

John C. Smart
Michael B. Paulsen
Editors

Higher Education: Handbook of Theory and Research

Volume 27

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Higher Education: Handbook of Theory and Research

Volume XXVII

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John C. Smart • Michael B. Paulsen
Editors

Higher Education: Handbook of Theory and Research

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Springer

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Chapter 1

I Have Always Been a Student: A Tale of Two Careers

Patrick T. Terenzini

I was among the people John Smart consulted in the early 1980s about his ideas for what became *Higher Education: Handbook of Theory and Research*. I thought it was a great idea then, as I do now, to provide a source where scholars, administrators, and policy analysts can find a definitive review of the literature on a wide array of important topics in higher education. Because I strongly believe that higher education scholars and administrators should have some sense of their intellectual and professional heritage, I also thought it was a great idea when John started inviting some of our senior scholars to reflect on the origins and evolution of their careers.

Thus, when Mike Paulsen invited me to write a chapter about *my* career in higher education, I was surprised and honored, and deep inside, *very* pleased, that is, until I went back to refresh my memory about who had written earlier chapters and how they had handled them. Then my surprise and sense of being honored increased sharply, along with my nervousness, for I have never considered myself a scholarly peer of the likes of C. Robert Pace, Wilbert McKeachie, Joan Stark, Alexander Astin, Marvin Peterson, John Centra, Yvonna Lincoln, or James Bess. However, as a friend once said, after sharply critiquing a list of the “top” higher education programs in the United States: “But if there’s going to be a list, it’s better to be on it than not.” So, I happily accepted Mike’s invitation and set about discovering what I had to share that would be beneficial to my colleagues, students, and professional successors.

In thinking about the task and asking myself: “Well, what *have* you learned?,” I began to realize more fully that I had learned a great deal, mostly from some won-

One might hope that this narrative of my professional career is more or less factually accurate. Memoir writers can, however, be prone to a failing memory or its twin, writing revisionist history to their own advantage. So, kind reader, *caveat emptor*.

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derful teachers, mentors, colleagues, students, and friends. I also realized that, since the age of five, not a year had passed when I was not in school. I had *always* been “a student” in some fashion or another—curious, watching and listening, wondering why I was seeing or hearing what I was, asking questions, reading, trying to make sense of it all. It was, I thought, a pretty big part of who I am.

Roots and the Early Years

My father’s parents had emigrated from Italy to the United States just before he was born, and my mother’s Irish grandparents were also immigrants. My father’s education stopped at Grade 8 so he could work to help and support his family. My mother graduated from a “Normal school” and taught in a one-room schoolhouse at the end of the rail line that served the Vermont Marble quarries. Both grandfathers and at least four uncles had been marble men, and my father sold life insurance. However, my three siblings and I were to have “a good education,” partly because of my mother’s background (her younger sister was also a school teacher), partly because my father was determined that his children would have the education he never had.

As long as I can remember, I have enjoyed learning. I liked to read (or to be read to), and as a child the Greek and Roman myths fascinated me. I loved the stories, not yet understanding that they were part of how two great civilizations explained what they saw going on about them, as well as the ways they passed on their culture and socialized their young. I later came to realize that they also did partly what faculty members do—try to understand and explain why things are the way they are, or behave the way they do, and then pass those discoveries on to others.

In elementary and secondary school, I was an acolyte, “serving” at various Roman Catholic liturgical services. I enjoyed learning the acolyte’s Latin responses to the prayers of the priest celebrating the mass, although at first it was pretty much rote memorization and recitation. At age 7, however, my First Holy Communion gift was an adult’s missal which had the Latin and English versions of the liturgy on facing pages. By following the Mass in the missal, I could now see words with the same meaning but in two different languages. It was a peek into another world. I also became familiar with the gospels and parables. That and my earlier interest in the Greek and Roman myths were excellent preparation for understanding the themes and metaphors in literature, art, music, and drama, as well as the power of language and metaphors, something I later came to value greatly in writing and speaking.

In my elementary and secondary school years, football, basketball, and baseball were the only organized sports in the schools I attended, and a 5’4”, 120-lb. kid who could not hit a fastball had no future in any of the sports all my friends were playing. However, I was being raised in Rutland, Vermont, the site of North America’s first “T-bar” ski lift and home of Andrea Mead, the first American to win an Olympic medal (two of them, actually, both gold). Skiing was growing in Rutland, and when I was nine, a youth ski development program opened. I got involved, and my life

changed forever. Skiing opened doors for me that would otherwise have remained closed, and it initiated a chain of events that I can follow easily from then to now.

In my later high school years, I worked as a lifeguard and water safety instructor to support my skiing habit. In teaching beginning swimmers, I discovered a talent for teaching. I enjoyed working with the little kids, particularly those who were afraid of the water. I took great satisfaction in watching their faces light up when they discovered they could put their faces in the water and live, then float, and eventually swim the 25 yards across the pool (demonstrating their readiness to swim with the big kids in the deep end). I also took pride in knowing I had helped them make those discoveries. It may have been those experiences more than anything else that turned me toward teaching. My growing interest in studying English and the encouragement of Walter Moore, who taught senior-year English, turned me to teaching English, and in high school, those interests and my skiing came together.

I had been a good student throughout my precollege school years. I was valedictorian of my small, Catholic high school class, and I had developed into a serious and successful competitive junior skier. The timing of my graduation from high school could not have been better. Dartmouth College had not won the team skiing events of its nationally famous Winter Carnival for three consecutive years, and I was one of a small group of promising skier-scholars (the order is significant) encouraged to apply. My academic preparation turned out to be not as strong as I had thought, although it was good enough to earn passing grades. In my sophomore year (freshmen were not allowed to compete in varsity sports), we Big Green skiers won our Carnival. To my mind, however, my first term was a disaster. As Dartmouth had a trimester system, students took only three courses per term, and this “valedictorian,” who had never seen anything but “As,” and who worked really, *really* hard, managed only two C⁺s and a C⁻. The message seemed pretty clear to me: I was in academically way over my head.

Fortunately, that first year also introduced me to the “student affairs” side of the College’s operations in the person of Albert I. Dickerson, Dartmouth’s legendary Dean of Freshmen. Dean Dickerson was legendary because he could channel for parents the despair their freshman sons would soon experience when the College released the first set of midterm grades to students and parents. Dean Dickerson wrote periodic letters to parents alerting them to the speed bumps their previously high-flying sons would encounter at key points in their first academic year.

His letters to my parents saved my Dartmouth life, which changed the ones that followed. When I raised with my parents the possibility of withdrawing or transferring to another school (the behavior that would later help define my early years as a researcher), my mother was loaded for bear with all the arguments Dean Dickerson had passed on both to allay her own concerns and to help her encourage me to continue at least another term. I did, was more successful, and the thought of leaving Dartmouth never arose again.

Besides the superb liberal arts education Dartmouth gave me, my early years there also introduced me to Bourdieu (see, e.g., Bourdieu 1977), although it would be another 30 or more years before I ever heard of the man or learned anything about his concepts of human, cultural, and social capital. Nonetheless, it was evident to

me that most of my peers came to college with far better academic preparation and skills than mine. They also came from higher socioeconomic stations and were more comfortable at Dartmouth than I both academically and socially. Some also came with friendship networks developed in prep school. They had done things, were interested in things, and been places I had never even thought about. Many had traveled internationally; I had never left the country and rarely traveled beyond New England and eastern New York. Some of my classmates were planning to major in fields I had never considered, in some cases did not even know existed. During my sophomore and junior years, I considered changing my academic major plans from English to French and to geology (paleontology was as interesting as the ancient myths). I always came back to English and teaching. In my senior year I flirted briefly with the idea of going to law school (many of my friends were going into law, and I knew attorneys made more money than school teachers). However, instead I enrolled in June of 1964 in the year-long Master of Arts in Teaching Program at Harvard to prepare to be a high school English teacher.

Three important things happened while I was at Harvard. First, I met Caroline Tuttle, a Middlebury College graduate who had also enrolled in the Harvard MAT program. We married 2 years later, raised a family, and have lived together ever since. Everywhere I look in my career, Caroline is there.

Second, in the practice-teaching portions of my MAT program, I taught under two superb English teachers, one at Newton High School (his name was Thomas Wolfe, however, he was unrelated to the famous American writer), the other at Dorchester High School, both of whom provided superb mentoring. Both sat-in on my classes (Wolfe did so frequently) and let me observe theirs. We would then meet to discuss what had happened, good and bad, and why. In addition, Newton and Dorchester High Schools served communities at the extreme opposite ends of the socioeconomic spectrum. The challenges of teaching in those circumstances were predictably diverse, however, the experiences and the lessons I learned were wonderful preparation for teaching diverse students in diverse settings in later years.

My third significant experience at Harvard was reading some of the work of Jerome Bruner (1966, 1979), a leading cognitive learning theorist. Bruner maintained that learning was based largely on the process of categorization and that we interpret our world by discerning similarities and differences. Bruner also believed that a complex concept or process can be taught to anyone, regardless of age, if the parts of what is to be taught and learned are properly deconstructed (my word) and appropriately sequenced. He is credited with coining the term “scaffolding.”

I have never forgotten watching an instructional film in one of my Harvard courses in which a prominent mathematician demonstrated the validity of Bruner’s theory by teaching calculus to fifth graders. Inasmuch as calculus was the only college course I ever dropped (it was impenetrable), I watched in wonder as fifth graders, guided by a skilled teacher, accomplished what I could not. I am not schooled enough in psychology to understand or explain how that can happen, however, the message I took from Bruner was that effective teaching required, first, a teacher with enough mastery of the material to deconstruct it into its key parts, and second, the ability to sequence and present those parts in ways appropriate for the students

being taught. Doing the latter, of course, requires knowing how much one's students know and do not know, what elements must be introduced, and in what order so the students will learn what one wants them to learn. I will come back to this critical skill later.

The Early Professional Years (1965–1969): From English to Higher Education

My interests in teaching English and in competitive skiing were relevant to my getting into Dartmouth, and they were the keys to getting my first full-time professional job. As I was completing my MAT, I was offered a position teaching 11th grade English and coaching the alpine ski team at Colorado Academy, a K-12 prep school on the outskirts of Denver, CO. Near the end of my senior year, I had spent a week skiing at Aspen in new-every-day, deep powder. With that indelible memory, the opportunity to return to Colorado to teach English and to ski the major ski areas (all expenses paid) was a skiing bachelor's dream-come-true. It also turned out to be an opportunity to work with and learn from Frank Slevin, the chair of the English Program at CA and yet another of the best classroom teachers I have ever seen. My good fortune and pleasure in learning from three master English teachers made it ever more likely that "teaching and learning" would be central parts of my life. The research part lay not too far over the horizon.

In 1966, I took a position in the English Department at (then) Dean Junior College in Franklin, MA. I joined a department led by Bob Hefferman, yet *another* master English teacher, and loaded with recent hires dedicated to good teaching. At one point at Dean, I also car-pooled with Charlie Cramer, a popular economics instructor and widely read individual who enjoyed discussing a wide variety of topics. He was also always the great teacher, politely challenging people to defend their opinions and defending his own. [Bill Green, a Dean alumnus and now Chairman and CEO of Accenture, publically credited Charlie with teaching him economics and how to think analytically (Green 2008)]. On one trip with Charlie, the conversation turned to the death penalty and whether it was an effective deterrent to murder. I was skeptical, and Charlie encouraged me to back it up. I accepted the challenge and spent a fair amount of time over the next week or two gathering information on murder rates in states with and without the death penalty, and in states that had (or did not have) the death penalty and then abolished (or instituted) it. My research design and analytical methods were pretty primitive (what did an English teacher know about social science research methods?), however, the hunt for an objectively supportable answer to the question was intellectually exciting. Charlie had planted the seed of my future career, and a couple of years later, while doing my doctoral dissertation at Syracuse, it would germinate and flower.

From the Small World Department: David Leslie was also at Dean as the College's Registrar and Director of Institutional Research (I had never heard of the

latter position, but soon would). In 1969, David headed for Penn State for doctoral study in their Higher Education Program and to work as graduate research assistant in the Center for the Study of Higher Education (CSHE). At the same time, after discovering some interest in college administration, I left Dean for Syracuse University for doctoral study in the higher education administration program there.

A Prologue to the Syracuse Years

The 1960s and 1970s witnessed social change of staggering proportions. The Baby Boomers arrived on America's campuses, augmenting the enrollment pressures already brought on by the G.I. Bill. Mario Savio was drawing very large crowds of listeners and followers to the Free Speech Movement at the University of California at Berkeley. America's involvement in Vietnam swelled, and the Civil Rights Movement grew in scope and public attention. Freedom Riders rode, were attacked, and died. A Black church in Birmingham was bombed, killing four little girls. The Civil Rights Act of 1964 extended voting rights and opened up public facilities (including colleges and universities) to all Americans, however, not before Newark, Detroit, and other US cities big and small experienced race riots. The Higher Education Act of 1965 put higher education within the reach of economic and racial/ethnic groups that had historically been excluded. Student unrest was on the rise, fueled by the Free Speech Movement, the Civil Rights Movement, and opposition to the Vietnam War and the military draft. *In loco parentis*, the legal doctrine that had historically allowed institutions to act "in the place of the parent," was in its death throes as institutions lost legal challenges for failing to provide due process to students charged with rule or law violations.

The impact of all these events on higher education was transformative. The curriculum and how colleges and universities functioned became common targets of protest, reexamination, and revision. Institutions grew rapidly in size, composition, mission, and number. In the mid- and late 1960s, community colleges opened at the rate of one per week. It was a postsecondary education bull market. Administrators scrambled for any information they could get to manage their rapidly growing institutions. Much of the institutional record keeping, however, had been transactional, focused on the current status of individual students and employees. Records were not kept with an institution's analytical needs in mind. Mainframe computer-based administrative record systems were growing, and "institutional research" was born and spread rapidly. Not without some justification, many people on campus considered "bean counting" and reporting the numbers of students, faculty members, and dollars to be IR's primary functions.

Another response was the emergence of higher education programs and research centers, such as the federally created centers (and their associated graduate programs) at the University of California—Berkeley, Michigan, and Columbia. Others appeared at Penn State, the University of Georgia, Syracuse, and elsewhere. The new programs were hardly at a loss for things to study.

The Syracuse Years (1967–1978)

I enrolled in Syracuse's doctoral program thinking I wanted to be a dean of students. Syracuse already had a prominent graduate Student Dean Program, founded in 1931, that prepared women to be deans of women in colleges and universities. Despite my initial interests, as I got deeper into my Syracuse program, being a dean lost some of its allure. Deans were involved in messy issues involving students, changing student-institution relations, and campus unrest. I began to doubt my interest in doing that for the rest of my life. Moreover, too much of what I read in the field lamented the second-class citizenship of "student personnel" staff members and exhorted professionals to explain to faculty members how they contributed to the development of "the whole student." So numerous were the lamentations that I began to spoof them as manifestations of the field's "Rodney Dangerfield Syndrome." [Dangerfield was a popular comic whose trademark shtick was fiddling nervously with his necktie while complaining: "I don't get no respect."] I believed then, as now, that respect must be earned and that the student personnel profession had not provided evidence or convincing arguments for the validity of the claims of contributing to students' overall development. In the literature review section of my dissertation, I noted the irony of the "no respect" complaints, documenting that since its inception the field's intellectual leaders (such as W. H. Cowley and C. Gilbert Wrenn) had urged the profession to capitalize on the research that was available to support their claims to being "educators" on a par with faculty members.

The founder and chair of Syracuse's program in higher education administration at the time was Maurice Troyer, from whom I learned about an emerging field called "institutional research." I did not know that within a year or two I would begin a 14-year career as an institutional researcher and would thereafter spend much of my career as a faculty member with strong interests in the functions of institutional research.

In doing my dissertation, I realized again what I had first discovered (with Charlie Kramer's prodding) while at Dean Junior College: I really enjoyed doing research. The challenges of discovery and the excitement and pride in finding answers and learning were highly enjoyable. At the time I finished my dissertation, moreover, Charles V. Willie, a member of my dissertation committee was just stepping down as chair of the Sociology Department to become Vice President for Student Affairs. Syracuse's Office of Institutional Research reported to the Vice Chancellor for Finance and Business, and the office's analyses, thus, focused on the University's financial operations. Chuck Willie wanted some research done on Syracuse's undergraduates. I was going through a frustrating period of unsuccessful searches for a position in student affairs administration and was being turned down for having either too little experience or too many credentials. When Chuck asked if I might be interested in establishing an "Office of Research" in the Division of Student Affairs, I believe I took his offer without asking how much it would pay. I may have been having reservations about becoming a student personnel administrator, but I had never lost my interest in students. The thought that someone would be willing

to pay me to do research on students was just too appealing to decline, and I enjoyed that assignment from 1972 to 1977.

Chuck Willie was an extraordinary person. When I first met him, he was also Vice President of the Methodist Church's House of Deputies, at the time the highest ranking lay position in the Church. During the period I worked with him, he was also President of the Eastern Sociological Society, produced two books and multiple journal articles, and delivered the sermon at the ordination of the first women ministers in the Methodist Church (the Bishop later annulled the ordinations, and Chuck resigned his position in protest). He was among the most politically skillful administrators I have ever known. Chuck Willie was a role model and mentor whom I have tried to emulate throughout my career.

Charles Willie embodied what I came to consider the three traits I admire most in colleagues: a high degree of competence in his field, a deep understanding of people and how to work successfully with them, and solid ego control. He had a knack for bringing an innovative idea to life while letting others get credit for having the idea and for developing it. Getting the credit was not important to him; he was more interested in making good things happen. During one unforgettable year I worked for him, female undergraduate students occupied his office demanding creation of a women's center. Chuck was sympathetic to the request, however, he was also a skillful teacher and shrewd administrator who knew a "teachable moment" when he saw one. He asked the occupying students, all of whom were White, what their Black sisters' feeling and ideas were on the matter. They had no answer, however, with Chuck's encouragement and help, a series of meetings were held (I was Chuck's representative) in which White and Black women students explored each other's needs and discussed how a women's center could help meet the needs of all women. A Women's Center was eventually established, however, I still marvel, remembering how patiently and skillfully Chuck guided its emergence and the education of the women who developed it. I learned other lessons working with Chuck. His departure for Harvard was a great loss to Syracuse and to me. I still had so much more to learn.

Working for Chuck Willie was the instrument of another turning point in my career. Syracuse's high rate of student attrition (that was what student withdrawal was called in the early 1970s) concerned him, and doing a "dropout study" became my first assignment. At the same time, Robert Diamond, founder and Director of SU's Center for Instructional Development, hired Ernie Pascarella, who had just completed his Ph.D. in Higher Education and who had been a graduate assistant in the Center, as CID's associate director for research. Bob was also concerned about Syracuse's attrition and asked Ernie to study the matter. At a Christmas holiday party at Joan Stark's home (Joan had recently become chair of the Higher Education Program, and Ernie and I both held adjunct faculty appointments), Ernie asked if I was interested in working together on the attrition study. We were friends during our graduate studies, however, we had never worked together. All that was about to change.

Over the next 3 years, Ernie and I worked together developing and analyzing data on SU undergraduates. By concentrating on factors related to students' dropping

out, our analyses served the purposes of both Student Affairs and CID, however, they also formed the foundations of other studies and our scholarly careers. My collaboration with Ernie, and my role as an early institutional researcher, made it possible for me to do my job and still write two or three conference papers per year. I was pretty sure at that point that I eventually wanted to become a faculty member, and writing a conference proposal was, I knew, the first step in a process that could lead to a refereed journal article. Having a conference proposal accepted, after all, obligated one to write the paper. If one wrote a paper, why not submit it for possible publication?

In the fall of 1975, as we were making plans for a second dataset, I read an article by Vincent Tinto (1975) in *Review of Educational Research*. It contained the most thorough review to-date of the attrition literature and suggested a conceptual model that had grown from his review. The model would, of course, redefine research on the college student withdrawal process for the next 25 years. Vince's model seemed tailor-made for Ernie's and my continuing retention studies, and we developed a set of items and scales to operationalize the major components of the framework, particularly those relating to social and academic integration. We never copyrighted the five scales we developed and which we called simply our "integration scales" (although users have graced them with far more elegant labels). Although we never kept track, we estimate that they have been used in perhaps a thousand studies or more. Their development also became the occasion for a number of enjoyable conversations with Vince, who in the fall of 1975 took a faculty position in the Syracuse College of Education. Our relationship with Vince grew over the years, ultimately involving our joint collaboration with him (and others) in a national research center. However, I am getting ahead of myself.

The Syracuse Higher Education Program faculty included (at one point or another) such distinguished scholars as Maurice Troyer (organizational theory and administration), Joan Stark (students and faculty), John Honey (public policy), Mary Evelyn Dewey (students and student affairs), and James Heffernan (students and student affairs). However, the Program also ran with substantial support from adjunct faculty members, including Bob Diamond (instructional development), Edward Kelly (program evaluation), Allen Splete (history of higher education), George Stern (social psychology and college environments), Ernie, and me. Adjunct faculty filled various roles, however, I tried to teach one course per year. I taught the history of higher education one year and team taught a research design course with Ernie. We were a good team, each of us bringing different strengths to the classroom. In one set of course evaluations, a student commented: "Ernie and Pat are a great team. Indeed, one can start a sentence, and the other can finish it." We both enjoyed research design so much that we have continued to teach it (albeit no longer as a team) as part of our regular faculty teaching loads. It is still my favorite course.

In 1977, the Fund for the Improvement of Postsecondary Education gave Joan Stark a grant to support Project CHOICE, an effort to improve the nature and quality of the information colleges and universities provided to potential students and their parents. Joan was looking for an associate director to oversee the research aspects of the project. I resigned my position in Student Affairs to work with Joan

(Chuck Willie had announced his decision to take a faculty appointment at Harvard) knowing it would be a good opportunity to work with a dynamic and extraordinarily productive scholar, as well as to learn something about securing external funding and managing funded projects. At the end of my first year, however, Joan accepted an appointment as Dean of the School of Education at Michigan and would be moving Project CHOICE to Ann Arbor. Ernie had also decided to take a faculty position at what was then the University of Illinois—Chicago Circle. For several reasons, I was ambivalent about following Joan to Michigan (as good a friend and mentor as she was).

I explored other possibilities, including one as director of institutional research at the State University of New York at Albany. My lack of experience in most of the important IR functions (such as enrollment projections, faculty workload analysis, and planning studies) kept me off the A-list, however, I eventually received an invitation to visit, did so, and had an offer by the time I returned to Syracuse that night. I am convinced it was my general preparation in higher education and administration, and not my technical skills, that got me the job. I did not realize it at the time, but my *real* education in how colleges and universities operate was about to begin.

A Prologue to Albany

The turbulence in the United States that had begun in the 1960s carried into the early and mid-1970s. The educational bull market of the 1960s, however, turned bearish. The national debt crept steadily upward as the Vietnam War drained the nation's resources and provoked deadly protests at Kent State and Jackson State Universities. In 1973, the first Mideast oil embargo sent the prices of gasoline and heating oil skyrocketing. Institutions with financial plans for the next decade saw them become obsolete in a matter of months.

The effects of these national and international events and trends, as in the previous decade, had their effects on higher education. Traditional student enrollments continued to increase, but at a much slower rate. As money became tighter, the enrollment "beans" were now being linked to cost figures to derive cost/bean ratios: cost/credit hour, cost/FTE student, cost/degree granted (overall and by major), and cost/anything else institutions could count. The drive for efficiency was on. As Peterson (1985, p. 10) noted, "An era that began with student discontent and prospects for an educational revolution that promised to raise significant educational issues became instead a decade of increasing concern for prudent management and accountability that focused on efficiency and effectiveness in higher education." On college and university campuses and in state houses, executive chambers, and board of trustees meetings, the question of "How many?" that had dominated institutional operations and planning in the 1960s was replaced by questions of "How much?" "Accountability" and "efficiency" were the watchwords. As the costs of other state programs and services, such as prisons, highways, and social services rose, funding priorities shifted, and the long-standing assumption that higher education should be

strongly supported came under close scrutiny. State-wide coordination grew, and state higher education boards began to ask hard questions about the need for certain programs and about the costs of offering them.

In response, colleges and universities turned to corporate America for ideas on how to cut costs and manage resources. Management philosophies and techniques developed for the commercial sector were imported into higher education. “Program Planning and Budgeting” came up on everyone’s view screens, and efforts were made to identify the ongoing, cyclical data needs of administrators. Main-frame computing had continued to develop, and elaborate software programs and systems emerged to analyze and report on large, quantitative databases. It was the age of administrative management information systems. Computer programs were developed to produce the needed reports on a regular, scheduled basis, affix costs to enrollments, and simulate the effects of various enrollment, cost, and pricing changes on departmental, college, and institutional workload, staffing, and budgets.

The late 1970s’ pressures to conserve resources through increased efficiencies and institutional contraction led logically to the growth of program evaluation to support prudent resource allocation. Program evaluation grew in importance; the assessment movement was waiting just over the horizon, and higher education programs grew in number and in the range of their instructional and analytical interests. The transformations underway touched all areas of college and university functioning.

The SUNY-Albany Years (1978–1986)

When I arrived at SUNY-Albany as its second director of institutional research, the University was struggling with the aftermath of a period of significant internal program reviews and retrenchments. Major financial problems in the State of New York had required serious reductions in the State’s workforce, and no branch was exempt.

Albany Presidents Louis T. Benezet (1970–1975) and Emmet B. Fields (1975–1977) had overseen the University’s responses to the State’s financial challenges. Having announced his intention to retire, but wanting to prepare the University for the difficult budget reduction decisions to come, Benezet named a Select Committee on Academic Program Priorities to recommend places to cut. Shortly after Fields succeeded Benezet, the State of New York announced additional budget reductions that would require more cuts. SUNY-Albany faced the loss of 103 positions (most of them faculty lines) and \$1.8 million (a reduction, I was told later, of about 15–17%). Most SUNY campuses responded to the storm by making “horizontal” reductions, eliminating vacant faculty lines, not renewing term contracts, and adopting other management tactics that would reduce the size of the campus workforce. The approach was essentially random, snatching vacant lines wherever they occurred, but lending at least the appearance of even-handedness. Under Fields, Albany forsook the “across-the-board dribble” (Volkwein 1984, p. 395), choosing instead to

retrench “surgically” through a Mission-linked process that involved evaluating the strengths and weaknesses of every program against a set of criteria, identifying strategic opportunities, and making targeted cuts that in the long run would focus and strengthen the University (see Shirley and Volkwein 1978 for a description of the process).

Fields named a Task Force on Priorities and Resources, a broadly representative body of the Albany campus’ community, to advise him on where to cut. Simultaneously, he also asked his budgetary group to make similar recommendations. The two groups met independently but used the same criteria and data. Differences in the two groups’ recommendations were resolved, and Albany proceeded with what one observer later characterized as “an act of self-amputation.” Albany’s strategy called for more cuts than the State required but which the State had agreed in advance the University could retain and reallocate to strengthen remaining programs. The process culminated in the closing of two schools, three departments, 26 academic degree programs (six of them doctoral), an experimental college, and several academic units (Volkwein 1984). The excess-reduction lines were reallocated to enhance the vitality and quality of continuing programs. In some instances, the reallocated lines bolstered seriously understaffed departments; in other cases, they supported the efforts of departments with high promise to achieve national recognition through the appointment of nationally and internationally prominent scholars.

Vincent O’Leary, a nationally respected criminal justice scholar and dean of Albany’s School of Criminal Justice, had chaired the Task Force. At the time I took over as IR director, O’Leary, after a year as Interim President, had just been named President with wide faculty approval. I had met this engaging man during my interviews and knew of his role in the retrenchments. On learning he had been appointed president, I could only marvel. What an extraordinary event and revealing reflection on this man: He had chaired a committee that recommended significant reductions in the faculty ranks but could *still* be named—with strong faculty support, no less—the University’s next president. I was excited to be moving to Albany at such a dynamic time, although I had no idea of the extraordinary education I was to receive in how the world of higher education administration really works. Vince O’Leary would rival Chuck Willie in his influence as a mentor in my professional life. I still cannot believe my good fortune, much less in successive professional appointments.

I moved to Albany excited by the prospects of working close to the decision-making power centers, but also concerned about whether I had the technical tools to do the job. I had had excellent classroom preparation in higher education administration, solid experience in survey research, knowledge of research design, and the good fortune to have had a front-row seat in watching Chuck Willie navigate and manage the Syracuse student affairs operations. However, I was bringing little else in the way of practical preparation or experience in analyzing an institution’s performance in virtually all other functional areas. I still think the move was a leap of faith on both Albany’s part and mine.

I need not have worried. Although the learning curve was steep, I had moved into an office of highly competent and professional IR people. My early weeks

briefly overlapped my predecessor's closing days as IR director. Dwight Smith, a criminal justice scholar with a particular interest in organized crime (an interesting background for an IR director, I thought), had founded Albany's IR office, but he was now on his way to a faculty appointment at Rutgers. He was good natured and keenly analytical, and together with Wendel Lorang, his associate, introduced me patiently to the breadth of institutional research and to the intricacies of SUNY-Albany's data systems, particularly the office's enrollment reporting and projection models and its faculty workload models which, together, guided Albany's decisions about how many students it needed to enroll (full- and part-time at each of four levels of instruction) in order to justify its budget requests and sustain its operations. In the SUNY System, enrollment projections drove the budget development process. The enrollment and budget projections affected the number of faculty lines a campus would be allocated (a touchy subject at Albany, given its recent history of retrenchments), as well as library acquisitions; equipment replacement funds; housing, advising, and counseling loads; physical plant operations, and a range of unit-level budgets and workloads. When the enrollment projections exceeded or fell short of subsequent enrollment realities, the whole campus knew about it and felt the effects for a couple of years. I quickly came to understand that running enrollment projections may have been my office's least-glamorous activity, however, it was also its most important one. The summers preceding each fall semester were periods of high anxiety as I monitored the Admissions Office's periodic updates on applications, offers of admission, and acceptances, as well as other related statistics, and held my breath, waiting to learn how close we had come.

I also quickly discovered, however, that IR was multidimensional and very exciting work. It was, in fact, a window on the University's administrative challenges and internal operations. Early in my IR career, I took pride in thinking I was aware of about 80–90% of what was going on inside the University.

Wendel Lorang, my associate in the IR office, was a huge asset throughout my years at Albany. Conscientious, hard-working, imaginative, thoroughly professional, and a good friend, Wendel knew our enrollment and "over-/understaffing" workload analysis models inside and out. He helped me understand them, but his competence also relieved me of having to learn them to the depth that would have been necessary without him. Indeed, I often thought: "If Wendel leaves, I'm outta here, too!" With Wendel overseeing the enrollment and workload analyses, I could turn my attention to other IR topics. Together, from 1978 to 1984, we extended the scale and reach of the IR office's activities into, among other things, a student outcomes analysis program (outcomes assessment was just emerging). In the late 1970s, budgets were tight everywhere; program evaluation was gaining in importance, and "assessment" was just a couple years short of becoming a "movement." Albany was not immune to the pressures to demonstrate its educational effectiveness. I had realized earlier that Vince Tinto's withdrawal model could be easily adapted for use in designing studies of other educational outcomes besides persistence. In fact, my generalizations of Vince's model became the foundation of Albany's assessment program, as well as my scholarly research. When Fred Volkwein succeeded me as IR director when I left for the University of Georgia, he extended and refined the

original outcomes and assessment program. We are both proud that the system remains in place and in use at Albany.

My IR portfolio also included faculty salary equity studies (women's rights issues were appearing on the front pages of national publications, and gender- and race-related salary differences were a rapidly growing concern nationally and at Albany), as well as the design and implementation of a course and instruction rating system (Albany had none when I arrived); development of a set of university, college/school, and department performance indicators; and other analyses in support of the president, the University's planning process, vice presidents, deans, and department heads. In each activity, I learned something new, not only about the IR trade, but also about the University's internal operations, the flow of formal and informal power, and the faculty culture.

For example, the sensitivity of gender- and race/ethnicity-related salary inequities and the threat they posed to the University's collegial relations, morale, and public mission of the University were quickly becoming clear. While preparing my salary equity studies, I could also watch and learn as President O'Leary found ways (as Chuck Willie had) to bring long-overdue attention to campus inequities and to reduce, and eventually eliminate, the salary distortions while educating both faculty and administrative staff members and the public about the University's past and future. (His obituary noted that O'Leary "grew the faculty, staff and student body into a more diverse force," including "add[ing] the third stanza to UAlbany's (sic) alma mater to make the school song correspond with increasing levels of diversity, adding lines like 'pass the torch from one to all/guide each destiny'" (Former UAlbany Leader Dies 2011). It was clear that things were often far more complex than they seemed at first.

I learned two other important lessons at Albany, and I have tried to pass them on to my graduate students. The first grew from my work as the staff member to a faculty committee O'Leary had formed to consider what should be done with respect to instituting an instructional rating system at Albany. Pressures for such evaluations were just gathering steam nationally, and instructional evaluations were a hot issue among faculty members. Many faculty members resisted them strongly, arguing that one cannot evaluate teaching quality reliably or validly. The committee (mostly faculty members) devoted its early meetings largely to debates about whether "good teaching" could be evaluated. I had made available research literature on the topic, but the discussions continued. In the course of one discussion, I realized that the key issue was not *whether* one could evaluate teaching but rather the quality of the "evidence" to be used. I commented that faculty members actually evaluate their peers all the time, whether casually or in more formal processes such as course assignments and promotion and tenure discussions. To that point, I noted, the "evidence" used was largely anecdotal, based mostly on hearsay, student comments or complaints, or watching and listening as colleagues presented their research. The committee, I suggested, was being asked to recommend better ways to gather evidence to inform those judgments, evidence based on instruments with known psychometric characteristics and which could be revised and refined as analyses suggested. My remarks grew from the understanding that, in the faculty culture, "evidence" is the

coin of the realm. Without evidence, any truth claim is merely an opinion. My comments resonated with committee members, and our work shortly thereafter returned to the available published research and to the development of a student rating (not “evaluation”) form that would be credible to faculty and worthy of adoption University-wide. My lesson was the value and importance of understanding what those with whom I was working valued, what the “deal breakers” would be in discussions and negotiations with them. It was what Chuck Willie had demonstrated in his interactions with the students demanding a women’s center. It was a clear application of Sun Tzu’s (1961) dictum to “Know your enemy” (in a nice sense, of course).

The second valuable lesson, similar to the previous one in its own way, came when I presented President O’Leary with the fruits of my first efforts to produce campus, college, and department “performance indicators.” The goal of those efforts had been to assemble in one place information to which the president and academic administrators could turn to learn how their unit was performing with respect to the University’s missions of teaching, research, and service. Previous reviews and discussions had relied almost exclusively on measures of instructional workload, although unit performance evaluations (always pretty informal) also occasionally incorporated reports on funded research productivity. My goal was to create “new” performance indicator reports that would include quantitative information in all three areas of instruction, research, and service. I presented the president with a 5–6 inch thick binder of mainframe computer output. The binder had multiple indicators for each “productivity” area and at three levels of detail (university, college/school, and department). The President scanned several pages in some detail, then flipped quickly through the rest. On closing the binder after about a minute, he turned and handed it back to me. “Pat,” he said gently, “don’t make an analyst out of me.” I understood instantly that I had given him what a researcher would have produced and valued, not what President O’Leary needed to do his job. At that point, I manifestly did not “know my enemy,” or at least had not thought carefully or fully enough about what the president needed and what I should have given him.

In 1984, I was asked to be the president’s assistant for planning. As IR director, I had provided staff assistance to the University Budget Panel, an annual, university-wide review body that focused on staffing levels and distributions (largely because the most threatening sections of the Governor’s budgets for SUNY campuses focused on staffing). I would now coordinate and (working with the president) refine that process. President O’Leary hand-picked Budget Panel members, taking great care to ensure university-wide representation across academic, administrative, and governance units. Members read, interviewed, and heard reports by the vice presidents and the directors of major University units recommending, if the SUNY System’s final budget required staff reductions, where the cuts could be made with the least damage to the Albany’s mission and operations. Staffing redistributions in and across all areas were on the table.

The spring-semester-long work of the Budget Panel was another extraordinary window on the University, an opportunity to watch how potentially competing units could also collaborate. Perhaps as a by-product of the recent retrenchments and O’Leary’s handling of them, SUNY-Albany functioned with a remarkably high level

of cooperation and collaboration, despite having a unionized faculty and staff. The President always urged (and throughout the process reminded) Panel members to think and vote as “citizens of the University,” not as representatives of the academic or administrative divisions or units from which they came. From everything I saw, they did so consistently. President O’Leary’s keen understanding of his University and its people, what they would worry about, how they would react to information (or the lack thereof), and other matters was on full display. He guided the process and institution with great sensitivity and fairness, always reminding Panel members and the University community at large that the Panel’s work was preparatory for what might or might not come from the budget negotiations going on between the Governor and the Legislature. People were understandably apprehensive about what might lie ahead, but my sense was that they took some comfort in knowing that their voices were being heard and that, whatever happened, the preparations were being done rationally, and President O’Leary would be fair.

While the Budget Panel was at work, the president held one-on-one meetings with each of the vice presidents, deans, and directors of major units. I attended those meeting and kept the minutes. In advance of each meeting, I would review the annual reports and future plans for the division of the person who would be meeting with the president and for the units within it. I then prepared a set of discussion topics and questions for the president.

Preparing the minutes for these meetings was a highly challenging, delicate activity. The written minutes had to be faithful records of the discussions and decisions, however, they were also potentially public documents of what were very private (and sometimes difficult) discussions. The challenge was to write them to be read by others, however, also in a way that the president and vice president (or dean or director) could read between the lines and know what had *really* been said in the meeting. It was a significant challenge to my writing skills and political acumen, and both sets of skills, as well as my grasp of how business is done in a university, developed enormously in the process. Readers may remember Kenny Roger’s ballad of “The Gambler.” If they do, it is probably for the lines “You got to know when to hold ‘em, know when to fold ‘em.” However, another line has also stuck with me and shaped my thinking about effective administration, survey data collection, and grant-getting: “If you’re going to play the game, boy, ya gotta learn to play it right” (Schlitz 1978). I have shared that advice regularly with my students.

The president’s one-on-one meetings provided yet another window on the University, and preparing for and participating in those meetings was highly educational. I had to anticipate what the president might want to know, as well as the questions he might (or I thought he should) ask. During the meetings, I could then watch, listen, and learn how close I had come to what he did and how he handled these sometimes delicate discussions. In retrospect, my preparations and the meetings themselves were regular exams in how well I was learning my lessons about all the things that go on inside and outside the University, and how a university really operates. In short, they were opportunities to see how well I was learning how the game is played.

Although I was unable to find time to do much teaching while at Albany (although I served on several dissertation committees), I nonetheless tried to maintain an active scholarly life. I continued (often still with Ernie Pascarella, but also with IR and President's Office colleagues) to submit conference paper proposals, write conference papers, and then rework most of them for submission to a journal. It was not only intellectually stimulating and good preparation for moving to a faculty position, but the activity was also advantageous in my role as IR director. Having an active scholarly life gave me a measure of credibility with deans, department heads, and faculty members that I almost certainly would not have had otherwise. In some ways, I "looked" like them, although I was probably regarded with some suspicion as a scholar who had gone over to the dark side.

In the mid-1980s, I think both Ernie Pascarella and I were feeling we were running out of new ideas in our retention studies, and I, at least, was concerned about becoming typecast as "the attrition guys." Sometime in the fall of 1985, Ernie called to make me "an offer you can't refuse. How would you like to update Feldman and Newcomb?" The reference was, of course, to Ken Feldman and Ted Newcomb's (1969) classic, *The Impact of College on Students*, in which they reviewed essentially the entire research literature on college students published in the 40 years before that date. "Feldman-Newcomb" was required reading in most doctoral programs in higher education (including Syracuse's), but by 1985, the book's material had become dated. In addition, since its publication, higher education programs had grown in number, and the volume of research on college students had exploded. Ernie and I both knew the great value that book had been to us as students and as scholars. We thought the time might be right for a similar review of the research that had appeared since 1967. I responded to Ernie's question without hesitation, and my answer was life-changing.

A dozen years earlier, as my doctoral program at Syracuse was winding down, I knew that at some point I wanted to be a faculty member. I enjoyed both teaching and research, and I wanted to do both full-time. I also knew, however, that I first needed some administrative experience. How could I, with a straight face, stand in front of a class and "profess" higher education without ever having worked on a campus at any serious level of responsibility or for any appreciable period of time? I know that students in some fields go directly from their undergraduate major to graduate school and a doctoral degree, and then into a faculty position. However, as I saw it, higher education was a profession, not a discipline, and professions required that their members "practice" the profession. Teaching about higher education without having "practiced" it in some fashion, helping people prepare to be administrators without having been one, was in my mind highly questionable. My years of full-time work at Syracuse and Albany had both been periods of great enjoyment and learning, and I have never regretted them. In retrospect, I think they made me a better administrator *and* a better researcher. After 14 years in administration, however, I was ready for a faculty position, and the prospect of working again with Ernie on a regular basis to "update Feldman and Newcomb" as my first faculty activity was just too good to pass up. Moreover, it would give me the opportunity to catch up on all the research that had been published since about 1965 and on which

I was shamefully behind in reading. The demands of continuing as Albany's IR director or assistant to the president for planning, however, simply would not allow me the time to carry my share of the workload for this new project. I needed to find a faculty position.

The University of Georgia Years (1986–1990)

About this same time, the Institute of Higher Education (IHE) at the University of Georgia (UGA) had an open position, and Cameron Fincher, Regents Professor of Higher Education and Psychology and the Institute's director since about 3 years after its founding in 1964, inquired about my interest in the position. IHE was organizationally and budgetarily separate from the College of Education, tasked with doing research and providing service in higher education to the State and the University System of Georgia. Despite not being a part of the College of Education, IHE professional staff members held joint appointments, one as a tenure-line faculty member in the College of Education. IHE offered the University's graduate program in higher education. My position called for spending 30% of my time teaching (essentially one course per year) and 70% in service (which meant about 25% service and 45% in research).

The prospect of joining IHE and its faculty, staff, students, and activities was highly appealing. Cameron was a founder of the Association for Institutional Research and deeply committed to the IR profession and to scholarship in general in higher education. He was delighted when I outlined Ernie's and my plans to update the Feldman-Newcomb book and excited by the prospect that half of the work on the book would be done at UGA. Thus, in August of 1986, I joined the IHE faculty. At Syracuse, I had managed to maintain a sufficient level of scholarly productivity to be promoted to adjunct associate professor, a rank I took with me to Albany. My productivity while at Albany justified my appointment at UGA at the full-professor rank. Over the next three and a half years, I taught the Higher Education Program's IR and planning course, advised graduate students, supervised dissertations, and made a number of presentations at some of the University System of Georgia's campuses. I also stayed involved in AIR through conference papers and service on the Publications Board (my time at UGA was in the middle of a 12-year stint as Editor-in-Chief of *New Directions for Institutional Research*). Basically, I tried to be a good faculty member and colleague.

The activity to which I gave the majority of my time, however, was my work on what became the first volume of *How College Affects Students*. Feldman and Newcomb had reviewed the approximately 1,500 books or articles published in the previous 40 or so years. With two of us working on it, Ernie and I thought the task of reviewing publications that had appeared in the next 20 years would be manageable. By the time we were done, *How College Affects Students* referenced more than 2,600 publications. Ernie and I both, however, still consider the book to be the most intellectually challenging thing we have ever taken on.

In the last 18 months of the writing and editing, I invested the equivalent of 6 days per week on the book, staying in the office one evening per week and returning early each Sunday morning in an effort to get my work done while trying to maintain some sort of family life (we had three children ages 8–10). I have said on many occasions that without Cameron’s and Caroline’s support and encouragement, I do not believe I could have held up my end of project.

My time at UGA also afforded me opportunities to visit and learn about other kinds of public and private campuses. The University System’s flagship campus in Athens was itself a major contributor to my education. I knew about land-grant universities from the history course I had taken as part of my doctoral program, however, I had never paid close attention to their functions nor had I ever visited one. Land-grant universities, I quickly discovered, are really exciting places. My early years at UGA were reminiscent of my early years at Dartmouth: I discovered people studying all kinds of things I had never known or thought much about, things like poultry science, field grasses, hydrology, veterinary science, and forestry, all, of course, areas of study vital to a state in which agriculture was a major economic force.

One memorable learning experience was a week-long, faculty “Road Scholars” trip (the first program of its kind, I believe). I was among 50 faculty members who boarded a bus (half our expenses paid by our departments, the other half by the Vice President for Service) for a fascinating introduction to Georgia’s major geographical regions and major economic and social sectors (including textile mills and carpet making, poultry and egg production and processing, a nuclear power plant, agricultural and marine research centers, a major grocery distribution center, a Vidalia onion farm, some of Georgia’s colleges and universities, the Georgia-Pacific headquarters, and the State Capitol). At one stop, we had breakfast in a popular local restaurant in a small town in South Georgia. We ate and chatted with “the regulars,” one of whom was a retired farmer and former chair of the University System of Georgia’s Board of Regents. It was easy (and dangerous) to underestimate the man. In a rich Southern drawl, he welcomed us and spoke of the great pride the people of Georgia have in “their university.” He described the trust parents place in the University and its faculty members when they send their children to Athens, and the vital role the University plays in the State’s social and economic health. As he closed, he thanked us again for coming and for the work we were doing for the people of Georgia. As his closing line, he said: “Now before ya’ll go, I want you to look around the room, and I want you to remember one thing: (pause) *These people pay your salaries.*” The only sound was our collective, deep, and audible gasp. Talk about a memorable lesson!

As work on the book approached its close, family matters required a return north. I was fortunate that the Penn State Higher Education Program and CSHE were looking for faculty member with interests in research on students. Looking back, I cannot believe how fortunate I was in having this opportunity open when it did, as had those at Syracuse, Albany, and Georgia. Each new position was, in its own clear way, positive and life-changing. I am not a statistician, however, I know enough about statistics to recognize “rare events” when I see them, and now were three in a row.

A Prologue to the Penn State Years

The decade of the 1980s brought a qualitative shift in the economic and educational environments in which colleges and universities found themselves. The questions of cost and efficiency that dominated the 1970s gave way to questions of worth and value. These questions asked not only about whether a program or activity worked, but also about whether it was really needed. Was it *worth* the resources being invested? “Goals” and “priorities” became the watchwords. By the mid-1980s, assessment and strategic planning had arrived on campus.

In 1983, Terrell Bell, President Ronald Reagan’s Secretary of Education, released *A Nation at Risk* (National Commission on Excellence in Education 1983). This blue ribbon committee report opened with a statement to the effect that if a foreign power imposed on this country the K-12 educational system we then had, it would be considered an act of war. The effect was catalytic. The report ignited a national school reform movement, and it was only a matter of time before higher education would come in for similar scrutiny. It took about a year. Depending upon how one counts, more than a dozen reports appeared, all critical of undergraduate education in the United States.

The college and university bashing that became fashionable in the Reagan years also brought a crisp focus on educational outcomes, specifically on the assessment of student learning. The recession and inflation of the 1970s had brought spiraling tuition and fee charges in all kinds of institutions. The money to pay for a 4-year education at an elite liberal arts college in the early 1960s would now cover less than 1 year at the same institution. It was not unreasonable to ask what educational benefits students were receiving at such a price.

The efficiency-oriented program reviews that had begun in the 1970s evolved during the early and mid-1980s into the outcomes assessment movement. The emergence of assessment constituted something of a minor revolution. The focus in demonstrating institutional quality slowly shifted away from descriptions of available resources, or “inputs,” as Astin (1985) called them (e.g., student selectivity, student/faculty ratios, educational expenditures per FTE student, percent of the faculty with a terminal degree). The shift was toward institutions’ “value-added” and specific measures of student learning outcomes.

The Penn State Years (1990–Present)

The workload terms of my Penn State appointment were identical to those I had had at Georgia: 70% time on research in the Center for the Study of Higher Education (CSHE) and 30% (one course per year) teaching in the Higher Education Program. Had I been asked to design “the perfect position” for myself at either institution, it would have looked a lot like the ones I had.

I joined CSHE at the beginning of a new and exciting era in its long and distinguished history. In 1969, Penn State President Eric Walker invited G. Lester Ander-

son to come to State College after a career as Vice President of Educational Affairs at the University of Buffalo to found CSHE. Originally half public policy analysis center for the Office of the President and half an academic research center, CSHE had evolved over the succeeding years to become a national research center with a strong emphasis on public policy. It was also home to scholars who provided a substantial proportion of the instructional faculty horsepower for the Higher Education Program.

Before my arrival, the Center had enjoyed a succession of excellent scholars and administrative leaders, including Kenneth Mortimer, William Toombs, and Kathryn Moore. The Center and Program were also home to a number of distinguished scholars, including Stanley Ikenberry, Sebastian V. Martorana, Larry L. Leslie, Richard Chait, Roger Geiger, William Tierney, James Fairweather, and Robert Hendrickson, as well as a steady stream of doctoral graduates who subsequently distinguished themselves as higher education scholars or administrators. Many of the Center's senior scholars, whose interests were largely in public policy, had retired or moved elsewhere. New people with other areas of interest were arriving.

In 1989, James L. Ratcliff became the Center's director and Irvin L. (Bobby) Wright joined the Center staff and Higher Education Program faculty. Estela M. Bensimon would arrive a year later, as would I. Bill Tierney and Jim Fairweather had been on staff in the Center since the mid-1980s, as had Roger Geiger and Bob Hendrickson in the Graduate Program. The Higher Education Program had been, and remained, among the very best such in the United States. The Center was entering a new era in its history, however, and a move to State College and Penn State was highly attractive for both personal and professional reasons.

Eight studies, all multi-institutional, large, and survey-based (save one), and all having to do with students, would define my career in Happy Valley. My first three months would also include finishing my part of the work on *How College Affects Students*. Writing Vol. 2 would take six of my middle years at Penn State. My classroom teaching was limited (first by contract, then by release time for funded research) to one course per year. Ironically, and despite nearing completion on the first volume of *How College Affects Students*, the first course I taught at Penn State was on the college curriculum. Because of staffing problems, *someone* was needed to teach it. I agreed to do so, partly because I had never taught the topic and partly because I had not done any relevant reading (or thinking) about the topic since the curriculum course in my doctoral program (now 20 years distant). Teaching the curriculum course would be a chance to learn about the field and practice what I preached. I have always believed it was important to a healthy organizational culture in any department (academic or administrative) that members "step-up" when needed and put their personal agendas and interests on hold, at least for a short time. For me, teaching the curriculum course would mean being both a student and a departmental good citizen.

Jim Ratcliff's first major undertaking as Center leader was to initiate a discussion of the possible development of a multiinstitutional grant proposal that would dominate the Center's research agenda for the next five years and, indirectly, even beyond. The US Department of Education's Office of Educational Research and

Improvement had released a request-for-proposals for a national research center on postsecondary teaching and learning. The University of Michigan, under Joan Stark's leadership (and with Bill McKeachie's assistance), was home to the first such center from 1986 to 1991, and the contract for a second 5-year period was now being rebid.

Jim convened an informal group at the 1989 ASHE conference in Atlanta, a group that subsequently held a five-month series of meetings to develop and write the proposal that we filed on June 15, 1990. The proposal planning and production group members brought great talent and expertise in a variety of areas of study that would be important to a new national center. The early group included Penn State's Jim Ratcliff, Maryellen Weimer, and me; Ernie Pascarella and Amaury Nora (and occasionally Larry Braskamp, all at the University of Illinois at Chicago Circle); Robert Menges (Northwestern University), and Vincent Tinto, John Centra, and John Braxton (Syracuse University). Centra and Braxton subsequently withdrew from the effort, and Penn State's Jim Fairweather, Estela Bensimon, and Bill Tierney joined it and made substantial contributions to the final proposal. In December of that year, we learned we had won the competition, and the National Center for Postsecondary Teaching, Learning, and Assessment (NCTLA) opened for business, headquartered at Penn State with Jim Ratcliff as the National Center's director and Maryellen Weimer and me as associate directors for dissemination and research, respectively. The five years that followed were, alternatively, exciting, intellectually and organizationally challenging, and occasionally exasperating. In the earliest days of rapidly evolving electronic communications, our challenge was to manage a Center that was widely dispersed geographically, operationally large, conceptually complex, and carried on the shoulders of a dozen or so nationally prominent scholars who had never worked together as a team before.

The NCTLA research agenda was a comprehensive and conceptually integrated effort to study the links in the teaching, learning and assessment process and its key student, faculty, curricular, pedagogical, and organizational components. The Center's conceptual foundations and guiding framework emerged from the planning meetings in which we made a conscious effort to identify, and map the central factors and dynamics of the process, then to design the best center possible to undertake the research to explore the parts and their interrelations, and only *then* to staff it with the best people available. We were determined not to design a center that would simply accommodate the varying research interests of the people around the table. It was not always easy, and the membership of the group changed somewhat from start to submission of the proposal.

The conceptual framework guided both the organization of the center and the research efforts within it. The framework had four major components believed to shape student learning: (1) the curriculum (by which we meant largely the courses students took and the academic majors they chose), (2) the pedagogies used in their classrooms, (3) students' out-of-class experiences, and (4) the structural and cultural characteristics of the institutions they attended. The outcomes on which the research would focus included students' cognitive development, psychosocial and attitudinal changes, and persistence. The research would be both quantitative and

qualitative, and each of the major research programs had a leader(s): Bill Tierney and Estela Bensimon directed the organizational analyses; Jim Fairweather undertook a set of faculty workload and values analyses; Bob Menges (and Vince Tinto and Maryellen Weimer) led the instructional approaches group; Jim Ratcliff headed the curricular analyses, and I guided the research into student's out-of-class experiences. The Center's largest undertaking was the National Study of Student Learning (NSSL), led by Ernie Pascarella and Amaury Nora (I was involved but, having other Center responsibilities, not to the degree Ernie and Amaury were). NSSL was a three-year, longitudinal, pre-/posttest quasi-experimental design involving the cohorts of students entering 23 colleges and universities (18 four-year and 5 community colleges). NSSL was intended to gather data relevant to all four of the main research areas and to help integrate the Center's research programs.

NCTLA produced some fine, ground-breaking research in such diverse areas as organizational change and leadership, curriculum analysis (still, in my view, an underdeveloped area of study), the newly emerging active and collaborative learning pedagogies and learning communities, and students' cognitive and psychosocial development. Overall, the Center produced a significant number of books, monographs, and conference papers; at last count, the NSSL dataset had been the foundation for upward of 30 refereed journal articles. Despite NCTLA's developing and widely disseminating excellent research, however, the NCTLA group was unsuccessful in its 1995 bid to continue as the Department of Education's only national center in postsecondary education.

In the 1995–2003 period that followed NCTLA's close, I became involved in three research projects, one small, one medium-sized, and one huge. The small, but really interesting, project was the evaluation of the World Campus, Penn State's emerging information technology-based distance education program. My work on the World Campus's formative evaluation gave me opportunities to participate in Penn State's entry into the brave new world of technology-based distance education. I was able to watch, learn, and contribute to essentially the reinvention of the organizational, operational, and instructional systems that had been designed to support Penn State's residential campuses system that could not be easily replicated or even adapted for the World Campus. The parts were all there, but they did not quite work in an asynchronous environment. The dedication and innovativeness of the World Campus's creators was simply extraordinary. The entire experience provided yet another window on a university, however, this window opened on a world people at Penn State and elsewhere were just discovering and exploring.

The medium-sized project was really something of a flirtation with the emerging idea of an integrated K-16 educational process. My earlier research in persistence and degree completion had convinced me that, as Laura Rendon once put it: "Dropping out begins in the 3rd grade." Alberto Cabrera and I undertook a Department of Education-funded study using data from the federal GEAR UP Program. GEAR UP was a comprehensive national effort to prepare whole cohorts of low-income middle-school students for college. The programs involved students, parents, school districts, and local businesses, and Alberto and I wanted to use the GEAR UP data

to better understand the nature and dynamics of students' transitions from middle school to high school and college.

Doing the research and writing for the second volume of *How College Affects Students* (Pascarella and Terenzini 2005) was the huge project. The first volume had been extremely well-received and had had broad circulation in just about all higher education sectors. Encouraged by the book's success, Ernie and I decided to produce a companion volume reviewing the research that had been published since the first book appeared. We assumed that the second book would require less time and effort than the first one inasmuch as we now had some practice, and we would be reviewing only the research that appeared in a 10-year period, a period half as long as that of the first book. We discovered (too late to turn back) that the body of research had increased exponentially. In the end, Vol. 2 reviewed approximately the same number of publications as we had covered in our first volume. The work on the second book was every bit as demanding and challenging intellectually as the first. When it was finished, we agreed there would be no Vol. 3, at least not one we would produce. Indeed, we wonder whether the literature has become so vast, and is accumulating so rapidly, a third book might well be impossible to complete.

When NCTLA opened in 1990, Jim Fairweather and CSHE had also received a grant to lead the evaluation component of the Engineering Coalition of Schools for Excellence in Education and Leadership (ECSEL), a consortium of seven universities with prominent engineering programs. ECSEL was the first in the National Science Foundation's new Engineering Education Coalitions program. ECSEL's goals were to promote both curricular and instructional innovation and gender and racial/ethnic diversity in engineering education on the member campuses and to disseminate what was developed and found to work to the rest of the engineering community. Jim was the third-party evaluator for the whole coalition and a consultant/overseer for the ECSEL campuses' local evaluation efforts. Thus, from 1990 to 1995, CSHE was home to two large projects simultaneously, NCTLA and the ECSEL evaluation. Following a favorable external review, the ECSEL Coalition (unlike NCTLA) was renewed for another five years. The ECSEL evaluation provided CSHE with a measure of financial stability in the wake of the loss of NCTLA. In 1997, however, Jim Fairweather left Penn State for a faculty position at Michigan State. I succeeded him as the Coalition's Co-Principal Investigator for Evaluation. For the next three years, Carol Colbeck, a recently appointed CSHE faculty member, who had worked with Jim on ECSEL, and I led that part of the Coalition's activities.

From the beginning, I had wondered why Jim was interested in studying engineering education, an area that seemed to me a rather narrow sector of the higher education world. I eventually understood that it was not so much engineering education per se that attracted his attention, but rather a significant, multi-institutional effort directed at organizational, curricular, pedagogical, cultural, and public policy change in higher education, a change effort that happened to be going on in engineering (although engineering education had some inherently interesting dimensions and formidable challenges distinctive to that area).

The ECSEL project provided continuing support for the Center, but engineering education was both similar and dramatically different from what I had observed or

studied previously. Before that point, I had viewed students as higher education's "customers." However, then a dean of engineering told me that industry, not students, was engineering education's customer. My work for the ECSEL Coalition introduced me to a fascinating educational world inside the traditional conception of a university, one with values, curricular practices, pedagogies and a faculty culture quite different from those found elsewhere on most campuses. My involvement with ECSEL was an education in areas with which I was largely unfamiliar. It was yet another opportunity and another career-changing experience.

Although ECSEL closed its doors in 2000, the Penn State Center's work in engineering education over the previous decade had attracted attention in the engineering education world. In 2002, the Accrediting Board for Engineering and Technology (ABET, now ABET, Inc.) invited CSHE and six other research or evaluation centers to submit proposals for a study of the effects of ABET's implementation in the mid-1990s of a new set of accreditation requirements. "Engineering Criteria 2000" (or "EC2000") was a significant departure from conventional practice in the accreditation world. ABET's accreditation model shifted from one focused on resources to one based on outcomes. EC2000 specified 11 engineering learning outcomes, and ABET wanted to know whether implementation of EC2000 was having any effect on the preparedness of graduates to enter the profession.

In 1998, I had stepped down from an 18-month tour as the Center's Interim Director (Jim Ratcliff had left the Center in 1997), and J. Fredericks Volkwein, a long-time friend and colleague at SUNY-Albany, succeeded me as CSHE's new director. By the time ABET's invitation arrived in 2002, Carol Colbeck succeeded Fred as the Center's director, and Lisa R. Lattuca had joined the Center and the Higher Education Program. ABET funded the proposal Lisa, Fred, and I had submitted for the "ABET Study," an evaluation and research project that would run from 2002 to 2006. The study's design was ambitious, involving separate surveys of engineering alumni, graduating seniors, faculty members, program chairs, and deans on 39 campuses (Lattuca et al. 2006). The research itself, as well as our interactions with ABET's leadership and Board of Directors and the deans, faculty, and chairs of our participating campuses, provided even broader exposure to the world of engineering and more detailed analyses of the world of engineering education than had ECSEL.

While in Baltimore for an ABET Board meeting, I awoke one morning and looked out my hotel room window at Baltimore and its Inner Harbor below. I began to realize that everything I could see had an engineer's fingerprints on it—the buildings of the city (and the one I was in), the cars and trucks, the streets and traffic control systems, the boats in the harbor, the water I was drinking, the planes arriving and departing Baltimore-Washington International airport in the distance. *Everything!* The more I thought about it, the more I realized that engineers do things that have a deep and far-reaching impact on our economy, society, and quality of life. And, I was involved in a project that (with any luck) would help engineering schools produce engineers who were even better than the ones who had helped produce the world at which I was gazing. Not many higher education researchers,

I mused, have the opportunity to do what I was trying to do and which had such potential for educational, economic, and social impact on such a grand scale.

I cannot guess just how much impact our research had, but I think one of our most important findings was that engineering educators could help their students develop some of the “soft” skills that EC2000 and industry were calling for (such as solving unstructured problems, working in teams, communicating with people who were not engineers). Equally important, because much of the opposition to EC2000 was coming from engineering faculty members who believed that teaching those skills would compromise their abilities to teach the bedrock, technical areas that were the foundations of engineering, our findings indicated that students were learning the new, soft skills with no loss in their developing technical competencies. As far as I can tell, the debates on that point have subsided and turned to other aspects of engineering education.

From 2003 to 2005, I was also involved, with Robert Reason, in the work of the *Foundations of Excellence in the First College Year* project. John Gardner, Betsy Barefoot, and Randy Swing were engaged in an effort to focus colleges’ and universities’ attention on students’ first year through a process of both self-study and campus-wide improvement efforts guided by a set of principles termed “Foundational Dimensions.” Bob Reason, Lee Upcraft, and I participated in the discussions and specifications of the Foundations, and Bob and I were responsible for a data collection effort designed to assess the validity of the Foundational Dimensions and to help refine them. Our research involved 18 comprehensive universities and 17 liberal arts colleges.

Beyond the pleasure of working with John, Betsy, and Randy, the Foundations Project was also the stimulus for Bob Reason’s and my thinking about the nature of college’s effects on students. The Foundations project was essentially an effort to help participating institutions to “think systemically” about their campus’s influences on their first-year students’ success. The project led Bob and me to push our own thinking along these lines, a process that led to early drafts of what we considered a comprehensive conceptual framework to describe the effects of college on students. [During this same period, I was also involved with Lisa Lattuca and Fred Volkwein in the ABET project, and my efforts to think systemically about college effects shaped, and were shaped by, the conversations with Lisa and Fred. “Systems thinking” is a key engineering concept, and in a real sense, Lisa, Fred, Bob, and I were trying to think like engineers.]

The work I and others had done for the ECSEL, ABET, and the Foundations projects might easily (and correctly) be viewed as “evaluation.” However, the work on those projects also presented opportunities to advance our scholarly research interests in various areas of higher education, including organizational change, faculty activities and cultures, undergraduate curricula and emerging pedagogies, students’ cocurricular experiences, and, ultimately, student learning. We had found ways to generate extramural funding for CSHE, meet the needs of our funding sources, and support our own academic research. As far as I could see, it was a win-win-win situation.

Our work on the Foundations project led to a major grant from the Spencer Foundation to Bob Reason and me to support the Parsing the First Year of College Study. The Foundations assessment was in many ways a pilot for the Parsing study, however, Parsing incorporated a broader, more heterogeneous sample of institutions ($n=35$) and used as its primary criterion measure the Critical Thinking module of ACT's Collegiate Assessment of Academic Proficiency (CAAP). Participating institutions in both studies had collected data on their students' first-year experiences using the National Survey of Student Engagement (NSSE), but the Foundations study had relied exclusively on the NSSE "gain" scores as the learning outcomes measures.

Similarly, work on the ABET Study led to funding from the National Science Foundation for Lisa Lattuca and me to undertake two separate, but closely related, studies of engineering education. Both are multi-institutional, multiyear studies. The first, entitled *Prototype to Production: Conditions and Processes for Educating the Engineer of 2020* (or "P2P" for short), is a nationally representative, 31-institution study benchmarking undergraduate engineering education in the United States against the attributes a blue ribbon committee of the National Academy of Engineering had specified that future engineers will need to be successful in an increasingly competitive global economy and engineering world (National Academy of Engineering 2004). As with the ABET Study, P2P involved surveys of enrolled undergraduate students, alumni, faculty members, program chairs, and associate deans for undergraduate education, but it also included a survey of pre-engineering students at the 15 community colleges that send the largest number of transfer students to four-year engineering programs.

The second NSF-funded study, *Prototyping the Engineer of 2020: A 360-degree Study of Effective Education* (a.k.a., "P360"), involved qualitative case studies of six engineering schools and programs we had identified (with ABET data) as producing graduates who (compared to those of other programs) most closely resembled "the engineer of 2020" as characterized in the National Academy's report. The six case studies examined the curricular, pedagogical, cultural, and organizational features of the selected institutions and programs that appeared to support high-quality and innovative engineering education that is well-aligned with the goals of the *Engineer of 2020*. P360 is a partnership with engineers and education researchers from Montana State University (Betsy Palmer, Carolyn Plumb, and Sarah Codd), Northwestern University (Ann McKenna and Lois Trautvetter), and the University of Missouri, Columbia (Rose Marra). Both P2P and P360 are also exploring engineering "pipeline" issues relating to the experiences of women and historically underrepresented students. Together, P2P and P360 constitute a mixed-methods design. The P360 case studies supported design and development of the P2P survey instruments. P2P data are serving to validate the emerging findings and conclusions of the P360 case studies regarding apparently effective organizational features and cultures, curriculum, students' academic and out-of-class experiences.

The Parsing, P2P, and P360 studies had several things in common. First, both Parsing and P2P were very large, and all were conceptually and methodologically complex (together, they were actually about 16 distinct, if closely related, studies).

All encountered (but survived) substantial data collection and management problems. For me, all were going on at the same time, and although I ceased classroom teaching, I continued to supervise dissertations and greatly enjoyed the teaching/mentoring of the graduate research assistants in the studies. The net result of these three studies' overlapping timelines was that work on all of them has lagged behind their original schedules. As of this writing, all three are closing officially, however, the datasets for each are now complete, marvelously (if sometimes dauntingly) detailed, and full of promise. Analyses are now beginning to flow.

On June 30, 2010, I formally retired, by which I mean my paycheck stopped. I continue to work on all the three studies and expect to continue to do so over the next year, albeit at a far more leisurely pace than has characterized the past 40 years of my career.

Other Professional Activities

Two other professional activities have been particularly valuable for me. The first has been my steady involvement in reviewing manuscripts for journals and serving on journal editorial boards. The most important of those has been my nearly 35 years as a consulting editor for *Research in Higher Education* (RIHE) and my editorial work for *New Directions for Institutional Research* (NDIR). In both roles, I got to know, work with, and learn from some of the best minds in my field, many of whom became good friends. In addition, I had the honor (and considerable responsibility) of helping make decisions about what my professional colleagues would read and think about, indirectly, perhaps, influencing the nature and topics of future research. Journal editorial work is also personally beneficial in helping one stay current with the research others are doing (whether about to be published or not), with literatures in one's areas of interest (from the literature reviews in the articles submitted), and with emerging research designs and analytical procedures. It also keeps one's conceptual and methodological skills sharp.

My other highly educational experience outside my formal roles was as a member of the Dean College board of trustees from 1995 until this year. I had been a member of Dean's English faculty in the late 1960s. Shortly after the first volume of *How College Affects Students* appeared, Dr. Paula Rooney took over the Dean presidency. I think that, as a graduate of Indiana University's Higher Education Program, Paula knew about my research and the book that had just appeared. When Paula learned of my Dean connection, she invited me to join the board. I could bring a faculty perspective and contribute to board discussions and decisions through both my administrative and scholarly backgrounds (we both knew she was not inviting me to join the board because of my vast financial resources). I am aware of only a handful of higher education researchers who are or have been trustees, and I believe we have been extremely fortunate in having that experience. "Being on the inside" of the operations of a board of trustees was still another window on at least one institution and the dynamics of its functioning.

I was particularly fortunate to join the board in a very dark period for the College. Since my earlier Dean years, enrollments had dropped by half (and it was a small college to begin with), the endowment was hovering around \$3 million, and the physical plant was in poor shape. Paula was Dean's third president in 5 years. For the next 15 years, I was privileged to watch and contribute to an absolutely incredible turnaround. Under Paula's leadership, Dean's enrollments have rebounded to levels higher than they had been when I was there; the endowment has grown tenfold, and the plant has been restored and new buildings added. Space will not allow discussion of how Paula pulled all that off, but the people she attracted to the board and her skillful use of the board (both as individuals and collectively) was a major element, that, in itself, was a valuable lesson.

Reflections and Ruminations

In reflecting on both my career and the changing economic, social, political, and educational contexts through which it ran, as well as reading back through this essay, I asked again the question I had asked at the beginning: "Well, what *did* you learn that's worth sharing with others?" A number of things came to mind, some of which I have carried with me throughout my career, as well as a few things that concern me a bit.

The Value of Administrative Experience

First, I have long believed that students enrolling in higher education doctoral programs (including Ph.D. candidates) should have had some modest degree of meaningful experience working in a college or university. Without it, they can spend a semester or more discovering that "higher education" is not what they thought it was or what they really want to do. The value of administrative experience, however, also extends to what people do following completion of their doctoral programs. In my view, *every* doctoral program graduate will benefit from meaningful administrative service somewhere in our heterogeneous higher education system.

In particular, I believe such administrative experience is critical preparation for a career of teaching and researching as a faculty member. As should now be evident from my story, my career as a faculty member has been shaped in no small part by my experiences as an administrator. "Meaningful" administrative experience would entail three or more years or the equivalent in middle- or upper-level employment in one of the major organizational divisions of a college or university.

As academic units and faculty members are at the heart of an educational institution, I attach particular value to administrative positions that involve contact with academic departments and faculty members because of the opportunities such positions have for developing an understanding of the faculty culture. The history

of higher education course I had had in graduate school made clear the central role of the faculty in a college or university. However, my administrative experience brought that centrality to life, as well as a deep appreciation (and respect) for the informal organizational power faculty members can wield. I could see in action how faculty members' academic (and sometimes discipline-specific) values shaped their individual and collective identities, attitudes, opinions, and behaviors. These dimensions of the faculty culture perhaps explain in part the irony of faculty members' expectations that they will be consulted and advise on important university matters and decisions, but also why they are also prone to complain about things that take time away from their teaching or research.

It seems clear to me that administrators, scholars, or policy makers who do not understand the faculty culture are likely to have a difficult time of it, no matter what their role may be. I still remember a spring semester-end phone call from a SUNY-Central administrator who needed information that would have to be collected directly from faculty members. When I noted that their participation would be extremely low, given how busy faculty members are at term's end, he asked: "Well, can't you just *tell* them to do it!?"

Understanding the faculty and its culture, however, is also important in studying various aspects of colleges and universities beyond those directly related to faculty members. Faculty members are not only a central segment of higher education's stakeholders. Their centrality and informal power also influence directly or indirectly most other major organizational divisions of our institutions. They play roles in curriculum matters and students' lives, of course, but they also influence the functioning in the areas of student affairs, business and finance, and university relations, as well as in institutional governance. One simply cannot really understand colleges and universities without understanding the faculty. Without such understanding, I believe, both administrators and higher education scholars will fail to function as effectively as they might.

Moreover, the broader the purview of one's campus-level administrative experience the better. I have already suggested that institutional research experience may be particularly useful because IR professionals are usually involved in many of the broad array of academic, student affairs, and finance and business operations of their institutions. As I noted earlier, my administrative-IR positions at Syracuse and SUNY-Albany (particularly the latter) were some of the best preparation I ever had for my roles as a teacher-mentor and researcher in a higher education program. Those experiences have helped in my teaching and working with advisees and graduate research assistants. They provided a wealth of examples for discussion and explanation, for helping students understand the formal and informal networks of power in any college or university, and for developing some of the instincts they would never get from a book.

As a researcher, my administrative experience has helped me better conceptualize my study designs, select important variables, develop instruments, collect data efficiently and effectively, and make sense of results. Perhaps I was particularly fortunate in being close to the action, working with senior-level administrative and academic officers who were making decisions that produced significant changes in

their institutions' futures. Ever since I first read Baldrige's (1971) *Power and Conflict in the University*, his analyses of colleges and universities as simultaneously collegial, bureaucratic, and political organizations have rung true in my experience, and without that perspective, the effectiveness and value of my teaching, research, and administrative service would have been diminished.

The Value of "Empathy"

Over the course of my two careers, I have come to believe that "knowing" one's readers, listeners, and colleagues is a critical component of one's ability to communicate and work with others. I have tried to practice, and to teach my students to practice, the advice of Sun Tzu, a famous sixth-century BC Chinese general and author of *The Art of War* (Tzu 1961). He is best known for his assertion: "If you know your enemies and know yourself, you will not be imperiled in a hundred battles... [but] if you do not know your enemies nor yourself, you will be imperiled in every single battle." The book was written for military strategists, but it has also been adapted for business and political (and probably other) settings. Although teaching, writing, speaking, supervising, and serving should not be warlike activities, the importance of understanding those with whom one is dealing has long been useful in each of my professional roles, whether as teacher, scholar, or administrator.

As I noted earlier, I had the great good fortune to work closely with Charles Willie and Vincent O'Leary, both master administrators. I have no idea whether either was familiar with Sun Tzu, however, both seemed to practice his advice in educational settings. Both had a keen understanding of people in college and university settings, what faculty and administrators valued, what was important to them. Both of these leaders seemed to know what others were thinking, whether presidents, vice presidents, legislators, administrators at all levels of their organization, faculty members, students, or subordinates. They anticipated how others would respond to an idea or situation and whether the reactions would be positive, neutral, or negative. They also knew what it would take to secure others' support for a proposal or process, or how to reduce or remove others' opposition. They knew how to appeal to the values and self-interests of others, to find the common ground. They could find "win-win" situations.

I also came to understand that "knowing your enemy" is critical to the success of others besides administrators. It seems to me a characteristic of good teachers, good writers, good speakers, and good politicians. One element of this talent, I think, is the ability to understand what background knowledge or information others need in order to understand what is being communicated. Willie and O'Leary were from the same mold as the mathematician who could teach 5th graders to do calculus. Ever since beginning to recognize and appreciate this considerable talent, however, I have struggled to find the right word to capture it. Thus far, "empathy" seems to be the best I can do, although I dislike (for my purposes) the psychological and counseling implications of that term. The sort of knowledge, understanding, and skill I

am trying to capture is all about practicing one's profession, accomplishing one's business, very, very skillfully.

*Effective Collaborations*¹

Until about 10 years ago, I believed that long, successful, and highly enjoyable relationships like the one I have enjoyed with Ernie Pascarella came along once in a career, if at all. I have also been fortunate, however, to find extended successful and enjoyable collaborative relationships with Lisa Lattuca (in our three engineering education studies) and with Bob Reason (in our two studies of students' first year of college). The success of all three of these collaborations, I believe, has rested on two vital conditions. First, in each relationship, we managed to keep our egos under control. We each had a sense of who we were professionally, what we could do, and what we were not so good at. We each recognized that the other knew more about some things than we did, or was better at doing some things than we were, and that those "somethings" were important to the success of the project. We valued the talents and experience of the other and never considered ourselves to be in competition. We recognized that we could accomplish more and better research together than we could independently.

Closely related to (and probably dependent on) our ego control and appreciation of the other's contributions to the partnership, we are able and willing to compromise. In none of these relationships did we always agree on things. When we did disagree, however, we could discuss respectfully the merits of the other's position or point of view, and, in the end, one of us would understand that it was time to compromise for the good of our friendship and the particular project (indeed, Ernie and I agreed early on that we would not let disagreements interfere with our friendship). In each relationship, even if we were not always happy with the compromises we agreed to accept, we could recognize when a difference was a potential deal breaker for the other. At that point, one of us would find humility, and we could move on.

Part of our willingness to compromise was the fact that none of us took ourselves too seriously. For example, during a difficult period of work on one of the engineering education projects, and after banging heads (and testing our egos' strengths), Lisa bought clown noses for everyone on the project staff. When one of us recognized the need for it, out would come the clown nose, and the room temperature would drop sharply.

Throughout each of these successful partnerships, we also followed a rule (one Ernie and I adopted early in our relationship) for resolving "order-of-authorship" matters. Whoever wrote the first draft of a paper (regardless of who had had the idea first or who did the analyses) would be the lead author. (At such times, ego control and a willingness to compromise are also helpful.)

¹ An earlier version of this section appeared in Terenzini and Pascarella (2008).

Successful collaborations have a number of clear and substantial professional benefits. First, good partnerships are fun. Whether working with Ernie, Lisa, or Bob, we always worked hard, produced good research, and had a lot of fun. Second, collaborations like these are likely to be more scholarly productive than individual efforts. Large, complex datasets or research projects contain *many* possible studies, and members of the partnership can work on the analyses and paper preparation for more than one study at the same time (but joint authorship was a given). Third, the partnerships produced better thinking and higher quality scholarship than either of us could produce alone. Fourth, a paper's content and writing were better. The second author can read a draft paper with sharper eyes than can the lead author. Finally, we learned continuously from each other, whether it was about the theory or the content of a study, something statistical or methodological, or the tricks of successful project management. We each also grasped our own ideas more sharply by working through the challenges or critiques posed by the other.

Producing good scholarship is a difficult and challenging enough task when one does it alone, but doing good collaborative research can significantly increase the challenges. I have summarized the benefits of working with other, carefully selected, colleagues. Nonetheless, collaborative, scholarly relationships are for neither the faint-hearted, those with tender egos, nor those unwilling or unable to compromise for the good of a project. Under the right conditions and with the right people, however, such partnerships can be enormously productive and satisfying. I earnestly hope readers are as fortunate as I have been in finding these personally and professionally rewarding relationships.

Focusing One's Scholarly Vision and Thinking

Understanding the implications of "normal science" (Kuhn 1962) is a nontrivial part of becoming comfortable with the unavoidable constraints on one's research. Novice and expert researchers alike want to produce new and important insights into some topic, but trying to do that generally forces us to come to grips with the fact that our reach almost always exceeds our grasp. Consequently, we are trained to understand that normal science is cumulative, each contribution adding to the literature and knowledge base in some area, shining a light into some dark, but maybe important, corner. As graduate students, we were encouraged and taught to focus our interests and studies, to develop a "consistent line of inquiry" (a common phrase in promotion-and-tenure committee reviews), to develop a research "program" of fairly narrowly focused studies in an area that remains fairly stable and does not change dramatically with each study. Most experienced scholars will agree that that was pretty good advice, and we gladly pass it on to our graduate students.

Appreciating the value of narrowing one's focus and question has several benefits. First, it makes research easier. We can avoid having to master a new literature each time the topic or area of study shifts. It also frees one practically and emotionally to undertake what may at first seem to be a needlessly narrow topic. Second,

our command of a field and sense of competence grow more rapidly, efficiently, and effectively as our research progresses and our familiarity with the area of study expands. Third, it brings finding answers within the range of the do-able. Fourth, it typically (with a little skill and luck) leads to more precise, if narrower, understanding of some aspect of our area of study. Fifth, it opens opportunities for theory development or refinement as our mastery of an area grows. Sixth (and not unimportantly), it provides the platform for developing the kind of bibliographic record that search and promotion and tenure committees look for.

The business of normal science and one's commitment to a "consistent line of inquiry," however, can also have a downside. Doing relatively small-scale research on narrow topics *in seriatim* and over a period of years can lead to a sense of failing to move ahead meaningfully in both one's scholarship and one's career. (I confessed earlier to some concern at one point in Ernie's and my careers that, after a number of persistence studies, we might be becoming typecast as "the attrition guys.") As one journal article leads to another, and as one's bibliography grows, however, with luck one may come to the same question Peggy Lee asked in her 1969 hit song: "Is That All There Is?"

Not Seeing the Forest for the Trees

As I followed my own "consistent line of inquiry" and my own bibliography swelled with journal articles on various aspects of college's effects on students, I increasingly wondered about the apparent inability of educational and social science research to explain more than a relatively small proportion of the variance in student persistence behaviors and a wide range of other educational outcomes. Despite doing theoretically well-grounded studies, using rigorous research designs, and applying powerful statistical procedures, my studies and those of others, more often than not, leave more variance unexplained than explained, frequently by a substantial margin. This apparent " R^2 ceiling" seems to me a formidable problem.

My concern grew as I thought about the evidence Ernie and I found consistently in more than 35 years of research (Pascarella and Terenzini 1991, 2005) indicating the apparent inability of widely used institutional descriptors (such as type of control, size, curricular mission, and selectivity) to explain much in the way of "between-college" effects on student outcomes after controlling for students' pre-college characteristics. Indeed, after taking into account the characteristics of the students enrolled, the between-college effects of conventional institutional descriptors virtually disappeared (with one exception: the effect of selectivity on graduates' salary and occupational status). What was I and others missing?

I began to wonder if we might be using the wrong variables. Perhaps we were too narrowly focused theoretically (e.g., studying college effects from a purely psychological, sociological, social psychological, or economic perspective). Bob Clark noted that one's disciplinary background shapes one's perspective but is "at the same time a way of not seeing" (Clark 2000, p. 34). Maybe we were using an in-

complete conception of the “causal chain” of college effects. It also seemed entirely possible that all these factors could be involved and that leaving any one of these considerations out of a research design could potentially ensure that a study would bump up against the R^2 ceiling.

These musings and other things led Bob Reason and me over the past few years to try to capture, conceptually and operationally, the *internal* organizational structures and operations of higher education institutions. Our thought has been that perhaps what colleges and universities “do” (i.e., their internal organizational structures, processes, and policies; the faculty culture; their academic and cocurricular programs) are more important than what they “are” (e.g., their size, control, wealth, selectivity) in shaping the kinds of academic and out-of-class experiences their students have and, in turn, the nature and extent of their educational outcomes. This line of thinking led to the Spencer Foundation grant to support the Parsing Study, part of which was intended to validate the conceptual framework that was emerging to characterize this “quasi-causal” chain of influences. My own thinking along these lines was also augmented and refined in the discussions related to the design of the ABET study, the two NSF-funded engineering studies.

The emerging conceptual framework (Terenzini and Reason 2005, 2010) is not itself a theory of college effects (in fact, we have studiously avoided using that phrase in characterizing the model). Rather, it provides a structure within which multiple disciplinary perspectives (e.g., psychological, sociological, economic, organizational) can be brought to bear in studying components within the model. Ernie and I had suggested that “single-paradigm research restricts the range of analytical vision and the depth and validity of understanding... limit[ing] the usefulness of findings for guiding development of effective academic and nonacademic programs, practices, and policies” (Pascarella and Terenzini 2005, p. 631). A multidisciplinary framework avoids at least some of those problems. Thus, I am coming to believe that significant progress in our understanding of college effects on students may lie in thinking more broadly and systemically rather than narrowly.

Thinking and designing studies in this way, however, can lead to some non-trivial problems. As I have preached to my graduate students, however, “Research design is one compromise after another.” Each design decision is a conscious (or unconscious) choice between or among competing alternatives related to such matters as internal and external validity, sample size, and the kinds of data collection and analytical methods to be used. Similarly, adopting a more systemic view of the “causal chain” of college effects has its costs. After working on four projects that were grounded in this framework, it is painfully clear that the apparent on-paper conceptual simplicity of the model masks substantial interdisciplinary and process complexity, as well as an intimidating array of operational challenges in both data collection and analysis. As of this writing, and for many of these reasons, my colleagues and I have been unable to evaluate the full model in either the Parsing study or the two engineering education studies. Analyses on parts of the framework and some of the relations among those parts suggest the concepts of the overall model may have some validity. The results are far from conclusive, however, and the jury is still out. I believe, however, that it is worth expanding our conceptual and em-

pirical vision rather than keeping it restricted. The future of research on the effects of college on students lies, I believe, in systemic and interdisciplinary thinking. Alternatively, perhaps we can at least keep in mind that the psychologists, sociologists, social psychologists, anthropologists, economists, or organizational theorists cannot adequately explain college effects by themselves. It is more complicated than that.

Substance and Methods

Over the past decade, I have noted two trends that give me not only pride in our accomplishments and advances, but also some concern about the future of the research on college effects on students (and maybe other areas as well). The first trend has been the marvelous growth in the sophistication, power, and convenient availability of quantitative data collection and analytical procedures. The differences between what was available when my career began and those now in use are simply stunning. Such incredible advances, however, also seem to have been accompanied by a growing fascination among scholars (particularly younger ones) with statistical complexity, virtuosity, and purity. Moreover, this move-to-the-complex may be coming at the expense of substance and the importance and value of the questions studied. Increasingly, it seems to me, analytical complexity (a false rigor?) is coming to trump substantive questions. The geometric growth in the information technology power may account at least partly for this shift. It is now far easier than it was even 10 years ago to collect, prepare, and analyze data. The shifts in data collection methods have been from snail mail and keypunching to optical scanning, and now to Web-based mechanisms. Data analysis has whizzed from hand-counting to bulky mechanical calculators to FORTRAN programs to primitive statistical packages to *unbelievably* sophisticated, fast, and flexible analytical packages. That all this analytical horsepower is also highly portable, moreover, makes running analyses easier still and exacerbates the problem that I see.

Using very large, multiinstitutional datasets and highly complex analytical procedures does not compensate for studying substantively marginal topics. In all my years reviewing for journals, the single-most frequent reason I give for rejecting a paper or requesting revisions is the author's failure to establish the warrant for the study: *Why* are this study and its findings important for theory, practice, or policy (preferably two or more)? *Why* should a journal publish it? *Why* should readers read it? *What will we learn that is important to know?*

Maurice Kendall, creator of "Kendall's Tau," wrote an entertaining but also highly instructive poem, entitled, "Hiawatha Designs an Experiment" (Kendall 1959). The first two stanzas are as follows:

Hiawatha, mighty hunter,
 He could shoot ten arrows upward,
 Shoot them with such strength and swiftness
 That the last had left the bow-string
 Ere the first to earth descended.

This was commonly regarded
As a feat of skill and cunning.
Several sarcastic spirits
Pointed out to him, however,
That it might be much more useful
If he sometimes hit the target.

The second trend I have watched with pride and satisfaction has been the growth in the number and, particularly, the sophistication of studies of college effects on students and on different kinds of students. The exponential growth in the volume and the expansion in the range of topics studied are remarkable and encouraging. However, the seeds of trouble may be hiding in these achievements. The increasingly uneven distribution in the scholarly attention accorded to topics *other* than students gives me pause. That is not to say that each topical area should receive the same amount of scholarly time and ink as any other. As a community of scholars, however, we appear to be according some topics substantial attention while overlooking or ignoring other, equally important, areas of study.

Studies of the broad categories of student development seem to me to be significantly more prominent in our field's publications and conference programs than other topics that previously drew at least modest attention, topics such as organizational development and change, finance, governance, faculty, or public policy. Indeed, the volume of proposals for "student" papers has grown so in the past few years that ASHE conferences now have two (of eight) tracks devoted to students, and I have heard it said that three-quarters or more of the proposals submitted for ASHE papers now fall in one of the two student categories.

My concern and observation are not the first of their kind. Others have remarked this trend and commented to me informally on it. To some extent, in fact, I am merely echoing comments Clark (2000, pp. 34–35) made in his "career-in-retrospect" essay, written more than a decade ago for this same series. "Students" are, indeed, a worthy area of study, and I am pleased to see the intensity of study on this topic. We must not, however, lose sight of other areas of higher education that need significant attention, including the effects of state regulations on colleges and universities, the effects of federal government policy intrusions in higher education's operations, as well as several of the less-well understood sectors of the postsecondary education system (e.g., minority-serving institutions, community colleges, commuter institutions) and kinds of students (e.g., part-timers, adults, and those with physical or learning disabilities).

The influences of rapidly emerging and changing information technologies on college students' learning and on other dimensions of institutional functioning are other seriously understudied area topics. We are woefully behind the curve in this area. In addition, and because the new information technologies seem to have the half-life of a head of lettuce, my limited research experience in this area suggests that our standard research designs and methods are ill-suited to keeping the pace. Perhaps worse, I suspect the faculty members in our graduate programs (particularly those of us more senior in rank) are ill-prepared to be preparing our students for these brave, new worlds.

Research in all these areas, as well continued study of what have been traditional areas of study—organizations, finance, faculty, and governance—must not be overlooked. The health of our profession and of higher education will depend on it.

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Chapter 2

A Model for Diverse Learning Environments

The Scholarship on Creating and Assessing Conditions for Student Success

Sylvia Hurtado, Cynthia L. Alvarez, Chelsea Guillermo-Wann,
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Introduction

One of the greatest contributions of higher education institutions has been in enhancing individual values, skills, and social mobility that result in a multitude of democratic and economic benefits for society (Bowen 1977; Bowen and Bok 1998). Institutions, and individuals within them, are part of the fabric of the larger social, historical, and political context. Scholars have been able to advance our thinking regarding this link between microlevel contexts, or the individual-, and macrolevel contexts that constitute larger sociohistorical forces (Alexander et al. 1987; Bronfenbrenner 1979), however, few higher education researchers have incorporated this perspective in the study of institutional-level contexts where diversity dynamics play out. This link is important, conceptually and in practice, for achieving higher education's role in advancing both individual social mobility and greater social equity. In times when our institutions are not advancing social equity, our own students become critics invested in the transformation of our institutions to meet the needs of a changing society. That is, individuals within institutions of higher education are shaped by the broader social contexts and also have social agency to affect change (Bronfenbrenner

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1977, 1979; Giddens 1979; Outcalt and Skewes-Cox 2002). Many educators within colleges and universities have been actively engaged in the education of students as citizens that are not only technically skilled but also possess the values, skills, and knowledge to become agents in broader social transformation processes.

As a consequence of the growing demographic of historically underrepresented groups (U.S. Census Bureau 2011), perhaps for the first time in history, we are at a critical crossroad—the success of diverse college students is tied to our collective social and economic success. Years ago, Gándara (1986) called it “the politics of self-interest” when referring to the higher education of a growing Latina/o population that required our attention. Critical race theorists call it interest convergence when ensuing action is taken to improve conditions for marginalized groups because it primarily benefits dominant White interests (Bell 1980; Delgado and Stefancic 2001). Today, the need for educating diverse students is most evident at broad access institutions that admit the majority of their applicants, many of whom have been historically underrepresented in higher education. Broad access institutions understand intuitively that their success and efficacy as institutions is largely dependent on the success of their diverse students. However, all institutions have to be brought to greater awareness about their own role in reproducing inequality. This can be evaluated through guided equity assessments regarding student access and progress (Bensimon 2004; Harris III and Bensimon 2007; Williams et al. 2005), salary equity studies for faculty and staff, or campus climate assessments of students, faculty, and staff experiences (Bauer 1998; Hart and Fellabaum 2008; Harper and Patton 2007; Turner et al. 2008), which are often prompted by highly charged conflict on campus. Whatever the motivation, suffice to say that interests are converging, however, the scholarship on diversity in higher education remains highly varied in approach and focus. Making sense of all of this research is the focus of this new section on diversity in the *Higher Education: Handbook of Theory and Research*. In this inaugural chapter, we rely on many published research syntheses, multiple conceptual models in higher education, as well as new and classic areas of scholarship to frame a conception of diverse learning environments. We plan to use these pages to capture a convergence in scholarship that will advance our understanding of research that informs the conditions for student success.

We aim to extend previous conceptualizations of the campus climate for diversity that have been articulated in multicontextual frameworks to develop a more holistic model accounting for climate, educational practices, and student outcomes. First, we offer a critique of existing climate models in higher education, and make a conceptual link with the climate and achieving equitable educational outcomes including competencies for lifelong learning and achievement in a multicultural world. Second, a blueprint for research and practice with concerns for diverse students at the center is presented in light of developments in research and new connections identified in the literature. Third, as part of the model, we locate diversity as embedded in the central tasks of educators—primarily faculty, administrators, and staff—in interaction with increasingly diverse students, all who possess multiple social identities. Fourth, macro-level forces that influence the institution are presented as a way to integrate a variety of literatures to highlight the multicontextual nature of educating students in a diverse learning environment. We refer to the model as the DLE model. We conclude with implications for research that advance student success and institutional transformation.

The Racial Climate Model and New Developments

Hurtado et al. (1998b, 1999) introduced a multidimensional, multicontextual model for the climate for racial/ethnic diversity. The model was based on a synthesis of nearly 30 years of research on underrepresented populations in higher education. Its main goals were to: (1) transform notions of the campus climate from an intangible concept to one that was tangible (documented and measured) with real consequences for students of color and majority students, (2) highlight the unique experiences of American Indian, Asian American, Black, Latina/o, and Native American students in higher education, although there was great unevenness in research at the time, and (3) provide research-based evidence regarding the multidimensional nature of the climate that clarified what we mean when we talk about diversity in higher education. An additional goal was to put research in the hands of practitioners—academic and student affairs professionals, faculty, chief diversity officers, institutional researchers, and program coordinators—to guide them in improving the climate. Hurtado et al.'s (1998b, 1999) model made several assumptions—the first was that students were educated in distinct racial contexts within institutions that were often influenced by the larger sociohistorical and policy contexts. A second assumption was that the campus climate could be assessed, and indeed, the research synthesis showed how many scholars over the years had undertaken studies to understand the experiences of diverse students and faculty. Perhaps the model's greatest contribution was indicating how structural diversity (the number/representation of individuals from diverse backgrounds) was a central focus on campuses that lacked diversity, when really most institutions also possessed historical legacies of inclusion and exclusion, as well as a psychological dimension based on different perceptions associated with the positionality of individuals within the institution, and a behavioral dimension based on interactions or intergroup contact experiences on campus. These distinct and measurable dimensions of the climate for diversity occur in an institutional context that is also informed by sociohistorical change and policy contexts that shape diversity dynamics within an institution.

Although it was articulated as a model depicting elements influencing the climate for racial/ethnic diversity, the essential features encouraged broad application for studies of other student groups and professionals on campus (Hurtado and Wathington Cade 2001; Mayhew et al. 2006; Williams 2010). For example, although based on a review of the literature on undergraduates from distinct racial groups, it was used to guide a mixed-method assessment of an institutional climate to capture each dimension as it affected undergraduates, graduate students, faculty, and staff, and to capture the experiences of women, lesbian, gay, bisexual, and transgender (LGBT) students, international students, and religious groups as well as different racial/ethnic groups on a campus (Hurtado and Wathington Cade 2001; Hurtado et al. 1998a). Williams (2010) identified potential data indicators in each of the four dimensions and extended its use to examine the climate for diversity at an institution for many other groups—including faculty and staff. In his assessment, the psychological and behavioral dimensions were treated as directly observable regarding the “lived experiences” of diverse groups, which have also been the focus of most climate assess-

ments, although these dimensions are often conflated (Hart and Fellabaum 2008; Hurtado et al. 2008; Rankin and Reason 2005).

As one of the most frequently downloaded articles from the *Review of Higher Education*, the Elements Influencing the Climate for Racial/Ethnic Diversity model (Hurtado et al. 1998b) proved to be extremely useful for subsequent research and practice even though, in hindsight, the model was incomplete. As the manuscript was in the final stages of revision in 1998, several higher education affirmative action cases were winding their way through the courts in various states (Texas, Georgia, Washington, and Michigan) and were likely to be heard by the Supreme Court. As a result, additional research was included in the research synthesis that linked a diverse student body (structural diversity, or compositional diversity in subsequent revisions) and contact with diverse peers (the behavioral dimension) with educational outcomes (Hurtado et al. 1998b, 1999). Evidence based on original studies (Bowen and Bok 1998; Gurin 1999) and research syntheses (Hurtado et al. 1998b; Smith et al. 1997) were included as part of the expert testimony of Patricia Gurin in the University of Michigan affirmative action case and filed by 1999. This left a window in the form of *amicus* briefs to include any new higher education research to be filed before the Supreme Court decision was rendered in 2003. In preparation for the Supreme Court hearing, scholars made explicit the link between the interactions with diverse peers (the behavioral dimension) and educational outcomes, via comprehensive research syntheses and new studies that have been summarized effectively in a body of work now known as the educational benefits of diversity (Chang et al. 2003; Gurin et al. 2002; Hurtado 2005; Hurtado et al. 2003; Milem and Hakuta 2000; Milem et al. 2005).

The educational benefits of diversity research emphasizes that desirable educational outcomes are associated with higher rates of interaction with diverse peers (the behavioral dimension), which is contingent on having a “critical mass” of racially diverse students on a campus (compositional diversity). Therefore, increasing the diversity of the student body is a necessary but not sufficient condition to realize beneficial educational outcomes—campuses need to optimize conditions for interaction that will result in the benefits of diversity (Gurin et al. 2002). Although there was supporting literature, the original campus racial climate model did not specify a link between educational outcomes and student body diversity or interactions in the behavioral dimension of the climate. A subsequent revision of the conceptual model (Milem et al. 2005) based on the educational benefits of diversity research also fails to stipulate this important link, even though the synthesis provides a strong rationale backed by a body of research that supports improvement of the climate to create the conditions for realizing the benefits of diversity on a campus. Today, there is much more scholarship connecting diversity experiences and student outcomes and we now have the capacity to undertake meta-analytic studies (Bowman 2010, 2011; Denson 2009; Engberg 2004), reflecting the next generation of research that empirically supports the value of diversity in higher education. It stands to reason, with existing evidence and increasing emphasis on outcomes assessment at the policy level, that this would be a key area for further development of a Diverse Learning Environments (DLE) model.

A second area that lacked clarity in the original climate model was specificity about how diversity dynamics operated in curricular and cocurricular spheres, and

how climate shapes processes within these spheres. Instead, research on social interaction across race/ethnicity, campus involvements and diversity, and classroom diversity with reference to faculty and peer interactions are embedded in the behavioral dimension of the climate. Moreover, there is a significant omission of the role of staff in advancing diversity and student outcomes. This reflected the dearth of research on staff, and although this latter area is still underdeveloped in the literature, new connections with research and theory can further shape a revision of the climate model (Mayhew et al. 2006; Stanton-Salazar 2004, 2010).

Indicating that the original climate model did not fully elaborate on institutional practices and policies, Milem et al. (2005) introduced a “fifth dimension” to the climate model that is organizational in nature. They renamed the structural dimension of the model “compositional diversity” in order to create clarity and space for the new dimension that represents supportive structures for institutionalizing diversity on a campus. The “organizational dimension represents the organizational and structural aspects of colleges and the ways in which benefits for some groups become embedded into these organizational and structural processes” (p. 18). It includes diversity in the curriculum, tenure processes, organizational decision-making processes, budget allocations, and institutional policies. With the exception of diversity in the curriculum, there is limited research that connects organizational structures with the climate, yet this dimension is a necessary modification because these are often the institutional mechanisms that reproduce inequality and shape diversity dynamics on campus. Many central administrators are interested in focusing strategic diversity initiatives on specific institutional components to drive organizational change, reform institutional support structures, and to create more inclusive institutional decision-making processes. This dimension, in itself, has generated models for institutional change that involve the climate as an essential dimension of organizational life. For example, the Campus Diversity Initiative involving private institutions in California (Clayton-Pedersen et al. 2007), adopted Smith’s (1995; Smith et al. 1997) model of major areas of institutional functioning associated with diversity, including: student access and success, campus climate and intergroup relations, education/training and scholarship, and overall institutional viability and vitality. The model was used to help campuses build and assess diversity initiatives. A subsequent model of organizational change associated with diversity work has also been introduced that includes various dimensions of the organizational environment, including such factors as the external environment, organizational behavior, campus culture, use of a diversity scorecard for assessment, and change strategies (Williams et al. 2005).

Basing their work on Smith et al.’s (1997) meta-analysis of research, Rankin and Reason (2008) developed a Transformational Tapestry Model that aims “to provide higher education administrators with the tools to assess and transform their campus climates” (p. 263). The model assumes a lens of power and privilege in conceptualizing a campus climate for diversity and includes multiple social identities, making its intention to be used with all groups, as it also draws from the work of assessing the climate for LGBT individuals (Rankin 2003). More importantly, the Transformational Tapestry Model is designed to move campuses from their current campus climate toward a transformed campus climate via assessment and interventions. It

is significant for situating the campus climate in relation to six functional areas of practice within an institution, including access and retention, research and scholarship, intergroup and intragroup relations, external relations, curriculum pedagogy, and university policy/service. While conceptualized as distinct from the climate, each of these areas corresponds to structures identified in other models (Hurtado et al. 1998b; Milem et al. 2005; Smith 1995; Williams et al. 2005). Although the Transformational Tapestry Model's essential purpose is to guide assessment and institutional transformation, the conceptualization of the climate is based primarily on the psychological and behavioral dimensions and institutional norms. The climate is described as "the current attitudes, behaviors, and standards and practices of employees and students of an institution" (p. 264). However, Peterson and Spencer (1990) indicate that the climate includes objective dimensions of organizational life, in addition to the perceived climate (perceptions) and felt or experienced climate, which they deemed the psychological aspects of organizational life. Furthermore, individuals can better understand the climate in their immediate or proximal environments if they can understand how concrete political and sociohistorical developments impact organizational components of the climate, rules and regulations that govern institutional behavior, and ultimately shape individual perceptions and feelings, as well as their interactions (behavioral aspects of the climate) (Hurtado et al. 1998b, 1999; Milem et al. 2005). Institutionally focused models sometimes lack attention to the broader contexts that influence outcomes of higher education. We refer to multicontextual frameworks later in the chapter that illustrate how researchers are now conceiving areas associated with diversity and equity in higher education using micro and macro contexts of influence (Renn 2003, 2004; Perna 2006a; Perna and Thomas 2006). Like the racial climate models (Hurtado et al. 1998b, 1999; Milem et al. 2005), the organizational models also fail to specify the dynamics between actors within the institution.

Perhaps the most compelling reason for revisiting the original racial climate model has to do with its applicability to the many institutions that have highly diverse student bodies, which are typically broad access institutions that admit most applicants. The original race/ethnicity climate model was intended to get campuses to move beyond the numbers (compositional diversity), however, it was also designed to leverage research to bring greater awareness among predominantly White campuses about the experiences of underrepresented groups in order to forge a path toward becoming a Diverse Learning Environment. We turned our attention to a project that would launch a national climate assessment with diverse students at the center and advance a link with outcomes to rearticulate the role of institutions in promoting social equity and democratic pluralism. This was the impetus for a new conceptual model, informed by working directly with broad access institutions using both quantitative and qualitative research. Scholars have much to learn from broad access institutions, at the same time that institutions will learn about themselves through the work of researchers.

The next phase of scholarship on the climate should determine what happens in institutions as they become more diverse, as well as institutions that already have a high level of student body diversity. Have these campuses "taken the steps to create the conditions that maximize learning in diverse student environments, thereby

preparing students for living and working in a society that is ever more complex” (Hurtado et al. 1999, p. 97)? Building on the work of many scholars who have made social justice a central task in their own work, we began to develop a model to guide our research at multiple institutions that resulted in what we present here, called the Multicontextual Model for Diverse Learning Environments (or DLE model). It is a revised model that is a convergence of scholarship that emphasizes the pervasiveness of the climate (Peterson and Spencer 1990), the contextual nature of the position of institutions (macrolevel), the individual-level dynamics within institutions (mesolevel), and outcomes for individuals and society (combining the micro and macrolevels; Bronfenbrenner 1977; Renn 2003, 2004).

Overview of the DLE Model

We call this new conceptual model multicontextual for diverse learning environments for several reasons (see Fig. 2.1). First, drawing on social identity theory (Tajfel 1974; Tajfel and Turner 1979), its assumption is that diverse students and their multiple social identities are at the center, and also intentionally reflects instructor and staff identity (Marchesani and Adams 1992). More importantly, it focuses on the dynamics within spheres of interaction (with equal emphasis on the classroom and cocurricular dynamics) to include the diverse student bodies at institutions that have yet to achieve equity in student outcomes and maximize the benefits of diversity for educational outcomes. The historical context dictated the development of a race-sensitive model, and post-2003 historical developments dictate a broader model focused on diversity. Specifically, interpretations of the 2003 Supreme Court decision established that an institution’s interest in achieving diversity benefits in the learning environment is most compelling if: (1) institutional definitions of diversity are broad, including both racial/ethnic and nonracial/ethnic diversity, (2) it is evident in the structure, pedagogy, and mission of the institution, and (3) it is supported by evidence that student body diversity enhances desired educational outcomes (Coleman and Palmer 2004). Broader definitions of diversity have been adopted at public institutions in some states (California, Washington, and Michigan), which are currently under race and gender neutral constraints in higher education imposed by state-wide voter propositions initiated by anti-affirmative action advocates. Assessment efforts that link educational outcomes with racial/ethnic diversity remain important, however, institutions must also broaden their definitions of diversity as a compelling educational interest without dismissing distinct social identities altogether. Individual institutions of higher education must also enact inclusive definitions of diversity in an active diversity agenda that is “at once academic, inclusive, and focused on both contemporary and historic issues of diversity” (Williams 2007, p. 14). Furthermore, scholars have chosen to use other models rather than the model depicting elements influencing the climate for racial/ethnic diversity because it failed to refer to gender (Hart and Fellabaum 2008) and multiple social identities (Rankin and Reason 2008), or have modified it to exam-

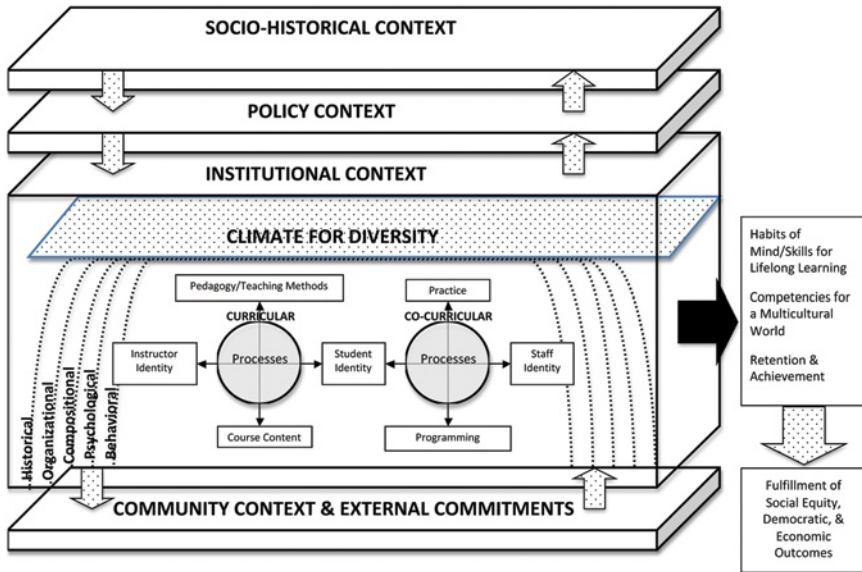


Fig. 2.1 Multicontextual model for diverse learning environments

ine the climate for multiracial students (Guillermo-Wann and Johnston n.d.). The new focus is intended to reflect inclusion of the developing scholarship on multiple social identity groups. At the same time we expect that the continuing significance of race, and an evolving body of scholarship on race/ethnicity, will influence how we talk about diversity on campus, we hold an ideal vision of inclusive learning environments—a point we will return to at the end of the chapter.

A second important observation about the DLE model in Fig. 2.1 is that it is much more explicit than previous models about the multiple contexts at work in influencing institutions of higher education and student outcomes for the twenty-first century. Drawing upon Bronfenbrenners’ (1976, 1977, 1979, 1989, 1993) ecological structure of the educational environment, and Renn’s (2003, 2004) adaptation for college student identity development, new conceptions are needed that can emphasize the microsystem that include individuals and roles; mesosystems, or spheres of interaction; as well as the exosystem (e.g., external communities and associative networks) or concrete social structures that influence and constrain what goes on in mesosystems; and how macrosystems (larger policy and sociohistorical change contexts) exert an equally powerful influence over all. The ecological lens has been extended in higher education scholarship (Dey and Hurtado 1995; Dennis et al. 2005; Guardia and Evans 2008; Outcalt and Skewes-Cox 2002; Renn 2003, 2004; Renn and Arnold 2003) to investigate students and institutional contexts, and can be applied to understanding the context of diversity and equity as it applies to students’ multiple social identities. (See Renn 2003, 2004 for a focus on multiracial identity in particular). In addition, students, staff, and faculty are actors within the institution who shape it and are also shaped by it (Bronfenbrenner 1993; Dey and

Hurtado 1995). Bronfenbrenner's (1977) ecological model of human development encompasses the person, process, context, and time as they relate to development. The development of student educational outcomes is linked with the mesolevel dynamics of teaching and learning (inclusive of cocurricular environments) within institutions, and also with these larger macrolevel constraints and processes.

In conceptualizing multiple contexts that influence and comprise the campus climate for diversity (Hurtado et al. 1998b, 1999), institutions do not exist in a vacuum, but rather are part of communities and individual external commitments and macrosystems or the contextual forces outside the institution. Organizationally speaking, this open-systems perspective frames institutions as entities that shape and are shaped by their environment (Morgan 2006; Perrow 1986), and this interaction is critical for their continual existence as organizations (Scott and Davis 2007). Figure 2.1 shows the macrolevel contexts in the DLE model that can include sociohistorical events or change, policy changes, and the exosystem of local community contexts or external commitments shared by individuals, which together shape the institutional context. Within the institutional context, the central features of the curricular (or classroom) and the cocurricular spheres are drawn from social justice education models detailing how diversity is embedded in who we teach (student identities), who teaches (instructor identities), what is taught (content), and how it is taught (pedagogies/teaching methods; see Jackson 1988; Marchesani and Adams 1992). This teaching and learning model of diversity is adapted to include the parallel role of staff in advancing student development, educating a diverse student body, and enhancing learning outcomes. Too often our models and assessments focus on students and their involvements, neglecting a critical examination of institutional actors and practices (Outcalt and Skewes-Cox 2002). Thus, the focus is on intentional curricular and cocurricular practice for the education of the whole student. Pervading the institution's curricular and cocurricular contexts, the five dimensions of the campus climate—the historical, compositional, organizational, psychological, and behavioral—shape the dynamics in institutions, and influence faculty, staff, and students. These are all in a dynamic relationship with each other, theorized here to affect the student outcomes for individual success as well as social transformation. Each area of the DLE model is described further, building on many areas of scholarship and updates of research syntheses.

Articulating the Educational Outcomes of Diverse Learning Environments

Student outcomes for success in the twenty-first century represent the various functions that key stakeholders believe higher education performs in society. Syntheses of how student success has been defined in the literature highlight the multiple definitions associated with this concept (Kuh et al. 2007; Perna and Thomas 2006). The most common indicators of student success represent quantifiable measures, such as access to a postsecondary education, academic achievement, persistence, and degree attainment (Perna and Thomas 2006). These achievement-oriented outcomes are

frequently utilized as measures of accountability and are consequently aligned with policymakers' and practitioners' interests (Perna and Thomas 2006; U.S. Department of Education 2006). Rather than simply "throughput" outcomes, broader definitions of student success encompass outcomes associated with a quality education, such as cognitive, personal, and civic development (Kuh et al. 2007, Lumina Foundation 2011; U.S. Department of Education 2010). In response to an early accountability movement, Bowen (1977) connected these more expansive conceptualizations of student success with the basic educational task of colleges and universities in educating the "whole student." An important aspect of Bowen's view of educational outcomes is that it placed responsibility on the colleges and universities to develop these essential values and skills to reflect individual and societal gains.

There are a number of student outcomes frameworks developed among higher education associations and organizations (AAC&U 2002; see also www.AACU.org; Keeling 2006; Lumina Foundation 2011), as well as others used to summarize results in the higher education literature on college impact (Astin 1993; Pascarella and Terenzini 2005). With due respect to the expansive lists and deliberation taken to develop these outcomes, we focus on three broad categories for student success in a diverse society. We contend that there are three cohesive sets of educational outcome categories that overlap significantly with developing frameworks for a quality higher education (Lumina Foundation 2011), reflect the government's emphasis on increasing the number of baccalaureate degree holders in the United States (Obama 2009), and are indicators of student success. These outcomes include: habits of mind or skills for lifelong learning, competencies for a multicultural world, and achievement, inclusive of retention and degree attainment. Each of the individual-level outcomes result in collective implications for the promotion of social equity, pluralistic ideals of democratic citizenship, as well as economic outcomes for regions where diverse college graduates reside.

Habits of Mind/Skills for Lifelong Learning

As we cannot hope to teach all the content knowledge to keep pace with a veritable explosion of information, educators now focus on preparing students for the flexible, independent, and complex thinking that will allow them to learn throughout their lifetime (AAC&U 2002; Lumina Foundation 2011). Most educators have come to understand that while knowledge in a particular field is essential for specific jobs (specialized and applied learning), the skills from a liberal education once associated with a privileged intellectual and social class must be more equitably distributed to prepare diverse students for the challenges of a twenty-first century workplace (AAC&U 2002). In the sciences, lifelong learning has been described as a necessity for the development of innovative work and is a mindset and habit that all individuals should acquire that fosters self-directed, informal, and organizational learning (Fischer 2001). The habits of mind involve the way students integrate different sources of knowledge. These domain-general habits shape the ways in which

individuals learn and attend to domain-specific expertise (Keating and Crane 1990). In essence, the idea of habits of mind is meant to reflect how individuals merge their ability to think and solve problems, and have the skills to effectively react to new challenges and situations (Matthews and Keating 1995).

Conley (2005) identified the skills and habits of mind that students in high school need to be successful in college. Working with teachers in high school and faculty in universities, he identified the skills and habits of mind of successful college students in six subject areas, specified further in course-related subjects. The dominant theme involved in these discipline-specific discussions of skills and behaviors was that the habits of mind were more important than specific content knowledge. From the time of college entry, students “need a clear sense of the distance they will travel intellectually” (p. 103), and more importantly, learn the behaviors that will result in student success. Implicit in the skills and habits of mind identified is that both student affairs professionals and faculty can encourage student behaviors that will be useful for not only success in college but also for lifelong learning. Some of the important habits of mind include an inquisitive nature and critical thinking, willingness to accept critical feedback and adjust accordingly, ability to handle ambiguous learning tasks, to express oneself orally and in writing, discern the relative importance and credibility of various sources of information, reach conclusions independently, and to use technology as a tool to assist the learning process. (See Conley 2005 for the specific habits of mind that successful students demonstrate in various subject areas).

The specific behaviors and skills that build student success and lifelong learning capacities have implications for achieving social equity at the same time that they have the potential for examining current practices in relation to diversity and learning. Although Conley (2005) does not address the power-knowledge relationship that feminist and inclusive pedagogy scholars have emphasized (Harding 1991; Minnich 1990; Tuit 2003), the habits of mind are linked to empowering students to use, question, and to take a role in constructing knowledge to make the best use of a college education. Rather than value students who already possess these skills and devalue those who have yet to acquire them, scholars can examine how institutional structures and practices work to undermine the acquisition of skills to achieve this level of independence of thought and action. For example, national studies of college students have reported how asking questions in class declines from high school to college (DeAngelo et al. 2010), no doubt a result of larger classes but also due to instructional practices that treat students as “receivers” of knowledge (Freire 1971). Unfortunately, declines in these behaviors that demonstrate inquisitiveness are more dramatic among women and students of color in the first year of college (DeAngelo et al. 2010).

A review of the literature in lifelong learning developed by the United Kingdom’s Department for Education and Employment (currently the Department for Education & Skills), further emphasizes a link with achieving social equity and the macrolevel contexts posited in the DLE model (Edwards et al. 1998). Five key findings that can be extended to social equity and policy issues include: (1) researchers in the field discuss lifelong learning as a goal but it is not seen as a specific

policy to be implemented, (2) research has been developed in the area of economic globalization that shows lifelong learning is key in developing a competitive, multiskilled workforce, and can be used as a tool for combating social exclusion, (3) the individual is emphasized and is seen as capable of managing their own learning and skill development, (4) much of the literature highlights the flaws in the market-based approach to learning, where unequal access to learning exists, and (5) notions of lifelong learning are not static and its definition and what influences it are still evolving (Edwards et al. 1998)—this last point remains a place of discussion and contention. In 2002, Edwards et al. published a research synthesis where they argued that not many studies discussed the development of reflexivity (self and social questioning), a practice which the authors theorized is required for an individual to become a lifelong learner. Edwards et al. (2002) further argued that placing emphasis on the accumulation of skills and qualifications by individuals as a way to become lifelong learners is too passive a method and suggest that the key in truly developing lifelong learners that are capable of responding to changing environments is to focus on reflexive lifelong learning.

Adding to this discussion, one quantitative study using 405 undergraduate students enrolled across five selected lifelong learning skills courses; the authors found that orientations for lifelong learning are garnered through instructional strategies such as providing time for reflection, active learning, and perspective-taking, and providing opportunities for positive interaction with diverse peers (Mayhew et al. 2008). Research on habits of mind and skills for lifelong learning aims to further understand the process of acquiring skills, how students learn these essential skills, and the techniques that produce these skills that make the most of diversity in the classroom. This suggests that the habits of mind and skills for lifelong learning are associated with other forms of learning that are of national interest, including broad, integrative knowledge, specialized knowledge, intellectual skills, civic learning, and applied learning (Lumina Foundation 2011). This current direction in research and practice could bring instructors and institutions more information about achieving some of the key outcomes for the next generation of college graduates.

Competencies for a Multicultural World

Higher education can also foster a critical consciousness and prepare students in a pluralistic democracy “for their role as democratic citizens, which encompasses the ideal of civic equality” (Gutmann 2004, p. 89). In order for students to become civic equals, educators must employ educational practices that are inclusive and teach deliberation and recognition of differences in nondiscriminatory ways (Gutmann 2004). As society becomes increasingly diverse, colleges and universities are responsible for providing students with an educational environment that will ensure success in a multicultural world. Hurtado et al. (2008) define competencies for a multicultural world as a set of skills and abilities needed to interact with individuals from different social identity groups, and to make ethical decisions in a soci-

ety marked by inequality and conflict. AAC&U (2002) calls this essential learning outcome personal and social responsibility, which has also been referred to as civic learning in the new Degree Qualifications Profile (Lumina Foundation 2011). Competencies for success in a multicultural society include outcomes associated with civic engagement, interest in equity and social justice issues, political involvement, perspective-taking, and pluralistic orientation (Hurtado et al. 2008). Institutions of higher education are especially critical in achieving these outcomes, which can in turn address the persistent societal problems of residential and educational segregation (Orfield and Lee 2005; Orfield et al. 1997). Diverse college environments, for many students, provide a valuable space for learning from other students with different social backgrounds in ways that they would not otherwise experience, as most first-time college students still come from segregated high schools and residential areas (Pryor et al. 2007). Research in higher education provides evidence that diverse learning environments are related to the development of these crucial cross-cultural competencies for civic life.

The literature has also referred to these outcomes as democratic outcomes (Gurin et al. 2002; Hurtado 2003; Zúñiga et al. 2005). Democratic outcomes are the attitudes, knowledge, and skills necessary for participation in a diverse and pluralistic democracy (Gurin et al. 2002; Hurtado et al. 2002). Several aspects of the campus climate for diversity are directly related to the development of these essential democratic outcomes. For example, students who have frequent informal interactions with diverse peers are more likely to feel it is important to influence political structures and social values, help others in difficulty, report involvement in cleaning up the environment, and participate in community action programs (Gurin et al. 2002). Participation in diversity courses (Nelson Laird 2005; Nelson Laird et al. 2005), the frequency of cross-group interaction, and involvement in residential diversity awareness programs strongly influence one's motivation to reduce one's own prejudices and take actions to promote inclusion and challenge social injustices (Zúñiga et al. 2005). Furthermore, Bowman's (2011) rigorous meta-analyses of studies on civic engagement revealed consistent findings across studies regarding the impact of diversity in the curriculum, cocurriculum, and informal interaction with diverse peers.

The development of multicultural competencies during postsecondary education is especially important because they meet workforce needs, which became more prominent as a result of the legal challenges against affirmative action in higher education. During the *Grutter v. Gratz* case, employers supported the notion that exposure to racial diversity in college has the long-term benefit of preparing students with the requisite skill set to work in a global economy. Some of the skills they noted as most important to work in this new economy included the ability to understand multiple perspectives, to negotiate conflict, openness to having one's views challenged, and tolerance of different worldviews. All of these skills have been referred to as pluralistic orientation in the higher education literature (Engberg 2007; Engberg and Hurtado 2011; Hurtado 2005; Jayakumar 2007).

Research indicates that several aspects of diversity in higher education leads to the development of this essential workforce competency (Engberg 2007; Jayakumar 2007). First, compositional diversity is important in fostering a stronger pluralistic

orientation during college (Engberg 2007), as well as in post college years (Jayakumar 2007). Students who attend more compositionally diverse institutions are more likely to report positive interracial interactions on campus, which in turn, promote pluralistic orientation (Jayakumar 2007). The development of a pluralistic orientation is observed across both the formal and informal behavioral dimension of the climate. Diversity in the curriculum as well as informal interaction with diverse peers also has positive effects on pluralistic orientation during college (Engberg 2007; Engberg and Hurtado 2011). Participation in diversity cocurricular programs has a positive indirect effect on students' pluralistic orientation across several majors, including engineering (Engberg 2007) and also across racial/ethnic groups (Engberg and Hurtado 2011). Emerging research also indicates that experiences with diversity in college extend to openness to other social dimensions beyond racial/ethnic diversity. Exposure to diverse learning environments in college also leads to more accepting attitudes toward individuals with different sexual orientations (Jayakumar 2009). This research suggests that fostering a positive campus climate for diversity enhances the development of much-needed multicultural competencies.

Achievement, Retention, and Degree Attainment

Student achievement, retention, and degree attainment are essential outcomes for both individuals and society, as are other key goals of higher education (Bowen 1977). Earning a degree affords an individual the opportunity to earn a higher salary (Leslie and Brinkman 1988; Perna 2003). On the other hand, society benefits from a more educated citizenry when education is considered a public good (Kezar et al. 2005). Public benefits include lower crime rates, higher tax revenues (through earning higher salaries), as well as civic engagement (see Rowley and Hurtado 2003 for a review of the literature). Furthermore, in order for the United States to compete in the global marketplace, it must rely on educated citizens. President Obama has underscored this point by making one of his administration's goals that this nation, once again, has the highest proportion of college graduates in the world by 2020 (Obama 2009). The fact that this is a national priority indicates the importance to national, economic, and political interests, however, equity in attainments is also an important social justice issue. Higher education studies show detrimental effects of unequal distribution of resources in per student expenditures and state allocations on degree attainment, which contributes to the accumulative disadvantage among the low-income status of students who enter such institutions (Titus 2006a, b).

However, it is important to note that there is a tremendous amount of disagreement among postsecondary institutions on how to define retention. There is also a great amount of variability between how retention is measured at a 2-year college, at a 4-year college or university, and how retention is measured on a system-wide level—whether a student remains enrolled in a higher education institution and the patterns that emerge from that trajectory (Arellano et al. 2010). While a community college typically measures retention within the same semester, 4-year colleges and universities usually measure first- to second-year retention, as well as 4-, 5-, and

6-year graduation rates, due primarily to the external reporting requirements of Integrated Postsecondary Education Data System (IPEDS) (<http://nces.ed.gov/ipeds>).

Hagedorn (2005) critiqued the use of the term “retention” as an overall umbrella label and began to unpack the multifaceted nature of the issue. She outlined the different types of retention: institutional retention, system retention, retention within a major or discipline, and retention within a course. Most importantly, she stated that students who are most often excluded from these measures are transfer students from other colleges, part-time students, enrolled students not working toward a degree or certificate, students who enter at any other time point except with the traditional fall cohort, and other times, students who have not declared a major. These are students who often enroll in diverse and broad access institutions. A report published by The College Board (2009) considered 275 four-year public and private institutions in five states (California, Georgia, Indiana, New York, and Texas), and concluded that there is a lack of benchmarks for retention practices to compare across similarly situated institutions. While the desire to create a system of retention benchmarks across various types of institutions remains strong, the challenge is in creating a robust enough metric that institutions will adopt. Hagedorn (2005) proposed a new formula for retention in order to better understand an institution’s rate of student success that at a minimum should include: (1) institutional persistence, (2) transfer rates (both of the proportion of students who transfer to other institutions, as well as the proportion that transfer in from other institutions), and (3) course completion ratios. The latter may be helpful in not only tracking student retention but also identifying problem courses within institutions (e.g., introductory classes where large numbers of students withdraw).

While some institutions have achieved a good deal of success with retention in the first year of college, many campuses begin to lose students as they transition into the major (Beggs et al. 2008). Preliminary studies (Ishitani 2006) are beginning to show that different factors have an effect at different time points in a student’s career (time-varying effects), however, much more information is needed about students’ experiences during college, the effect of aid in different years, curricular requirements, and other factors that may impact time to degree. This calls for longitudinal assessment of similar factors to understand their relative importance in getting students through transition points from high school to college, lower division to upper division work, and the transition from college to workplace.

Student enrollment patterns are also posited to affect time to degree, college costs, and the quality of learning experiences (Townsend 2001). Nearly 60% of college students enroll in more than one college or university throughout their educational trajectory (Adelman 2006; Peter and Cataldi 2005). Students enroll in multiple institutions for a variety of hypothesized reasons (McCormick 2003), however, not all enrollment mobility is beneficial to degree attainment (Adelman 2006; DesJardins et al. 2002, 2006; McCormick 2003). At least 8% of students swirl between 2- and 4-year institutions with minimal degree progress (Adelman 2006). In addition, the vertical transfer path from community college to 4-year schools is the path a large proportion of underrepresented students traverse. Fifty-five percent of Native Americans, 45% of Asian/Pacific Islanders, 44% of Blacks, and 52% of Latina/os are enrolled in community colleges across the nation (AACCC 2011). However, the

high degree of student mobility that deters degree attainment indicates we must adopt more systemic ways of tracking students and assuring equitable degree attainment across diverse student groups.

Retention Models for Diverse Learning Environments

Braxton et al. (2000) asserted that the previous models of student departure (Bean 1980; Tinto 1993) have reached “near paradigmatic status” in the field of higher education (p. 569). Nearly every academic who has studied retention and student departure employs one of these “classic” models. However, there are some scholars in the field who acknowledge the weaknesses of these theories and call for the incorporation of diverse student experiences in examining and testing assumptions underlying student departure models (Hurtado and Carter 1997; Museus et al. 2008; Nora and Cabrera 1996; Tierney 1992). In the development of the earlier models, the sample populations used to create them was very homogenous, and some would argue exclusively White (Rendón et al. 2000). Given the demographic shifts in society and higher education, researchers need to employ theories and models that account for an ever-increasing diverse student population.

Research on first generation, low-income, and specific racial/ethnic populations has generated several studies that now contribute to a new theoretical integration model (a modified version of Tinto’s model) that can be tested in an integrated way (Hurtado et al. 2007; Nora 2003; Nora et al. 2005). Building on the research focused on underrepresented groups, the Nora (2003) and Nora et al. (2005) model provides greater emphasis on external push/pull factors outside of college (e.g., family), student finances, validating experiences with both faculty and peers, peer contexts, sense of belonging, and campus climate issues in relation to reenrollment in an institution—significant omissions from the original Tinto model. These factors, along with participation in formal structures, inform both social and academic integration and ultimately persistence toward a degree. Further tests are needed of this relatively new model and the generation of other new models based on diverse populations to more accurately reflect their experiences. As Rendón et al. (2000) stated: “While traditional theories of student retention and involvement have been useful in providing a foundation for the study of persistence, they need to be taken further, as much more work needs to be done to uncover race, class, and gender issues (among others) that impact retention for diverse students in diverse institutions” (p. 151). New developments have since occurred in reconceptualizing retention models to incorporate social identity development (see section on Social Identity and Outcomes).

Linking Campus Climate and Retention

The campus climate as a factor affecting student achievement, retention, and degree attainment is one contribution the DLE model reflects, as empirical work has

begun to establish this link. The campus climate has been found to have a considerable impact on students' postsecondary experiences, particularly students of color. (Hurtado et al. 1996, 2008; Solórzano et al. 2000) yet it is not often incorporated into research on persistence, degree attainment, or student departure. Only a handful of studies were identified that link campus climate to degree attainment using national data (Museus et al. 2008; Oseguera and Rhee 2009; Rhee 2008; Titus 2006a. See Museus et al. 2008 for a review of earlier studies linking perceptions of the climate with adjustment to college.) Part of the problem is that, until recently, national databases failed to include comprehensive measures of the campus climate to test in relation to degree attainment. Recent research explores the relationship between the campus climate for diversity and degree completion. Some research indicates that the structural dimension and organizational dimensions of the campus climate for diversity are related to elements of retention, particularly student departure (Rhee 2008) and degree attainment (Titus 2006a, b). Controlling for a host of factors using a multicontextual model, Titus (2006a) found that individual satisfaction with the racial climate, the average SES of students on campus, and expenditures per student (budget allocations in the organizational dimension) have a significant effect on student degree completion. Using Hurtado et al.'s (1999) framework on campus climate for diversity and Tinto's (1993) theory of student departure, Rhee (2008) found that institutions with a more diverse student population and higher commitments to diversity are both related to a higher likelihood of a student stopping out, however, not dropping out or transferring from an institution. In this sense, institutional commitment to diversity at a compositionally diverse institution may help diverse students reenroll after a departure, rather than depart permanently. Oseguera and Rhee (2009) found that compositional diversity does not significantly hinder degree completion, despite the fact that the most diverse institutions also tend to be those enrolling large proportions of underprepared students in higher education. However, in the same study, socioeconomic status and expressed financial concerns are related to a student's persistence.

Museus et al. (2008) found that satisfaction with the campus climate for diversity influence persistence and degree completion differently for Latina/o, White, Asian, and African American students. Direct effects of the campus climate for diversity on degree completion were not found in the case of every group. Instead, satisfaction with the campus climate for diversity had significant indirect effects on degree completion through academic involvement, normative peer academic involvement, and institutional commitment. The relationship between these variables and persistence were different for each racial group. Museus et al.'s (2008) findings indicate that the campus climate for diversity is linked with student degree attainment and retention, largely indirectly through interactions with others in the campus environment and that this is conditional on race. However, further research is necessary to investigate these relationships given that the measures in this study only employed a one-item measure of the campus climate in relation to retention. Overall, the emerging research begins to identify a relationship between the campus climate for diversity and retention.

With the external pressures on institutions to increase retention and graduation rates (given the recent increase in accountability and decreased funding), a more nuanced understanding of how the multiple dimensions of the campus climate for diversity are related to student success and retention is of utmost importance. All of the elements of the campus climate for diversity, through a dynamic relationship, influence achievement, retention, and degree attainment. The three DLE outcomes areas—habits of mind/skills for lifelong learning, competencies for a multicultural world, and achievement and retention—are necessary for successfully navigating and contributing to a complex, multicultural world. Although achieving these outcomes is influenced by the various components of an institution—as well as its surrounding contexts—it is essential to keep in mind that the campus climate permeates the institution and student experiences, and therefore shapes the learning environment and these outcomes. The following section will outline the core of the DLE model, beginning with the institutional context followed by the individual-level aspects of the campus climate dimensions (Hurtado et al. 1999; Milem et al. 2005).

Dimensions of the Campus Climate for Diversity

While external contexts are featured in the DLE model, we begin with a focus on the institution as an educational environment enveloped in a climate that reflects the institutional- and also individual-level lived experiences of organizational life (Peterson and Spencer 1990). The campus climate is a multidimensional concept that is comprised of institutional-level dimensions such as the institution's historical legacy of inclusion or exclusion; its compositional diversity of students, faculty and staff; and organizational structures (institutional policies, curriculum, processes; Milem et al. 2005). The individual level of the climate includes the psychological perceptions of individuals and the behavioral dimension that encompasses individual actions and intergroup contact experiences. Several scholars have analyzed the literature on the campus climate over the last 15 years across many of these dimensions (Hart and Fellabuum 2008; Harper and Hurtado 2007; Hurtado et al. 2008). The following sections will highlight some findings from these syntheses but more importantly, will discuss key areas where further research is necessary to gain a more comprehensive understanding of all the dimensions of the campus climate and how they influence success for students from multiple social identities and across different institutional contexts.

Institutional-Level Dimensions of the Climate

The Historical Dimension

This dimension emphasizes how the historical vestiges of exclusion affect the current campus climate and practices (Hurtado 1992; Hurtado et al. 1998b, 1999) that,

indeed, were part of a larger sociohistorical and policy context of race and gender segregation. Some colleges and universities began with a more inclusive mission to serve diverse groups of students, however, the majority of traditionally White institutions (TWIs) have always been an exclusive club (Horowitz 1987; Solomon 1985), historically limiting access for women, Jews, Blacks, Latina/os, and Native Americans and other groups over the years. Moreover, institutions in 18 southern states have spent decades attempting to racially desegregate since the *Brown* decision in 1954 (Williams 1988). Understanding the influence of the historical legacy of an institution's campus climate for diversity involves a more in-depth examination of an institution's norms, campus culture, traditions, policies, and historical mission (Hurtado et al. 2008). Qualitative methodologies, such as case studies, are therefore commonly employed to assess the historical context of an institution's exclusionary policies and subsequent changes that influence the multiple dimensions of the campus climate for diversity (Harper and Hurtado 2007; Peterson et al. 1978; Richardson and Skinner 1991). Future research on the historical context could be expanded on a broader array of postsecondary institutions like those that began with an inclusive mission, such as minority-serving institutions (MSIs) (Gasman et al. 2008), or campuses that have experienced demographic shifts over time without any intentional efforts to diversify the student body. Hart and Fellabaum (2008) reviewed gender-focused, faculty climate studies found on the National Academy of Sciences clearinghouse database. They concluded that a "stronger model will emerge on which all those engaged in campus climate research can build" by incorporating the historical legacy of inclusion or exclusion, in addition to objective organizational and psychological aspects of the climate identified by Peterson and Spencer (1990).

The historical dimension is rarely assessed and as a consequence, there are minimal links established to educational outcomes (Hurtado et al. 2008). Despite the inherent challenges in assessing the historical dimension with quantitative approaches, there are benefits to employing multiple methods in an effort to triangulate findings on the campus climate for diversity and its influence on student experiences and success over time. In a study conducted at a southern flagship university, survey research was employed to understand how the campus climate for diversity had changed over the span of three decades from the perspective of African American graduate students (Johnson-Bailey et al. 2009). The institution enacted desegregation policies during the 1960s; however, symbols from the segregationist past, such as the display of confederate flags on fraternity houses and cars, were still visibly present. The cohort of students differed but the historical context of the institution and region appeared to still influence the campus climate for diversity in different ways. Certain negative elements of the campus climate for diversity decreased over time while others remained the same or worsened. Improvements in the campus climate for African Americans were evidenced by the fact that less students perceived discrimination from faculty, and were less likely to have others underestimate their academic abilities over time, as student cohorts changed. Yet, response trends over time indicate that graduate students were more likely to feel like they were forced to represent their racial group in class, to socially isolate themselves from peers, and report discrimination from their White peers. These changes across time pro-

vide evidence of the continued legacy of the historical context on student academic and social experiences. Future research could examine how institutional histories continue to influence student success and provide more nuanced understanding of changes within the campus climate for underrepresented groups.

The Organizational/Structural Dimension

The organizational dimension of the campus climate identifies structures and processes that embed group-based privilege and oppression or confer resources that often go unquestioned, such as tenure processes, decision-making processes regarding recruitment and hiring, budget allocations, curriculum, and other institutional practices and policies (Milem et al. 2005). These often are based on agreed upon procedures implemented by dominant groups of faculty and administrators. On the surface, they may have neutral facades but work to maintain inequity among groups (see Morfin et al. 2006 for a critique of race-neutral institutional policy and practices). For example, the organizational dimension of the climate can be understood as reflecting the pervasive, systemic, and ordinary nature of racism in American institutions (Delgado and Stefancic 2001), and perpetuate inequity through status quo processes in education. Scholars have also long identified these organizational structures and processes as the key source of barriers to representation and inclusion of women and minorities in the academy (Minnich 1990; Smith 1996). Theory and research on or around the organizational dimension of the climate generally approaches the topic from three angles: that of the broader context for institutional policies and practices, specific policies or practices that structure the environment, and processes to improve the climate for diversity on an organizational level.

The Context for Institutional Policy and Practice

Institutions of higher education are conceptualized as open systems that interact with their surrounding environment (Williams et al. 2005). Shifting demographics, political and legal dynamics, societal inequities, and workforce needs all influence organizational behavior, and are forces that influence the policies and practices within the organizational dimension of the climate. External contexts and relations are key factors in creating transformational change to improve the campus climate for diversity, as Rankin and Reason (2008) identified elements of exosystem and macrosystem levels that influence organizational decision-making, including: state financial aid policies, local, state, and national agendas, trustee decisions with regard to access, and the influence of alumni. The focus on contexts external to the institution mirrors the sociohistorical, policy, and local community contexts in the DLE model described later, however, we offer one research example to illustrate how internal campus decision-making processes are influenced by external contexts.

Smith (1996) interviewed 299 competitive doctoral fellowship recipients (Ford, Mellon, and Spencer Fellows) about their experiences with recruitment and hiring in academe to address institutional difficulty in diversifying faculty. External factors such as availability pools in specific disciplines (and the production of graduates from acceptable institutions) and external associative networks of faculty influence institutional-level recruitment and hiring practices. They documented concrete experiences among fellows that debunked myths about hiring and retention, including the myth about high demand and limited pools for minority candidates. Despite their prestigious fellowships, only 9% were highly sought after candidates. There were more diverse candidates than institutions considered, the search and hiring process remains unchanged, and a lack of diversity on search committees results in little change in the evaluation of candidates for hire. The study showed how legitimizing myths and external relations operate in recruitment and hiring practices, which in turn, work to reinforce a process that results in low compositional diversity in the faculty.

Critical Aspects of Institutional Policy and Practice

Institutional commitment to diversity, or lack thereof, is readily identified as an aspect of the organizational dimension of the climate. Such a commitment must be articulated in an institutional mission (Clayton-Pedersen et al. 2007), and may be well-regarded by students, in particular through transparency and the development of trust (Pepper et al. 2010). Symbolic action may help build perceptions of institutional commitment to diversity, so long as symbols align with political, financial, and structural resources (Williams et al. 2005). Too often, institutions are characterized by administrative nonresponse to climate issues (Yosso et al. 2009), perhaps reflecting an artificial commitment to diversity or misalignment between resources and symbolic action. Institutional policy on the other hand, concretely reflects the level of institutional commitment to diversity (Milem et al. 2005; Rankin and Reason 2008). This is readily seen in university policies, programs and services (Rankin and Reason 2008), which must be tied to institutional mission (Clayton-Pedersen et al. 2007). Institutional policies and processes have the potential to create more equitable conditions and outcomes for diverse students and can be assessed for equity and diversity.

Diversity in the curriculum is one aspect of the organizational dimension of the climate (Milem et al. 2005; Williams et al. 2005) that has been studied and addressed in scholarship. One of the most consistent empirical findings in reviews of many studies is that diversity in the curriculum has the transformative capacity to enlighten and change the perspectives of individuals, especially in the reduction of prejudice (Engberg 2004; Engberg et al. 2007; Denson 2009). Engberg (2004), for example, reviews studies that include a diversity course as a requirement or non-requirement, as well as taking ethnic and women studies courses. He concluded, “the majority of studies support the conclusion that multicultural interventions are effective in the context of the higher education curriculum” (p. 489), but also indi-

cates the effects for different gender, race, disciplinary, and class-level groupings are still unclear. Much more research is needed to understand when it might be more appropriate for student preparation and development as an intervention for particular groups (Rankin and Reason 2008), or as part of the education for all students.

Theoretically, diversity in the curriculum and scholarship reflects the values of what an institution considers to be legitimate knowledge. Both feminist and critical race theorists have focused on this institutional feature. Minnich (1990) states we must “rethink what we thought we knew, recognizing now that the knowledge established by the dominant tradition is indeed *partial* in both senses of the term. It makes the part the whole, and that whole is partial to the interests of those thus enshrined at the defining, controlling center” (p. 148). In TWIs, there is likely to be “the expectation that all individuals conform to one ‘scholarly’ worldview, which stems from the aforementioned beliefs in the superiority and normalcy of White culture” (Gusa 2010, p. 474–475). Monocultural institutions may be less likely to value lived experience or non-Western ways of knowing as a legitimate form of knowledge, which are ways of knowing within various communities of color (e.g., Brayboy 2005; Delgado Bernal 2002; Solórzano et al. 2000). Thus, the curriculum becomes an enduring social structure with persistent intrinsic opposition to efforts to redefine it as more inclusive.

The lack of faculty of color (Yosso et al. 2009), as well as the lag in diversifying staff, administration, and trustees (Clayton-Pedersen et al. 2007) is not only related to recruitment strategies, but also to retention and promotion procedures of key personnel (Smith 1996). The tenure and promotion process (Antonio 2002; Milem et al. 2005) and salary inequities (Hart and Fellabaum 2008) are located within the organizational dimension of the climate, and may be justified as fair, however, are likely to embed privilege for some groups and systematically disadvantage others. Administrators’ initiatives to develop mentoring structures within and across departments may help recruit and retain faculty of color, redistribute privilege that comes from informal sponsorship networks, as well as to empower them to engage in transforming the climate for diversity (Kezar et al. 2008).

Each of these aspects of the organizational dimension may be considered within a larger umbrella of the pervasiveness of dominant norms as a marker of a hostile climate (Harper and Hurtado 2007), and particularly the norms of White middle-class culture (Yosso et al. 2009). Gusa (2010) details the concept of White institutional presence (WIP) in four ways. The first, White ascendancy is “thinking and behavior that arise from White mainstream authority and advantage... a sense of superiority, a sense of entitlement, domination over racial discourse, and White victimization” (p. 472). Monoculturalism may particularly be embedded in pedagogy and curriculum. White blindness is “a racial ideology that obscures and protects White identity and White privilege” (p. 477), and is pervasive in curriculum decisions. Lastly, White estrangement is the “distancing of Whites physically and socially from People of Color” (p. 478), and occurs through social and institutional policies that segregate groups, often through nonracial means, such as housing policy. The notion of the pervasiveness of any privileged cultural norm (e.g., Whiteness, hetero-

sexuality) is a crucial lens to apply when examining the organizational dimension of the climate, in order to question if the process is inclusive and if outcomes are equitable. That is, rather than engaging in restrictive views of equality that focus on equality in process (e.g., treating students the same from a colorblind perspective), an expansive view of equality is needed that focuses on equity of outcomes (Crenshaw 1988).

The organizational dimension of the campus racial climate is not often examined empirically across campuses because it requires a good deal of information about various structures and practices within institutions and across a large number of institutions to understand impact on outcomes for diverse students (e.g., faculty reward structures). Nonetheless, the organizational dimension of the campus climate for diversity is important to consider in future examinations of student success because it frames actions that reflect an institution's commitment to diversity. Rowley et al. (2002) found that despite an institution's indication that its mission statement addressed diversity, this rhetoric was not aligned with two institutional actions: valuation and rewards for diversity on campus and innovation in creating a diverse learning environment in comparison to peer institutions. The only practice that predicted a diverse student body was lower selectivity in the admission processes (rhetoric and priorities were not significant). The study was based on responses of 744 Chief Academic Officers on a survey related to diversity and resources provided across academic and administrative units on campus to achieve institutional diversity goals. Support from core leadership and a strong articulation of diversity priorities were the most important factors in predicting institutional action in terms of predicting diversity of the faculty and innovation in practices relative to peer institutions. These organizational behaviors are particularly important when taking into account that students, especially students of color, believe that administrators do not place enough emphasis on addressing underrepresentation; the campus climate can be improved through the enactment of institutional practices that promote diversity (Rankin and Reason 2005).

Processes that Improve the Climate for Diversity

The literature can be understood through four overarching themes that help improve the climate for diversity, specifically in the organizational dimension. These include having a clear definition of diversity that influences practice (Clayton-Pedersen et al. 2007), working with multiple elements of organizational culture (Williams et al. 2005), creating shared responsibility for assessing, planning, and improving the climate (Clayton-Pedersen et al. 2007; Kezar et al. 2008; Rankin and Reason 2008; Williams et al. 2005), and having comprehensive evaluation and assessment systems (Clayton-Pedersen et al. 2007; Rankin and Reason 2008; Williams et al. 2005). The location of these processes in the organizational dimension for the DLE model is strategic in that most of them deal directly with institutional actors that are intimately involved in decision-making processes that affect assessment, planning, and leading change initiatives.

First, there must be shared responsibility throughout the college or university for diversity work in its design, implementation, and success (Clayton-Pedersen et al. 2007). A crucial early step in climate transformation is to prepare the campus community for shared ownership of the entire process of self-assessment (Rankin and Reason 2008). Throughout the process, leaders need to create shared understandings of the new values and processes (Kezar and Eckel 2002), and share results with the campus community (Rankin and Reason 2008). One empirical study found that nonlinear deployment strategies by presidents are particularly effective, as they create networks of individuals that facilitate the process (Kezar et al. 2008). Specific processes that have been effective for presidents include developing an internal network, hiring strategic personnel, mentoring faculty of color, developing faculty partnerships in revising curriculum, supporting student affairs staff, engaging with students, and developing networks external to the institution (Kezar et al. 2008). In addition, using a human resources frame that focuses on relationships and developing individuals was cited as the most helpful approach to transformative diversity work in that study. Additional models support a collegial approach that involves and empowers faculty to engage in the change, and that committees must include campus-wide representation and provide training for all leaders charged with disseminating the vision and implementing the diversity plan (Williams et al. 2005). Throughout change processes, campus leaders must also keep in mind the political nature of the work, effectively manage resource allocation, and acknowledge related power, interests, and conflicts that arise (Williams et al. 2005).

The Compositional Dimension

The compositional dimension of the campus climate has been well-documented and is an initial step in the creation of a diverse learning environment (Hurtado et al. 2008). The compositional dimension refers to the numerical representation of individuals from diverse social identities among students, faculty, staff, and administrators (Hurtado et al. 1999; Milem et al. 2005). Foundational theories assert that the influence of a compositionally diverse representation within an organization is grounded in contact theory (Allport 1954) and the notion that environmental change occurs when significant demographic shifts take place within an organization (Kanter 1977). Severely underrepresented groups are subject to stereotyping, but as homogeneous groups become increasingly diverse, the experiences of minority and dominant members will perceptually change and shape the interactions that occur between these members (Kanter 1977; Thompson and Sekaquaptewa 2002). In the earliest studies of higher education, scholars found a relationship between a critical mass of Black students (absolute numbers not percentages) and incidents of campus protest (Astin and Bayer 1971; Astin et al. 1975). Racially related protests were associated with attaining a critical mass of minorities who could collectively present demands for institutional change. Thus, this review finds that low numbers are detrimental to underrepresented groups (Thompson and Sekaquaptewa 2002), a critical mass is es-

sential to bring about institutional change (Astin and Bayer 1971; Astin et al. 1975), and substantially greater numbers bring opportunities to increase intergroup contact (Chang et al. 2004; Pike and Kuh 2006; Sáenz et al. 2007), which consequently reduces prejudice (Denson 2009; Engberg 2004), resulting in cognitive change, and civic-minded students (Bowman 2010; 2011). More research is needed on what constitutes a critical mass, and optimal levels for representation. For example, one study found that medium levels of heterogeneity (33–38% of students as racial numerical minorities) in classrooms have positive effects on all students' problem solving skills and group skills (Terenzini et al. 2001). This seems to support other social science research (Thompson and Sekaquaptewa 2002), the more balanced representation of a diverse set of individuals within a college or university can lead to more inclusive experiences for members of all groups because no group is tokenized and there will be greater opportunities for interactions across difference for all.

Greater compositional diversity is also positively related to satisfaction with the college experience (Hinrichs 2011), as well as ethnic identity development. It is also associated with satisfaction with the racial/ethnic diversity of the student body for students from all racial/ethnic groups, especially White and Latina/o students (Park 2009). Park (2009) argued that student satisfaction with racial/ethnic diversity of the student body and faculty is an important factor to consider in their overall perceptions about campus racial dynamics. More studies are needed on the composition of a campus in relation to ethnic identity development, as it may be that low diversity can heighten racial salience due to discrimination (Hurtado et al. 2011b), however, higher numbers also result in greater identity awareness. In a study of Latino fraternity brothers at a Hispanic Serving Institution in the Southeast (Guardia and Evans 2008), participants talked about how the high proportion of Latinos heightened their ethnic identity. A higher compositional diversity for these students seems to provide a more positive climate that affirms and helps students develop their ethnic identity. The compositional dimension, therefore, is a critical component of student experiences and outcomes, and based on Thompson and Sekaquaptewa's (2002) review, appears to be equally important for performance in the work environment for staff, faculty, and administrators.

Thompson and Sekaquaptewa's (2002) synthesis of a growing body of experimental and field research indicated that "being the only member of one's race or gender in educational or work settings is more detrimental to the performance of women and racial minorities than Whites and males" (p. 199), signaling the great importance for campuses to continue to diversify their student bodies, staff, faculty, and administration. In their experimental study of women and African Americans in contrast to men and White students, respectively, the authors found that being different, that is visibly being a numerical minority, has negative effects on performance for women and African Americans. When "solo status," stereotype threat, and fear of group representativeness are removed from the environment, these group members can perform at the same level as men and White students. The authors suggest that maintaining solo status for lower-status groups by the way of a relatively homogeneous student body, staff, or faculty, may constitute a subtle form of institutional oppression, as it leads to lower performance levels for those in the solo

status. Thompson and Sekaquaptewa (2002) recommend that institutions maintain clear performance-evaluation criteria in order to reduce reliance upon stereotypes for evaluation, make use of private/written performance evaluation over public performance evaluation, downplay stereotypes, publicly legitimize lower-status solo persons by higher-status persons, assign equally needed information to master for group success, and seek superordinate identities to be shared across diverse groups while also acknowledging individual group-based identities.

New directions in the work on the student compositional diversity of institutions indicates that although absolute numbers may determine diversity on a campus, this does not assure equity in outcomes (Bensimon 2004). Several scholars have used equity index methods to understand issues such as access, policy changes, and outcomes (Bensimon et al. 2006; Contreras 2005; Contreras et al. 2008; Hao 2005; Harris III and Bensimon 2007; Perna et al. 2005; Santos et al. 2010). Despite the high numbers of Latina/o student enrollments, for example, the latter study used an equity index to reveal how Latina/os are below equity in degree attainments (relative to their undergraduate enrollments and in comparison with other groups) in most 2-year and 4-year Hispanic Serving Institutions (HSIs). Thus, highly diverse institutions may still be far from the goal of achieving equity in outcomes relative to their undergraduate enrollments. The use of an equity scorecard has been integrated into assessments of institutions to raise awareness about how practices result in unequal opportunity and outcomes in an effort to promote institutional change (Bensimon 2004; Harris III and Bensimon 2007; Williams et al. 2005).

Individual-Level Dimensions of the Climate

The Behavioral Dimension

The behavioral dimension of the campus climate refers to the context, frequency, and quality of interactions on campus between social identity groups and their members (Hurtado 2005; Hurtado et al. 2008). Categorizing interactions into formal and informal interactions helps educators to understand those interactions they may have control over, as opposed to chance encounters. *Formal* interactions are often referred to as campus-facilitated interactions that may occur in the classroom or cocurricular settings and are the result of intentional educational practice (see, for example, Gurin et al. 2002; Hurtado 2005). *Informal* interactions occur in the everyday interactions between individuals outside of campus-designed educational activities. Both informal and formal interactions have been captured by assessments of individual behavior in relation to developing student outcomes. In some cases, however, it is difficult to determine whether interaction measures were assessed as part of a program, practice, or students' informal activities.

In a review of climate assessments, Hurtado et al. (2008) find that climate instruments focus on student informal interactions with different identity groups, and reports of positive and negative interactions with different groups (e.g., harassment).

In almost all cases, the focus has been on assessing and improving intergroup relations, however, in studies associated with the educational benefits of diversity, interactions are linked with student educational outcomes. The most common formal interactions in the literature are diversity initiatives that include the curriculum (integrated course content, diversity requirements, or ethnic or women's studies), cocurricular programs like intergroup dialogue, involvement in student activities, and integrative learning such as service learning or learning communities (Hurtado et al. 2008). Many of these practices are described in a later section on curricular and cocurricular contexts.

Hurtado et al. (2008) also show several major trends in the research literature assessing the *informal* aspect of the behavioral dimension of the climate. These include an increasing focus on the quality of interactions (positive and negative) among diverse students (Gurin et al. 2002; Hurtado 2005; Sáenz et al. 2007); that precollege interactions determine the quality of cross-racial interactions in college (Sáenz et al. 2007); and that students experience unique interactions based on their racial group membership (Chang et al. 2004). In addition to a continuing focus on frequency of interaction, researchers are identifying aggregate levels of interaction among diverse peers (Denson and Chang 2009), measured as an institutional-level variable.

Provided that many of the *formal* interactions are considered as part of intentional practice in curricular and cocurricular spheres, what follows is a synthesis of climate literature that builds upon these previous bases to document further developments in understanding the behavioral dimension of the campus climate for diversity with a focus on students' *informal* interactions around race and ethnicity, gender, socioeconomic class, and sexual orientation. It is important to note that several systematic, meta-analytic studies have confirmed informal contact experiences were stronger in effect than formal types of diversity experiences (curricular or cocurricular diversity experiences) in relation to cognitive (Bowman 2010) and civic outcomes (Bowman 2011). Further, these synthetic studies found that racial interactions had more impact than nonracial forms of interactions on these outcomes. An even stronger effect of informal racial interactions was evident in the meta-analytic study on the reduction of group prejudice (Denson 2009). Research on college students' informal interactions with diverse others in recent years appears to be centered around major themes: effects on educational outcomes, perceptions of the campus climate, sense of belonging, transition to college (Denson and Chang 2009; Locks et al. 2008; Nuñez 2009a; Singley and Sedlacek 2009), and students' ongoing experiences of a hostile climate (Shammas 2009b; Suarez-Balcazar et al. 2003). The literature builds upon the previously established understanding that all students benefit educationally from a compositionally diverse learning environment (Gurin et al. 2002). What is particular about recent research is that rather than measuring student engagement in general, it focuses specifically in diversity-related forms of engagement. For example, Denson and Chang (2009) find that campuses whose students are more engaged in diversity (at an aggregate level) improve learning benefits for all students, even for those who are less engaged with diversity as individuals. This implies that student norms can change

with diverse peer engagement and that this is a powerful form of peer-to-peer learning that affects student outcomes.

Interaction with faculty is another behavior that is associated with diverse student interactions and impacts student perceptions of the campus climate and subsequent outcomes (Cole 2007; Cress 2008). Cress (2008) found that students who have positive interpersonal relationships with faculty are less likely to report observations and experiences of prejudice. The strength of this relationship increased after controlling for individual and institutional variables related to diversity. Cole (2007) found that interracial peer interactions were positively associated with various forms of student involvement with faculty, which is in turn, associated with changes in students' intellectual self-concept. Simply stated, informal interactions with various actors within college environments may contribute to a positive climate on campus.

In a longitudinal study of Latina/o college students in 4-year public research universities, Nuñez (2009b) reported that students with greater familiarity with diversity issues, social and intercultural capital, and higher social and academic engagement have a higher sense of belonging, even in a hostile climate. A report from the University of California (Chatman 2008) documented that students in that system are interacting across multiple social identity groups and reported that most students indicate a sense of belonging to the university. Perhaps surprisingly, given the political and religious conflicts in the Middle East and the post-9/11 racialization of Arab Muslim students, Muslim students in general had the highest percentages of students feeling like they belong followed by Jewish students. While one cannot assume that there is a positive or negative climate for these groups, those with a higher proportion of students who feel like they belong at the very least have a more positive experience on campus. In addition, in their study of White students and students of color in their second year at public universities, Locks et al. (2008) found that positive interactions with diverse peers is associated with all students' sense of belonging in the campus community, indicating that a positive behavioral climate is likely one of many factors related to ease in students' transition to college and possibly retention beyond the first year.

Research on social and racial justice allies has shown that members of privileged groups usually describe their initial engagement in such social justice activities as by chance or personal invitation—very rarely did a student seek out the opportunity on her or his own (Broido 2000; Broido and Reason 2005). The concept of privilege, and White racial privilege in particular, is crucial to address when considering how to improve the climate for diversity with regard to interactions. Regarding the behavioral dimension of the climate and informal interactions, this is seen primarily in what Gusa calls *White estrangement*, which is the “distancing of Whites physically and socially from People of Color” (p. 478). Monoculturalism also plays out in the behavioral dimension, particularly through pedagogy. It is “the expectation that all individuals conform to one ‘scholarly’ worldview, which stems from the aforementioned beliefs in the superiority and normalcy of White culture” (p. 474–475). Harper and Hurtado (2007) found that the pervasiveness of Whiteness is one of nine themes that indicate a racially hostile campus. Campuses' efforts to intentionally in-

clude privileged students in diversity efforts relieves the burden on targeted groups for improving the climate for diversity, and espouses a collaborative effort between all groups to work together toward this common and mutually beneficial goal.

A Hostile Climate—Merging the Behavioral and Psychological Dimensions

Studies that reveal a hostile climate on campus are sometimes based on measures that reflect reports of hostile incidents or perceptions of a hostile climate based on interpersonal encounters. That is, earlier work categorized hostile encounters in the behavioral dimension of the climate (Hurtado et al. 1999) when much of this work can also be categorized in the psychological climate, as there is a fine line between perception and reality. “Reality is not something objective or external to participants. Instead participant reality is defined through a process of social interchange in which perceptions are reaffirmed, modified, and replaced according to their apparent congruence with the perceptions of others” (Tierney 1987, p. 64). However, the impact is real: students who reported negative or hostile encounters with members of other racial groups scored lower on the majority of outcomes (Hurtado 2005). Further, studies often combine behavioral measures with other measures of the climate in the same statistical models, or even use combined measures. For example, Chang et al. (2009) combined perceptions and behaviors in their measure of negative racial experiences to show a significant negative interaction effect on retention in science majors for underrepresented students who entered college with initially strong science identities. The studies presented in this section represent both behavioral and psychological dimensions of the campus climate (studies clearly based on perceptions alone are discussed in the subsequent section of the psychological climate).

Many of the recent studies of the campus climate for diversity focus on students’ experiences of a hostile climate. Despite the dominant belief that group-based discrimination no longer exists in the United States, the relative abundance of research in this area continues to document students’ experiences of discrimination on campus and draws attention to the need for intervention and proactive steps to improve the climate for diverse students. Most studies confirmed that students of color are more likely to experience a hostile climate (Harper and Hurtado 2007; Hurtado et al. 2008), however, other groups also report a hostile climate. In a multi-institution mixed-methods study, Shammass (2009b) found that both Arab and Muslim community college students experience a hostile climate, but are hesitant to report various forms of discrimination whether based on race or religion. However, their diverse friendships are associated with a higher sense of belonging, which is consistent with previous research on other ethnic groups. The intersection of religion, race, and ethnicity as it relates to perceptions of the campus climate is an important area for future research.

Additional studies show that students are experiencing a hostile climate based on gender, sexual orientation, and socioeconomic status. Despite years of progress, women are still reporting a ‘chilly campus climate’ and express concern for

their safety on campus regardless of race (Kelly and Torres 2006). Similarly, the campus climate regarding students' and faculty's sexuality reflects hostility and discrimination (Bilimoria and Stewart 2009; Rankin 2004). LGBT students, described as the "invisible population" (Sanlo 2004), experience a hostile climate as well (D'Augelli 1992; Little and Marx 2002; Rankin 2004), which may prevent them from becoming fully participating members of their campus community (Rankin 2004; Sanlo 2004). Not surprisingly, another study at a midsize state research university in the Midwest documents the presence of different climates in different campus subcontexts (Brown et al. 2004). That is to say, while there may be a generally hostile campus climate for LGBT students, subcontexts within the organizational structure of the campus may be welcoming for these students, serving as safe-spaces. These studies imply that while it is important to improve the overall climate for LGBT students, it may be important to target analyses of different spaces on campus for intervention. Comparing subcontexts within an institution as well as cross-institutional comparisons are needed as this research continues. Additionally, students report discrimination in college based on socioeconomic status. Institutionalized and interpersonal classism was prevalent at a highly selective, wealthy liberal arts college (Langhout et al. 2007), despite this institutions' identity as a college that is committed to social justice. In addition, students had different levels of marginalization within racial groups based on their socioeconomic status.

This brief review of research on the campus climate for gender, sexuality, and socioeconomic status documents students' experiences of a hostile climate. Most studies examined these experiences on campuses where the identity group of interest is the numerical minority. It will be important in future research to compare and contrast students' experiences in diverse learning environments where targeted groups constitute a numerical majority, and where campuses are intentionally facilitating interventions across diverse groups to improve intergroup relations.

The Psychological Dimension

The psychological dimension involves individuals' perceptions of the environment, views of intergroup relations, and perceptions of discrimination or racial conflict within the institutional context (Hurtado et al. 1998b, 1999). Some have argued that the scholarship on the educational benefits of diversity that focuses on interaction with diverse peers (the behavioral dimension) in relation to outcomes has neglected the psychological effects of the climate (perceptions and felt discrimination) as part of the continuing legacy of exclusion (see Hurtado 2004, 2007). We contend that these two bodies of work are not exclusive. Climate research based on the psychological dimension remains vital to understanding the experiences of multiple social identity groups in order to improve the conditions for success of diverse faculty, students, and staff. A significant portion of the campus climate for diversity literature focuses on the psychological dimension (Hurtado et al. 2008), and this is revisited in institutional assessment circles when campuses experience intergroup conflict.

Central findings from these research syntheses indicate that students of color perceive and experience their educational environments differently than their White peers and that these perceptions can impact student outcomes (Harper and Hurtado 2007; Hurtado et al. 2008; Museus and Maramba 2011; Museus et al. 2008). Specifically, students of color experience discrimination and perceive their campus environments as more hostile, and this is particularly true for African American students. More recently, scholars have expanded research on Latina/os (Nuñez 2009b; Yosso et al. 2009), Arabs and Muslims (Shammas 2009a), and disaggregated ethnic groups among Asian Americans (Maramba 2008; Museus and Truong 2009) to provide a broader understanding of the campus climate for diversity for these previously understudied racial/ethnic groups.

Some studies have examined minority group perceptions of other targeted social identity group's experience of the campus climate. For example, female students and students of color perceived the climate for LGB students to be more hostile (Waldo 1998), supporting the notion that forms of oppression intersect along students' different social identities (e.g. Adams et al. 2000; Delgado and Stefancic 2001). In contrast, similar to studies of racial differences, students from the dominant group (heterosexuals), perceived the campus to be more hospitable to homosexual and bisexual students in comparison to the LGB students' perceptions (Waldo 1998).

Much like other targeted social identity populations, LGBT students also perceive their institution's climate as negative. LGBT students often worry about being in an unsupportive institution and stress about facing discrimination and harassment, all of which leads to their inability to focus on their academics and/or leaving the institution (Hunter and Schaecher 1990; Lucozzi 1998; Remafedi 1987; Rotheram-Borus et al. 1991). A qualitative study on lesbian and bisexual women's experiences in residence halls (Evans and Broido 2002) confirmed this space as having a hostile climate; specifically, these students often felt uncomfortable and threatened because of their sexual identity, which created an unwelcoming atmosphere. In addition, these students felt it unwise to open up about their sexual identity for fear of emotional retaliation and hostility from their peers (Evans and Broido 2002). Evans and Broido (2002) urge campuses to address heterosexism and homophobia to improve the climate. In a review of existing LGBT and queer research in higher education, Renn (2010) notes that studies on the perceptions and experiences of LGBT people make up one of the three foci of campus climate research. Despite describing the important role research on campus climate for LGBT students has played in making institutions increasingly accountable for the experience of LGBT students, perhaps as a sign of progress, Renn (2010) states that it is no longer a mainstay in research on LGBT issues in higher education. Despite this conclusion, efforts to assess the campus climate for LGBT students have continued and culminated in the 2010 launch of the National LGBT College Climate Survey (See <http://www.campuspride.org/research/qrihe.htm> for additional information).

It is important to also acknowledge the relationship between the campus climate for diversity and literature on general perceptions of the campus climate (Navarro et al. 2009; Reid and Radhakrishnan 2003; Worthington et al. 2008). The findings from this literature further show that students of color perceive a more unwelcom-

ing campus climate and report having observed discrimination at their institutions at higher levels than their White counterparts (Navarro et al. 2009; Reid and Radhakrishnan 2003; Worthington et al. 2008). Worthington et al. (2008) and Navarro et al. (2009) both differentiated between perceptions of the general campus climate and racial/ethnic campus climate in their studies at a single institution. The general campus climate measure was represented by a semantic differential scale that described the campus climate in bipolar dimensions, for example, as friendly or hostile and respectful or disrespectful. In contrast, the racial/ethnic campus climate measure was comprised of student responses to perceptions of the campus climate specific to underrepresented student groups. Results indicate that experiences with racial/ethnic harassment on campus significantly predict less positive perceptions of both the general campus climate and racial/ethnic campus climate. This latter study also highlights that more studies are beginning to examine behaviors and perceptions of both the general and the climate for diversity on campuses.

Student Identities at the Center: Knowing More About Students, Contexts, and Processes

Knowing more about students is critical to the process of inclusion in both curricular and cocurricular spheres of college. Two aspects of college student identity theory are of particular interest in the DLE model: social identity theory and social identity development. On the one hand, students and people in general are ascribed socially constructed identities such as race, class, and gender (Adams et al. 2000). On the other, students also develop personal and social identities along these socially constructed groupings, as well as unique personal identities (Jones and McEwen 2000). This section will first provide an overview of social identity theory and its applicability in college environments, followed by an overview of college student identity development theory. Finally, key research will be discussed that links social identity theory and development related to learning outcomes.

Social Identity Theory

Social identity theory (Tajfel 1981) distinguishes between personal identities and social or group-based identities, such as race, class, and gender (see Jones and McEwen 2000). Social identity theory posits that as people define in-group characteristics, out-groups are formed, and people look more favorably toward in-group members. As social identity group members consider how their respective groups are viewed or their social status, individuals will always try to find a way to be viewed positively, whether as part of that group or by distancing from it (Tajfel 1981). In addition, social identities that are negatively valued by society are the most powerful, psychologically accessible, and are more salient, acting as social scripts (Hurtado et al. 1994).

Social scientists have come to understand that social identity groups are formed through economic and political processes that attach meaning to bodily markers, as in the case of racial formation, and that groups are constructed against one another in social contexts (Haney Lopez 1994; Omi and Winant 1994). That is to say, Whiteness was constructed in relation to Blackness, and vice versa; without one there was no need for the other as a social category (Haney Lopez 1994). As educators consider how social identities are created, recreated, and manifested in diverse college environments, it is important to be critically conscious of the real power and privilege attached to these socially constructed identities such as race, class, gender, ability, and sexual orientation, and how they intersect with one another (e.g., Frable 1997; Jones 2009; Jones and McEwen 2000). Hart and Fellabaum (2008) point out in their review of gender-based climate studies that nearly half concentrate on one identity characteristic (gender or race) and that most studies fail to “take into account the interlocking nature of identity and how these mutually shaping identities may contribute to differing experiences and perceptions of the climate” (p. 230).

Social identity theory has important implications for the development of outcomes regarding retention and achievement equity, as well as multicultural competencies. Considering that students are ascribed social identities such as race through processes like racialization, educators often necessarily examine educational gaps between students based on these socially constructed groups. Although race is socially constructed, racism and additional group-based oppression is real based on these group ascriptions (Adams et al. 2000; Omi and Winant 1994). A critical race theory perspective posits that racism is pervasive throughout social and educational systems (Delgado and Stefancic 2001), and therefore structurally manifests by reproducing inequities between racial groups in nonracial or seemingly race-neutral matters (e.g., Morfin et al. 2006). One example would be educational attainment gaps between racial groups (Astin and Oseguera 2005) in addition to interpersonal bias or prejudice (Dovidio et al. 2010). In this sense, understanding social identity theory and utilizing it in relation to creating learning environments that produce equitable achievement outcomes for all college students is paramount. In developing multicultural competencies, as is the case for transformational resistance, students must become critically conscious of social oppression and be motivated by social justice (Solórzano and Delgado Bernal 2001). This would include how social identities are constructed (e.g., Omi and Winant 1994), and the relative power and oppression attached to group memberships (Adams et al. 2000; Johnson 2005; Tatum 2000). Ideally, institutions of higher education should facilitate the development of this critical consciousness in students. Only through this awareness does it seem plausible that students will move away from perspectives that perpetuate inequity, toward developing competencies that will allow them to contribute to creating equity throughout college and their lifetime.

Social Identity Development

Foundational college student identity development theories did not originally consider social identities (Chickering 1969; Erikson 1968; Marcia 1966), and have been

critiqued for not being inclusive of nondominant groups (McEwen et al. 1990). Chickering and Reisser (1993) have since modified Chickering's original vector model, one of which is establishing identity, to include social identities such as race/ethnicity, gender, and sexual orientation. Frable (1997) synthesizes additional identity development models focused on social identities, including racial and ethnic identity (e.g., Cross 1995; Ferdman and Gallegos 2001; Hardiman 2001; Kim 2001; Phinney 1992; Renn 2004; Sue and Sue 1990), gender identity (e.g., Ashmore 1990; Gurin and Markus 1989; Gurin and Townsend 1986; Katz 1986; Kohlberg 1966), sexual identity (e.g., Abes et al. 2007; Cass 1979; D'Augelli 1994), and class identity (see Frable 1997).

Jones and McEwen (2000) proposed a developmental model accounting for the intersection of multiple social identities in considering the whole person, and the multiple contexts that make different identities salient. It has since been re-conceptualized to account for meaning-making in the process of multiple social identity development (Abes et al. 2007). While scholars agree that the intersectionality of social identities inform the construction of each identity, competing perspectives include feminist and postmodern conceptualizations (see Abes et al. 2007). As students negotiate tensions between their multiple privileged and oppressed social identities, they also demonstrate a process of self-authorship (Jones 2009). However, a meta-analysis of studies on identity status change in adolescents through young adulthood from 1966 to 2005 found that large proportions were not identity achieved by young adulthood (Kroger et al. 2010). Although that study looked broadly at ego identity development, and not social identity development, it raises questions about similar processes in social identity development in college, and highlights that for identity development in general, individuals' contexts must contain a balance of challenge and support (Sanford 1966) to facilitate identity development. The importance of context in increasing the salience of multiple social identities speaks to the ability of educators to shape DLE to facilitate social identity salience and development in college, and support the development of related outcomes.

Renn (2003, 2004) pioneered the use of ecological models to understand the complexities of racial identity development for multiracial college students. Drawing upon Bronfenbrenner's models, Renn (2004) identified aspects of the college environment that correspond with micro, meso, exo, and macrosystems. Microsystems include students' classes, jobs, friendship groups, and roommates. The mesosystem accounts for the interaction between such microsystems. Examples of components of college students' exosystem include federal financial aid policy, institutional policy makers, parents' workplace/job security, and faculty curriculum committees. (The DLE model has a separate policy context as a macrolevel influence.) Finally, the macrosystem is comprised of more abstract forces such as cultural expectations, historical trends and events, and social forces in general. While Renn (2000, 2003, 2004) focused on the influence of these different levels of systems on multiracial identity, she noted that future research should also examine the campus climate for multiracial college students.

Social Identity Theory, Development, and Outcomes

Higher education research is beginning to connect social identity theory and development to educational outcomes, including some that are considered multicultural competencies as well as achievement (Boyd et al. 2003; Pizzolato et al. 2008; Sellers et al. 1998) and retention (Chavous 2000). Although few in number, recent studies examined feminist activism (social agency; Yoder et al. 2011), socially responsible leadership (Dugan and Komives 2010), as well as identifying discrimination (Cameron 2004); these can be regarded under the umbrella of multicultural competencies. In one study, sociocultural conversations with peers, faculty mentoring, and community service were positively linked to leadership efficacy as an intermediate outcome for socially responsible leadership (Dugan and Komives 2010). Identity salience as part of identity development may potentially be related to developing socially responsible leadership, however, such a relationship remains to be tested. Similarly, research has also found racial centrality, another dimension of racial identity salience, to be predictive of perceptions of group-based discrimination and disadvantage because it increases one's likelihood of responding as a member of the identity group (Cameron 2004). With regard to a gendered activist identity, a small study of midwestern college women found that self-labeling as feminist enhanced feminist action (Yoder et al. 2001). Although complexities exist around identity and labeling, this study also raises questions about mobilizing nonfeminist identified people of all genders to work toward gender equity issues. Increasing salience of social identities, whether targeted or privileged, seems to be an important part of the process of supporting students in their social identity development and in developing a critical consciousness of oppression, which may then lead to equity-minded action and coalition building between privileged and oppressed groups and their members (Zúñiga et al. 2005).

As for identity and achievement in college, research is reexamining the relationship between social identity development and academic achievement, and theoretical support for a relationship with college student retention. The centrality of students' racial identity has been linked to higher academic performance in college (Sellers et al. 1998). Conversely, having a low racial centrality has been associated with lower perceptions of fit between African Americans and their college environment (Chavous 2000). Moreover, ethnic identity and epistemological development together are as indicative of college GPA as the traditional measures of high school GPA and SAT scores (Pizzolato et al. 2008). Boyd et al. (2003) also link identity processing style to academic performance. These studies suggest that racial and ethnic identity and development may potentially be related to retention via academic performance and social fit. In that vein, Rodgers and Summers (2008) propose a reconceptualization of Bean and Eaton's (2000) model for retention that extends its applicability to African American students at predominantly White institutions (PWIs). Rodgers and Summer's (2008) model accounts for ethnic and bicultural identity development in analysis. Research to date has begun to connect college achievement and retention with aspects of primarily racial and ethnic identity, and

much remains to be examined with regard to additional social identities and intersectionality in relation to achievement.

Actors within the institution also bring their own multiple social group identities to the learning environment (Marchesani and Adams 1992), which the broader society has defined, ascribed meaning, and given status, including race/ethnicity, socioeconomic class, gender, sexual orientation, and dis/ability, among others (Johnson 2005; Omi and Winant 1994; Tatum 2000). For example, student experiences in the classroom context and cocurricular context are shaped by dynamics of who they are in relation to what they learn and how they interact with institutional actors (Marchesani and Adams 1992). Within an institution, interactions among diverse people with various social group identities may easily replicate the normative power relations in society, which privilege certain groups and oppress others (e.g., Adams et al. 2000; Johnson 2005; Tatum 2000), thus creating a hostile climate for diversity. Institutions are also positioned to counter and undo institutional oppression and interpersonal bias. In essence, what the DLE model provides is an opportunity to understand the various contexts in which diverse students learn, and how these varying contexts are linked to students' multiple social identities in the campus climate for diversity.

The Curricular Context

The classroom experience in the DLE model draws on Jackson's (1988) initial model as cited in Marchesani and Adams (1992) to understand that a diverse learning environment should involve a diverse curriculum content that is associated with the multiple social identities of students. More important to this experience are the interactions between the students and instructors based on their own social group identities. In addition, the extent to which faculty use inclusive pedagogies, are self-reflective, and take note of their students' identities are critical areas for student success within the classroom. Thus, diverse learning environments are characterized by the dynamic interplay between faculty and student identity, content, and pedagogy, all of which are facilitated by processes such as intentional socialization, validation, and inclusion that creates the psychological sense of integration or sense of belonging.

Instructor's Identity: Influences in the Classroom

Cohen and Brawer (1972) put it best when they wrote a piece on instructor identity: "The teacher is both a person and a practitioner" (p. 1). Reflection on identity is key: the better one understands oneself, the more one's performance can benefit the students he or she teaches. Reybold (2003) conducted a study on the experience of becoming faculty, focusing on how graduate students come to adopt their instructor or faculty identity. He identified five dominant pathways that doctoral students and young faculty exhibited: anointed, pilgrim, visionary, philosopher, and drifter.

The anointed prioritize research productivity over teaching proficiency, the pilgrim sees the doctoral program as a training camp for becoming a faculty and researcher, the visionary sees their teaching and research goals as a way of achieving social change, and the philosophers pursue faculty positions to fulfill their quest for intellectual growth and enlightenment (Reybold 2003). In taking into consideration instructors' initial period of professional identity formation, a new dimension of understanding instructors' perspectives is born and provides insight into why they engage in certain pedagogical practices. It is important to further understand how these professional roles intersect with multiple social identities among faculty.

Focusing on how identity directly influences classroom practices, one study on the impact of gender and race on faculty teaching experiences reported that 82% of female faculty participants had experiences of being challenged about their position (i.e., students mistook them for graduate students or secretaries). At the same time, their efforts in achieving classroom success were dismissed by their colleagues, and they endured double-standards in etiquette and dress (Kardia and Wright 2004). These women reported investing time in pedagogical practices to meet these challenges and establish credibility in the classroom. This included being a "warm authoritarian" by staying tough and bringing in humor, using dress and demeanor strategically, enforcing a preferred form of address, clarifying academic and behavioral expectations, being selective about making personal disclosures in the classroom, having high standards for students, emphasizing credentials and qualifications on the first day of class, and posting and keeping regular office hours (Kardia and Wright 2004).

The literature on faculty of color is substantial (Turner et al. 2008), and Stanley (2006) summarized it best as focused on four broad and "interlocking themes" related to this review including: the degree to which faculty of color feel comfortable in the institution; documented experiences of discrimination; challenges related to teaching, and tenure and promotion—in other words, several dimensions of the campus climate. Based on 27 faculty narratives, using autoethnography, the study illustrated how salient race and gender identity becomes for faculty of color in the areas identified. Additional faculty narratives are beginning to appear in print that document instructors' reflection on own identities made salient in different institutional contexts, challenges related to the climate of the institution, as well as moments of empowerment among young faculty interested in social justice aims (Murakami-Ramalho et al. 2010; Nuñez and Murakami-Ramalho 2011; Tuitt et al. 2009). These studies explore the intersections of identity, including multiracial/ethnic faculty. Another study focused on instructors with disabilities and how their self-understanding influenced their pedagogical knowledge and practice (Gabel 2001). One participant of the study described how he used his own childhood experience of feeling lost, struggling to learn, and having behavioral problems to connect with a student who was exhibiting similar behavior. Another participant shares in that practice, where she reveals she's become a more reflective and sensitive teacher since being diagnosed with leukemia. The author proposes that instructors reflect deeply on disability and pedagogy and ask themselves who they want their students to become and how they can help them succeed to achieve their goals (Gabel 2001).

Bromley (1989) also writes on the importance of relating an instructor's identity to the classroom and encourages critical educators to explicitly introduce their identities and personal backgrounds into the classroom as a way of creating explanatory, motivational, and integrating power. He argues that in order to engage in critical pedagogy, instructors must link their identity to the topics discussed in class, such as systemic societal factors that influence our daily lives (Bromley 1989). Rendón (2009) indicates that instructors engage in multiple roles that inform positionality: as teacher/learners, they are experts that remain open to learning; as artists, they foster creativity and insight; as activist/social agents, they are concerned with social justice work; as healer/liberators, they help heal the "wounds of students' past invalidation and self-limiting beliefs" (p. 138), and as humanitarians, they view their teaching in a broader context as a service to humanity. This conceptualization was introduced to empower instructors to reform their pedagogy, make their daily work more relevant to their own identity, and address larger social justice aims. Clearly, more work is needed to extend the link between instructor identity, pedagogy, interactions with multiple student identities, and outcomes.

Pedagogy/Teaching Methods

There is a vast literature on pedagogy and various teaching methods, consequently we limit this review to the scholarship that particularly addresses teaching in diverse classrooms. Tuitt (2003) describes *inclusive pedagogy* as an emerging body of scholarship that "advocates teaching practices that embrace the whole student in the learning process" and provides "insight into how college educators can create classrooms in which diversity is valued as a central component of the process" (p. 243). Inclusive pedagogy seeks to transform higher education as well as engage in a broader vision of social transformation. This genre includes "critical pedagogy" that has origins in the work of Paulo Freire (1971) that influenced subsequent developments advanced by the writing of critical pedagogy scholars Giroux, McClaren, hooks, and Darder (cited in Tuitt 2003). This pedagogy focuses on the development of a critical consciousness among learners—not as objects but as subjects and knowers of the world. Freire's (1970, 1983) classic identification and critique of "banking education" as a description of the traditional way of delivering knowledge to disempowered learners has had a strong impact on rethinking practice throughout education. Feminist pedagogy in higher education, beginning in the 1960s, is an example of critical pedagogy in practice because of its focus on consciousness raising, value placed on the experience and voice of the learner, and social transformation aims (Weiler 1991). Both reflect a parallel development of changes in pedagogy (with global impact) inspired by larger sociohistorical change that shaped dynamics in diverse classrooms.

Tuitt (2003) acknowledged feminist scholarship as important to the development of inclusive pedagogy in higher education, as well as other models focused on multicultural education and race-centered pedagogies that have implications for higher education. The scholarship on inclusive pedagogy models also includes those described as "engaging pedagogy" (Hooks 1984) that connects students with

content and their own life experiences; “equity pedagogy” (Banks and McGee 1997), which involves students in a process of knowledge construction and helps “students to become reflective and active citizens of a public, democratic society” (cited in Tuitt 2003, p. 246); and “culturally relevant” pedagogy (Ladson-Billings 1995). Ladson-Billings (1995), describes culturally relevant pedagogy as a series of teaching behaviors that are meant to bridge the classroom with her/his students’ cultural backgrounds. She argues that a culturally relevant teacher must be willing to meet three criteria: “an ability to develop students academically, a willingness to nurture and support cultural competence, and the development of a sociopolitical or critical consciousness” (p. 483). According to Rendón (1994), instructors can also provide a validating experience for students in their classrooms by following a few guidelines, including demonstrating a genuine concern for teaching students, being personable and approachable toward students, treating all students equally, structuring learning experiences that allows students to feel confident in their learning capacities, working with students who need extra help on a one-on-one basis, and providing helpful and meaningful feedback to students.

Rendón (2009) also reviewed a brief history of inclusive pedagogies, ways of knowing, and intelligences (multiple and spiritual) and introduced a new model called *sentipensante* (sensing/ thinking) pedagogy reflecting cognitive and affective integration of instructors’ reflective practice—an approach based on “wholeness, harmony, social justice and liberation” (p. 132). This model can also come under the umbrella of inclusive pedagogy, as it ties in many forms of teaching practices with the development of instructor and student identity. However, Tuitt (2003) stated that there are few studies about the consequences of inclusive pedagogies in diverse classrooms in higher education. He relied on a few studies of Black students in teaching/learning environments (Baker 1998; Steele 1999; Zimmerman 1991 as cited in Tuitt 2003) and a review of inclusive pedagogy scholarship to identify teaching practices or the characteristics of inclusive pedagogy. These principles include: (1) positive student-faculty interaction to create a welcoming environment for learning, (2) sharing power which makes students and faculty equally responsible for constructing knowledge, (3) a dialogical process of professor-student interaction to “create respectful, challenging, and collaborative learning environments” (p. 248), characterized by trust and risk-taking, (4) the activation of student voices, “to hear each other is an act of recognition”—“no student remains invisible in the classroom” (Hooks 1984, cited in Tuitt 2003, p. 249), and (5) use of personal narratives to personalize subject matter, and make connections between classroom and life experience learning. The framework developed by Tuitt (2003) provides a new way of linking studies on forms of teaching methods in higher education with the transformational goals of inclusive pedagogy scholarship. We identified a new set of instructor-identity-based narratives (reviewed in the previous section) that can be linked with an array of practices focused on students with multiple social identities. For example, Danowitz and Tuitt (2011) use autoethnographic methods to illustrate how they work toward curriculum change and how inclusive pedagogy principles work in practice in a higher education program. Determining what works best in diverse higher education classrooms is clearly a focus of future research and practice.

Course Content: Making Curriculum Inclusive

Minnich (1990) states why it is so important to focus on change in the curriculum in higher education:

As long as we do not engage in critique and correction of the curriculum, the framework of meaning behind particular questions of what to teach to whom will continue to prove inhospitable to all those who have been excluded from knowledge and knowledge-making and also from effective participation in understanding and exercising power on a basic cultural level. (p. 11–12)

An accumulation of studies have also provided a strong rationale for making the curriculum more inclusive. In a single-institution study, researchers found that when students are exposed to diversity in the curriculum, they are more likely to develop critical perspectives on how their institution fosters a positive climate for diversity (Mayhew et al. 2006). The study further suggests that the instructors' design of curricula that integrates different racial and ethnic perspectives leads to a more welcoming environment for diverse students (Mayhew et al. 2006). As stated in the section on the organization dimension of the climate, diversifying the content of courses in the curriculum has been extensively studied: students who report taking courses with diversity content (either required or electively) demonstrate significant change in the reduction of prejudice toward racial groups (Engberg 2004; Denson 2009) and LGBT peers (Engberg et al. 2007). Further, the aggregate level of student participation in a diverse curriculum on a campus is also associated with reduction of prejudice among individuals (Denson and Chang 2009). Consistent evidence has also been affirmed through meta-analytic studies linking diversity coursework and students' cognitive development (Bowman 2010) and civic behaviors and dispositions (Bowman 2011). The cognitive benefits associated with diversity coursework are more influential for particular groups; while it may create comfort for diverse groups, cognitive gains were more evident for White students and students from low- and middle-income families (Bowman 2009). This same study also showed that taking one diversity course (vs. none) is associated with greater cognitive gains than additional courses, suggesting initial encounters with diverse perspectives have a significant effect in altering students' thinking. Denson (2009) and Bowman (2010, 2011) both concluded that while diversity in the curriculum is important, content-knowledge interventions are more effective when contact with diverse racial groups is also incorporated. This suggests that diversifying course content and using inclusive pedagogy that increases intergroup contact makes for optimal conditions in diverse learning environments and the achievement of desirable outcomes.

The Cocurricular Context

Much of what students learn in college also occurs outside of the classroom, in campus-facilitated programs and activities made possible by cocurricular programming. The cocurricular aspect of the collegiate environment is equally important in

advancing the education of students, affecting student development, and creating a positive climate on campus. For this reason, we incorporate a component of the framework that models the dynamic dimensions of the cocurricular context. It is also based on the Jackson (1988)/Marchesani and Adams (1992) model of the curricular context to parallel dynamics in the cocurricular environment. Similar to the components within a classroom setting, the cocurricular aspect of a college campus mirrors the interaction of staff identities with student identities, programming for design of content, and practices centered on student development.

Staff Identity

Acknowledging the influence that staff has on the cocurricular life of a student in college (Bresciani 2006; Kuh et al. 2005), it is critical to have a diverse staff who possess the multicultural competencies to work with diverse students. One study found that student affairs moves more rapidly in the training and diversification of staff than academic affairs (Richardson and Skinner 1990). How a student perceives college personnel is likely to shape comfort levels and engagement in activities that facilitate competencies for a multicultural society, habits of mind for lifelong learning, achievement, and retention. From a theoretical standpoint, staff has the capacity to become vital institutional agents in a student's navigation of college and ultimate success. Institutional agents are described as individuals who have the capacity and commitment to directly or indirectly transmit institutional knowledge and resources to students (Stanton-Salazar 2004, 2010; Stanton-Salazar and Dornbusch 1995).

One of the few empirical studies focusing on staff was conducted at a large, public, predominantly White university in the Midwest and found that an institution's ability to achieve a positive climate for diversity is contingent upon (among other things) the personal characteristics of the staff member including race, gender, education level, and age (Mayhew et al. 2006). Although studies centering the experiences of staff members are scant, the finding that perceptions vary as a function of race and gender mirrors previous findings on students and faculty (Griffin 2008; Hurtado et al. 1998b; Nora and Cabrera 1996). Staff members at often times have direct and frequent contact with students. This is why their influence has the potential to leave a lasting impression of the institution. Diverse staff identities are important as potential influences on students' perceptions of the compositional diversity of the institution at the least, and at most can be vital to the success of students when they take on the role of institutional agents (Stanton-Salazar 2004, 2010).

Practice

A number of national entities outline institutional practices that help facilitate student success. One of the most widely known frameworks is AACU's "High-Impact Educational Practices" (American Association of Colleges and Universities 2008). While extensive study is still needed on the impact of these practices on diverse

groups, they concluded that these practices were most important for underrepresented groups but also identified that these groups were significantly less likely to have access to high impact practices. While many practices are primarily academic-based, several address the cocurricular side of successful practices meant to complement student academic work. To illustrate one example, in learning communities, it is important to engage in “common intellectual experiences” (AAC&U 2008). The very nature of learning communities reinforces the importance of out-of-classroom learning. Experiential learning is also stressed within the DLE model. In a national study of living learning communities, Inkelas et al. (2007) found that participants in such practices found it easier to socially and academically transition into college and also demonstrated higher levels of critical thinking and analytical abilities. In addition, service or community-based learning as well as internships highlight that learning outside of the classroom is essential in order to prepare students to be citizens in a diverse society (AAC&U 2008). Furthermore, participation in these kinds of programs reinforces the interconnectedness of service-learning, social justice, multicultural competence, and civic engagement (Einfeld and Collins 2008). Embedded in practice is the notion of the development of the whole student, and concern for the health and welfare of students as citizens of a community of learners. Finally, Bresciani (2006) presented an illustrative compilation of good practices and key questions in assessing program effectiveness.

Compelling evidence from a range of studies shows the impact of cocurricular diversity activities on reduction of prejudice (Denson 2009), cognitive development (Bowman 2010), and civic engagement (Bowman 2011), and pluralistic orientation skills among different racial groups (Engberg and Hurtado 2011). As stated earlier, all forms of intentional educational practice that increase interaction across different groups enhance learning outcomes. It is important to note that in all of these studies, cocurricular diversity initiatives show a unique effect even after controlling for informal interaction across groups. Diversity practices can be broad-based or targeted. Hurtado et al. (2008) identify a typology of campus-facilitated diversity initiatives, based on ten public university campuses. These practices range from institutional-wide strategic initiatives, organized community outreach initiatives, cocurricular initiatives or events, “safe space” initiatives (identity and awareness programs for target groups), integrative learning initiatives such as intergroup dialogue, and service learning that span academic and student affairs. Intergroup dialogue, in particular, is used in both curricular and cocurricular contexts, has a specific pedagogy of engagement and a developing body of scholarship (Zúñiga et al. 2007). Thus, there are distinct practices that have been studied in relation to desired outcomes.

Programming

In considering the cocurricular aspect of campus life, programming is the most visible and identifiable within an institution—everything from student activities to first-year orientation and diversity events falls under this category. Most student af-

fairs programming has a clear educational purpose and activities intended to result in desired outcomes, and it is analogous to course content in the curricular context. At present there are more studies on specific types of practices but little research on the effects of intentional programming efforts. Still the positive effects of cocurricular activities identified in the literature suggest that broad base discussions should occur regarding coordination of programming within and across campus units to achieve desired outcomes. This direct influence on student learning and development confirms that student affairs practitioners can be purposeful in creating learning opportunities for their students with proven results. Each one of these components (staff identity, practice, and programming) come together to form coherent cocurricular learning experiences. With regard to the climate for diversity, it is crucial that diversity and equity programming not only focus on supporting students from targeted social identity groups, but also incorporate ally development (Edwards 2006) for students with privileged social identities as well. In this way, programming can be inclusive of all students and challenge unequal social power based on group identities through collaboration and shared responsibility.

Processes

Processes occur at the intersection of student and educator's identities, and intentional practices (content, pedagogy, practice, and programming), that advance both diversity and learning to achieve essential outcomes. These processes that occur are socialization or resocialization, validation, and building a sense of community through encouraging students' sense of belonging. There are also other processes that occur but these are conceptualized as most salient in diverse learning environments, although they are also likely to work in less diverse settings.

Socialization or Resocialization

One of the key processes that occurs during college is socialization. A classic definition of college impact asserts that colleges socialize students in preparation for work/life in the larger society:

As socializing institutions, colleges and universities have the task of influencing students so that they leave campus with improved or different knowledge, skills, attitudes, and values. Designated socializing agents (primarily the faculty) act on behalf of the organization to train, develop, modify, or in some way "act upon" the individuals (students) who enter it, in more or less formal ways. (Feldman and Newcomb 1969, pp. 227–228)

While there is much evidence about the impact of college, and growing research on the conditional effects on certain groups of diverse students (Pascarella and Terenzini 2005), we still know much less about the actual processes that occur in the mutual exchange between diverse students and faculty, diverse staff and students, and diverse peers and students that result in a variety of outcomes. Lacy (1978) con-

cluded that although the direct effect of the college environment on student values (liberalism, cognitive complexity, thinking introversion, autonomy, theoretical orientation, social conscience, and cultural sophistication) was small, when examined through the mediation of peer and faculty interaction, the influence of the college environment remains great. This conclusion was mirrored nearly 30 years later in the conclusions of Pascarella and Terenzini's comprehensive synthesis of college impact research (2005). Focus is now needed on socialization processes that are compatible with diverse students' experiences. For the mechanisms of socialization are also institutional agents (Stanton-Salazar 2004, 2010) that can help students from historically underrepresented groups make the most of opportunities in college. Most of the studies that use the socialization process as a frame have been focused on graduate students in preparation for a particular career. Antony (2002) provides a synthesis of both career choice and research on how higher education institutions work to socialize graduate students' in their professional fields. He concludes that although most research and frameworks offered by scholars make a case for congruence and assimilation to graduate culture, it is problematic to continue theorizing about graduate school socialization in this way because it ignores the fact that individuals, whose unique identities are not similar to graduate school culture, may find it difficult assimilating to the culture. It is appropriate to acknowledge and study institutional and cultural socialization processes to interrogate the dominant norms, messages, rules, roles, and models of ways of being (Harro 2000) to understand exclusion and inclusion. In their model of *Multicultural Teaching and Learning* in the classroom, Marchesani and Adams (1992) posit that both instructors and students experience a dynamic between monocultural and multicultural socialization in classrooms that can result in culture shock or alienation for students.

Harro (2000) stated that we are socialized in our respective social identities throughout our lifetime "by powerful forces in our worlds to play the roles prescribed by an inequitable social system" (p. 15). He goes on to detail using recognition of the "cycle of socialization" to examine students' own social identity development and develop critical thinking about how their own views are shaped by institutions. In this case, he shows how educators can also be resocializing agents for students from multiple social identities groups, teaching students to recognize prejudice, understand the sources of conflict, and interrupt unthinking social behaviors. If higher education's goal is to improve both individual social mobility and advance social equity, educators have to adopt the stance of a resocializing agent. Studies about these resocialization processes can be tied to practices and inclusive pedagogy that raise consciousness, challenge existing worldviews, and provide students with the tools to become "empowered, informed, and responsible" learners (AAC&U 2002).

Creating Community: Sense of Belonging

At the intersection of curricular and cocurricular spheres is also the process of creating community, which also may spur in-group and out-group dynamics (Tajfel

1974, 1981; Tajfel and Turner 1979). Drawn from the work on social cohesion in sociology (Bollen and Hoyle 1990), sense of belonging is a measure of an individual's perceived social cohesion in a variety of environments (from college campuses to nations). Much like the psychological sense of integration in Tinto's model (1993), many researchers have studied sense of belonging among diverse groups of students as distinct from student involvements or memberships. That is, studies have shown that diverse students' involvements differ in the degree to which they generate a sense of belonging (Hurtado and Carter 1997; Locks et al. 2008; Shammass 2009b), so not all types of engagement in college will produce the same desired sense of community, and subsequently have different effects on transition to college, retention, and degree attainment (Hausman et al. 2007; Nuñez 2009a). Many of the studies have already been mentioned in this review. We summarize here the main developments in this work. First, we note that sense of belonging is now the focus of studies on a variety of identity groups (Hausman et al. 2007; Hurtado and Carter 1997; Hurtado and Ponjuan 2005; Langhout et al. 2009; Locks et al. 2008; Museus and Maramba 2011; Nuñez 2009b; Shammass 2009a). As a result, it is now part of a new integration model that is focused on diverse college students (Nora 2003; Nora et al. 2005). Second, the studies have made a definitive connection with the campus climate—positive climates are associated with a higher sense of belonging, and mediating factors such as diverse friendships and positive interactions across difference improve sense of belonging in a negative climate (Locks et al. 2008; Nuñez 2009b; Ostrove and Long 2007; Shammass 2009b). New research is now extending into subenvironments such as majors; perceptions of a hostile climate are associated with a lower sense of belonging among both students of color and White students in STEM fields in the first year of college (Hurtado et al. 2007).

Scholars have also begun to examine sense of belonging across other dimensions of social identity. Langhout et al. (2009) explored how experiences with classism in a private, elite institution influenced school belonging and several psychosocial outcomes. The measures of school belonging in this study consist of school affect and school normative scales (Allen and Meyer 1990), and course adjustment and roommate adjustment (Solberg et al. 1993). Although they subsume these transition measures under the concept of sense of belonging, these are typically separate concepts in higher education research; nevertheless, their study examines important perceptions illustrative of students' sense of belonging in college as it pertains to socioeconomic class and classism. Langhout et al. (2009) found that classism was negatively associated with school belonging and psychosocial outcomes. Classism, as experiences of feeling discriminated against in relation to class background, was also positively associated with intentions to leave school without graduating. Interestingly, race and gender were not associated with classism in this study, however, this could be a result of the low representation of racially/ethnically diverse students in the sample. Ostrove and Long (2007) also examined students' sense of belonging based on socioeconomic class at a predominantly White, small, liberal-arts college in the Midwest as it relates to social and academic adjustment to college. They found that two measures of socioeconomic class, factors measuring subjective and objective indicators, were directly related to students' sense of belonging, and in-

directly predictive of students' social and academic adjustment through sense of belonging. These findings related to social class and sense of belonging mirror the research on students of color: students with less privilege and power in the societal and institutional context are more likely to experience a lower sense of belonging, which can influence students' decisions to persist in their postsecondary goals (Hausman et al. 2007).

Given these developments, most researchers are likely to regard sense of belonging as a proxy for a process of inclusion (or exclusion), and sometimes perhaps a proxy for the climate. Sense of belonging should continue to be studied as a mediating factor in retention, and as a separate construct from multiple dimensions of the climate. Changes in sense of belonging can be indicators of climate change, or more importantly, as features of campus subenvironments or "safe spaces" that foster community regardless of the overall campus climate for diversity.

Validation

Validation occurs through a student's interactions across the curricular and cocurricular contexts of an institution. The concept of validation originates from Rendón's (1994) work with first-generation college students. Rendón (1994) defined validation as an enabling, supportive process that encourages students to acknowledge their self-worth and potential for success in higher education. Rendón's theory of validation emerged through a qualitative assessment on the persistence of nontraditional students in higher education. Rendón (1994) found that those with validating educational experiences were more likely to persist despite academic and social challenges. Furthermore, students who were not involved or integrated into the social aspects of the college experience still showed signs of success. These findings are contrary to Astin's (1984, 1993) theory of involvement and Tinto's (1993) theory of student departure. Rendón's (1994) theory of validation therefore proposes that students are most likely to succeed in college if they are empowered and view themselves as capable learners through the academic and interpersonal validation that they receive from in-class and out-of-class agents. Validation occurs through active fostering of academic and interpersonal development between agents in the college environment and students. These agents can exist in a classroom, such as faculty, or outside of the classroom, such as counselors, administrators, and staff (Rendón 1994; Rendón and Jalomo 1995).

Beyond individual experiences, Rendón's (1994) theory of validation also emphasizes the importance of institutional transformation in regards to serving a diverse student population. Agents within colleges and universities should initiate contact with students to promote their development across academic and interpersonal contexts because nontraditional students are often not as familiar with navigating postsecondary environments. As such, Rendón (1994) encourages colleges and universities to invest in developing the validating capabilities of staff and faculty. Some scholars have developed conceptual models to assess validation in edu-

cational contexts for different student populations that emphasize an institution's influence on student success outcomes (Holmes et al. 2001). Holmes et al.'s (2001) proposed a model for the success of African American students in predominantly White institutions, which included all of the key agents within the institution (e.g., faculty, staff, administrators) along with institutional policies and academic programs. Actual measures of validation and its influence on student outcomes would further our understanding of the key elements related to student success of historically underrepresented students.

Consequently, several scholars have begun to develop measures of validation and empirically examine its relationship to student success (Barnett 2006; Hurtado et al. 2011a). Within a single community college sample, Barnett (2006) found that four distinct measures of student perceptions of faculty validation had a positive relationship with students' intentions to persist and their sense of integration on campus. The study provides empirical evidence on the influence of validation and student success, yet it focuses on validation by faculty in one community college environment. Subsequent research showed that validation was related to integration and intent to persist, but that this varies by student identity group (older vs. younger students, race/ethnicity, gender; Barnett 2011). Although faculty are important agents in the academic experience of all students, it is also important to consider the influence that staff have on the students' educational experiences and outcomes. Hurtado et al. (2011a) tested measures that tap into a student's sense of academic validation within the classroom and interpersonal validation through interactions with both faculty and staff. While both validation measures were reliable and valid for students of color and white students across several broad access institutions (2- and 4-year institutions), there were distinct differences across groups. Students of color reported lower levels on both measures as compared to their white counterparts. Also, feeling empowered by faculty only has a strong relationship with white students' sense of academic validation, whereas for students of color, this sense of empowerment is directly associated with general interpersonal forms of validation. Future research will examine how these forms of validation influence other student experiences and outcomes.

Macrolevel Contexts

The DLE model highlights that larger social forces and external communities shape and constrain dynamics within each institutional context. However, the model (Fig. 2.1) also reflects that institutions themselves are in dynamic interaction with these communities and multiple contexts. Rather than an extensive review of the literature, the following section makes connections that can be the focus of scholarship, providing examples of studies that link across contexts, in each macrocontext to illustrate institutional dynamics.

Community Context and External Commitments

Community contexts and external commitments are an aspect of what Bronfenbrenner (1976, 1977) calls the exosystem (e.g., connections with external communities and associative networks) where institutions of higher education are engaged in mutual relations based on exchange and influence. We consider this context to reflect the linkages that institutions and individuals have with local communities, disciplinary networks, alumni networks, parents, religious affiliations, etc. We focus on key aspects that are related to the campus climates for diversity and consequent individual and institutional outcomes. These communities include the local community surrounding the institutions and their subcommunities. Community colleges and broad access institutions, in particular, often have a commitment to serving their local regions due to their funding base and mission (Cohen and Brawer 2008). This commitment and focus on the local context shapes how institutions build relationships with their surrounding communities, be it in creating a college-going culture among historically underrepresented populations and college pathways, through service learning and civic engagement, or even as contexts for identity development. Students' home communities or other communities they may be connected to "outside" of college, (i.e., religious, cultural, social, political, etc.), are also part of the web of relationships. For many students in broad access institutions and community colleges, school is also "outside" of their primary community. This section focuses on how local regional communities and institutions shape one another and influence outcomes, again reflecting that institutions do not exist in a vacuum, but are located within communities in which they have multiple relationships.

Higher education has long recognized its relationship with the communities in which institutions are located, which stems back to an initial purpose of publicly funded land-grant institutions—a democratizing moment in its history (Cohen 1998). Many types of institutions specifically aim to serve their local community, as is the case for community colleges and many regionally focused teaching universities. Institutions also engage students in the local communities through continuing education, volunteer initiatives, administrative and academic outreach, campus cultural events, and service-learning (Bringle and Hatcher 2002). The Carnegie Classification defines community engagement as describing "the collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" (Carnegie Foundation for the Advancement of Teaching 1998, p. 3). Important here is the local context, as its relation to the climate for diversity has been undertheorized. Carnegie (Carnegie Foundation for the Advancement of Teaching n.d.) also notes that community engagement tends to manifest through outreach and partnerships. They distinguish the two by specifying:

Outreach focuses on the application and provision of institutional resources for community use with benefits to both campus and community. Partnerships focuses [sic] on collaborative interactions with community and related scholarship for the mutually beneficial exchange, exploration, and application of knowledge, information, and resources (research, capacity building, economic development, etc.). (p. 5)

Developing trusting relationships between higher education institutions and the community are key including the sustainability of partnerships, clarity in contributing roles in the partnership, regular feedback and evaluation from community partners, and a shared desire regarding outcomes (Bringle and Hatcher 2002).

A primary area of community engagement is through college outreach and recruitment, in which creating a college-going culture (McClafferty et al. 2002) in local communities and schools is often a goal. This includes working with K-12 schools as well as with other community entities such as nonprofit organizations, faith centers, or other institutions that serve the needs of the local community. With regard to building partnerships with local schools, building a college culture in schools requires academic momentum, an understanding of how college plans develop, a clear mission statement, comprehensive services, and coordinated and systemic college support (Corwin and Tierney 2007). Corwin and Tierney (2007) acknowledge many actors in creating college cultures within K-12 education, including developing partnerships with institutions of higher education. McClafferty et al. (2002) add to these “high academic standards with formal and informal communication networks that promote and support college expectations; a school staff that is collectively committed to students’ college goals; and resources devoted to counseling and advising college bound students,” (p. 6) and advocate for an organizational change in K-12 school culture. Perna’s (2006a; Perna and Thomas 2006) model for college access has dimensions that capture communities and families as part of the multilayered influences in students’ college enrollment decisions. Perna (2006a) and Perna and Thomas (2006) argue that the college enrollment choices students make can only be understood if students and their families, K-12 schools, higher education institutions, and the broader societal, economic, and policy contexts are taken into account, and have found that each layer does indeed play an important role. One college choice study incorporating the local community context finds that for Latina high school students and their parents, sources and types of information change over time—and sources include those considered experts within family networks, faith-based communities, and K-12 counselors (Alvarez 2010). This study lends support for developing partnerships between higher education and local communities, formally and informally, in order to facilitate college-going among the underrepresented students. Another study examined a collaborative partnership between a business school, a private company, and high school students to increase access to college and business leadership for underrepresented students (Siegel 2008). This study was unique in the diversity of constituents involved in preparing students for college. While creating a college-going culture in schools and in other parts of local communities is an important aspect of community engagement, higher education institutions must understand that it does not end at college entrance.

For highly mobile students at broad access institutions, there is no boundary between the community and any particular college context. Developing research on college student enrollment mobility maps multiple patterns and pathways students traverse toward degree attainment. The Association of American Colleges and Universities (AAC&U 2002) highlights that student attendance at multiple institutions

of higher education is a challenge to be met in the twenty-first century. Research examines enrollment patterns at and between 2- and 4-year institutions, and has identified that students' demographic, financial, and academic characteristics play a key role in how students engage in enrollment patterns (Adelman 2006; Peter and Cataldi 2005). In particular, higher income and more academically prepared students are more likely to enroll continuously, with lower income and less academically prepared students being more likely to enroll discontinuously at single or multiple institutions (Goldrick-Rab 2006). Although a variety of patterns have been documented, Goldrick-Rab (2006) offers a model of college pathways that can be applied to student mobility regardless of institution type, examining continuity of enrollment and number of institutions attended. Four macro patterns include: traditional enrollment, which is continuous enrollment at a single institution; interrupted enrollment, specified as discontinuous enrollment at a single institution; fluid movement, which is continuous enrollment at two or more institutions; and interrupted movement, or discontinuous enrollment and attending two or more institutions (Goldrick-Rab 2006). As the credit hour allows students to transfer credits between institutions (McCormick 2003), multiple institution attendance seems to be becoming the norm with approximately 60% of all college students taking courses at more than one institution (Adelman 2006; Peter and Cataldi 2005). This may be particularly true for students who reside in perhaps metropolitan or other areas where a number of institutions share a common geographic locale. In general, it appears student mobility is a new social norm that influences dynamics with institutions. Institutions must collaborate with one another in facilitating fluid movement among institutions where this may already be occurring informally, and work with the local community to ensure pathways toward degree completion.

Complex college pathways have implications for retention and degree attainment (Adelman 2006; DesJardins et al. 2002, 2006; McCormick 2003); given the policy context to increase degree attainment, institutional engagement in local communities to support continuity multiple pathways for lower income and less academically prepared students may be needed now more than ever. In a study of 21 community colleges using National Student Clearinghouse data, researchers found that attending a community college farther from home increases the likelihood of earning a degree, transferring, and still being enrolled, compared to dropping out (Porchea et al. 2010); conversely then, students who live and attend community college in their home communities seem to be more likely to drop or stop out. Research also examines how groups of students may be more inclined to enroll in college that is close to their home, such as community college students (Adelman 2005). In addition, many enrollment patterns, particularly those that include stopping out, may delay or hinder degree attainment at 4-year institutions as well (Adelman 2006; DesJardins et al. 2002, 2006; McCormick 2003). This can be understood as a call to institutions to continue to develop partnerships in local communities and with each other to support the educational progress of students in their local regions, whether through developing college-going cultures, supporting continual progress toward a degree, or via service learning and civic engagement.

In considering the development of cultural competencies for a diverse society, service learning and civic engagement are promising practices that institutions can foster through community engagement. In particular, when diversity-related content is infused into these types of first-year courses, students' commitment to social justice and awareness is more likely to increase (Engberg and Mayhew 2007). Mayhew and Engberg (2011) examined the relationship between service learning and charitable and social justice responsibility; they found that it has positive effects on charitable responsibility but not on social justice responsibility. Given the importance scholars place on institutions moving from a charity-minded approach to a partnership approach (Marullo and Edwards 2000), it may be feasible that the method of implementation of service learning may lead to increases in charitable responsibility without social justice goals that could bring about improvements in the community.

Challenges exist for institutions in successfully enacting effective forms of community engagement, although research has begun to identify ways of improving community engagement. In research institutions in particular, faculty reward structures do not foster engaging in service or the application of scholarship to the local communities, as scholars are often tied to national and international arenas; if these institutional types are to sustain this type of community engagement, there is a need to reconfigure higher education (Antonio 2002; Boyer 1990). This relates to the purpose of higher education, and if it is to educate citizens for a democracy, working out of an ecology of education may facilitate higher education reform and improve civic participation (Longo 2007). This relationship with the community must be reciprocal, in which institutions incorporate the community culture and resources to truly become centers for democratic education (Longo 2007). Enhancing a community's human capital, social capital, physical infrastructure, economic infrastructure, institutional infrastructure, and political strength (Cox 2000) can bring about change in the community, and thus also help higher education become sites of democratic education. In such endeavors, institutions must not engage with communities as an act of charity, but in partnership with the community (Marullo and Edwards 2000; Ward and Wolf-Wendel 2000). That is, universities and communities are better off when both are doing well, and that requires privileged universities to work with local communities (Marullo and Edwards 2000). Of utmost importance in partnering with the local community is for institutions to be flexible and incremental in their work (Wiewel and Lieber 1998). In a study that focused on community perspectives of a partnership, the community personnel view their campus partners very positively, note challenges and benefits to working with service learning students, and that increased coordination and communication with university contacts would improve the partnership (Ward and Vernon 1999). These challenges and guidelines may help campuses improve their approach and effectiveness as they partner with their local communities through service learning and other forms of civic engagement.

The local community may also influence the campus climate for diversity. To illustrate, case study analyses showed that students, staff, faculty, and administrators consistently mentioned the local context in voicing their perceptions of the insti-

tutional climate for diversity (Key 1999; Hurtado et al. 1998a). For some students and faculty, a perceptibly conservative local community brought them to see their institution as a safe haven from hostile encounters they had around issues of sexual orientation, gender, and race. On the other hand, many students of color considered leaving because of the lack of diversity in the local community and hostile experiences they had while engaging in the community. In addition, mixed race identity development literature has begun to conceptualize the local community context as a moderately proximal context that may shape students' racial identity development (Renn 2004). Although research that examines the influence of the local community on the campus climate for diversity and student outcomes currently appears to be minimal, emerging work suggests that this is a prime area for study and practice.

In sum, institutions of higher education share common space with their local communities, and can effectively engage in those communities through partnerships and outreach, which may take the form of research and service. In light of the literature on creating a college-going culture, enrollment mobility, service learning, and civic engagement, these practices must be taken into account in considering their influence on the campus climate for diversity and the development of student outcomes.

External Commitments

In addition to institution's relationships with their local community, at the individual level, students maintain links with external communities as well. Bean and Metzner (1985) presented a conceptual model of nontraditional student attrition based on a thorough review of the literature. Some of the external commitment variables included in their model are finances, hours of employment, outside encouragement, family responsibilities, and an opportunity to transfer. Interestingly many of these external factors that affected community college students over 25 years ago are still prevalent today. A growing number of students entering college even as first time, full-time freshman are working more hours per week than ever before (Pryor et al. 2007), indicating additional external commitments during college.

Research shows that the ability to finance college plays an important role in student persistence, especially for students from lower-income backgrounds (Paulsen and St. John 2002; Titus 2006b). For some students, such as Latina/os, this lack of financial aid may result in many of them working additional hours, attending college part-time, or deferring enrollment to mitigate college costs (Rooney 2002). In addition, Latina/o college students are more likely to work, be employed for longer hours, and drop out of school due to financial reasons than non-Latina/os (Sedlacek et al. 2003). First-generation students share a similar experience—they tend to work more hours as compared to the rest of their peers and tend to take longer to complete their degrees (Terenzini et al. 1996), but overall, the students who tend to work longer hours while in school are more likely to have lower grade point averages, be they female, Black, and/or Latina/o (Lyons and Hunt 2003).

Additional external factors that impact student success can include family obligations; students whose cultural background emphasizes family interdependence may be expected to fulfill obligations to the family that conflict with college responsibilities (Tseng 2004). On the other hand, students with collectivistic orientations can experience a positive influence from their families, as they are motivated to achieve in order to meet the demands and expectations of family members (Markus and Kitayama 1991). For Latina/o and first-generation students, aside from experiencing stress related to financial constraints, familial obligations are likely to impact their college experience (Inman and Mayers 1999; Rodriguez et al. 2000). Family responsibilities that interfere with academic work create additional stress on underrepresented students' transition to college, particularly in demanding STEM fields (Hurtado et al. 2007).

In sum, institutional relationships with local community, the climate of the community, and external push and pull factors, appear to have differing effects on the campus climate in diverse learning environments, as well as intermediate and final educational outcomes. The relationship between the local community and the climate for diversity appears ripe for empirical research, whereas the relationship between external commitments, the climate, and outcomes may benefit from continued research on nuances in these relationships.

The Policy Context

Educational policies at local, state, and federal levels create an important external context that shapes campuses and student outcomes. Institutions operate within the policies and practices of the states in which they are situated, as well as those at the federal level, which impacts the actions that institutions can take to support student success (Tinto and Pusser 2006). Although the federal government delegates the responsibility of regulating and financing postsecondary education to states (Cohen 1998; Gladieux et al. 2005), key federal policies have impacted access to higher education largely through financial aid, whereas state policies have addressed issues of affirmative action, in-state tuition for undocumented students, merit aid, and the structure of public higher education systems including their transfer functions. Unique aspects of higher education, such as academic freedom and professional autonomy, typically limit the direct influence of policies on the educational environments of colleges and universities (Hearn and Holdsworth 2002). However, the drive for greater postsecondary institutional accountability has become more prominent after the passage of No Child Left Behind (Tinto and Pusser 2006), and student learning outcomes are at the center of most accountability efforts (Hearn and Holdsworth 2002). Scholars have examined how the broader policy context exerts pressure on institutions to act in specific ways, which in turn impact student experiences in college and postsecondary educational outcomes. The study of policy development as it relates to student success is relatively new (Tinto and Pusser 2006), however, in the current context of increased accountability, it is im-

portant to understand how federal and state policies directly and indirectly influence postsecondary outcomes. It is important to note that Perna (2006a) has introduced a multicontextual model (later refined by Perna and Thomas 2006) that captures many of the similar domains of macro–micro influences illustrated in the DLE model, with a particular focus on the external and contextual forces that influence students' college choices at the individual level and shape student outcomes. This has guided subsequent multilevel studies on student choice and access in relation to college finances (Perna 2006b, 2007), on socioeconomic differences in the parental involvement of their child's college-going behaviors (Rowan-Kenyon et al. 2008), and on the role of counselors in student college choice and access across achievement and socioeconomic levels (2008). Titus (2006a) incorporated individual levels (including perceptions of the campus racial climate) and institutional and state-level policy to illustrate a multicontextual approach to degree attainment. Dynamic panel modeling of changing state policy in relation to the production of bachelor's degrees (Titus 2009) is also a new development in research that links the institutional- and policy-level contexts. Both conceptual and research approaches have important implications for further investigating equity in outcomes for diverse students based on larger policy contexts.

Many presumably race-neutral merit-oriented policies produce inequitable outcomes across racialized groups (Orfield et al. 2007). At play is the concept of institutional racism in which discrimination based on race, ethnicity, gender, or other social identities is redirected to nonracial or nongendered entities such as merit (Anderson 1993; Feagin and Feagin 1978; Glazer 1975). Both federal and state policies play an important role in the campus climate for diversity in a post-civil rights "colorblind" era, and in the development of equitable outcomes for retention and achievement in particular. Select federal and state policies are addressed in this section together under the closely related topics of access and affirmative action, access and financial aid, and baccalaureate attainment; studies that have examined their effects with regard to racial or ethnic diversity and equity are also discussed.

College Access and Affirmative Action Policy

American ideals include the notion of equal opportunity, and many presume that this is a reality for all people in the post-civil rights era. Affirmative action was developed to ensure that historically excluded groups be included in applicant pools and be represented in colleges and employment sectors. However, over the last several decades, state affirmative action policies have been dismantled (Harper et al. 2009) and fewer publicly funded 4-year institutions are considering race as a factor in the admissions process (Grodsky and Kalogrides 2008). Supreme Court cases have played a prominent role in this process, specifically that *Grutter v. Bollinger* and *Gratz v. Bollinger* reaffirmed an earlier ruling in *Bakke* that prohibited the use of racial quotas in university admissions, however, acknowledged that diversity is a compelling interest for the purposes of higher education. The ruling in *Grutter* concluded that diversity was a compelling interest and that a narrow tailoring of the

use of race was permissible, provided there are no quotas, that diversity is needed to prepare future leaders, and that a critical mass was necessary in order to facilitate these educational goals. However, in *Gratz*, the court ruled that the use of a points system in undergraduate admissions was too narrowly tailored and was therefore unconstitutional (Morfin et al. 2006). The use of diversity as a compelling interest rests on “the diversity rationale” that highlights the educational benefits of diversity for all students, and has a long intellectual history that can be traced back to Aristotle (Moses and Chang 2006). Although the diversity rationale informed affirmative action policy, when used alone, it fails to address social justice and equity issues (Moses and Chang 2006). Nevertheless, these cases set precedents about the role of race in college access via institutional admissions processes.

As affirmative action has given way to colorblind “race neutral” preferences in policy, historically excluded groups have seen concerning drops in college admission and enrollment. For example, after the passing of *Hopwood* in 1996 in Texas (another anti-affirmative action case) substantial decreases in admission and enrollment of Black and Latino students were seen (Long and Tienda 2008, 2010). Similarly, after the passing of the anti-affirmative action Proposition 209 in 1998 in California, enrollments of African Americans and Latina/os declined substantially at the University of California (Morfin et al. 2006; Contreras 2005; Santos et al. 2010). Anti-affirmative action legislation, and subsequent inaction by institutions along permissible race-conscious avenues, decreases the racial diversity in the composition of the student body, a crucial dimensions of the campus climate for diversity.

Affirmative action based on race-conscious versus colorblind categories also differentially affects achievement and retention in college. In an interesting simulation study of three forms of affirmative action, Massey and Mooney (2007) found that Black and Latina/o students enrolled under race-conscious affirmative action were more likely to persist at the end of their junior year despite lower grades, compared to legacy admits who earned low grades and were more likely to drop out, as well as athlete admits who were also more likely to drop out. This study shows that of these three forms of affirmative action, the race-conscious action for minority students has the most positive effects in terms of student retention. The legacy affirmative action is presumably “colorblind,” however, these students who are given preferential treatment tend to be White and is, therefore, a racially biased institutional policy that remains despite a currently “race-neutral” policy environment. This study calls into question the accepted norm of other forms of affirmative action and provides support for race-conscious affirmative action over “colorblind” policies.

Even so, there is room for institutions to address inequity in access and enrollment across racial groups through a comprehensive review in admissions given the Supreme Court’s ruling in *Grutter*; however, the institutional tendency is to prefer seemingly race-neutral policies to avoid the politicized discourse around race and admissions (Morfin et al. 2006). Studies are beginning to show “race-neutral” policy has race-specific impact (Contreras 2005; Santos et al. 2010). Santos et al. (2010) show how policy changes in Regents’ decisions and subsequent state proposition 209 led to the adoption of race-neutral University of California admissions policies, with the race-neutral policy resulting in systemic increases in disparate

impact for the admission of Black and Latino groups relative to other groups. If campuses continue to privilege colorblind policies regardless of their states' law on affirmative action, admitting a top percentage of students in each high school, rather than a top percentage of high school graduates state-wide, may be the best nonracial merit-based policy that will result in an increase in Black and Latina/o admission rates (Chapa and Horn in Orfield 2007). Such adjustments take into account the segregated nature of K-12 education, differential school resources, and that students of color tend to be concentrated in lower-performing schools in low-income areas (St. John et al. 2007). Due to the structural inequalities in K-12 education produced by property rights and the intersection with race (Ladson-Billings and Tate 1995), students of color who are often low-income students have less opportunity to accumulate the "race-neutral" forms of merit used in college admissions such as SAT scores, AP classes, and extracurricular activities. However, a Texas-based simulation study found that the nonracial weights, such as income levels, when applied to many underrepresented students in the admission process did not sufficiently restore Black and Latina/o admission rates (Long and Tienda 2008). In addition, the mean applicant test scores rose at less selective Texas institutions, signaling that students were applying more broadly to secure admission at less selective institutions (Long and Tienda 2010). Institutions in states with affirmative action bans may look into adopting critically constructed nonracial admission policies that will still improve the compositional diversity of their campuses, even if they may not restore them to previous levels during affirmative action. It is disheartening to see that despite an opportunity for institutions to affirm diversity through admission processes via *Grutter* (Morfin et al. 2006), few have done so in favor of maintaining seemingly race-neutral admissions policies that effectively produce inequitable outcomes in terms of admissions, enrollment, and retention of diverse students.

College Access and Financial Aid Policy

Federal policies that have and continue to impact college access via financial aid include the Servicemen's Readjustment Act of 1944, the Higher Education Act of 1965, the Middle Income Assistance Act (MIAA), and the Health Care and Education Reconciliation Act of 2010. The first two federal policies had a direct impact on increased enrollments in higher education and also provided financial assistance for students to pursue a postsecondary education (Cohen 1998). In contrast, the MIAA shifted federal aid from grants to loans, effectively limiting college access for low-income students, often students of color (O'Connor 2002). The 2010 federal policy to increase baccalaureate attainment may have a similar effect given that it increases Pell Grant funding, funding to MSIs, and competitive state grants (DOE 2010). It appears to respond to the trend in higher education of increased tuition, which directly impacts the affordability of a postsecondary education for all students (Heller 2001). Even with financial assistance provided by federal grants, the burden for paying for college has been disproportionately felt by students who have been underrepresented in higher education, specifically lower-income, African American,

and Latina/o students (Heller 2001). In addition, state merit aid tends to be awarded disproportionately to White upper-income students despite its colorblind approach (Dynarski 2004; St. John et al. 2007). These inequitable effects of federal and state aid policy raise concern if we are to pursue equity in retention and achievement outcomes, a necessity for an effective and just diverse society.

In a review of financial aid policy, St. John et al. (2007) found that although race-conscious aid-programs have been under attack, much can be done to move toward more equitable funding across racial groups for higher education. They find that in response to decreasing public funding for higher education and the resulting inequitable enrollment across racial groups, state race-conscious aid programs have more than doubled; however, given the policy climate around affirmative action, they recommend modifying other existing programs. Such an approach is needed, as need-based aid helps equalize educational opportunity but is not adequate alone. In their analysis of state merit aid programs, the authors find they can be redesigned to be more equitable, and that targeted aid programs can be modified to improve diverse enrollments. In their simulation study, when merit aid programs account for high school attended (and their relative quality), merit aid is awarded relatively proportionate to the population racial groups. This is similar to Chapa and Horn's (2007) suggestion that the top students from each high school be granted admission, rather than the top students overall. Both approaches to admissions and merit aid do not disproportionately punish students of color if they had to attend a lower-performing high school in a low-income area. This approach, however, remains successful through the perpetuation of neighborhood segregation across racial and economic lines (Orfield and Lee 2005). Together, these approaches may help produce more equity in college access via financial aid.

Closely related is the topic of in-state tuition for undocumented students; another aspect of the current policy context. At the time of this writing, states are moving forward legislation resembling the Dream Act, as the federal congress has also recently begun to reintroduce that legislation. The federal act would provide a path to legal citizenship for undocumented students under certain stipulations. Many state-initiated policies in the interim aim to provide in-state tuition to undocumented students. State policies of this nature increase college enrollment rates of undocumented students, and the effect is stronger for students in metropolitan areas (Flores 2010). Such policies are aimed at providing equitable funding for students whose home is the United States, and are aimed at educating an important sector of the country's economic base. However, securing in-state tuition is not the only challenge undocumented students face; without legal status, these students are unable to take advantage of all the opportunities within college (Pérez 2009), and are hindered from engaging in society as professionals to their full potential (Gonzalez 2007). Currently, these state policies extend access to undocumented students, however, without the federal policy that creates a path toward legal citizenship through college, their professional contributions to society will remain bleak. The research highlights important aspects of the current policy context that impact college access, experiences, and society; policies at the state and federal levels will continue to address admissions, financial aid, and other concerns that will influence diverse

students in college, as well as the utility of the outcomes developed for the twenty-first century.

Baccalaureate Attainment and Financial Aid Policy

The influence of state-level policies on higher education is more direct than federal policies, particularly in the financing of colleges and universities (Tinto and Pusser 2006), which raises concern given that state appropriations for higher education influence the completion of a bachelor's degree (Titus 2006a, 2009). Despite the economic and social benefits of higher education to society, state and local investment in higher education has steadily decreased (Titus 2009). Research is emerging on the impact of such state policies on degree attainment, and shows that there has been no change in the number of baccalaureate degrees awarded since the 1990s (Titus 2009). For example, the percentage of total state grants as a percentage of total appropriations of state tax funds for the operational expenses of higher education is positively associated with degree completion (Titus 2006a). In addition, increases in state need-based grant dollars per individual in the traditional college-age increased postsecondary degree completions (Titus 2009). These state-level financial policies inevitably influence an institution's context, which is also related to college completion.

The shift of federal financial aid policy from grant-based aid toward loan-based aid over the last several decades also influences student outcomes, particularly baccalaureate degree attainment. Increased reliance on higher education loans in the first year has been shown to have a significant negative effect on degree completion for low-income students (Kim 2007). However, dependence on loans in the first year significantly decreased the degree attainment of African American college students in the same study (Kim 2007). As student populations are more diverse than ever along multiple social identities, it is important to critically examine how policy efforts impact the success of these groups given the differential degree attainments of African American, Latina/o (Titus 2006b), and lower income students (Kim 2007; Titus 2006b). With regard to undocumented Latina/o students, Flores and Horn (2009) found that those who are recipients of in-state resident tuition (IRST) persist at comparable rates to their documented Latina/o peers, lending support for the IRST policies in terms of effectiveness toward retention, and in hopes that federal policy will follow with the Dream Act. Even with such state policies, inequitable outcomes across historically and currently marginalized groups persist (degree attainment in particular), and may be due in part to colorblind policies. These studies on finance and financial aid highlight the impact comprehensive policies have on baccalaureate attainment.

The push to raise the level of degree attainments in the United States by the current Obama administration is an additional component of the current policy context for higher education (DOE 2010). As mentioned earlier, a distinctive feature of the new federal policy is the notion that the United States has fallen behind other countries both in terms of degree attainments and the skills acquired in college that are

necessary for the workplace, which are outcomes included in the DLE conceptual model. The focus on community colleges in helping to achieve this national goal is important (Dowd 2003), as nearly half of all first-time college students begin in 2-year institutions, with the proportions being greater for students over age 24; these trends have not changed over several decades (Adelman 2005). These students' completion of community college programs, as well as transfer to 4-year institutions may help bolster degree attainment. To increase baccalaureate attainment, policy and public funding must also focus on increasing retention in broad access 4-year institutions, which tend to have low retention and graduation rates; many potential graduates enter higher education through these institutions but leave for various reasons, or attend multiple institutions (Adelman 2005, 2006; Goldrick-Rab 2006; McCormick 2003). Many of these broad access institutions enroll high proportions of students of color, and through the Higher Education Act, have been designated as MSIs. The federal accountability pressures on these institutions in particular must be met with strong funding and support at the state level if they are to produce more graduates from the base of students already enrolled in higher education.

Scholars have proposed models that take into account the policy context's influence on student success in terms of degree completion (Perna and Thomas 2006; Tinto and Pusser 2006). These recent considerations, however, have not fully accounted for the societal factors that impact success (Hearn 2006). Furthermore, these models have not detailed the success for students who commute or attend part-time. Despite earnest efforts to expand postsecondary access and promote student success for marginalized groups in society, federal and state policies have not always benefited racial/ethnic groups equitably in terms of access and funding, such as in the case of African Americans at Historically Black Colleges and Universities (HBCU) and PWI's (Harper et al. 2009). Examining how federal and state policies impact student success will continue to be a crucial element in understanding differential student outcomes for students from diverse social backgrounds.

Sociohistorical Context

To date, only a handful of studies have linked changes in the larger sociohistorical context with changes in the institution. A few indicate that sociohistorical changes result in differences in how faculty perform their role (Lawrence and Blackburn 1985; Milem et al. 2000), address the impact of college generally (Weidman 1989), and that there are changing institutional effects on student outcomes such as political attitudes in specific time periods (Alwin et al. 1991; Dey 1997). The classic study of Bennington women documented the long-term effect of obtaining an education in college during a specific era on political attitudes and behaviors over the life span. Alwin et al. (1991) defined such period effects as the intersection of biological and historical time, with the socializing effects of a unique women's college having a lasting impact. A study of three age cohorts (born 1922–1970) of

female African American first-generation college graduates showed that constraints and opportunities for college access and educational attainment varied based on generation, or sociohistorical context (O'Connor 2002). Furthermore, their strategies for negotiating predominantly White educational environments varied as well during different sociohistorical eras (O'Connor 2002). A primarily historical piece examines shifts in the racial composition of HBCU during different sociohistorical periods, highlighting how forced desegregation contradicted their institutional mission (Allen et al. 2007). Also contextualized in the post-civil rights era, one essay explores the possible effectiveness of leaders with privileged social identities, specifically White male Chief Diversity Officers, in dismantling systemic racism, depending on the institutional and sociohistorical context (Owen 2009). It suggests that White males may be effective in antiracist leadership in institutions that are primarily monoculturally White, however, who are moving toward multiculturalism, and must work with peers of color and weigh their experiential knowledge of related issues. Appropriate strategies for improving the climate for diversity and dismantling systemic oppression likely vary based on institution and sociohistorical period. With several national data bases and many years of higher education research, it is now possible to gain a retrospective understanding of how each era impacted diverse students, learning environments, and postsecondary outcomes.

The current sociohistorical context for diversity and improvement of equity outcomes is influenced by a broadened concept of diversity due to legal precedents, an accountability movement that has extended from K-12 to higher education, economic decline, and privatization of public higher education and with this, an increase in viewing students as consumers. At the same time, we witnessed an unprecedented historical event, the election of the first African-American President, although some progressive scholars critique his post racial identity politics and policies (e.g., Bonilla-Silva 2010). Despite critiques of President Obama's politics around race and racism, he is also the only President in recent decades committed to improving the US position internationally in terms of degree attainments. This has been occurring at the same time that underrepresented populations are projected to increase in number (U.S. Census Bureau, Population Division 2008) and xenophobia and racist nativism are more pronounced (Pérez Huber and López 2008). No doubt there are significant period effects on students and their outcomes, and it appears that the economic downturn that began in 2008 will have a long-term effect on both institutions and students. There is a sense that we are in an era of opportunity for significant change in higher education, which must be creatively approached given severe constraint due to economic instability.

The collision of fiscal constraint with increased accountability, the desire for equitable outcomes, and the sorely needed competencies for a multicultural world pose a unique challenge to higher education in the current milieu. The DLE model focus on the habits of mind for lifelong learning, skills for a diverse and global world or multicultural competencies, and student achievement and retention coincide with a global recession and radical reductions in the budgets of postsecondary institutions. The tension between promoting student outcomes while simultaneously divesting in education spending has impacted the efforts of foundations, as-

sociations, and the federal government to improve the function of higher education (Johnson et al. 2010). Clearly, the sociohistorical context influences policies made within eras, and informs approaches to education and educational research; these are certain to change with the passage of time and affect both institutions and consequently the students we educate. This review has also illustrated that sociohistorical contexts have affected the development of diversity scholarship and educational equity. However, while scholarship on diverse learning environments is affected by these larger sociohistorical trends (e.g., the development of the educational benefits of diversity scholarship), scholars, in turn, attempt to affect institutional and social transformation through their scholarship.

Conclusion: Advancing the Study of Diverse Learning Environments

The DLE Model is a multidimensional, campus climate model that is multicontextual and inclusive of the multiple social identities of students, faculty, and staff. Simply put, it is a model of climate, practices, and outcomes. The key assumption is that monitoring dynamics surrounding an institution as well as between actors within the institution is as important as monitoring students' behaviors and perceptions. From a sociological perspective, the model links the microlevel with the macrolevel contexts (Alexander et al. 1987) and is supported by Bronfenbrenner's theories of human development that incorporate multiple contexts, as well as organizational theory that has long posited that educational institutions are open to external influences. In the review of literature, we identified other scholars who have adopted a multicontextual approach to research in identity development (Renn 2003, 2004) and with regard to access, student progress, and policy (Perna 2006a; Perna and Thomas 2006; Titus 2006a, 2009). This micro and macro link is further developed in the conceptualization of the DLE model to guide research on the climate and outcomes of higher education.

To advance the study of diverse campuses, we first summarize modifications from previous climate models and shifts in underlying assumptions, as well as offer observations on advances in scholarship that emerged from the review. We reflect on the convergence of scholarship and multiple methods that enliven the model from different perspectives. Second, we acknowledge omissions from this review that are important areas of scholarship on diversity, and encourage others to make use of the model as a springboard for theory development and the design of studies. Finally, we offer a vision of diverse learning environments that will advance individual and social transformation.

The focus on student outcomes in the model not only resonates with contemporary literature and policy initiatives but also ties these outcomes to the institution's role in promoting social transformation that advances social equity, as well as democratic and economic aims (Bowen 1977). Earlier climate syntheses (Harper and Hurtado 2007; Hurtado et al. 1998, 1999) focused on understanding the problem

of underrepresentation that results in stereotyping, microaggressions, and generally hostile climates, which have negative consequences for individuals. Many of the climate studies today still identify these problems but have also now solidified a link between the climate and many outcomes (Hurtado et al. 2008), particularly student adjustment in the early years of college and retention/degree attainment (through direct and indirect relationships). We can conclude from these studies that a hostile climate has real consequences for students, and arguably for women and faculty of color and probably staff when representation is low (Stanley 2006; Thompson and Sekaquaptewa 2002; Turner et al. 2008), however, the research for the latter group is still very limited.

In addition, studies of student degree attainment have now included multiple institutions and policy contexts at the same time that individual-level perceptions of the climate are accounted for in a model (Titus 2006b). This is clearly illustrative of the interrelated elements in the DLE model, which can be used to frame more studies that link across contexts to understand effects of the climate on actors while operating under organizational and policy constraints that impact student outcomes. This work was not possible several years ago, until federal data sets included survey items on the climate (albeit limited to a single item), and researchers began to use multilevel statistical modeling to account for students nested within institutions, and institutions nested in policy contexts.

At the same time that researchers confirm the negative effects of a hostile climate, other researchers have found the positive effects of the behavioral dimension of the climate—when students have the opportunity for interaction and learning about diversity. Significant developments in the field regarding the growth and sophistication of research on student outcomes have occurred, with distinct measures of the climate and diversity initiatives, which provide evidence of the benefits of diversity for all students. The development of meta-analytic studies is evidence of the maturity of scholarship in the field (Bowman 2010, 2011; Engberg 2004; Denson 2009). This scholarship continues to be motivated by aims to improve the conditions for student success as much as it is by attempts to inform legal and political challenges to diversity in higher education.

In addition to macrolevel influences in previous climate models, including sociohistorical periods and policy contexts, we included the exosystem in the model that involves community contexts and associative relations that also involve individual and institutional external commitments. This gives further definition to external environments, relations, and commitments evident in both student models of integration/reenrollment (Nora 2003; 2005) and institutional models of assessment and transformation (Rankin and Reason 2008; Williams et al. 2005), as well as multicontextual models of access (Perna 2006a; Perna and Thomas 2006). At minimum, we hope this addition to the model brings civic engagement and diversity initiatives into convergence (Hurtado 2007), as studies show the consistent effects of interactions with diverse peers or intentional campus diversity initiatives on civic learning (Bowman 2011). The external context is also intended to reflect the realities of broad access institutions that attend to regional or urban concerns and students. For example, most of the research on highly mobile students who are less

attuned to institutional boundaries or “membership” remains at a descriptive level and needs to advance toward explanation—we know more about who these students are than about why they leave, return, or continue their studies elsewhere. How much of this student mobility is due to the climate, institutional policy, resources, or broader macrolevel influences, instead of student characteristics is not known. Some of these patterns have become a new norm at broad access institutions, and is an example of how students influence institutions in achieving retention goals.

The multidimensional nature of the climate for diversity was enhanced by the addition of an organizational dimension (Milem et al. 2005), although much more research on identifying processes and organizational structures that continue to reproduce inequalities within institutions is necessary to round out the picture. The development of organizational and institutional models for assessment is evidence that there is key interest in developing strategic activity for institutional transformation (Milem et al. 2005; Rankin and Reason 2008; Smith 1995; Williams et al. 2005). Institutions are also developing their own organizational models to frame equity and institutional transformation initiatives (see, for example, the University of Minnesota (2011), www.academic.umn.edu/equity). Although informed by organizational theory, the DLE model is not meant to replace these institutionally focused models. Each dimension of the climate can have its own model of processes, actors, and measures. The DLE model shows, instead, the interaction of systems and reciprocal influences that constrain or lead to an institution’s role in producing social transformation or the reproduction of inequality.

Borrowing from social justice teaching/learning models, the assumption is that diversity is embedded in the daily practice of actors within the institution, and students’ social identities are at the center of inclusive and exclusive practices. The dynamic lens of person, process, context, and time is at play as actors create or recreate the climate in curricular and cocurricular spheres. This part of the model integrated many areas of scholarship, including: faculty studies, with the new scholarship on faculty self-reflection and autoethnography; feminist and inclusive pedagogies designed for diverse classrooms; student development theory and studies of identity in context, feminist, and inclusive pedagogies; critical race theory, including studies of whiteness; socialization or college impact, and social cohesion (integration models or individual measures of psychological integration). The conceptual model may help to identify other converging areas of scholarship that influence practice and/or lead to greater awareness about actors’ roles as institutional agents who determine student success (Stanton-Salazar 2004, 2010) and/or the reproduction of inequality. In this way, the DLE model serves as a blueprint for locating areas of scholarship and connections, even those that originate from distinct methodologies but that share a paradigm of transformation. It is a model that can be used to guide qualitative, quantitative, multiple methods, and mixed-methods research.

At the same time, however, we acknowledge that we were unable to adequately cover research on particular areas that naturally inform or can be informed by the DLE model. Particularly relevant areas include the developing scholarship on MSIs, cultural and social capital theory studies in higher education, institutional leadership and transformation, critical race theory, and developing scholarship on

practices with transformative capacities such as intergroup relations. We gave only passing reference to many of these areas, and more thorough reviews are needed on the variety of social identity groups that constitute diversity in our institutions. We expect that each of these areas merits a thorough review of studies as they relate to advancing the study of diverse learning environments.

In terms of assessment of the climate or its use in research, Rankin and Reason (2005) state that much of the empirical work tends to conceptualize the climate as an “immeasurable construct comprised of multiple items” (p. 264). Instead, we found that research establishes that the climate is not only pervasive, but also palpable, documentable, and measurable at the organizational and individual level with real consequences for individuals. Studies can undermine conceptualization and measurement advances when there is a lack of clarity about what the climate is and whether it can be assessed. The campus climate has often been operationalized as a latent construct, and researchers have used multiple-item measures (except for a few studies that have been limited to single-item measures) to assess it in a variety of environments. Hurtado et al. (2008a) reviewed over 90 instruments used with students, faculty, and staff that address some aspect of the climate for diversity on campus, and found comprehensive climate instruments are designed to use multiple indicators to capture constructs such as perceptions of discrimination/bias, multiple forms of harassment, and positive and negative intergroup interactions. Further, multi-institutional studies have used organizational-level measures that include compositional diversity, aggregate measures of student behaviors, and aspects of the organizational dimension that affect the climate for diversity across institutions. The use of an equity index or scorecard has also linked the climate with outcomes to guide assessment for achieving social equity (Bensimon 2004; Harris and Bensimon 2007). The DLE model served as the basis for the design of a new instrument that was launched nationally in 2010 to allow for institutional comparisons with peer institutions, and longitudinal assessment when combined with Cooperative Institutional Research Program (CIRP) surveys administered by the Higher Education Research Institute, UCLA. Many of the previous studies were based on single institutions, making it difficult to understand whether an institution had a relatively good climate or hostile one. Further study of the climate dimensions will provide greater clarity with regard to the assessment of campus climates, measurement and validation of constructs, and extend the empirical link to outcomes at the individual, institutional, and societal levels.

The essence of a diverse learning environment is one that integrates inclusive practices, and is also intentional about purpose and knowledgeable about whom they educate (student identities). Actors are cognizant of their role in enhancing individual mobility that, at the same time, minimizes social inequality. Intentional education with the aim of fostering civic equality reflects a belief that our students represent our best investment for a more just, equitable, economically viable, and stable democratic society. We contend that institutions of higher education are in a position to transform power dynamics between groups that will not jeopardize an institution’s existence, but rather strengthen its effectiveness in serving diverse students and creating a more equitable society. Admittedly, we present an optimistic

view of the transformative promise of higher education but we also concede that scholarship is still needed to also identify how institutions reproduce inequality. The latter has the potential to advance institutional transformation if it moves institutional actors toward reflexivity to alter their role in the reproduction of inequality. What diverse learning environments accomplish will be important in collectively striving to achieve and educating students for an aspirational vision of the society we wish to become.

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Chapter 3

Understanding Academic Work in a Changing Institutional Environment

Faculty Autonomy, Productivity, and Identity in Europe and the United States

Liudvika Leisyte and Jay R. Dee

Introduction

With knowledge serving as an increasingly important asset in societies, its production, diffusion, and commercialization are crucially important to society's well-being. As noted by Clark Kerr in 1963, new knowledge is pivotal for economic growth and social development. Thus, the role of universities in knowledge-based societies has changed from "platitudes and nostalgic glances backward" to looking forward and defining their new position in today's societies (Kerr 1963, vii). Over the past several decades, European and US governments have increasingly prioritized areas of knowledge that have potential to contribute to national economies under the banner of building research excellence, relevance, and innovation. At the same time, facing the reality of budget cuts in tough economic times and increasing societal demands, universities have strengthened the management of knowledge production so as to monitor, evaluate, and enhance knowledge production, and at the same time to account to funders regarding how public monies are spent. The governance of knowledge has thus become a multilevel and multiactor endeavor.

These changes in the governance and management of knowledge production are likely to have significant effects on the core processes of research universities. Changes in the institutional environments of research universities may have profound implications for the work of academics. Faculty may be compelled to adapt to emerging dynamics that alter the context of their work. Specifically, the professional autonomy of faculty members may need to be recast against competing demands for faculty to be engaged in research agendas that are guided more

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extensively by external forces, such as the priorities of government and industry. The relationship between teaching and research may also need to be reconsidered in the context of public policies and university strategies that frequently call upon faculty to engage in more of each. Furthermore, policymakers and university leaders have begun to convey more precise expectations for faculty productivity, and these expectations are often linked with new accountability mechanisms that monitor and evaluate faculty performance, thus subjecting faculty to greater managerial oversight. Finally, the aggregate effects of these environmental changes may alter the very essence of what it means to be a faculty member. Will the identities and values of faculty begin to change, as a result of these significant transformations in the external environments of universities?

In this chapter, we explore how changing institutional environments influence academic work at research universities in Europe and the United States since the 1980s. The focus on Europe and the United States is purposeful. While the governance and management of research in the United States has been market-oriented for many decades, European higher education systems have been more state-driven. Given the isomorphic pressures that research universities face in increasingly competitive institutional environments, we argue that the changes in academic work conditions may be converging in European and US universities, although to various degrees. Furthermore, since the 1980s, higher education systems in Europe and the United States have enacted numerous changes in governance and policy, which potentially could affect academic work conditions and academic work in both continents. In the United States, research commercialization legislation was passed in the 1980s, which incentivized universities to harness technology transfer potential and to promote academic capitalism. In European higher education systems, this period since 1980 has been marked by the rise of new public management ideologies in public policies, starting with Prime Minister Thatcher's reforms in the United Kingdom, which set an example of rationalizing university affairs, and thus influencing working conditions and academic work.

The extent to which these changing environmental conditions permeate academic work and the processes and mechanisms through which they do so are the main foci of this chapter. We expect that academic work, despite its different professional traditions in the United States and Continental Europe (Neave and Rhoades 1987), is challenged and is changing toward a similar direction of reduced academic autonomy, differentiation in faculty roles, and a further quantification of academic outputs. Altogether, we expect that the self-concept of academics may be changing from the notion of faculty as a self-governing community toward a status as knowledge workers who are increasingly governed by academic elites and university managers.

The chapter is structured as follows. First, we begin with an overview of the main trends and contextual developments that characterize the institutional environments for research universities in Europe and the United States. Second, we examine how research universities in Europe and the United States have responded to these environmental changes. These institutions have developed many new strategies and structures that seek to capitalize on emerging opportunities in the external environment, and such strategies and structures have direct effects on the work of academics. Next, we focus on the changing nature of academic work. In particular,

we focus on the impact of changing work conditions on faculty autonomy, the relationship between teaching and research, academic productivity, and the identities of faculty members (i.e., the values and beliefs that faculty hold regarding their work). The chapter closes with a discussion of the main theoretical underpinnings of the research that has been conducted on academic work in the research university context. We offer a critique of the current theoretical approaches and suggest additional frameworks which could help researchers design new studies that address how academic work is changing in the context of turbulent and sometimes unpredictable external environments.

Changing Institutional Environments in Europe

Contextual Developments in European Higher Education

Faculty have encountered changes in their immediate and external institutional environments in Europe, as witnessed by a variety of national and comparative studies over the past two decades. Both demographic and sociopolitical factors have been part and parcel of this change. The massification of higher education in Europe came with an accompanying increase in student enrollments and the creation of new higher education institutions (e.g., in the United Kingdom, Poland, France, and Russia). This was coupled with processes of globalization and internationalization that have strongly shaped the daily conditions of academic work. These developments by no means have been independent of broader sociopolitical forces nationally and internationally in Europe. The fall of the Berlin Wall and the collapse of the Soviet Union fostered an unprecedented cross-border mobility of students and staff in Europe and provided a new space for privatization of higher education to take hold in Continental Europe (e.g., in Poland, Romania, and Bulgaria).

This process was facilitated by the expansion of the European Union and the signing of the Bologna Declaration in 1999, an intergovernmental agreement which has been followed up regularly through Ministerial meetings, as well as institutionalized in the interactions between a variety of actors with new powers at the European level, such as the European University Association, the European Student Union, and the Bologna Follow-Up Group. As a result of these intergovernmental agreements, the complexity of the governance of higher education in Europe has changed, where nation states are now negotiating for funding in the sciences and education at the European level to supplement funds allocated at the national level (Corbett 2005). The role of international organizations, such as the Organization for Economic Cooperation and Development (OECD), in shaping higher education systems in Europe should not be underestimated as well.

These significant historical and geopolitical changes have been coupled with severe financial constraints in university funding, which have been referred to in the literature as the advent of “markets” in higher education sectors. The United Kingdom’s Thatcher reforms serve as an example of how drastic cuts in university

funding have permeated and changed the university system from a collegial model toward a managerial governance model (Leisyte 2007). Markets, or more specifically quasimarkets, in European higher education have been reshaping the governance of research in European universities, however, at different paces and points in time. Specifically, higher education and research governance studies have pointed to changes in formal structures, decision-making processes, and academic work conditions at European universities (Benninghoff and Ramuz 2002; Gornitzka et al. 2007). Research governance has become a complex multilayered and multiactor activity in every country (Braun and Merrien 1999; de Boer et al. 2007a). Higher education policies have also become more multifaceted, often combined with research and economic policies, to allow for broader systemic impacts and synergies. Today one can see a patchwork of state control and quasimarkets coupled with professional and managerial self-governance in higher education systems. Next, we will discuss the role of markets in the governance of research universities, followed by a discussion of the changing role of the state, external stakeholders, and academic communities in the governance of universities.

Market Orientation in European Higher Education

A market orientation in European higher education policies can be seen in the increasing importance of privatization ideas in setting national higher education policy agendas. The prevalence of the idea of the university contributing to the economy of a state has been coupled with the practice of managing public sector institutions with mechanisms borrowed from the private sector to increase efficiency and effectiveness, such as performance-based funding, competitive resource allocation, and increasing performance monitoring (Scott 2009).

The market orientation in higher education has also been associated with the introduction of, or the increase in, tuition fees (to various degrees in various countries) and in the increasing competition for resources. National governments have been increasing the competitive allocation of research funds (e.g., through national research councils), and have begun to use output-based funding (e.g., number of graduates or research productivity) in national higher education funding allocation formulas (Jongbloed et al. 2010). Competition for students, who are fee paying customers, is slowly gaining ground (especially in the United Kingdom and Central and Eastern European countries).

The increasing emphasis on markets has led many European universities to develop prestige maximization strategies, which have led to differentiation in higher education systems as intended or unintended by policy makers and university managers. Differentiation of higher education systems is manifested in the striving of European universities to achieve higher positions in international rankings. Irrespective of which corner or region of Europe, universities have been proclaiming in their missions to be “internationally excellent,” “world-class,” and “leading

research” institutions (Hazelkorn 2007). The wish to be in the top rankings has been proclaimed by university managers as well as policymakers, and is not new and is seen on both sides of the Atlantic (Altbach 2004). However, differentiation, as well as efforts by governments to concentrate resources in the top institutions, is a new trend in Europe. At the national level, policies that support building “centers of excellence,” such as the German Excellence Initiative, the Swedish initiative for creating centers of excellence in research, and Russian policies for creating megalnational universities, are examples of governmental policy initiatives that concentrate research funding at the top performing institutions, so as to compete with countries that have universities in the top rankings of the Shanghai Jiao Tong Academic Ranking of World Universities or the Times QS World University Ranking.

For European universities, striving for legitimacy has been transformed into specific behaviors related to prioritizing their research strengths and maximizing outputs on a variety of research productivity indicators, either via personnel evaluation policies or by refocusing internal research funding priorities. In terms of personnel policies, one example is the practice of “headhunting” for Nobel-prize winners and other “star” faculty, which can be somewhat restricted in European higher education systems that have national or institutional salary ceilings. Further institutional strategies to maximize rankings include copying the behavior of higher-ranked institutions by specializing in certain areas (known as “building on excellence”), adopting strategic management practices, buying expensive state-of-the-art equipment, and adhering to certain indicators of quality, which more often than not, end up being a race for high impact-factor publications and citations. Although these exercises have resulted in only marginal improvements in the rankings of the institutions that are “muddling in the middle,” the drive to compete on a global market remains a strong driver for either national or institutional initiatives for university mergers, or for various branding and profiling exercises (Beerkens et al. 2011).

Given the traditionally state-dominated steering of higher education in Europe, competition induced by national research funding mechanisms and university budget allocation procedures is a rather novel phenomenon in the European higher education scene. The 1980s in Europe have been described as a mix of bureaucratic state steering and self-governance of professional bureaucracies (Paradeise et al. 2009). The top-down steering of universities via national ministries that centrally allocate resources and administer those to universities has been a common template in Continental Europe and still prevails in some of these countries today (Neave and van Vught 1994; Olsen 2009). The logics of competition and efficiency, however, have been increasingly used by governments to steer their higher education systems. As a result, universities now have to compete “on the market” for resources, and they increasingly have to justify their state funding on the basis of performance indicators that are established by governments. This shift to a market orientation in European higher education has resulted in substantial changes in the relationships between governments and universities, particularly in the areas of autonomy and accountability, which are foci in the next section.

Autonomy and Accountability: The Role of the State and the Power of Academic Communities

Since universities in Europe increasingly must seek to obtain funding up to 40% of their budgets from nonstate sources, these institutions have been granted reforms that proclaim to increase university autonomy and enable these institutions to compete more successfully on the open market for a variety of resources. At the same time, more autonomy has also meant increased accountability to quality assurance agencies of the state, which measure university performance on a variety of indicators. The level of performance on such indicators can affect the level of state funding provided to the university.

Recent studies (de Boer et al. 2010; Estermann and Nokkala 2010) have shown that the institutional autonomy of universities varies greatly in Europe. Traditionally, the state controlled higher education systems in Continental Europe have slowly been shifting toward approaches that are known as “state steering at a distance,” where the state assumes the role of evaluator (Neave 1998). Increased demands for accountability and related performance-based funding in higher education have become common features both for Western and Eastern European systems alike (Jongbloed et al. 2010; Leisyte and Dobbins 2011; Lepori 2006). However, in the Anglo-Saxon tradition, where the state has been traditionally less involved in controlling universities, the role of government has changed since the 1980s in the opposite direction compared to Continental Europe, notably toward increasing state intervention. As Brown (2009) notes, in Britain in the 1980s, the national government became far more involved in determining the direction, shape, and health of the higher education system despite the proclamation of its adoption of market-based approaches.

Trends toward accountability reporting of various sorts, accreditation systems for academic programs, reporting requirements for research funders and other sponsors, accountability to the ministry for the number of graduates produced, and research productivity via performance contracts between the ministries and universities have been increasingly commonplace across Europe. Moreover, the example of performance-based funding in the United Kingdom, where the results of national research evaluations are linked to the funding of universities, has set an example for some systems in Eastern Europe (e.g., the Czech Republic) to reward the stronger departments at universities rather than all departments.

The effects of these reform policies have been varied (Kehm and Lanzendorf 2006; Lucas 2006; McNay 1995). Some scholars argue that despite the autonomy given to universities and the fact that the university funding base has increasingly become diversified, the state is still a very powerful actor in steering higher education via quality assurance, accreditation, or performance contracts between ministries and universities. Similarly, quite a few studies have argued that the power of disciplinary communities has diminished as shown in studies of internal university governance (Currie et al. 2003; de Boer et al. 2007b; Leisyte and Kizniene 2006). However, the power of academic elites, although transformed, has been maintained,

according to some scholars, due to the complex consultative structures and networks in which these communities have been embedded (Whitley et al. 2010). The “star” faculty are usually well-embedded in the policy networks and research councils that distribute research funding on a peer review basis; this status allows these academic elites to shape research funding as well as research agendas at the policy level.

The role of peer review remains strong and perhaps has even been strengthened, since universities now focus not only on peer-reviewed publications, but also on peer-reviewed research evaluations of academic departments—the results of which in some systems, such as the United Kingdom or the Czech Republic, transform directly into institutional funding. Peer review is also at the core of the funding allocation schemes of research councils and national science foundations in Europe (van der Most 2009). However, peer review is also perceived as being under pressure by the emergence of international and national quality indicators and benchmarks, such as the European Standards and Guidelines for Quality Assurance. Although the adoption of such standards is voluntary, national quality assurance agencies, as shown in the Norwegian example, may focus on standards coming from outside the academy rather than from inside academic communities. In this scenario, the importance of peer review in the determination of academic quality may be reduced (Langfeldt et al. 2010).

The changing balance between autonomy and accountability of universities has also meant a rising managerial logic and power at European universities. In a way, the state has given autonomy to the universities; however, the need to attract external funding has given grounds for a new managerial class of administrators to emerge as powerful within these institutions. In the following section, we discuss the causes as well as the outcomes of this development, especially with regard to changing academic work conditions at universities.

Strengthening University Management

Some studies have explored how the narrative of New Public Management (NPM) has permeated higher education sectors (de Boer et al. 2007b; Paradeise et al. 2009). NPM in Europe is understood generally as running public sectors more efficiently, where the state delegates its responsibility for running public sectors to the managers of institutions and monitors their performance via a set of indicators. NPM is understood differently in different countries, and related reforms have been instigated at different times and in different sectors in Europe. In the higher education sector, the NPM approach can first be traced to the United Kingdom (Deem et al. 2007).

Some studies have revealed a certain level of convergence toward the NPM model in higher education, where the managers of universities are empowered to make strategic decisions for the university, which will enable the institution to compete more effectively in quasimarkets for students, academic staff, and research funding in European systems. However, studies reveal that despite the visibility of the NPM narrative in national policy documents and research funding mechanisms,

the areas of faculty recruitment and personnel policies have been changing only slowly in the direction of the NPM model (de Boer et al. 2007b). Recruitment and personnel policies have remained somewhat insulated from the effects of NPM, due to the prevalence of standardized salary scales, the status of academics as public servants, and centralized recruiting practices (e.g., in France, Italy, and Greece).

Despite the differences in adopting the narrative of NPM in different European countries, scholars (Amaral et al. 2003; Bleiklie et al. 2011) suggest that some common features include:

1. Introduction of performance indicators and benchmarking.
2. Priority setting by government and institutions.
3. The assessment of targets and outputs.
4. Strengthening the administrative and leadership functions within universities.
5. Adopting a client orientation.
6. New budget allocation schemes where more influence comes from outputs than inputs.
7. Diversification of university funding mechanisms.
8. Stimulation of new actors in university management councils and boards, quality control, and research funding agencies.
9. A value-for-money logic, with an increased emphasis on costs and returns (see also Leisyte 2007, p. 190).

Despite the political priorities and the NPM narrative of European governments, research funding remains scarce. Thus, state policy leads to priority setting for certain fields and for certain types of universities. These funding decisions are now heavily related to university performance outcomes (such as the Research Assessment Exercise (RAE) in the United Kingdom). The decline in direct state funding for higher education has also encouraged universities to apply for research money outside the governmental purse, and to diversify their funding base via contract research with industry.

Promotion of the Third Mission of Universities

European national governments and universities are strategically rethinking their research policies and orienting their research capacities to address the demands of competition among different countries in the context of changing knowledge production processes (i.e., the challenges of “big science”). An important change that is shaping the debate about the modern research university is the recognition of the so-called “third mission” of universities (Etzkowitz et al. 1998; Laredo 2007). This mission has been fostered by both national governments and university administrators via research commercialization policies, especially in those countries where research management has become more centralized in universities (Dill and van Vught 2010). As studies on technology transfer and research commercialization suggest, the logic of commercialization has permeated European universities to a

larger or lesser extent depending on the type of university, the level of technological advancement in the country, and the type of national economic system (Krücken et al. 2007; Leisyte and Horta 2011). The knowledge transfer function has been institutionalized to various extents by universities that develop technology transfer offices, hire Intellectual Property (IP) officers, establish internal procedures regarding IP rights and licensing, and create research science parks. More often than not, these initiatives in European universities have been the result of governmental policies to foster research commercialization, or have been initiated through broader European Union funding schemes, such as the European Structural Funds used by new EU member states (Eastern and Central European countries) to foster the creation of new structures to promote technology transfer at universities (Clancy and Dill 2009; Dill and van Vught 2010; Leisyte 2011; Mora et al. 2010).

The interactions between universities, industrial firms, and governments have been seen as increasingly blurring the traditional boundaries between the different sectors, as noted by some authors (Etzkowitz and Leydesdorff 1997; Nowotny et al. 2001). Some argue, however, that these changes have kept the traditional institutional boundaries intact—where academics are mainly advice giving, while societal actors are primarily advice-taking (Krücken et al. 2009). Other studies have shown that the institutionalization of the third mission in European universities has led to the use of new hiring and promotion criteria for academic staff in certain fields. These criteria may include patenting discoveries or acquiring industrial funding. However, evidence regarding the use of such criteria in the European context is sporadic at best (Horta and Lacey 2011; Wigren-Kristoferson et al. 2011; Leisyte 2011).

Changing Institutional Environments in the United States

Contextual Developments in US Higher Education

Research universities in the United States have undergone a gradual, yet profound, transformation, since the early 1980s. This transformation has been spurred by significant changes in the institutional environments of higher education. As in the European context, the boundary between the university and the external environment in the United States has become much less defined due to government policies and institutional strategies that encourage more extensive interactions with the market (Bok 2003; Geiger 2004; Slaughter and Rhoades 2004).

Research universities are now engaged much more extensively in large-scale scientific enterprises that are supported by a more diverse array of funding sources, including government agencies and industry. University research operations, which have long been intertwined with health care and national defense establishments, are now much more closely linked to the commercial marketplace (Geiger 2006). Government agencies and corporations provide funding to universities with the expectation that breakthroughs in the lab will be transferable into the commercial

marketplace. Technology transfer, in fact, is viewed by many as a legitimate (some would argue, necessary) function of research universities (Jaffe 1989; Tassey 2001).

Furthermore, the relationship between state governments and public research universities has changed significantly in terms of funding, governance, and accountability. Public universities have experienced a relative decline in the state's share of institutional revenues, from around 43% in 1985 to approximately 27% in 2009 (NCES 2010). Some large public research universities receive less than 10% of their revenues from the state. These reductions in the relative share of state funding have triggered changes in the governance relationships between states and universities (McLendon 2003; Morphew and Eckel 2009). Public institutions have generally been provided greater autonomy, however, often in exchange for their compliance with new accountability measures. As actors in complex external markets, research universities have become subject to greater external scrutiny, including government efforts to ensure institutional accountability to students and taxpayers, as well as third-party assessments of university quality as defined by various, ad hoc university rankings (Bastedo and Bowman 2011; Bogue and Saunders 1992).

Environmental pressures exerted by the market, government, and industry have yielded concomitant changes in the structures of research universities. Institutions have developed elaborate technology transfer offices to manage university relations with industry (Geiger 2006). Furthermore, research centers and institutes have grown in number and power on university campuses (Mallon 2006). Many of these centers have federal funding, and some have direct industry involvement in the selection of research foci. Universities have also developed new online or corporate education divisions, which seek to respond to emerging occupational training needs, but also generate significant revenues for the institution (Toma 2007).

In addition to structural changes, the strategies that guide institutional operations have also shifted in response to changes in the external environment (Zemsky et al. 2005). Research universities are now driven by strategies that seek to maximize prestige and revenues (largely under the assumption that the former will generate more of the later). Prestige may be generated through gains in national or international rankings, which are indexed to quality indicators such as the amount of external research funding and selectivity in student admissions (Toutkoushian 2009). Whether this same set of quality indicators is appropriate for all universities is a debatable matter (Morphew 2009). Nevertheless, the potential payoffs from prestige-maximizing strategies are viewed as too substantial for institutions to opt-out of the competition.

These new structures and strategies have also produced changes in how universities are governed. As research universities have become more structurally differentiated, new layers of administration have been added to manage the complexity (Bess 2006; Rhoades 1998). New classifications of university administrators have been hired to promote and manage university-industry partnerships, develop and market online programs, and measure and assess student learning outcomes—to name just a few domains of the growing administrative apparatus (Gumport and Pusser 1995). Moreover, pressures for accountability and efficiency may have emboldened trustees and administrators to involve themselves more extensively in do-

mains that have traditionally been left to the faculty, including academic program development, as well as tenure and promotion policies. The net result, many argue, is a shift in the balance of power within universities from the faculty to administrators and professional managers. In several surveys, faculty have reported that their influence in governance has declined, while the authority of administrators has increased (Cummins and Finkelstein 2009).

In turn, the effects on academic work have been substantial. Since the early 1980s, academic work has become more entrepreneurial and more externally controlled (Slaughter and Leslie 1997). While faculty remain heavily involved in large-scale basic science initiatives, their work responsibilities have shifted to include short-term applied projects that focus on specific social problems or commercial applications. Given significant reliance on external revenues for research, academics may be compelled to reshape their research agendas in ways that accommodate the preferences of funding agencies and industry. Moreover, academic work is now subject to greater managerial oversight, and faculty must adjust their practices to comply with directives from campus administrators, trustees, or state officials. Rhoades (1998), for example, argues that administrative management is transforming faculty teaching and research from autonomous activities to organizationally-regulated work.

Paradoxically, however, greater external involvement in the shaping of academic work could create new opportunities for faculty to effect change in the broader society. Through partnerships with government and industry, faculty can link their work to public purposes, especially in relation to addressing social and economic problems (Tierney 2006). Furthermore, trends toward entrepreneurialism and commercialization of research have reinforced the relevance and value of interdisciplinary and collaborative approaches to academic work (Kezar and Lester 2009). If these trends lead to the loosening of disciplinary boundaries, then it is possible that academics will feel liberated to engage in a wider range of scholarly activities. Interdisciplinary collaboration, for example, opens many new possibilities for faculty to address intellectual and practical challenges, and potentially serves as a means for renewing a sense of community among faculty who work in an increasingly fragmented profession.

The next section will examine the institutional environments of research universities, beginning with an exploration of the long-standing influence of academic disciplines on faculty behavior and institutional structure. We argue that prior to the 1980s, the effects of external forces on universities were largely indirect, mediated through faculty and their respective academic disciplines. Federal science funding after World War II, for example, had significant effects on the operations of research universities, however, these effects were largely mediated through the preferences and priorities of the faculty who served as peer-reviewers for these grants. However, as external entities began to assert their own priorities for higher education, above and beyond general support, their effects on universities became direct, rather than indirect. Governments, industry, and markets began to have independent effects on universities—influences that were not necessarily mediated through the priorities of the professoriate.

Academic Communities

Among the external entities that have shaped the daily operations of research universities, academic disciplines may have had the deepest effects. The power of academic communities is readily apparent when viewing the structure of any university in the United States. The academic structures of nearly all universities are arrayed into departments that group faculty by discipline. Even when universities make concerted efforts to organize differently, the institutionalized power of the academic disciplines is inescapable. Alpert (1985), for example, noted how several, more-recently established universities, such as the University of California at Santa Cruz and the University of Illinois at Chicago, attempted to depart from the traditional departmental organization, only to revert to the more conventional structure after just a few years of operation.

The power of academic disciplines was strengthened by federal science policies in the United States following World War II. Specifically, federal science agencies awarded research grants directly to faculty scientists, and these grants were managed by their respective academic departments. Therefore, faculty had direct access to funding streams for which they had greater knowledge and expertise than administrators. This type of direct access to revenue sources gave faculty more control over the resource environment and more leverage within their institutions to structure their work according to their own priorities. Thus, the emergence of the federal government in the postwar era as a major research funding source enhanced the authority of academic disciplines, and in governance matters on campus, led to academic authority shifting from the president and administrators to the faculty—a phenomenon that Jencks and Riesman (1968) labeled an “academic revolution.”

The academic revolution enabled faculty to determine how the external environment would shape their work as academics. The effects of federal science agencies, for example, were mediated through peer review processes that were controlled and managed by the leading academics in their respective fields. In this way, academic work became a self-regulating profession (Schuster and Finkelstein 2006). Leading scholars within each discipline determined the criteria by which faculty work would be judged, and the professional associations of the various disciplines (such as the American Psychological Association) set the standards by which academic quality would be determined.

The self-regulating capacity of academics was further enhanced by the rise of professional accreditation bodies (such as the American Bar Association for the accreditation of law schools). These professional associations set standards and goals that were readily adopted by university academic units. Universities were compelled to adopt the standards set by these professional societies, or risk jeopardizing the accreditation status of their academic programs and their national ranking within the field (Bogue and Saunders 1992).

The rise of disciplinary power in research universities had several effects on governance and academic work. Faculty authority was enhanced, especially in departments that were able to secure funding sources that were independent of uni-

versity budget allocations. As disciplinary power increased, academic policymaking became decentralized to the department level. Academic departments displaced campus-wide senates as the primary venue for faculty participation in governance. The autonomy of the academic profession was also strengthened, as faculty served as the intermediaries between powerful external entities (federal government, accreditation associations) and the university organization.

While the power of academic disciplines remains strong, especially in venues of peer review (Lamont 2009), other elements of the institutional environment have begun to exert independent effects on university organization and academic work. Some scholars suggest that markets may now play a stronger role than academic communities in shaping the forms of university organization (Slaughter and Rhoades 2004). As universities have become more engaged in entrepreneurial research markets, they have established centers and institutes that seek to promote collaborative and interdisciplinary approaches to research. Several authors have noted that research centers and institutes can respond more quickly and more effectively to emerging external opportunities than academic departments can (Clark 1998). The proliferation of research centers and institutes has created an alternative power base within universities, which may result in internal competition with academic departments for resources (Mallon 2006).

Furthermore, pressures for accountability and efficiency from trustees and government officials have led universities to develop strategic plans that seek to align internal resource allocations with institutional priorities (Keller 1983; Zemsky et al. 2005). Strategic plans may be developed in consultation with faculty, however, generally they are products of the work of academic managers, whose power has increased; some would argue that those gains in administrative authority have come at the expense of faculty power (Burgan 2006; Rhoades 1998). The growth in the power of academic managers, which some scholars have called “managerialism,” may further diminish the importance of academic communities in the governance of universities (Bess 2006).

Changing Relationships Between Universities and Federal and State Governments

Relationships between universities and governmental entities have shifted considerably in recent years in terms of funding, accountability, and autonomy. State governments no longer provide the primary means of financial support for public universities. While states have granted public universities more autonomy in the areas of tuition pricing and revenue generation, they have also devised new accountability and performance measurement standards with which public universities are expected to comply. These pressures for revenue generation and accountability, in turn, are likely to compel universities to adopt more market-driven strategies (Eckel and Morphew 2009; Slaughter and Rhoades 2004) such as attracting higher levels

of federal research funding and participating more extensively in economic development and research commercialization initiatives (Geiger 2006).

As noted above, states have reduced the relative amount of funding that they contribute to institutional revenues. In 2009, state appropriations accounted for only 27% of public university revenues, down from around 43% in 1985 (NCES 2010). The relative decline in state support for public higher education is one component of a growing trend toward privatization. McLendon and Mokher (2009) suggest that the privatization of public higher education is characterized by three dimensions:

- (1) growing dependence on private sources of revenue to finance public higher education;
- (2) increasing reliance on market mechanisms with which to promote competition and through which to allocate higher education goods and services; and
- (3) diminishing direct control over the governance and management of campuses, both substantively and procedurally (p. 7)

As states have reduced their funding effort for higher education, policymakers have stepped away from centralized control. States are beginning to offer public higher education institutions more autonomy, particularly in the area of tuition setting authority. McLendon (2003), for example, found that between 1985 and 2002, state governments considered more than 120 measures to modify their governance systems for public higher education, and the dominant theme of these initiatives was decentralization.

With regard to governance decentralization, some states have reduced the powers of their statewide coordinating boards (McLendon 2003), which represents a significant shift in public higher education policy. The post-World War II massification in enrollments led many states to create consolidated governing boards or state coordinating boards to enhance rationality and efficiency in the use of resources, as well as to promote planning across institutional sectors. The California Master Plan of 1960 stands as an exemplar of centralized, statewide coordination among the University of California, California State University, and California Community College systems. These forms of centralized coordination have been weakened, in order to permit greater autonomy for individual public institutions (Dee 2006; Dill 2001).

Eckel and Morphew (2009) suggest that paradoxically privatization could lead to both greater centralization and greater decentralization of governance and decision making. Here, Chandler's (1962) classic distinction between strategic and tactical decisions becomes useful. Strategic decisions pertain to setting the long-term goals for an organization, while tactical decisions are related to how the organization will implement its objectives. Strategic decisions may become more highly centralized, as university administrators seek to design specific strategies for revenue enhancement and prestige maximization. Tactical decisions, on the other hand, may be decentralized to Clark's (1998) "expanded developmental periphery," where research institutes, interdisciplinary centers, distance education divisions, technology transfer offices, and other entrepreneurial units are able to determine how they will structure their interactions with external resource providers.

A similar privatization paradox may emerge at the level of statewide governance. As McLendon (2003) found, privatization is often associated with a weakening of statewide coordinating boards and a reduction in state oversight of public campuses. This arrangement may increase university autonomy, and give campus administrators more authority to set the strategic priorities for their institutions. Thus, decentralization at the state or system level could yield centralization of governance at the campus level, if administrative authority on campus is enhanced via reductions in state oversight. Moreover, these new decentralization policies frequently include provisions for universities to comply with new accountability measures, which monitor various indicators of productivity and efficiency, including graduation rates and faculty workloads (Dill 2001). These new accountability frameworks may enhance the role of campus administrators at the expense of faculty authority over academic matters. New accountability frameworks established by state governments empower campus administrators to monitor and evaluate faculty workloads and outputs (Alexander 2000). Therefore, some argue that the privatization of public higher education has led to a growing managerialism within universities (Bess 2006), which in turn, positions faculty as “managed professionals” who are subject to greater oversight by various authorities (Rhoades 1998).

Eckel and Morphew (2009) argue that privatization has not been a deliberate policy choice. Instead, it has been a response to other factors that have limited the capacity of state governments to fund public higher education. These factors include rising state obligations for health care and K-12 education expenditures, as well as voter-approved amendments to state constitutions that impose tax and expenditure limitations (Archibald and Feldman 2006). If privatization is not a deliberate choice of policymakers, then associated practices are likely to be highly susceptible to unintended outcomes. Some research suggests that governance decentralization, one component of privatization, increases the likelihood that public goals for higher education will be suboptimized. While centralized state governance has been associated with lower tuition, greater access for students, and a stronger emphasis on teaching, decentralized state governance has led to higher tuition, lower enrollments, and a prioritization of faculty research, especially through grants and contracts (Berger and Kostal 2002; Knott and Payne 2004; Lowry 2007).

In addition to significant changes in the relationship between public higher education and state governments, universities have also encountered new priorities in federal research funding. These changes can be understood within a historical context. During the 1950s and 1960s, federal science policy was largely uncoordinated; each federal science agency pursued its own mission. Prominent academics sat on peer review panels to determine how federal grant funds would be distributed to university-based researchers, largely for the purpose of advancing basic research. By the 1970s, however, government policymakers expressed concerns about the capacity of the US economy to keep pace with global competition. The US economy in this decade was characterized by stagflation: a “perfect storm” of high inflation, rising unemployment, declining consumer demand, and lack of growth in business activity. One response of government officials was to link national science policy much more closely to economic policy (Geiger 2004). Thus, federal science agen-

cies began to introduce new stipulations for grant funding, including incentives for universities to begin to partner with industry. Moreover, with the Bayh-Dole Act of 1980, universities were allowed to retain the intellectual property rights to discoveries that emerged from federally-sponsored research, thus paving the way toward patenting and licensing agreements between universities and industry. Therefore, by the early 1980s, the federal government had shifted from providing basic support to pursuing specific policy objectives that linked university research to economic development (Geiger and Sá 2005).

Federal science funding is now guided in part by a technology transfer model. Technology transfer is promoted through federal and state incentives for university-industry partnerships, as well as exclusivity agreements that give participating firms a first chance to develop commercial applications from such endeavors. The technology transfer model suggests that basic science serves as an input into applied science. As Geiger and Sá (2005) note, universities perform half of all the basic research conducted in the US. Universities, therefore, have a large role to play in industrial R&D, given their capacity to engage in basic research and translate those findings into specific applications.

These changes in national science policy have, in turn, increased the influence of industry and market forces in the determination of scientific research agendas (Slaughter and Rhoades 2004). The National Science Foundation, for instance, emphasizes collaboration with industry in many of its larger grant programs (Geiger 2006). As one example, NSF provides support for Industry-University Cooperative Research Centers, which are partially funded by NSF and fees from industrial partners. In 2011, there were 44 active centers with NSF funding at US universities (NSF 2011). These centers are located on university campuses and typically comprise multiple university and industry partners. Each center is governed by an Industrial Advisory Board, which includes members from the industrial firms that pay fees to support the center. These boards “advise the Center’s management on all aspects of the Center, from research project selection and evaluation to strategic planning” (NSF 2011). Scientists from participating industrial firms work with Center faculty to design and implement the research projects selected by the advisory board.

State governments have also been active in promoting university-industry partnerships. States such as North Carolina, Georgia, Pennsylvania, and California have enacted policies that provide direct support to universities and corporations in cutting-edge fields such as nanotechnology and biotechnology. One goal of these policies is to foster the development of academic-industrial clusters, which can provide a knowledge infrastructure capable of supporting the creation of new technologies. “The combination of specialized university laboratories, high-tech corporations, and local start-ups will, it is argued, create thriving ‘clusters’ of economic activity” (Geiger and Sá 2005, p. 5).

While states seek to emulate the success of California’s Silicon Valley or North Carolina’s Research Triangle, policymakers are cautioned not to neglect general support for basic university infrastructure. If state leaders focus their priorities solely on economic returns and fail to provide sufficient support for basic university

infrastructure, then these institutions will be incapable of driving technological innovation. Public universities have experienced a significant decline in the relative share of their budgets provided by state appropriations, and as Geiger and Sá (2005) note, some states “seem more interested in gathering the economic golden eggs than in feeding the university goose” (p. 18).

Markets and Competition

Government policies, partnerships with industry, and privatization have propelled universities toward market-oriented behaviors. National science policies and state economic development programs have provided incentives for universities to engage in commercial activities and compete for research funding, contingent on partnering with industrial firms. These industrial firms have also independently sought greater involvement in setting the research priorities of university departments in fields that have commercial potential. Furthermore, privatization has compelled public universities to compete more extensively among themselves and with private universities across a variety of revenue and prestige factors, including competition for student enrollments, faculty talent, philanthropic gifts, and research funds.

The “academic revolution” of the 1950s and 1960s, and the rise in power of the academic disciplines, also played a role in fostering more competitive university behaviors. As academic disciplines became the primary source of identity and prestige for faculty members, their departments began to compete against each other for status and standing within the discipline (Alpert 1985). In order to gain stature and mobility within the profession, faculty needed to affiliate with the most prestigious departments. Being a faculty member in a prestigious department enhanced the likelihood that the faculty member would obtain access to professionally desirable resources, such as state-of-the-art laboratories, highly capable graduate students, and networks of highly-accomplished colleagues who themselves have established track records in securing external funding.

Furthermore, the competitive rankings of academic departments have significant effects on the internal organizational behavior of universities. Alpert (1985) noted that “a department with a rating substantially above others on campus has great leverage in the internal competition for resources, appointments to key committees, and faculty perquisites such as lower teaching loads and higher salaries” (pp. 255–256). Departments become highly ranked, in part, because of their demonstrated success in securing valued external resources, especially students and research funds. Universities, in turn, gain prestige and standing when many of their departments are highly ranked. In order to maintain those high rankings, universities allocate more resources to their strongest, most competitive programs.

Market-based competition, in fact, is enshrined in these elaborate and sometimes controversial rankings systems. While the National Research Council conducts an elaborate ranking exercise for graduate programs approximately once per decade (Hicks 2009), the far more ubiquitous rankings are produced by *U.S. News and*

World Report. Rankings systems in the United States do not carry with them any direct financial implications, unlike in other nations where government resource allocation decisions are based on a university's rank. Nevertheless, rankings constitute a quasiobjective, third-party assessment of institutional quality, and therefore can convey prestige to the institutions that acquire high ratings. The "halo effect" of a high ranking can also influence decisions made by resource providers. Bastedo and Bowman (2011) found that university rankings in 1998 significantly predicted financial measures in 2006. After controlling for prior reputation, higher rankings were associated with attracting larger amounts of research funding from government and industry, and obtaining donations from a higher proportion of alumni.

Trends and Commonalities in the Institutional Environments of Europe and the United States

Changing Role of the State

Although the situation in Europe and the United States in the 1980s was different regarding the state's role in funding universities (with high financial dependence on the state in European universities compared to a rather low financial dependence on the states in the United States), the trend toward further reductions in the relative share of state support to higher education has been common on both continents. However, the rate and scope of the decline has been quite different. When we look at the United States, the state share of public university budgets declined from around 43% in 1985 to 27% in 2009 (NCES 2010). While in the most extreme European examples, we witness the decrease of state financing from 70% to 40%. Still in most countries, two thirds of university budgets come from the state, mainly as a bulk sum based on student numbers.

Public policies in Europe and the United States have paradoxically moved in the direction of both more decentralization and more centralization. Some states in the United States have granted public universities more autonomy, especially in areas related to budgeting, purchasing, personnel, and revenues, including tuition setting authority in some cases. However, in other domains of university activity, such as teaching and research productivity, states have developed centralized systems for monitoring institutional performance. In Europe, despite the trend toward giving universities autonomy, tuition fees are usually regulated by the state (at least the ceiling is set by the government), and the university staff is either hired by the state (in centralized systems such as France or Italy), or by the universities, however, still largely regulated by the state with limited power to differentiate salaries (e.g., the Netherlands).

In both continents, the "off loading" from state budgets to diversified funding sources has also meant more interventionist mechanisms for accountability coming from state authorities. While European governments usually use the evalua-

tion mechanisms of quality assurance and accreditation, as well as other systems of monitoring such as performance-based funding, performance-based contracts, and research evaluation exercises, in the United States, accreditation remains more in the hands of professional academic bodies, rather than state authorities. Nevertheless, state authorities in the United States have devised new policies that seek to make public university faculty accountable for the amount of time that they spend in the classroom (Fairweather and Beach 2002).

Competition

Competition and market orientation have been dominant policy themes since the 1980s on both continents. With governments providing a smaller share of university budgets, institutions have found themselves to a larger or lesser degree in the situation where they need to compete for other sources of funding, such as student fees, external agency grants, and industrial contracts.

The escalating competition for resources may have further strengthened the positions of the leading academic programs at the most prestigious universities. In a competitive, market-driven environment, universities are likely to favor their higher ranked departments, which gain advantages in internal resource allocation decisions, appointments to important committees, and other perquisites. Although in the United States, competition for faculty positions and mobility from lower to higher ranking departments has been a long-standing position; in Europe, this has been a more recent phenomenon, where the universities start to look in their systems and abroad for “star” scientists and begin to compete for faculty who have significant research and external funding records. However, competition for staff in Europe is less pronounced due to the stringencies of the national faculty employment conditions and procedures in Europe.

The advent of all sorts of university rankings systems, followed closely by university managers, has contributed to an “arms race,” as universities on both continents seek to improve their positions. This competitive environment has encouraged lower-ranked institutions to mimic the behavior of the higher-ranked institutions. Universities have also embraced management practices that ostensibly seek to make the institution more competitive in the higher education marketplace. These practices include strategic planning, building on research strengths, and investing in state-of-the-art equipment (Hazelkorn 2007). The main difference between competition for rankings in the United States and Europe is that in the European context the rankings race is strengthened by governmental policies toward building “research excellence,” which in turn, fosters differentiation in the respective national higher education systems.

The idea of competitive external research funding has been ingrained in the US system since the post-World War II period, although the emphasis on technology transfer and the commercialization of research is a more recent trend.

Moreover, the tradition of philanthropic gifts and private foundation funding has been more significant in the US higher education scene. The concept of competition and the need to obtain research funds on a competitive basis has permeated some European countries only in the past decade. Thus, the universities' ability to compete for external funds varies greatly within Europe compared to that of the US universities.

Further competition has been fostered by national science policies and economic development initiatives that incentivize universities to engage in commercial activities and compete for external research funding, which may be contingent on partnering with industrial firms. Research commercialization policies have been on the agenda for US universities since the 1980s. In Europe, research commercialization policies and practices became more prevalent in the 1990s, and started to gain ground through the European Union agenda, as well as through national government funding schemes that promote university-industry linkages. Universities in the United States and Europe have been incentivized to create technology transfer offices and to be entrepreneurial in valorizing their knowledge.

The Power of Academic Communities and University Managers

The power of academic communities has historically been strong both in the United States, due to its "academic revolution" in the 1950s and 1960s, and in Europe, where the professoriate and the peer review system have exerted decision-making power within and outside the universities. On both continents, the academic department structure has been deeply institutionalized, which for a long time has been a stronghold of authority for the academic disciplines. In the United States, the emergence of the federal government in the post-World War II era as a major research funding source enhanced the authority of academic communities, and in governance matters on campus, led to academic authority shifting from the president and administrators to the faculty. However, this power has been challenged by recent changes toward accountability to university administrators. Similarly, in European universities, studies have shown a decreasing power in decision making on behalf of academic communities. The power of administration has been strengthened through the implementation of accountability measures, and by changes in university governance structures, where collegial decision making has been significantly diminished (albeit to a different degree in different Continental European countries).

At the same time, the power of academic elites (the leading faculty within their respective fields) has been maintained in Europe and the United States. External funding agencies, such as national research councils, have been strong vehicles for engaging academic elites in resource distribution decisions through the peer review process. Resource allocation on the basis of peer review has reinforced the self-steering capacity of academic communities in Europe. Moreover, national research

evaluations in Europe are usually carried out by committees consisting largely of the academics themselves—thus, reinforcing the peer review system.

On the other hand, the common trend of strengthening the administrative core of universities has been observed both in Europe and the United States. The professionalization and concomitant rise in authority of university administration occurred more quickly in the United States than in highly diverse European higher education systems. Managerial practices in US higher education became widely prevalent during the 1980s and 1990s (Birnbaum 2000). More recently, the increasing accountability requirements of European governments toward universities, through performance-based funding and quality assurance procedures, have empowered university managers to monitor and evaluate academic workloads and outputs. European higher education systems increasingly have witnessed strengthened managerialism within universities, where governance structures have been centralized, at least in the United Kingdom and Northern European countries. University rectors and deans in some countries are no longer elected by academics, but instead are hired and appointed as professional managers.

Managerial power in United States and European universities may impinge on the academic authority of faculty. Changes in governance arrangements and power relationships have imposed new mechanisms for monitoring and evaluating faculty performance. A shift from the status of an academic as a civil servant to that of an employee in an organization has been observed in Europe (Pechar 2004). The conclusion that academics are subject to greater oversight by various authorities holds true for all disciplines and universities in Europe and the United States; the difference lies in the degree of it.

University Responses in Europe

Changing Structures in European Universities

Literature has suggested that the introduction of quasi-markets and competition in European higher education has strengthened university management and has led to more strategic behavior of institutions (Whitley et al. 2010). In the words of Krücken and Meier (2006), the university is becoming more of an organizational actor than ever before. Stronger organizational leadership, strategic management, and formal structures are seen as part and parcel of this modern model of the university. Professionalized academic managers, who are appointed instead of elected to their positions, have become a new reality at universities (e.g., in the United Kingdom, the Netherlands, and Austria; Deem et al. 2007; Kehm and Lanzerdorf 2006; Shattock 2003). Headhunting for university deans and vice chancellors has become a routine activity in the UK system, and slowly these administrative recruitment practices have been introduced in the Continental European systems (e.g., new appointment procedures for Rectors in Austria or Lithuania). Instead of being elected

from the university professors by the university community, now they are appointed by the university boards and can come from outside the university.

The extent of centralization of power in university management has been largely debated in the literature. Some studies indicate that managerialism at universities has been introduced at the expense of academic collegiality, where academic managers are differentiated from the faculty who serve as “knowledge workers” (Deem et al. 2007). As noted by Currie et al. (2003), this managerial approach emphasizes executive leadership at the expense of the professional role of faculty in decision making; instrumental rationality stressing economy, efficiency and effectiveness; and top-down structures, such as centralization and hierarchy. It is argued that the rise of managerialism within universities has diminished the power of academics through the “battery of mechanisms of audit and control generated by the state and instituted by senior and middle academic-managers” (Kolsaker 2008, p. 516). Although the evidence remains scarce, some studies show that universities have increasingly centralized their managerial power in university boards or executive management teams, as in the United Kingdom, the Netherlands, Norway, and Austria (de Boer et al. 2007b; Midgaard 1982). In other continental systems, such as France, centralization of power within universities is not as clear cut.

The strengthening of university management needs to be understood not only in terms of top management roles but also the changing roles and leadership of middle management, deans, and other professionalized administrators (de Boer and Goedegebuure 2009; Mignot-Gérard and Musselin 2002). Evidence suggests that the professionalization of university administration, especially in the areas of quality assurance, technology transfer, and grant writing support have increased in some countries (especially in the United Kingdom and the Netherlands; Berrivin and Musselin 1996; Currie et al. 2003; Gordon and Whitchurch 2010; McNay 1995; Middlehurst 2004).

As a result of centralizing and strengthening university management, coupled with the increased competition for funding, literature suggests that new rules and structures have been created to maximize the capacity of universities to attract external funding either via grants, licenses, spin-off creation, or through international student fees. Promotion criteria for faculty and other instruments of personnel policies have been streamlined toward a research-output orientation, and standardized indicators have increasingly been used by university administrators and managers to evaluate the performance and promotion prospects of faculty (Krücken and Meier 2006).

In terms of the changing power relations of managers and academics, studies suggest, on the one hand, the rise of professional academic managers and a decrease in shared governance (Nixon 2001). However, at the same time, it is argued that collegiality as an ideal continues to influence the normative values of universities, because it stands as a more “humane” alternative to managerialism, with an emphasis on collectivism rather than individualism and competition (Lapworth 2004; Lucas 2006). As noted by Lucas (2006), based on her study of English universities, collegiality serves as a marker of elite distinctiveness for universities, both in terms of separating them from the practices of the commercial world, and more impor-

tantly from each other. Thus, organizational mechanisms and market forces do not necessarily weaken the professional control of academics (Enders and de Weert 2009; Musselin 2009). Based on studies of the faculty recruitment practices of German and French universities, Musselin (2009) shows that academics still have the monopoly of judgment regarding whom to hire and which faculty will be promoted. Further studies suggest that stronger university management and collegial faculty governance are not mutually exclusive and that the elite academics maintain their power and reinforce it by bringing legitimacy to the university through the acquisition of outside recognition and funding, as seen for example in case studies in England and the Netherlands (Leisyte et al. 2010).

Although academics may still exercise primary influence over faculty hiring and evaluation processes, the criteria by which these decisions are made continue to evolve in the context of heightened levels of competition for resources and prestige (Farnham 2009). As noted by Musselin (2005, 2010), based on three different studies over 10 years in France and Germany, the recruitment of faculty is linked to new types of profiles that fit new institutional missions. Specifically, appointment criteria and recruitment procedures have shifted toward more emphasis on productivity and social fit within the department as witnessed in mathematics and history departments (Musselin 2005, 2010). The importance of productivity has been increasingly underscored in faculty recruitment and appraisal. Partly due to the increasingly important quality assurance mechanisms in European countries and the stronger willingness of university managers to monitor efficiency and performance, university personnel policies have started to include performance measurement criteria, which stem from human resource management approaches in business. The practices of yearly staff appraisal, performance monitoring, and devising workload management plans are encountered at universities in the United Kingdom and to some extent in the Netherlands and in Scandinavian countries, although less so in centralized systems such as France (Barrett and Barrett 2008; Farnham 2009; McInnis 2010). Morley (2003) argues that, in the United Kingdom at least, academic cultures have internalized the quality agenda so that significant attention is paid to league tables, national quality assurance agency reports, and other mechanisms by which higher education is routinely judged by external stakeholders. She suggests that university managers and administrators wield significant power through their ability to align university budget allocation decisions with outcomes on various performance indicators, thus rewarding the departments that fulfill such criteria.

Another trend in restructuring academic work deals with the flexibility of faculty employment. As studies have shown, tenure has become less available to faculty, as universities have moved toward an increase in the use of fixed-term contracts, which is a significant change given the traditional status of academic tenure as employment security for the profession (Court 1998). The lowest tenure rate is in Portugal (40%), with Austria, Belgium, the Netherlands, Norway, and Spain (50–60%) being in the middle, and with the highest in Ireland, France, and Italy (up to 90%; Farnham 2009). As noted by Enders and de Weert (2004), the shift from tenured and permanent staff positions toward fixed contracts and part-time positions has been

significant. It is estimated that in Europe between one-fifth and one-half of faculty are contingent (Enders and de Weert 2004, p. 29).

This shift has led to the creation of a new segment of faculty who occupy teaching-only or research-only positions. For example, the growth in the number of postdoctoral researchers in European higher education, as witnessed in the formalization of selection processes for postdoctoral candidates, is a significant development that institutionalizes research-only positions (Sadowski et al. 2008). Studies of early career and postdoctoral researchers have revealed the influence of external project-based funding on the differentiation of tasks and roles in the early stages of the academic career (Akerlind 2005; Ylijoki 2003). A study of electronics departments in France, for example, has shown that postdoctoral researchers may serve as a “cheap” labor force, which is an effect of externally-funded research projects (Barrier 2011). Furthermore, some evidence suggests that in United Kingdom and Dutch institutions, teaching-only faculty have become a customary short-term substitute during staff shortages or when tenured faculty are on sabbatical leaves, especially in disciplines that rely on high student enrollments (Leisyte 2007). This differentiation of tasks and spreading out of responsibilities has traditionally depended on discipline (how much teaching and research are interrelated) and stage in academic career (junior faculty needing more time for research). As noted in a study of English, sociology, and biology departments in the United Kingdom, temporary differentiation can also exist within the same departments, in the same disciplines, and for academics at different points in their careers. For example, junior academics who are building their research portfolios may teach less for a semester or two in their first few years at the university. In the same department, academics may change roles at different points in time, with some serving on governance committees and dealing with specific intensive teaching tasks one year, while getting research-only time the next year (Lucas 2006).

European University Strategies

One of the consequences of strengthened university management, coupled with financial constraints and national funding schemes that promote excellence in research, has been the practice of strategic profiling of institutions in Europe. As noted in a few studies, European universities are increasingly trying to profile and brand themselves. The classifications distinguish between traditional academic research universities versus universities of applied sciences, more teaching-oriented universities, or regional institutions—these are only a few examples of the possible distinctions made either by national policymakers or by university leaders (Beerkens et al. 2011; Meier and Schimank 2010; Moscati 1993; Ylijoki 2003). Institutional differentiation based on distinct missions may lead to the differentiation of expectations toward organizing academic work in universities, and in some cases, a mission stretch may be observed (Enders and de Boer 2009; Enders and Musselin 2008). This means that the whole institution takes a more systematic approach to

managing the performance of faculty according to the strategic goals of the institution. As argued by McInnis (2010), the mission-driven changes of managing academic work have a direct impact on the roles and status of faculty. This may include yearly workload management plans, or meeting the strategic goals of uniformity of student experience, specific thematic collaboration between different departments, or adoption of a uniform time accounting system across the whole institution.

In many ways, these practices are related to the revenue-seeking behaviors of universities, such as attracting external funding via research grants, corporate research funding, or student fees (Fumasoli and Lepori 2011). Increasing financial uncertainty has led university leaders to promote revenue seeking policies and behaviors. For example, one of the criteria for promotion today in some European universities can be the amount of external funding secured for the department's research and the extent to which such funding covers the full costs of the faculty member's research (Jongbloed et al. 2010). Although such criteria are more prominent in Northern Europe, studies from Southern Europe have indicated that new government formulas that emphasize externally acquired resources as a performance criterion influence the behavior of universities in Italy and some regions of Spain (Agasisti and Perez-Esparrells 2010).

Another example of strategic revenue-seeking behavior can be seen in university efforts to promote the attractiveness of their academic programs to international students, especially in the countries where foreign students pay higher tuition fees (e.g., the United Kingdom and the Netherlands). Revenues have been part of the motivation to tap into the international student market. The so-called "receiving countries" for international students are usually located in Western Europe, and more often than not, in the English speaking countries (the United Kingdom, Ireland), or in countries where programs in English have been created to attract foreign fee-paying students or attract students to areas where there is a lack of local students, especially in graduate programs (e.g., the Netherlands, Germany, and Norway; Epping 2010).

University Responses in the United States

University Structures

In response to incentives and opportunities in the external environment, research universities in the United States have developed a range of new structural divisions. These new units include research centers and institutes, technology transfer offices, offices for industrial research, small business incubators, research parks, and distance education divisions. Clark (1998) referred to such units collectively as an "expanded developmental periphery" whereby universities create new entrepreneurial structures that operate outside the boundaries of the academic core (p. 6). In this arrangement, decisions regarding interactions with the external environment are decentralized to the level of the entrepreneurial unit, rather than centralized through

multilevel approval processes that might entail time-consuming deliberations by governance committees or administrative offices. The decentralized entrepreneurial unit can respond more quickly to emerging opportunities in the environment. Moreover, staff in these units can develop high levels of expertise in specialized resource domains such as federal science funding, technology transfer, or corporate training programs. This level of specialized expertise can provide the university with a competitive advantage when it seeks funding from external sources.

Technology transfer offices are one example of the specialized entrepreneurial structures that research universities are developing. According to Geiger (2006), research universities began to develop specialized structures for technology transfer and research commercialization shortly after the passage of the Bayh-Dole Act of 1980. Staff members in technology transfer offices are highly professionalized and perform a range of functions for their respective universities. First, they serve as a liaison between the university and industry, and seek to match faculty expertise with the research needs of corporations. Second, they receive invention disclosures from faculty and determine which are suitable for patenting. Third, staff members market and maximize revenues from technology licensing. Finally, these offices provide support for start-up companies through business incubators, research parks, and venture capital funds.

The development of a technology transfer office requires the allocation of a significant amount of university resources. Institutional leaders justify these expenditures because technology transfer offices seek to promote economic development, provide services to entrepreneurial faculty, and generate revenue for the university (Geiger 2006). The revenue-generating potential of research commercialization, however, may be overstated. Mowery et al. (2004) found that only seven universities in the United States generated enough revenue through patents to offset their administrative costs for technology transfer. Furthermore, they found that universities tended to derive most of their returns from a small number of patents (typically less than five), and that most of these patents were in the life sciences with linkages to the pharmaceutical industry. Similarly, Geiger (2006), using data from 2004, found that only 35 universities had generated more than \$ 5 million in annual revenues from licensing, a figure that may represent a break-even point for universities; universities with less than \$ 5 million in annual revenues were probably losing money. Feller (1997), in fact, argued that “it is questionable whether many [technology transfer] offices break even, much less return net revenue [to the university]” (p. 14). Nevertheless, universities continue to move aggressively toward adopting the practices and structures of the institutions that have been most successful in the commercialization of research. As Geiger (2006) explains, “More than a few universities are seeking to rationalize serendipity by analyzing the etiology of these megawinners. Regardless of other considerations, every university would like to hit the jackpot” (p. 426).

New university structures have also been created to generate knowledge in commercially-relevant fields. With funding from federal science agencies and industrial firms, universities have established research centers and institutes in areas such as biotechnology and nanotechnology. These centers serve as venues for collaboration

between scientists in industry and those in academia, as well as for collaborations between faculty members in different disciplines. While organized research units (ORUs) have long been part of university organizational structures, these new institutes have a distinctive purpose to commercialize knowledge. As Geiger (2004) notes:

Collectively, these research units represented a distinctive social invention—publicly supported university centers designed to foster collaborative research with industry and technology transfer. As products of public policy, these centers are a more coherent group than the university ORUs that have ad hoc research relationships with firms... (p. 198).

The development of entrepreneurial structures in universities may foster new forms of academic work. Geiger (2006), for example, argues that technology transfer and research commercialization initiatives will lead universities to develop more collaborative, team-based structures to carry out faculty research. Federal grant programs often require recipients to build collaborations among multiple universities, between universities and federal laboratories, or with industrial partners. Geiger also suggests that universities may be evolving toward a matrix structure in which faculty will have affiliations with both an academic department and with an entrepreneurial unit, such as a research center or institute.

These new collaborative forms of academic work may yield positive outcomes in terms of research productivity. Fox and Mohapatra (2007) studied the impact of collaboration on the productivity of a national sample of faculty in doctoral-granting departments in the sciences. They found that collaborating with faculty in one's own department and collaborating with faculty outside one's own university had strong, positive effects on publication productivity. Similarly, Lee and Bozeman (2005) found that the number of collaborating researchers is a strong predictor of faculty productivity. Collaboration provides access to a wider range of intellectual capital and material resources, and this degree of enhanced capacity can yield greater productivity.

Bunton and Mallon (2007) found that affiliation with a research center may have a positive effect on faculty productivity. In their study of life sciences faculty at the 40 universities with the most funding from the National Institutes of Health (NIH), Bunton and Mallon found that senior-level faculty affiliated with centers were more productive (number of articles, books, chapters, refereed presentations) than their nonaffiliated colleagues, and were more likely to be a principal investigator on external grants. Faculty members with center affiliations also worked more hours per week than their nonaffiliated colleagues (60.3 versus 56.5 hours per week), however, they reported higher levels of dissatisfaction with workload, and they were dissatisfied with the mix of their work activities. A potential source of dissatisfaction for center-affiliated faculty might be related to tensions that emerge in matrix structures. Workers in matrix structures typically encounter high levels of role conflict, given that they must seek to satisfy the expectations of both their immediate supervisor as well as the project manager (Bess and Dee 2008).

The emergence of entrepreneurial structures may also have important implications for university governance. First, entrepreneurial structures, such as research institutes and technology transfer offices, can become independent "power centers"

that carry a great deal of influence in university decision making (Mallon 2006). If research commercialization is a central strategy in a university's effort to generate new revenue, then the leaders of these entrepreneurial units are likely to gain power and influence within the institution. Second, if these entrepreneurial units operate outside the boundaries of campus governance structures, then their leaders may bypass established decision-making bodies to obtain policy changes that would be favorable to their interests. Rather than pursuing change through the faculty senate, the director of a research institute may seek direct intervention from a provost or other senior administrator. In this case, the authority of formal governance bodies would be diminished. Furthermore, the power of academic departments is likely to recede as well, because many new research institutes tend to be interdisciplinary and therefore would not be subject to the authority of departmental committees.

University Strategies

Increasingly, universities are developing strategic plans that seek to align institutional priorities with opportunities and incentives available in external markets. Nearly all universities have developed strategies for maximizing revenues and enhancing prestige. Tactics related to these strategies include building the institution's research capacity, growing the institution's fundraising operations, recruiting academically-strong students, and hiring "star" faculty (especially those who can attract external research funding). In order to be viewed as a high-quality university, the institution must compete for research grants, large philanthropic gifts, students with high SAT scores, and faculty with many grants and publications (Hearn 2003). These outcomes, in fact, comprise the criteria by which external entities assess the quality of universities. University strategies, therefore, are developed to maximize outcomes on the variables that are associated with social assessments of quality (Kaplan 2009).

If all universities pursue the same strategies to attain the same notion of quality, then nearly all universities will begin to resemble each other in their priorities and goals. Morphew's (2002, 2009) research has documented strong isomorphic trends in US higher education, whereby institutions seek to replicate the practices of their more prestigious counterparts. Public universities come to resemble private institutions, and regional teaching-oriented universities seek to become research universities. However, if all universities seek to maximize their performance on quality indicators that focus on admissions selectivity and research output, then other important goals, such as access, affordability, and undergraduate education may suffer. For example, researchers have found that when universities prioritize research and admissions selectivity to generate prestige, these institutions tend to admit fewer total students and charge higher tuition and fees (Berger and Kostal 2002; Knott and Payne 2004; Lowry 2007).

When less-prestigious universities adopt the strategies and practices of the more-prestigious universities, they are essentially deciding to compete with institutions

that already have well-established advantages (Eckel 2007). The prospects for success are not promising. This phenomenon is known as the “Matthew effect” (Merton 1968)—organizations with accumulated advantage are able to prevail in competitive domains, and their success reinforces those advantages, thus making it even more difficult in the future for lower-ranked competitors to challenge them. As a result, the gap between the higher-ranked and lower-ranked competitors merely widens. Geiger (2004), for example, identified a “rich get richer” pattern in explaining the growing disparity in revenues and expenditures between public and private universities. This study examined data from 99 major research universities (33 private and 66 public). In 1980, the average range of expenditures at these public and private universities was nearly coextensive, although the mean for privates was somewhat higher. By the year 2000, however, the range for the upper half of the public universities overlapped only with the range of the lower half of the private universities. The range of expenditures for the upper half of the private universities far exceeded that of the public universities. Geiger (2004) concluded that “the academic competitiveness of public universities may have grown in absolute terms, yet it declined relative to that of private universities. This widening gap is ominous” (p. 50).

The accumulated advantages of prestigious universities are likely to affect faculty prospects for success in the competition for resources. Ali et al. (2010) sought to determine whether institutional characteristics affect the ability of faculty members to secure competitive research grants. Study findings indicated that faculty at private universities are more likely to compete successfully for external funding. The study’s design controlled for faculty productivity. Thus, if we consider two equally productive faculty, the one working at a private university stands a better chance to secure more grants and more grant dollars. Furthermore, university prestige also affected the likelihood of faculty obtaining research grants. Prestige was examined in terms of whether the institution was affiliated with the American Association of Universities (AAU), an elite group of the leading research universities. Again, controlling for productivity, if we consider two equally well-published faculty, the one working for an AAU-member institution is more likely to secure a larger number of grants at higher dollar amounts.

In order to compete for revenues and prestige, public universities have sought greater autonomy from state governments. Such efforts may improve the competitive positions of large flagship universities, which already have significant research capacities and a diversified range of academic programs that can serve as the basis for entrepreneurial activity. Less prestigious regional universities, however, may struggle in the new parameters of privatization. “They too must play by the same rules regarding financial self-sufficiency and policy autonomy as new public policies emerge and the role of the state declines” (Eckel and Morphew 2009, p. 188). These universities may not have access to sufficiently deep revenue streams and may struggle to maintain their quality, as a result. Moreover, Kaplan (2009) argues that the missions of regional teaching universities are likely to be degraded by privatization.

For the less wealthy or influential institutions that often seek to hitch a ride on the privatization reform wagon, they, and the state politicians who encourage them, may find themselves striking a Faustian bargain. They may earn the flexibility to raise tuition revenues and dollars from other sources, but their character as teaching institutions, as repositories of public service energy, and as entryways into the middle class for state residents may fade (p. 128).

Taken together, university strategies to maximize revenues and prestige can be depicted as academic capitalism. Slaughter and Leslie (1997) defined academic capitalism as the engagement of universities and their faculties in market-oriented behavior. They argued that starting around 1980, university faculty had to begin competing aggressively for research grants and contracts, establishing partnerships with industry, and attracting larger student enrollments in order to maintain and expand available resources. The alternative to aggressive competition was framed by university leaders as an inevitable decline in quality, due to diminished federal and state support for higher education.

The ascendancy of academic capitalism and market-based competition may be eroding the influence of traditional faculty governance processes (Mallon 2006). Trustees and policymakers have criticized the slow pace of governance and decision making; they have issued calls for streamlining decision-making procedures so that institutions can respond more rapidly to emerging opportunities in the external environment (Association of Governing Boards 1996). Other observers have called for bypassing existing governance committees to rely instead on administratively-appointed planning groups (Keller 1983; Schuster et al. 1994).

While scholars have focused on the effects of academic capitalism in the research and governance domains, fewer studies have examined the scope and impact of market-oriented behaviors on teaching. Yet, as Anderson (2001) argued, “instructional capitalism is emerging as potentially more disruptive to the status quo of higher education institutions than research capitalism” (p. 244). Universities are rapidly developing new academic programs that exist outside the structures of traditional academic departments. Many of these programs are located in online or continuing education divisions where the curricula are developed by professional academic managers, rather than by faculty (Toma 2007). Thus, instructional capitalism may have the effect of further reducing the influence of faculty in academic decision making.

Trends and Commonalities in the Responses of European and US Universities

University Strategies

Both in European countries and in the United States, university managers and administrators have designed long-term strategies for their institutions that seek to maximize revenues and prestige. In the European context, strategic profiling of uni-

versities has meant a more systematic approach to managing the performance of faculty according to the strategic goals of the institution. Revenue-seeking strategic behaviors, such as the diversification of funding sources, are more common today in European universities, and these practices have led to the use of revenue generation as a performance indicator for evaluating academic staff. In the European context, at least in some countries and disciplines, this is a significant change for faculty. Similarly, in the US context, university managers have designed specific strategies for revenue enhancement and prestige maximization. However, due to the historical practice of competitive science funding in the United States, faculty are more accustomed to university expectations for external revenue acquisition; for them, the revenue-seeking strategies of universities may have a different meaning than for their European counterparts.

In the United States, university efforts to maximize revenue as well as prestige usually occur through enhancing research capacity, engaging in research commercialization and fundraising operations, recruiting academically strong students, and hiring “star” faculty. Universities have also created marketing departments and implemented branding initiatives to shape consumer preferences regarding higher education programs and services. In Europe, university striving for prestige has also meant focusing on research, merging or making alliances with more prestigious institutions, recruiting “star” faculty, and competing for the best students. However, these strategies are not as pronounced in Europe as in the United States, since competing for students as well as fundraising operations depend on each individual European country context.

Furthermore, universities in the United States and Europe are aligning their strategic initiatives with efforts to advance in university rankings systems. Universities in the United States have established budget priorities that allocate more funds to departments that stand the best chance of making gains in university rankings. Institutional leaders also seek to motivate faculty and staff to pursue higher levels of research productivity, so that the university can advance its position within the hierarchy of institutions—for example, a change in status from a regional, teaching-oriented university to a nationally-competitive research institution (Gioia and Thomas 1996; Morphew 2002). In the European context, national research assessments evaluate institutions, departments or research groups largely based on the research they perform. Thus, institutional evaluation is mainly aligned with what is perceived as important in the university rankings. As universities in Europe begin to gear their strategies toward achieving higher levels of success in national research assessments, the higher education system as a whole has become more highly differentiated, with wider gaps and disparities in resources among the European universities.

University Structures

University structures in the United States and Europe have been changing toward more centralization where the power of managers has been manifested in strategic

management and performance monitoring. In European countries, committees of academics are still important, however, in some countries, especially in Northern Europe and the United Kingdom, many strategic decisions are made within management teams, and fewer are made in the faculty senates.

Research universities in the United States have developed a range of new structural divisions, which specialize in the capitalization of knowledge. These units include new research institutes, technology transfer offices, offices for industrial research, small business incubators, and distance education divisions. Such units are typically located outside the boundaries of conventional academic department structures and faculty governance committees. In US universities, we can see strong administrative structures and professionalized administrators, such as technology transfer officers and vice presidents for research. Such administrative departments in the European universities have started to professionalize only in the past decade.

In terms of hiring and promotion, the main change has been an emphasis on performance criteria, which depend not only on the preferences of the academic community, but also the priorities established by university administration, and in Europe criteria defined through national evaluation systems. These criteria typically emphasize research productivity and the acquisition of external funding, and sometimes extend to include relevance to industry and economic development (Leisyte 2007).

Influence of the Institutional Environment on Academic Work in Europe

This section will introduce what the above-described changes in institutional environments and working conditions have meant for academic work in European and the US universities. In each subsection we will first discuss how faculty seek to maintain their professional autonomy and academic freedom in their research. Then, we will discuss how governance changes have affected the relationship between teaching and research, as well as faculty productivity. Finally, we will reflect on changes and stability in academic identities. We will conclude with a comparison of the changes in academic work in European and the US higher education systems.

Professional Autonomy and Academic Freedom

Professional autonomy and academic freedom have been important topics of study for higher education scholars. By professional autonomy, we mean the freedom of faculty to decide on lines and priorities of research and design of curriculum and content of courses and modes of instruction. It is linked to what Berdahl (1990) understands as substantive autonomy, or the autonomy of academic affairs (Braun and Merrien 1999).

Traditionally, faculty in universities have had autonomy to choose research themes on the basis of their idiosyncratic preferences. This type of intellectual freedom provides huge variety in the total pool of research produced by faculty. Here, the scientific norm of originality (following Merton 1973) requires freedom to undertake research of one's own choosing (Ziman 2000, p. 170). To be credible, science traditionally strives to produce knowledge that serves only its own interest. This autonomy renounces external influences, however, cannot totally exclude them. Although it is not possible to achieve complete social objectivity since scientists are part of societies with their collective interests and cultural values in their nonscientific lives, the norm of disinterestedness is at the forefront of scientific endeavors. This means that research should not be influenced by external considerations such as economic, political, religious, or other social interests. Scientists within this normative framework first and foremost seek to solve all intellectual puzzles without reference to their practical significance and contribute by producing "valid knowledge that sometimes turns out to be useful" (Ziman 2000, p. 161).

Many scholars have begun to argue, however, that the ethical code supporting the norm of disinterestedness cannot stand up to external pressures to exploit the increasing "instrumental power of science" (Ziman 2000, p. 162). Although the assumption has prevailed that research problems arise from the research process itself, individual freedom has always been constrained to a certain degree by "material circumstances, historical opportunity, epistemic conviction, and above all, communal doctrine" (Ziman 2000, p. 204). Moreover, given the scale of recent changes in the institutional environment of universities and the changing conditions of faculty work, the central values of the academic profession may be at risk. As Neave (2002) has put it: "It is self-evident that the emergence of a world-wide economic order has immense consequences for higher education. And because it has immense consequences for the institution, it cannot be without effect for the central values that institution enshrines—academic freedom" (p. 331).

Despite significant changes in the institutional environments of universities, some research suggests that faculty attempt to preserve their long standing research lines and adhere to the norms of the academic world, where mutual exchange within the academic community and peer review are expected to provide guidance in the choice of research agendas (Henkel 2000; Leisyte 2007). In the European context in the last few decades, however, faculty professional autonomy has been under pressure from the institutional environment. New accountability mechanisms, national research assessments, and performance-based funding systems have led universities to develop more elaborate ways of monitoring the work of academics.

A range of studies has investigated the responses of faculty to these changing work conditions (Gläser et al. 2010b; Leisyte et al. 2010; Morris 2010). These studies have shown that faculty are often strategic about preserving their professional autonomy and academic freedom in the context of enhanced efforts by universities, governments, and industry to shape their work. The studies differ in their assessment of the importance of these strategies and the extent to which they are successful (Barrier and Musselin 2009; Henkel 2005; Trowler 1998). The UK system, as shown in McNay's (2003) study, is an extreme example. In his view, there is less

faculty power in setting research agendas due to the increasing power of industry and government in determining research priorities and distributing funding for research. Other studies of life scientists in the UK system, however, point to the proactive nature of academic strategies, following principal agent theory (Morris and Rip 2006). Similarly, a study of research groups of life scientists and medieval history departments in the United Kingdom and the Netherlands by Leisyte (2007), building on neo-institutional and resource dependence theories, has shown that strategies may range from passive compliance to active manipulation and that dependence on external governmental research funding and contract research may influence the selection of research topics. This may be particularly true for junior faculty and for those departments that are not doing very well in terms of academic reputation (Leisyte et al. 2010). At the same time, Leisyte's study suggests that academics who have strong reputations and extensive resources can more easily maintain their professional autonomy and academic freedom. Similar findings have been offered in studies by Morris (2004) and Mulkey (1979), which show that hierarchical position within the academic field (i.e., senior faculty at prestigious universities) influences the strategies that faculty use to maintain their autonomy. Faculty at the top of the hierarchy will differentiate the risks of various activities, and they will pass the "safe" tasks to Ph.D. students, since those students need to produce research results in order to obtain their degrees. In contrast, the more "risky" tasks with a higher level of uncertainty are more likely to be passed to junior faculty or postdoctoral researchers, since they can "afford" to assume projects with somewhat longer time horizons.

Faculty are using a wide range of strategies in order to protect their academic freedom—quite in line with the range of strategies proposed by Oliver (1991). Faculty try to balance their own preferred topics with the research priorities of sponsors; they seek to fit the sponsors' priorities into their own research agendas through "packaging" the ideas in the "right way" (Leisyte 2007). Leisyte sought to understand how the amount of credibility and reputation possessed by a particular academic shapes how he or she responds to the demands for relevance that emanate from a wide array of audiences in the institutional environment. These new demands for relevance may require different types of credibility building compared to those used by faculty to advance their academic reputations. This has been seen both for life scientists who are more familiar with "selling" their research to external stakeholders and for medieval historians, for whom this is a new contextual reality. However, as shown in a study of humanities departments in Austria, Germany, the United Kingdom, and the Netherlands, this adaptive behavior has its limits, since humanities faculty showed resistance to externally-driven research priorities by using defiance and symbolic compliance strategies (Kehm and Leisyte 2010). Similarly, Schimank and Stucke (1994) have proposed a range of coping strategies used by faculty, given pressures from the institutional environment. These strategies included "coping in terms of suffering" and "defensive coping." The first strategy meant complying with the external requirements that are not viewed by faculty as useful, such as filling in various performance evaluation forms. Defensive coping,

in contrast, refers to noncompliance strategies where faculty ignore or find ways around the requirements of managers.

Research by Laudel (2006) has indicated how scientists in Germany and Australia adapt to funding conditions that threaten their professional autonomy. She found that applied physicists used strategies such as diversifying research topics, selecting externally predetermined topics, avoiding risky research, and avoiding controversial topics. Her study suggests that problem choice among scientists is compromised by external funding conditions and leads to decreasing research quality, disappearance of slowly progressing research, and a shift toward applied research and a change in the experimental/theoretical character of research. Studies in Finland and Russia have also shown that faculty engage in more entrepreneurial activities as a way of diversifying their financial base so that they can still carry out their preferred teaching and research projects (Johnson and Kortunov 2011; Laudel 2006; Ylijoki 2003).

The strategic behavior of faculty, as well as the significance of seniority, is also found in a study of French electronics scientists. Barrier (2010) has shown that fixed-contract faculty have much less autonomy to decide what to research and how to organize their activities compared to those having permanent positions. In these case studies of electronics laboratories, Barrier has shown that Ph.D. students within this field assimilate into their research groups as contract researchers and are viewed as project workers. Following the patronage and partnership models of authority relations in research units (Clark 1973; Lemaine et al. 1973), Barrier shows how the growing prevalence of project funding is changing not only academic practices, but also interactions within the research unit from a patronage model to a partnership model. In a patronage model, the research group leader is a professor who takes care of the group within a hierarchical governance mode. The partnership model, in contrast, refers to a flatter group hierarchy, where the group leader is more of a manager and a colleague. Another study of research practices at one of the largest academic centers in the French system (Louvel 2010) has indicated that the patronage model is quite efficient in protecting the research team's professional autonomy against hierarchical pressures, while the partnership model does not have a direct consequence for the research unit's ability to innovate. The partnership model, however, may further meritocracy, since it allows room to maneuver for any researcher who shows initiative. A similar trend toward the partnership model is also observed in Germany (Meier and Schimank 2010).

Teaching-Research Nexus

Given an expansion of higher education systems, universities in Europe are facing demands for more teaching. In this context, the quality of teaching and its connection to research have increasingly become the concern of European governments. At the same time, given the increasingly dominant logic of the "evaluative" state, as well as increasing competition as expressed through international university rankings, governments and universities are preoccupied with increasing the number and

quality of research outputs. Given pressures to “do more with less” and the assumption that teaching usually carries less importance than research in evaluations of faculty performance, conflicts between teaching and research are likely to occur (Lucas 2006).

Studies on the history, characteristics, and nature of the teaching-research nexus have ranged from a positive to a negative relationship, as well as the nonexistence of the nexus (Coate et al. 2001; Elton 1986, 2001; Hattie and Marsh 1996). These studies provide no conclusive answers and report many difficulties in determining and measuring the connections between the discovery of knowledge and the transmission of knowledge (Hattie and Marsh 1996; Neumann 1994, 1996).

Historical studies have shown how the teaching-research nexus has evolved in different European countries. It is important to understand the different models that have emerged, since changing academic work conditions may influence the teaching-research nexus in various countries in different ways. According to Schimank and Winnes (2000), three models may be distinguished in this regard. In the pre-Humboldtian model, research and teaching are separated in different institutions, as can be found today in France, Spain, Hungary, the Czech Republic, and Russia. This institutionalized division of universities and research institutes dates back to the eighteenth century. According to this model, research is carried out separately from teaching and was deemed to be mainly a researcher’s own scientific inquiry (Schimank and Winnes 2000, p. 404). The second model concerns the modern idea of an interrelated unity of research and teaching. It stems from Wilhelm von Humboldt’s nineteenth-century university ideal and emphasizes the integration of teaching and research with a heavy assignment of research to universities and a blending of teaching and research in the professorial role (Clark 1983). Germany and Italy would be examples of this model. The third model is the post-Humboldtian pattern characterized by “a differentiation of roles and/or organizations and/or resources for teaching and research” although both roles are expected of academics at a university (Schimank and Winnes 2000, p. 398). This pattern goes further than the Humboldtian type in terms of the differentiation between the two activities, and it is to some extent found in the United Kingdom, the Netherlands, and Scandinavian countries.

Studies of the characteristics and structures of the teaching-research nexus have focused on different levels of analysis: national higher education systems, institutions, departments, and faculty members. These studies have concluded that teaching and research time allocation, as well as the ways in which faculty conceptualize the nexus, depend very much on the structure of the national higher education system and the values and practices of the academic discipline (Deem and Lucas 2007; Elton 2001; Enders and Teichler 1996; Robertson and Bond 2003). Further studies have pointed toward the influence of institutional and departmental rules, cultures, and policies on the relationship between teaching and research (Deem and Lucas 2007; Leisyte 2007; Taylor 2007).

Some wide ranging surveys shed some light on the differences in the characteristics of the teaching-research nexus in European higher education systems (Enders and Teichler 1996; Fulton 1996; Halsey and Trow 1971). The Carnegie study of the academic profession provided comparative evidence regarding how faculty allocate

time toward teaching and research, and how those allocations vary by country and level of faculty seniority. Attitudes toward teaching and research also differed by country and academic field. For example, in the United Kingdom, the teaching-research nexus has traditionally been strong, where 24% of faculty time is allocated to research. In Germany, 29% of faculty time was spent for research. Moreover, German professors favored teaching most, compared to the United Kingdom and the Netherlands (Enders and Teichler 1996). In Germany, professors had less administration and more teaching, while junior academics in Germany did more research than teaching. The country in between was the Netherlands where there was much teaching in all positions, although senior faculty were also doing more administration. In Sweden, the picture was very different, since professors did more research overall (Fulton 1996). As noticed by Fulton, the trend of deprofessionalization could be observed in Swedish universities with clear division between senior and junior academics, where the junior faculty were viewed as knowledge workers who conduct routine tasks.

Recent studies of the organization of the teaching-research nexus have revealed changes in the model of time allocation for teaching and research. As noted by de Weert (2009), three major trends are observed: cross-fertilization, diversity of career patterns and rewards systems, and divergent research missions across institutional types. In terms of cross-fertilization, in the French model, a movement toward closer collaboration between universities and separate research institutes can be observed. New structures, called “mixed research units” have been formed, and include both university faculty and researchers from the institutes. Musselin (2005) argues that such agreements facilitate collaborative work among scholars, and researchers from the institutes are invited to give seminars at the university and to supervise doctoral students. Furthermore, in some European countries such as Germany, the Netherlands, Scandinavia, and France, the model of academics allocating a fixed percentage of time for teaching and research has been replaced by staffing models that allow for more freedom in the division of teaching and research per faculty member. For example, as observed by de Weert (2009), in the Netherlands, a more diversified career pattern can be found in the new job ranking system. Individual faculty members can apply for specific roles on the basis of an assessment of their qualifications to be involved either in teaching or research. Thus, through a system of functional role differentiation, specific competencies can become visible, and research performance does not become the only factor in establishing a faculty career path. However, the Dutch system still maintains a close connection between teaching and research through this newly designed instrument for defining personal development plans and distinctive career paths. Functional levels within teaching and research are linked insofar as the separate tasks can be carried out for the duration of a previously planned period. This means that for a given period, the agreement can be for the faculty member to carry out only research, having time away from teaching, while later the reverse arrangement can be followed. Moreover, the combination of competencies in teaching and research is assigned a higher value by universities than competencies in either research or teaching alone (de Weert 2009, p. 148).

Looking at the nature of the relationship between teaching and research, some studies have revealed an inverse relationship. Hattie and Marsh (1996) provide three arguments for a negative relationship. Their scarcity model suggests that teaching and research are in conflict with each other and compete for time, energy, and commitment. When research competes with teaching obligations, teaching tends to suffer as a result (Zubrick et al. 2001). For example, students find the availability of teachers important and this availability in research universities—driven by academic prestige primarily based on research performance—is frequently perceived as limited. The second argument for a negative relationship, their “differential personality model,” proposes that the two activities require contrary personal orientations. The third argument pertains to their “divergent reward system model” where “research and teaching are conflicting roles with different expectations and obligations that are motivated by differing reward systems” (Zubrick et al. 2001, p. 510). Barnett (2003) also criticizes the teaching-research nexus, as he sees these two activities as different and one is not superior to the other. University teaching and research have become separate functions, he argues, with different structures and interests, and which require different competencies.

In contrast, proponents of a strong integrationist view stress the synergy possible by connecting teaching and research. This view represents Hattie and Marsh’s (1996, p. 511) “conventional wisdom model,” which argues that in higher education, faculty cannot be good researchers unless they are also good teachers, and vice versa. Studies indicate that academics have a common belief that teaching and research are positively correlated (e.g., see Smeby 1998). Academics also tend to believe that the effects of research on teaching are more important than the effects of teaching on research.

A study of the teaching-research nexus in medieval history and life sciences departments in Dutch and UK universities (Leisyte et al. 2009) has indicated that the teaching-research nexus is being reshaped by factors in the institutional environment, including budgetary pressures, growing student numbers, and the expectations of external sponsors of research. On the one hand, the study revealed support for the nexus. Many interviewees revealed clear indications in favor of the “conventional wisdom model” (Hattie and Marsh 1996, p. 511): teaching and research should be tightly coupled. The study participants also indicated a belief that research is more important for teaching than the other way around (see also de Weert 2009; Smeby 1998), although occasionally academics said that research may benefit from teaching. On the other hand, academics reported an increasing level of competition between teaching and research time, leading to intense conflicts in their work portfolios. Furthermore, an increased administrative burden, particularly for senior academics, enhanced this time and energy competition. These academics indicated that the intensifying time allocation challenge was due in part to changes in university policies, including rewards and penalties via financial incentives and staffing policies. For example, promotion criteria required a certain number of publications within a limited timeframe, and if faculty members failed to produce the required research publications, they would not be allowed to participate in the research evaluation exercise, which eventually may marginalize them into teach-

ing-only roles. On the contrary, in the case of successful research output production, recognition came from university management, and faculty were sometimes released temporarily from their teaching responsibilities (e.g., for one semester) as a reward for successful research. Faculty in this study also reported that they worked long hours and took only brief holidays, so that they could address their intensifying workload demands. Although traditionally there are differences in the number of hours taught in history as compared to the life sciences, academics in both disciplines reported workload increases due to the growing number of tasks expected of them in teaching, research, and administration.

Moreover, nearly all academics observe—to their disliking—a change in the nexus toward separation of the two activities. Particularly, institutional policies that create teaching-only positions are disliked by most academics in Europe (Leisyte et al. 2009). This shift toward loosening the nexus between teaching and research may be stronger in the United Kingdom than in the Netherlands. In the United Kingdom, research performance, mapped by the RAE, has direct consequences for the academic unit's funding level. Consequently, university managers, as well as the academic units themselves, make an all-out effort to look good on the research front. Low performers in research are “kindly requested” to focus on teaching. This outcome supports Ben-David's (1972) observation that the rise of research weakens the unity of teaching and research. Leisyte et al. (2009) also conclude that the post-Humboldtian pattern, characterized by a differentiation of roles and resources for teaching and research, is emerging where the nexus between the two activities is eroding. Similar findings have been observed by a number of authors studying the effects of the RAE on the teaching-research nexus in the United Kingdom (Halsey 1995; Jenkins 1995; Lucas 2006; McNay 1995).

Hattie and Marsh (1996) emphasized that institutional contexts are important in shaping the nexus. A strand of literature has addressed the issue of how departmental structures, cultures, and policies shape the teaching-research nexus. These studies have examined the management of the link between teaching and research by institutions and by individual academics. Studies in the United Kingdom have shown the importance of how these two activities are managed (Jenkins et al. 2003; Taylor 2007). Scholars have drawn attention to the prioritization of research due to increasing research expectations (especially in systems where national research evaluation schemes are linked to the financing of higher education institutions, as in the United Kingdom and the Czech Republic). Given expectations that they will produce a certain number of research outputs, faculty have increasingly been socialized to value research. For example, using Bourdieu's theory, Deem and Lucas (2007) studied research-active academics in five education departments in English and Scottish universities in order to understand whether academic habitus and departmental cultures appeared to be affected by research assessment practices. They concluded that the majority of education faculty had different habitus compared with academics in non-vocational fields, with academic capital being more prevalent than scientific capital at the entry point in their academic career. Following Bourdieu (1988), scientific capital and academic capital represent two paths for academic careers. The path of building scientific capital is based on attracting research funding and

producing publications as the main forms of capital. The path of academic capital includes teaching, academic networking, leadership, and gate-keeping of disciplinary boundaries. Deem and Lucas found that the majority of interviewed academics valued scientific (research) capital more than academic (teaching) capital in the context of the RAE in the United Kingdom, other policy initiatives, and their department's preferences.

While national research evaluation schemes are determining factors in resource allocation decisions in some European nations such as the United Kingdom, in other countries the influence of the academic disciplines and peer review processes remains stronger. In the Netherlands, for example, the influence of the disciplinary, peer-review-based research evaluation can be an important factor in the decisions of university management to increase funding or to maintain institutional funding for specific areas. Switzerland represents another example of this practice (Chandler et al. 2002; Gläser et al. 2010a; Leisyte 2007; Morris and Rip 2006; Whitley and Gläser 2007). Despite the country studied though, the perception of increased accountability and an increasing variety and amount of administrative tasks has been witnessed across the board. Concerns about work performance, time constraints for research and teaching tasks, and decreasing faculty work satisfaction have accompanied this development (Barrett and Barrett 2008; Chiang 2006; Henkel 2000; Tammi 2009; Vardi 2009). Thus, studies of the teaching-research nexus that take into account institutional context are increasingly paramount. For instance, Deem and Lucas (2007) concluded that while the teaching-research connection mattered to many of the academics they interviewed, its interpretation and the ways in which scientific (research) capital and academic (teaching) capital are sustained and developed, are related to both local departmental cultures and the broader national policy contexts.

Furthermore, scholars have investigated how the character of academic disciplines and faculty conceptions of knowledge impact the relationship between teaching and research (Deem and Lucas 2007; Jenkins 2004). Differences in conceptions of the relationship between teaching and research may be partly caused by disciplinary differences in epistemology, truth criteria, and cultural norms (Becher 1989; Robertson and Bond 2005). For example, Robertson (2007) notes that in the hard disciplines, the link is characterized as “transmission” and “weak,” while in the soft disciplines, the link is conceptualized as “symbiotic” and “integrated.” Other scholars have sought to reveal the underlying processes that shape the relationship between teaching and research in different disciplines (Becher and Trowler 2001; Henkel 2000; Mangset 2009; Musselin and Becquet 2008).

Some studies have focused on particular disciplines' understandings of these concepts on a smaller scale. For example, in the Dutch context, Leiden University case studies attempted to shed light on the conceptions of research, teaching, and knowledge in various departments of sciences faculty (van der Rijst 2009) and humanities faculty (Visser-Wijnveen 2009). In the United Kingdom, as another example, education departments were studied. Academics in those departments saw the teaching-research relationship in a variety of ways, “from an emphasis on collaborative problem-based learning to more individualized use of personal research

in teaching” (Deem and Lucas 2007, pp. 129–130). In Norway, France, and the United Kingdom, conceptions of teaching among historians were investigated, which again revealed divergent conceptions of teaching in different countries in the same discipline (Mangset 2009). These findings point to the limitations of standardized performance evaluations and promotion criteria in different countries, even in the same discipline, since depending on the discipline and the conception of the teaching-research nexus, faculty may see the emphasis as a threat in some disciplines and countries, while in others, they may see it as a reinforcement of their common practice. Moreover, differences in the conceptualization of the teaching-research nexus in different disciplines may also have implications for the responses of academics, if university management decides to establish unified performance criteria for the entire university without taking into account the strong differences among the disciplines regarding the teaching-research nexus.

Academic Productivity

A related change in academic work as discussed by higher education scholars is academic productivity. Academic productivity has been an important topic for scholarly discussion as well as for policy makers, since research and teaching expectations have been increasing in recent years. Academic work traditionally has been understood as teaching and research, which in the view of some productivity studies would mean the number of graduates produced or the number of publications published. Increasingly, research administration tasks together with the writing of research grant proposals have come into the portfolios of academics. In some of the more applied disciplines, entrepreneurial activities, such as consultancy work, patenting, and corporate education have become an inherent part of what is understood as academic work. Although these activities are not completely new for some disciplines, the emphasis on third mission activities at universities, coupled with demands for relevance from research funding agencies, have added a new importance for commercialization of knowledge in all disciplines (Barrier and Musselin 2009; Krücken and Meier 2006).

Research productivity has been widely studied in scientometrics and bibliometrics, primarily examining the changing quantity of scientific production in the fields that can be studied using such techniques (i.e., the sciences that tend to publish in ISI journals and therefore accessible for empirical investigations). Such studies have shed light on the number of publications produced and changes thereof in different fields and countries, which would allow researchers to draw conclusions on the performance levels of national higher education systems or the changing patterns of collaboration between scientists in different fields. Although limited to coverage of specific databases and a specific definition of productivity, these studies have shown that different kinds of collaborations contribute to scientific productivity of individuals, groups, and universities (Barjak and Robinson 2007; van Raan 1998). For example, studies on university-industry collaboration have shown that highly

performing academics (those who publish a great deal) also tend to be top performers in terms of coinventions with private firms (Balconi and Laboranti 2006).

Studies on productivity have investigated factors at individual, group, university, and national policy levels. These studies have examined how national research evaluation schemes, changing national research funding regimes, industrial funding, or governance changes in universities influence researcher productivity (Gläser et al. 2010a; Gulbrandsen and Smeby 2005; Horta and Lacy 2011; Jongbloed and Meulen 2006; Leisyte et al. 2008; Morris and Rip 2006). It is difficult to directly trace the effects of managerial control or evaluation procedures on productivity as can be seen from a number of studies that seek to evaluate the impact of the RAE in the United Kingdom on faculty research performance (Harley 2002; Hicks 2009). While it is possible to measure the increase in quantity, the change in quality of research outputs is much more difficult to study, despite some attempts (Gläser et al. 2010a; Laudel 2006; Leisyte 2007).

National evaluation schemes, as well as university personnel policies, have led to an increasing emphasis on the quantification of scientific outputs. A study of the Czech higher education system, for example, has revealed that after the point system was established for awarding productive scientists with financial bonuses, scientists markedly increased the number of their scientific publications (Leisyte et al. 2011). Several studies, however, have indicated that faculty perceive this heightened emphasis on the quantification of outputs as a negative development. For example, in the study of life scientists and medieval historians in the United Kingdom and the Netherlands, Leisyte (2007) found a standardization of output expectations in terms of quantity and quality in the studied universities. From case studies in Germany, Austria, and France, one can also note a similar trend; specifically, publish-or-perish logics dominate university assessments of faculty performance (Barrier 2010; Kehm and Leisyte 2010).

Furthermore, the expected outputs of faculty research have become more standardized, as national evaluation schemes and university personnel policies are increasingly linked to the quantity of peer-reviewed journal publications. International peer-reviewed journals have gained in importance compared to books and book chapters, as witnessed in the United Kingdom, the Netherlands, Germany, and Austria (Kehm and Leisyte 2010). This change was also perceived negatively among the medieval historians in Leisyte's (2007) study. Moreover, the increasing emphasis on competitive research funding and the prevailing practice of project-based funding may be seen as a threat to long-term research lines, as well as to research outputs that take longer to produce, such as monographs in the humanities (Barrier 2011; Leisyte 2007). By project-based funding, we mean research projects that are funded by external funding agencies for a specific period of time on a defined topic.

The growing emphasis on quantifiable research outputs may have negative implications for research quality. Given expectations to do more research in the context of scarce resources, faculty may be compelled to compromise the quality of their research processes. A study of German academics (Gläser et al. 2010b), for example, revealed a perceived decrease in scientific quality due to scarcity of resources and constraints on faculty time due to work overload. For example, some of

the coping strategies described by faculty in this study included using student labor in research projects in biology, physics, and geology; doing consultancy work, so-called “jobbing”; and reducing the empirical basis of their projects, which was witnessed in biology, geology, political science, and history. The use of student projects in faculty research agendas, the focus on consulting, and the reduction in empirical work, will likely lead to lower quality research.

In addition to the growing emphasis on the quantification of research outputs, governments and external sponsors have emphasized the need for relevance in research outputs (Hessels et al. 2009). To understand the change from “academic” to “relevant” outputs, Wigren-Kristoferson et al. (2011) provide evidence from Sweden regarding the changing nature of academic work and the diversifying activities of faculty. They focus on the involvement of scientists in commercialization and public dissemination activities by analyzing “high-performing” researchers based in Sweden. They found that there is a strong, virtuous, cyclical model connecting different academic activities. Conducting high quality research creates opportunities for disseminating academic knowledge in various forms. Exploiting these opportunities is instrumental for building a reputation in society and for pursuing additional funding sources. This, in turn, fuels further knowledge production and the cycle continues.

The push for relevance in research outputs, however, may lead to role conflict for faculty members. Leisyte’s (2007) study of research units in Dutch and English universities shows that faculty prefer to invest their time in producing credible outputs for the academic community. Patenting, therefore, can be detrimental for researchers who want to make the outcomes of their work public as soon as possible. This study revealed that faculty think that patents hardly pay off in terms of costs and benefits. These faculty members also discussed tensions that emerge from ambivalent signals and contradictory expectations that their research groups face. On the one hand, major research evaluations and funding streams are based on expectations for research excellence. On the other hand, the research groups experience a growing rhetoric of “relevance” coming from university management that does not pay off in terms of reputation and funding. This tension is more visible in the United Kingdom than in the Netherlands. Leisyte theorizes that this may be due to the difference in research evaluation systems in the two countries, which affect the academic credibility cycles in different ways. The results of a department’s performance in the research assessment in the United Kingdom are directly related to funding allocations for research from the Higher Education Funding Council, and the assessment is carried out by panels that consist of both peers and external stakeholders. The Dutch research assessment, in contrast, is carried out solely by peer review. Its results inform university managers, but do not have direct financial consequences.

The speed and rhythm of producing outputs have also been influenced by changes in the institutional environment, especially regarding the pace of competition for resources. Barnett (2008), for example, notes that academics work in the context of impoverished time, which can be structured as “busy” or “fast” time. This structuring of time can be self-initiated or imposed by university management. Barnett (2008) calls for a critical phenomenology of academic time, since “the distortion of

academic time has yet systematically to be investigated” (p. 16). From the scarce evidence so far (Henkel 2000; Leisyte 2007), it is possible to note that the production cycle of faculty is increasingly speeding up. Time is becoming an important resource, which among other ways can be acquired by getting a research council grant that will buy a faculty member out of teaching for a certain period of time, as seen in the UK and Dutch examples (Leisyte 2007).

The study of academic productivity has employed a range of theoretical perspectives, such as cultural theory, sociology of science, and sociology of organizations. The Mertonian (1973) norms are often used as a frame of reference for what constitutes the traditional ideals to which academics adhere in producing and diffusing their knowledge. Mertonian sociology of science is contrasted often with Ziman’s (1994) typology of changing academic values toward proprietary, local, authoritarian, commissioned, and expert work (PLACE), which seeks to explain the shifts toward relevance and applicability in faculty research outputs. The credibility cycle of Latour and Woolgar (1979), as well as other “laboratory studies” in the sociology of science (Callon 1989; Latour 1987), have proven helpful in understanding the changing nature of knowledge production by exploring how faculty translate their academic outputs into other resources, among which include networks of academics and potential funders. This translation allows faculty to make their outputs recognized by their epistemic communities, as well as by increasingly diversified actor arenas (Knorr-Cetina 1999).

Bourdieu’s theory of social practice has been helpful to understand the changing academic field. The construct of academic habitus, using Bourdieu’s notion of studying academic dispositions and practices, has been employed to study faculty publication practices and other output “games” of academics (e.g., see Lucas 2006) and in studies of the shifting research arena where the research manager field crosses into the academic field (e.g., see Deem 2006; Shelley 2010). An example of the shifting research arena may be found in the area of writing grant proposals. University managers increasingly check the writing of grant proposals, or even write parts of those proposals themselves, while traditionally this was the sole task of a researcher.

In addition to Bourdieu’s theory of social practice, organizational sociology has been helpful in the study of academic productivity. For example, the Oliver (1991) typology of strategies based on neo-institutional and resource dependence theories has been used to understand academic output production in response to changing environmental expectations (Leisyte 2007). Furthermore, principal-agent theory has been used to understand the responses of faculty to new domains of competition and new research funding conditions (Morris and Rip 2006).

Insights from organizational learning theories, notably the exploration and exploitation behavior of academics, has been investigated in France, the United Kingdom, and the Netherlands (Barrier 2010; Leisyte and Enders 2011). The ambidexterity concept has also been useful to understand the conflicting demands and behaviors of faculty and research units (Leisyte and Enders 2011). Krücken et al. (2009) used neo-institutional theory to study the blurring boundaries between academic and industrial worlds and the adaptive behavior of faculty in a German higher

education system. Also, resource dependence theory has been used to examine the knowledge transfer activities of academics, especially exploring the behavior of university spin-off companies, as seen in Dutch case studies (Zomer et al. 2010).

Academic Identities

Changes in the institutional environment of academics have led scholars to investigate the changing interplay between the professional cultures and identities of faculty members and environmental factors such as funding regimes, managerialism, and audit cultures. One of the most prominent writers in Europe on this issue is Mary Henkel, who has studied the identities and beliefs of faculty in selected UK universities (Henkel 2000). As argued by Bleiklie et al. (2008), her contribution developed “a perspective that makes it possible to move from a top-down to a bottom-up perspective in the analysis of change in higher education” (p. 1). Academic identities are perceived as shared identities, where individual identities are intertwined with the identity stemming from a particular discipline. From this point of view, university education can be seen as the process of socialization into academic norms, values, and ways of looking at the world (Brennan and Patel 2008). For Henkel (2005), academic identities first and foremost are associated with the discipline and academic freedom; these constructs were the source of meaning and self-esteem for the faculty interviewed in her study. Using communitarian moral philosophy and symbolic interactionism, which view individuals as both distinctive and socially embedded, she contends that faculty identities are “shaped and reinforced in and by strong and stable communities and the social processes generated within them” (Henkel 2005, p. 157).

Another perspective on identities—a cultural theory developed by Douglass (1970, 1982) and Thompson et al. (1990)—also holds the view of social embeddedness of individuals. This theory has been employed to study faculty beliefs in a variety of European systems, such as the Netherlands, Portugal, and Germany (Maassen 1996; Veiga et al. 2011). From this cultural theoretical perspective, personal freedom and control of one’s social context is viewed as paramount, however, individual freedom is embedded in institutional arrangements, which among other factors include academic cultures.

Studies have argued that the formation of academic identities is linked not only to the flux of academic communities but also to changing structures and processes within universities. Trowler (1998) argues that changes in the institutional environment, however, do not determine how they will be interpreted by academics or what self-understandings of academics will emerge as a result. Here, the socially constructed nature of academic identities is highlighted.

Taylor’s (1989) work on modern identity and its moral source is another example of an approach that seeks to understand the creation of self-concepts of academics, as shown by Hakala (2009), who argues that the traditional understanding of academic identity is related to ideas of truth, autonomy, academic calling, and passion

for knowledge—which collectively constitutes a moral framework. This framework helps academics define “who they are and what they should aspire” (p. 178). However, studies that explore the self-concepts of academics are limited, although some authors have explored the self-perceptions of teachers and researchers (Akerlind 2008; Brew and Akerlind 2009; Brew and Lucas 2009).

The scholarship on academic identities has identified a number of changes that have been taking place over the past few decades due to emerging trends in the institutional environment. The fragmentation of the academic profession, and as some authors argue the “proletarianization” of academic knowledge workers, are examples of some of the main challenges to academic identities (Dearlove 1997; Enders and de Weert 2009; Stromquist et al. 2007). Some authors have argued that despite the changing management practices and working conditions of universities, faculty have not embraced the values stemming from organizational management. Studies indicate that traditional academic identities are strong, and academics continue to see their roles of teaching and research as primary endeavors in the United Kingdom, Germany, Austria, the Netherlands, and Finland to name a few examples (Henkel 2000; Kehm and Leisyte 2010; Ylijoki 2003). Given strong adherence to traditional academic identities, Barrier and Musselin (2009) argue that the claims of deprofessionalization of the faculty are somewhat overstated.

Studies suggest that academic identities are renegotiated and reasserted as faculty encounter new expectations and pressures in their work environments. Kolsaker (2008), based on six case studies in the United Kingdom, has concluded that academics are positive and pragmatic about managerial control. They accept managerialism as an external technology of control, as well as a facilitator of enhanced performance, professionalism, and status. Kolsaker concludes that this is a more positive view compared to the prevailing literature on the proletarianization and demoralization of academic identities. Kolsaker draws on Hall’s (1996) work, which states that identities are constructed within, not outside, discourse. Her findings, based on Foucauldian epistemology, suggest that her respondents regard their exposure to managerialism as potentially important in maintaining autonomy and in strengthening society’s trust in academics, which may in turn help to maintain the professional status of academics in society.

Theories of academic professionalism and academic work have also been used to understand the interaction between academic identities and changing institutional environments. Musselin (2009) uses Lallement’s (2007) four distinctions of changing academic work—division, individuation, integration, and regulation—to elucidate the shifts in academic work and identities in the changing European higher education systems. She argues that the study of disciplinary divisions in academic work has been addressed in the literature, while the division of work among peers has not been sufficiently studied, since the assumption holds that peers are involved in similar activities. However, divisions among faculty peers have been made visible and more pronounced due to external evaluations where faculty are categorized as “research-active” or not. These new divisions of work can inadvertently influence the self-concepts of various types of academics. For example, in the UK case studies (Lucas 2006), faculty struggled in biology, English, and sociology depart-

ments over academic and research identities. In particular, they were concerned about the classification of faculty for external research evaluations, which distinguish between research-active and nonactive academic staff. As noted by Lucas, not being research active does not mean exclusion from the department, however, the designation has serious implications for the type of work engaged in, the valuing of that work, and individual identity.

Musselin (2009) also argues that individuation has become an increasingly distinctive feature of academic life and identities. The use of differentiated salaries and work conditions that are based on research performance, the importance assigned to external research evaluations (especially in the UK and Czech settings), and the advent of individual faculty rankings using citation and impact factors, further highlight the increased importance of individualism and an individual self in European higher education systems. This observation regarding individualism, however, needs to be taken cautiously, since evidence suggests that Continental Western European countries have not completely embraced the salary differentiation model, and significant differences among countries are observed in terms of the competitive allocation of funds and the differentiation of academic roles in universities (Dobbins and Knill 2009; Enders and de Weert 2009; Jongbloed et al. 2010). At the same time, one can argue that the process of “collectivization” is gaining more ground simultaneously, since external funding agencies increasingly favor collaborative endeavors. For example, the European Union’s funding schemes, such as the Framework Programs’ criteria, favor applications from consortia rather than individual scholars. This means that academics need to collaborate with partners in other countries and sectors, as well as have the administrative capacity to be able to obtain such funding. While collaboration has been the name of the game in the laboratory sciences (e.g., life sciences), this is a new development in the disciplines that have been more individually oriented (e.g., humanities). The paradoxical pressures toward both more individuation and more collectivization at the same time need to be explored at greater depth. Studies are needed to distinguish the changes that take place within different disciplines and what it means for individual academic identities. The empirical evidence that would shed light on these simultaneous processes across countries and disciplines has been thus far rather limited (Henkel 2000; Laudel 2006; Lucas 2006).

The integration of faculty into their organizational context has been another important development in discussing academic identities from the sociology of work perspective (Musselin 2008). The importance of an institutional affiliation and the sense of belonging to a specific university with its particular profile and mission are becoming more of an expectation at European universities. Adhering to an institutional identity is becoming important (Henkel 2000; Morris and Rip 2006). The institutionalized support systems that universities establish for mentoring junior faculty, in areas such as how to write grant proposals, indicate that the organization is increasingly involved in shaping academic work and academic identities (Leisyte 2007).

A further development indicated by Musselin (2008) is the increasing regulation of academic work at universities. The literature provides plentiful examples of how

performance-based academic review procedures have become part of daily faculty life. This expansion of regulation is often viewed negatively by academics as an increase in control over traditionally autonomous faculty, who now must comply with a variety of reporting rules and procedures. Universities in Europe are beginning to establish more explicit career advancement rules for academics, and they are putting into practice the use of contracts-by-objectives to direct the activities of faculty toward specific university goals (de Weert 2009; Musselin 2005). Furthermore, the literature on academic managers has pointed to the blurring boundaries between academic and administrative role identities and the “shifting arenas” in the academy (Deem 2006; Gordon and Whitchurch 2010; Shelley 2010). The boundaries associated with research administration, for example, have shifted and resulted in “a space of tension,” where both faculty and research administrators compete for research cultural capital (Shelley 2010, p. 60).

Influence of Institutional Environments on Academic Work in the United States

Faculty Roles

As universities have developed new entrepreneurial structures and strategies, the work roles of faculty members have been reshaped in important ways. The pursuit of revenue and prestige has generated incentives for faculty to allocate more of their time to research (Melguizo and Strober 2007). Public pressures for accountability regarding the quality of undergraduate education, in contrast, have resulted in additional policies that seek to increase the amount of effort that faculty devote to teaching (Fairweather and Beach 2002). Furthermore, faculty roles have expanded to include expectations for faculty to engage in entrepreneurial activity. These expanding expectations for the faculty role may lead to higher levels of structural differentiation and the use of more teaching-only and research-only faculty appointments (Eckel and Morphew 2009; Schuster and Finkelstein 2006).

While the prioritization of research over teaching was triggered in part by the rising power of academic disciplines during the 1950s and 1960s (Jencks and Riesman 1968), the shift from teaching toward a greater emphasis on research was gradual, and did not reach its peak until the 1980s. As Schuster and Finkelstein (2006) note, “During the first several decades following World War II, faculty members spent a majority of their work time, as much as two-thirds, directly engaged in instructional duties.” By 1987, however, “the portion of their effort devoted to teaching declined to about half of their overall effort” (p. 89).

During the 1980s and 1990s, public stakeholders began to express concerns regarding whether faculty research detracted from their teaching responsibilities. While faculty tended to argue that research informs and enriches their teaching, external observers were more likely to suggest that faculty neglect undergraduate

students so that they can focus on research and graduate education. For example, Massy and Zemsky (1994) argued that decreased teaching loads have provided faculty with larger amounts of discretionary time, which they have invested in their research agendas. Faculty use their discretionary time to maximize research activities, because those outcomes are associated with greater prestige in the discipline and with greater pay from their employing institutions. These efforts, Massy and Zemsky argued, diminished faculty attention toward teaching and contributed to a decline in the quality of undergraduate education.

These concerns led researchers to conduct a large number of studies on the relationship between faculty research productivity and teaching performance. The overwhelming majority of these studies revealed no correlation, or only modestly positive relationships between teaching and research performance. In a review of this research, Feldman (1987) concluded that “an obvious interpretation of these results is either that, in general, the likelihood that research productivity actually benefits teaching is extremely small or that the two, for all practical purposes, are essentially unrelated” (p. 275).

Schuster and Finkelstein (2006) noted that the proportion of time that faculty devoted to teaching began to increase during the 1990s, which they attributed to “a significant teaching-friendly correction” (p. 90) that ensued following critiques that higher education institutions were neglecting undergraduate education. The increase in attention toward teaching, however, did not come at the expense of research. Instead, faculty were able to devote more time to teaching because they increased the total number of hours they worked each week, and because they began to allocate less time toward governance matters on campus. As Schuster and Finkelstein (2006) explained, “To the extent that both teaching and research pressures have increased, the resolution of those forces has apparently been achieved via a combination of decreased time allocation to administration and a greater aggregated volume of work effort” (pp. 96–97). Schuster and Finkelstein found that between 1984 and 1998, the average work week for faculty expanded by 21.5% to a total of 48.6 hours per week. Moreover, between 1972 and 1998, the number of faculty who worked more than 55 hours per week doubled from about one in eight, to one in four.

Milem et al. (2000) also found an increase in the amount of time that faculty devote to both teaching and research. They examined faculty survey data from 1972 to 1992 and found a significant increase in time spent on research at research, doctoral, and comprehensive institutions. Faculty at doctoral and comprehensive institutions also reported statistically significant increases in time spent on teaching. Time spent on teaching was statistically unchanged at research universities. These findings lend support to the argument that doctoral and comprehensive universities are pursuing isomorphic strategies that emulate the research university model. Nevertheless, these strategies did not appear to compromise time spent on teaching. Faculty at doctoral and comprehensive institutions have increased the amount of time they spend on both teaching and research. Milem et al. (2000) argue that institutional environments may be exerting pressures on faculty to engage in both more teaching and more research. Some state policies mandate an increase in teaching productivity among public university faculty, whereas other state policies seek to increase

the amount of research conducted by faculty in order to advance goals related to technology transfer and economic development.

Colbeck (1998) reframed the issue regarding faculty time allocation between teaching and research. She found that some faculty are able to integrate their teaching and research roles such that a particular work activity fulfills more than one purpose. Undergraduate research initiatives are one example of how faculty can integrate their teaching and research. Faculty are able to advance their research projects, while students build skills and gain mentoring through the research process. The growing emphasis on research, therefore, may not necessarily damage undergraduate education. The potential for integrating the roles of teaching and research, however, may be shaped by disciplinary norms or delimited by performance expectations associated with research universities. For example, the publication of a textbook would certainly enable the faculty member to integrate teaching and research; yet, in research universities, textbooks may be viewed as less worthwhile products than peer-reviewed publications. Furthermore, some faculty might argue that the integration of teaching and research is more feasible in a professional or applied field, rather than in a basic sciences discipline.

A further concern regarding the composition of faculty roles pertains to whether faculty involvement in entrepreneurial activity leads them to neglect other components of the faculty role, including teaching and service. Campbell and Slaughter (1999) found that faculty who were involved in university-industry partnerships were less committed to their traditional academic responsibilities (teaching and service) than their colleagues who were not engaged in such partnerships. Likewise, Lee and Rhoads (2004) sought to determine whether entrepreneurial activity has an effect on faculty levels of commitment to teaching. They found that acquiring grant funds for research was negatively related to faculty commitment to teaching. In contrast, faculty consulting activity had a modest positive effect. Thus, different types of entrepreneurial activity may have different implications for faculty commitment to teaching. Furthermore, Bunton and Mallon (2007) found that when senior-level life sciences faculty were affiliated with a research center, they spent a smaller percentage of their time teaching than their nonaffiliated colleagues. Center-affiliated faculty also directed more of their teaching effort toward graduate students than nonaffiliated faculty. The findings of these studies suggest that entrepreneurial activity may “crowd out” other forms of faculty work.

In terms of the service roles of faculty, Campbell and Slaughter (1999) found that faculty involved in university-industry partnerships had reconceptualized public service to include the development of revenue-generating relationships with corporations. They viewed “the public” to include industry, and “service” as contributing to economic development and job creation. Their shifting definition of service allowed these faculty to integrate their roles of research commercialization and public service, thus reducing their level of role conflict, as Colbeck’s (1998) research would suggest. However, faculty colleagues who were not involved in university-industry partnerships were less supportive of the idea that research commercialization efforts constitute public service. Thus, as universities engage more

extensively in research commercialization, different groups of faculty may come to define public service in divergent ways.

Furthermore, faculty roles have been altered in fundamental ways by the greater use of teaching-only and research-only appointments. Entrepreneurialism and associated revenue-generating strategies have led to what Schuster and Finkelstein (2006) refer to as the “unbundling” of the faculty role (p. 108). Rather than have all faculty perform teaching and research responsibilities, institutions are hiring more teaching-only and research-only faculty (Eckel and Morphew 2009). Teaching-only positions may be created to staff the new academic programs developed by entrepreneurial units within the university, such as online or corporate education divisions. This arrangement enables the tenure-eligible faculty to focus on teaching and research within their respective disciplines (Baldwin and Chronister 2001). Similarly, universities may hire research-only faculty to staff centers and institutes, thus allowing the tenure-eligible faculty to continue their work with students while still increasing the research capacity of the institution. These types of nontenure appointments advance the aims of entrepreneurialism, because teaching-only and research-only faculty serve on contracts that can be terminated quickly if revenues decline. This staffing arrangement also permits the university greater flexibility in the development of new programs. Universities can experiment with new academic programs and research initiatives without the long-term commitment associated with hiring tenure-track faculty. If the risk does not pay off, then the staff can be released from their contracts.

The unbundling of the faculty role, however, has important implications for university governance. This trend suggests that an increasing number of faculty will not be eligible for tenure, and therefore will not have the same academic freedom protections as previous generations of faculty. In 2003, the majority (58.6%) of all full-time faculty hires were appointed to nontenure-eligible positions (Schuster and Finkelstein 2006). Thus, among new hires, full-time faculty are now more likely to be in a nontenure position (teaching-only or research-only) than in a tenure-eligible position. As the core of full-time, tenure-eligible faculty continues to shrink, governance processes may become compromised. Fewer faculty will be willing or eligible to serve on governance committees and faculty senates. The collective power of the faculty is likely to diminish as a result. Faculty without the protection of tenure may be unwilling to criticize or challenge an administrative policy. Moreover, the smaller core of tenure-eligible faculty may become overburdened with an increasing obligation for participation in campus governance. As a result, they may defect from governance responsibilities, and instead focus on their teaching and research roles (Tierney and Minor 2003).

Research on the relationship between institutional environments and faculty roles has used a range of theoretical perspectives. Several authors have used institutional theory to examine how the isomorphic strategies of higher education institutions may shift the allocation of faculty time toward research (Dey et al. 1997; Milem et al. 2000; Morphew 2002). In addition to institutional theory, resource dependence theory is another prominent perspective in the study of faculty roles. Bunton and Mallon (2007) used resource dependence theory to explain why life

sciences faculty members would choose to affiliate with a research center or institute. Likewise, Campbell and Slaughter (1999) used resource dependence theory to understand the incentives that drive university-industry partnerships, as well as theories of professionalization to understand how faculty structure their interactions with entrepreneurial markets. Other authors have used sociological role theories to understand the organizational and individual factors that shape how faculty allocate their time to various activities (Colbeck 1998).

Faculty Reward Systems

Many scholars suggest that the heavy emphasis on research is associated with the faculty reward systems established by universities (Austin and Gamson 1983; Rice et al. 2000). Pay, promotions, and prestige are linked to faculty performance in the research role (Alpert 1985). Fewer rewards are available for teaching and service. The emphasis on rewards for research has likely been strengthened by pressures in the external environment associated with market-based competition and privatization (Fairweather 2005; Morphew and Eckel 2009). As the funding basis for higher education has shifted increasingly from public sources to markets, universities are under greater pressure to compete for revenue sources. Universities may establish faculty reward systems that provide incentives for faculty to engage in market-oriented behaviors. These reward systems seek to foster higher levels of faculty involvement in activities that bring revenues and prestige to the institution.

Research has examined how reward systems influence faculty behavior. Tenure and promotion criteria, in particular, are viewed as highly influential in shaping the behaviors of early-career faculty (Rice et al. 2000). Tierney and Bensimon (1996) found that junior faculty members were shaping their behaviors to conform to their university's expectations for research productivity so that they would be viewed more favorably when the institution considered them for promotion and tenure. As a result, junior faculty sought to reduce time spent teaching, as well as avoid service on time-consuming governance committees.

Boyer's (1990) *Scholarship Reconsidered* advocated for a reward system that includes more flexible criteria for gaining tenure. Boyer called on universities to adopt a broader definition of scholarship, which would recognize and reward a wider range of faculty activity. The expanded definition of scholarship would include: (1) the scholarship of discovery in order to generate new knowledge through empirical research and scientific inquiry; (2) the scholarship of integration that fosters interdisciplinary connections and synthesis across academic fields; (3) the scholarship of application, in which faculty expertise is applied to practical problems in society; and (4) the scholarship of teaching, through which faculty develop state-of-the-art curricula to disseminate new knowledge, as well as engage in assessing and evaluating the outcomes of various pedagogical practices.

Since the publication of *Scholarship Reconsidered*, many universities have changed their faculty reward systems to support multiple forms of scholarship. In

a national survey of chief academic officers, O'Meara (2005) found that within the previous 10 years, more than two-thirds (68%) of all 4-year institutions had modified their academic policies to acknowledge or support an expanded definition of scholarship. While O'Meara found a high level of policy change, Braxton et al. (2002) sought to determine whether the work activities of faculty were changing in response to the "Boyer model." They conducted a national study to understand the extent to which faculty have institutionalized Boyer's four domains of scholarship. All four domains had attained a structural level of institutionalization where faculty engaged in these activities with some measure of institutional support. The scholarship of discovery and the scholarship of teaching had also attained a procedural level of institutionalization, where these activities had become a regular part of faculty work routines. However, only the scholarship of discovery (empirical research) had achieved the highest level of institutionalization (incorporation) where faculty values and assumptions support the activity. Thus, while all four domains have made inroads into academic work, the scholarship of discovery remains the most prominent. These findings suggest that although universities may alter their faculty reward policies, such changes may not alter the values and assumptions of faculty and administrators who assess and evaluate faculty work.

Despite some Boyer-inspired reforms, universities continue to prioritize research in their faculty reward systems. Using data from 1999, Melguizo and Strober (2007) found that faculty at research universities continue to devote less time to teaching than faculty at other types of institutions. Research university faculty spent about 47% of their time on teaching, as compared to 57% for faculty at doctoral universities and 67% for faculty at comprehensive institutions. Nevertheless, the reward structures for faculty were similar across all institutional types in that publishing journal articles was significantly related to higher salary. The authors concluded that "other types of universities have emulated research universities to such a degree that rewards to faculty for the production of prestige in comprehensive and doctoral institutions are now quite similar to those of research universities. Moreover, more time spent on teaching was not rewarded in any of these types of institutions" (Melguizo and Strober 2007, p. 663). Thus, faculty reward structures may be increasingly guided by institutional strategies to maximize revenues and prestige.

Fairweather (2005) found that hours spent in the classroom per week was negatively related to pay among faculty in research, doctoral, and comprehensive universities. The type of student taught also affected faculty compensation levels. In all three types of universities, teaching only undergraduate students had a negative effect on pay, while teaching only graduate students had a positive effect. Research productivity had a positive effect on pay in all three types of universities. The total number of refereed publications for the career was strongly, positively related to pay. The results of this study indicate that faculty reward structures are becoming more similar across different types of universities.

Research on the relationship between institutional environments and faculty reward systems is based largely in conceptual frameworks from the field of organizational behavior, including theories of work motivation (Boyer 1990; Fairweather 2005). Other researchers have used cultural frameworks to understand the assump-

tions and values associated with different forms of faculty work. These studies have shown that even when faculty reward policies change, the implicit criteria by which faculty and administrators judge academic work may remain unchanged and persist in prioritizing conventional forms of research (Braxton et al. 2002). Furthermore, some studies have used a cultural framework to explore how faculty are socialized to particular role sets (Tierney and Bensimon 1996). In contrast to these sociological approaches, other researchers have focused on economic theories in order to explain the factors that are associated with faculty salary rates (Melguizo and Strober 2007).

Faculty Productivity

Faculty productivity has been a long-standing focal point for research in higher education (Long 1978; Merton 1968). The literature has identified a range of institutional and individual factors that influence research productivity, including larger size of the department, disciplinary norms, reward and prestige systems, and individual-level psychological constructs such as desire for the intrinsic rewards of puzzle solving (Stephan and Levin 1992). Studies of faculty productivity have focused heavily on research performance, and have given comparatively less attention to teaching productivity.

Rising research productivity across all types of higher education institutions has been a long-standing trend (Blackburn and Lawrence 1995). Bentley and Blackburn (1990) examined data from four national surveys between 1969 and 1988, and found that faculty research output increased at all types of institutions. Similarly, Dey et al. (1997) found a significant increase between 1972 and 1992 in publication productivity for all types of 4-year institutions. These trends provide evidence regarding how previously teaching-oriented institutions have become more research-focused (Morphew 2002).

Further studies have sought to determine whether it is feasible for faculty to be productive and proficient in both teaching and research. Fairweather (2002) attempted to identify the percentage of faculty who were highly productive in both teaching and research. Faculty were deemed highly productive teachers if their classroom contact hours were above the median for their program area and institutional type. Faculty were classified as highly productive researchers if their number of publications during the previous 2 years exceeded the median for their program area and institutional type. Based on national data from 1993, only 22% of all faculty in 4-year institutions were highly productive in both teaching and research. Furthermore, when the use of active or collaborative instructional practices was added to the definition of a productive teacher, the percentage fell to about 6%. Thus, a very small percentage of faculty were able to achieve high levels of teaching and research productivity while also using the pedagogical practices that research shows are most closely related to gains in student learning outcomes.

Researchers have attempted to determine whether faculty involvement in entrepreneurial research diminishes their academic productivity. Some researchers have

found evidence of a virtuous cycle between academic productivity and involvement in entrepreneurial activity. Based on data from 11 major universities, Thursby and Thursby (2011) found a positive relationship between invention disclosure and the faculty member's publication count, as well as citation impact ratings. In contrast, Powers and Campbell (2011) found that the use of exclusive licensing agreements with industry may diminish faculty productivity in terms of published research. Moreover, faculty who were involved extensively in the patenting of discoveries were less likely to collaborate with colleagues at other universities. Such collaboration could jeopardize the ability of the faculty member and the university to appropriate for themselves the revenues that could accrue from discoveries with commercial potential. The differences in these findings may be attributable to the form of entrepreneurialism that the authors investigated. Invention disclosure (Thursby and Thursby 2011) represents a broader range of activity than licensing agreements (Powers and Campbell 2011), which are shaped through direct interactions with industrial firms.

Larsen (2011) conducted an extensive literature review regarding the relationship between entrepreneurial activity and faculty research productivity. The preponderance of evidence suggested that entrepreneurial and academic science may be complementary activities; each may lead to higher levels of the other. A complementary relationship between entrepreneurial and academic science may be field specific. In some fields, such as biotechnology and electronics, the distinction between pure and applied research is less salient (Geiger 2006). When the goal of research falls within what Stokes (1997) refers to as "Pasteur's quadrant"—that is, science that is motivated by both a quest for fundamental understanding and a desire for application—faculty are likely to produce research that is both publishable and patentable.

Other outcomes of academic capitalism and entrepreneurialism may be less favorable toward faculty productivity. For instance, the move toward more nontenure positions may have disappointing consequences. In a study of full-time faculty productivity at research and doctoral universities, Bland et al. (2006) found that appointment type had a significant impact on all measures of productivity. Tenured and tenure-track faculty produced more publications, presentations, and patents than nontenure-track faculty. Tenure faculty also reported working more hours per week (56 hours) than nontenure faculty (52 hours). Furthermore, tenure faculty were more likely to acquire research grants and contracts than nontenure faculty. This finding is noteworthy, given that nearly the same percentage of tenure faculty as nontenure faculty indicated that their primary role was research. In other words, the lower research productivity of nontenure faculty was not because they primarily occupied teaching-only positions. Likewise, Finkelstein and Schuster (2001) found that nontenure-track faculty published fewer articles, worked fewer hours, and spent less time out of class with students. Perhaps the lower productivity levels are not surprising, since nontenure faculty are typically paid less than their tenured counterparts (Baldwin and Chronister 2001).

Research on faculty productivity has generally taken either an organizational sociology approach by investigating institutional and contextual factors that shape productivity, or a social psychological approach that examines how individual char-

acteristics, attitudes, and experiences may affect performance. Studies that examine the relationship between institutional environments and faculty productivity, therefore, are framed within the organizational sociology lens. For example, Dey et al. (1997) used institutional theory to examine how rising research expectations affect faculty productivity. Likewise, Bland et al. (2006) framed their study of the relationship between tenure status and productivity within an organizational sociology framework. Nevertheless, studies in the social psychology tradition can help the field understand how individual faculty attitudes and experiences may be changing as a result of participation in entrepreneurial activities. Thursby and Thursby (2011), for instance, argued that the intrinsic needs of faculty members may drive them to be productive in both entrepreneurial and academic science. They noted that “recent theoretical work shows that curiosity-driven, university research might not suffer from licensing” or other forms of entrepreneurial activity (Thursby and Thursby 2011, p. 21).

Faculty Autonomy

As universities engage in strategic activities that seek to enhance revenues and prestige, faculty may encounter emerging expectations that constrain their autonomy. Research commercialization initiatives, for instance, may diminish the ability of faculty members to determine their own research agendas (Slaughter and Rhoades 2004). Foci for research programs may be determined more by what the market will fund, rather than by what faculty members believe should be studied. Faculty may feel compelled to curtail their pursuit of publication so that the commercial potential of discoveries can be exploited first (Campbell and Slaughter 1999). Moreover, faculty may encounter pressures from senior administrators to engage in activities that bring more revenue into the institution. They may experience pressure to compete for federal grants, attract entrepreneurial research funding from industry, and establish new academic programs that can generate additional tuition revenue. Such pressures may constrain the types of studies that faculty conduct, as well as delimit the types of courses that they can offer.

Some large-scale, industry-funded partnerships have attracted significant media attention, and have raised concerns regarding the preservation of academic autonomy in the setting of research agendas (Slaughter and Leslie 1997). In one highly-publicized case, the University of California Berkeley entered an agreement with Novartis, a Swiss pharmaceutical company, through which Novartis provided \$ 25 million to the university for basic research in plant and microbial biology, a figure that constituted approximately one-third of the department’s research budget. Novartis, in turn, was granted first right to negotiate exclusive licenses on one-third of the department’s discoveries, including those from research funded by federal and state sources. Moreover, Novartis was granted two of the five positions on the department’s research committee, a body that determines how research funds will be spent (Press and Washburn 2000).

Slaughter et al. (2004) examined the tension between publishing and patenting. They found that faculty who were engaged in university-industry partnerships developed strategies that enabled them to both publish and patent discoveries with industry. Specifically, they practiced sequencing and sanitizing. They sequenced the timing of their publications so that they did not interfere with the patenting process, and they sanitized their data by removing information that they knew the companies wanted to protect. While these strategies may enable faculty to maintain both high levels of scholarly productivity and effective relationships with industry, this finding calls into question the effects of university-industry partnerships on the quality, timeliness, and comprehensiveness of published scientific research.

In addition to the challenges to autonomy presented by research commercialization activities, faculty also encounter significant pressures to engage in market-oriented behaviors that have the potential to bring new revenues to their institutions. In their review of academic capitalism at the academic department level, Slaughter and Rhoades (2004) examined data from a previous study on entrepreneurial activity at 11 public research universities that were members of AAU. The study focused on departments of engineering, physical sciences, life sciences, mathematics, and social sciences. At these highly prestigious public universities, faculty felt compelled to compete more extensively for external research dollars, given the relative decline in state support for their institutions. In fact, faculty from two-thirds of the departments reported that they have found it necessary to substitute self-generated revenues for budget items that used to be supported by state appropriations.

Slaughter and Rhoades (2004) noted that the faculty in this study were heavily engaged in academic capitalism, primarily through federal grant and contract work. These faculty were being encouraged by university administrators to not only attract more federal funding, but also to pursue entrepreneurial research ventures with industry. Faculty in this study, however, expressed a strong preference for federal grants over funding associated with industry. Federal grants were viewed as a more reliable and more prestigious funding source. Faculty also argued that a strong base of federally-funded research was necessary before they could become successful in entrepreneurial or private markets. They explained that most entrepreneurial ventures were built on findings from federally-funded research, an outcome made possible by the Bayh-Dole Act of 1980.

In the Slaughter and Rhoades (2004) study, faculty expressed some reservations about research partnerships with industry, particularly regarding whether such activities would lead to an overemphasis on applied research that could diminish their capacity to engage in basic research, which they believed to be central to their work as faculty. This issue reflects a concern regarding academic autonomy and problem choice in faculty research agendas. Furthermore, Slaughter and Rhoades (2004) argued that a focus on basic research provides faculty only “the illusion of controlling research agendas and following research where it leads” (p. 199). The driving forces behind many faculty research agendas remain external to the university. The research agendas of many faculty in this study were supported substantially by grants and contracts from federal agencies, which are increasingly prioritizing commercially relevant research.

Some evidence suggests that involvement in entrepreneurial research markets may change the structure of academic work, from large-scale endeavors with lengthy timelines to project work with immediate time horizons. Slaughter et al. (2004) found that faculty prefer to engage in large, long-term programs of research, however, industrial partners prefer short-term projects. Likewise, Slaughter and Rhoades (2004) examined data from 11 public research universities and found that faculty were concerned that an emphasis on entrepreneurial research with industry would not allow them to examine the big questions of their respective fields. New forms of entrepreneurial work may destabilize the balance between basic and applied research (Anderson 2001), as well as create tensions between the desire to maintain academic autonomy and the need to serve the interests of external stakeholders.

Studies suggest that faculty have developed strategies for maintaining a balance between basic and applied research. Slaughter et al. (2004) found that faculty involved in university-industry partnerships tend to “layer” applied research projects on top of a program of basic research. Applied research projects do not necessarily displace basic science, however, they do constitute an “add-on” to the faculty role, which may cause faculty to work more hours. Bunton and Mallon (2007), for example, found that life sciences faculty worked more hours when they were affiliated with a research center. These extra hours may reflect the additional effort needed to “layer” applied projects (via a research center) on top of an already heavy workload.

Faculty autonomy may be further constrained by the growing administrative apparatus that has emerged around funded research. The management of university-industry partnerships, in particular, may constitute a venue for conflict between faculty and administration. Campbell and Slaughter (1999) discovered that faculty and administrators have different priorities for partnerships with industry. Faculty valued having the ability to work directly with a large number of industry partners, while administrators were more supportive of activities in which they had more control such as granting exclusive licenses and investing university funds in start-up companies. In sum, faculty wanted to have direct access to industry, while administrators wanted to manage the institution’s external relationships. The result of these perspectives may be more conflict between faculty and administrators regarding autonomy and the control of resources.

Study findings have also shown some degree of faculty resistance to elements of academic capitalism that could infringe upon their autonomy. Slaughter and Rhoades (2004) found high levels of skepticism among some faculty regarding the appropriateness of university-industry partnerships. They expressed strong support for Mertonian values of professional autonomy, and they were able to ward off attempts by administrators to reorient their work toward commercial endeavors.

Other studies indicate that the pursuit of entrepreneurial research markets may not necessarily constrain faculty autonomy. In their study of life sciences faculty at 40 leading universities, Bunton and Mallon (2007) found that faculty who were affiliated with a research center were more satisfied with job security and autonomy. The finding for autonomy is noteworthy, given concerns regarding whether entrepreneurial activity would constrain faculty members’ freedom to select their

research foci. For faculty in some disciplines, research centers may be important venues for them to exercise their autonomy—the center could provide faculty access to infrastructure and networks for collaboration; the greater capacity of research centers may be appealing for some faculty who seek to direct their autonomy toward large-scale scientific endeavors.

Similarly, Mendoza (2007) found that graduate students had positive views of industrial sponsorship of research. The study examined the perspectives of graduate students in a material sciences department with extensive government and industrial funding. Students reported that they were satisfied with the amount of freedom that they have in research. Furthermore, Mendoza found that the values expressed by graduate students who were involved in corporate-funded research were consistent with traditional norms in the academic profession. They expressed a strong commitment to academic freedom and the belief that basic science belongs to the realm of the university.

Research on the relationship between institutional environments and faculty autonomy has been carried out largely through the lens of academic capitalism theory (Slaughter and Rhoades 2004). Slaughter and Rhoades' theory of academic capitalism is widely used to explore and discuss the changing structure of faculty work. The theory of academic capitalism suggests that faculty are active agents in the marketplace, rather than passive actors that are shaped by market forces. Thus, observed changes in the structure of academic work are not merely the result of market forces; instead, these changes have likely been initiated by faculty members themselves as they seek to capitalize on opportunity structures in the market.

Researchers have also used Merton's conceptualization of science to determine how faculty values toward professional autonomy might be changing (Slaughter et al. 2004). Mendoza (2007) used a cultural framework to understand how values toward autonomy are conveyed to graduate students. Theories of professionalization also assign a high value to autonomy, especially regarding the extent to which academic professionals are able to structure their work environments (Campbell and Slaughter 1999). Furthermore, the concept of agency is important to both academic capitalism and professionalization theories; agency refers to the ability of an individual to structure his or her own environment in ways that advance goals that are meaningful to the individual (Bandura 1989).

Faculty Identity

Dramatic changes in the external environment may be reshaping not only the roles of faculty members, but also their identities as academics. While the academic discipline has historically served as the primary source of identity for faculty members, other structures and values are beginning to shape faculty members' sense of self. Rather than viewing faculty identity as closely aligned with a discipline or department, academics may begin to derive their sense of self from broader entrepreneurial networks that provide access to resources, prestige, and status. If faculty begin

to assume entrepreneurial identities, then they may no longer maintain the values of openness and disinterestedness in carrying out their work. Research findings, for example, may be held secret in order to exploit the commercial potential of discoveries, rather than published widely to advance the construction of knowledge within the academic community.

Clark (1983) noted that the “discipline rather than the institution tends to be the dominant force in the working lives of academics” (p. 30). The effect of the discipline may be greater for faculty who work in research universities, where prestige accrues through the ability to produce outcomes (publications, grant proposals) that are valued by academic elites within the discipline (Alpert 1985). In fact, faculty may identify themselves primarily with their discipline, and only secondarily with their employing institution (Bess 1988; Clark 1998). University faculty may have cosmopolitan orientations (Gouldner 1957) in which their allegiances are more closely allied with external reference groups and colleagues in the professional discipline community. In terms of governance, cosmopolitan faculty would likely display little interest in campus-wide governance bodies, and would instead seek to influence decisions within their discipline-based academic departments. In a national survey, Tierney and Minor (2003) found that faculty generally viewed departmental governance as more influential and effective than campus-wide governance bodies such as faculty senates. Campus-wide governance, however, may be less effective precisely because faculty prefer to focus their energies on discipline-based matters, rather than on issues that affect the institution as a whole.

The relative importance of the academic discipline in shaping faculty identity, however, may be declining. Universities are establishing new research centers and institutes that become important venues for faculty affiliation and agency (Mallon 2006). Moreover, the growing emphasis on collaborative and interdisciplinary research (Geiger 2006) suggests that the academic discipline may be only one of many sources from which faculty derive their sense of identity.

Entrepreneurial activity may constitute another source of identity development for faculty. Slaughter and Rhoades (2004) argue that academic capitalism may alter significant aspects of faculty identity. The theory of academic capitalism suggests that the boundaries between universities, governments, and market actors have disintegrated considerably. University administrators and faculty members are organizational members who are affected by the external environment, but they are also actors in that environment. Administrators and faculty members initiate academic capitalism; they are not simply captured by the market. University administrators are aggressively pursuing partnerships with industry, even when some industrial firms express caution about their potential for revenue generation. Faculty are also members of wider networks that include government agency staff, private donors, corporate officials, and other scientists working in industry. Faculty have long been actors in the external environment. Slaughter and Rhoades argue, however, that the key difference between the academic capitalism regime and previous eras of faculty involvement in external matters is that the purpose of such interactions has shifted from advancing the public good, toward a profit-making motive. In this scenario, faculty become simply another actor in political and economic exchanges,

rather than remain a disinterested expert. Some observers have expressed concerns regarding whether the Mertonian values of openness and disinterestedness can be maintained when faculty are heavily involved in revenue-seeking initiatives in both teaching and research (Slaughter and Rhoades 2004).

Research findings, however, suggest that faculty who are involved in entrepreneurial activity still seek to maintain an identity that adheres to academic values. Jain et al. (2009) examined the role identities of faculty who were engaged in technology transfer initiatives. Participation in technology transfer had modified the identities of these faculty members. They had developed a hybrid identity, which was characterized by a focal academic self and a secondary commercial persona. In order to maintain the primacy of their academic identities, these faculty engaged in delegating and buffering. Specifically, they delegated many commercialization tasks to staff in their university's technology transfer offices or to graduate students who were particularly interested in industrial careers. They also sought to buffer themselves from the effects of commercialization by reaffirming their commitment to cherished academic values, including an emphasis on basic research. Furthermore, Jain et al. (2009) found that the reasons that faculty members gave for getting involved in research commercialization were heavily linked to their academic identities, specifically the desire to serve as a custodian of the nascent technology that they had developed, as well as leveraging the invention so that it would have a larger societal benefit.

Further studies also point toward the maintenance of an academic identity in the context of academic capitalism. Slaughter et al. (2004) found that faculty who are involved in university-industry partnerships still maintain a preference for publishing over patenting, basic research over applied, and long-term research agendas over short-term project work. Furthermore, Mendoza (2007) found that the values expressed by graduate students who were involved in corporate-funded research were consistent with traditional norms in the academic profession. They expressed a strong commitment to academic freedom and the belief that basic science belongs to the realm of the university, while applications are primarily the domain of industry.

Additional research indicates that graduate students in fields that interact extensively with external research markets still value academic freedom and basic research. Roach and Sauermann (2010) found that doctoral students in the life sciences, physical sciences, and engineering who reported a strong desire for choosing their own research projects, collaborating with the broader academic community, and engaging in basic research expressed a preference for an academic career. In contrast, doctoral students who expressed a concern for salary, applied research, and access to cutting-edge technologies had a stronger preference for a career in industry. The authors conclude that the traditional advantages of academia, especially academic freedom, continue to have a strong appeal to students.

Most of the available research has examined the perspectives of faculty and graduate students at leading research universities where more ample resources are available for academics to enact their autonomy in a wide variety of ways (Jain et al. 2009; Mendoza 2007; Slaughter et al. 2004). The effects of academic capitalism, however, may be different at lower-ranked universities, where resources are

limited and pressures for revenue-generation are more intense. As university reward and incentive systems continue to prioritize faculty engagement with the market, it will be important to determine whether those interactions conflict with or reshape the values of the academic profession.

A further concern regarding entrepreneurialism is that it may dismantle a sense of collective faculty identity. Campbell and Slaughter (1999) argued that a gap will develop and widen between entrepreneurial and nonentrepreneurial faculty. Those engaged in entrepreneurial activity will gain greater rewards and status, while non-entrepreneurial faculty will engage in lower-status activities such as teaching and advising students. Entrepreneurialism and prestige-seeking strategies may also create new alignments between faculty and administrators. Gumpert (1993) examined universities during a period of budget cuts and found that “star” faculty (those with extensive involvement in research grants and publications) became closely aligned with the views of senior administrators, whereas full-time faculty in programs targeted for reduction united with part-time and adjunct faculty in their collective defense against budget cuts. These findings show how a collective faculty identity can become splintered, as competing interests draw new lines of demarcation among groups.

The related rise of managerialism may also portend a decline in a collective sense of faculty identity. Specifically, faculty identity has long been associated with the idea that the professoriate should be a self-regulating community (Schuster and Finkelstein 2006), however, the rise of managerialism suggests that faculty are simply another interest group in the struggle for university resources. Based on a comparison of survey results from 1992 and 2007, Cummins and Finkelstein (2009) conclude that faculty believe that their influence in governance has declined and that the authority of administrators has increased. In 2007, nearly two-thirds (64%) of faculty described governance on their campus as “top down.” Only 30% said that there was good communication between administrators and faculty. Furthermore, the percentages of faculty who indicated that they were involved in the selection of administrators (8%) and in setting budget priorities for the institution (2%) were very low.

Faculty unionization may be viewed as a counterweight for managerialism, but again, this would require a shift in faculty identities. Unions represent only 25% of full-time faculty members in the United States (Clery and Lee 2002). Some argue that unionization diminishes the professional identity of faculty members. Mintzberg (1983), for instance, argued that unionization damages the notion of professional responsibility and interferes with collegiality, because unions assume a conflict of interest between professionals and administrators. While collegial governance may be preferable in situations where common interests are present, critics of unionization do not offer workable alternatives for when conflicts of interest prevail. Entrepreneurial, revenue-seeking organizational behaviors are, in fact, likely to generate even more conflicts of interest between faculty and administration (Campbell and Slaughter 1999; Rhoades and Slaughter 1991). How these conflicts will be addressed remains an important matter for campus governance.

Research on faculty identities is limited in the US context. Nevertheless, several studies of academic work have significant implications for understanding faculty identity. Studies that explore the effects of academic capitalism suggest that faculty identity is being reshaped in ways that position the faculty member as an active agent in markets and politics. This emerging identity differs significantly from the Mertonian conceptualization of academic values (Slaughter et al. 2004; Slaughter and Rhoades 2004). Cultural theories also hold promise for understanding how faculty identities are formed during graduate school (Mendoza 2007) and shaped during the early years in the profession (Tierney and Bensimon 1996). Furthermore, Gumport (1993) used a critical theory perspective to understand how financial cutbacks in higher education institutions can lead to new power configurations that accentuate the gap between the “haves” and the “have nots.” Critical theory may be a potentially useful, yet underutilized, framework for understanding power relations between administrators and faculty members in the context of shifting contingencies in the external environment.

Trends and Commonalities Regarding Academic Work in Europe and the United States

Despite the significant differences between the governance arrangements in Europe and the United States, especially regarding competition, managerialism, and stakeholder involvement, the effects on faculty work are strikingly similar in European and US universities. First, we will discuss the similarities and differences in the roles of faculty, especially regarding the teaching-research nexus. Then, we will reflect on the autonomy of faculty, on their productivity, and close with a comparison of changing academic identities.

Teaching-Research Nexus

Traditional linkages between teaching and research have been challenged in the United States and in some European systems. Faculty recruitment, tenure, and promotion practices in US universities have long taken research performance more into account than teaching (Tierney and Bensimon 1996). In European countries, especially in the ones where national research evaluations take place, research is becoming more closely linked to faculty reward and compensation policies. This growing emphasis on research, however, may jeopardize the ability of academics to maintain effective performance in both teaching and research. In European countries with a traditionally strong teaching-research nexus, these roles are increasingly becoming differentiated, largely through the use of research-only and teaching-only appointments. Conversely, in European systems where teaching and research have

been traditionally decoupled (i.e., where research institutes exist separate from universities) an opposite movement—the hybridization of roles—can be observed. In such cases, scientists from research laboratories teach and participate in educational committees at universities, while faculty from universities collaborate and carry out research in the laboratories.

In the aggregate, the institutional environments of universities have been propelling a shift away from the model of an “integrated scholar” toward structurally differentiated academic roles. As a result of the differentiation of roles, different faculty career patterns have emerged, with teaching-only and research-only positions becoming more prevalent (Schuster and Finkelstein 2006). These new types of faculty are increasing in numbers, especially in research institutes and centers that attract external project funding, and in the US context, as teaching-only faculty in continuing education divisions (Toma 2007). In the United States, the unbundling of the faculty role at this large scale may also portend serious implications for diminishing the collective power of the professoriate within internal governance structures. Nontenure-track faculty typically do not serve on university governance committees. Moreover, faculty who are not eligible for tenure are unlikely to voice opposition to administrative initiatives.

Furthermore, faculty evaluation systems that are based largely on research performance have the power to push lower performing faculty into more teaching-only roles. An extreme example can be seen in systems where underperformance in research (as measured by institutional appraisals and national research assessments), may compel a faculty member to change to teaching-only or administrative roles. Such effects may be more pronounced in European countries with strong national research evaluation regimes, while not as clearly identifiable in the US higher education system or in European countries where performance in research is not directly related to funding.

The teaching-research nexus has also been affected by institutional policies regarding what constitutes research. Broader definitions of scholarship have been introduced in many US universities, where it has been argued that multiple forms of research can constitute legitimate contributions to academic fields and disciplines (this phenomenon is less pronounced in Europe). Proponents of these forms of research suggest that universities should enable faculty to pursue a variety of scholarly projects, some of which may be highly integrated with their teaching responsibilities. Nevertheless, studies suggest that the scholarship of discovery (empirical research typically published in peer-reviewed journals) remains the most prominent, perhaps because this form of research is linked closely to traditional notions of university prestige, which are codified in university rankings systems. Prominence in the scholarship of discovery is also more likely to enhance the university’s capacity to attract external research funding.

Comparative evidence on the divisions between time allocated for teaching and research, as well as faculty attitudes toward these activities, vary by country and by level of faculty seniority. Research has shown that the two tasks may compete for faculty time and attention, and therefore, result in conflicting roles and work over-

load. In addition, due to various accountability schemes increasingly used by university managers, academics find themselves more involved in administrative tasks, which include not only the traditional participation in university decision-making committees, but also in grants administration and accountability exercises such as work monitoring procedures. Concerns about role overload, work performance, time constraints for research and teaching tasks, and decreasing work satisfaction have accompanied these developments on both continents.

Faculty Autonomy

Autonomy is still a key construct in the lives of academics, as witnessed in both the European and US studies. Although research is increasingly funded by external sources, including governmental and private sponsors, the desire for academic freedom among faculty remains paramount. Numerous accounts have shown the extent to which faculty seek to balance out their traditional values and favorite research problems with the priorities of external government agencies (if they do not coincide), and to what extent research priorities are actually shaped by industrial and private funders.

Academic capitalism and entrepreneurialism have often been perceived as forces that restrict the autonomy of faculty in setting their research agendas. Evidence suggests that external funding agencies indeed have their priorities and do influence what types of research are carried out at universities in Europe and the United States. However, numerous studies have also shown that faculty are quite adept at using a range of behaviors to preserve their autonomy and “cope” with externally-defined research agendas. The strategies range from defiance, to symbolic-compliance, to proactive behavior, depending on reputation, seniority, and resources available in the department. Faculty try to balance their own preferred topics with the research priorities of sponsors by “packaging” their ideas in the “right way,” avoiding risky topics, diversifying research topics, and selecting externally predetermined topics. Studies in the US context have revealed that faculty who are involved in industrial partnerships tend to layer applied research projects on top of their program of basic research. Similarly, in the European context, faculty may use funds received from industrial sponsors to carry out some basic research “on the side.” However, the question remains regarding whether these strategies are successful in preserving faculty autonomy, or whether they merely provide faculty the illusion of controlling the choice of research topics.

Another factor that strongly influences professional autonomy in the United States is the administrative apparatus of the university. Attempts by universities to orient faculty research toward commercial use, as well as certain rules regarding technology transfer, may impinge on the professional autonomy of academics. At the same time, some new structures, such as research centers and institutes, may offer a more flexible working environment with large interdisciplinary teams,

which may enable faculty to pursue a variety of research areas—and thus potentially enhance faculty autonomy. So far, there is no evidence in the European countries of universities influencing faculty members' problem choice, although increasingly universities define research policies and set strategic priorities for faculty performance. However, overall, it has been evident in both Europe and the United States that faculty attempt to preserve their autonomy and adhere to the norms of the academic world, where mutual exchange within the academic community and peer review are expected to provide guidance in the choice of research problems.

Faculty Productivity

The productivity of faculty has been extensively studied in the past several decades, particularly since this has been one of the domains of academic work that governments have been attempting to increase. In studies of European higher education systems, the quantification of research outputs has been a common trend over the past several decades. Whether these pressures for producing a higher quantity of research interfere with the quality of research remains a concern. In the United States, publish-or-perish logics continue to structure the academic hierarchy of disciplines and institutions. The types of publications expected by different types of universities have become more similar over time and across disciplines, with the desired outcome defined as higher numbers of peer-reviewed journal articles. Moreover, productivity in recent years has been seen more and more as the ability to attract external research funding.

The increasing prevalence of competitive project-based funding in different disciplines has resulted in the growth of short-term, project-based research, which may lead to the hiring of more academics on short-term contracts (usually postdoctoral researchers). This development is seen by academics as a threat to long-term research lines, as well as to research outputs that take longer to produce. Thus, a strong trend seen on both sides of the Atlantic is toward short-term project horizons, rather than long-term research agendas. Studies indicate, however, that faculty prefer to engage in large, long-term programs of research, and this preference runs contrary to the growth in short-term contract funding, which is common in the United States and increasingly gaining ground in European countries.

Academic capitalism also poses a challenge for faculty productivity in disciplines that are prone to working with industry. As studies of faculty productivity in European and US universities have underscored, tensions between publishing and patenting are likely to arise. Faculty may use strategies such as sequencing and sanitizing to help them maintain both high levels of scholarly productivity and effective relationships with industry. An important question, however, pertains to whether faculty in less prestigious institutions are able to use these types of strategies to preserve their academic autonomy, especially in the context of severe resource constraints and significant pressures to attract external funding.

Academic Identity

Faculty identity is no longer only based on affiliations with academic disciplines, but is also shaped by the institutional context, such as new university structures and processes, as well as new values and norms of academic capitalism. Although trends toward academic capitalism and research commercialization are observed to be stronger in the US higher education system, the traditional faculty values of autonomy, an academic calling, and a passion for knowledge are being questioned and challenged to varying degrees on both sides of the Atlantic.

Some authors in Europe have argued that despite changes in university management practices and academic working conditions, faculty have not embraced the values stemming from organizational management. The core values of academics remain intact as seen in studies of entrepreneurial academics and graduate students working with industry in the United States. Traditional academic identities appear to remain strong, and academics see their roles of teaching and research as primary endeavors, with a third service function being more pronounced in the US context. Others argue, however, that fragmentation of the profession and demoralization of academic identities are taking place.

Furthermore, it is argued that individuation rather than collective academic identities are gaining in importance due to differentiated salary scales, performance-based evaluation systems, and competitive external funding. In the United States, the traditional collective identity of the professoriate is becoming further splintered, as faculty are cast in the role of interest group member in the broader competition for university resources. Conversely, however, the collectivization of academic identities may also be on the rise, particularly when it comes to obtaining external funding as part of a larger collaborative research endeavor.

In addition to the sources of identity that come from academic disciplines and university affiliations, academics may derive components of their identity from broader entrepreneurial networks that provide access to resources, prestige, and status. US scholars have observed that faculty identity is being reshaped in ways that position the faculty member as an active agent in markets and politics; thus, faculty are seeking to build credibility both inside and outside the traditional realm of the academic community. The question still remains, however, regarding the extent to which academic identities are actually changing, and further research needs to elucidate the limits of our understanding in this regard.

Theoretical Frameworks

Research on academic work in the context of changing institutional environments has adopted a range of theories from the sociology of work, sociology of knowledge, organizational sociology, cultural theory, political science, and economics. In addition, researchers have developed a range of new concepts and models in an

effort to understand the changing definition of faculty roles, academic productivity, professional autonomy, and academic identities.

Research on the relationship between the institutional environment and faculty roles has relied largely on organizational and critical sociology. Resource dependence and neo-institutional theories are two prominent approaches that higher education researchers have employed to understand how the isomorphic strategies of higher education institutions may shift the allocation of faculty time toward research, why faculty members choose to affiliate with a research center or institute, which incentives drive university-industry partnerships, and how faculty roles adapt to changing evaluation and promotion criteria. These theories, however, have been limited in their capacity to explain why faculty members may resist change, as well as what authority they use and how they use it. Resource dependence and neo-institutionalism are general theories that researchers apply to all types of organizations. Sometimes more fine-grained theories are needed to tackle the intricacies of the different types of higher education institutions and their different processes and structural units. In selecting theories to guide their work, researchers have to consider the unit of analysis that they intend to explore. To what extent are organizational theories such as resource dependence and neo-institutionalism applicable to the study of individuals, as opposed to groups, departments, and whole organizations? Each theory has unique boundaries, and a researcher has to exercise prudence and good judgment in making choices regarding the theory to invoke for a particular study.

Researchers have also developed various models of the relationships between different academic roles. Examples include Boyer's four models of scholarship; Shimank and Winnes' pre-Humboldtian, Humboldtian, and post-Humboldtian models of the teaching-research nexus; and Hattie and Marsh's scarcity, differential personality, and divergent reward system models. Each of these models emphasizes different aspects of faculty roles and the corresponding level of their institutionalization within higher education systems. Although these models are helpful in understanding the interconnectedness or the differentiation of faculty roles, they are somewhat limited in elucidating the relationship between faculty roles and university reward structures. For example, although many universities in the United States have adopted the "Boyer model" in their faculty reward systems, conventional forms of academic research continue to structure the work roles of most academics. We suggest that future research on faculty roles can be enhanced through the use of theories that are grounded in social psychology (see for example, Kearl and Gordon 1992). Social psychological theories may be useful for understanding how the behaviors and identities of academics may be changing due to where they are located in social space—in this case, in which type of reward structure, discipline, university, and country.

Research on academic productivity and professional autonomy has shown that time is an increasingly limited resource, since academics are becoming more managerially constrained in their work. From a critical phenomenology point of view, academics live in "fast time" in Barnett's (2008) words. Evidence from European case studies shows that the concept of a credibility cycle (Latour and Woolgar 1979), emanating initially from laboratory studies in the sociology of science, may

be useful in visualizing the changing pace of knowledge production and the audiences with which faculty interact in the process of credibility building. The model conceptualizes the scientific credibility process as a continuous cycle where research questions and ideas are translated into data gathering, publishing, citations, and recognition from peers, which leads to the acquisition of further research funding. This additional funding enables faculty to hire new researchers and advance their research agendas, which again brings more recognition, and in this way, builds additional scientific credibility. The limitation of the credibility cycle model, however, lies in its level of analysis. Currently, it is not clear whether this model, which was developed initially through ethnographic studies of a laboratory and its further expansion, can be applicable to the study of individual faculty and organizational groups alike.

Neo-institutional theory has been used to study the blurring boundaries between the academic and industrial worlds, as well as the isomorphic behaviors of departments and universities in technology transfer activities. Organizational sociology frameworks have also been useful to determine how department size and collaboration affect faculty productivity and how resource dependencies shape the responses of departments to external research sponsors. However, neo-institutional and resource dependence frameworks do not help much in explaining the changing power relations between faculty and university managers. Examining these power dynamics is crucial in order to understand changes in academic productivity—that is, who determines which outputs count and to what extent, and which types of academics will have the power to either adapt or ignore the rules on productivity as defined by university management. Here, theories of power and resistance from organizational sociology could be especially helpful (see for example, Jermier et al. 1994).

Furthermore, Slaughter and Rhoades' (2004) theory of academic capitalism is widely used to discuss the changing structure of faculty work. The theory suggests that changes in the structure of academic work are not merely the result of market forces; instead, these changes have been initiated, at least in part, by faculty members themselves, especially as they have become more involved as actors in external markets. The concept of agency, therefore, is important to academic capitalism theory, and holds promise for guiding future studies that seek to understand how faculty shape and reshape the context of academic work through their involvement in external markets.

Overall, the theories described above have proven useful for understanding how changes in academic productivity and professional autonomy connect with changes in the organizational structures of universities and to broader institutional frameworks such as national research evaluations and changing funding conditions. These organizational sociology frameworks, however, may be more helpful in understanding organizational behavior and institutional responses, rather than those of individual faculty members. This discrepancy should encourage researchers to search for new and more nuanced explanations of changing academic productivity in the changing university.

Academic identities have been conceptualized as distinctive and socially embedded, following the theories of symbolic interactionism and communitarian moral

philosophy. These views have been complemented by cultural theory, which has been used in research on the belief systems of faculty. Cultural theories also hold promise for understanding how faculty identities are formed during graduate school and shaped during the early years in the profession. These theories hold that freedom to control one's social context is paramount, but this freedom is embedded in complex institutional arrangements, which among other factors include academic cultures. Potentially, here, theories from organizational psychology could be complementary to the understanding of factors that shape faculty identities. For example, Herzberg's (1968) two-factor theory could be instrumental for understanding which intrinsic (context of work) and extrinsic (salary, job security, benefits) factors are important for faculty to maintain or change their roles and their sense of identity (McInnis 2010).

Furthermore, critical sociology has been used to understand how identities are constructed within the discourse of managerialism at universities. This body of research has been helpful also in explaining how financial cutbacks in higher education institutions can lead to new power configurations that accentuate the gap between the "haves" and the "have nots." Although critical theory holds promise because it addresses questions of power and agency, it remains a somewhat underutilized perspective in studies of academic identities, especially in the US context.

Theories of academic professionalism and the sociology of work have also enriched our understanding of the interaction between academic identities and changing institutional environments. For example, Lallement's (2007) four distinctions of changing academic work—division, individuation, integration, and regulation—have been especially useful for understanding the increasing level of differentiation in academic identities. These frameworks, however, do not adequately capture the connections between faculty identities and the conditions within the institutions in which they work. Therefore, we suggest that researchers use both theories of academic professionalism and theories from organizational sociology to develop a more robust framework for explaining the multiactor and multilevel processes that increasingly shape academic identities.

Theories and perspectives from cultural and critical sociology and the sociology of knowledge could also be useful for studying the relational nature of academic identities and their fragmentation, as well as the shifting boundaries between academia and society. Furthermore, theory building by higher education scholars, based on new models that encapsulate the changing nature of academic work as well as the intricacies of university structures and processes, could improve future research.

Future Research Avenues

In addition to our critique of the theoretical perspectives that have been used in research on the changing nature of academic work, we have also identified several gaps in the current literature, which limit our understanding of the relationships

among institutional environments, university structures and strategies, and faculty work roles, autonomy, productivity, and identity. We conclude with recommendations for future research, which focus on the effects of strategic planning on faculty autonomy; the relationship between faculty entrepreneurialism and the teaching-research nexus; changes in university reward systems for faculty; the effects of academic capitalism on faculty hiring, tenure, and promotion practices; and the paradoxes and tensions that challenge current conceptualizations of faculty identity.

Strategic plans have become the mechanisms by which university administrators are able to justify internal resource allocation decisions that favor certain units over others. The administrators who develop strategic plans are empowered not only to set priorities for the university, but also to determine which faculty activities address those priorities and are thus worthy of university resources. While studies have examined the processes by which university strategic plans are developed (Eckel 2000; Schuster et al. 1994), few have examined the effects of strategic plans on faculty autonomy. If faculty members feel compelled to orient their research and teaching toward priorities articulated in a university strategic plan, then their academic autonomy may be compromised (Burgan 2006). On the other hand, it could be argued that faculty must be accountable to the missions of their employing institutions and therefore must align their activities with the needs and goals of the organization as a whole.

The effects of privatization and entrepreneurialism on the teaching-research nexus need to be examined more extensively. Some evidence suggests that these trends have undermined the nexus, especially when universities hire more teaching-only and research-only faculty (Schuster and Finkelstein 2006). Moreover, in a revenue-driven environment, universities are expecting faculty to develop academic programs that generate tuition and fees, obtain external research funding, and teach more student credit hours (Eckel and Morphew 2009). As faculty role expectations continue to multiply, academics may be challenged to carry out all of their roles with a high level of proficiency. Furthermore, these trends may also affect faculty beliefs about the nexus. As faculty become more involved in entrepreneurial research, do they experience less connection between their research and the courses that they teach?

Studies are needed to examine whether the type and salience of intrinsic and extrinsic faculty rewards are changing, as a result of entrepreneurialism, managerialism, and privatization. Research findings suggest that faculty and doctoral students remain highly motivated by the intrinsic satisfactions associated with academic freedom and the ability to collaborate freely with the broader academic community (Roach and Sauermann 2010; Slaughter and Rhoades 2004). Are these intrinsic rewards becoming more difficult to obtain in a competitive, market-driven environment? Likewise, are the extrinsic rewards provided by universities becoming more aligned with strategic priorities for prestige and revenue maximization? If so, are university extrinsic rewards providing incentives for activities that interfere with the ability of faculty to pursue valued intrinsic rewards?

Further research is also needed regarding the potential effects of entrepreneurialism on faculty hiring practices and tenure and promotion criteria. In Slaughter and

Rhoades' (2004) study of academic capitalism, their analyses did not reveal efforts by universities to reorient faculty hiring practices so that they give priority to those who could enhance ties with industry or attract funding for commercial research. These data, however, were collected in the late 1990s; therefore, more research is needed to determine if university strategies to enhance prestige and attract revenues are also influencing decisions about which applicants to hire and which faculty to tenure and promote.

Studies indicate that faculty role identities have become more complex, as faculty seek to maintain a persona grounded in academic values and disciplinary norms, as well as adopt an interdisciplinary and/or commercial identity (Jain et al. 2009). The ability of faculty to incorporate multiple identities into their work roles may be a requisite for success in a changing university environment. Further research is needed to understand the identity work of faculty, as they seek to manage the contradictions and tensions that exist in their complex sets of role expectations.

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Chapter 4

The Sociology of Academic Careers: Problems and Prospects

Joseph C. Hermanowicz

Background

This chapter reviews major lines of research in the sociology of science to inform inquiry into the study of academic careers. The chapter seeks to serve as a bridge between the discipline of sociology and the field of higher education. The two fields have much to offer the other. At their best, the benefits are reciprocal. Studies in education can profit from sociological concepts and abstract theorizing as frames through which to ground scholarly inquiry. Studies in sociology can make much of educational processes, settings, and organizations to develop and refine concepts and theory.

Despite the professed benefits, the relationship between the fields has always been uneasy. Neal Gross labored to reveal the potential fruits of the union as early as 1959. After some development, and in the aftermath of expansion and heightened interest in the higher education system following World War II, Donald Light, drawing attention to the study of university faculty, sounded the concerns of an as-yet immature science:

...the sociology of academicians suffers from disorganization...First, the research is uncoordinated...The second weakness which keeps the sociology of the academic profession from maturing as a science is the lack of good theory on which to base research (Light 1973, pp. 2–3).

In his essay, “Development of the Sociology of Higher Education,” Burton Clark (1973) outlined major streams of research, future prospects, and potential pitfalls for a cross-fertilization of the two fields. The combination has worked only partially. Differentiated topical essays in Gumport (2007a) bespeak significant knowledge consolidation and field maturation. However, despite this gain, the relationship struggles. As Gumport has put it:

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...in spite of the dramatic expansion within distinct lines of inquiry in this field over the past 30 years—and perhaps because the research is pursued by individuals from different professional contexts—the visibility of the sociology of higher education *as a field* remains questionable...One unfortunate side effect of this separation is that the intellectual resources each draws upon may be unduly narrow and partial by neglecting prior work on a topic, such that the research fails to make a cumulative contribution that is seen by researchers working from these different locations (Gumpert 2007b, pp. 338–339, original emphasis).

Sociologists in academic departments and higher education scholars in schools of education still struggle to communicate effectively in scholarship that does indeed cross boundaries between the fields. This stems in part from different scholarly norms of communication—researchers in each field seeking to conform to valued preferences of their most immediate peers—as well as from allegedly different professional goals. An often overstated divide between basic and applied inquiry, between an emphasis on theory versus practice, handicaps a developmental goal of field maturation. For many scholars, the divide is not merely overstated but falsely drawn: “...some of the most important and difficult intellectual questions in sociology turn on so-called practical problems” (Sampson 2010, p. 66). Marx, Durkheim, and Weber, the theoretic triumvirate of sociology, were, first and foremost, concerned with the practical problems of their day. They may be viewed as among the greatest applied sociologists who made lasting theoretic contributions to the study of society.

The ongoing confusion has come with costs. According to Stevens, Armstrong, and Arum, the result is that “higher education [as a field of study] remains without an intellectually coherent sociology. Instead, the varied and empirically rich sociological work on higher education is scattered throughout the field, creating at times a narrowness of analytic vision and inhibiting the benefits that can accrue from integrated scholarly discourse” (Stevens et al. 2008, p. 128). While the amount of work in the sociology of higher education has increased substantially since Light and Clark commented on developmental issues within the field in 1973, aspects of the problems they identified continue to characterize attempts at synthesis.

In this chapter, I focus on one domain of the sociology of higher education—the study of academic careers—and organize a key sociological literature that can help advance inquiry on the topic between fields. In the field of higher education, systematic study of academic careers typically falls under the heading of and incorporates a literature on “faculty,” as indicated, for instance, in the organization of the Association for the Study of Higher Education. In the field of sociology, this study most readily draws on literature in the *sociology of science*. The sociology of science “deals with the social conditions and effects of science, and with the social structures and processes of scientific activity” (Ben-David and Sullivan 1975, p. 203). As a subspecialty area of sociology, “it resembles the sociologies of art, law, religion, politics, economy, and the family, since each examines institutional organization, structure, processes, contexts, and products” (Zuckerman 1988, p. 511).

Focusing the lens, a subset of the sociology of science has concerned the study of scientists and scientific careers.¹ To a very great extent, the samples upon which these studies are based, and the theorizing that has emerged from them, have been drawn on academics situated in departments and universities, rather than scientists working in industry or government. Herein lies the fundamental basis of the link between the sociology of science and a sociology of academic careers. It seems that a substantial portion of the work on the sociology of scientists was conducted as though one could substitute the term “professors” or “academe” in order to extend its reach. Thus, for example, when one reads in this literature of the “reward system of science,” one may extend the idea to the “reward system of academe.” Or in reading of “stratification in science” one may cognitively attempt a reconfiguration as “stratification in higher education” or in academic careers.

This is not to say that all of the conclusions drawn from this body of work, dealing as it largely does with physical and biological scientists, mathematicians and engineers, are applicable to academics across all fields. These extensions, extrapolations, and reconfigurations are precisely where new empirical work awaits to be done. This is a subject to which we shall return. The point here is that this is the closest sociological literature to the study of academic careers and it therefore holds the greatest potential for development, expansion, and generalizability across the sociology and higher education fields.²

The cross-fertilization and maturation of a field is dependent on two conditions. First, it is necessary to identify substantive problem areas of mutual concern to the fields, a condition sought to be satisfied by conducting the present review. Second, it is necessary to develop theory. Abstracting explanation from particularities serves the goal of transcending boundaries that falsely separate shared substantive areas. The inadequate use of concepts and theory formation has perhaps existed as the chief impediment to a bona fide sociology of higher education. The juxtaposition of terms underscores the point: to have a sociology *of* something, one must conceptualize problems abstractly in terms of systemic patterns of thought, behavior, action, or processes. By reviewing the most relevant work in the sociology of science, this chapter aims to make explicit the sociological concepts and frames of inquiry

¹ The sociology of science is wide-ranging, and only one part of it establishes *scientific careers* as an object of study. Other concerns consist, for example, in the construction of scientific knowledge. A major distinction in the sociology of science lies between *institutional* sociology of science, developed principally by Robert K. Merton and also known as “Mertonian sociology of science,” and *constructivist* sociology of science, developed largely (though not exclusively) following the bulk of Merton’s work and that of others whose writings closely paralleled the Merton tradition. For reviews of the sociology of science as a specialty, see Ben-David and Sullivan (1975), Hess (1997), and Zuckerman (1987).

² One might wonder why a cousin specialty, the sociology of education, did not develop a sustained research line into academic careers or, for that matter, into concerns of higher education more generally. The answer is that the classical sociological theorists confined themselves to schooling in the earliest years, believing, in Durkheim’s words, that this is “where real life began” (Durkheim [1925] 1961). For additional discussion, see Hermanowicz (2007b).

that may be used to expand toward a more theoretically guided study of academic careers.

Finally, it is worth noting that the very idea of a *career* is *sociologically* rooted (Barley 1989). We may understand a career “to be the set of hierarchically ordered and professionally relevant positions within a field or discipline in which entrance and progression are regulated by peers” (Lawrence 1998). This is to say that to have a career, and in particular one in academe, there exist: advisors, mentors, college origins, doctoral programs, social class backgrounds, colleagues, collaborative networks, postdoctoral appointments, employing departments, employing universities, disciplines, fields, professions, and reward systems—among other social constructions—that make careers possible and which differentiate them. To study careers is to examine how they are constituted and patterned by constellations of social conditions and social processes. Regardless of a scholar’s field, any inquiry into academic careers—if that is indeed what one is studying—*requires* sociological theorizing, since we cannot speak faithfully of careers independent of the social arrangements by which they are formed (cf. Finkelstein 2006).

In the next section, I review the major lines of inquiry that have defined the segment of the sociology of science most relevant to the study of careers. I organize the discussion topically, both to convey the breadth of prior inquiry and as a means to suggest applicability and points of departure in new work conducted by scholars in sociology and the higher education fields. The topics are arranged in four substantive parts: foundations; stratification and careers; gender, productivity, and careers; and the social control of careers. In the conclusion, I illustrate areas in which scholars across fields may expand and build upon the reviewed work, such that a prior sociology of *scientific* careers may more deliberately propagate and profit the theoretically guided study of *academic* careers.

Learning from the Sociology of Science: Major Lines of Inquiry

Foundations

Robert K. Merton (1910–2003), professor of sociology at Columbia University, is credited as the primary founder of the sociology of science (for a review of Merton, see Calhoun 2010 and Cole 2004). The Columbia “program in the sociology of science,” beginning in the 1960s and extending to the 1970s, consists of a sustained line of work by Merton, his students, and collaborators that helped to institutionalize a tradition of scholarship that came to be known eponymously across institutional and disciplinary boundaries as “Mertonian sociology of science.” Scholars not directly associated with Merton but conducting research on science and scientists in the Mertonian vein—during and following this period—are likewise associated with this tradition. The tradition is *institutional* in the sociological usage of the term:

the work sought to understand rule-bound and standardized behavior patterns associated with norms and roles comprising social systems, in this instance, the social system of science (for a discussion of institutional analysis, see Turner [1997]). Theoretically, this tradition of work was situated primarily in functional analysis, concerned as it was with the operation and maintenance of a social system and the actors who compose it. A variety of topics pertinent to careers were pursued by scholars of institutional sociology of science, which shall be explored in the pages to follow. No topic was pursued more extensively, however, than a body of work on stratification in science.

The paramount interest in stratification was borne of Merton's claim that science has an "ethos," indicated by a set of four delimitable norms that govern scientists' behavior, which thereby form a theory of the normative structure of science (Merton 1973a). The norms, now widely recognized but also contested, include: universalism, communism, disinterestedness, and organized skepticism. The norm of *universalism* holds that assessments of contributions to knowledge should not be influenced by personal or social attributes of the contributor *and* that rewards should be conferred in ways commensurate with contributions. Universalism is set in contrast to particularism, which refers to factors such as age, race, gender, religion, political or sexual orientation, said to be functionally irrelevant to institutional operation but used in the evaluation of people and their work. The norm of *communism* (also "communalism") holds that knowledge must be shared, not kept secret. The norm of *disinterestedness* holds that the motives and actual conduct of science should be driven without personal bias. The norm of *organized skepticism* holds that scientific judgments are to be held until all necessary evidence is on hand to make evaluations of scholarship.

The norms are said to bind scientists' behavior. Like all norms, those that compose an ethos of science are understood to be acquired through socialization and internalized by rule-bound performance in a scientific career, subject to and reinforced by positive and negative sanctions. Merton claimed that the ethos of science is inferred from what scientists write about science and from how they behave, including observable reactions by the scientific community to those instances when norms are violated (Merton 1973a; Zuckerman 1988, p. 515).

Norms specify shared expectations of behavior. The ethos of science never meant that all scientists act always according to the norms. As Merton noted (1976, p. 40), there is at times a "painful contrast" between expectations and actual behavior. Zuckerman has reminded us that:

This 'painful contrast' does not mean that the norms of science do not exercise patterned control over behavior any more than occasional homicides mean that norms prohibiting murder are either absent or inconsequential. Sociologists seldom need to be reminded that norms and behavior are never perfectly correlated (1988, pp. 515–516).

In examining the norms, it quickly becomes evident that they focus especially on one of the several roles performed by academic scientists (and, again by extension, by higher education faculty): the role of research and scholarship leading to publication. Whether it is judging contributions, sharing contributions, curbing personal

bias in the motivation to contribute, or in attempting to acquire all necessary evidence in order to assess contributions, the subject of the rules is clear indeed.

The norms assume this particular formulation, and consequently are legitimized, because of the overriding institutional goal that Merton saw science serving: the goal of science to extend socially certified knowledge. In this light, the research role is paramount, and arguably remains so even amidst organizational goals and missions of various colleges and universities that may stress different roles, such as that of teaching, over others. This idea does not originate from opinion, preference, or personal points of view, however, rather from a theoretic consideration of how academic roles are functionally arranged as part of the social system of performing wide varieties of work in the modern-day college or university. In their formulation that warrants repeating, Merton and Zuckerman provide a self-exemplifying account for why the research role has been, is, and will always remain, more central than any other role that scientists perform:

Like other statuses, the status of scientist involves not a single role but, in varying mixture, a complement of roles. These are of four principal kinds: research, teaching, administrative, and gatekeeper roles... The research role, which provides for the growth of knowledge, is central, with the others being functionally ancillary to it. For plainly, if there were no scientific investigation, there would be no new knowledge to be transmitted through the teaching role, no need to allocate resources for investigation, no research organization to administer, and no new flow of knowledge for gatekeepers to regulate. Possibly because of its functional centrality, scientists apparently place greater value on the research role than any of the others. As is generally the case in maintaining a complex of mutually sustaining roles, ideology does not fully reflect the differential evaluation of roles in the role-set: scientists will often insist on the 'indispensability' and consequently equal importance of the ancillary roles. Yet, almost in a pattern of revealed preference, the working of the reward system in science testifies that the research role is the most highly valued. The heroes of science are acclaimed in their capacity as scientific investigators, seldom as teachers, administrators or referees or editors (Merton and Zuckerman 1973, p. 520).

In light of how science is argued to operate systemically, attempts by colleges and universities are futile when they seek to "reprioritize" roles or tamper with local reward systems in an effort to modify behavior. The formulation above does not diminish the importance of ancillary roles, although it may be tempting to draw this conclusion from the preponderance of subsequent scholarly attention that Mertonians gave to the research role of scientists. (For instance, one could also argue that if scientists did not teach at all, they would not have university jobs, or that if universities had no students, there would be nothing to administer. The advancement of science, however, does not depend on these conditions *per se*.) The formulation explains why the research role is functionally central to satisfying the *institutional* goal of science and why, consequently, practitioners and observers alike may always assign the role greater prestige, even in contexts of professed valuations of the other roles that academics perform.

This also accounts for the prominence played by *peer recognition* in Merton's discussions of scientists and their careers (Merton 1973b; see also Hagstrom 1965, esp. Chaps. 2 and 3). How may one view the phenomenon of recognition sociologically? In Merton's formulation, recognition is socially validated testimony that one

has fulfilled the goal of science—to extend certified knowledge (1973b). Recognition, therefore, is itself an institutionalized process in the system of science: it is both essential to progress and expected in trained individuals (cf. Glaser 1965; Gustin 1973).

These foundational formulations set forth a framework in which to examine careers. They made explicit a set of norms that may be taken to structure careers in professional and disciplinary milieux. The norms may be used as a basis to examine variation in and the stratification of careers. By the same token, an “ethos of science” specifies an order against which academics derive meaning about their careers, in various ways, and thus further establishes a basis on which to examine differences in the experience and practice of academic work. The importance attributed to recognition in this framework presents an additional lens through which to study career processes, including motivation, commitment, satisfaction, and productivity, among others.

Of all the norms guiding an ethos of science, universalism received the most attention in research. It became the main means by which to assess inequality in career attainments. It was, more fundamentally, the mechanism by which to examine the workings of the scientific reward system, to understand whether distributions of recognition resulted more so, or under what conditions, from universalistic versus particularistic criteria. A major line of inquiry on stratification in science developed to examine the operation of this norm in the larger context of the ethos of science.

Stratification and Careers

The literature on stratification and scientific careers may be considered via five organizing topics of research: processes of cumulative advantage and disadvantage; organizational bases of stratification; the construction of reputation, visibility, and influence; the relationship between age and achievement; and mobility patterns of scientists. It is important to bear in mind that discussion in several subsequent sections of this chapter also overlap with considerations of stratification (e.g., gender, productivity, and careers; recruitment and socialization; experience of work, etc.). However, as they tend to constitute distinct topics unto their own, they will be treated separately from the discussion that immediately follows.

Cumulative Advantage and Disadvantage

By one view, stratification in science may seem at odds with an “egalitarian ethos of science.” Zuckerman (1970) explained that stratification in science arises, amidst a correlation between contributions to science and investigators’ professional standing, from differential processes of resource allocation. These processes involve selective recruitment and socialization, access to publication and research facilities, and recognition of scientists’ work through citations of their published research.

Processes of cumulative advantage and disadvantage in science have been examined extensively to reveal stratification in the making. Cumulative advantage and disadvantage is a theory developed by Merton and elaborated by others to explain inequality in science. The theory explains how increasing disparities come to characterize the “haves” and “have nots” over the course of a career.

Processes of individual self-selection and institutional social-selection interact to affect successive probabilities of access to the opportunity structure in a given field...When the role-performance of an individual measures up to demanding...standards...this initiates a process of cumulative advantage in which the individual acquires successively enlarged opportunities to advance his work (and the rewards that go with it)...[those who find their] way into [elite] institutions ha[ve] the heightened potential of acquiring differentially accumulating advantage (Merton 1977, p. 89; quoted in Zuckerman 1988, p. 531).

Put differently, the theory holds that “certain individuals and groups repeatedly receive resources and rewards that enrich recipients at an accelerated rate and conversely impoverish (relatively) the non-recipients” (Zuckerman 1977, pp. 59–60). That is, the rich get richer at a rate that makes the relatively poor become even poorer. Zuckerman (1998) has elaborated on the development of this theory, and DiPrete and Eirich (2006) have considered its utility and application well outside of science.

The “Matthew Effect” elaborated by Merton is a special case of cumulative advantage. Named after the Gospel of St. Matthew, it holds that already-recognized scientists receive disproportionate recognition for subsequent contributions. “Eminent scientists get disproportionate great credit for their contributions to science while relatively unknown scientists tend to get disproportionately little credit for comparable contributions” (Merton 1973c), or, following the Gospel, “For unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath” (Matthew 25:29). In social terms, the Matthew Effect, to the extent it may exist empirically (Cole 1970), is antimercitocratic since it violates the universalistic norm by favoring a particularistic attribute of an investigator (in this case, professional standing established by prior recognition).

Cole and Cole (1967) examined the operation of the reward system in science by focusing on the relationship between quantity and quality of publication among 120 university physicists. They found that quality of publication was more important than quantity in eliciting recognition in the form of awards, positions in prestigious academic departments, and renown among colleagues. In ways consistent with the theory of cumulative advantage, they concluded that the reward system operates to encourage creative scientists to remain productive while discouraging less creative scientists from further research.

Allison and Stewart (1974) incorporated the theory of cumulative advantage to account for productivity differences among scientists. They note that publication productivity among scientists (as among academics within any given field) tend to be highly skewed. Drawing on a sample of chemists, physicists, and mathematicians, they argue that productive scientists maintain or increase their productivity, while scientists who produce little go on to produce even less later on. They note the major implication of applying this theory to their data: the distribution of produc-

tivity becomes increasingly unequal as a cohort of scientists ages. The magnifying inequality over time is associated with change in the amount of time that scientists spend on research. Additional evidence in support of these claims was subsequently provided from a sample of true cohorts (as opposed to synthetic cohorts) of chemists and biochemists (Allison et al. 1982). In an extrapolation to the higher education field, Bentley and Blackburn (1990) assessed whether groups of institutions accumulate advantage relative to others by comparing the research activities across five Carnegie types of schools. They concluded that research advantages snowball in ways proportionate to the research scope of schools.

The book-length treatment, *Social Stratification in Science*, by Cole and Cole (1973), remains as much a treasure trove of ideas for further research today as when it was published. Using samples of physicists, the authors examine through multiple means the processes by which recognition is distributed among scientists, patterns that define the structure of stratification in the scientific community, and the manner by which the reward system of science operates to produce stratification. With only few exceptions, the authors conclude in this work that science operates largely universalistically.

The main purpose of the research reported in this book has been to investigate the extent and ways in which science departs from its rational and universalistic ideal. All our studies have focused on this one problem area. The general conclusion of our research has been that science does to a great extent approximate its ideal of universalism. In almost all cases where science departs from the ideal we find the process of accumulative advantage at work. People who have done well at time 1 have a better chance of doing well at time 2, independently of their objective role performance (Cole and Cole 1973, p. 235).

This conclusion would be subjected to considerable scrutiny and empirical work in the subsequent years, with numerous authors advancing competing claims. The review by Long and Fox (1995) summarizes the body of work that emerged to further assess the occurrence of particularism in science and indeed, conclusions evolved as additional evidence emerged, such that by 1992, Cole observed:

Is science universalistic? My answer now is substantially different from the one put forth in my 1973 monograph with Jonathan Cole... I conclude that the traditional studies failed to tap adequately particularism based on cognitive criteria and location in social networks rather than on statuses occupied by scientists (Cole 1992, pp. xi–xii).

Cognitive criteria refer to factors such as evidence, models, and theories used in people's work; *location in social networks* encompasses the position of a social actor vis-à-vis the status of others with whom that actor interacts and/or by which the actor is influenced; *statuses* refer to professional stature as indicated by factors such as position, rank, and citation.

Still, the 1973 treatment is evocative. Consider the "Ortega Hypothesis," that large numbers of average scientists contribute substantially to the advancement of science through their research (Cole and Cole 1973, pp. 216–234). The authors find the contrary, that scientific progress results not from the labor of all "academic classes," but is rather primarily dependent on the work of an elite. They use this finding to question, then as one could today, whether the same rate of knowledge

advancement could be maintained even if the number of scholars were greatly reduced. The implications of the idea achieve still greater prominence in times of fiscal austerity, erosion of state funds for higher education, and clogged competition within federal and nonfederal granting agencies. It also relates to rising university expenses of journals and the proliferation of writing for publication, the concomitant ascendance of the research role across university types, consequent increases in referee roles and demands, and the organization of faculty time to “manage” what may largely consist of unnecessary work.

Zuckerman’s (1977) book on Nobel laureates in the United States simultaneously illustrates empirical concern for the operation of the reward system in science and a sustained inquiry into a specific stratum of individuals who comprise a larger occupational community. One could conceivably devise parallel inquiry into other important subsets of the academic community: for instance, community college faculty, the faculty of comprehensive universities, or the careers of part-time faculty, all of these groups ascending in their importance by their proportion among all faculty, by the proportion of institutions that employ them, and by the proportion of students they teach.

Zuckerman presents an exemplary occupational study. She theorizes about elites and their role, in occupations and in society. She situates her research subjects in the context of the Nobel Prize and its background. She then accounts for the Nobelists’ careers, first by examining their social origins and subsequently their schooling and mentors, followed by an analysis of the work that resulted in the prize and their careers following the award.

The author bases this work on biographical and bibliographic data on laureates, and incorporates data from interviews that she conducted with 41 prize-winners. The study is arguably the most sustained in its consideration of the theory of cumulative advantage. Well before the award, laureates are successively advantaged through stages of their careers. The advantages produce widening disparities between the elite and other scientists both in performance and in rewards, which create and maintain a system of social stratification.

The social class origins of scientists constitute another, though less extensively researched, area in which to consider the accumulation of advantage. In 1969, Crane found that class origin was related to holding academic positions at top-ranking universities (Crane 1969). The effect was traceable in part to the fact that lower-class academics were more likely to have received doctorates from lower-ranking institutions, which higher-ranking institutions were less likely to draw upon for their faculties. Crane found that even lower-class academics who had earned doctorates from high-ranking institutions still were less likely than their middle-class counterparts to obtain employment in “major” universities. By 1992, Xie drew different conclusions, albeit with different variables and measures (Xie 1992). Xie found that the social origins of scientists were largely homogenous across fields and that the disadvantages of having come from a low-status family were mediated by education.

Organizational Bases

A body of work has examined the role of department, university, (and, to a more limited extent, field) as organizational bases in stratifying scientific careers. Long (1978) investigated the relationship between productivity (indicated by publication and citation) and academic position using a sample of male biochemists. In this work, Long found a strong effect of departmental location on productivity, but a weak effect of productivity on the allocation of positions. Publication productivity was found to exert an insignificant effect on both the prestige of a scientist's first academic position and on subsequent institution changes. However, this work revealed that while the correspondence between productivity and prestige of initial academic position is at first weak, the effect of departmental prestige on productivity increases over time. Moreover, for scientists who moved to other institutions, the prestige of the new department significantly affected their productivity in a positive direction.

In its time, this work emphasized the point that factors other than publication and citation, such as scientists' graduate education, sponsorship, and postdoctoral study, played a more prominent role in initial academic appointment. Long observed that:

to the extent that the eminence of a scientist's mentor and the prestige of his doctoral department, *independently* of the productivity of the scientist, are particularistic criteria for evaluation, a *particularistic* advantage accumulates, not an advantage initiated for universalistic reasons... Even if success in later job mobility is based more on objective criteria of productivity, the initial academic appointment, which is independent of earlier productivity, has a major impact on later productivity and hence the prestige of the second institutional location. Initial academic appointment significantly affects the chances of a scientist to become a successful researcher. Academic departments may recruit on the basis of the prestige of the mentor and the doctoral department because they have insufficient evidence of the young scientist's productivity. But nonetheless, this initial decision to hire, based on where one studied and with whom, has a major effect on the career of the scientist (Long 1978, pp. 905–906).

Long does not state that publication productivity is unrelated to obtaining a first academic appointment. Here, the emphasis lies on other, particularistic criteria that exert a stronger effect on employment outcome. Thus, the data do not support a universalistic claim that scientists are allocated to positions on the basis of their scientific contributions. Long et al. (1979) repeated this finding in their study of entrance into academic careers.

The findings prompt speculation about how patterns might shift under different labor market conditions (i.e., whether the effect of productivity on initial academic employment is greater when academic jobs are scarcer). The findings also raise the question of how patterns change in light of further institutionalization of the postdoctoral stage of scientific careers, and how patterns vary among fields, particularly between those that evince relatively abundant productivity in early career stages (e.g., physics, chemistry) and those that are characterized by relatively less early productivity (e.g., history, classics). As Wanner et al. (1981) remarked in their comparative study of productivity in the sciences, social sciences, and humanities, "the mechanisms determining article and book count are quite different and are

systematically related to the relative roles of the two forms of output in the broad disciplinary categories examined" (1981, p. 250). Using field alone as the unit of organizational analysis, Hargens and Felmlee (1984) concluded that the distribution of recognition in a scientific field is conditioned by its rate of growth and the extent to which its members focus on recent as opposed to later work. They found that high field growth rates increase citations for senior members, which thereby increases the inequality of citation among members of a field as a whole. The citation of recent rather than later work, however, can reduce inequality by "discounting" the oldest contributions by a field's senior members.

As a field's growth rate declines, the career prospects of young scholars worsen. This is true not just with respect to one's initial position, but for other forms of reward and recognition throughout one's career...the baby boom of the late 1940s and 1950s greatly benefited scholars who had obtained positions by the middle 1960s...and the baby bust of the late 1960s and 1970s will greatly diminish the prospects of those currently entering academic positions...Large differences in scholarly recognition and rewards for equivalent performances will characterize the careers of these two cohorts of academics (Hargens and Felmlee 1984, p. 694).

We shall return to this last point, which has since emerged as a major structural issue of the academic profession, when discussing "Experience of Work" later in this chapter.

It also remains a puzzle as to what about prestige prompts productivity, a relationship also discussed by Zuckerman (1977, pp. 172–173) in terms of the "evocative environments" scientists attribute to have benefited their work. A partial answer is provided by Hermanowicz (1998), discussed later in this chapter, and lies in the ways highly productive academics, organizationally located in departments, socially control careers. Using interview data from respondents in the fields of biology, political science, and psychology, Crane (1965) found that scientists at major universities are more likely to be productive and garner recognition than scientists at minor universities. "Scientists trained and later hired by minor universities had difficulty developing continuity in their research activities and tended to be differently motivated than scientists trained and hired by major universities" (Crane 1965, p. 699). This is related to Long's subsequent finding (Long and McGinnis 1981) that individual productivity conforms to the characteristics of the context in which a scientist works, a pattern elaborated by Braxton (1983).

It is also consistent with Allison and Long's (1990) conclusion years later that the effect of department affiliation on productivity is more important than the effect of productivity on departmental affiliation. Despite the weak effect of preemployment productivity on placement relative to ascriptive factors such as mentor, doctoral and postdoctoral origins, it is this productivity that remains the best predictor of later productivity (Long et al. 1979). In an earlier study, Clemente (1973) provided confirmatory evidence that only age at first publication and publication prior to the Ph.D. best predicts subsequent research productivity. The line of thought also underscores the great importance that the first academic position takes on: it structures the entire career, playing a prominent role in a stratification process that intensifies over time. As Reskin (1977) found in her work on chemists, early productivity most

accounts for productivity in the decade following the Ph.D., and the effect is most pronounced in strongly research-oriented universities. The stratifying effects of first employment could seemingly only grow greater in eras when academic jobs are scarce. This remains a topic for empirical work.

Reputation, Visibility, and Influence

For all the importance assigned to recognition—for scientists and for the institution of science—one may question how, in fact, professional reputations in science are made. Clearly, one answer is that scientists make a habit out of hard work (Hargens 1978; Simon 1974), devote many hours to their work (Blackburn and Lawrence 1995; Milem et al. 2000; Schuster and Finkelstein 2006), and persist in their efforts during frequent bouts with failure (Hermanowicz 2006).

Using a sample of physicists, and making citation counts to analyze reputation, Cole (1970) concluded that a relatively small number of physicists produce work which is used to make subsequent discoveries in the field and, physicists do so regardless of their academic location. Physicists disproportionately use and cite the work of eminent scientists in their own work; the research contributions of most physicists are used only minimally. The patterns provide partial evidence in support of the Matthew Effect. Likewise, the paper by Cole (1970) in the same year and again using a sample of physicists found that, while top papers written by highly reputed scientists were no more likely to be widely used than top papers written by less-renowned scientists, lesser quality papers by reputed scientists did receive greater attention than papers of equal quality by less-renowned scientists. In this work, paper “quality” was determined by the number of citations to papers.

Combined with the research discussed in the prior section of this chapter, the patterns demonstrate how appointment to “top” departments facilitates productivity, increasing the likelihood of “hits” within that productivity, and thus the chances of recognition and the concomitant social testimony that one has “contributed” to the institutional goals of science. The constellation of findings also highlight the particularistic pattern wherein scientists employed outside of top departments, albeit less likely to produce as much, are also less likely to receive comparable recognition for their contributions when producing work of comparable quality.

The physicists in the research described above, however, work in fields characterized by high consensus (Braxton and Hargens 1996; Hargens 1975). Thus, one may be inclined to question how patterns of reputation, visibility, and influence possibly vary in contrasting fields. In a study of academic reputation situated in the field of sociology, a low consensus field, Clemens et al. (1995) examine how publication genre shapes careers. Unlike physics and the rest of the natural sciences, standard sociological work is produced in both article and book formats, and it is conceivable that different formats (or genres) establish grounds for differential reputation, visibility, and influence. Clemens et al. found that subject category in the discipline does not distinguish between the formats; rather, evidence and method do. Books are most often associated with the use of qualitative evidence; however,

the researchers found that the most cited books were those that used quantitative evidence.

In addition, the institutional origins of authors played a significant role in authorship patterns. Elite private universities were found to favor books, public institutions, articles. The preferences appear to be a part of socialization processes in different institutional types. With regard to the reception of work as indicated by citations, book authors at private institutions receive more citations.

The authors interpret the public/private difference in publication format in terms of scholarly networks. "Intellectual discussions at private universities typically span departments," and books more readily reach audiences outside of a given field (Clemens et al. 1995, p. 480).

At the large public universities, the cultures of production are less oriented to the university community than to the department's standing in the discipline's hierarchy (namely, the frequency with which department chairs produce 'bragging sheets' that compare departments by per capita publications in top journals). Whether the goal is attracting graduate students or protecting department budgets, publication in elite journals provides a highly visible marker of status within sociology (Clemens et al. 1995, p. 480).

Cole and Cole (1967) observed publication quality mattering more at private institutions and publication quantity mattering more at public institutions. Article publication satisfies such an organizational imperative at public institutions. Furthermore, associated with quality is the idea of "changing the direction of a field." Books may be viewed as more substantial and more compatible with this elite goal, thus constituting a different explanation for why books are favored by private universities. Such a goal is satisfied by articles in private institutions, especially in those fields where articles reflect the cognitive organization of the fields themselves, as in the natural sciences, where book publication is aberrant to the modal pattern of article publication.

The order of authorship on article (and book) publications constitutes a further mechanism in the construction of reputation (Zuckerman 1968). As collaboration in fields increases, taken by Hagstrom to be an indication of field maturation (Hagstrom 1963), visibility of individual role performance decreases. The ordering of authors' names on publication becomes, according to Zuckerman, an adaptive device which symbolizes relative contributions to the research. Working on the assumption that authors should be listed in the order of the value of their contribution, Zuckerman found, however, that Nobelists were often not listed first. She identified the practice of *noblesse oblige*, in which highly reputed scientists, despite their greater contribution, give credit to less eminent coresearchers, and do so increasingly as their eminence grows. Such a practice prompts the more general question of field differences in author-order norms. It may be generally assumed that, in the physical and biological sciences, authors are listed exclusive of having contributed to any of the actual writing of an article, whereas in the social sciences, the contribution of actual writing determines authorship listing.

These patterns bear on the related practice of listing doctoral or postdoctoral mentor names on mentees' publications: in the physical and biological sciences, the pattern may be parallel to that above, in which mentors' names are listed because

of any affiliation with the research, whereas in the social sciences, mentors' names may be listed only where actual writing contributions are made. These patterns, and their consequences for visibility and reputation formation, are in need of empirical treatment.

Just as different institutions appear to support different "cultures of production," according to Clemens et al., the careers of authors lend further support to the idea of differentiated scholarly worlds, at least in low consensus fields. The researchers found that almost half of the book authors and more than one-third of the article authors had never published in the other genre. The researchers discuss how their findings implicate (and complicate) disciplinary authority as well as the disciplinary legitimacy of careers.

Clemens et al.'s (1995) results also differentiate men and women authors. They found women eight times more likely to be first authors of qualitative articles in the *American Journal of Sociology*, and men six times more likely to be first authors of quantitative articles in the *American Sociological Review*. In addition, almost half of female first authors in their sample wrote books based on qualitative evidence; the modal career pattern among males was a quantitative article published in the *American Sociological Review* (see also Grant et al. 1987; Ward and Grant 1996).

In longitudinal work using samples from the fields of sociology and linguistics, Leahey et al. (2008) examined the effects of specialization on career success, as indicated by productivity and visibility. Leahey found that specialization enhances productivity but not visibility. Scholars who specialize may be visible within specific and relatively small networks of scholars, but not outside of them. The findings are consistent with a subset of those found in Clemens et al. (1995). Article authors—the types of authors examined by Leahey—are more likely specialists attempting to address more narrowly posed questions. The genre is less cited and recognizable outside of the small network to which such contributions speak. Specialization and visibility are also found to account for differences in academics' salary earnings (Leahey 2007). Women specialize less often than men, consequently publish less, and are thereby less visible. Leahey found women earn less than men as a result of these processes.

Age and Achievement

The relationship between age and achievement has long fascinated researchers from a variety of fields, spanning sociology, history, psychology, and higher education studies (Blackburn and Lawrence 1986; Clemente and Hendricks 1973; Simonton 1988, 1994). A related area concerned with "developmental approaches" to the study of faculty careers emerged in the field of higher education. Some studies in this area incorporate varieties of disciplinary views (Corcoran and Clark 1984; Lawrence and Blackburn 1985, 1988), others are psychologically oriented (Baldwin and Blackburn 1981; Baldwin et al. 2005; Caffarella et al. 1989).

In science, as in other institutional realms, a common belief is that individuals do their best work when they are young. It may also be believed that, in the case

of science, individuals are most productive in publication in their younger years. These notions were lent credence by the work of the psychologist Harvey Lehman (1958; see also Stephan and Levin 1992), who thought that there was a relationship between being young, creativity, and achievement. Despite the strength of these beliefs, now diffused throughout culture, empirical evidence does not support them (Bayer and Dutton 1977; Reskin 1979a). Moreover, Lehman's work has since been found to be methodologically flawed (Cole 1979).

Instead, research has found that the relationship between age and scientific performance is modestly curvilinear; publication productivity is generally seen to increase modestly as scientists enter middle age and then decrease modestly as they advance further in age (Cole 1979). As a case in point, Zuckerman recorded that physicists were on average 36.1 years of age when they did the research that resulted in a Nobel Prize. Chemists were 38.8, biological scientists, 41.1 years of age on the average (Zuckerman 1977, p. 166).

As already made clear, organizational contexts of academic employment affect productivity; a concentration of highly productive colleagues creates an environment to stimulate high levels of research publication (Allison and Long 1990; Braxton 1983; Crane 1965; Fox 1983; Long and McGinnis 1981; Pelz and Andrews 1966; Reskin 1977). Furthermore, processes of cumulative advantage and disadvantage differentiate scientists as they age (Cole and Cole 1967, 1973). As Allison and Stewart (1974, p. 596) observed: "Because of feedback through recognition and resources, highly productive scientists maintain or increase their productivity, while scientists who produce very little produce even less later on. A major implication of cumulative advantage is that the distribution of productivity becomes increasingly unequal as a cohort of scientists ages." This pattern was restated with slightly different emphasis by Blackburn: "Productivity does not decline with increasing age for all faculty...but only very slightly for many people. The more accurate statement is that there are productive and nonproductive people and the discrepancy between them increases over time as the productive people maintain their high level and the less productive become even less so" (1979, p. 25).

Publication patterns vary by academic field because of publication norms across fields (Bayer and Dutton 1977; Wanner et al. 1981). Publication patterns also vary by gender, to be discussed later in this chapter (Cole 1979; Cole and Zuckerman 1987; Fox 1985, 2005; National Research Council 2001; Reskin 1978; Sonnert and Holton 1995; Xie and Shauman 2003; Zuckerman and Cole 1975; Zuckerman et al. 1991). Overall, however, the evidence does not point to a strong relationship between youth and doing one's best work.

How the reward system of science and how organizational settings of academic work influence productivity patterns have already been observed. In the case of the reward system of science, when early work is recognized, scientists are apt to continue to be productive whereas scientists whose early work is unrecognized are apt to become less productive, each respective process of advantage and disadvantage reinforced over time (Allison et al. 1982; Cole and Cole 1967, 1973; Zuckerman 1970, 1977). Zuckerman (1988) explained why it might be tempting to believe that there is a relationship between age and achievement. As so often is the case for

numerous purposes, the pantheon of science is invoked, enabling one to turn to the Newton at 24 for the invention of calculus, to the Einstein at 26 for the elaboration of relativity, to the Darwin at 29 for the theory of natural selection, and so on (Zuckerman 1988, pp. 533–534; also discussed in Merton and Zuckerman 1973 and Cole 1979). Rarely are epoch-defining events, or epoch-making individuals, generalizable to wider populations who follow in their long wakes, despite the inspiration that such events and individuals provide for those who follow. Such is true regarding the relationship between age and scientific achievement.

Mobility

A closely related body of work has examined faculty movement among ranks and among institutions as a means to uncover processes of stratification in science. Drawing on a sample of physicists, chemists, mathematicians, and biologists who changed institutions between 1961 and 1975, Allison and Long (1987) found that the major determinants of prestige of the destination department were: prestige of prior job, prestige of doctoral department, and the number of articles published in the 6 years prior to the move. When the job change involved promotion, the major determinants for elevation in rank included: origin rank, professional age, and citation frequency. (The authors are not able to provide support for differential patterns among the four fields studied.) Recall that Long et al. found in their 1979 research that publication productivity does not affect job placement, but that job placement does affect productivity. In light of the 1987 findings, this conclusion is thus amended when applied to job changes *after the first* academic job. The discrepant results seemed to indicate that hiring departments, at least in the historical context in which the researchers completed their work, paid more attention to research productivity when candidates are mature scholars with lengthier publication records than at the time of obtaining the first job.

Reskin and others have inquired into the effects of mentor characteristics on scientists' careers. Using a sample of chemists, Reskin (1979b) found that an academic sponsor's productivity affected predoctoral productivity in "offspring," and that the caliber of the Ph.D. department affected offsprings' postdoctoral productivity. Integrated with the results above, these factors would seemingly play a prominent role in professional mobility *after* entry, if not also *at the time of* entry into an academic career. As Reskin observed: "sponsorship is vital for scientists' careers. Both their [Ph.D.] departments and sponsors affect graduate students' later performance as well as how they fare professionally" (1979b, p. 143). The net findings from these studies are logically consistent with Hargens and Hagstrom's (1967) early article on the topic, where they found that prestige of doctoral department is closely associated with the prestige of the first employing department, even when the effects of productivity are controlled.

In a subsequent study, Long et al. (1993) researched rank advancement using a sample of biochemists who earned their Ph.D.s between 1956 and 1958 and all females who received Ph.D.s in biochemistry from 1956 to 1967. The authors found

that time in rank and number of publications in rank were the most important factors in determining rates of promotion. “There is little evidence that the quality of research, as indicated by citations to the articles or the standing of the journals in which the articles are published, affects promotion” (Long et al. 1993, p. 719). This finding, independent as it is from data on the departmental contexts of publication productivity, departs from Cole and Cole’s (1973) earlier claim that publication quality matters more for success in prestigious departments whereas publication quantity matters more in less prestigious departments.

Long et al. also revealed that rates of promotion are lower for women. Moreover, employment in a prestigious department has a significantly more negative effect on promotion for women than for men. At both promotion junctures—from assistant to associate and from associate to full professor—women are promoted more slowly. Returning to the norm of universalism as their point of departure, the authors conclude that particularistic factors operate in processes of rank advancement in academe. If contributions to scientific knowledge were the chief criterion in promotion, the authors argue, then effects of citations to published work (for women and for men) should be stronger. What is more, while women were found to benefit more from each of their publications, this advantage only materializes into tangible results for the most published women scientists. The precise sources of gender differences in science have remained a puzzle on which researchers have worked extensively, producing a large body of work on the subject of gender, productivity, and careers (see the next section of this chapter).

In work that bears as much on mobility as on socialization, to be discussed later, Fox and Stephan (2001) considered the discrepancies between employment preferences and realities among 3,800 doctoral students in the fields of chemistry, computer science, electrical engineering, microbiology, and physics. In all fields, they found, students reported that their prospects for careers in research universities were less than good (and for men and women in physics and for women in chemistry, the prospects were rated as less than fair). In physics, nearly half of students preferred careers in research universities; frustration among recent graduates may stem from the discrepancy between reality and a desired future. The fraction of those students in microbiology who prefer careers in research universities is similar to that of physics; however, students are less pessimistic. Fox and Stephan attribute this difference to comparatively greater postdoctoral options open to microbiologists. A related issue is funding found in fields; depressed periods of funding in certain fields, such as physics (and in contrast to microbiology), may contribute to depressed sentiments about one’s professional future.

Fox and Stephan (2001) also observed women reporting a greater preference than men for careers in teaching universities, which may reflect women’s expectations that this is the option open to them. This channeling process of gender among the sectors of academic employment proves to constitute a major dimension that accounts for cumulative disparities between gender and publication productivity, a topic of the next section of this chapter.

The study of stratification in academic careers may be considered via five areas: (1) cumulative advantage and disadvantage; (2) the organizational bases of strati-

fication; (3) reputation, visibility, and influence; (4) age and achievement, and (5) mobility. These represent key domains in which scientific and academic careers are differentiated: by *time* (in the instances of cumulative advantage and disadvantage and of age); by *place* (in the instance of organizational bases—the departments, institutions, and fields in which academics work that constrain and shape careers); by *medium* (in the instance of reputation, visibility, and influence, and how these are constructed by quality and quantity of publication, publication type, and the citation of published work); and by the *intersection of these dimensions* (in the instance of mobility, patterns of which account for research productivity via the influence of timing of moves and lengths of accumulated publication records, the types of departments and institutions that foster, “send off” and “receive” individuals with these records, and how the records themselves are socially established by processes of citation and reputation formation).

Gender, Productivity, and Careers

No other area in the sociological treatment of scientific careers has received more attention than that of gender. Even in the larger context of stratification research on science, the area of gender has remained the most active. In their review of the subject in 1984, Cole and Zuckerman identified some 50 studies that sought to address “the productivity puzzle,” that is, why women scientists consistently publish less than their male counterparts. The volume of literature since their writing has only increased, with several book-length treatments having appeared (Eisenhart and Finkel 1998; National Research Council 2001; Sonnert and Holton 1995; Xie and Shauman 2003; Zuckerman et al. 1991; also Cole 1979) to complement the output of articles on gender differences in science careers. Again, the conceptual underpinning of the interest lies, as in the work above, in social stratification, and again, the interest originates (if not always stated explicitly) in ways the universalistic norm of science may fail—here, for how men’s and women’s scientific work is differently evaluated, for how their contributions are differently recognized and rewarded, for differences in structural barriers in their careers, and for how men’s and women’s careers may respond differently to feedback mechanisms that alternatively promote or inhibit productivity. While the topic of gender, productivity, and careers is sufficiently distinct to be partitioned as its own section in this chapter, the topic has grown so large that only reviews devoted to it entirely can grant the subject its justice (Cole and Zuckerman 1984; Fox 1985, 1995, 2008; Long and Fox 1995; Ward and Grant 1996; Zuckerman 1991; Zuckerman and Cole 1975). In light of our present aims, the treatment here is necessarily selective and understood as a means to illustrate central themes, including: the “productivity puzzle”; marriage, parenthood, and productivity; and social-organizational conditions of work environments.

Attempting to address the “productivity puzzle” and to settle some of its quandaries, Xie and Shauman (1998) develop a sample of doctoral scientists spanning a time period between 1969 and 1993 with regular faculty appointments across the

fields of the biological, physical, and social sciences, engineering, and mathematics. Whereas prior studies demonstrated that women published slightly more than half as many papers as men (Cole and Zuckerman 1984; Zuckerman 1991), Xie and Shauman's findings demonstrate a significant narrowing of this gap, such that by the late 1980s and early 1990s, the gender ratio in productivity stood between 75 and 80%. The authors reason that the distribution of positions and resources, while still unfavorable to women, became more equitable in the last three decades of the twentieth century. It is important to note that this gender ratio encompasses overall sex differences; different fields may exhibit different gender productivity ratios.

Their data indicate that women are more likely than men to hold appointments in teaching colleges and are less likely employed at research universities. Across the time period of the researchers' study, this pattern in institutional affiliation persisted but began to converge. Independent of institutional type, gender differences in teaching load significantly narrowed, as did differences in research funding, across the span of time studied. Resource conditions that affect productivity, such as teaching hours, research funding, and research assistance became more equally distributed between men and women (Xie and Shauman 1998, p. 859).

Some contradictory evidence is on hand about the effects of marriage, parenthood, and productivity. Hargens et al. (1978) report a negative relationship between childbearing and productivity. Hunter and Leahey (2010) found that productivity among women linguists and sociologists decline after the birth of a child. Other studies have found either a neutral or a modestly positive relationship (Cole and Zuckerman 1987; Sonnert and Holton 1995). Cole and Zuckerman (1987), using a sample from the fields of mathematics, the physical and biological sciences, economics, and psychology, found that women who marry and have children publish on average as many papers per year as single women, though the authors caution that the result should not be equated with a conclusion that marriage and children have no effect on the careers of women scientists. Indeed they do, but the effect is generally not observed in women's research productivity. Throughout this body of research, it is abundantly clear that productive women scientists possess organizational qualities and organizational support that creates a ground for their work (Ward and Wolf-Wendel 2004). They are seen to eliminate from their lives "almost everything but work and family" (Cole and Zuckerman 1987, p. 125).

Xie and Shauman (1998) found married scientists to have significantly higher rates of productivity than unmarried scientists. Marriage may benefit productivity through the addition of economic resources and emotional support from a spouse. What is more, a spouse may provide domestic support whose net effect includes additional time for a scientist to work. Women scientists are, however, less likely than men scientists to be married (Marwell et al. 1979; Shauman and Xie 1996). Consequently, women scientists are on average less likely to benefit from marriage, but when they are married, are found to benefit equally with men (Xie and Shauman 1998, p. 860). Xie and Shauman (1998) argue that, when controlling for marriage, estimated gender differences in publication productivity are further reduced.

What can be made compositely of the patterns? Xie and Shauman (1998) argue that women scientists publish fewer papers than men because women are less likely to have the personal characteristics (as indicated by field, time lag between bachelors and doctoral degrees, and years of experience beyond the doctoral degree), structural positions (indicated by university type), and facilitating resources (indicated by teaching loads, research grants and assistance) that foster publication. That is, men and women scientists often pursue (or are characterized by) different career tracks. Preponderantly, women and men scientists are located in different academic structures that entail varying access to the types of institutional values and resources that facilitate publication productivity. Personal values and career ambitions, the authors argue, may vary systematically, owing to gender-typed socialization (Xie and Shauman 1998, p. 864) and to significant gender differences attendant on child-bearing (Shauman and Xie 1996), creating further ground for the observed variation in outcomes.

Xie and Shauman's research plows substantial new ground on the long-vexing productivity puzzle; it also prompts new questions. For example, does its use of synthetic cohorts across four different time periods mask differences between men and women that otherwise would be observed by following the same scientists over time in their careers? Longitudinal data, nestled in organizational contexts, could parse the answer to the question in order to see how, and to what degree, demographic and contextual conditions differentiate careers.

Recent work has addressed some of these concerns. With regard to select demographic characteristics, Fox (2005) has found that, for women at least, the relationship between marriage and productivity varies by type of marriage and the occupation of a spouse. Women in subsequent (as opposed to first) marriages exhibited higher productivity. In subsequent marriages, women scientists are more likely to be married to another scientist, which Fox found to enhance productivity. Subsequent marriages may also be more stable and, by virtue of time, are likely correlated with a more mature research infrastructure within which one works, enhancing productivity.

With regard to select contextual conditions, Fox (2007, 2010) in other research has identified key social-organizational features of work environments that differentiate men's and women's careers in science and engineering fields: frequency of speaking with faculty about research in one's home unit; ratings of position and department; characterizations of departmental climates; and levels of interference experienced between work and family. Fox found that women are less likely than men to speak daily about research and more likely than men to speak of research less than weekly. The difference may be explained by lower integration or sense of membership among women in departments.

In addition, women rate their positions and their departments lower than men on aspects of human benefits and material resources necessary to work success (Fox 2010). These include such matters as access to equipment, a sense of inclusion among faculty in a department, and recognition from faculty for accomplishment. Correspondingly, women, more than men, characterize their home units as operating in ways other than consistently, neutrally, or "universalistically." Finally,

both men and women experience interference between work and family, but women more so, perhaps reflecting gendered expectations for women in households and families.

The findings are related to a theoretic orientation advanced by Sonnert and Holton (1995)—identified as the “deficit” and “difference” models—to explain gender differences in science careers. Building on the theoretical sociologist Georg Simmel’s formulation of “the stranger,” the deficit model holds that women are *treated* as strangers in science, whereas the difference model holds that women *act* as strangers in science. By the deficit model, women receive fewer chances and opportunities in their careers. The model postulates that women scientists’ goals are like those of men scientists, however, structural barriers keep women from accomplishing these goals. Much of the research on gender stratification in science, including that which explicitly seeks to partition universalistic and particularistic patterns, is consonant with the deficit model.

By the difference model, women possess “ingrained” contrasts in behavior, outlook, and goals compared to men. Differences are accounted for by gender-role socialization and cultural patterns, which may prompt varying professional orientations, ambitions, and attitudes between (and within) the genders (Sonnert and Holton 1995, pp. 10–17).

On this latter point, some gender differences, the researchers found, lie in stimulus-response behavior. For instance, more men than women interviewees in the study considered themselves self-confident. When questioned about whether they should have handled career obstacles in a different way, many more women than men claimed they should have been more confident or more assertive (Sonnert and Holton 1995, p. 139). The researchers also found women scientists, more so than men, more likely to have entered their careers “gingerly,” that is, by taking a step-by-step approach rather than by pursuing clear career goals at the outset. Three times as many women as men said they had unclear career aspirations when starting out in science (Sonnert and Holton 1995, p. 139). Cole and Fiorentine (1991) cautioned about the confusion between cause and effect in discrimination toward women in science. These results suggest patterned ways in which disadvantage may accumulate for women, both as gender-socialized agents in their careers and as subjects occupying specific structural positions.

Issues of self-confidence and assertiveness provide partial evidence for the former point (i.e., women as gender-socialized agents in their careers). Evidence for the latter point—women occupying specific structural positions—comes by way of the coping mechanisms that Sonnert and Holton found women scientists to employ in actively dealing with discrimination. They identified five chief strategies: ignoring, humor, compliance, deemphasizing gender, and avoidance (Sonnert and Holton 1995, pp. 130–131). Long and Fox (1995, pp. 62–63) postulated four conditions associated with the use of particularistic criteria on the basis of gender (and race) in academic science: the absence of information—when little information about the qualifications of scientists in on hand, particularistic factors are more likely to come into play; ambiguity of standards—particularism is more apt to be found in

those instances when criteria for evaluation are unclear; less developed scientific paradigms—particularism is apt to be correlated with low consensus fields characterized by a comparative lack of agreement on research problems, theories, and methods; and secrecy—particularism is likely to be more evident on those occasions when processes are not open and/or transparent, as in hiring, promotion, and the distribution of rewards.

Sonnert and Holton's research underscores the importance of the idea of the "critical mass." By this view, many differences in career outcomes are attributable to a low density of women in science, which varies by field (Fox 1995). Sonnert and Holton suggest that a comparative lack of women scientists leads them to adopt a distinctive "scientific style": women frequently embrace a more meticulous and perfectionist approach to research and tend to more strenuously uphold traditional standards of science, such as carefulness, replicability, and connection to fundamental ideas. Women may embrace this style because the perception of a marginal status compels them to adopt extra-high standards of conformity in order to be viewed as legitimate members of the scientific community. Using Simmel's formulations, the authors reason that women act in these ways because they are "strangers to science" and strive to be members of science. Here, the theory of cumulative disadvantage comes into play. Initially, small differences are accentuated in later career stages, resulting in disparities of performance (Sonnert and Holton 1995).

This temporal interpretation of gender differences in science careers is distinct from that promulgated by Xie and Shauman (1998) described above, which accounts for differences (and then only with regard to productivity), by women's personal characteristics, structural positions, and attending resources. These three sets of conditions are themselves subject to accumulating or nonaccumulating returns; data on real, rather than synthetic cohorts, will allow future researchers to further examine the effects of gender on academic careers over time.

Gender constitutes the largest area of research on stratification in scientific careers. The preceding discussion has highlighted three central themes in this body of research: the "productivity puzzle" between men and women scientists; marriage, parenthood, and productivity; and social-organizational conditions of work environments. Since women and men are represented differently from field to field, despite various changes in the gender make-up of fields, it has become even more important to examine differences by field, which will reflect empirical realities more precisely than global assertions. In conjunction with the prior section on stratification and careers, research will likely profit from still greater in-roads made into how reward systems operate with and/or without regard to the use of particularistic criteria, including gender. The profit will likely be greatest (though not exclusive) at the level of department, not only because local work environments demonstrably condition the structure and experience of academic careers, but also because the outcomes of one's situated work "feed" or, conversely, "starve" the operation of reward systems at institutional and professional levels.

Social Control of Careers

The social control of careers involves the ways by which careers are normatively ordered. Literature on the social control of careers in science originates not only from the sociology of science but also, in degrees, from the sociologies of work, occupations, and professions. Three main topics in the literature orient a consideration of how careers are socially controlled: recruitment and socialization; deviance; and the experience of work.

Recruitment and Socialization

Socialization refers to the transmission and internalization of norms such that they become self-imposed rather than exclusively managed by external regulation. Knowledge acquisition, intellectual and material investment, and role involvement may be understood as core elements of socializing processes (Antony 2002). While the majority of scholarship on professional socialization in higher education has concentrated on the transition from student-apprentice to scholar, inquiry need not be confined to this stage in the professional life course. Age norms socially control the timing, duration, and experience of the key events throughout the life cycle. While the change from lay person to professional may be viewed as particularly momentous, the occupational stakes in subsequent status transitions remain consequential to the very elements identified above that guide a socialization process—knowledge acquisition, intellectual and material investment, and role involvement (Hermanowicz 1998, 2009; Neumann 2005, 2009). Ways by which faculty members adapt over time in their productivity patterns, role sets, and professional identities are *learned*; socialization processes are as much a feature of ending careers in retirement as in beginning careers in graduate or professional school. Clearly, though, socialization researchers have been more caught up with early periods of professional socialization. Still other work has approached the subject in terms of a pipeline metaphor, investigating the sequences of events that result or fails to result in the production of the professoriate. Here, too, the focus lies in early rather than subsequent career matters of selection and socialization.

Cole and Barber (2003) follow this last approach in their examination of selection processes toward and away from academic careers among high-achieving minority students. The study is based on 7,612 graduating seniors at 34 colleges and universities across the United States. Occupational choice is treated as the dependent variable subject to the influence of various institutional characteristics, aspects of students' experience of school and schooling, and input variables such as SAT scores, GPA, gender, and socioeconomic status. The authors contend that it is logical to examine academia as a career choice by studying the choices of high-achieving students, since high-achieving students may be most likely drawn to, and be encouraged to consider, an academic career.

The authors focused on three institutional variables: selectivity, student-body racial composition, and institutional orientation (i.e., research versus teaching). To test hypotheses using these variables, four main institutional types were included in the study design: Ivy League institutions (highly selective, predominantly white, and predominantly research-oriented); liberal arts colleges (generally highly selective; predominantly white, and predominantly teaching-oriented); state universities (generally less selective, predominantly white, and predominantly research-oriented); and historically black colleges and universities (included were HBCU's of varying selectivity and research orientation, all, of course, predominantly African American).

Drawing on Davis' (1966) classic article, "The Campus as a Frog Pond," Cole and Barber advance a theory of relative deprivation to explain several findings. The theory is based on the premise that satisfaction with a particular life condition is based less on objective conditions than on a comparison with those nearest.

Consider students at an elite school who receive a GPA of B-. These students are in the lower quarter of their class. When they compare themselves with classmates who have done better academically they are likely to conclude that academically they are average or below average... With such relatively low levels of self-confidence, these students might be less likely to pursue high-achieving occupations such as academia. If the same students had attended less selective schools they probably would have received higher GPA's since there would have been less academic competition at these schools, and they may have concluded that academically they were average or above average. Even if they had received the same GPA at a nonelite school, a GPA of B- has very different consequences for a student attending a school where almost everyone has a higher GPA than it does for a student attending a school where this is the average or above average GPA (Cole and Barber 2003, p. 201).

The researchers observe that affirmative action policies have steered many minority undergraduates to selective colleges where they do poorly, and further limit the "pipeline" into academe. What is more, Cole and Barber find that liberal arts colleges tend not to produce students with aspirations for high-achieving occupations, perhaps surprising given the low faculty-student ratios in such environments where many believe success is more readily facilitated. The research finds that role models do not exert a significant influence on decisions to become a professor. Students with same-gender or same-race role models were found no more likely to want to become a professor than those who had no such role model (Cole and Barber 2003, p. 185). Cole and Barber conclude their analysis with a set of important findings and specific recommendations, including greater student exposure to research experiences, steering of students to institutions that are not necessarily the most prestigious but ones where they are more likely to do well, and the development of institutional programs and career counselors dedicated to stimulating minority student interest in an academic career (Cole and Barber 2003, pp. 236–258; for related treatments, see Becker and Price 2009; Castillo-Chavez and Castillo-Garsow 2009; Leggon and Pearson 2009; Tapia and Johnson 2009).

By 2000, women accounted for almost half of doctorates across academic fields. However, their low representation has persisted in areas of engineering, physics, and mathematics. Throughout the sciences, career persistence and mobility after the

doctorate are considerably lower for women than men. Xie and Shauman (2003) examined the trajectories of women into science careers. Using demographic methods they apply a life course perspective to 17 longitudinal data sets in order to understand the interdependence and consequences of exit and entry across the domains of education, family, and work.

Xie and Shauman observe minimal gender differences in mathematical ability except at the upper extreme of the distribution. Male students, however, participate more in science curricula, and by the time students are high school seniors, many more male than female students have developed expectations to major in science or engineering fields in college. In college, women are more likely than men to major in some of the science fields, but these majors are less likely than other science majors to pursue scientific careers. Subsequently, married women, and married women with children, are less likely to pursue a career in science or engineering. The patterns are suggestive of the ways in which gender segregation by college major and subsequent familial roles differentiate ensuing career sequencing and attainment.

Later in the career, Xie and Shauman found that while female participation in science and engineering has increased over time, a gender disadvantage continues in employment and positional status. Recalling earlier theorizing, the disadvantage accumulates: it negatively affects geographic mobility. Affirming the authors' prior work (Xie and Shauman 1998), they find again (Xie and Shauman 2003) that productivity differences between men and women are best explained by personal characteristics, structural positions, and facilitating resources.

The approaches above either adopt a "pipeline" approach to selection, recruitment, and socialization to the professoriate or, as in the case of Xie and Shauman (2003), adopt a perspective that functions as a critical response to the use of the metaphor. By contrast, other work focuses on a stage, and most often graduate education, to examine socialization issues. Austin's work (2002; also Wulff and Austin 2004) exemplifies this approach.

Austin's studies of graduate students and criticisms of their training yielded five recommendations: more attention to regular mentoring, advising, and feedback; structured opportunities to observe, meet, and talk with peers; diverse, developmentally oriented teaching opportunities; information and guidance about the full array of faculty responsibilities; and regular, guided reflection on the nature and content of faculty roles (Austin 2002, pp. 111–112). Most of these recommendations might seem obvious, but are hardly so when placed against data that indeed suggest how infrequently departments, programs, and faculty members engage student clientele in these activities (Ehrenberg et al. 2009). Concern for the efficacy in doctoral and professional training led the Carnegie Foundation for the Advancement of Teaching, among others, to complete intensive studies of training and socialization in several fields (Foster et al. 2006; Golde and Walker 2006; Sheppard et al. 2008; Walker et al. 2008).

A minority of research has examined aspects of socialization processes beyond the entry points of careers. Fox and Ferri (1992) examined the attributions that academics make for successful people in their fields. Using a national survey of academics across economics, political science, psychology, and sociology, the re-

searchers found that women make weaker internal (or individual) attributions but significantly stronger external (or structural) attributions than do men. Two possible explanations are offered to account for the differences. First, women are more aware of external barriers than are men. Second, the noncomparability of structural locations between men and women academics (a pattern subsequently confirmed and examined by Xie and Shauman [1998] as discussed above in the section on gender, productivity, and careers) evinces diverging sentiment about the sources underlying academics' career success. The findings are suggestive of the way that academics, well into their careers, are conditioned to understand a system of stratification in which they are integral parts.

Concentrating on the field of biology, Sonnert (1995) inquired about the factors that led reviewers to make positive assessments of another scientist's career. Among a variety of productivity and career measures, he found three factors to account for the majority of variance in reviewers' evaluations: annual publication productivity, the existence of sole-authored publications, and graduate school prestige. The results suggest that academics are regarded as less successful when they publish a comparatively less amount of excellent work, do so (at least in part) with coauthors, and hail from a nonelite doctoral program. Success attributions are more readily assigned to those who are more prolific, independent of the quality of output, and even if variability in production quality cooccurs with prestigious doctoral origins. These patterns, too, reveal ways in which academic communities condition behavior and attitudes about performance in a scholarly career.

Using a sample of academic physicists, Hermanowicz (2006) asked: what does it take to be successful? The responses cast light on the moral order of physics by eliciting how members of academe construe the structure of success. Following Durkheim ([1915] 1965), a moral order refers to a group's conception of how a life (or career) ought to be lived. Physicists identified a finite set of 12 qualities that they deemed necessary for success. In rank order of mention, these qualities included: persistent, smart, civil, creative, entrepreneurial, aggressive, tasteful, confident, adaptable, ability to communicate, service-oriented, and lucky. Over half the physicists concentrated on persistence as that attribute most responsible for success, whereas only a quarter of them identified the next most commonly attributed quality, that of being smart. Moreover, senior scientists were more likely to discuss persistence than junior scientists, suggesting that the importance of the attribute is learned via experience and indeed through brushes with failure. Gans and Shepard (1994; also Shepard 1995), who in studying the world's leading economists, observed how frequently their articles—which went on to become classics, were routinely rejected in the early cycles of the reviewing process. "In the big leagues," they wrote, "even the best hitters regularly strike out" (Gans and Shepard 1994, p. 166). Persistence allowed them to hit their home runs.

A concern for socialization has often prompted the question, "Socialization for what?" Bidwell (1972) addressed the question by answering: "For moral commitment." Socialization processes and their efficacy immediately draw our attention to ideas of career success constituted by exemplary role performance. Few of those who embark on an academic career, particularly once beyond graduate or profes-

sional socialization, likely do so with low aspirations. Rather, ambition imbues the culture of professions (Bledstein 1976). It was with this backdrop that Westie (1972, 1973; Westie and Kick 1980) conducted his studies of academics' expectations for professional immortality. Using a sample of sociologists, Westie examined academics' aspirations for significant contributions and lasting legacy beyond their career spans. Almost half of his respondents entertained the desire to be included among the top ten leaders in at least one of their specialties, and more than half believed that their contributions in the form of research and publication would survive their career spans. Yet when presented with the task of identifying "luminaries" and their work on a list (which turned out to be the names of past presidents of the American Sociological Association), most of the people had been forgotten. Expectations for professional survival after one's career are unrealistically high when compared with the fate academics accord many distinguished scholars.

As academic people we compete for rank, salary, recognition, as we are required to do. The system forces us to exaggerate our accomplishments and others' definitions of our accomplishments. Because exaggeration is near-normative, we do it without knowing we are doing it, and we come to believe our exaggerations, again without knowing it...this academic normative order, which includes definitions of how one ought to evaluate one's self as originator and lasting contributor, may be understood as part of the academic *culture of legitimation*, whereby the peculiar perquisites of academic people are perpetuated (Westie 1973, p. 32, original emphasis).

Rules of legitimacy are transmitted by socialization, both in doctoral training and throughout subsequent phases of the professional life course. On the one hand, these specific findings illustrate the prominence of exaggeration in the normative order of how academics make status claims. On the other, they underscore the importance to which academics assign recognition, when as socialized members of the academic profession, they seek, in Merton's terms, to satisfy the institutional goals of science. To this end, Westie conveys something of the chances with which even once-prominent academics will be remembered for their work.

Deviance

The norms of science, discussed at the beginning of this chapter, prescribe behavior in how academic roles are to be performed and, conversely, call attention to the episodes in which scientists deviate from them. Zuckerman explains that the two most serious violations of the norms are fraud and plagiarism, which involve deliberately deceptive truth claims and deliberately deceptive claims to ownership of intellectual property (Zuckerman 1988, p. 521). These, however, are by no means the only ways in which scientists deviate from scholarly norms, though they may be viewed as the most serious and consequential because they interfere fundamentally with the development of knowledge, and thus with the foremost institutional goal of science (LaFollette 1992; Zuckerman 1988, p. 522).

The chief sociological explanation for deviance is, again building on Merton, anomie theory (Merton [1957] 1968a, [1957] 1968b, 1973b). Intense competition

results from the premium that the scientific community places on originality and recognition. By anomie theory, a discrepancy arises between desired goals and the means to satisfy them. Scientists unable to bring legitimate means to satisfy this institutional end are among those most prone to resort to deviance in order to gain desired rewards (Braxton 1993).

On the one hand, deviance from scientific norms is not surprising in the sense that, as in all norms, violations will invariably occur and, following Durkheim, must occur, in order to serve—with subsequent punishment—as reminders to a community of the rules to which members must adhere. In this regard, deviance is never eradicated; to have a collectively established idea of normative behavior, it is necessary also to have collectively recognized deviations from it, and incidents to make real distinctions in behavior.

On the other hand, it is not clear how much deviance exists. The actual frequency of deviance is not known, and no method has been developed to gauge the ratio of public cases with those gone undetected (Zuckerman 1988, p. 523). In the absence of systematic data on the subject, scholarly inquiry into deviance in academic roles is, while important, generally scant, and virtually no sociological treatments have been made. Studies that exist tend to be hypothetical in nature, considering either behavior that is plausibly regarded as deviant, or work conditions that plausibly give rise to its occurrence. The volume by Braxton (1999), which covers historical overviews, theoretical perspectives of deviance, and targeted empirical analyses, provides the best starting point for further inquiry.

Experience of Work

A final body of work focuses on how scientists experience the academic career and, in turn, how normative conceptions of work socially control subjective interpretations and passage through time. A number of topics discussed above are subsumed under this focus, including socialization, organizational bases of stratification and cumulative advantage, and age and achievement. However, as the term “experience” suggests, the emphasis in this latter work tends to be more social-psychological and biographically oriented as opposed to exclusively structural, as in much of the work discussed under the mentioned headings. What is more, some of these treatments in the experience of work, like the topic of socialization, are informed by a sociology of professions and occupations in addition to the sociology of science.

Hermanowicz's studies (1998, 2003, 2005, 2007a, 2009) are part of a tradition of work in the field of sociology that dates to the 1940s and originates from what was called the “Chicago School of Sociology,” which studies how individuals are socially shaped by their interaction with institutions, including occupations (see Bulmer 1984; Hughes 1958, 1971, 1994). The Hermanowicz studies are also informed by the long legacy of work and protégés produced by Robert Merton in the sociology of science.

The concept of the *subjective career* situates the analyses. In one of Everett Hughes' most notable formulations, careers are seen and studied for their “two

sides” (Hughes 1937; later developed by Goffman 1961; see also Hughes’ posthumous publication 1997). One side is the objective career, which consists of the sequence of statuses a person holds over time. The statuses may be indicated by positions or offices or titles, such as freshmen, sophomores, juniors, and seniors composing an educational career or assistant, associate, and full professor composing an academic career. The second side, existing in tandem, is the subjective career, which consists of the *shifting personal perspectives individuals develop about themselves and their work as the objective career unfolds* (Stebbins 1970).

Hughes marshaled the idea of *turning points* as a social mechanism that explains when and how change occurs in the subjective career as it engages in dialogue with the objective side (Hughes 1958). As lives and careers transpire, people undergo a series of changes, not only in their objective status, but also in the patterned subjective views they hold about themselves in light of this change. The young assistant professor comes to see him or herself in a substantially new and different light from that understood as a student undergoing intense training and socialization for the professorial role, just as the emeritus professor—at the other end of a long sequence in professional status change—comes to see him or herself differently than viewed through the lens of a once regular member of a senior faculty.

In *The Stars Are Not Enough: Scientists—Their Passions and Professions*, Hermanowicz (1998) sampled and interviewed physicists according to early, middle, and late career stages and by one of three types of university in which they were employed. The universities, which form a representative continuum, consist of those stressing research in the presence of teaching and other roles, termed *elite*; institutions that stress research and teaching as well as other roles, termed *pluralist*; and institutions that stress teaching in the presence of research and other roles, termed *communitarian*.

The same physicists were again interviewed in 2004–2005, creating a longitudinal design from which to study how academics, working in a variety of institutions, age in relation to their work (Hermanowicz 2009). The sequel study, *Lives in Science: How Institutions Affect Academic Careers*, thus allows one to see how academics’ perceptions of work evolve with felt costs and rewards, from early to mid career, from mid to late career, and from late to post career. Age and institutional location provide the structure to analyze individual, subjective careers through diachronic change, and the work is consequently in a position to address the following questions about scientific careers:

- How do scientists account for the unfolding of their careers in light of the goals and aspirations that socially situate their profession?
- What continuities and changes—in aspiration, satisfaction, motivation, commitment, and identification with work—mark the careers of scientists?
- What knowledge have scientists acquired about themselves, their institutions, and the academic profession in 10 years?
- How does this knowledge vary by individual age and type of university?

Hermanowicz (2009) generalizes about these careers by way of 20 analytic dimensions, ranging from overall modal career patterns to overall satisfaction and to work

attitudes. For example, with respect to overall modal career patterns, Hermanowicz (2009) found that in passing from early to mid career, elites stabilized and rededicated themselves to academe—to fulfilling the institutional goals of higher education by continuing in their research productivity. By contrast, pluralists experienced reversals. They questioned their interest and commitment to the profession and grew disillusioned with academic research. By mid career, most communitarians ceased in research. For communitarians, cumulative disadvantages accrued to the point of shutting down interest and motivation to continue in scientific research. Their career pattern may best be described as succumbing to a stasis—there was no forward progress.

In their mid to late career transitions, elites remained consistent in their identification with science and in their scientific productivity. Their publication productivity continued to accelerate. Pluralists either attempted to regenerate themselves following earlier fallow periods, or continued in the research that they had been doing. Communitarians entered into a demise; they decreasingly identified with research and became increasingly disaffected with their departments and universities, which they saw as having crippled their research aspirations. In moving from late to post career phases, elites for the first time lessened their intensity and embrace of research. Pluralists characteristically withdrew from work. Communitarians separated themselves completely from it, usually severing all ties with work and their employing organizations.

Patterns in modal careers are in turn associated with patterns in satisfaction and in attitudes about work. Among elites, satisfaction begins high and rises through the career. It then drops at the end. Among pluralists, satisfaction starts out on a high, drops and levels off. Finally, it rises at the end, coinciding with a time at which they withdraw from work. Among communitarians, there is a low in satisfaction throughout their careers, until the end. At the end of their careers, for the first time, communitarians experience the greatest high. Coincidentally, it is a time at which they are separating themselves altogether from work. Satisfaction operates both as a function of opportunity to undertake desired work, particularly research work, and as a function of the recognition garnered for work performed.

Elites possessed positive attitudes toward their work throughout most of their careers. Only in the end do their attitudes turn ambivalent—about what they have done, how much they have achieved, and where they stand professionally. Unlike any previous period in their careers, there is a sense of regret and resignation about their efforts and what they have achieved. Pluralists are, by turn, positive. Communitarians feel detached from work and institution. Their attitudes are far from the negative ones that were most common among them at earlier points in their careers.

Would scientists pursue an academic career again? Many would not. The notable trend is not that many would, as is also the case: one might anticipate that long training and preparation for a profession would coincide with commitment and satisfaction, indicated by a strong desire to pursue the same profession were people given the chance to start over. By contrast, what is noteworthy is the large fraction of faculty members who say they would pursue another line of work, an indication of

a profession's possible lack of vitality, conditioned by the circumstances that faculty members confront in their institutional environments.

The picture that emerges is far from sanguine. In what direction do the patterns seem to be headed? Hermanowicz argues that increased emphases on research will likely be accompanied by increased probabilities of dissatisfaction throughout the system of higher education. As research is more greatly stressed, by institutions as by individuals, career expectations rise, in accord with attempting to satisfy external reference groups that are consistent with fulfilling the institutional goals of academe. As expectations rise, the likelihood of satisfying them decreases, because the expectations are defined by that not yet achieved and, ultimately, by the unachievable. Once again the idea of *anomie* is invoked. The relevance of anomie is readily found in the work conditions of contemporary academic careers, even as the origins of the idea trace to the social theorist Emile Durkheim ([1915] 1965, [1897] 1951), then subsequently pursued by Merton ([1957] 1968a, [1957] b), explored in later empirical studies of scientists (Braxton 1993; Hagstrom 1964, 1965, 1974; Hargens and Kelly-Wilson 1994), and suggested in others by virtue of work conditions outlined (Becher and Trowler 1989, esp. Chaps. 5 and 6; Zuckerman 1992). Many conditions of work appear to generate dissatisfaction and disaffection for academic careers.

Hermanowicz's findings suggest that the present conditions of academe favor a decline in the attractiveness of academic careers. On many objective criteria, chances of success in academia across many fields are low and, where won, are hard-fought: obtaining regular employment, obtaining tenure, obtaining promotion through standard ranks, publication, citation of work, competitive salary, and competitive salary growth. These basic rewards are also arguably more difficult to obtain across institutional types than in any other historical time in the profession.

At stake on the one hand are individual satisfaction and moral commitment. These are significant stakes. When compromised, the institutional goals of science fail to be served. On the other hand, the overall welfare and functioning of the profession are at stake. Hermanowicz's findings prompt the question of what types of people, with what levels of talent, the academic profession will be able to attract—a question centrally situated in the studies of recruitment and socialization discussed earlier in this chapter.

The social control of careers refers to the ways in which occupational groups—here, scientists and academics—regulate professional passage through time with socially enforced norms. Three principal areas situate work on the social control of careers: recruitment and socialization; deviance; and the experience of work. A major idea underlying social control involves the task of managing heterogeneity such that actors of numerous types, stripes, and persuasions conform, more or less, to group principles. Researchers can assess the extent to which this is actually the case. More significantly, researchers may draw new attention to the consequences of heightened heterogeneity. More people, from more diverse backgrounds, earn doctoral degrees and enter academic careers, having been trained and socialized at institutions and in programs that themselves speak of heterogeneity.

The challenge that heterogeneity poses to the social control of careers is not likely trivial. It may well condition how individuals are recruited and trained, their proclivity toward or desistance from deviance, and how they experience their work. In other words, we are drawn to additional dimensions by which to study and differentiate academic careers via social control. We are indeed thus also led to consider what a career means as well as what it means (if anything) to be a member of the academic profession, to the variety of people seeking to develop their livelihoods therein.

Conclusion

This chapter has aimed to organize the major lines of research in the sociology of science—the branch of sociology whose cumulative work is most closely allied with the more general study of faculty—in order to motivate a more theoretically grounded study of academic careers. These major lines include: *stratification and careers* (and attendant focus on cumulative advantage and disadvantage; organizational bases of stratification; reputation, visibility, and influence; age and achievement; and mobility); *gender, productivity, and careers*; and the *social control of careers* (and attendant focus on recruitment and socialization; deviance; and the experience of work). The discussion is not intended to be exhaustive of all work conducted in these major areas; as noted, the areas constitute domains for their own respective reviews. Rather, the goal has been to identify the principal topics of research, to call attention to the concepts that anchor the work theoretically, to summarize major findings, and, in so doing, to suggest connections to be forged between a sociology of scientific and academic careers.

Such connection can help stimulate research on many fronts and lead to greater synthesis between the sociology and higher education fields. In the field of higher education, the exchange will serve the goal of theory-building and concept-usage, which will in turn create greater ground for field maturation. In sociology, new work on academic careers, to the extent it makes use of a synthesis, will help reinvigorate institutional sociology of science. Readers will have observed (as explained in the account of the specialty's mid-to-late twentieth century heyday as well as in note 1) that many of the bodies of work in the sociology of science are themselves aging. Some of them, such as the body of work on stratification, are in need of transfusion; in some areas, work ceased in the 1980s and 1990s. Methodical connection and systematic integration with higher education is a prime source of new blood.

A variety of problems and projects illustrate, but by no means delimit, work to be done in a way that makes productive use of field cross-fertilization. We may consider five of them. First, it is clear that if synthesis is to succeed, *samples must be drawn from varieties of fields* and not simply those in the biological and physical sciences, mathematics, and engineering. Braxton and Hargens (1996, p. 35) earlier sounded a similar call: “differences among academic disciplines are profound and extensive.” It is a noteworthy question to ponder how all of the findings discussed

in this chapter might vary from one cluster of fields to another if indeed samples extended beyond the sciences. Work by Becher and Trowler (1989) is suggestive of the pay-off. Are the dimensions and processes of stratification, for instance, the same between the sciences and humanities? Consequently, what are the possible differences in how reputations are made and in the resulting ways that visibility shapes the cognitive structure of fields? Are the career dynamics of women scientists similar to that of women humanists or social scientists or faculty of professional fields? In conducting these types of extensions and extrapolations, we might arrive at an altogether different conception of careers in contemporary American higher education, but nevertheless one that is decidedly more holistic, variable, and nuanced—and thus more representative of the empirical realities that define our very object of inquiry.

Second, we need to examine *the interplay of professional with organizational reward systems*. Study of “the reward system” in the sociology of science has rarely, if ever, been clearly specified. It is used as an abstraction and, operationally, appears to consist of the means by which recognition is distributed within a professional community. What is more, usage of the term is typically singular: *the* reward system of science. However, is there not more than one system of reward in which academics are integrated? Apart from a professional system of reward are organizational systems that vary in their operation among and within the types of higher education *institutions*; and in any given institutional type, there may in turn be seen to exist multiple systems of reward (e.g., faculty in the multiuniversity who are conditioned to be responsive to a “teaching track” as opposed to a “research track” in their work). There is a further point: nearly all work on academic careers is situated in research universities; exceptions are few (e.g., Braxton 1983). Yet many faculty members do not work in research universities. Continued exclusion of other employment sectors, such as community and liberal arts colleges and comprehensive universities, will continue to blunt our understanding of academic careers. In addition, different *departments or fields* may entail systematic contrasts in how faculty work is sanctioned. The complexity of how professional and organizational reward systems may interact awaits systematic investigation. The potential theoretic pay-off is large: it could reshape understanding of stratification and related career processes and, in doing so, inform such questions as how institutions structurally facilitate or constrain the advancement of knowledge.

Third, we may ask: *what are careers in academe?* At this time, approximately half of faculty appointments are not on a tenure track (Finkelstein et al. 1998; Schuster and Finkelstein 2006). Academic careers appear to be experiencing a transfiguration by employment type alone (Baldwin and Chronister 2001; Cross and Goldenberg 2009). Research is needed on several issues, among them: the consequences of employment type on the stratification of careers; the constitution and performance of roles in higher education institutions (e.g., teaching versus research classes of faculty members); the consequent quality of university functions, including teaching; mobility patterns; recruitment and socialization in light of incongruence between types of graduate school supplies and types of employing university demands; and on the very coherence of academe as a profession.

Fourth, the conditions above suggest deprofessionalization of academe. A recent series of treatments across a variety of topics illustrates the potentially wide-ranging effects of deprofessionalization in one of society's oldest and most vaunted professions (Hermanowicz 2011). With limited exception, the work of the sociology of science portrays its subjects as dedicated researchers, committed to the cosmopolitan goals of their fields, and identifying strongly with an intrinsic value assigned to their scholarly endeavors. Is this an accurate depiction of professors? Study of scientists and satisfaction reveals contradictory results (Hermanowicz 2003). We might hypothesize significant variation in career orientation in academics between types of institutions, but we have been less inclined to consider such variation within institutions, including the sector of research universities, which consists of significant internal variation. In light of dramatically changed and evolving work conditions, opportunities, and rewards, we need to inquire about *the meaning of work* for those who attempt to develop a career in academe. The study of subjective careers, as discussed earlier in this chapter, reveals not simply individual experience, but also the organizational conditions under which such sentiment is generated. The concept of the subjective career is viable to the extent that it is as much a lens on individuals as on the institutions involved in their reciprocal creation.

Finally, prevailing conditions of universities prompt the question of *who will seek an academic career*. The question is one of recruitment of labor stock. The implication is that degenerative organizational conditions will affect the quality of labor supplies. Prior discussion in this chapter and elsewhere (Bok 1993; Cole 1992) suggests that the most talented individuals will be drawn to professions viewed as more rewarding. If that is the case, we will need the means necessary to understand the consequences of such decline on the viability of academic careers, on the organizations in which academic careers are forged, and on the knowledge gains that are supposed to be made by the people who enter academic careers. This problem, like the projects outlined above, is likely too heavy a burden for just one research specialty to bear. The research agenda—illustrative, not exclusive—underscores the value of cultivating a courtship between sociologies of scientific and academic careers.

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Chapter 5

Regression Discontinuity Design: Recent Developments and a Guide to Practice for Researchers in Higher Education

Brian P. McCall and Rob M. Bielby

Introduction

A relatively recent wave of empirical research in the social sciences has focused on establishing the causal effect of policy-relevant variables on outcomes of interest and estimating the size of those effects. This strain of research has strong implications for the future of higher education research; e.g., educational stakeholders may be interested in ascertaining the impact of financial aid on college completion. For sound policy decisions, it is not enough to simply have an estimate of the size of the *association* between the policy variable (i.e., the amount of financial aid provided) and the outcome of interest (e.g., college completion), instead researchers and policymakers must seek to ascertain the *causal* effect of the policy variable on the outcome.

Performing a random experiment is the best way to determine a causal effect of a policy variable on an outcome and is typically considered the “gold standard” of causal analysis (U.S. Department of Education 2008). A major benefit of a random experiment is that it is straightforward to test whether its assumptions are satisfied by the data. One simply checks whether the randomization was done appropriately, which typically involves testing whether the distributions of the baseline variables are similar between treatment and control groups. Once these assumptions are verified, mean differences between treatment and control groups on the variables of interest are understood to be due to differences in treatment.

In many situations in higher education and the social sciences, however, random experiments are not feasible either due to cost considerations or ethical reasons; e.g., it is not feasible to use random assignment to decide which students go to college and which do not. So, in situations where random experiments are not feasible or are impossible, researchers have resorted to other statistical methods to try to

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establish a causal claim. However, whether such a claim is possible using these statistical methods depends on the legitimacy of the assumptions of the model being employed; e.g., in order to go for a regression analysis to establish a causal relationship one must assume, among other things, that the policy variable is uncorrelated with the error term (conditional on all the other regressors included in the model). However, many pertinent higher education outcomes and the policy variables often examined are correlated with individual attributes such as student ability and motivation. These individual attributes are often difficult to measure and are therefore absorbed into the error term of the regression equation, making the independence assumption untenable. Other techniques such as propensity score matching, while improving on some aspects of regression analysis, still assume that selection into the “treatment” is based solely on the observed variables. Other methods often employed such as instrumental variable and difference-in-differences estimation make assumptions that are also difficult (in practice) to verify. The reliance on such assumptions reduces the clarity of causal inferences drawn from such methods.

One type of analysis that has become increasingly popular is regression discontinuity (RD) analysis or RD design. The RD design is a quasiexperimental method (see Shadish et al. 2001 for details) where subjects are assigned to treatment and control groups based on their score (i.e., the “cut-off score”) on some prespecified criterion (or criteria). RD designs mimic the desirable properties of randomized experiments but typically have more tenable and/or easily verifiable assumptions than other quasiexperimental designs. The purpose of this chapter is to introduce this technique, examine some recent developments that have shown that the assumptions underlying this technique are weaker than was originally thought and are nearly as easy to verify as those underlying random experiments, and to demonstrate using a running example how the technique can be applied to problems in educational research.

Cook (2008) has traced the historical development of RD designs in the fields of psychology, economics, and statistics. Cook’s history indicates that psychologists Thistlethwaite and Campbell (1960) initially developed RD and applied it in the field of education to study the effects of the National Merit Scholarship program. They compared two groups of near-winners in the scholarship program, those receiving Certificates of Merit (i.e., the treatment group) and those receiving Letters of Commendation (i.e., the control group), on a number of outcomes related to higher education (e.g., degree aspirations, attitudes toward education, and acquisition of additional scholarships). Students who received Certificates of Merit received additional recognition both through the scholarship competition, a published booklet, and local media. The selection of students into each award category was decided mainly on students’ scores on a standardized test. Students who scored well enough on the test to receive a Certificate of Merit were found to have a more positive attitude toward intellectualism, were more likely to intend to seek advanced degrees, and were more likely to receive scholarships from other sources than students who only received Letters of Commendation. These findings suggest that the additional recognition associated with receiving the additional award causally improved student outcomes.

Subsequently, RD studies of education issues have generally been conducted by researchers from other disciplines, in particular by economists, and have of-

ten focused on K-12 issues. These studies have focused on topics such as class size (Angrist and Lavy 1999; Browning and Heinesen 2007), school funding (Chay et al. 2005), school autonomy (Damon 2009), skipping class (Dobkin et al. 2010), preschool and maternal work outcomes (Fitzpatrick 2010; Goux and Maurin 2010; Berlinski et al. 2011), targeted public school funding (Henry et al. 2010), teacher training (Jacob and Lefgren 2004a), financial aid offers (Van der Klaauw 2002), minimum school-leaving age (Oreopoulos 2006), and high school exit exams (Reardon et al. 2010), among others.

One specific area in which education scholars have applied RD designs has been in the evaluation of remedial education both in K-12 (Jacob and Lefgren 2004b; Matsudaira 2008; Martorell and McFarlin 2011) and higher education (Moss and Yeaton 2006; Lesik 2007). The use of cut-off points on examinations to place students into remediation, in addition to the large sample sizes of students in both the treatment and nontreatment groups, provides ample opportunity for the method to be applied. In K-12 research, Jacob and Lefgren (2004b) found that student achievement levels were positively impacted by summer school when in 3rd grade, however, not in 6th grade. Matsudaira (2008) similarly found that summer schooling improved student performance in both math and reading and could be considered a more cost-effective method of improving student outcomes than reduced class sizes. In the context of higher education remediation, Lesik (2007) found that participation in mathematics remediation increased students' probability of persisting in a 4-year institution. Moss and Yeaton (2006) found that English remediation successfully brought students up to speed with nonremedial students and provided the greatest benefits to the students with the greatest needs. However, Martorell and McFarlin (2011), using Texas administrative data, found no positive effects of remediation on total credits taken, 2- to 4-year transfer, time to degree or 6-year degree completion, or labor market earnings. Each of these studies expanded on extant correlational knowledge about the impacts of remediation and allowed for the evaluation of the causal mechanism operating on students' postsecondary and labor market outcomes.

Another area in which RD design has been successfully employed is in estimating the economic value of school quality (Bayer et al. 2007; Black 1999). These papers examined the impact of school assignment on the price of homes in a neighborhood where one school had higher achievement scores than the other. Since the neighborhood and other characteristics of the house tend to vary smoothly across the geographical boundary, and houses are in the same tax districts so locally provided public goods are the same, any discontinuous jump in housing prices is attributed to differences in school quality and provides a measure of the value that parents place on higher-quality education. Black (1999) finds that parents are willing to pay an additional 2.5% for homes where their children attend an elementary school with 5% higher test scores. Bayer et al. (2007) found a weaker association between average test scores and housing prices (less than 1% increase in prices due to a 5% increase in test scores).

Similarly, the evaluation of educational programs, such as the Gates Millennium Scholars Program (GMS), which uses students' scores on essays to determine pro-

gram placement, and Head Start, which allocated federal funding for early schooling based on city-level finances, have also taken advantage of RD designs (Ludwig and Miller 2007; DesJardins et al. 2010). DesJardins et al. (2010) used students' scores on the noncognitive measure administered by the GMS program and the associated cut-off points to evaluate the impacts of the program on student outcomes including usage of time and participation in schooling and extracurricular activities. Students who received the Gates Scholarship were found to commit less time to work per week and to be more involved as volunteers and in cultural events than students who did not receive the scholarship.

Ludwig and Miller (2007) use the discontinuity in federal funding for Head Start programs in the poorest 300 cities in the nation to test the impacts of the program on both health and education outcomes of individuals growing up in those cities. Individuals in Head Start cities were found to have both better health outcomes, operationalized as lower childhood mortality, and higher educational outcomes later in life than those in non-Head Start cities.

Thus, scholars have successfully employed RD design to explore a number of issues and questions important to the realm of higher education in order to expand upon correlational evidence with causal results. However, this innovative method has yet to be fully embraced by the higher education research community. The discussion below will provide a description of both the underpinnings and applications of RD designs to facilitate their use for the higher education empiricist.

Before delving into the methodological issues related to the RD design, the next section will provide a short review of concepts and terminology used in the causal modeling literature. After that the RD design will be described and there will be a general discussion of how to check the assumptions underlying the RD design. Section 3 of the chapter then introduces an empirical example to illustrate the specific methods that can be used to check the underlying assumptions, and Sect. 4 then turns to the issue of how to obtain estimates of the treatment effect using variants of the RD method, using both parametric and nonparametric estimation techniques. The final section provides a summary and discusses some directions for future research. The more technical discussion of nonparametric techniques and bandwidth choice issues is provided in the Appendix and a URL link is included where readers will find statistical code to employ the RD methods and tests of the underlying assumptions described herein.

Conceptual Issues

The terminology of potential outcomes is typically used when discussing causal effects such as in an RD design so it is useful to review it.¹ Potential outcomes look at all the possible outcomes of the dependent variable that can occur in different states

¹ For a more complete discussion see Angrist and Pischke (2009).

of the world. In our context the different states of the world depend on whether an individual receives the treatment or not.

More formally, let the outcome for person i be denoted by Y_i . The value of Y_i is denoted by Y_i^1 if the person receives the treatment and by Y_i^0 if they do not receive the treatment. Let T_i be a dummy variable that equals 1 if person i receives the treatment. Then

$$Y_i = \begin{cases} Y_i^1 & \text{if } T_i = 1 \\ Y_i^0 & \text{if } T_i = 0 \end{cases}$$

or

$$Y_i = Y_i^0 + T_i(Y_i^1 - Y_i^0).$$

The value $(Y_i^1 - Y_i^0)$ is the causal effect of the treatment for this individual. The fundamental problem of causal inference is that we never observe both of these values of Y for individual i . The individual is either treated and we observe Y_i^1 (which we would call the “factual”) but not Y_i^0 (which we would call the “counterfactual”) or the individual is untreated and we observe Y_i^0 but not Y_i^1 . One naive solution to this problem is to compare the average value of Y for those who are treated with the average value of Y for those who are untreated: $E(Y_i|T_i = 1) - E(Y_i|T_i = 0)$. However, it can be shown that

$$\begin{aligned} E(Y_i|T_i = 1) - E(Y_i|T_i = 0) \\ &= \{E(Y_i^1|T_i = 1) - E(Y_i^0|T_i = 1)\} \\ &\quad - \{E(Y_i^0|T_i = 1) - E(Y_i^0|T_i = 0)\}. \end{aligned}$$

The first term in brackets is the average causal effect of the treatment on the treated. The second term is the difference in what the average value of Y would have been had the treated remain untreated and the average value of Y for the untreated. This term is a selection bias term; e.g., suppose Y is end of term GPA and T is whether an individual received tutoring or not. Then $E(Y_i^1|T_i = 1) - E(Y_i^0|T_i = 1)$ is the average effect of tutoring on GPA among those who are tutored while $E(Y_i^0|T_i = 1) - E(Y_i^0|T_i = 0)$ is the average difference in GPAs between those who are tutored and those who are not tutored if the former group never received the tutoring. If only students having trouble in schools receive tutoring, we would expect this second term to be negative. As a result, simply comparing average GPA's between those who are tutored and those who are not tutored results in a downward biased estimate of the effect of tutoring on the GPA of the tutored. The objective is to statistically alleviate the selection bias due to this second term.

Before turning our attention to how RD design methods may alleviate this bias, we will first consider the situation where individuals are randomly assigned to a treatment such as in a randomized controlled trial (RCT). In this situation, there is no selection bias since both the observed and unobserved variables are “balanced” across the treated and untreated. In particular, consider the case where an individual

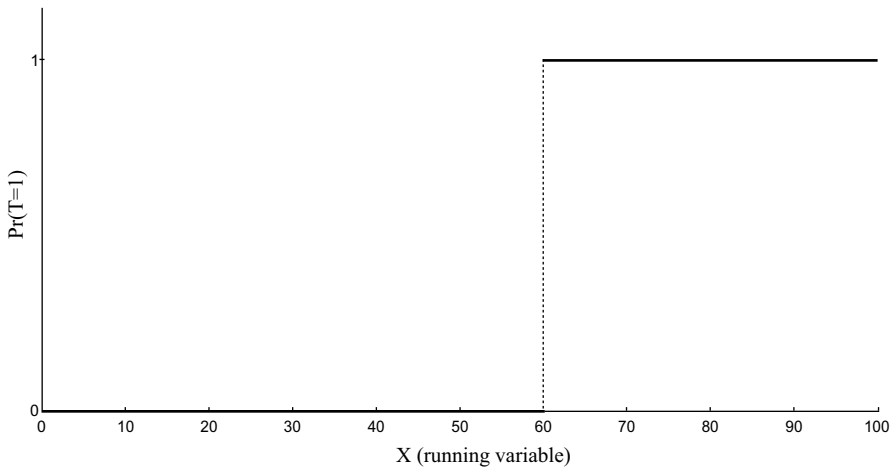


Fig. 5.1 Probability of treatment in sharp RD design

is first assigned a continuous random number X and that only individuals with $X \geq c$ are given the treatment. So, the probability of treatment equals 0 for $X < c$ and the probability of treatment equals 1 for $X \geq c$. This is shown in Fig. 5.1.

Here, the number c simply determines the fraction of individuals who receive treatment. Given this set up how can we estimate the average effect of the treatment on the treated? We can rewrite our outcome in a standard regression format

$$Y_i = \alpha + \tau T_i + \varepsilon_i \quad (1)$$

where $E(Y_i|T_i = 0) = \alpha + E(\varepsilon_i|T_i = 0)$ and $E(Y_i|T_i = 1) = \alpha + \tau + E(\varepsilon_i|T_i = 1)$ with T_i and ε_i being independent, because X_i is randomly assigned to an individual. Thus, one can estimate τ by

$$\hat{\tau} = \frac{\sum_{i=1}^n T_i Y_i}{\sum_{i=1}^n T_i} - \frac{\sum_{i=1}^n (1 - T_i) Y_i}{\sum_{i=1}^n (1 - T_i)}. \quad (2)$$

where the estimate ($\hat{\tau}$) is simply due to the difference in the average of Y between all the treated and untreated individuals.

As demonstrated in Fig. 5.2, when individuals are randomly assigned to the treatment the average value of Y given X does not change with X except at the cut-off point (60) where it jumps by the average treatment effect. Hence, we can use all the observations to the left of c to estimate $E[Y|T=0]$ and all the observations to the right of c to estimate $E[Y|T=1]$. Thus, in a randomized experiment the treatment effect is simply

$$\tau = E(Y|X \geq c) - E(Y|X < c). \quad (3)$$

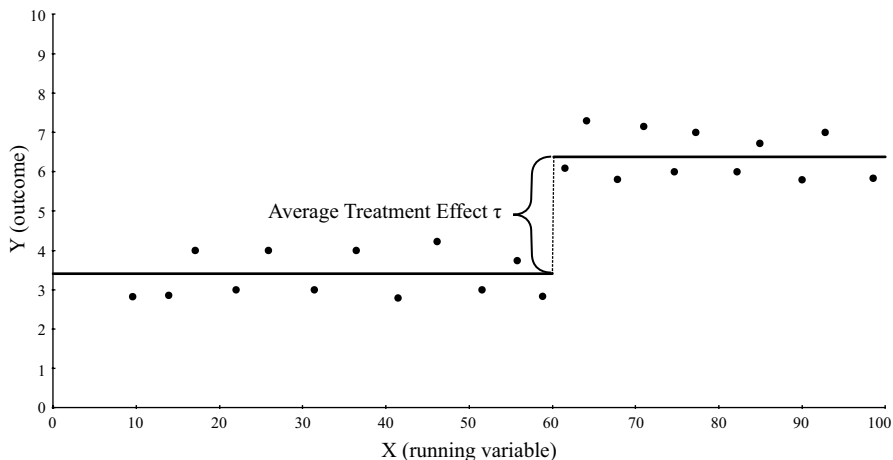


Fig. 5.2 Average treatment effect in randomized experiment

The reason that a randomized experiment is often referred to as the “gold standard” is that, when conducted properly, this design leads to unbiased estimates of the treatment effect and hopefully better policy decision making.

In a “sharp” RD design we still have the property that only those individuals with a value of $X \geq c$ receive the treatment. So, the manner that the probability of treatment varies with the continuous variable X is the same as in the randomized experiment (see Fig. 5.1). However, we no longer have the property that X is randomly assigned and, so, X may be related to ε ; in fact, X may be related to ε in a nonlinear manner. So, an estimate based on Eq. 2 may result in a biased estimate of the treatment effect. What is assumed, however, is that average value of ε varies with respect to X in a continuous fashion, i.e., $E(\varepsilon|X)$ is a continuous function of X .² If this is the case then any observed “jump” in the expected value of Y when X crosses the threshold c will be due to the treatment T . Under this assumption it can be shown (Hahn et al. 2011; Lee and Lemieux 2009) that the treatment effect is simply

$$\tau = \lim_{d \downarrow 0} E(Y|c + d > X \geq c) - \lim_{d \downarrow 0} E(Y|c - d < X < c). \tag{4}$$

Equation 4 is similar to Eq. 3 except that the data are limited to an arbitrarily small interval around the cut-off point. So, to obtain an unbiased estimate of the treatment effect in a sharp RD design we want to only examine the data that are close to the cut-off point.

The property that the expected value of the error term is continuous in X is equivalent to individuals being randomly distributed around the cut-off point c . So, under this condition we have a random experiment except that it is restricted to those ob-

² All that is really required is that $E(Y|X)$ is continuous for $X=c$.

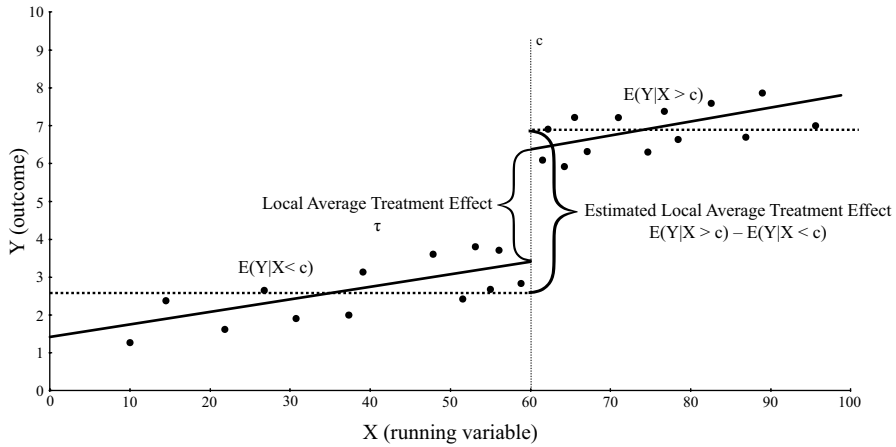


Fig. 5.3 Estimated local average treatment effect

servations in a small neighborhood of c . We can call this “local randomization” (Lee and Lemieux 2009) as opposed to global randomization in an RCT.

For example, suppose that college students are required to take a math test that determines whether they are placed in a remedial math class or not. Suppose, the test is out of 100 points and that only individuals scoring 60 or lower take the remedial class. The assumptions for an RD design will be satisfied as long as one can argue that individuals who scored 60 or “just below” are similar to individuals who scored “just above” 60, i.e., whether you received a score of 59 or 61 depends on random factors and is not related to the outcome variable of interest.

To see the similarities and differences between an RCT and a sharp RD design consider Fig. 5.3. In this figure, we depict a situation with a sharp RD design. If we calculated an estimate of the treatment effect τ using the full sample as in Eq. 2, the estimate would be a biased estimate. This is seen in Fig. 5.3 by comparing the difference in the jump of the dashed lines to the size of the jump of the regression line in Fig. 5.3. If we exclude points whose X distance from c is greater than d and only use the remaining data points when computing the difference between the average value of Y to the left of c and the average value of Y to the right of c , as is done in Fig. 5.4, the bias is reduced but not eliminated. One problem that we will always encounter is that as we shrink the interval (reduce d) of data that we use, the bias is reduced; however, the sample used is smaller leading to an increase in the variance of our estimate. If we keep on shrinking the interval eventually no data will be left, so we always have to make a choice about how much data to use within some finite interval around c .

Also, we can see from Figs. 5.3 and 5.4 that if the underlying model generating the data was a linear model with a jump at $X=c$ as portrayed in Figs. 5.3 and 5.4, we can obtain a less biased estimate of the treatment effect by estimating a model

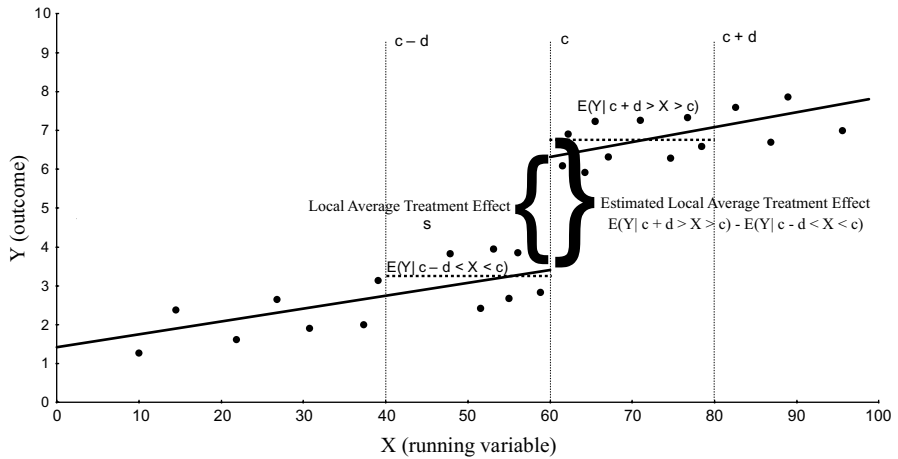


Fig. 5.4 Estimate of local average treatment effect

that allows the expected value of Y to vary in a linear fashion with X within the interval around c .³

Particularly noteworthy is that a discontinuity in the impact of the treatment on an outcome does not guarantee a valid RD design; e.g., if individuals can perfectly manipulate the running variable (determine their placement into treatment or not) then individuals just around the cut-off point will be different thereby invalidating a critical assumption of the RD design. Thus, researchers need to have knowledge of the process by which individuals are assigned to treatment (or not) in order to ascertain whether individuals are able to manipulate this placement.

One problem that often arises is that in order to have sufficient power to identify a treatment effect, we need a lot of data near the cut-off point $X=c$. In principle, we could ignore data points outside some interval $(c-d, c+d)$ where d is some small number. However, how small should d be? This will depend on issues of power (variance) versus bias and will be discussed at length below.

One way to check the validity of the randomization in an RCT is to examine whether the distributions of observed baseline characteristics (e.g., student age, gender, ethnicity, ability, and other factors) are balanced across the treatment and control groups. When applying the RD design we can conduct a similar check to assess whether or not $E(Y|X)$ is continuous at the cut-off point c , except in the RD case we limit the data to observations around the cut-off value c ; e.g., we can check whether the average value of some baseline characteristic Z (e.g., parental income) is the same for individuals just above and below the cut-off value. If the average

³ Of course, if we truly knew that the $E(\varepsilon|X)$ was linear in X , we could reduce the variance of the estimate by using all the data. However, if the $E(\varepsilon|X)$ is nonlinear in X it will be approximately linear at any point such as the cut-off value. So, limiting the data to an interval around the cut-off point, while leading to a less precise estimate, reduces the potential bias of the estimate.

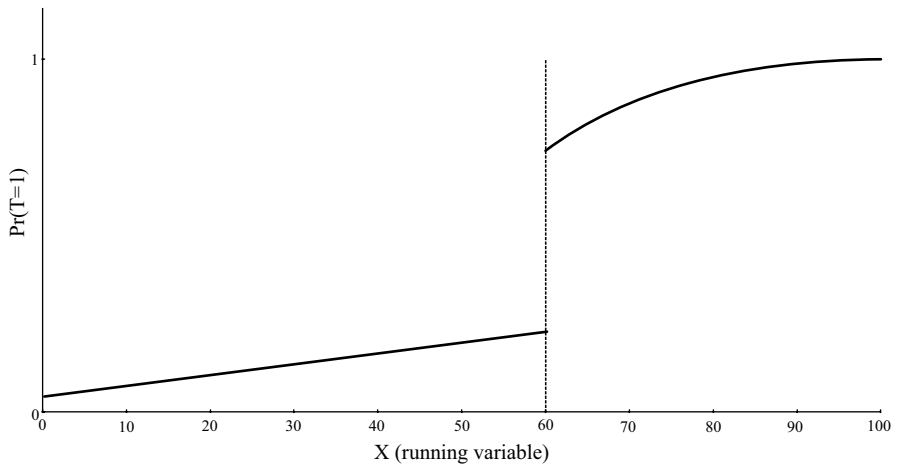


Fig. 5.5 Probability of treatment in fuzzy RD design

value of the baseline characteristic Z exhibits a jump at the cut-off value c , and Z is related to Y but not perfectly related to X , then it can be shown that $E(\varepsilon|X)$ will not be a continuous function of X so the assumptions for an RD design are not satisfied.⁴

Fuzzy RD Design

In some situations it may be that individuals receive the treatment even though their value on the running variable indicated that they should not be in the treatment group; e.g., when studying the effects of remedial math courses on student outcomes, some students who are *placed* into the remedial course (e.g., by virtue of a math placement test score less than 60) may not actually *take* the suggested course. Conversely, there may be other students who have obtained math placement scores high enough (e.g., greater than a score of 60) to waive them from the remedial course, but who will enroll in this class anyway. A logical analytic question is: Can we apply RD methods in such a situation? The answer is “yes” as long as the *probability* of receiving treatment jumps discontinuously at the cut-off value. Such a situation is referred to as a “fuzzy” RD design (see Trochim 1984, for details), and example of which is displayed in Fig. 5.5.

In this situation, the difference $\lim_{d \downarrow 0} E(Y|c + d > X \geq c) - \lim_{d \downarrow 0} E(Y|c - d < X < c)$ no longer estimates the average treatment effect but only the “intent to treat” which

⁴ For a proof of this result, let $\varepsilon = \alpha_0 + \alpha_1 Z + v$. Now, suppose we assume that $E(v|X)$ is a continuous function of X but that $E(Z|X)$ jumps at $X=c$. So, the term $E(v|c + d) - E(v|c - d)$ approaches zero as d approaches zero while the term $E(Z|c + d) - E(Z|c - d)$ approaches some nonzero number call it ξ . Hence, $E(\varepsilon|X)$ is discontinuous at the cut-off value c and the basic RD assumption is violated.

is the effect on the outcome variable Y of being above the cut-off value as opposed to being below the cut-off value. To obtain an estimate of the treatment effect we need to estimate how large the jump in the probability of treatment is at the cut-off value. This can be done by calculating the difference in the probability of treatment for those just above the cut-off value to those just below the cut-off value:

$$\lim_{d \downarrow 0} \Pr(T = 1 | c + d > X \geq c) - \lim_{d \downarrow 0} \Pr(T = 1 | c - d < X < c).$$

Noteworthy, in our example, in a sharp RD design this difference is 1 because nobody below the cut-off value receives the treatment and everybody above the cut-off value receives the treatment.

The estimated treatment effect is then the ratio of the jump in the expected value Y at the cut-off point (i.e., the intent to treat effect) to the jump in the probability of treatment at the cut-off point, or

$$\tau = \frac{\lim_{d \downarrow 0} E(Y | c + d > X \geq c) - \lim_{d \downarrow 0} E(Y | c - d < X < c)}{\lim_{d \downarrow 0} \Pr(T = 1 | c + d > X \geq c) - \lim_{d \downarrow 0} \Pr(T = 1 | c - d < X < c)}. \quad (4)$$

For example, suppose the average first year GPA of students who scored just below 60 on the math placement test is 2.35 and the average first year GPA of those who scored just above 60 on the math placement test is 2.65. Furthermore, suppose that 80% of students who scored just below 60 on the math placement test took a remedial math test whereas 20% of students who scored just above 60 on the math placement test took a remedial math test. Then the estimated impact of taking a remedial math test on first year GPA equals $\hat{\tau} = \frac{2.65 - 2.35}{0.80 - 0.20} = \frac{0.30}{0.60} = 0.50$.

So, we see that even with “noncompliance” in terms of placement into treatment, the “intent to treat” approach can nonetheless provide us with a method to estimate the effect of the treatment based on those who were *intended* to be treated, not on individuals who actually received the treatment.

Issues Regarding Discrete Data

In the theoretical discussion above, we have assumed that X is a continuous random variable. In many empirical applications, however, the running variable X may be discrete instead of continuous. In these situations there is always an extrapolation problem where one must, e.g., extrapolate from the largest value of X just below the cut-off value to the cut-off value. No data are ever observed between these two points so the problem does not go away as sample sizes are increased as in the situation with truly continuous data. As this sample error is related across observations, conventional standard errors will understate the amount of uncertainty and statistical inferences based on these standard errors may give misleading results. As long

as it is assumed that the extrapolation error is similar in both factual and counterfactual states, then the correct standard error can be computed using clustered standard errors where the clustering variable is the discrete running variable (Lee and Card 2008). This standard error correction for discrete data was used, e.g., by DesJardins et al. (2010) and DesJardins and McCall (2011) to investigate the impact of the GMS program on a number of college outcomes including student persistence, loan accumulation, work during college, and parental support.

Testing the RD Design Assumptions

Before describing how to test the assumptions of the RD design we will briefly describe the data that we use to illustrate these techniques. The data used throughout the remainder of this chapter are from the GMS program. The GMS program is a \$ 1 billion, 20-year project designed to promote academic excellence by providing higher education opportunities for low-income, high-achieving minority students. High school students who apply for the program have to meet a number of eligibility criteria before being accepted. To be eligible for a GMS the applicant must be an ethnic minority, have at least a 3.33 high school grade point average, and have a family income that qualifies them for a Pell grant. Each year, the GMS receives more applicants who satisfy these eligibility requirements than there are available scholarships, so, in order to allocate the scholarships applicants are required to take a test, the outcome of which is used (in part) to determine program eligibility. The test consists of eight essay questions that are noncognitive in nature and three questions that are cognitive in nature.⁵ Each question is scored (by trained raters) on an eight-point basis and the scores on individual questions are then summed up to determine the overall test score. Scholarships are then allocated within each race/ethnic group on the basis of this overall test score. This gives rise to a cut-off score such that only applicants receiving that score or above receive a scholarship.

Once in the program the students receive a scholarship that is a “last dollar” award meaning that it covers the unmet need remaining after the Pell and any other scholarships or grants are awarded. The GMS scholarship is portable to any institution of higher education of the student’s choice in the United States and can be used to pay tuition and fees, books, and living expenses. The average award to freshman is about \$ 8,000 and the average award to upper-division students (juniors and seniors) is about \$ 10,000–\$ 11,000.⁶

⁵ The eight noncognitive questions measure: positive self-concept; realistic self-appraisal; successfully handling the system (racism); preferences for long-term goals; availability of a strong support person; leadership experience; community involvement; knowledge acquired in a particular field, while the applicants are rated on three cognitive dimensions: rigor of course work; number of math, science and language courses; and a scholarly essay.

⁶ For more information on the GMS program see DesJardins et al. (2010). A quasiexperimental investigation of how the Gates millennium scholars program is related to college students’ time use and activities. *Educational Evaluation and Policy Analysis*, 32(4), 456–475.

Table 5.1 Application outcome by cohort. (Source: Cohorts II and III of Gates Millennium Scholarship Follow-Up Surveys. See text for details)

Reason	Cohort II	Cohort III
Below cut-off score on noncognitive test	2,057	1,513
Declined GMS scholarship	3	8
GPA ineligible	4	15
Incomplete submissions	564	71
Institution ineligible	4	0
No record of financial aid	13	8
Pell ineligible	424	382
Scholar	1,000	1,000
Total	4,069	2,997
<i>Survey response rates</i>		
<i>Scholars</i>		
Surveyed	1,000	1,000
Responding	831	897
Response rate	83.10%	89.70%
<i>Nonscholars</i>		
Surveyed	1,340	1,333
Responding	778	996
Response rate	58.06%	74.72%
Responders below cut-off score	198	737
Percent below cut-off score	25.45%	74.00%

In the spring of their freshman year in college, all GMS recipients and a random sample of approximately 1,300 nonrecipients were surveyed by the National Opinion Research Center (NORC) at the University of Chicago. The overall response rate was 69% in Cohort II (fall 2001 entering freshman) and 81% in Cohort III (fall 2002 entering freshman). More information about these two Cohorts is provided in Table 5.1. In this “baseline” survey students are asked to respond to questions that provide information about their backgrounds, enrollment status, academic and community engagement, college finances and work, self-concept and attitudes, and future plans. These students are also resurveyed in the late spring of their junior year in college, constituting the first “follow-up” survey. A second follow-up survey is administered 2 years later. Additional data are added from individual applicant files. In our examples we focus on the data from the first follow-up survey.⁷

Returning to RD design diagnostics, testing whether observations are locally randomized around the cut-off point is similar to checking whether the randomization was done correctly in an RCT. One simple way to check whether the local randomization hypothesis is satisfied is to examine whether the means of the baseline variables are similar on different sides of the cut-off point for observations “close” to the cut-off point. However, one potential difficulty is defining what is meant by “close” to the cut-off point. It is useful to compute means for several different

⁷ For the analyses of the baseline and second follow-up survey data, see DesJardins et al. (2010).

definitions of close to examine how dependent the results are to the choice of the interval used.

For the GMS data, we compute means for two definitions of “close”: Within one point of the cut-off score and within two points of the cut-off score. The differences in the means are presented in Table 5.2. As noted in the table, none of the differences are statistically significant at the 5% significance level regardless of whether we limit the sample to those within one or two points of the cut-off point. The difference in the fraction attending private school between those above the cut and those below the cut is weakly significant ($p=0.06$) when those with scores within two points of the cut-off score are analyzed, suggesting there may be nonrandom differences based on this variable.

An alternative way to assess the randomness assumption is to regress whether an individual is above the cut-off point on these baseline variables for those within some distance of the cut-off point and compute an F test for joint significance of the regressors. When this regression is performed for individuals within two points (one point) of the cut-off point the p value of the joint test equals 0.40 (0.15).

One visual check of the local randomization assumption is to examine whether there are any jumps in the cut-off point when student characteristics (i.e., the baseline variables) are averaged by the test score. We are particularly interested in ascertaining whether any of these baseline characteristics (variables) predict a jump in any of the outcome variables at the cut-off point. To accomplish this one can simply regress any outcome variables on any of the baseline variables (i.e., regressors). The analyst then needs to compute the average predicted values from these regressions by the test score. Plotting these average predicted values by the test score will then reveal if there is any evidence of a “jump” at the cut-off point.

We estimated regressions and computed these average predicted values for the eight outcome variables that we will investigate with the GMS data. We then constructed the plots of the averages by the test score. These plots are presented in Figs. 5.6 and 5.7, and as indicated in these graphs, there are no obvious “jumps” at the cut-off points. This graphical evidence is consistent with the other analysis we conducted indicating a failure to reject the local randomization hypothesis.

Recall that the randomness around the cut-off point is a result of an individual’s imperfect control of the running variable. So, one way to test the randomness assumption is to check whether or not the density of the running variable X is discontinuous at the cut-off point (McCrary 2008). In many data situations, such as the GMS example used herein, the running variable (X) is discrete and it may be difficult to assess whether the density jumps at the cut-off point. An alternative in such situations is to examine consecutive values of X and compute the difference in the proportion of the sample between those values of X . If there is imperfect control one would not expect the difference in these proportions to be abnormally large when comparing ($X=c$) to ($X=c-1$), relative to other consecutive values of X . In Fig. 5.8 we plot the distribution of standardized differences in consecutive proportions by ethnicity for both cohorts, were we have standardized the difference using the estimated standard deviation of the difference. As can be seen in the figure, the

Table 5.2. Sample means and means just above and below the “cut-off points” for demographic and high school background variables

Variable name	All applicants with total noncognitive scores equal to the...					
	Cut-off score of +1	Cut-off score of -1 or -2	p value	Cut-off score	Cut-off score -1	p value
	(1)	(2)	(3)	(4)	(5)	(6)
SAT verbal + math score	1,107.63	1,119.96	0.40	1,098.03	1,130.16	0.13
Attended religious high school	0.06	0.03	0.17	0.05	0.03	0.25
Attended private high school	0.09	0.04	0.06	0.08	0.03	0.10
Years of high school math	3.88	3.85	0.51	3.89	3.84	0.27
Years of high school science	3.62	3.68	0.44	3.61	3.65	0.66
Family size	3.76	3.78	0.88	3.84	3.84	0.99
Born in United States	0.58	0.50	0.50	0.60	0.50	0.87
Family owns home	0.44	0.42	0.39	0.46	0.46	0.41
Male	0.26	0.23	1.00	0.25	0.26	0.49
<i>Father's education</i>	-	-	0.36	-	-	0.63
Less than high school	0.18	0.18	-	0.17	0.15	-
High school	0.25	0.21	-	0.28	0.21	-
Some college	0.19	0.18	-	0.16	0.17	-
BA/BS degree	0.13	0.08	-	0.16	0.09	-
Post BA/BS degree	0.08	0.11	-	0.08	0.13	-
Missing	0.09	0.07	-	0.09	0.08	-
<i>Mother's education</i>	-	-	0.91	-	-	0.42
Less than high school	0.18	0.15	-	0.15	0.15	-
High school	0.26	0.22	-	0.28	0.16	-
Some college	0.23	0.23	-	0.24	0.26	-
BA/BS degree	0.15	0.15	-	0.15	0.17	-
Post BA/BS degree	0.08	0.05	-	0.08	0.05	-
Missing	0.02	0.03	-	0.04	0.04	-
Sample size	342	257	-	130	156	-

Cohorts II and III combined. Cut-off scores for total non-cognitive score were 71, 72, and 68 for African Americans, Asian Americans and Latinos, respectively in Cohort II and 72, 75, and 69 for African Americans, Asian Americans and Latinos, respectively for Cohort III. All tests of differences were Fisher exact tests for equality based on categorical data except for family size, ACT and SAT scores which were simple t-tests for differences in means. Note that sample sizes differ across variables because of missing values

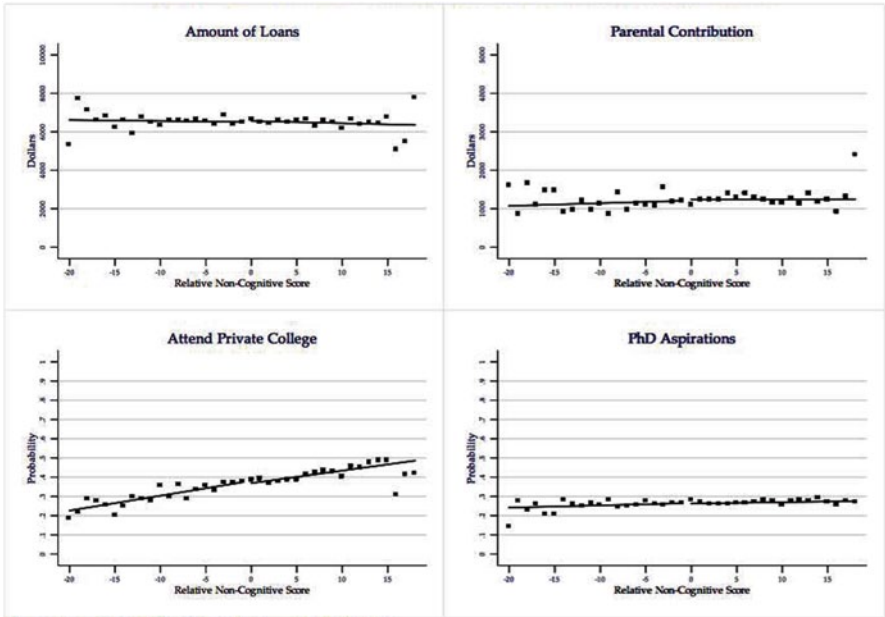


Fig. 5.6 Predicted values for various outcomes in first follow-up survey by relative noncognitive score. (Gates Millennium Scholar Surveys: Cohort II and III)

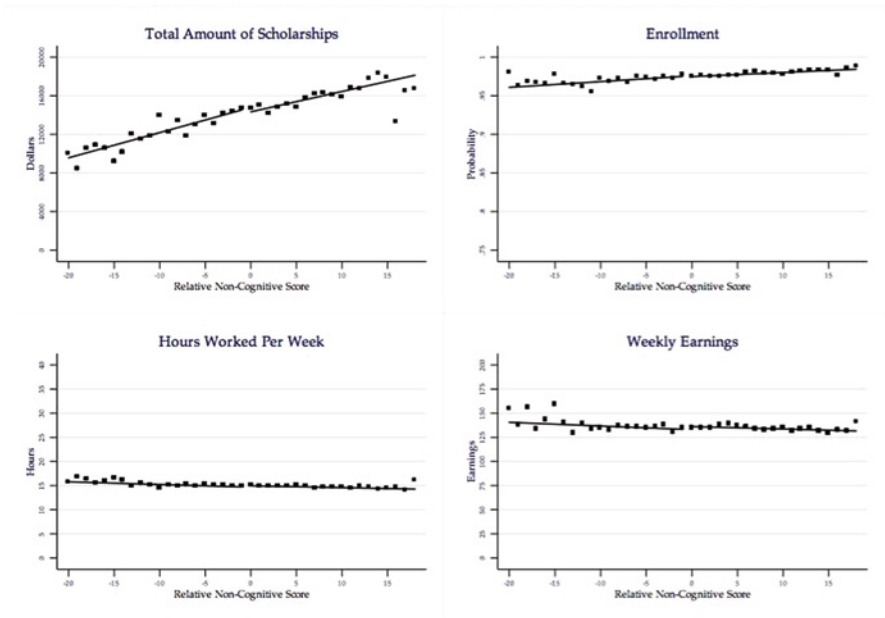


Fig. 5.7 Predicted values for various outcomes in first follow-up survey by relative noncognitive score. (Gates Millennium Scholar Surveys: Cohort II and III)

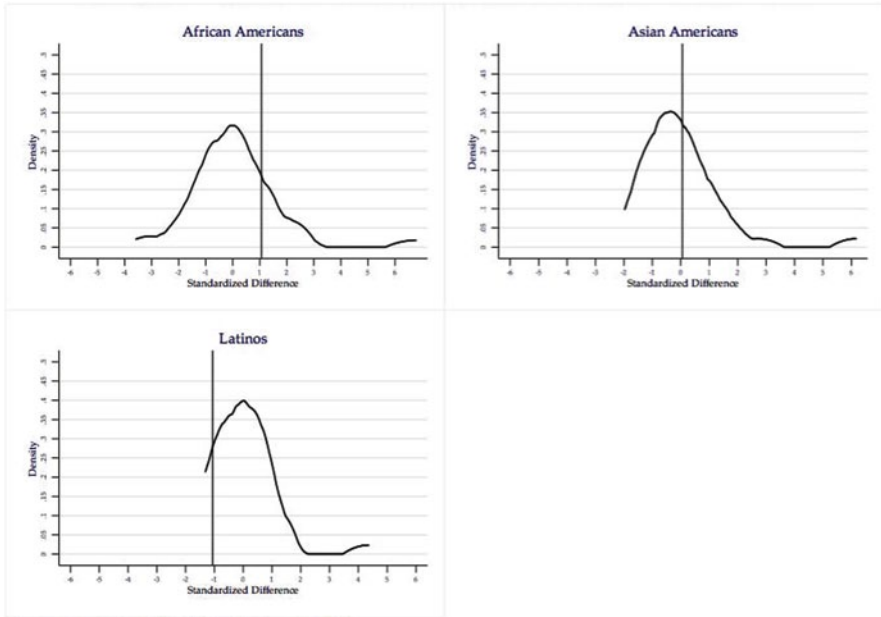


Fig. 5.8 Distribution of standardized consecutive proportion differences in test scores: Cohort II. (Gates Millennium Scholar Surveys: Cohort III)

estimated differences at the cut-off points are never unusually large and positive when compared to other consecutive X values.⁸

Estimating the Causal Impact in an RD Design

In this section, we present the empirical techniques to obtain estimates in an RD design. These techniques allow us to understand the direction, magnitude, and statistical significance of the causal relationships being modeled in an RD design. Initially, we will focus on parametric techniques then will discuss RD estimation based on nonparametric methods. The line between these techniques is blurred because parametric techniques typically limit the data to some interval around the cut-off point at the outset and so may be viewed as a particular type of nonparametric estimate with

⁸ This is not surprising given the fact that the cut-off point for a particular ethnic group depends on the total number of applicants for that ethnic group which is unknown by any applicant (or by those who score the exam) at the time they complete the test.

a fixed bin-width.⁹ One important point is that regardless of the techniques used, as in “any empirical analysis, results that are stable across alternative and equally plausible specifications are generally viewed as more reliable than those that are sensitive to minor changes in specification. RD is no exception in this regard” (Lee and Lemieux 2009).

The outcome variables we analyzed were assessed at the end of the junior year of college and include: Whether the student persists until the end of their junior year, the total amount of student loans accumulated by the end of the junior year, whether they were attending a private college, the number of hours a week they were working, their weekly earnings, the amount of money that their parents contribute to their education, whether they aspired to attain a Ph.D., and the total amount of scholarship money they received by the end of the junior year. From analyzing the impact of GMS receipt on this last outcome we can ascertain whether or not GMS receipt increases the total amount of scholarship money that an individual receives or whether universities reduce the amount of institutional aid a GMS recipient receives to offset the GMS.

As a first step in the analysis, we computed the average values of the outcome variables by the running variable where the running variable has been normalized relative to the cut-off value. These are plotted in Figs. 5.9 and 5.10 along with the best fitting quadratic line. For many of the outcome variables, the average value appears to jump at the cut-off score. Visually, GMS receipt appears to have a positive impact on both the total amount of scholarship money that an individual receives and on the probability that an individual aspires to a Ph.D. degree. The GMS appears to have a negative impact on the total dollar amount of loans a student has accumulated, the amount of parental financial support a student receives, the hours per week a student works, and the amount the student earns during the week of their junior year.

In order to discern whether these jumps are statistically significant and whether they persist when other factors are controlled for, we estimate several RD models.

Parametric Techniques

In general, parametric models make assumptions about the distribution or functional form of some parameters within the model in order to ease the process of estimation. A simple example of a parametric assumption can be drawn from ordinary least squares (OLS) regression, where it is assumed that the error term is normally distributed with a mean of zero. Within RD models, parametric techniques typically fix the estimate of the impact of the running variable on the outcome variable as some polynomial function. However, in order to avoid misspecification, most empirical applications limit the data at the outset to some interval (band) around

⁹ The key difference is that in nonparametric techniques this bin-width, or more generally the bandwidth, decreases as the sample size increases.

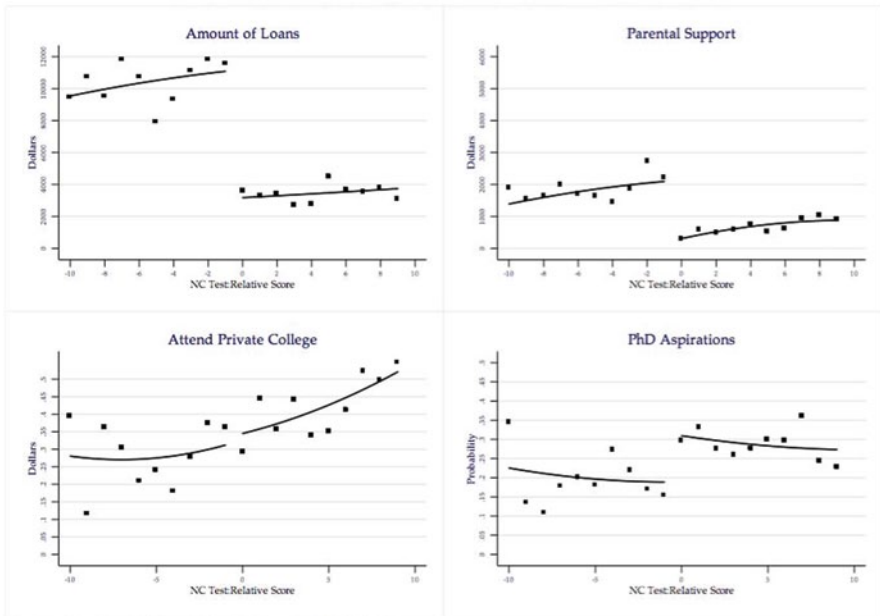


Fig. 5.9 Sharp regression discontinuity estimates for various outcomes: 1st follow-up interview. (Gates Millennium Scholar Surveys: Cohort II and III)

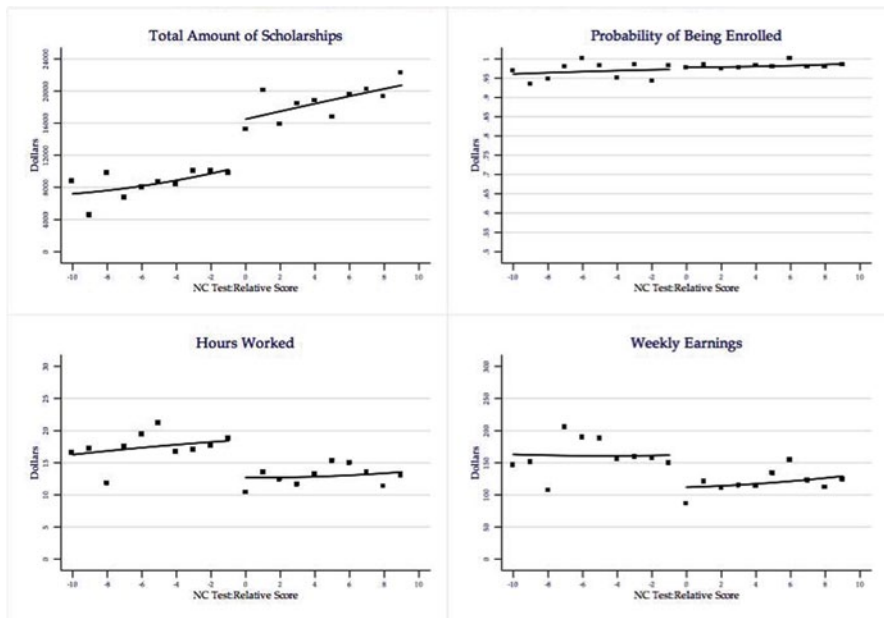


Fig. 5.10 Sharp regression discontinuity estimates for various outcomes: 1st follow-up interview. (Gates Millennium Scholar Surveys: Cohort II and III)

the cut-off point. Also, the running variable is usually normalized to 0 at the cut-off point. In the GMS data the range of the normalized score is from -35 to -18 . As we are only interested in examining the size of the jump at the cut-off point, and to limit the amount of possible misspecification at the outset due to extreme values away from the cut-off point, we eliminate all observations that are not within 10 points of the cut-off point.¹⁰

To begin our discussion of parametric techniques, we will focus on techniques associated with a sharp RD design. Virtually all individuals who were offered the GMS accepted it. However, some individuals who had test scores above the cut-off point ended up not being offered a GMS because they were not Pell eligible, or their GPA was not 3.33 or above.¹¹ So, to make the data appropriate for a sharp design, we eliminate those few students who declined the scholarship as well as students who ultimately turned out to be ineligible (see Table 5.1 for details).

We then estimated the effect of the treatment, receiving a GMS, using a linear regression model.¹² As the running variable is discrete, as discussed above, we cluster the standard errors by the running variable. We first estimate models where the effect of the running variable on the outcome variables is assumed to be linear. As the cut-off points vary by ethnic group and cohort, we allow the slopes of the running variables and the intercepts to vary by cohort and ethnicity.

Next, we estimate models where the running variable is assumed to have a quadratic effect on the outcome variables. As the cut-off points vary by ethnic group and cohort, we also can interact the quadratic running variable with ethnic group and cohort variables. Finally, we estimate models where the running variable is assumed to have a cubic polynomial effect. The estimates are present in columns (1), (3), and (5) for the linear, quadratic, and cubic model, respectively.

Recall that if the data are randomized around the cut-off point, then including additional control variables (e.g., gender and parental education) should not have an appreciable effect on the treatment estimate when compared to a model without these control variables. So, in addition to the polynomial specifications noted above, we also estimate models that control for gender, parental education, SAT score, type of high school, family size, and family income. The results of these specifications are presented in columns (2), (4) and (6) of Table 5.3.

As noted in the first column of Table 5.3, the effect of receiving a GMS on total scholarship money awarded is positive and statistically significant. The point estimate implies that receipt of a GMS increases an individual's total scholarship amount by nearly \$ 6,000 compared to nonrecipients. Receipt of a GMS does not

¹⁰ Given the discreteness of the total score, we eliminate those observations whose relative score is less than -10 or whose relative score is greater than 9. This results in dropping 1,152 observations.

¹¹ Only nine individuals who were offered a GMS declined the offer.

¹² For simplicity, we estimate linear probability models for dichotomous dependent variables. We adjust the standard errors for heteroskedasticity. Probit estimates yield similar results. This was done because in the fuzzy model estimations, presented below, instrumental variable estimation with a linear probability model was more stable than instrumental variable probit estimation across the many different model specifications that we estimated.

Table 5.3 Estimated impact of GMS variables at end of junior year in college sharp RD design. (Source: Cohorts II and III of Gates Millennium Scholarship Follow-up Surveys. See text for details)

Outcome	Linear			Quadratic			Cubic		
	Base set of control variables (1)	Additional control variables (2)	Additional control variables (3)	Base set of control variables (4)	Additional control variables (4)	Additional control variables (5)	Base set of control variables (5)	Additional control variables (6)	Additional control variables (6)
Scholarships	\$ 5,919.46 (\$ 950.54)	\$ 6,197.74 (\$ 890.76)	\$ 6,121.60 (\$ 1,123.13)	\$ 6,510.08 (\$ 1,010.12)	\$ 6,061.33 (\$ 1,450.26)	\$ 6,278.65 (\$ 1,454.86)			
Enrollment	0.005 (0.017)	0.010 (0.016)	0.009 (0.014)	0.014 (0.013)	0.012 (0.017)	0.023 (0.020)			
Private school attendance	-0.010 (0.047)	0.037 (0.048)	0.004 (0.043)	0.060 (0.044)	-0.021 (0.049)	0.029 (0.050)			
Loans	-\$ 8,293.05 (\$ 781.62)	-\$ 7,629.42 (\$ 1,043.02)	-\$ 8,143.70 (\$ 855.19)	-\$ 7,360.76 (\$ 1,130.56)	-\$ 8,919.01 (\$ 900.12)	-\$ 8,120.04 (\$ 1,207.00)			
Parental support	-\$ 1,824.51 (\$ 354.59)	-\$ 1,144.50 (\$ 364.72)	-\$ 1,758.89 (\$ 349.83)	-\$ 1,014.55 (\$ 362.53)	-\$ 1,809.85 (\$ 369.09)	-\$ 1,035.11 (\$ 433.91)			
Hours worked	-6.01 (1.34)	-5.56 (1.33)	-6.08 (1.42)	-5.64 (1.45)	-7.10 (1.55)	-7.03 (1.71)			
Earnings	-\$ 51.37 (\$ 15.65)	-\$ 44.59 (\$ 15.91)	-\$ 49.11 (\$ 25.20)	-\$ 41.19 (\$ 18.09)	-\$ 44.88 (\$ 21.82)	-\$ 42.03 (\$ 24.81)			
Ph.D. aspirations	0.122 (0.038)	0.135 (0.037)	0.103 (0.038)	0.113 (0.037)	0.079 (0.041)	0.088 (0.041)			
<i>Chi-square tests</i>									
Scholarships	-	-	0.276	0.331	0.026 (0.055)	0.028 (0.016)			
Enrollment	-	-	0.002	0.004	0.819 (0.001)	0.807 (0.000)			
Private school attendance	-	-	0.642	0.243	0.003 (0.000)	0.035 (0.000)			
Loans	-	-	0.087	0.265	0.110 (0.009)	0.088 (0.024)			
Parental support	-	-	0.123	0.122	0.076 (0.025)	0.079 (0.006)			
Hours worked	-	-	0.106	0.060	0.227 (0.093)	0.143 (0.049)			
Earnings	-	-	0.436	0.066	0.498 (0.419)	0.537 (0.226)			
Ph.D. aspirations	-	-	0.016	0.010	0.263 (0.000)	0.186 (0.000)			

Standard errors are reported in parentheses. Estimates are based on two-stage least squares with standard errors adjusted for heteroskedasticity and for intracohort relation among individuals with equal total noncognitive scores. Controls for cohort and ethnicity, test score and its interaction with cohort and ethnicity are included in the base set of controls. Quadratic and cubic models include interactions of test score squared and cubed with ethnicity and cohort. Models with additional control variables include controls for gender, SAT score, mother's and father's education, type of high school, family size, and parental income

have a statistically significant effect on the probability of college enrollment at the end of the junior year or on the probability of attending a private college. In the former case the absence of the effect may be due to the fact that 96% of nonrecipients are enrolled at the time of the first follow-up so that there is little room for improvement (i.e., a “ceiling effect”).

Receipt of a GMS has a statistically significant negative effect on the total dollar amount of student loans a student owes. The coefficient estimate indicates that receipt of a GMS lowers the amount of debt a student has by their junior year by over \$ 8,000. In addition, a Gates scholarship is estimated to reduce the amount of support a student receives from their parents by about \$ 1,800, student hours of work per week by 6 hours, and students’ weekly earnings by \$ 51, all of which are statistically significant. Receipt of a GMS also statistically significantly increases the probability of aspiring to a Ph.D. degree by over 12 percentage points.

These estimates are based on a specification that assumes the effect of the running variable on the outcomes is linear. It is important to check this assumption to see if it is tenable. So, in columns (3) and (5) of Table 5.3 we report model estimates where the running variable is assumed to have quadratic and cubic effects, respectively, on the outcome variables. We see little qualitative change in the estimates of the linear effects across the three model specifications. The bottom panel presents the results of specification tests that evaluate the quadratic versus linear specification and the cubic versus quadratic specification. The p values reported in parentheses test the joint null hypothesis that the coefficients associated with both the quadratic and cubic terms are zero. Examining the specifications test results in the bottom panel of the table, for all outcome variables there is at least weak statistical evidence that the linear specification is inappropriate. This is not surprising given the large width of the test score interval around the cut-off score that is used in the estimations (± 10 points of the cut-off). The crucial question, however, is whether the estimated impact of receiving a GMS changes depending on the model specification. Whereas the point estimates change to some extent, the fact that there is little variation in the qualitative results across the different model specifications leaves us satisfied with the linear model.

Recall that if the data are randomly distributed around the cut-off point then the estimated treatment effect should not be affected by the inclusion of additional control variables in the statistical models. The qualitative findings are fairly robust to the inclusion of these regressors, although the magnitude of the coefficient estimates for parental support and the amount of student loans are reduced by about 40 and 30%, respectively. The lack of significant changes suggests that changes in the dependent variable at the cut-off point are unlikely to be due to differences in covariate values and are therefore attributable to GMS receipt.

An additional way to check the sensitivity of the results to the assumption of random assignment around the cut-off point is by narrowing the width of the interval around the cut-off point which determines whether or not an observation is included in the sample. We reduce the width of the interval centered around the cut-off score to 10, 8, and 4 while maintaining the assumption that the test score has a linear effect on the outcome variables. The estimation results are presented in Table 5.4 for

Table 5.4 Estimated impact of GMS on outcome variables at end of junior year in college sharp RD design. (Source: Cohorts II and III of Gates Millennium Scholarship Follow-up Surveys. See text for details)

Outcome	Width = 10		Width = 8		Width = 6		Additional control variables (4)
	Base set of control variables (1)	Additional control variables (2)	Base set of control variables (1)	Additional control variables (2)	Base set of control variables (3)	Additional control variables (4)	
Scholarships	\$5,383.59 (\$1,477.99)	\$6,085.33 (\$1,509.72)	\$4,985.55 (\$1,931.94)	\$5,764.08 (\$2,013.21)	\$4,663.67 (\$2,821.58)	\$4,865.42 (\$2,728.56)	
Enrollment	0.004 (0.006)	0.022 (0.026)	0.009 (0.011)	0.006 (0.011)	0.016 (0.028)	0.028 (0.035)	
Private school attendance	-0.036 (0.051)	0.033 (0.040)	-0.115 (0.055)	-0.057 (0.051)	-0.093 (0.070)	-0.099 (0.078)	
Loans	-\$8,854.95 (\$881.38)	-\$7,910.93 (\$1,013.32)	-\$8,477.04 (\$945.38)	-\$7,409.61 (\$1,229.86)	-\$8,298.48 (\$924.73)	-\$7,403.89 (\$1,208.37)	
Parental support	-\$1,995.38 (\$405.16)	-\$1,124.91	-\$2,126.91 (\$578.75)	-\$1,124.91 (\$482.28)	-\$2,089.32 (\$544.23)	-\$858.22 (\$529.28)	
Hours worked	-5.74 (158)	-5.58 (1.97)	-7.05 (1.50)	-7.33 (1.91)	-8.10 (1.45)	-8.18 (1.82)	
Earnings	-\$37.30 (\$17.47)	-\$32.85 (\$22.63)	-\$50.00 (\$15.93)	-\$53.32 (\$16.00)	-\$52.08 (\$17.40)	-\$50.08 (\$18.88)	
Ph.D. aspirations	0.135 (0.038)	0.148 (0.039)	0.178 (0.051)	0.195 (0.053)	0.155 (0.053)	0.177 (0.063)	

Standard errors are reported in parentheses. Estimates are based on two-stage least squares with standard errors adjusted for heteroskedasticity and for intra-correlation among individuals with equal test scores. Controls for cohort and ethnicity, test score and its interaction with cohort and ethnicity are included in the base set of controls. Models with additional control variables include controls for gender, SAT score, mother's and father's education, type of high school, family size, and parental income

models with and without additional regressors. In general, qualitatively the results are robust as the width of the interval is decreased, although the estimated effect of receiving a GMS on total scholarship amounts is no longer statistically significant when the width is reduced to 6. This strengthens our confidence in the findings produced by the parametric models because these results are not sensitive to any ad hoc restrictions on the width of the interval of the running variable that is used in the analysis.

The sharp estimates presented above were based on a sample that excluded the few individuals who turned down the offer of a Gates scholarship and those who ultimately were deemed ineligible either because they were Pell ineligible or their grade point average in high school was below 3.33. However, many of the individuals who were disqualified for other reasons had test scores above the cut-off value. If we include individuals who qualified for the GMS based on the test score, however, did not receive it due to other factors in the analysis, we no longer have a sharp design, but instead have a fuzzy design. For this sample, Fig. 5.11 plots the fraction of individuals who receive a GMS by ethnicity.

As these plots indicate, the probability of receiving a Gates scholarship is zero for those below the cut-off value. At the cut-off value the probability of receiving a GMS jumps to between 60 and 80 points, indicating that treatment (i.e., GMS receipt) is still dependent upon the cut-off point, however, that not all individuals in the fuzzy design who exceed the cut-off are actually treated.

If we want to include all available data, instead of excluding those observations that do not conform to the assumptions of a sharp RD design, we rely on a fuzzy design. In order to estimate a fuzzy RD model, we use instrumental variable estimation where we instrument for GMS receipt using a dummy variable of whether an individual's test score is greater than or equal to the cut-off score. The use of this instrument was validated above by evidence that the probability of receiving the GMS discontinuously jumps at the cut-off point. As the test score is a discrete variable, as was the case for the sharp RD design, we cluster standard errors by test score. Also, we will compute standard errors that are robust to heteroskedasticity. This is important because some of our outcome variables are dichotomous and we are estimating a linear probability model.

The results of the fuzzy RD estimations are presented in column (1) of Table 5.5 for several outcome variables. The first outcome variable is the total amount of scholarship money that individuals report receiving from all sources. We would expect Gates scholars to receive substantially more in scholarship money than non-recipients unless universities were able to offset the award by reducing scholarships from other sources. While this may be occurring to some extent, the point estimate implies that students just above the cut-off point receive, on average, nearly \$ 6,000 more in scholarships than individuals just below the cut-off point (this estimate is statistically significant at conventional levels). The estimated impact of receiving a Gates scholarship on being enrolled at the end of the junior year of college, while positive, is small and not statistically significant. This is not surprising given the fact that enrollment rates exceed 90% even for those without a Gates scholarship, so there is a limited range for improvement. The estimated impact of receiving a

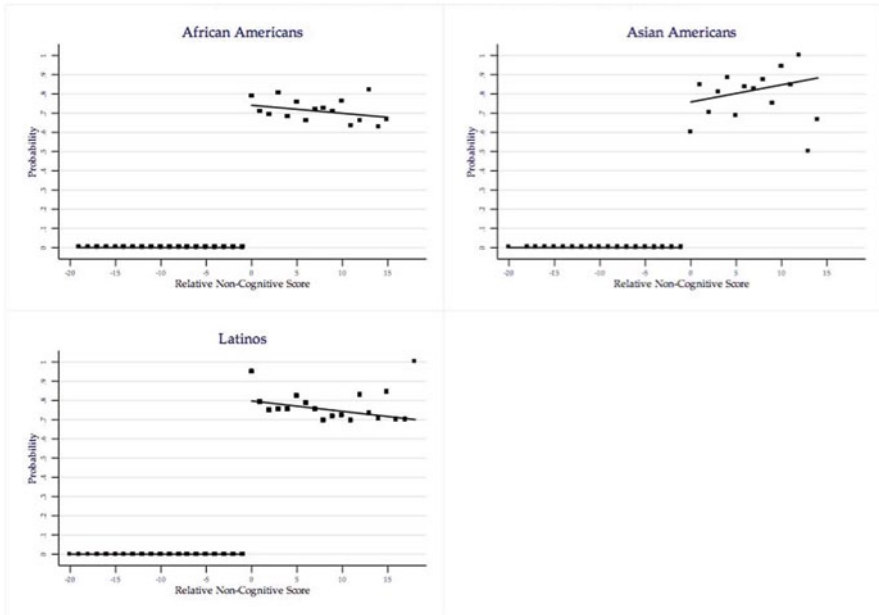


Fig. 5.11 Probability of GMS receipt by relative noncognitive score I (Gates Millennium Scholar Surveys: Cohort II and III)

Gates scholarship on private college attendance is imprecise and not statistically significant.

GMS receipt has a statistically significant impact on all the remaining outcomes reported in Table 5.5. Receiving a Gates scholarship reduces the total amount of loans a student has taken out through the end of the junior year by over \$ 8,000, on average, and also reduces parental support by approximately \$ 1,600. Students in their junior year of college who received a GMS work, on average, 6.5 hours less per week than those without a GMS and earn about \$ 58 less per week. Finally, GMS students in their junior year have a probability of aspiring to a Ph.D. degree that is about 13 percentage points higher than those without a GMS.

As with the sharp design, it is essential to check the robustness of the findings against alternative specifications that change assumptions regarding the form of the relationship between the running variable and outcome variables. Also, if the assumption that observations are randomly distributed around the cut-off point is satisfied then adding additional regressors should not substantially change the estimated impact of receiving a scholarship on an outcome variable.

Column 2 of Table 5.5 reports the estimated impact of receiving a GMS when several additional variables are included as regressors. The estimated effect of receiving a GMS is similar to the baseline model for many outcome variables. However, the estimated impact of receiving a GMS does change appreciably for private school enrollment and parental support, suggesting that some of the differences in

Table 5.5 Estimated impact of GMS on outcome variables at end of junior year in college fuzzy RD design. (Source: Cohorts II and III of Gates Millennium Scholarship Follow-up Surveys. See text for details)

Outcome	Linear		Quadratic		Cubic	
	Base set of control variables (1)	Additional control variables (2)	Base set of control variables (3)	Additional control variables (4)	Base set of control variables (5)	Additional control variables (6)
Scholarships	\$5,830.71 (\$772.60)	\$6,289.43 (\$796.18)	\$6,208.38 (\$861.78)	\$6,887.96 (\$876.09)	\$5,540.08 (\$1,145.89)	\$6,686.85 (\$1,009.68)
Enrollment	0.009 (0.020)	0.013 (0.019)	0.014 (0.017)	0.019 (0.017)	0.021 (0.057)	0.059 (0.101)
Private school attendance	-0.014 (0.044)	0.037 (0.047)	0.009 (0.048)	0.075 (0.051)	0.023 (0.058)	0.013 (0.103)
Loans	-\$8,238.90 (\$817.13)	-\$7,640.32 (\$1,135.11)	-\$7,075.44 (\$974.95)	-\$9,030.15 (\$1,351.43)	-\$8,140.34 (\$985.27)	-\$8,725.85 (\$1,224.98)
Parental support	-\$1,631.18 (\$470.78)	-\$1,152.74 (\$537.72)	-\$1,636.82 (\$473.08)	-\$1,000.31 (\$538.31)	-\$2,533.76 (\$1,101.61)	-\$611.55 (\$806.87)
Hours worked	-6.52 (1.75)	-6.66 (1.81)	-6.91 (1.80)	-7.04 (1.94)	-6.99 (1.78)	-10.15 (2.36)
Earnings	-\$57.92 (\$21.93)	-\$58.45 (\$24.06)	-\$57.61 (\$25.20)	-\$55.11 (\$25.04)	-\$110.85 (\$65.26)	-\$61.48 (\$26.94)
Ph.D. aspirations	0.128 (0.037)	0.143 (0.037)	0.113 (0.039)	0.125 (0.041)	0.071 (0.039)	-0.156 (0.288)
<i>Chi-square tests</i>						
Scholarships	-	-	0.497	0.515	0.315 (0.000)	0.882 (0.008)
Enrollment	-	-	0.007	0.014	0.051 (0.019)	0.421 (0.154)
Private college attendance	-	-	0.850	0.312	0.792 (0.010)	0.319 (0.008)
Loans	-	-	0.043	0.116	0.182 (0.000)	0.135 (0.000)
Parental support	-	-	0.177	0.128	0.729 (0.066)	0.638 (0.020)
Hours worked	-	-	0.653	0.551	0.969 (0.067)	0.172 (0.206)
Earnings	-	-	0.413	0.088	0.743 (0.251)	0.221 (0.130)
Ph.D. aspirations	-	-	0.049	0.044	0.001 (0.006)	0.088 (0.181)

Standard errors are reported in parentheses. Estimates are based on two-stage least squares with standard errors adjusted for heteroskedasticity and for intracohort relation among individuals with equal test scores. Controls for cohort and ethnicity, test score and its interaction with cohort and ethnicity are included in the base set of controls. Quadratic and cubic models include interactions of test score squared and cubed with ethnicity and cohort. Models with additional control variables include controls for gender, SAT score, mother's and father's education, type of high school, family size, and parental income

these dependent variables might not be strictly due to GMS receipt. Nevertheless, in the former case the point estimate remains statistically insignificant while in the latter case it remains negative and statistically significant, so the qualitative impacts of receiving the GMS remain the same.

So far, we have assumed that the outcomes are linearly related to the test score. It is important to check whether modeling the estimated effect of the treatment variable is sensitive to this assumption. In columns (3) and (5) of Table 5.5 we estimate models where the outcomes vary with the test score in a quadratic and cubic fashion, respectively, to check for possible nonlinearities above and below the cut-off point. Columns (4) and (6) then add additional regressors to these models. In the bottom panel of the table we present Chi-square tests to assess whether these additional quadratic and cubic variables are statistically significant.¹³

The estimated impacts of receiving the GMS on the different outcome variables are fairly robust to adding these quadratic and cubic regressors. The quadratic variables are jointly statistically significant only for the enrollment, student loans, and Ph.D. aspirations outcome variables. The cubic terms are jointly significant ($p=0.001$) for Ph.D. aspirations and weakly significant ($p=0.051$) for student loans, indicating that the cubic model provides a better fit than the quadratic model.

The impact of GMS receipt on parental support appears to be sensitive to how the effect of test score is specified. When test scores have a cubic impact on parental support and additional regressors are included, the estimated impact of GMS receipt on parental support is no longer statistically significant. A similar sensitivity is observed for Ph.D. aspirations, the estimated impact of GMS receipt is no longer statistically significant in estimates where tests scores are assumed to have a cubic impact and additional control variables are added, suggesting that the results for these outcomes variables are sensitive to model specification.

Again, as a further check of the sensitivity of the estimates, we reestimate the fuzzy RD models by limiting the data to smaller bands around the cut-off score. As, the linear model is not rejected for most outcomes variables, we only include a linear control for the running variable. The results of specifications that limit the data to within 10, 6, and 4 points of the cut-off score are reported in Table 5.6, both with and without additional control variables. For the estimates without the additional control variables, the qualitative results are robust with respect to the chosen bandwidth. Quantitatively, however, the magnitude of the coefficient estimate of the GMS receipt variable is increased by over 40% for hours worked as the width is decreased from 10 to 4, and more than doubled for private school attendance, although, in the latter case, the estimate is still not statistically significant. Moreover, the estimated effect of GMS receipt on parental support is sensitive to whether or not additional regressors are included in the estimations, suggesting that jumps at the cut-off point may not be entirely due to receiving the GMS.

Thus far, we have explored a number of parametric specifications of the RD design. Models have been estimated assuming linear, quadratic, and cubic relation-

¹³ As with the linear term, all quadratic terms are interacted with ethnicity and cohort.

Table 5.6 Estimated impact of GMS on outcome variables at end of junior year in college fuzzy RD design. (Source: Cohorts II and III of Gates Millennium Scholarship Follow-up Surveys. See text for details)

Outcome	Width = 10		Width = 8		Width = 6	
	Base set of control variables (1)	Additional control variables (2)	Base set of control variable (3)	Additional control variables (4)	Base set of control variables (5)	Additional control variables (6)
Scholarships	\$5,786.32 (\$1,117.38)	\$6,795.02 (\$1,636.35)	\$6,097.07 (\$1,378.38)	\$7,026.70 (\$2,031.37)	\$6,269.23 (\$2,112.21)	\$6,937.44 (\$3,079.33)
Enrollment	0.021 (0.028)	0.031 (0.033)	0.021 (0.033)	0.035 (0.040)	0.020 (0.046)	0.033 (0.041)
Private school attendance	-0.054 (0.063)	0.019 (0.049)	-0.134 (0.071)	-0.077 (0.064)	-0.145 (0.129)	-0.136 (0.152)
Loans	-\$10,051.34 (\$893.99)	-\$9,252.04 (\$944.65)	-\$10,028.65 (\$944.65)	-\$9,030.15 (\$1,132.06)	-\$9,329.73 (\$1,295.61)	-\$8,839.01 (\$1,888.03)
Parental support	-\$1,890.64 (\$578.75)	-\$1,082.28 (\$753.70)	-\$1,702.40 (\$540.21)	-\$753.62 (\$729.16)	-\$1,928.67 (\$498.20)	-\$628.51 (\$640.28)
Hours worked	-6.85 (2.19)	-7.60 (2.71)	-8.45 (2.00)	-9.63 (2.32)	-9.91 (2.81)	-11.38 (3.03)
Earnings	-\$43.70 (\$24.50)	-\$45.88 (\$32.06)	-\$62.16 (\$22.28)	-\$70.51 (\$21.44)	-\$67.09 (\$39.12)	-\$77.45 (\$40.93)
Ph.D. aspirations	0.117 (0.052)	0.141 (0.052)	0.171 (0.065)	0.208 (0.065)	0.148 (0.071)	0.198 (0.074)

Standard errors are reported in parentheses. Estimates are based on two-stage least squares with standard errors adjusted for heteroskedasticity and for intra-correlation among individuals with equal test scores. Controls for cohort and ethnicity, test score and its interaction with cohort and ethnicity are included in the base set of controls. Models with additional control variables include controls for gender, SAT score, mother's and father's education, type of high school, family size, and parental income

ships between the running variable and dependent variable. Different sets of regressors have been explored to verify assumptions about random distributions of those variables above and below the cut-off point and the distance of observations from the cut-off point was varied to test the assumption of random assignment of observations to treatment. However, each of these analyses was somewhat limited by the fact that they relied on parametric assumptions about the data. Below, we will discuss methods which allow for estimates to be constructed strictly upon the form of the data itself.

Nonparametric Estimation Methods

Above, we examined estimation strategies that are parametric. We now turn to nonparametric estimation techniques. Here, the idea is to run linear regressions on weighted data where values closer to the cut-off value receive higher weights. We have done this to some extent when we limited the data to various intervals around the cut-off score in our robustness checks above because we are assigning a weight of one to data within the interval and a weight of zero to data outside of the interval. Nonparametric techniques weight the data by using kernel densities within a specific bandwidth to weight the data. The bandwidth is a function of the running variable and determines how much weight a particular observation receives and the bandwidth is a variable that determines how quickly the weight diminishes as you move away from a particular point.

In particular, these nonparametric techniques only assume that the relationship between Y and X is of the form:

$$Y = m(X) + \varepsilon$$

where m is some unknown function of the variable X .

The nonparametric technique that is used for RD estimation is called local polynomial regression or, as is usually the case when the order of the polynomial equals one, local linear regression.¹⁴ Local linear regression is a nonparametric technique that estimates the effect of a regressor at a point x_0 (which in our case will be a point near the cut-off value c) by estimating a weighted regression where values of x closer to x_0 receive larger weight. The weights attached to each value of x are determined by both the particular kernel density employed and the size of the bandwidth. Usually, the choice of bandwidth size is more important than the choice of the particular kernel density. Bandwidth choice determines the amount the data that is smoothed with smaller bandwidths resulting in less smoothing. Since the choice of bandwidth is less important, we will only use the Gaussian (normal) density kernel in this paper.¹⁵ The weights associated with this kernel density for two bandwidths

¹⁴ For technical reasons this estimation technique is preferred to other nonparametric techniques when applied to RD models.

¹⁵ The estimates with the GMS data are similar when other kernel densities are used.

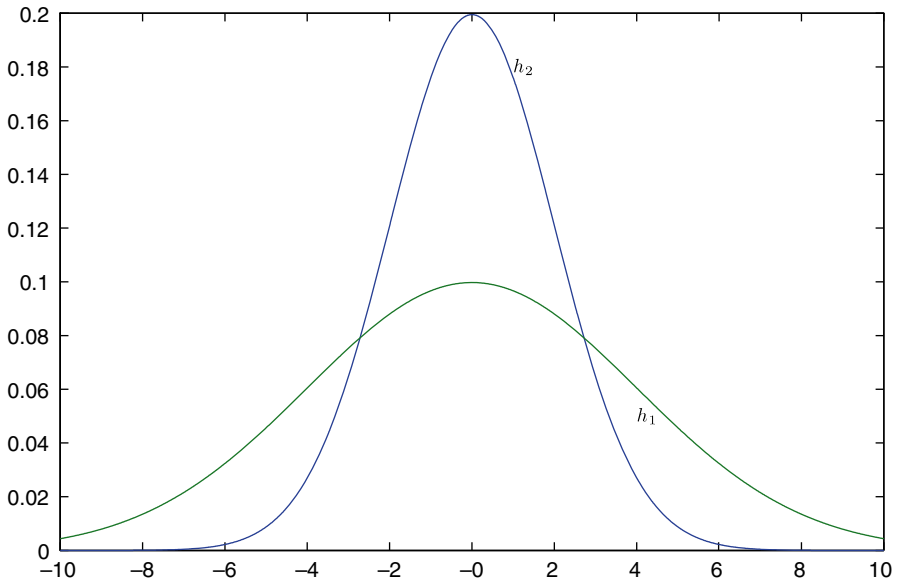


Fig. 5.12 Kernel density for two bandwidths (h_1 and h_2 with $h_1 > h_2$)

(h_1 and h_2 with $h_1 > h_2$) are shown in Fig. 5.12. With a Gaussian kernel, reducing the bandwidth is akin to lowering the standard deviation of the normal distribution used to weight the data. So, a lower bandwidth results in a more rapid reduction in the weights as one moves away from x_0 .

In a sharp RD design, one needs to estimate two such weighted regressions; one just below the cut-off point using data only to the left of the cut-off point, and one just above the cut-off point using data just to the right of the cut-off point. The choice of bandwidth is important and depends on how one wants to trade off potential bias and the variance of the estimate. A large bandwidth reduces the variance of the estimate by using more data, however, increases the chance of bias as the slope of the regression function may differ at points that are far away from x_0 . On the other hand, a small bandwidth, while reducing the potential for bias, increases the variance of the estimate since it is based on less data. Typically, an optimal bandwidth is chosen by balancing these two concerns. In our case we will choose the bandwidth by minimizing the mean square error.¹⁶ Complete details of this procedure are provided in the Appendix.

For illustration purposes we will compute the nonparametric estimates for the sharp design only. Moreover, we initially limit the data to those GMS applicants whose test score is within 10 points of the cut-off value. The estimates are provided in column (1) of Table 5.7 for the same outcomes we examined with the parametric techniques. Using a data-driven optimal bandwidth makes the computation of the

¹⁶ The mean squared error (MSE) equals bias squared plus the variance.

Table 5.7 Estimated impact of GMS on outcome variables at end of junior year in college sharp RD design: local linear regression. (Source: Cohorts II and III of Gates Millennium Scholarship Follow-up Surveys. See text for details)

Outcome	Base set of control variables	Estimated percentage change	Optimal bandwidth above cut-off point	Optimal bandwidth below cut-off point
	(1)	(2)	(3)	(4)
Scholarships	\$ 5,668.68 (\$ 2,259.59)	59.33%	0.24	0.61
Enrollment	-0.111 (0.094)	-4.09%	0.57	0.68
Private school attendance	-0.064 (0.076)	-18.13%	0.12	0.94
Loans	-\$ 8,326.10 (\$ 2,440.09)	-69.97%	0.37	1.44
Parental support	-\$ 1,398.73 (\$ 968.07)	-81.93%	0.23	0.44
Hours worked	-9.48 (3.22)	-48.13%	0.18	0.55
Earnings	-\$ 54.80 (\$30.04)	-39.26%	0.13	0.52
Ph.D. aspirations	0.160 (0.064)	117.10%	0.09	0.66

Bootstrapped standard errors are reported in parentheses

standard errors of the estimated impact of GMS receipt difficult because we need to incorporate the fact that the bandwidth is sample-dependent. In order to deal with this our standard errors are computed using bootstrap techniques. Column (2) presents the estimated percentage change in the outcome variable produced by the receipt of a Gates scholarship. Finally, columns (3) and (4) present the optimal bandwidths above and below the cut-off point, respectively.

As can be seen from Table 7.7, qualitative results are similar to those derived from parametric techniques. Receipt of a Gates scholarship has a statistically significant and negative impact on the total amount of student loans a student has at the time of the first follow-up survey, the amount of parental support, the amount of hours worked, and weekly earnings from work. On the other hand, receipt of a GMS has a statistically significant and positive effect on the total amount of scholarship money a student receives and on the probability that a student’s educational aspiration is to earn a Ph.D. Based on the nonparametric estimates, there is no statistically significant effect of receiving a GMS on either the probability of attending a private school or enrollment at the time of the first follow-up survey.

Calculating percentage changes in the point estimates of the different models, we note (see column 2) that receipt of a GMS results in a decrease of 70 and 82% in the amount of student loans accumulated and parental support provided, respectively. We also find that receiving a GMS lowers the number of hours a student works and their weekly earnings from that work by 48 and 39%, respectively. Receipt of a Gates scholarship is estimated to increase the total amount of scholarship money a student receives by 59% and increases the probability that a student’s educational aspiration is a Ph.D. by 117%.

In columns (3) and (4), we find that the optimal bandwidths vary considerably across the different outcomes variables that are analyzed. Moreover, the optimal bandwidth is always smaller above the cut-off score than below the cut-off score. The main reason for this is that there are more data above the cut-off score than below the cut-off score and the optimal bandwidth decreases with sample size.

Heterogeneous Treatment Effects

As mentioned above, the estimated treatment effect is based on data from individuals who are near the cut-off point. So, the estimate is a local average treatment effect in the sense that the “RD estimand can be interpreted as a weighted average treatment effect, where the weights are the relative ex ante probability that the value of an individual’s assignment variable will be in the neighborhood of the threshold”(Lee and Lemieux 2009). Of course, the impact of the treatment may be different for different subgroups of individuals who are close in this sense to the cut-off value. So, tests for heterogeneous treatment effects are typically computed in RD studies. These heterogeneity tests are especially important when the empirical results are used to inform public policy.

To test for such heterogeneous treatment effects with the GMS data, we estimate a fuzzy linear RD model for groups that differ according to gender, ethnicity (African American, Asian American, or Latino), or parental education (whether or not at least one parent went to college). For brevity, we only present the results for the sample of individuals whose test score was within 10 points of the cut-off score. The results are presented in Tables 8–10 for breakdowns by ethnicity, gender, and parental education, respectively.

As noted in Table 5.8, there are some ethnic differences in the impact of GMS receipt. In particular, receiving a Gates scholarship has a statistically significant larger reduction in parental support for Asian Americans than for either African Americans or Latinos. There are also statistically significant differences between Asians Americans and African Americans and Latinos in the impact of GMS receipt on enrollment (at least in models that do not include additional regressors). For Asian Americans, receipt of a Gates scholarship has a positive and statistically significant effect on enrollment at the time of the follow-up survey whereas the effect is positive and not statistically significant for African Americans, and negative and statistically significant for Latinos.

When broken down by gender, receipt of a Gates scholarship has a statistically significant larger impact on total scholarship money for males than females with the point estimates when no additional regressors are included in the model equal to \$ 10,420 for males and and \$ 3,782 for females. There are no other statistically significant gender differences in the impact of GMS receipt. The complete results are presented in Table 5.9.

Finally, Table 5.10 presents the estimates when the estimations are done separately for applicants where at least one parent had attended college and applicants

Table 5.8 Estimated impact of GMS on outcome variables at end of junior year in college fuzzy RD design

Outcome	African American		Asian American		Latino	
	Base set of control variables (1)	Additional control variables (2)	Base set of control variables (3)	Additional control variables (4)	Base set of control variables (5)	Additional control variables (6)
Scholarships	\$ 5,278.68 (\$ 1,593.36)	\$ 6,319.93 (\$ 1,106.50)	\$ 4,205.44 (\$ 1,487.88)	\$ 6,802.36 (\$ 1,801.20)	\$ 7,467.15 (\$ 1,808.02)	\$ 6,189.95 (\$ 2,241.87)
Enrollment	0.023 (0.024)	0.034 (0.028)	0.074 (0.037)	0.035 (0.040)	-0.048 (0.024)	-0.038 (0.029)
Private school attendance	0.068 (0.046)	0.124 (0.059)	-0.123 (0.131)	-0.046 (0.126)	-0.039 (0.074)	0.002 (0.083)
Loans	-\$ 8,207.51 (\$ 1,260.34)	-\$ 7,710.87 (\$ 1,651.06)	-\$ 10,480.92 (\$ 1,832.14)	-\$ 9,771.36 (\$ 2,419.30)	-\$ 6,898.73 (\$ 1,378.70)	-\$ 6,412.39 (\$ 2,111.67)
Parental support	-\$ 249.21 (\$ 384.18)	\$ 500.50 (\$ 390.45)	-\$ 5,091.50 (\$ 1,437.85)	-\$ 4,432.99 (\$ 1,388.05)	-\$ 1,127.07 (\$ 452.27)	-\$ 893.81 (\$ 368.90)
Hours worked	-6.18 (2.60)	-5.66 (2.66)	-9.63 (3.41)	-11.04 (3.45)	-4.90 (2.73)	-5.17 (3.19)
Earnings	-\$ 52.20 (\$ 27.94)	-\$ 34.22 (\$ 25.05)	-\$ 101.29 (\$ 45.20)	-\$ 125.64 (\$ 43.16)	-\$ 36.10 (\$ 31.28)	-\$ 52.71 (\$ 39.22)
Ph.D. aspirations	0.036 (0.068)	0.065 (0.066)	0.186 (0.099)	0.193 (0.107)	0.195 (0.047)	0.188 (0.054)

Standard errors are reported in parentheses. Estimates are based on two-stage least squares with standard errors adjusted for heteroskedasticity and for intracohort relation among individuals with equal test scores. Controls for cohort, test score and its interaction with cohort are included in the base set of controls. Models with additional control variables include controls for gender, SAT score, mother's and father's education, type of high school, family size, and parental income

Table 5.9 Estimated impact of GMS on outcome variables at end of junior year in college fuzzy RD design. (Source: Cohorts II and III of Gates Millennium Scholarship Follow-up Surveys. See text for details)

Outcome	Males		Females	
	Base set of control variables	Additional control variables	Base set of control variables	Additional control variables
	(1)	(2)	(3)	(4)
Scholarships	\$10,420.42 (\$2,074.47)	\$10,505.67 (\$2,663.69)	\$3,782.11 (\$1,049.18)	\$4,482.40 (\$950.35)
Enrollment	-0.018 (0.027)	-0.038 (0.022)	0.021 (0.023)	0.036 (0.023)
Private school attendance	0.005 (0.083)	0.003 (0.094)	-0.029 (0.048)	0.030 (0.054)
Loans	-\$10,655.66 (\$1,992.05)	-\$9,589.83 (\$2,216.48)	-\$7,132.16 (\$954.13)	-\$6,810.78 (\$1,306.15)
Parental support	-\$1,725.64 (\$630.39)	-\$751.47 (\$819.20)	-\$1,561.10 (\$610.66)	-\$1,224.74 (\$604.48)
Hours worked	-6.53 (2.63)	-7.56 (2.69)	-6.56 (1.87)	-6.10 (1.79)
Earnings	-\$72.18 (\$38.59)	-\$78.63 (\$41.13)	-\$53.66 (\$22.28)	-\$46.77 (\$20.60)
Ph.D. aspirations	0.186 (0.061)	0.215 (0.065)	0.110 (0.049)	0.115 (0.054)

Standard errors are reported in parentheses. Estimates are based on two-stage least squares with standard errors adjusted for heteroskedasticity and for intracohort relation among individuals with equal test scores. Controls for cohort and ethnicity, test score and its interaction with cohort and ethnicity are included in the base set of controls. Models with additional control variables include controls for SAT score, mother's and father's education, type of high school, family size, and parental income

Table 5.10 Estimated impact of GMS on outcome variables at the end of junior year in college fuzzy RD design. (Source: Cohorts II and III of Gates Millennium Scholarship Follow-up Surveys. See text for details)

Outcome	Parents (no college)		Parents (some college)	
	Base set of control variables		Base set of control variables	
	(1)	(2)	(3)	(4)
Scholarships	\$6,147.16 (\$847.03)	\$5,673.03 (\$1,080.80)	\$5,608.79 (\$1,919.70)	\$8,151.59 (\$1,943.70)
Enrollment	0.010 (0.024)	0.017 (0.026)	0.013 (0.025)	0.003 (0.024)
Private school attendance	0.034 (0.042)	0.050 (0.047)	-0.125 (0.131)	-0.011 (0.125)
Loans	-\$7,401.57 (\$1,229.74)	-\$6,532.44 (\$1,373.03)	-\$10,272.51 (\$2,063.22)	-\$10,355.24 (\$2,504.63)
Parental support	-\$1,160.65 (\$193.66)	-\$830.62 (\$319.42)	-\$2,785.40 (\$1,243.05)	-\$1,872.91 (\$1,213.94)
Hours worked	-6.26 (1.89)	-6.36 (2.07)	-7.21 (3.00)	-7.46 (3.22)
Earnings	-\$67.69 (\$20.09)	-\$63.13 (\$21.85)	-\$29.84 (\$41.27)	-\$36.92 (\$45.82)
Ph.D. aspirations	0.148 (0.048)	0.166 (0.048)	0.075 (0.068)	0.057 (0.079)

Standard errors are reported in parentheses. Estimates are based on two-stage least squares with standard errors adjusted for heteroskedasticity and for intra-correlation among individuals with equal test scores. Controls for cohort and ethnicity, test score and its interaction with cohort and ethnicity are included in the base set of controls. Models with additional control variables include controls for gender, SAT score, type of high school, family size, and parental income

where neither parents had attended college. For this breakdown of the sample, we found no statistically significant differences in the impact of GMS receipt on any of the outcome variables studied.

Summary and Conclusions

Above, we have provided a guide to the application of RD designs for educational research. We first discussed some terminology relating RD designs to more familiar experimental designs. Next, we covered the assumptions related to RD designs and showed how these can be checked through the use of an empirical example. We then used the empirical example to demonstrate how to obtain estimates of treatment effects in both “sharp” and “fuzzy” RD designs, employing both parametric and nonparametric frameworks. However, new innovations to RD designs continue to be developed and these new models have potential for application within higher education research.

Recent research (Card et al. 2009) has analyzed a design that is similar to the RD design where, instead of the treatment being determined by whether a variable is above or below a cut-off point, everybody receives some amount of a continuous treatment and this amount depends on the level of some running variable. However, at some cut-off value there is a discontinuous change in the *slope* of the relationship. An example of this is how unemployment insurance benefit amounts are determined in the United States. Typically, weekly benefit amounts are a fraction of earnings in the base period (or, in some states, high quarter earnings) up to some maximum benefit level, where additional base-period earnings no longer leads to an increase in the weekly benefit amount. This discontinuous change in the slope of the relationship can, under certain conditions, identify the effect of an increase in the amount of UI benefits on some behavioral outcome. An example for higher education might be a situation where the amount of financial aid increases linearly as parental income decreases up to a maximum amount.

Also, recent research (Papay et al. 2011) has extended the RD framework to situations with multiple running (assignment) variables. This model may be applied in circumstances, e.g., where individuals receive a scholarship when either their SAT score is above some threshold level or when their high school GPA is above a threshold value.

RD designs continue to have a strong potential for use in education research and new methodological developments allow for a broader range of applications where the understanding of causal mechanisms is necessary to inform both policy and practice. The above discussion provides a foundation for higher education researchers to begin applying RD frameworks to questions of interest within the field. A focus here, and an important aspect of RD designs in any application, is the comparative application of multiple specifications of the models. When statistical modeling techniques are used to inform decisions related to policy development or change, it is important to ensure that causal claims being made from the data are supported by

the most reliable information possible. By varying model specifications, we are able to increase our level of confidence in our findings and ensure that we are making the strongest claims possible to guide decision making.

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Appendix: Local Polynomial Regression Estimates and Optimal Bandwidth Determination

In this appendix, we will describe in more detail how the nonparametric estimates are computed. Recall that the treatment effect τ for a RD design equals

$$\tau = \frac{\lim_{d \rightarrow 0} E(Y|c + d > X > c) - \lim_{d \rightarrow 0} E(Y|c > X > c - d)}{\lim_{d \rightarrow 0} \Pr(T = 1|c + d > X > c) - \lim_{d \rightarrow 0} \Pr(T = 0|c > X > c - d)} \quad (5)$$

Now with the GMS program, no individuals below the cut-off score received a scholarship so $\lim_{d \rightarrow 0} \Pr(T = 0|c > X > c - d) = 0$ and

$$\tau = \frac{\lim_{d \rightarrow 0} E(Y|c + d > X > c) - \lim_{d \rightarrow 0} E(Y|c > X > c - d)}{\lim_{d \rightarrow 0} \Pr(T = 1|c + d > X > c)}. \quad (6)$$

To derive a consistent estimator of τ where consistency means that as the sample size gets large our estimate $\hat{\tau}$ approaches the true population value τ with probability one, we will need to consistently estimate the three terms in Eq. 6, $E(Y|c + d > X > c)$, $E(Y|c > X > c - d)$, and $\Pr(T = 1|c + d > X > c)$, for some “small” value of d (i.e., using data close to the cut-off score). In order to do this, we will apply a technique called local polynomial regression (Fan and Gijbels 1992).

Consider the nonparametric regression model:

$$Y = m(X) + \varepsilon. \quad (7)$$

In Eq. 7, $m(X)$ is any continuous function of X instead of, e.g., a linear function of X : $\beta_0 + \beta_1 X$. So, instead of estimating two unknown population parameters β_0 and β_1 , we are trying to estimate some unknown population function $m(X)$. Local polynomial regression estimates the function $m(x)$ by obtaining estimates of its value for a large number of values of x . For a particular value of x and x_0 , the value $m(x_0)$ is estimated by running a weighted polynomial regression using the sample where points in the sample that are closer to x_0 receive larger weights in the regression. More formally, suppose that we wish to estimate the value $m(x_0)$ using a local polynomial regression of order p . Define the data matrix \mathbf{X} by:

$$\mathbf{X} = \begin{bmatrix} 1 & X_1 - x_0 & \cdots & (X_1 - x_0)^p \\ \vdots & \vdots & \vdots & \vdots \\ 1 & X_n - x_0 & \cdots & (X_n - x_0)^p \end{bmatrix} \quad (8)$$

where each value of \mathbf{X} in the sample is measured relative to its distance from x_0 . Let \mathbf{y} be the vector of values of the dependent variable:

$$\mathbf{y} = \begin{pmatrix} Y_1 \\ Y_2 \\ \vdots \\ Y_n \end{pmatrix}. \tag{9}$$

In local polynomial regression, we will want to run a weighted regression where those points closer to x_0 receive larger weights in the regression. To this end, define the diagonal weighting matrix \mathbf{W} by:

$$\mathbf{W} = \text{diag} \{K_h(X_i - x_0)\}. \tag{10}$$

In Eq. 10, K_h is a kernel density weighting function with bandwidth h and is defined by $K_h(\cdot) = [K(\cdot/h)]/h$ for some kernel density function K and some bandwidth h . These kernel density functions reach the maximum height at 0 and decline monotonically as you move away from 0. While there are several possible choices K , we use the Gaussian kernel function which is defined by $K(u) = 1/\sqrt{2\pi} \exp(-(1/2)u^2)$. Once a bandwidth is determined then we estimate the local polynomial coefficients at x_0 ,

$$\hat{\beta} = \begin{pmatrix} \hat{\beta}_0 \\ \hat{\beta}_1 \\ \vdots \\ \hat{\beta}_p \end{pmatrix}$$

by minimizing the weighted sum of squared errors $\mathbf{y} - \mathbf{X}'\beta$:

$$\min_{\hat{\beta}} (\mathbf{y} - \mathbf{X}\hat{\beta})' \mathbf{W} (\mathbf{y} - \mathbf{X}\hat{\beta}). \tag{11}$$

For theoretical reasons (Fan and Gijbels 1996), it is preferable to estimate odd-ordered polynomial models. In our estimates of the treatment effect τ using the GMS data, we will simply estimate a local linear regression ($p=1$). However, we need to estimate separate local linear regressions for $E(Y|c + d > X > c)$, $E(Y|c > X > c - d)$, and $\Pr(T = 1|c + d > X > c)$. Here, we only use the data from the right of the cut-off value when estimating $E(Y|c + d > X > c)$ and $\Pr(T = 1|c + d > X > c)$ and only use data to the left of the cut-off value when estimating $E(Y|c > X > c - d)$. Letting x be the closet point on our grid of x values to the left of c (which in our GMS application is $c-0.1$) and x_+ be the point closest on our grid of x values to the right of c ($c+0.1$), the estimated value of τ equals

$$\hat{\tau} = \frac{\hat{E}(Y|X = x_+) - \hat{E}(Y|X = x_-)}{\hat{\Pr}(T = 1|X = x_+)}. \tag{12}$$

To implement this technique it is necessary to choose a bandwidth. Recall that the bandwidth determines the amount of smoothing. The larger the bandwidth, the bigger the potential for bias while a smaller bandwidth leads to an estimate with higher variance. We would like to choose a bandwidth which balances the potential of bias with variance. So, we choose the bandwidth that minimizes the mean square error which equals the sum bias squared plus variance.

Let $s_{r,0} = \int_0^\infty K(u)u^r du$.

It can be shown that for a local linear regression model the optimal bandwidth, to the left of the cut-off point equals, (see Fan and Gijbels 1992, 1996) equals

$$h_{opt}(x_0) = C(K) \left[\frac{\sigma^2(x_0)}{\{m''(x_0)\}^2 f(x_0)n} \right]^{\frac{1}{5}} \tag{13}$$

where

$$C(K) = \left[\frac{\int_0^\infty [s_{2,0}^2 - ts_{1,0}] K^2(t) dt}{\{s_{2,0}^2 - s_{1,0}s_{3,0}\}^2} \right]^{\frac{1}{5}},$$

$\sigma^2(x_0)$ is the variance of ε at x_0 , $m''(x_0)$ is the second derivative of m at x_0 , and $f(x_0)$ is the density of x at x_0 .

The idea here is that the larger the variance of the error at x_0 , all else equal, the larger the optimal bandwidth is in order to minimize the mean square error since a larger bandwidth will smooth the data more and reduce the variance of the estimate. On the other hand, the larger $m''(x_0)$ the smaller the bandwidth, all else equal, because the slope of the function $m(x_0)$ changes more quickly and so a smaller bandwidth reduces the amount of bias.

For the Gaussian kernel density function that we employ in our estimates $C(K)=0.794$. Several of these quantities are unknown; e.g., $m''(x_0)$ depends on m , which is what we are trying to estimate in the first place. So, we must employ a two-step method to obtain the optimal bandwidth.

In the first step, we compute what is termed as the ‘‘Rule of Thumb’’ (ROT) bandwidth which we denote by h_{ROT} . To compute h_{ROT} we first obtain a rough estimate of $m(x)$ using a fourth-order (quartic) polynomial and weighting all the data equally. From these estimates we compute

$$\tilde{m}(x) = \tilde{\beta}_0 + \tilde{\beta}_1x + \dots + \tilde{\beta}_4x^4$$

which results in an estimate of $m''(x_0)$:

$$\tilde{m}''(x) = 2\tilde{\beta}_2 + 6\tilde{\beta}_3x + 12\tilde{\beta}_4x^2$$

and

$$\sigma^2 : \tilde{\sigma}^2 = \sum_{i=1}^N \frac{(y_i - \tilde{m}(x))^2}{N - 5}$$

Then,

$$h_{\text{ROT}} = 0.794 \times \left[\frac{\tilde{\sigma}^2}{\sum_{i=1}^n \{\tilde{m}''(x_i) - K_{h_{\text{ROT}}}(x_i - x_0)\}^2} \right]^{\frac{1}{5}}$$

In the second step, we estimate a third-order local polynomial regression using the rule of thumb bandwidth h_{ROT} and the Gaussian kernel density function and obtain a refined estimate of $m(x)$ at x_0

$$\hat{m}(x_0) = \hat{\beta}_0 + \hat{\beta}_1 x_0 + \hat{\beta}_2 x_0^2 + \hat{\beta}_3 x_0^3.$$

From this we get:

$$\hat{m}''(x_0) = 2\hat{\beta}_2 + 6\hat{\beta}_3 x_0$$

and

$$\hat{\sigma}^2(x_0) = \frac{\sum_{i=1}^N (y_i - \hat{m}(x_i))^2 K_{h_{\text{ROT}}}(x_i - x_0)}{\text{tr} \{ \mathbf{W} - \mathbf{W}\mathbf{X}(\mathbf{X}'\mathbf{W}\mathbf{X})^{-1}\mathbf{X}'\mathbf{W} \}}.$$

From Eq. 13 the optimal bandwidth is then

$$\hat{h}_{\text{opt}}(x_0) = 0.794 \left[\frac{\hat{\sigma}^2(x_0)}{\{\hat{m}''(x_0)\}^2 \hat{f}(x_0)n} \right]^{\frac{1}{5}}$$

where $\hat{f}(x_0)$ is estimated using a Gaussian kernel density estimator:

$$\hat{f}(x_0) = \frac{1}{nh} \sum_{i=1}^n K \left(\frac{x_0 - x_i}{h} \right)$$

where h is chosen to minimize the mean squared error.

When computing the optimal bandwidth for $\hat{E}(y|x_+)$ and $\hat{\text{Pr}}(T = 1|x_+)$ we only use the data to the right of the cut-off point c when $x_0 = x_+$. When computing the optimal bandwidth for $\hat{E}(y|x_-)$ we use the data to the left of the cut-off point and $x_0 = x_-$. The Stata programs necessary to compute these estimates can be found at http://www-personal.umich.edu/~bpmccall/Programs/Handbook_Chapter/.

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Chapter 6

Toward a Greater Understanding of the Effects of State Merit Aid Programs: Examining Existing Evidence and Exploring Future Research Direction

Shouping Hu, Matthew Trengove and Liang Zhang

Introduction

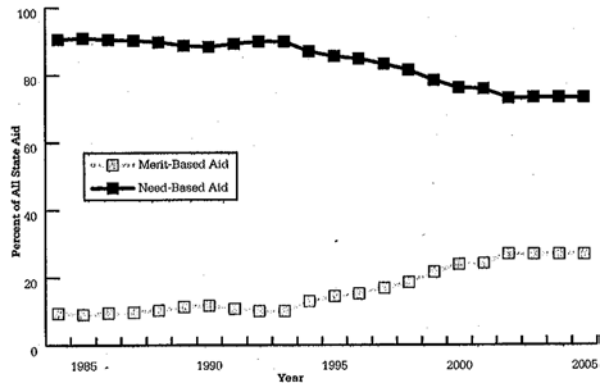
Government-sponsored financial aid programs in the United States were traditionally intended to eliminate financial barriers for student participation in higher education so that equal educational opportunity could be achieved (Heller and Marin 2002; St. John 2003). This type of program has been known as need-based financial aid program. Federal student financial assistance programs, along with various financial aid programs in states, are the backbone of need-based financial aid programs in higher education (Advisory Committee on Student Financial Assistance 2001, 2002, 2010; St. John 2003). At the federal level, Pell grants and other student financial assistance programs that including grants, loans, and work study have historically functioned as a financial supporting system to help eliminate financial barriers for students so that they can realize their college dreams (St. John 2003). The federal goals in student financial assistance are multifaceted, but the paramount feature is the commitment to equalize educational opportunities for all students (McPherson and Shapiro 1998; St. John 2003). At the state level, a combination of financial appropriations to institutions and direct financial aid to students is the way that states finance higher education. States help achieve college affordability by lowering college tuition pricing through providing financial support to higher education institutions (Hearn and Longanecker 1985). States also, rather common

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Fig. 6.1 Percentage of all state aid based on merit or need. (Source: Doyle (2008). Used with author's permission)



than not, provide direct financial assistance to individual students. Such financial aid support policies have historically been based on the need of students, mirroring the federal commitment to equalizing educational opportunities (Doyle 2008; Hearn and Longanecker 1985).

However, the political landscape has changed dramatically in the financial aid policy arena. At the federal level, the historical financial commitment has been wavering due to both financial and political realities (Hearn 1993; St. John 2003). The purchasing power of Pell grants, the cornerstone of the federal student financial assistance system, has not kept up with the increase of college costs, and the installation of federal tax credits signaled a shift in the focus of federal financial assistance away from the neediest student (Advisory Committee on Student Financial Assistance 2001, 2002, 2010; Long 2004). Still, one of the most dramatic changes came in the state financial aid arena with the emergence and prevalence of state merit aid programs (Doyle 2006). Since the inception of Georgia's HOPE scholarship program in 1993, state-sponsored broad-based merit aid programs, where student academic achievement and performance are key factors in program eligibility, have been enacted in many states across the country (Cohen-Vogel et al. 2008; Heller and Marin 2002). The distinctive feature of broad-based state merit aid programs is the use of academic criteria in determining financial aid award eligibility. Some of those programs can have high academic criterion. For example, programs in Missouri, Mississippi, New Jersey, and Washington set their eligibility criterion roughly at the 90th percentile of standardized test scores. Most programs, however, have modest eligibility criterion of 3.0 grade point average (GPA) and/or 20–22 ACT, roughly corresponding to 48th and 62nd percentile in the distribution of ACT scores (Delaney and Ness 2009). Student financial need, which has been a key factor in determining need-based financial aid, has relatively minor role or no role in the broad-based state merit aid programs. Statistics show that the percentage of state financial aid based on merit has been trending upward while need-based aid has experienced a downward trend (Fig. 6.1).

Even though not the first state merit aid program, Georgia's HOPE scholarships program is arguably one of the most visible such programs in the United States. Georgia began offering HOPE scholarships in 1993, designing the program in such a way that the scholarship would cover 100% of the tuition and fees at public state

colleges for high school graduates with a 3.0 GPA. The program would allow students attending in-state postsecondary institutions to receive enough funding to cover tuition, book expenses, and fees at all public postsecondary institutions, while students attending private universities would receive funding comparable to that provided to students attending public programs (Cornwell et al. 2006b). A minimal college GPA of 3.0 is required for students to maintain their HOPE scholarship. Student financial need was initially a consideration in the HOPE scholarship program when family income cap was used in scholarship qualification. Such requirement was removed from the HOPE scholarship program in two years (Dynarski 2004).

The state of Florida is another early state that adopted state-sponsored merit aid program. After observing the HOPE scholarship program in neighboring Georgia and voters' discontent with the use of state lottery proceeds, Florida legislature created and funded the Bright Futures Scholarship program in 1997, somewhat mirroring Georgia's HOPE scholarship program. The two previously existing programs in the state, Florida Academic Scholars Award (FAS) for students on academic tracks and Florida Gold Seal Vocational Scholars Award (GSV) for students on vocational tracks, were integrated into the newly created Bright Futures program with the addition of Florida Medallion Scholars Award (FMS), also for students on academic tracks. The FAS awards cover 100% of tuition and have some allowance for fees and college-related expenses while requiring 3.5 GPA on 15 college preparatory credits in high school and SAT at 1,270 or ACT at 28 for initial qualification and 3.0 GPA on all postsecondary work attempted for renewal. The FMS awards cover 75% of tuition and required fees while requiring 3.0 GPA on 15 college preparatory credits and SAT at 970 or ACT at 20 for initial qualification and 2.75 GPA on all postsecondary work for renewal. The GSV awards are similar to FMS award but toward students in vocational tracks (Florida Department of Education 2010). No financial need is considered in the Bright Futures program.

Both Georgia's HOPE Scholarship program and Florida's Bright Futures Scholarship program have the trait of being simple and straightforward. That is, as long as students have met the qualification of academic performance and file an application for the scholarship program, they are qualified for the generous financial assistance for their college tuition and related expenses. They are the two largest state merit aid programs and received most of the attention in research and policy conversation on state merit aid programs.

Many other states have adopted merit aid programs, and we described the program features of those programs in Table 6.1. In addition to the variation in program eligibility criteria, some programs are more generous than others. Some states (e.g., Tennessee, Georgia, and South Carolina) spend more than \$1,000 per undergraduate student on merit aid award while others (e.g., Arkansas, Colorado, Maryland, and Mississippi) spend less than \$ 25 per undergraduate student. In light of the wide range of variation in some key features in state merit aid programs, it is important to consider specific state contexts and program characteristics when evaluating the impact of these programs. It is worth noting that the current literature on state merit aid programs does not agree on the number of states that have a merit aid program. This is in part due to the fact that these state programs were implemented in differ-

Table 6.1 Description of state merit aid programs. (Sources: Delaney (2007), Doyle (2006), Dynarski (2004), Heller (2002, 2004), Zhang and Ness (2010) and various Websites)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
Alaska	University of Alaska scholars award	1999	Land leases & sales	Top 10% of high school class in their junior year	Must maintain a 12 credit hour schedule and a minimum collegiate GPA of 2.5	\$2,750 at University of Alaska	Enrolled at University of Alaska campuses
Delaware	Diamond State	1987	General revenues	Upper quartile of class and a combined score of SAT of 1,800	Cumulative GPA of 3.0 renewed each year with a three-year limitation	\$1,250 per year	Scholarship attending regionally accredited colleges in any state
	B. Bradford Barnes Memorial Scholarship	1989				Full tuition, fees, room, board and books	Enrolled at The University of Delaware
	Herman M., Holloway, Sr. Memorial Scholarship	1995		Upper half of class and a combined SAT of at least 1,350		Full tuition, fees, room, board and books	Enrolled at Delaware State University
	Charles L. Hebbner Memorial Scholarship	2000				Full tuition, fees, room, board and books	Enrolled at either University of Delaware or Delaware State University majoring in humanities or social sciences

Table 6.1 (continued)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
Florida	Bright Futures Scholarships	1997	Lottery	Three-tiered awards with both GPA and ACT requirements: 1. Florida Academic Scholars (FAS) HSGPA 3.5 & SAT/ACT 1270/28 2. Florida Medallion Scholars (FMS) HSGPA 3.0 SAT/ACT 970/20 3. Florida Gold Seal Vocational Scholars Award (GSV) HSGPA 3.0	Collegiate GPA 1. FAS = 3.0 2. FMS = 2.75 3. GSV = 2.75	FAS = 100% tuition and required fees, FMS & GVS = 75% tuition and required fees	
Georgia	Helping Outstanding Pupils Educationally (HOPE)	1993	Lottery	1. High school graduate = 3.0 GPA 2. Home school graduate = 3.0 GPA 3. Graduates from ineligible high school/home study program, or receiving a GED, must score in the national composite 85th percentile or higher on the SAT or ACT tests.	Collegiate GPA 3.0	HOPE award amounts are based upon a per hour rate at the institution the student is attending (varies according to the institution)	Full-time students enrolled in private schools will receive: \$1,800 per semester, or \$1,200 per quarter. Half-time students enrolled in private institutions will receive \$900 per semester, \$600 per quarter

Table 6.1 (continued)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
				<p>4. Graduates from an ineligible high school or an ineligible home study program, who earn a 3.0 grade point average on 30 semester hours or 45 quarter hours of college degree-level coursework, can be compensated for their first 30 semester hours or 45 quarter hours <i>after</i> they are taken.</p> <p>5. Students who earn a 3.0 grade point average at the college level on degree coursework after attempting 30, 60, or 90 semesters hours or 45, 90, or 135 quarter hours, regardless of high school graduation status.</p>			

Table 6.1 (continued)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
Kentucky	Educational Excellence Scholarship (KEES)	1998	Lottery	Awards are based on sliding scale of HS GPA (2.5–4.0) for each year in high school grades 9–12 and earn a bonus based on ACT score (15–36)	If collegiate GPA = 3.0+, your full award will be renewed. If collegiate GPA = 2.5–3.0 your college must verify that you are on track to graduate. If yes—your award amount will be reduced by 50%. If no—you will become ineligible until you meet above standards	GPA for each year of high school: 2.5 = \$125, 4.0 = \$500; ACT bonus: 15 = \$36, 28+ = \$500	
Louisiana	Tuition Opportunity Program for Students (TOPS)	1998	General revenues	Three-tiered awards with both GPA and ACT requirements: 1. Honors—3.0 GPA & 27 ACT 2. Performance—3.0 GPA & 23 ACT 3. Opportunity—2.5 GPA & 20 ACT	Three-tiered awards with the following requirements: 1. GPA = 3.0 & has earned 24 credit hours 2. GPA = 3.0 & has earned 24 credit hours 3. GPA = 2.5 & has earned 24 credit hours	Three-tiered awards with both GPA and ACT requirements: 1. Full tuition + \$800 per year 2. Full tuition + \$400 per year 3. Full tuition	

Table 6.1 (continued)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
Massachusetts	John and Abigail Adams Scholarship Program	2006	General revenues	Students must score "advanced" on either mathematics or language arts section of the grade 10 MCAS test and score in the proficient or advanced category on the second subject. Have a combined MCAS score on these assessments that ranks in the top 25% in their school district.	GPA of at least 3.0	Full tuition	
Michigan	Merit Award Scholarship	2000	Tobacco settlement	"Acceptable" score on all four components of MEAP test assessment, or "acceptable" score on two tests & 24 ACT		One-time awards: \$2,500, in-state institutions (public or private); \$1,000, out-of-state public or private institutions	Eligibility for the Michigan Merit Award has now expired for all students unless they have served or are currently serving in the military
Mississippi	Eminent Scholars Program	1995	General revenues	Has a minimum GPA of 3.5 & 29 ACT or 1,280 on the SAT. Students may also be a national merit or national achievement finalist or semi-finalist	Minimum GPA of 3.5 & enrolled in at least 12 credit hours per semester	Tuition and fees up to \$2,500 per year	

Table 6.1 (continued)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
Missouri	Higher Education Academic Scholarship Program (Bright Flight)	1997	General revenues	Top 5% of all Missouri ACT or SAT test takers in the state qualify for the award	GPA of 2.5	\$2,000	
Nevada	Millennium Scholarship	1999	Tobacco lawsuit	3.25 GPA and have completed a core curriculum of 14 units of English (4), Math (including Algebra II) (4), Natural Science (3) and Social Science and History courses (3)	Maintain a GPA of 2.6 (1st yr) and a GPA of 2.75 during the 2nd, 3rd, and 4th yrs	Variable rates ranging from \$40 to \$80 per credit hour depending on institution type; maximum annual awards: \$2,500 (four-year institutions), \$1,250 (two-year institutions)	University students enrolled in 12 credit hours would be eligible to receive a maximum of \$960 (\$80 × 12 credits). Community college students enrolled in 9 semester credit hours would be eligible to receive \$360 (\$40 × 9 credits), up to a total of 12 credits per term maximum
New Mexico	Lottery Success Scholarship	1996	Lottery	College GPA 2.5 after first 12 credit hours	Maintain a GPA of 2.5	Full tuition	

Table 6.1 (continued)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
North Carolina	Education Lottery Scholarship (ELS)	2005	Lottery	<ul style="list-style-type: none"> Eligibility is determined based on the same criteria as the Federal Pell Grant with one exception; students not eligible for the Federal Pell Grant with an estimated family contribution of \$5,000 or less will be eligible for an Education Lottery Scholarship. Students who have earned baccalaureate (four-year) college degrees are ineligible Enroll for at least six credit hours per semester Meet the satisfactory academic progress requirements of the institution 	Meet satisfactory progress requirements of the institution	Grants will range from \$100 to \$3,400 for the year	

Table 6.1 (continued)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
South Carolina	<p>South Carolina has three awards:</p> <ol style="list-style-type: none"> 1. Legislative Incentive for Future Excellence (LIFE). 2. Palmetto Fellows. 3. Hope Scholarship. 	2004	General revenues	<p>Three-tiered awards with both GPA and SAT/ACT requirements:</p> <ol style="list-style-type: none"> 1. Score of 1,100+ on SAT I or 24 + on ACT earn a cumulative of at least 3.0 GPR and rank in the top 30% of the graduating class. 2. Score 1,200+ on the SAT (27 + on the ACT) and earn a minimum 3.5 cumulative GPA and rank in the top 6% of the class at the end of either the sophomore or the junior year or score at least 1,400 on the SAT (32+ on the ACT) and earn a minimum 4.00 cumulative GPA (junior year) 3. Earn a minimum 3.0 cumulative GPA and cannot be recipients of the Palmetto Fellows Scholarship, LIFE Scholarship, or Lottery Tuition Assistance 	Three-tiered awards	<p>Three-tiered awards with both GPA and ACT requirements:</p> <ol style="list-style-type: none"> 1. Up to \$5,000/yr + \$300 for books. 2. \$6,700 (1st year) and \$7,500 (2nd, 3rd, 4th yrs), \$300 book allowance 3. \$2,800 and a \$300 book allowance 	

Table 6.1 (continued)

State	Program	Start year	Funding sources	Initial eligibility criteria	Renewal requirements	Award amount	Others
Tennessee	Education Lottery Scholarship Program (TELS)	2004	Lottery	<p>Three-tiered awards with different GPA, ACT, and income requirements:</p> <ol style="list-style-type: none"> 1. <i>Tennessee HOPE Scholarship</i> = High school and home school graduates must have a minimum of a 980 SAT (21 ACT), or a 3.0 GPA, GED applicants must have a score of at least 525 and a 980 SAT (21 ACT) 	<p>Must have a cumulative GPA of 2.75 after 24 and 48 hours. After 72 students may retain the award by either:</p> <ul style="list-style-type: none"> Keeping a GPA of 3.0 or above, or achieving a cumulative GPA of 2.75–2.99 and a semester GPA of at least 3.0 in the preceding term for which the student will receive the award as a full-time enrolled student 	<ol style="list-style-type: none"> 1. \$4,000 (4 yr) & \$2,000 (2 yr) 2. \$1,500 3. \$2,750 (4 yr) or \$1,250 (2 yr) 	
West Virginia	Providing Real Opportunities for Maximizing In-State Student Excellence (PROMISE)	2005	Video lottery and state general appropriations	<ol style="list-style-type: none"> 2. <i>Aspire Award</i> = 3.0 GPA or 21 ACT & AGI ≤ \$36 k 3. <i>Tennessee HOPE Access Grant</i> = a GPA of 2.75–2.99 GPA & 860–970 SAT (18 ACT) & AGI ≤ \$36k <p>3.0 GPA and a 1,020 SAT</p> <p>20 in all subsections and have completed a core curriculum of 14 units of English (4), Math (4), Natural Science (3), and Social Sciences (4)</p>	<p>Minimum 3.0 GPA throughout their collegiate career</p>	<p>Pays tuition and mandatory fees at any public college or \$4,752 to a private college</p>	

ent points of time. Most importantly, there has been no agreed-upon criterion for such programs.

State merit aid programs are among one of the most visible policy initiatives in state higher education policy arena. The embedded policy values in such programs make the discourses of such programs spirited and sometimes contentious, perhaps also served as one of the reasons that make such programs highly visible and politically popular by and large. As calls for evidence-based policy making permeate, it is time to assemble both conceptual and empirical evidence related to the effects of state merit aid programs (Brewer et al. 2010; Krathwohl 1998).

Purposes and Guiding Questions

Because of the contentious nature of conversation surrounding state merit aid programs, it is important for policy researchers and scholars to provide conceptually solid explanation on how merit aid programs can affect educational outcomes and generate rigorous empirical evidence to demonstrate the effects of such programs. Moreover, researchers and scholars should periodically reexamine their own work and think more critically about the implications of their research. Thus, the purposes of this chapter are multifaceted. First, we synthesize the existing literature and research on the effects of state merit aid programs on educational outcomes in the policy states and individual student decisions in higher education. The following two questions guide the organization of the evidence: Do merit aid programs serve the interests of policy states? How do merit aid programs affect student decisions and related outcomes? Second, we consider the broad context facing American higher education and broaden the conversation of the role of state merit aid programs from a national perspective. The question that guides our critique is: do state merit aid programs help achieve the national educational attainment goal and national interest in international competitiveness? Third, given the nature of state merit aid programs as high-profile policy initiatives and the heightened emphasis on the rigor of policy research, we discuss the theories that can help us understand how merit aid programs could affect student outcomes in higher education. Specifically, what can we learn from existing theories on whether and how state merit aid programs may affect educational outcomes? Fourth, to improve our understanding of the effects of state merit aid programs, inquiry methods certainly are critical to the credibility and trustworthiness of research findings. Thus, we discuss the methodological issues related to research on state merit aid programs. The guiding question is: how different inquiry methods can help us understand the effects of state merit aid programs? Finally, we explore the areas that more research can be valuable and propose the directions for future research related to state merit aid programs. That is, which topical areas could be fruitful for researchers and scholars to further explore in order to help develop a greater understanding of the effects of state merit aid programs?

Effects on Educational Outcomes in Policy States

Commonly mentioned purposes of state merit aid programs are: (1) Promoting college access to the residents in the state; (2) Retaining the best and brightest students in the state; and (3) Incentivizing students to work harder for academic excellence (Cohen-Vogel et al. 2008; Heller 2004). To assess whether state merit aid programs achieve such goals, researchers and scholars can provide answers by analyzing aggregate data, among which the most important are data from the Integrated Postsecondary Education Data System (IPEDS) or US Census data. Research in this area has primarily focused on three state-level outcomes: college enrollment, college degree attainment, and migration of college students.

Effects on College Enrollment

Since state merit aid programs are still relatively recent policy innovations, much of the research on enrollment effects has been limited either to single-state studies most often of Georgia's HOPE program or to studies of the southeast region. In studying college enrollment, one must make distinctions between college enrollment in a merit aid state and college enrollment of residents from that state. If we take Georgia as an example, the former consists of all students who are enrolled at postsecondary institutions in Georgia regardless of their states of residence, while the latter includes all Georgia resident students who are enrolled at any postsecondary institution in the United States. Although studies along this line have shown large and significant effects of merit aid programs on both measures of college enrollment, their differences are important as they have different policy implications.

Treating Georgia's HOPE program as a natural experiment, Cornwell et al. (2006b) compared college enrollment data from IPEDS between 1988 and 1997 (i.e., 5 years before and after the policy implementation) in the state of Georgia with those in other states of the Southern Regional Educational Board. Their difference-in-difference estimates suggest that the HOPE increased total freshmen enrollment by about 6% following the adoption of the program. It is noteworthy that this 6% growth in freshmen enrollment does not represent the net gain of college enrollment by Georgia residents because it includes those students who would have attended out-of-state institutions without the merit aid. In fact, their subsequent analyses using IPEDS freshmen migration data suggest that the majority of this increase is due to reduced out-migration of resident students from Georgia.

Dynarski (2000) used data from October Current Population Survey from 1989 to 1997 to estimate the net gain of college enrollment by Georgia residents. Since CPS data provided information on an individual's state of residence but not on where he or she attended college, estimates based on these data represented the effect of HOPE on college enrollment for Georgia residents, regardless of the location of college enrollment. Again, using difference-in-difference technique to com-

pare college enrollment by Georgia residents with those by residents from other states, this study found roughly a 7–8% enrollment increase by Georgia residents as a result of the HOPE Scholarship program. Dynarski (2004) expanded this early analysis in an evaluation of the effect of state merit aid programs in seven states; the results showed that these programs typically increased the college enrollment by 5–7%.

Despite the difference in the definition of college enrollment, studies along this line have shown large and significant effects of merit aid programs on college enrollment. Furthermore, these studies have also shown that the largest enrollment growth has occurred at public four-year institutions. In fact, Dynarski (2004) suggested that Georgia's HOPE scholarship "appears to push more students out of two-year, public institutions than it pulls in" (p. 79), resulting in a net drop of student enrollment in two-year institutions, while the enrollment in four-year institutions increases. This pattern reflects that merit aid programs can have effects on student choice of institutions for college education.

Effects on College Degree Attainment

Growth in college enrollment is important because college participation is the critical first step in college education; however, increased college enrollment in those merit aid states does not guarantee improved degree attainment. On one hand, the average six-year college graduation rate at all four-year colleges and universities in the United States is slightly over 50%. Many merit aid students lose their financial support while in college, especially in science, engineering, and computing fields where maintaining good academic standing is challenging (Dee and Jackson 1999). On the other hand, these merit aid programs might improve student persistence through college. Consequently, the impact of these merit aid programs on college degree attainment could be higher or lower than on college enrollment. Without degree attainment, college education in the form of college credits still matters, but much less so (Jaeger and Page 1996; Kane and Rouse 1995). Perhaps for this reason, the focus of public policies in higher education has shifted in recent years from college participation to college persistence and degree attainment.

Similarly, in studying college enrollment, one must make distinctions between degree production by postsecondary institutions in a merit aid state and degree attainment of residents from that state. If we take Georgia as an example, degrees awarded by postsecondary institutions located in Georgia could be obtained by both Georgia residents and nonresident students who attend colleges in Georgia. Similarly, residents of Georgia may obtain their college degrees from postsecondary institutions in Georgia or elsewhere in the United States.

Treating Georgia's HOPE program and Florida's Bright Future program as natural experiments, Zhang (2011) compared degree completion data from IPEDS in these two states and with those in other states of the SREB. Results suggest that the HOPE program increased four-year degree production at Georgia institutions

by about 3–4% and at Florida institutions by about 11%. Considering that the increase in freshmen enrollment in Georgia is estimated at about 6% (Cornwell et al. 2006b) and in Florida at more than 20% (Zhang and Ness 2010), it appears that the increase in degree production is lower than the increases of freshmen enrollment. More importantly, the growth has occurred in both STEM and non-STEM disciplines. In Georgia, the number of STEM degrees has increased by about 5–7% and non-STEM degrees by 1–4%, depending on comparison groups and model specifications. The growth is even larger in Florida, with about 10–13% for STEM degrees and 11–13% for non-STEM degrees. Both the public and private sectors have experienced growth in the number of STEM degrees conferred, although the growth is uneven. The positive effect of state merit aid programs on STEM degree production is consistent with the effect of these programs on enrollment and the academic quality of students who are attending in-state institutions. Since data on degree production by institutions are not available by status of residence, it is difficult to know whether these merit aid programs have increased or decreased overall STEM degree production by their resident students. However, at least from a state perspective, these merit aid programs are quite effective in retaining the best and bright and improving their degree production in both STEM and non-STEM fields.

Dynarski (2008) used data from the 2000 Census 1% public use microdata sample (PUMS) to examine the impact of state merit aid programs on degree attainment by their residents. Because an individual's residence state could change over time and could be a function of these programs, state of birth was used as the identification strategy. After comparing similar age cohorts between merit aid states (Arkansas and Georgia) and the rest of the United States, Dynarski (2008) found that the share of the population with college degrees (including both associate and bachelor degrees) who were born in these two states increased by 2.98 percentage points after implementation of these policies. This is a quite large increase considering that the base share of college attainment in these two states before policy implementation is about 27%.

Effects on Migration of College Students

Because one of the main policy goals for these merit aid states has been to retain the best and brightest students to attend in-state colleges and universities with the hope that they will enter the state's workforce after college graduation, it is important to evaluate whether these programs have been successful in stemming the brain drain. From a national perspective, because the net gain of college enrollment for those merit aid states is a function of both increased college enrollment in their home states and (presumably) decreased college enrollment of their resident students in other states, it is important to examine to what extent these programs are successful in boosting the net college enrollment. For example, if these programs increase college enrollment in their home states simply by reducing the out-migration of

their resident students, these programs will not improve college attainment from a national perspective.

Empirical evidence on student migration suggests that these programs have been quite successful in stanching the brain drain from those merit aid states. Dynarski (2004) found that immediately after the establishment of these programs, enrollment in border state colleges, defined as postsecondary institutions located near the border in neighboring states, was reduced by 3.4%. Cornwell et al. (2006b) also found strong evidence of HOPE reducing the migration of Georgia high school graduates to out-of-state institutions. Using the IPEDS data and examining the unique effects of state merit aid programs and the combined effects of merit aid with other state policies, Orsuwan and Heck (2009) found that state merit aid programs affect first-year college student interstate migration in a way that students in states with merit aid programs are less likely to migrate out.

In a more recent study, Zhang and Ness (2010) conducted a systematic analysis on the effect of merit aid programs on student migration in 14 merit aid states. They distinguished stayers who attended colleges in their home states and leavers who attended colleges elsewhere. Their results suggested that state merit aid programs indeed stanching the migration of the best and brightest students to other states. In the aggregate and on average, the implementation of state merit aid programs boosted resident college enrollment in these states by about 10% and decreased the number of resident students from these states who attend out-of-state institutions by about 10%. However, there was a great deal of variation across states and across types of institutions. These variations appeared to be related to differences in eligibility criteria and award amount across states. In addition, it appears that the largest increased stayer enrollment and decreased leaver enrollment have occurred in research and doctoral institutions, suggesting that these programs have been quite successful in retaining the best and brightest students in state.

Results in Zhang and Ness (2010) provide an important tool to simulate the impact of merit aid programs on different enrollment types. For example, a typical state has 70% resident enrollment and 30% nonresident enrollment. After the introduction of merit-based aid program, the resident enrollment increases by about 10%, from 70 to 77. At the same time, student out-migration decreases by 10%, from 30 to 27. In other words, although the college enrollment in this policy state has increased by 7 percentage points (assuming that the nonresident enrollment at this state does not change), the net increase of college enrollment of its residents only increases by 4 percentage points because about 3 percentage points in college enrollment is due to reduced out-migration.

These studies deal solely with student migration for postsecondary education enrollment and do not address where students will reside upon graduating from college. However, many state merit aid programs explicitly aim to enhance the state's workforce as a means to generate economic development. Although it is unclear whether these state merit aid programs encourage college graduates to stay in their home states or not, limited empirical evidence in this area suggests that students attending college in-state are more likely to remain in-state post graduation than students who attend college out-of-state are to return to their home state. For ex-

ample, Perry (2001) uses Baccalaureate and Beyond data and finds that 84% of students attending college in-state remain in the state after graduation compared to 64% of students attending out-of-state institutions who return to their home state. In another study that tracks students 10 and 20 years post graduation, Groen (2004) finds a roughly 10 percentage point increase of home state residence post graduation among students attending in-state colleges as compared to students attending college elsewhere.

Effects on Educational Outcomes for Students

To understand the effects of merit aid programs on individual students, we utilize the “choice construct” proposed by St. John et al. (2001) to organize the empirical evidence. The student choice construct starts with two core propositions: (1) Students make their educational choices within the situated contexts of their life experiences, including their family lives, community members, schools, and dreams, which all influence their choices; (2) There is a sequence in student choice process, where initial choices influencing subsequent decisions. Specifically, the choice sequence in understanding policy effects on individual students include the critical junctures in student educational attainment process: Academic preparation for college, educational aspiration to go to college, opportunity to attend college (access), the choice of college to attend, choice of major field of study in college, persistence and graduation from college, and possibly the decision for graduate education and choice of occupations after graduation.

The majority of the research on financial aid awards has consistently indicated that financial aid subsidies improve college attendance, persistence, and degree completion rates (Heller 1997; Hu and St. John 2001; Leslie and Brinkman 1987; St. John 2003) with cost and preparation being two of the most common and critical barriers to college degree attainment identified by previous research (Cornwell et al. 2006b; St. John 2003). Furthermore, financial aid awards can help students to “upgrade” their college choice options (Hoxby 2004; Hu and Hossler 2000). That is, students who received financial aid awards are more likely to attend higher priced or more selective colleges and universities (Hoxby 2004; Hu and Hossler 2000; McPherson and Shapiro 1998). Most of the research on how state merit aid programs affect individual student outcomes is, not surprisingly, from the studies on Georgia’s HOPE program and Florida’s Bright Futures programs and a few others.

Effects on Student Academic Preparation

Some researchers found that state merit aid programs improved student performance in K-12 education and increased student motivation to improve academic preparation (Henry and Rubenstein 2002). Research conducted by Harkreader et al. (2008)

suggested that while low-income and minority high school graduates in Florida were overall less likely to receive a Bright Futures scholarship, or take preparatory courses, the test scores of individuals in these groups did improve with each successive graduation cohort. This was measured by the percentage of students taking college prep classes increased from 53.5% in 1997 to 67.2% in 2001. Similarly, the overall percentage of students eligible to receive a Bright Futures Scholarship increased from 20.1% in 1997 to 29.3% in 2001 (Harkreader et al. 2008). Similar findings have been reported in Cornwell and Mustard (2002) which reported that the SAT scores of college freshmen had risen by approximately 35 points over a 10-year period (1988–1998) bringing Georgia’s average SAT scores into alignment with the national average.

Henry et al. (2004) discovered increases in levels of student performance on both individual student SAT scores and high school GPAs. They also found that students receiving HOPE scholarships outperform their peers in several significant ways with performance boosts found even among borderline HOPE scholars, by earning an average 50 more credits, than their peers, over a four-year period (Henry et al. 2004). These findings were a major factor in Tennessee’s decision to lower the standards and enabling “less qualified” students earning a GPA of 2.75 to have access to HOPE Access grants when it established its HOPE scholarship program in 2003 (Heller and Marin 2004). Later studies by Cornwell and Mustard (2006) found that the requirements of HOPE scholarships have encouraged students to withdraw from courses in which they perform poorly lowering the likelihood of a full load program by 9.3%, and shift to more summer courses (Cornwell and Mustard 2006); and while there has been considerable debate on this issue over how these changes initiated by merit-based aid programs have affected student “college experiences,” the end results are generally positive with students showing higher levels of persistence, earning more college credits, and maintaining higher college GPA’s (Henry et al. 2004).

Some worry about the uneven qualification rates for state merit aid programs given that low-income and minority students are less likely to take college preparatory courses and have lower college completion rates (Heller and Marin 2002), which means that the programs are more likely to support the academic efforts of wealthy, White and middle-upper class families. This issue is exasperated by the fact that African Americans as a group score lower on the SAT, putting them at a disadvantage when seeking admission to top universities as the SAT scores are one of the main criteria for admission to these institutions (Cornwell and Mustard 2003). These positions are supported by the fact that merit-based programs have regressive effects, meaning that scholastic funding from lottery programs that are disproportionately supported by low-income groups (Binder et al. 2002; Dynarski 2004).

The side effect of increasing SAT scores and student GPAs is that merit-based scholarship programs are facing an increasing number of qualified students applying for these scholarships, which has outpaced the states’ ability to fund these programs. In terms of the dollars disbursed and students served, Cornwell and Mustard (2001) found that the HOPE scholarship program in Georgia was roughly twice as

large as the need-based federal Pell Grant funding allocated in the state. While the actual number of HOPE awards has been evenly divided between HOPE scholarships and HOPE grants, HOPE scholarships account for nearly 80% of all aid disbursed—and given the differential tuition costs between four- and two-year institutions with four-year public institutions absorbing 77% of all scholarship aid and private colleges accounting for 12.5% of aid—this leaves very little for community colleges (Cornwell and Mustard 2001).

Effects on Student Access

Another issue commonly addressed when describing merit aid programs is the desire to improve college access, which is defined by a process where traditionally disadvantaged students are given an increasing opportunities to obtain higher education. Statistical reports indicate that only 29% of citizens aged 25 to 29 years old, had completed four or more years of college in 2002. Thus, there are strong theoretical and policy rationales to examine how merit aid programs affect educational outcomes for students of different background characteristics. Statistics presented by researchers indicates that a majority of the students benefiting from merit aid programs are White, upper-middle-class students, given the high eligibility requirements for merit aid programs (Heller and Marin 2002).

Even though there are quite forceful arguments about the possible unequal effects of state merit aid programs on the probability of receiving merit aid scholarships, the examination on the effects of state merit aid programs on educational decisions for students of different backgrounds is still scarce. Binder et al. (2002) found New Mexico's program had somewhat stronger positive effects on access and persistence of Native American students. A study based on student perception in Tennessee indicates that students from disadvantaged groups tend to consider merit aid programs had larger effects on their opportunity to enroll in colleges and universities (Ness 2008).

Dynarski (2004) used aggregate data to examine the enrollment effects of state merit aid programs on students of different backgrounds. She found that even though state merit aid programs tend to narrow the enrollment gaps in Florida, Arkansas, and Mississippi, Georgia's HOPE program appears to be an outlier whereby the program enlarged the enrollment gaps between White students and African-American and Hispanic students. However, Cornwell and Mustard (2002) found that after Georgia's HOPE scholarship program was established, the percentage of African-American students enrolling in public, four-year institutions rose by 21% and 16% at private colleges between 1993 and 1997, exceeding the gains of White enrollments, of 5% and 12%. During a recent study examining the effects of HOPE scholarships on enrollment by race, they found that the scholarship increased White enrollment by only about 3.6% but boosted the enrollment of African-American students by about 15% (Cornwell and Mustard 2006). It is worth noting that Dynarski (2004) and Cornwell and Mustard (2002, 2006) used different types of data

(state administrative data vs. Census data) and examined different aspects of the effects of the HOPE program. As Dynarski (2002) suggested, her study was about any student from Georgia enrolled in any college, while Cornwell and Mustard (2002, 2006) examined student enrollment in Georgia's colleges and universities. Thus, HOPE program may have sizeable effects on student migration across the state border in the way that minority students tend to more likely attend in-state colleges due to the HOPE program.

Some researchers were worried that Georgia's higher education system may become less diverse as a significant portion (45%) of all African-American students is enrolled in one of the state's HBCUs (Cornwell and Mustard 2006). This becomes an issue because any enrollment gains that have occurred since the HOPE scholarship program was initiated primarily occurred at less selective institutions (like the HBCUs) and not at the flagship institutions like Georgia Tech or the University of Georgia (Cornwell and Mustard 2002). This is because increases in SAT math (9.4 points) and verbal scores (14.3 points) encouraged the top institutions to become more selective with their applicants, exacerbating the stratification of enrollment by student quality (Cornwell and Mustard 2006). Some suggested that the primary role of Georgia's HOPE Scholarship has been to influence where, not whether, students attend college because 96% of the students would have enrolled in college without the program (Cornwell and Mustard 2003).

Effects on Student College Choice

College choice on the other hand refers to the increased opportunity of all students to attend the institution they select. On this issue, merit aid scholarship programs have had a significant effect, with multiple studies finding that students are more likely to attend a four-year university program rather than a two-year college when receiving a scholarship (Cornwell et al. 2006b; Doyle 2010). The choice of college, or which colleges are viable options, has become an important yet largely shadowed topic in public policy discourse in the United States. In a book on the economics of college choices, Hoxby (2004) argued that future public policies could have more substantial effects on educational outcomes if the focus of the policy is on where students go to college and who goes where to college. She contended that although college access has historical policy significance, the current status in American higher education leaves little room for policy makers to have substantial impact in the area of college access. Instead, the college choices made by a diverse student population can be an area for policymakers to play a significant role that can help broaden postsecondary opportunities for individual students and level the playground for students of different backgrounds in choosing their college destinations (Hoxby 2004).

Research findings suggest that merit-based scholarships offer students with more potential career opportunities as empirical research has indicated that attending different types of colleges confers different benefits to students (Zhang 2005). Fur-

thermore, attending different types of postsecondary institutions (i.e., institutional selectivity) can also influence students' eventual success in college (Melguizo 2008, 2010). Therefore the proliferation of merit-based scholarships, may force states to compete against each another to retain/obtain the "best" students by using these scholarships to motivate institutions that may be less attractive to them if not for the scholarships (Cornwell and Mustard 2006).

The size and scope of the merit-based scholarships have had a pronounced effect on student attendance patterns, further increasing the likelihood that students will enroll in an in-state institution. For example, the state of Florida provided \$ 346 million in Bright Futures Scholarships to over 149,000 students in the 2006–2007 fiscal year (Florida Department of Education 2008). As a result, the overall percentage of Florida high school graduates enrolling in out-of-state institutions has declined from 9.8% in 1997 to 7.2% in 2001 (Harkreader et al. 2008). Similar results were outlined in Dynarski's study (2004) finding that immediately after the establishment of Georgia's HOPE scholarship program, enrollment in border state colleges, defined as postsecondary institutions located near the border in neighboring states was reduced by 3.4%. In addition to affecting student choice of in-state versus out-of-state institutions, state merit aid can also affect students' choice of different types of institutions. For example, Dynarski (2004) found that students appear to be more likely to attend four-year institutions in Georgia after the implementation of the HOPE scholarship program. In a study on New Mexico's merit aid program, Binder et al. (2002) also found that New Mexico's program affect student's choice of colleges in the way that students were more likely to attend in-state institutions and more likely to go to four-year institutions, even though the program did not appear to generate additional college enrollment.

Effects on Choice of STEM Fields

There is only limited indirect evidence on the effects of merit aid programs on students' STEM educational decisions (Cornwell et al. 2005, 2006a; Hu 2008; St. John and Hu 2006b). Economists treat student choice as an investment decision by which students consider both the costs and benefits associated with their choice (Becker 1994; Leslie and Brinkman 1988; Montmarquette et al. 2002; St. John 2003). Merit aid programs then could affect student decisions by affecting the costs of college education for the aid recipients. As Delaney (2007) suggested, merit aid scholarships provided subsidies for students to choose "high-risk" fields such as the STEM fields. As a result, merit aid could help increase the likelihood of choosing STEM fields by students. However, some scholars suggest otherwise, particularly in the literature related to college grading practices (Hu 2005; Johnson 2003). After reviewing the literature on college grading practices, Hu (2005) suggested that merit aid programs based on college grades could function as financial disincentives for students to choose degree programs in STEM fields due to the fact that grading policies in STEM fields tend to be more stringent. For example, a study of

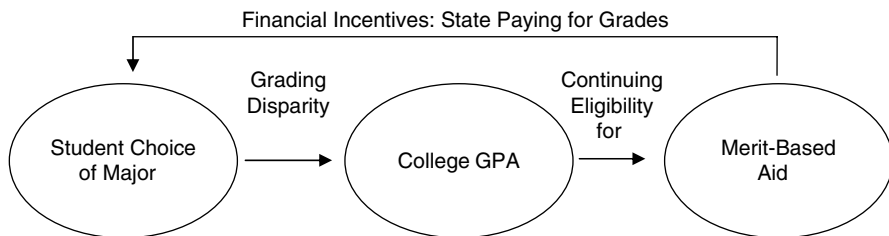


Fig. 6.2 Possible mechanism that merit-based aid could affect student choice of major fields. (Source: Hu 2008)

Georgia's student-record data indicated that freshmen and sophomores completed roughly 1.2 fewer math and science core-curriculum credits than their peers (Cornwell and Mustard 2006). Essentially, students could be encouraged to withdraw from the more difficult courses if they are performing poorly, in order to fulfill the GPA requirements of the scholarship program. By necessity students who withdraw must increase their summer course when grades are generally higher, "even though the typical summer-school enrollee has a lower SAT score and high school GPA" (Cornwell and Mustard 2006, p. 36). In addition, Cornwell and Mustard (2006) present evidence that suggests HOPE scholarship programs have increased the likelihood of a typical freshman choosing an education major by 1.2%, with the percentages for women and White students being even higher. The scholarship's influence on declared majors is potentially costly because earnings are so closely tied to that choice (Cornwell and Mustard 2006). Research conducted by Cornwell et al. (2005, 2006a) and Hu (2008) provided some evidence that the renewal rules of merit aid programs could affect student choice and course load requirements of college major. However, from the limited literature, it is still inconclusive how merit aid programs could affect individual decisions in STEM education.

Using data from the state of Florida, Hu (2008) found that receiving a Bright Futures award was associated with higher level of probability to be enrolled in a baccalaureate degree program in science and engineering, but there was a significant drop in student enrollment in science and engineering baccalaureate degree programs after the implementation of the Bright Futures program, as indicated in the comparison of student data from the two time periods before and after the program. In combination, these findings on the one hand suggest that the financial aid such as the Bright Futures could function as price subsidies on students and could encourage students to choose more "risky" fields such as the STEM, consistent with findings from other studies on merit aid programs (Delaney 2007; St. John and Hu 2006b). This can be part of the reasons that aid recipients were more likely to enroll in the STEM degree programs. On the other hand, because college grades in all fields are treated equally in the merit aid award renewal criteria, there is a negative influence on all students in their decisions to enroll in the STEM programs, aid recipients and nonrecipients alike. This possibility can be illustrated in Fig. 6.2. Other researchers also found some evidence that students did adopt some strategies to protect their eligibility to merit aid scholarships. In another study on Florida's students, Zhang et al. (2006)

found that students strategize their college load and major fields to manipulate college GPAs to remain eligible to merit aid scholarship, and this phenomenon is more pronounced to students whose college grades are close to the eligibility cut-off point.

Effects on Student Persistence

In the public policy arena, student persistence has almost become synonymous with student success (Kuh et al. 2007). A dozen state merit aid programs have eligibility criteria that are lenient enough that more than 30% of high school seniors qualify (Dynarski 2008), but to help students benefit fully from postsecondary opportunity, college access alone cannot accomplish it because the economic benefits of college education largely depend on student degree completion (Jaeger and Page 1996; Pascarella and Terenzini 2005). That is, “access” to postsecondary education does not necessarily coincide with student persistence, especially given that the college graduation rate has been just around 50% for decades in the United States (Kuh et al. 2005). As a result one question that is common in the minds of public policy makers and institutional administrators is: How can the educational system effectively promote student success in college?

Cornwell et al. (2005) found that students were actually less likely to complete a full course load at the University of Georgia after the HOPE scholarship program was initiated. Similarly, Scott-Clayton (2009) found that merit aid recipients in West Virginia were nearly 25% more likely to complete 30 credits during their freshman year. Using the 2000 Census data, Dynarski (2008) estimated the impact of the HOPE scholarship on persistence rate indirectly and found that the program reduced the dropout rate by 3–5 percentage points.

As previously described, research of merit-based aid programs have concluded with the findings that cost and preparation are the two most critical barriers affecting college persistence (Cornwell et al. 2006a, b; St. John 2003). The size and scope of these awards provide many students with the necessary funding to ensure their pursuit of a college degree is not limited by financial risk or instability, given that research has consistently indicated that financial aid subsidies improve college attendance, persistence, and degree completion rates (Heller 1997; Hu and St. John 2001; Leslie and Brinkman 1987; St. John 2003), as students enrolled in these programs face higher levels of persistence, earning more college credits, and maintaining higher college GPAs when compared with their peers (Henry et al. 2004).

State Merit Aid Programs and National Interests

In the public policy arena related to higher education, educational attainment in general and degree production in Science, Technology, Engineering, and Mathematics (commonly known as the STEM fields) in particular are undoubtedly two of the

most important issues. The arrival of age of knowledge economy has made college education a necessity toward decent employment in a new economy. Meanwhile, as globalization in the world economy is deepening and international competition is intensifying, the quantity and quality of human capital in the fields of STEM has become necessary for Americans to maintain its historical edge in a new world order (Clotfelter 2010). It is with this understanding that we think it is not only useful but also necessary to broaden the perspectives in discussing the effects of state merit aid programs. Even though state merit aid programs are policies and programs initiated and sponsored by the states, the examination of such programs have to be based on broader perspectives. Granted, it is important to understand merit aid programs from the policy perspectives, and the interests, of the states, it is also valuable and important to consider the implications for the country as a whole in achieving its educational attainment goal and the goal of training a workforce with strong STEM preparation.

State Merit Aid Programs and Educational Attainment

The landscape of American higher education is changing dramatically as an increasingly diverse population gets ready to go to college. Meanwhile, the intensified global competition demands more Americans to acquire higher level of education. While it is critical to provide access to higher education for American citizens, it is also important to recognize the importance of the choice of college and success in college. The United States has been leading the world in percentage of population with more than a high school education mostly throughout the twentieth century, but can no longer claim this distinction. The statistics from the Organization for Economic Cooperation and Development (OECD) show the United States is trailing several other countries in the percentage of population ages 25–34 having attained “tertiary” education (2005). It has now become a clear policy priority related to higher education in the United States to ensure more students graduate from college. President Obama—as well as some prominent foundations including the Lumina Foundation for Education and the Bill & Melinda Gates Foundation (Ashburn 2010; Gonzalez 2010; Hebel 2009)—has repeatedly called for a dramatic increase of college degree completion rates to meet the need of economic development and international competition.

Because the primary interest of state merit aid programs is to meet the needs of the states, it is not surprising that many evaluative studies focused on whether such programs meet the state policy goals in retaining the best and brightest students (Zhang and Ness 2010). However, given the need to increase the number of college graduates in the United States as a national goal, it is important to examine the efficacy of the policy from a national perspective as well. That is, it is important to evaluate state merit aid programs from both the state and national perspectives.

To better understand the impact of state merit aid programs, two different yet related outcomes can be adopted: The degree production in the state that adopted

the policy and educational decisions of individual students. The former outcome has direct policy implications to the state and the latter outcome has implication to the individual student and ultimately the country as a whole. For policy makers in a state that adopts a merit aid program, they are more concerned about the gain or loss of talents to their state. That is, they are interested in whether the adoption of the merit aid program affects the degree production for the state. If merit aid programs can help retain students attending in-state colleges, as some research suggests (Zhang and Ness 2010), it is a beneficial policy to the state. However, from a national perspective, such an outcome might have limited significance if the policy effect is only about student redistribution across state borders. To see whether such a policy has any impact in meeting the national goal, it is more important to understand whether the adoption of merit aid programs by the states affects the decision of individual students in their choice of college (other than in-state versus out-of-state) and eventual attainment of college degrees. Interstate migration of students has little bearing on the overall degree production in the country whereas individual student decisions related to college choice and persistence do. Unfortunately, there is a lack of explicit consideration of state merit aid policy from the national perspective. Most of the research to date is to evaluate the loss or gain of talent from the state perspectives, mostly using aggregated data (Zhang and Ness 2010). While it is certainly a valuable undertaking, it does not help to develop a comprehensive understanding of such programs, particularly from a national perspective. What is called for is a comprehensive analysis of state aggregated data and student record data to deepen our understanding of the effects of state merit aid programs in meeting the needs of the states and the nation.

State Merit Aid Programs in STEM Workforce Preparation

For over a half century, the United States has led the way in scientific discoveries and the application of new knowledge to scientific advancement, as well as in business and industry worldwide (Geiger 2004). However, in the last few years, other countries have caught up to and have eventually surpassed the United States in the international rankings. The 2006 Science and Engineering Indicators (National Science Board 2006) show the US ranking on several indicators has been matched or surpassed by other countries.

The state of undergraduate education in the STEM fields is also in decline. The United States ranks 32nd out of 90 countries in the number of natural science and engineering degrees per 100 degrees awarded among 24-year olds—with just 6 out of 100 students completing such degrees (National Science Board 2006). These figures are complicated by the fact that there are more women than men in college. Clearly, more students, especially women and minorities, must be encouraged to seek degrees in the STEM fields in order for the United States to maintain a competitive edge with the rest of the world. International competition has intensified

with the coming of the age of globalization, and science and engineering education is essential to a sustainable national economic development and global competitiveness (National Commission on the Future of Higher Education 2006; National Science Board 2006).

State merit aid programs provide strong financial incentives to eligible students in the form of scholarship awards. The awards are based on student academic achievement and performance in the initial qualification stage and eventual renewal considerations, as well as a student's decision to stay in state or pursue education in another state. Such financial incentive and eligibility criteria, along with the disparity in college grading practices across the major fields (Hu 2005; Sabot and Wakeman-Linn 1991), could conceivably influence student decisions on whether or not to choose the STEM fields and persist in those fields in college. However, there has been little effort to examine such influences. With the increasing popularity of merit aid programs in state policy arena (Cohen-Vogel et al. 2008), it is critical to examine whether and to what extent state merit aid programs could affect the outcomes in STEM fields for individual students and the state and the country as a whole.

To understand the impact of state merit aid programs, two different yet related outcomes in STEM education can be adopted to develop a better policy perspective: The STEM degree production in the states that have adopted the policy and the educational decisions of individual students. The former outcome has direct policy implications to the state, and the latter outcome has implications to individual students and ultimately the country as a whole.

For policymakers in a state that adopts a merit aid program, they are more concerned about the gain or loss of talents to their state. In terms of STEM education outcomes, they would be interested in knowing whether the adoption of the merit aid program affects the STEM degree production in the state. Studies on the HOPE program indicated that HOPE helped increase student enrollment and reduce student migration to out-of-state colleges and universities (Cornwell et al. 2006a, b; Dynarski 2000, 2004). Because students with higher-level academic preparation are more likely to choose STEM fields than counterparts with lower academic preparation (Xie and Shauman 2003), merit aid programs could help increase STEM degree production in the state by retaining high-performing students. However, whether it is a net gain or loss of STEM talents by the state also depends on the choice of and degree attainment in the STEM fields by individual students who would not have left their home state even without the merit aid program. Therefore, the outcome of degree production in the STEM fields in the state is a combination of student redistribution across state borders and individual student choices of STEM fields.

From a national perspective, it is more important to understand whether the adoption of merit aid programs by the states affects the decisions of individual students in their choice of STEM majors and eventual attainment of STEM degrees. Interstate migration of students has little bearing on the overall STEM degree production in the country, whereas individual student decisions related to STEM fields

do. Thus, there are two aspects in understanding the effects of merit aid programs on STEM education outcomes: (1) The “redistribution” aspect—that merit aid programs could affect student decisions of obtaining college education in-state or out-of-state, which could subsequently influence the STEM education outcomes for the state; and (2) The “choice” aspect—that merit aid programs could affect individual choice of STEM fields and eventual degree attainment. For the state, if there are more students choosing to attain STEM degrees, whether through “redistribution” or “choice,” merit aid programs benefit the state in STEM degree production. For the country as a whole, the “choice” aspect has much more bearing, while the “redistribution” aspect has little consequence. Whether the interests of the states and the country as a whole converge or diverge depends on the policy effects on student STEM educational outcomes.

Summary

State merit aid programs in general do not have very complicated policy configurations. However, because of the policy values embedded in those programs and the competition of policy values such as equity, efficiency, excellence, and fraternity in American society (Fowler 2000), the conversations surrounding those programs are intense and contentious. Also, because those programs are initiated and financed by states, the examination of the effects of those programs tended to be focused on state interests. Even though it makes sense to evaluate the “gains” and “losses” from the standpoint of the policy states, such types of studies essentially pit one state’s interests against others. In other words, it is about an “arms race” of talents among states. Such phenomenon clearly has policy importance to the states, but the implications for individual students and the country as a whole are unclear. Perhaps such programs instead have some “externality” from student redistribution among different types of higher education institutions (McPherson and Schapiro 1994) because most of the talents would concentrate in a limited number of highly prestigious colleges and universities if without such programs, but tangible evidence beyond state interests is close to nonexistent.

We argue that a comprehensive understanding of the effects of state merit aid programs should consider a wide range of outcomes from the perspectives of the states, individual students, and the country as a whole. The educational outcomes for the policy states will likely depend on the effects of state merit aid programs on student migration across state borders and their eventual decisions and the effects of such programs on individual decisions for those students who would have stayed in state regardless of state merit aid programs. It is useful to differentiate those effects and distill clearer policy implications for individual students, states, and the country as a whole.

Theoretical Issues in Studying the Effects of State Merit Aid Programs

The key feature of state merit aid programs is financial awards to students who demonstrate merits as reflected in academic achievement in course work, performance in academic assessment, and/or standardized tests such as SAT or ACT (Table 6.1). The states expect that such a mechanism can incentivize students to put more effort into academic work and achieve academic excellence, can help retain the best and brightest students in state, and can promote higher education opportunity for state residents (Heller 2004; Zhang and Ness 2010). That is, central to state policy goals is to use financial awards to improve student educational performance and attainment and to increase the stock of college-educated labor force for the state. In the following section, we review the common theoretical perspectives used by researchers in dealing with state merit aid programs and some other potential useful theories overlooked in studying those programs.

Economic Perspective

Economics as a discipline has exerted enormous influence on research in higher education, especially on studies of college choice and persistence. The economic demand theory and human capital theory are the foundations of economic modeling on student postsecondary decisions (Chen 2008; Hossler et al. 2009; Perna 2006, 2010).

The economic demand theory suggested that the quantity of a good or service an individual demands is a function of the monetary income of the individual, the price of the good or service, prices of alternative good or service, and individual tastes or preferences. Human capital theory, on the other hand, provided the basis for considering higher education as an investment, by which educational recipients would enjoy economic returns from their investment in education. The concurrent views coming from human capital and student demand theories for student postsecondary education are as follows: (1) higher education is a wise investment for individuals because college graduates can earn enough to offset the expense of attending college in addition to the forgone earnings due to the delayed entrance into the labor market, that is, the opportunity costs; and (2) student demand for higher education is related to college tuition prices and financial aid because tuition prices and financial aid ultimately influence student utility maximization.

Although there remain some controversies over the effectiveness of student financial aid, existing literature provides relatively sound evidence that financial aid can encourage college access and persistence in higher education, and the effects vary depending on student backgrounds and the configuration of the financial aid programs (Chen 2008; St. John et al. 2011; Perna 2006). Like many other financial supports to students, state merit aid awards provide financial assistance to students

which can change the costs students face when selecting educational programs, which in turn can alter student educational decisions. Not surprisingly, the economic perspectives have been used in existing literature in guiding the studies. Typically from those perspectives, state merit aid awards are considered as financial incentives that could affect student college decisions (Cornwell et al. 2006a, b; Dynarski 2004).

Sociological Perspectives

Sociological perspectives have demonstrated strong powers in explaining phenomena in higher education. Researchers in higher education have used the social capital perspective by Coleman (1988) and cultural capital perspective by Bourdieu (1986), among some other theoretical perspectives, to examine student educational participation and attainment. Both social capital and cultural capital perspectives could help understand who may be more likely to receive merit aid scholarships and why. The niche of those theoretical perspectives in understanding the effects of state merit aid programs, though, needs further exploration. Still, some sociological perspectives may be relevant in the research on the effects of state merit aid programs.

Sociological perspectives on social stratification and inequality in educational opportunity have been used in the discourse of merit aid programs. Those perspectives were mostly adopted in the discussion on the unequal distribution of state merit aid scholarship among students of different backgrounds such as income and racial/ethnic backgrounds (Heller and Marin 2002). As mentioned before, state merit aid programs consider student academic achievement and performance as a key factor in scholarship eligibility. Such a consideration could have differential effects on students of different socioeconomic and racial/ethnic backgrounds because students from low-income and minority backgrounds tend to achieve lower academically (Heller and Marin 2002, 2004). This situation could be exacerbated when the funds from state lottery proceeds are used in state merit aid programs as individuals of disadvantaged backgrounds disproportionately contributed to such funds (Heller and Marin 2002, 2004). Thus, state merit aid programs were considered “a particularly regressive form of redistribution” (Dynarski 2004, p. 93).

Another prominent sociological theory that can be useful in understanding state merit aid programs is the status attainment model (Blau and Duncan 1967). However, existing literature on state merit aid programs has not paid sufficient attention to it. The status attainment model viewed social mobility as a process of status attainment developing through the person’s life history. The process is an interactive one between social environment and individual student characteristics (Hossler et al. 1998), and finally determines the outcome such as educational or occupational attainment.

The logical model proposed by Blau and Duncan (1967) dealt with the interactions among four factors: family background, educational attainment, early occupational status, and current occupational status. They linked current occupational status

with family background, educational attainment, and early occupational status, but also emphasized that each phase of later attainment was a function of previous attainment. Alexander and Eckland (1975) expanded the basic status attainment model by including student academic ability and educational plans. The basic status attainment model was also expanded when attainment was viewed as a dynamic process that traces an individual's movement through the most crucial educational decision points. College access and persistence are among the critical decision points in the chain of the student status attainment process, where family background variables, academic ability, and individual aspirations potentially have influence.

The underlying interpretive views from status attainment models, however, are somewhat different. The critical theorists, such as Bowles and Gintis (1976) and Karabel (1972), argued that educational institutions are structured to serve the interests of the ruling class. Student educational decisions, therefore, are understood not as isolated individual events but as part of a larger process of social stratification, through which the existing educational and social inequalities were perpetuated. Another school of thought advanced the idea of meritocracy in status attainment (Sewell and Hauser 1975). From this view, differences in educational attainment mirrored the differences in individual skills and abilities rather than social status per se, and the social origins of students largely had indirect effects on student attainment mediated by student academic ability and achievement.

The status attainment model is relevant in understanding the role of state merit aid programs in student academic preparation and postsecondary participation. The key concept is academic achievement and whether the financial awards based on academic achievement can mitigate or exacerbate the inequality in postsecondary opportunity. The end outcome of educational attainment for students of different backgrounds likely depends on how different students respond to the financial incentives in their academic effort and educational decisions. However, little research exists on the effects of state merit aid programs on academic effort and achievement by students of different backgrounds.

Psychological Perspectives

Higher education literature on student educational attainment has traditionally been based on the sociological and economic perspectives to understand student decisions regarding higher education. Recent literature synthesis shows a trend toward more multidisciplinary effort. In a synthesis to examine whether financial aid affects student college decisions, Goldrick-Rab et al. (2009) explored some new theories that are pertinent to the understanding of how financial aid may affect student success in college. In particular, they introduced several aspects that should be considered in understanding the role of merit aid student decisions: differences in individual expected returns from education and the importance of time horizon, and the role of risk aversion and loss aversion in individual decision-making process.

Goldrick-Rab et al. (2009) suggested that students from different backgrounds may have very different expected return from their college education, and they could also use different time horizon to calculate the benefits from higher education investment. Thus, even though the interventions are similar, the decision responses could vary largely due to the way individuals make cost-benefit analysis. This reasoning can have implications to state merit aid awards on student decisions, as applicable in research on the effects of other financial aid programs. Moreover, given the risk that students can lose their merit aid awards due to the eligibility criteria based on continuous academic performance, the perspectives of risk aversion and loss aversion become highly relevant in understanding how state merit aid awards could affect student educational decisions. This is particularly true in understanding student choice of course work and major fields. One example is the finding by Dee and Jackson (1999) that students in the disciplines of science, engineering, and computing are more likely to lose their HOPE scholarship in Georgia, a phenomenon that is consistent with the argument by Hu (2005) in his analysis of college grading practices. Thus, the risks of losing merit aid scholarship are not the same for students in different disciplines, and it is reasonable to expect that students would take this into the consideration of their educational decisions (Goldrick-Rab et al. 2009).

Summary

The three theoretical perspectives provide conceptual arguments about the possible effects of state merit aid programs on student educational achievement and attainment. Furthermore, they also offer some insights about some possible unintended consequences given the high stakes embedded in the state merit aid programs where financial awards are contingent upon student continuous academic performance as measured by student GPAs, which could alter student choices as different decisions may imply different risks. Researchers on state merit aid programs can use those theories to frame their studies, and can also explore the utility of other theoretical perspectives such as social capital and cultural capital to understand the effects of merit aid programs.

Methodological Considerations in Evaluating the Effects of State Merit Aid Programs

Educational research could be more valuable if researchers can provide rigorous evidence to demonstrate the causal effects of policies and programs (Brewer et al. 2010). To obtain a “causal” estimate of the effect of state merit aid programs, one would then calculate the difference in the average outcome for students who receive

the treatment versus the same students if they had not received the treatment (the counterfactual). Given that students are not randomly assigned into those programs, researchers have been using different quasi-experimental methods to evaluate these program effects. Two commonly used techniques in this area, namely, difference-in-differences (DD) and regression discontinuity (RD) can help remedy the inferential problems encountered when trying to establish causal effects using observational data (Schneider et al. 2007). In addition, researchers may also benefit from using other research perspectives, including qualitative approaches, to enrich the understanding of the effects of merit aid programs.

Difference-in-Differences (DD)

The DD approach is by far one of the most widely used approaches to evaluate the effects of state merit aid programs. This approach has been used by economists analyzing aggregate data from IPEDS and Census (Dynarski 2004; Zhang and Ness 2010) and state or institutional administrative data (Binder et al. 2002; Cornwell et al. 2006b).

The DD technique is a variation of fixed effects panel data models (Zhang 2010). Since the work by Ashenfelter and Card (1985), the use of DD technique has been increasingly popular, especially in program and policy evaluation research (e.g., Cornwell et al. 2006b; Dynarski 2000). In the simplest set-up, suppose two states are observed for two time periods, with one of the states exposed to a treatment (i.e., the merit aid program) in the second period but not in the first period, while the other not exposed to any treatment in either period. The change between the two periods for the first state (i.e., the treatment group) represents both policy and time effects; and the change between the two periods for the second state (i.e., the control group) represents the time effect. Assuming the time effect is the same for both treatment and control groups, the difference between the above two differences would provide an estimate for the policy effects.

The DD technique is based on two indispensable assumptions. First, there are no other variables/policies that might have affected the outcome variable in the treatment group. Otherwise, the DD estimate will include both the effect of the policy of interest and other variables. If there are time-varying factors that might have affected the outcome, one could control those factors in the empirical model. Second, the time effect is group-invariant. No group-specific factors other than the policy of interest have led to different time trends across groups. Selection of comparable states (i.e., the control group) is crucial because the difference between the before and after period in the comparable states is substituted for the difference between the before and after period in the policy state. In empirical research, different sets of comparable states have been used to check the robustness of DD estimates (e.g., Doyle 2006; Hearn and Griswold 1994; Zhang and Ness 2010).

Regression Discontinuity

A substantial quantity of literature is developed which is centered around the use of RD to examine postsecondary access and educational attainment (Bettinger 2004; Lesik 2006; Trochim 1984; van der Klaauw 2002). RD is a useful technique for situations in which there are specific, measurable criteria for eligibility into a program (van der Klaauw 2002). This is the case for merit aid programs. It is worthwhile to note that the RD design assumes that the students whose eligibility scores are close to the cut-off threshold are very similar, akin to being randomly assigned around this threshold. If we take college persistence as an example, the RD design answers whether the students who are slightly above the eligibility threshold (thus receiving merit aid) are more likely to persist into the next year than those who are slightly below the threshold, holding all other factors constant.

In employing the RD design in quasi-experimental study, one has to attend to the differences of a “sharp” RD design versus a “fuzzy” design. In a “sharp” RD design, the prediction of treated versus untreated is perfect based on test scores. Results from this sharp design can be interpreted as intent-to-treat (ITT) effects, which estimates the effect of providing someone the treatment, regardless whether they choose to participate or not. This certainly might not be the case with a large program such as the Bright Futures. To address the potential issue of noncompliance, a fuzzy RD design is required. This can be accomplished by using an instrumental variable (IV) in the first stage to predict the probability of being treated and then using the predicted probability in the second stage to estimate the effect of actual treatment on the treated. It is noteworthy that different student test scores should be used for different outcome variables. For example, high school GPA and SAT/ACT will be used to examine the effect of a merit aid program on college choice, while college GPA will be used to estimate the effect of such a program on subsequent college persistence and degree completion.

Since the identification of RD technique is based on the difference between the groups above and below the threshold, choosing appropriate bandwidth for RD design becomes critical because it involves balancing between precision and bias. Using a larger bandwidth yields more observations, thus more precise estimates. However, the local linear functional form becomes less accurate with a large bandwidth, leading to biased estimates. Fan and Gijbels (1996) developed an optimal bandwidth in the case of local linear regression.

Another issue related to evaluating the effects of a merit aid program on educational outcome is the potential problem of “gaming” for qualifying for the awards. For example, if college GPA is used in determining the eligibility for students to renew their merit awards, it is possible that faculty members would give out qualifying grades to students who could have not received such grades. In this case, some cautions should be taken to address such a potential problem. McCrary (2008) suggests that if the manipulation is monotonic, that is, if the merit aid program induces changes of the assignment variable in one direction (in this particular case, to make students more likely to qualify for the aid), a discontinuity in the density of the as-

signment variable would raise the question whether its value has been manipulated. This can be done by examining the distribution of observations around the cut-off point. In addition, one has to check whether individuals on either side of the cut-off point are observationally similar. If the manipulation systematically favors certain students (e.g., from certain area and high schools, with certain individual characteristics), one would detect an imbalance of observed covariates at the cut-off point. The alternative is to conduct the regression discontinuity analysis treating these covariates as outcome variables (van der Klaauw 2008).

Although RD is a highly desirable approach to evaluate the effects of state merit aid programs, it is surprising to see few researchers studying state merit aid programs actually used this approach. With the availability of state administrative data on student longitudinal records, RD would be a highly valuable approach for researchers to evaluate the effects of state merit aid programs on student educational decisions and progression in higher education.

Other Research Approaches

Using aggregate data at institutional level or state level can help understand policy effects from a macroperspective, and using student-level data can help understand how such programs affect educational outcomes from a microperspective. It is not surprising that most of policy studies have used existing data to examine the effects of state merit aid programs on a wide range of outcomes including college enrollment and the production of college-educated workforce. However, there are limitations with the use of existing data such as the IPEDS, Census, and state administrative data sets. The data elements there essentially deal with the factual information while do not have measures on student attitudinal aspects, which are important in student decision-making process (Clotfelter and Rothschild 1993).

The use of longitudinal survey of students could help “unpack” the underlying decision process of individual students and shed light on the mechanism for state merit aid programs affecting desirable outcomes. In particular, the threads of survey questions on student attitudes and values and experiences in the academic, social, and financial dimensions can be very valuable. Measures on student attitudes and values can improve the accuracy of modeling on student educational decisions, whereas measures on student experiences can help examine the potential mediating variables in understanding the effects of merit aid on student educational decisions.

Another potential beneficial research approach studying the effects of state merit aid program is the use of qualitative inquiry method. Very few studies on state merit aid program used qualitative methods, with a recent exception of Perna and Steele (2011). Qualitative research approach can help shed new light on effects of state merit aid programs, particularly some unintended consequences. For instance, Perna and Steele (2011) uncovered some unintended consequences of state merit aid programs as reflected in grade inflation and student choice of less rigorous course work due to the concern of losing merit aid scholarships. Qualitative approach can

also provide insights about the roles of parents, students, teachers, and others may play in student educational decisions in merit-aid environments.

Future Direction in Studying State Merit Aid Programs

State merit aid programs have been enacted in around one-third of the states as of now. Researchers in various disciplines have devoted considerable amount of time and energy in studying those programs. Such research effort has generated useful literature base related to the effects of state merit aid programs. Future research effort on the following areas, whether using quantitative or qualitative approaches or a combination, can further advance the understanding of the effects of state merit aid programs.

Attending to the Missing Links in Student Educational Decision Sequence

There is clearly a need to evaluate the effects of various state merit aid programs on educational outcomes such as academic achievement and student access and success in higher education. It is also important to expand the outcomes of interest so that a better understanding of such programs can be developed. First, can merit aid programs affect student educational aspirations? Student education aspiration has long been considered as one of the important juncture in student educational decision sequence (St. John et al. 2001). Abundant research literature shows that student educational aspiration is among one of the most important determinants for student college access and success (Hossler and Stage 1992; Hossler et al. 1998). Previous research on student financial aid indicated that financial aid availability can help remove student concerns on college affordability and enhance student educational aspirations (Hossler et al. 1989; Hossler and Stage 1992; St. John and Hu 2006a).

Another important aspect is to examine whether merit aid programs affect student college experiences and learning outcomes. Higher education literature has consistently pointed to the importance of student experiences in student learning and personal development outcomes (Astin 1993; Pascarella and Terenzini 1991, 2005). Given the increasing use of surveys on college students by colleges and universities such as participation in the National Survey of Student Engagement (NSSE) and Collegiate Learning Assessment (CLA) programs, it is now possible to conduct studies examining whether merit aid programs could affect student experiences in college and outcomes from college. Can merit aid programs affect student effort on academic work? Can merit aid scholarships affect student academic and social experiences and learning outcomes? Answers to those questions can not only

provide answers directly related to the fundamental argument that state merit aid programs can induce students to put forth more effort in the learning process but also have important implications in educational reform aiming to improve the quality of both K-12 and postsecondary education.

Finally, as more and more states develop state longitudinal data systems and enhance capacity to link student record data with information regarding college graduates in the labor market (such as Unemployment Insurance), the opportunity to examine longer-term effects of state merit aid programs is also feasible. One logical question is whether students who received state merit aid scholarships eventually work in the policy states. Another question is the economic returns of state merit aid scholarships to individual students, the states, and the country. The benefits of higher education to individuals and the society have long been the driving force in policy debate on investing in higher education (McMahon 2009), and rigorous evidence of the effects of state merit aid programs on individual in the labor market and the society would certainly enrich the conversation on state merit aid programs.

Recognizing Policy Dynamics and the Complication of Policy Effects

Most of the time, evaluative studies on public policy do not pay sufficient attention to the interactivity of various policy actors and tend to simplify the connection (or lack thereof) between policy intervention and outcomes of interest. This is clearly the case in examining the effects of state merit aid programs. A common tendency is to compare the outcomes before and after the implementation of programs, or compare outcomes for those who receive policy interventions to those who do not. What is missing is the consideration of possible responses by colleges and universities in reaction to state merit aid programs and the potential complication of such possible reactivity to outcomes under study.

Some researchers have paid attention to this phenomenon. For example, Dynarski (2004) and Long (2004) found that colleges and universities tend to raise the costs of attendance for students in response to the implementation of state merit aid programs so that they can capture the additional revenues from such programs, either through increase in tuition fees or increased charges on other education-related costs. This is a very important phenomenon to consider given the increasing concerns on college costs and prices and college affordability problems for many Americans. This reactivity may or may not directly exert financial burdens to individual students due to the configuration of state merit aid programs, but if it does have linkage to college pricing behavior, it could affect the financial context for higher education and influence student educational decisions in a still unknown way. Future studies explicitly considering this phenomenon can help shed light on this possibility.

Studying Conditional Effects of Merit Aid Programs

As much as it is important to understand the general effects of merit aid programs on degree production and educational decisions of the individuals, it is also critical to examine whether the effects are different for students of different gender or racial/ethnic background for a number of reasons. Existing statistics indicate that among 25- to 29-year-olds in 2002, only 29% had completed four or more years of college. Perhaps more striking element of these statistics is the racial divide as 36% of this group were White; 18% were non-Hispanic Blacks; and Hispanics accounted for only 9% of the graduates. For the same age group, only 45% of whites, 26% of non-Hispanic blacks, and 15% of Hispanics had completed at least an associate's degree (National Center for Educational Statistics 2004).

Differential effects of a state program on educational outcomes for students from different backgrounds could have implications from an equity perspective, but more importantly, the changing demographics in the United States make it critical to have more traditionally disadvantaged students to succeed and obtain college degrees. Across a vast array of postsecondary outcomes, evidence increasingly points to the fact that the effects of programs and practices are not equally applicable to all students. For instance, Pascarella and Terenzini (2005) pointed to the increasing diversity in the college-going population to encourage greater attention examining conditional effects of policies and programs on students from different backgrounds. Researchers have repeatedly called for increased analysis of gender and racial/ethnic-related conditional effects across many types of college outcomes including student educational attainment (Pascarella and Terenzini 2005; Reason et al. 2006; Tinto 1993). This call is certainly relevant in studying a large-scale state policy initiative like merit aid programs. Can state merit aid programs affect the sequence of educational outcomes differentially for students of different backgrounds? How do the eligibility criteria and award generosity play a role in moderating those effects? Answers to those questions can provide critical information on the social consequences of state merit aid programs and also could shed light on potential remedies.

Comparing the Effects of Merit Aid to Need-Based Aid and Other Policy Interventions

Attention to educational attainment has never been in shortage, even though the accomplishments have been less than satisfactory. Various policy interventions and programs have been in place aiming to improve educational attainment (Kazis et al. 2004).

Higher education has very complicated "objective" functions, among which maximizing educational attainment for all and minimizing the attainment gaps among students of different characteristics are both important (St. John 2003; Hu 2005). In addition, program efficiency is an important consideration, which has become even more critical given the financial difficulties and scarce resources available.

However, it has some policy relevance to compare the effects of merit aid programs with other policy interventions. The comparison between merit aid programs to need-based programs and other programs can be an interesting and useful direction for policy researchers. How do the effects of merit aid programs compare to need-based financial aid programs and other interventions such as early encouragement program or outreach programs on college access, choice, and success? There is just not much information to gather to answer questions like this yet, but it is important for policy makers to know the answer to make evidence-based policy decisions.

Conclusions

In an age of scarce public resources and increasing need to promote postsecondary education opportunity to all students while minimizing the disparity of such opportunity for students of different backgrounds, it is valuable to carefully examine the effects of public policies that involve resource allocation at the magnitude of state-sponsored merit aid programs on college degree production in the state and individual student college choices, persistence, and degree completion, as well as educational outcomes in the STEM fields. At the same time, the financial difficulties facing many states, coupled with the increasing tuition pricing in higher education, have forced state policy makers to reprioritize and rethink about strategies related to merit aid programs. In this context, it is important to analyze both the conceptual and empirical evidences regarding the effects of merit aid programs on individual students, states, and the country as a whole. Our analysis in this chapter generated some promising findings of state merit aid programs on educational outcomes that have strong policy implications. It also exposes the areas that further efforts are warranted to develop a greater understanding of state merit aid programs. The future of research on merit aid programs is bright. There remain some challenges and opportunities as well, as identified in this chapter.

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Chapter 7

Access and Success for Students from Indigenous Populations

The Case of Native Hawaiians and Higher Education

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Introduction

College access and success have been the focus of an inordinate amount of research in the field of higher education and its allied disciplines (sociology, economics, and anthropology—see Teachers College Record v 109, n 10 for a review of disciplinary work on these topics). Spurring this interest has been a long-held belief that education plays a key role in the status attainment process (Sewell 1971; Sewell and Hauser 1975; Jencks et al. 1983). Understanding the structure of existing inequities in access and better defining the processes through which those inequities come about has defined the main thrusts of work on this topic over the past 30 years.

We know a great deal about issues informing access to postsecondary education. While much of this is theoretically oriented (see Perna and Thomas 2008), there is also a great deal of applied practical knowledge about what works (and by extension what does not work) in terms of encouraging ever-higher rates of participation in this sector (see for example, Tierney et al. 2005). The corpus of work in this area touches many populations: low income, high income, a variety of racial ethnic groups historically underrepresented on college campuses, men and women. Much of this literature is focused on aligning educational opportunities defined by society's advantaged groups with the cultures and perspectives of students and families who have been historically marginalized and thus discouraged from engaging in non-compulsory education.

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Indeed, we have gone so far as to formally designate institutional types designed to accommodate these differences in culture and perspective. While each has its unique history and circumstance, the Historically Black Colleges and Universities (Gasman and Tudico 2008), Tribal Colleges and Universities (Benham and Stein 2003), and newer forms of “serving” designations such as Hispanic Serving Institutions (Laden 2004) and Native Hawaiian Serving Institutions (see <http://www2.ed.gov/about/offices/list/ocr/edlite-minorityinst-list-pg6.html>) are built on the idea of cultural congruency offering a more familiar cultural harbor and, in some cases, a bridge to “mainstream” institutions.

Implicit in much of this work is the tension that exists between historically marginalized communities and the formal institutions developed and maintained by dominant groups in society. Traditional forms of education serve to legitimate status hierarchies (Ogbu 1992; Apple 2001). Participation in higher education (or any level of education for that matter) is therefore an essential pathway to mainstream economic and political success, but participation in higher education also, to some degree, undermines the integrity of cultures that may have values not always consistent with the mainstream (Ogbu 1992). The distance between home culture and that of the modern American college or university often creates a wide gulf that must be bridged to allow for meaningful access, engagement, and ultimately success, and hence the efforts to increase the sensitivity of institutions and experiences to the diversity of cultural orientations in our society.

Although a great deal of scholarship exists around divisions that generate this tension, there are important populations that remain largely invisible to our field and that could be powerfully instructive in our conceptualizations around access and success. In this chapter, we present one such population—Native Hawaiians—and argue that a focused line of inquiry on the educational experiences of this group can provide useful lessons for our interests in other, better-studied populations. Much has been written about Asian (and sometimes Pacific Islander) students (broadly categorized) in higher education, however, the indigenous character and history of Native Hawaiians is sufficiently different, warranting a separate study.

Native Hawaiians, like American Indians, are indigenous people, but Native Hawaiians differ on a number of important dimensions, including the temporal proximity of the 1893 overthrow of the Hawaiian nation by “a group of American insurgents, with the help of the U.S. military” (Tsosie 2005, 2006, p 32) and the lack of legal standing to petition for a federal recognition similar to that held by native American tribes. They simultaneously bear the pressures of being a racial minority and a displaced indigenous population in their homeland with neither federal recognition nor the right to self-determination. These twin pressures have resulted in significant disparities in educational conditions experienced by Native Hawaiians. Kana’iaupuni et al. (2005) sum it up this way:

Two historical processes shed light on the disparity between Native Hawaiian children and their peers in school. First, the evolution of education in Hawai‘i—from placed based transmission of traditional knowledge to a system of Western instruction characterized by standardized tests, curricula, and content—has alienated many Native Hawaiian children whose cultural roots suggest an inclination toward experiential learning in authentic envi-

ronments (Kawakami 2004). Second, marginalization and socioeconomic adversity have likely spilled over into the classroom, leaving some Native Hawaiian children disengaged and distrustful of social institutions such as school (p 40).

The nearly two centuries of systematic political, racial, and cultural marginalization has left the Native Hawaiian people in a precarious position. They are on the wrong side of almost every agreed upon indicator of well-being, including educational attainment. While Native Hawaiians are found across the country and abroad, the majority still live in Hawai‘i. Hawai‘i’s economy during this period has undergone radical transformations that are reflected in job markets that demand ever-increasing levels of education and technical skill. The gaps in educational attainment between Native Hawaiians and members of other racial and ethnic groups in Hawai‘i further exacerbate the well being of the Native Hawaiian community.

In short, the relatively rapid turnaround in the cultural, economic, and political fortunes of Native Hawaiians have eroded their once dominant role in the Hawaiian Islands. The dynamics of colonialism have powerfully supplanted their cultural institutions with settler institutions, norms, and laws that have been carefully designed to legitimate the actions of the United States and its interests (Benham and Heck 1998). Following a pattern typical of other displaced indigenous peoples, the Native Hawaiian population finds itself struggling to maintain a connection to its land, language, and culture.

The efforts to revitalize Native Hawaiian leadership and culture to some important degree rest on promoting higher levels of educational achievement. As we describe later in the chapter, important inroads to this end have been made in the past decade, but as we will show, the results have fallen far short of what is needed to facilitate full participation in the institutions that can be used to revitalize the culture that they supplanted over the last century.

On an applied level, the study of Native Hawaiian access and success in higher education may help to better document their condition and suggest useful ways for closing the durable gaps in attainment. On a theoretical level, the study of Native Hawaiians in education allows us to check assumptions about the generalizability of our existing models of access and success. This study also provides an opportunity to explore the utility of existing areas of critical theory built around Asian (e.g., Buenavista et al. 2009; Liu 2009; Teranishi 2002; Teranishi et al. 2009) and Native American (e.g., Brayboy 2005; Castagnola and Lee 2007; Grande 2004) populations.

In the next section, we provide a brief history of Native Hawaiians and their origins. We then examine the sociohistorical context of colonization to establish the powerful forces that have systematically eroded the Hawaiian culture, values, and eventually control over their schools and educational sovereignty. This context and current local culture form the backdrop for our understanding of the many challenges that Hawaiians have faced over the last 200 years. These challenges point to the paradox created by colonialism and subjugation of indigenous people in their homeland. The work in these sections draws directly from and, where possible, updates work by Kana‘iaupuni et al. (2005) published in Kamehameha Schools’ *Ka Huaka‘i: 2005 Native Hawaiian Educational Assessment*.

Cultural Beginnings

Hawaiian refers to an indigenous group of people, *Kānaka Maoli*, aboriginal to the Hawaiian archipelago. The first discoverers of the 1,500 mile long Hawaiian archipelago in the Pacific Ocean, these Polynesians migrated to Hawai‘i by sea using advanced navigation skills long before the Western world discovered the concept of longitude. There, they survived and flourished for hundreds of years prior to Western contact, evolving a complex system of resource management and developing sophisticated knowledge bases and skills to survive on these remote islands with limited resources.

Cosmogonic and religious beliefs of Hawaiians tie the Hawaiian Islands to *Kānaka Maoli* beginning with creation, or *pō* (darkness, obscurity). The islands were born from Papahānaumoku, earth mother, and Wākea, sky father, who also gave birth to *kalo*, the taro plant and main staple crop of traditional Hawaiians, and, ultimately, to people. As such, “the genealogy of the Land, the Gods, Chiefs, and people intertwine with one another, and with all the myriad aspects of the universe” (Kame‘eleihiwa 1992b, p. 2). In these beginnings, the archipelago is intimately connected to Hawaiians through genealogy, culture, history, and spirituality. The natural elements (land, wind, rain) and creatures of the islands are considered primordial ancestors; they are the older relatives of living Hawaiians. Both share an interdependent, familial relationship that requires *mālama* (care) and *kia ‘i* (guardianship) for the older siblings who, in turn, provide for the well-being of the younger siblings.

Significant cultural values of the Hawaiian people are centered on the importance of ‘*ohana* (family), *aloha ‘āina* (love for the land), and *mo ‘okū ‘auhau* (genealogy). Hawaiians are known for a deep sense of spirituality and for the special compassion, or *aloha*, that they bring to the world around them, including animate and inanimate forms of life (Meyer 2003).

Sociohistorical Context of Colonization

Historically, the Hawaiian Islands were divided into four chiefdoms until the late eighteenth century, when King Kamehameha I consolidated them through conquest. United under single rule, the archipelago then modernized rapidly through economic commerce in sugar, pineapple, shipping and related industries. By the late nineteenth century, Hawai‘i was a fully recognized nation-state with multiple international treaties, including one with the United States (Tsosie 2005, 2006).

During the same century, however, several transformations occurred that changed Hawaiian ways and lifestyles drastically. First, Native Hawaiians progressively became a minority in their own homeland. Estimates suggest that the native population, afflicted by Western disease and to a much lesser extent, warfare, dropped by at least 90% in the 100 years following Captain Cook’s arrival in 1778 (marking the Kingdom’s first contact with Europeans). A conservative estimate of the pre-Western contact Native Hawaiian population is 300,000, whereas other

population estimates range as high as 800,000 Hawaiians prior to Western contact. By the end of the century, only about 40,000 aboriginal Hawaiians remained alive (Nordyke 1989). Meanwhile, the immigrant population gained steadily in number, including Whites who outnumbered Hawaiians by the early 1900s. Today, Native Hawaiians comprise about one-fifth of the state population, numbering almost 290,000 (US Bureau of the Census 2010).

A second driver of change was the gradual and systematic erosion of indigenous control over the land primarily through the insertion of Western legal tactics, government, and religion. John Kelly described “while we looked to the heavens for their gods, they stole the land beneath our feet” (Kame‘eleihiwa 1994, p. 108). Gradually, foreigners took more and more control, exploiting fully Hawaiian cultural beliefs in land as collective property (Kame‘eleihiwa 1992a; Osorio 2001). The eventual privatization of land played an important role in the displacement of Hawaiians. In Hawaiian perspective, it was unfathomable that someone else could deny their rights to place, a precious ancestor, the same land that a family had worked and lived for generations and generations. As Kanahale describes, Hawaiians “belonged to the land. How could you ever own a place, let alone sell it as a commodity, if its true value is found in the sum of the lives, memories, achievements, and *mana* (spiritual power) of the generations who once dwelled upon it?” (Kanahale 1986, p. 208). In the failure of most aboriginals to recognize that they had to formally claim the private ownership of their land, white foreigners, mostly missionaries and businessmen, rapidly bought up the property where Hawaiians lived and worked, forcing them to move elsewhere in most cases (Parker 1989).

These displacing events culminated in 1893, when a small oligopoly of American businessmen and missionary descendants staged a coup d’état, capturing the Hawaiian Queen Lili‘uokalani and imprisoning her in the royal palace for eight months with the help of U.S. Marines. Although the overthrow violated existing treaties and established procedures for annexation, Hawai‘i was proclaimed a U.S. territory by Congress via the Newlands Resolution in 1898.

In addition to Congressional controversy over the legality of annexation by resolution (Tsosie 2005, 2006), what many do not know is that the annexation occurred despite a petition signed by nearly every living Hawaiian at the time (an estimated 38,000 of 40,000) in protest of losing their sovereign nation (Coffman 1998; Silva 2004). In recognition and formal apology by the U.S. government for these actions, U.S. Public Law 103–150, signed in 1993, cites that indigenous Hawaiians never relinquished claims to their inherent sovereignty as people or over their lands to the United States. Hawai‘i became a state in 1959.

Since then, historically high rates of intermarriage and small numbers of full-blooded Hawaiians mean that today’s Hawaiians have created an almost entirely multiracial population by demographic standards. Nevertheless, more than 400,000 individuals identified themselves as Hawaiian in the Census 2000 and that number increased to 521,000 in 2010 and 289,970 of whom live in Hawai‘i. A significant proportion reported only one race (Hawaiian), despite recent estimates that only 1,000–3,000 full-blooded Hawaiians remain alive today. These data indicate the powerful importance of being Hawaiian to the lives of many individuals who are mixed race.

Like other indigenous groups, however, Native Hawaiians face challenges in their health, economic, and social wellbeing. Although assimilation theory (see Alba and Nee 1997) would predict that intermarriage brings conformity and improved wellbeing, analysis of the health and social outcomes for Native Hawaiians tell a different story. For example, by 1990, Native Hawaiian life expectancy at birth continued to be the shortest of all major ethnic groups in Hawai‘i, where 60% of Native Hawaiians reside today. Life expectancy actually decreased from the average documented in 1980, unlike the experience of other ethnic groups who have experienced longer lives and continued convergence of life expectancy rates since 1930 (Braun et al. 1996a, b; Panapasa et al. 2010).

Contested Terrain

A critical area of past and present controversy focuses on Hawai‘i, which is now a U.S. state (albeit contested by some), and the place of Hawaiians in it. More generally, a fair amount of confusion also exists about the question of what Hawaiian means. In both the *New Oxford American Dictionary* (2001) and *Merriam-Websters Collegiate Dictionary, 10th Edition* (2002), Hawaiian is defined as “a native or inhabitant/resident of Hawaii”. Both sources list the second definition as “the Polynesian language of the Hawaiians,” which is interesting given that Hawaiians themselves are not necessarily Polynesian in these references. According to the *Associated Press Stylebook*, all residents of Hawai‘i are Hawaiians, and only “technically” referring to those who are “natives of Polynesian descent” (Goldstein 2002, p. 112).

Although seemingly innocuous, the technical issue of aboriginal native versus resident has spurred considerable debate in Hawai‘i as well as in the North American continent. Locally, descendants of early European and American missionary families argue that they are also just as Hawaiian as are the original Polynesian inhabitants of the Hawaiian islands because their ancestors were part of the Hawaiian kingdom at one point (highlighting an important distinction between ethnicity and nationality). The confusion is exacerbated by Hawai‘i’s longstanding political rhetoric that portrays a melting pot paradise composed of race/ethnic hybrids all coexisting harmoniously. This concept traces back to eugenicist scientific theory prevalent in the 1930s, which imagined a “super race” in Hawai‘i created by racial fusion (e.g., Adams 1937; Gulick 1937, see also discussion by Kauanui 2004). Whether by design or not, treating all Hawai‘i residents as Hawaiian effectively masks the significant marginalization, history, and struggles, not to mention the unique cultural qualities, of *Native Hawaiians* both yesterday and today.

Many Hawaiians reject these notions as blatantly colonialist, because they negate the indigenous Hawaiian culture in favor of a mixed-race, assimilated citizenry (see Rohrer 2010 for a consideration of the history and place of whites in Hawai‘i). Hawaiians also are keenly aware of the political and economic commodification of Hawaiian values and culture by the global tourist industry. One reaction is commemorated by a popular bumper sticker that reads “No Hawaiians, No Aloha.” In essence, it protests

the co-optation of a venerated cultural value of existing people while the existence of the people themselves has been dismissed. Moreover, to avoid being sidestepped as a technicality, indigenous Hawaiians have had to adopt the term Native Hawaiian (actually some now use *Kānaka Hawai‘i*, the people of Hawai‘i), though their Hawaiian language remains uncontested, Hawaiian (‘ōlelo Hawai‘i, in Hawaiian language).

Hawaiian Cultural Identity

For more than a century, scholars have written about the end of the Hawaiian people (e.g., Marques 1894). The plight of this so-called dying race also was depicted in Elizabeth Lindsey’s 1995 documentary entitled, ‘Then There Were None’. On the one hand, diversity and the threat of cultural assimilation raise questions about the survival of Hawaiians as a distinctive people. Yet, today there may be more Hawaiians than at any single point in history.

As more and more Hawaiian scholars enter the discussion about what it means to be Hawaiian, it is quite clear that the answer has little to do with the amount of Hawaiian blood in any individual and much more to do with genealogy and culture. “...Hawaiians are an ethnic group, today comprising the descendants of the people who settled the Hawaiian Islands before the first Europeans arrived. Hawaiians are thus defined by ancestry, which is an important place of origin in any discussion of Hawaiian identity. For if being a descendant of a Native makes one Native, what if anything does blood quantum have to do with who we are?” (Osorio 2001, p. 361). The answer, clearly, is that while phenotype and lifestyles may adapt to new surroundings and mixes, Hawaiian identity continues to thrive uniquely and strongly. It is the continuity of belonging to an ancestral place and people.

In this section, we have established the importance of the sociocultural historical context and Hawaiian identity. We have also developed the lines of division that have emerged as a result of Western cultural influences that were forcefully imposed on the *Kānaka Maoli*. These divisions and historical tensions have contributed in large part to the decline of Hawaiian culture and the well being of Native Hawaiians. In the following section, we consider how this tension has affected Native Hawaiian experiences with Western forms of education.

Education and Colonization

The introduction of Western education played a key role in the colonization of the islands. In traditional Hawaiian society, education reflected the need and functions of its people. Though traditional Hawaiian society was highly stratified, both commoners and elite Native Hawaiians highly valued education that was skill-based, practical, and place-based. Children were informally taught by caregivers, which included older siblings and adults considered masters in their occupations. Intrinsic

to this form of education was the importance of the natural classroom of the *‘āina*, respectful observation of one’s *kumu* (teacher), and the continuous pursuit of excellence or mastery (Benham and Heck 1998). The Hawaiian approach to education permitted every child to progress from student to teacher, given her or his mastery of particular skills and talents. Families passed down their specialized occupational knowledge once children were identified as having an interest in and propensity toward a particular content area. Older children were often placed under the tutelage of an accomplished master as apprentices for the duration of their training. This kind of training—more formal in nature—required strict adherence to rules and regulations and precise memorization of large amounts of information (Kelly 1982).

A highly developed system of oratory generated a tremendous body of chants, genealogies, and stories that ensured an exacting perpetuation of history, technical information, and beliefs while instilling respect and gratitude for the *‘āina* as home, provider, protector, and classroom. As a result, Native Hawaiians achieved mastery in several areas, including agriculture and aquaculture, navigation, canoe construction, wood carving, genealogy, crafts and fine arts, and healing (Blaisdell 1993).

Influences of Western Contact

Western contact marked a fundamental shift in the course of Native Hawaiian education. Native children were increasingly exposed to a curriculum devoid of the traditional teachings, practices, and knowledge that had previously characterized their learning. The arrival of missionaries in 1820 changed the nature of education in Hawai‘i from family- and occupation-focused natural learning environments to a classroom-centered systematic effort to spread written literacy and Western acculturation. Until 1830, efforts were focused on developing teachers from the native adult population and most adults quickly became functionally literate in Hawaiian. With support from Hawaiian rulers, education expanded to more than 1,000 Hawaiian-medium schools, first educating adults, and later, children. Schools for commoners evolved, as well as select schools for young chiefs that were staffed and taught by missionaries (Stueber 1982). In 1887, Bernice Pauahi Bishop, great-granddaughter and one of the last royal descendants of Kamehameha the Great, founded Kamehameha Schools to provide educational opportunities to improve the capability and well being of people of Hawaiian ancestry.

Kauikeaouli—Kamehameha III—formally recognized public education in Hawai‘i in 1840. Its first superintendent was David Malo, a graduate of the Lahainaluna Seminary. Literacy flourished among the people who considered language and elevated oratory to be among the highest of the skilled arts. From 1890 to 1910, the estimated literacy rates for Native Hawaiians were between 79.8 and 98.6 (Lind 1980). From 1834 to 1948, more than 135 different newspapers were published in Hawai‘i (Dawrs 2003). Some newspapers stayed in circulation for more than 60 years, providing religious content, local and international news, literacy and historical writings, as well as translations of classic Western literature into Hawaiian. (See

Silva 2004 for a review of the colonialist and resistance discourses that appeared in these papers across this time period).

Businessmen and missionaries were instrumental in pressuring the school system to change the language of instruction from Hawaiian to English. In 1896, only three years after the overthrow of the Hawaiian monarchy by a group of Western businessmen and U.S. military forces, a new law was enacted that recognized only those schools whose “medium and basis of instruction” was English (Laws of the Republic of Hawai‘i 1896). This law effectively ended Hawaiian medium schooling by the early 1900s and, ironically, eroded the Kingdom’s high level of literacy. Even today, many Native Hawaiians can recount a story in which they—or a close family member or friend—suffered the irony and humiliation of being punished for speaking their home language at school.

The territorial school system focused on the Westernization, and later, Americanization, of a population that increasingly included immigrant laborers for the sugar industry. Public schooling was progressively formalized and segregated with the establishment of English Standard Schools in the 1920s, which were funded by the government and attended by White children (Stueber 1982), while the majority of non-White children continued to attend other public schools. Private and religious schools also flourished during this time.

By 1930, public education included secondary curriculum and a growing trend toward equal access by all children, regardless of English language ability. Independent schools continued to thrive and began to function as college-preparatory schools. In 1986, after 100 years in effect, the law exclusively promoting the use of Hawaiian language in schools was lifted, leaving in its wake fewer than 50 children under the age of 18 who were fluent in Hawaiian (Wilson 1998).

Trends in Education in Hawai‘i

Given the struggles Native Hawaiians have endured with Western schools and institutions, we devote this section of the chapter to a characterization of the K-12 system in Hawai‘i and federal initiatives to address the durable gaps in student performance and attainment in the state. This system forms a key pipeline for Native Hawaiian college participation and, as such, a clear understanding of that system is central to our subsequent description of college access and success outcomes.

The Hawai‘i Department of Education faces an increasingly diverse student population, a steady stream of immigrant students for whom English is a foreign language, and a geographically dispersed constituency spanning seven islands. To date, Hawai‘i remains the only state in the nation that administers its public schools within a single school district.

Presently, the Hawai‘i Department of Education serves more than 180,000 students in kindergarten through Grade 12, with roughly 12,000 teachers in more than 280 schools (Hawai‘i Department of Education 2009). According to the Department of Education, Native Hawaiians account for more than 26% of students in the public

school population, making them the largest racial ethnic group in the system, followed by Filipinos, who constitute 21% of all students. Despite their high numbers, Native Hawaiian children in the public school system have, as a group, struggled.

The federal government was slow to move on Native Hawaiian issues in the period between “statehood” in 1959 and the establishment of the passage of the Native Hawaiian programs act in 1974. Since 1974, the federal government has directed more attention to funding potential remedies for the educational challenges faced by the Native Hawaiian population in Hawai‘i. For example, the Native Hawaiian Programs Act of 1974 directed financial assistance to Native Hawaiians through various agencies, and a variety of subsequent appropriation acts earmarked funds for the betterment of Native Hawaiian education, health, and welfare.

In 1980, the first advisory council on Native Hawaiian education was convened under the Education Amendments of 1980. The council’s mandate was to examine the effectiveness of state and federal education programs for Native Hawaiians. The resulting report—the Native Hawaiian Educational Assessment of 1983—documented a number of inequities, including the fact that Native Hawaiian students scored disproportionately lower than their non-Hawaiian peers on standardized test of reading and math achievement (Kamehameha Schools/Bernice Pauahi Bishop Estate 1983). As a result, the Elementary and Secondary Education Act (ESEA) of 1988 set aside funds to provide supplemental educational programs for elementary and secondary Native Hawaiian students. Other funds were also appropriated for Native Hawaiian education under the Supplemental Appropriations Act of 1982 and the Department of Education Appropriation Acts of 1984, 1985, and 1990–1999.

The Native Hawaiian Education Act of 1988 triggered a surge of activity in the mid-1990s. (Native Hawaiian Education Act 2002 (see http://nhec.org/index.php/about/nhec_act/). The Native Hawaiian Education Act defined Native Hawaiians as “distinct and unique indigenous people with a historical continuity to the original inhabitants of the Hawaiian archipelago.” The findings further outlined the debilitating impact of the influx of nonindigenous people into Hawai‘i, the overthrow of the sovereign government, and the ultimate deprivation of Native Hawaiian rights. The act was meant to reaffirm the cultural, historical, and land-based ties of Native Hawaiian people and to establish a foundation for culturally and linguistically unique programs to support Native Hawaiian learners. In 1994, the Improving America’s Schools Act supplemented the Native Hawaiian Education Act through the implementation of the Native Hawaiian Educational Council, which would coordinate, assess, and make recommendations for the improvement of educational programs and services for Native Hawaiian students. In 2002, the Native Hawaiian Education Act was reauthorized by Congress for an additional five years, citing findings from Kamehameha Schools’ 1993 Native Hawaiian Educational Assessment Project, which showed that, despite prior legislation, persistent gaps distinguish Native Hawaiian children from their peers in measures of schools readiness and academic achievement. To address these ongoing disparities, the act provides for continued efforts to enhance the educational outcomes of Native Hawaiians (including the study of Hawaiian language, culture, and history) while also contribut-

ing to the knowledge base about Native Hawaiian education through research and data collection.

The year 2001 marked the passage of the No Child Left Behind (NCLB) Act, which reauthorized the ESEA while imposing new regulatory requirements on schools to promote greater accountability. In particular, under NCLB schools are required to show “Adequate Yearly Progress”, based on standardized test scores in reading and math. Title V Part D.12 and Title VII of NCLB specifically address Native Hawaiian education. The first gives educational, cultural, apprenticeship, and exchange opportunities to Alaska Natives, Native Hawaiians, and other children linked to history and indigenous traditions of Alaska and Hawai‘i. In recognition of Native Hawaiians’ lagging school readiness, educational achievement, and overrepresentation in special education, Title VII provides for “innovative educational programs to assist Native Hawaiians.” Its purpose is to focus resources on the education of Native Hawaiians while also monitoring progress through periodic assessment and data collection.

Despite the Title VII provisions, a concern from the standpoint of indigenous populations is that NCLB’s emphasis on standardized testing is detrimental to innovative culture-based programs, many of which serve highly disadvantaged populations and promote areas of child development that may not be captured by test scores. Indeed, some of Hawai‘i’s most promising innovations in education have arisen not from federal action but from within the Native Hawaiian community itself in efforts to engage students through culturally relevant and responsive education (Kana‘iaupuni and Malone 2006; Kana‘iaupuni et al. 2005).

The Hawaiian language immersion movement is one of the most successful examples of Native Hawaiians asserting control over the learning process while implementing educational models adapted to meet children’s needs and to build on the community’s strengths. The use of Hawaiian language as the medium of instruction began with the establishment of the privately run *Pūnana Leo* (language nest) preschools. The first was opened in 1983 by a group of parent and college instructors who were inspired by the efforts of Māori activists to revise their indigenous language and culture through a government school system in New Zealand. Kame‘eleihiwa (1992a) reports that, until 1989, the *Pūnana Leo* preschools were entirely supported by parent contributions and community organizations (e.g., local churches) and received no funds from either the state or the federal government. The origins of Hawaiian immersion within the public school system were similarly driven by grassroots efforts within the Native Hawaiian community. Kame‘eleihiwa attributed the opening of the first two immersion kindergarten classes in the Hawai‘i Department of Education—and subsequent expansion of the Hawaiian immersion program, Papahana Kaiapuni—to the lobbying efforts of *Pūnana Leo* parents. As of school year 2003–2004, more than 1,700 students from kindergarten through Grade 12 were enrolled in Hawaiian immersion programs on five of the seven populated Hawaiian islands.

Hawaiian-focused public charter schools similarly emerged from within Native Hawaiian communities. Frustrated by the challenges of conventional public school classrooms in meeting the needs of Native Hawaiian students, several Na-

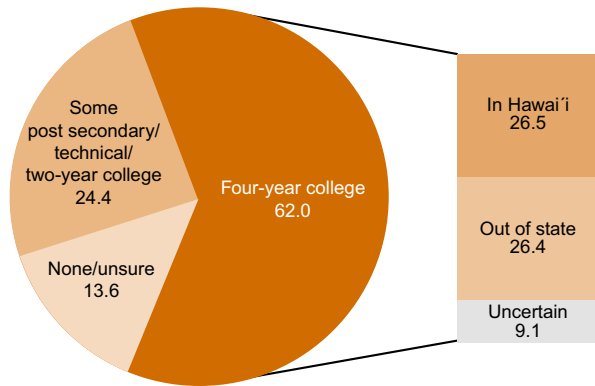
tive Hawaiian communities seized opportunities for independence and autonomy offered by the public charter school movement. Of the 31 public charter schools in Hawai‘i, seventeen are Hawaiian-focused, providing culturally rich, relevant, community-based educational choices. Although each school is developing its own particular model of Hawaiian education, all “reflect, respect, and embrace Hawaiian cultural values, philosophies, and ideologies,” and many are tied together by Nā Lei Na‘auao, an alliance of Hawaiian focused charter schools that provides a forum to share ideas and successes and to pursue legislation collaboratively.

Data show that students in culture-based Hawaiian public charter schools experience positive outcomes compared with Native Hawaiian students in conventional public schools. Moreover, Hawaiian immersion students are showing progress, and the Native Hawaiian community itself is increasingly determining the future of Native Hawaiian education. As part of this educational self-determination, Kānaka Maoli are drawing from cultural expertise and traditional learning approaches. These findings are reviewed in a recent hearing of the Senate Committee on Indian Affairs, during which expert indigenous panelists called for continued federal support for culture-based learning in general and the promising vehicle of charter schools in particular. (For more information, refer to <http://indian.senate.gov/news/pressreleases/2011-05-26.cfm>).

The evolution of the K-12 system has yielded a set of schools and experiences that are increasingly sensitive to the history, language, and culture of the Native Hawaiian community. While the lion’s share of programmatic attention has been devoted to efforts in the K-12 education sector, there also has been a notable level of commitment to improve Native Hawaiian access and success at the postsecondary level. The Native Hawaii Education Act within the larger Elementary and Secondary Education Act notes that Native Hawaiians continue to be underrepresented in institutions of higher learning and in the proportion of adults who have completed four or more years of college. As a partial remedy for this finding, the NHEA makes provision to support scholarship programs at the undergraduate and graduate levels (tied to commitments to future service in Native Hawaiian communities), especially in areas with significant underrepresentation of Native Hawaiians. The NHEA also enables the provision of family literacy services, student college-oriented counseling at the secondary level, and faculty development activities all designed to encourage increased Native Hawaiian enrollment at the postsecondary level. (see Sect. 7202 and 7205 of the Native Hawaiian Education Act).

The Higher Education Act of 1965 has been amended to provide resources under its Title III to “Native-Hawaiian Serving Institutions” (NHSI) (Sect. 317(b)(4) of the Higher Education Act of 1965, 20 U.S.C. 1059d(b)(4)). Funds from Title III grants have been used to develop physical capacity at and programming NHSIs. Dozens of programs exist across the state to encourage and assist students of Native Hawaiian ancestry. As we show in the section that follows, participation of Native Hawaiian students has increased within the largest Native Hawaiian Serving Institution system, the University of Hawai‘i. This increase is dramatic over the last five years and is anecdotally connected to some of the programming enabled by federal, state, and private initiatives to encourage Native Hawaiian enrollment.

Fig. 7.1 Native Hawaiian parent respondents' postsecondary education plans for their children (percentage distribution, Native Hawaiian parents of school-age children, Hawai'i, 2002). (Data source: Kamehameha Schools, Hawaiian community survey 2002. Figure from *Ka Huaka'i: 2005 Native Hawaiian educational assessment*)



Postsecondary Access and Success

Non-standard, changing definitions of Native Hawaiian and frequent aggregation of Native Hawaiian with Pacific Islanders or, even more problematically, Asian and Pacific Islanders has rendered it very difficult to track the postsecondary destinations and outcomes of Native Hawaiian students accurately. A corollary of the definition and categorization problem is that there is no centralized data system for tracking Native Hawaiian students beyond the K-12 system. The 2009 Integrated Postsecondary Education Data System—a widely accepted source for tracking interstate migration and enrollment—has no discrete category for Native Hawaiians. Although it would seem that Asian/Pacific Islander would be the logical category to include Native Hawaiians, Native Hawaiians are far more likely to report being of mixed race heritage than any other census categorized group (Lee and Bean 2004; Kana'iaupuni 2011). This propensity to identify with multiple ethnicities further complicates the accurate enumeration of Native Hawaiians in the wider postsecondary education system.

Despite the problems in accurately establishing broad patterns of Native Hawaiian participation, there are a few notable efforts that provide a window into their postsecondary enrollment behavior. One of these efforts comes from a survey conducted by Kamehameha Schools in 2004. Their survey data show that most parents in a sample of Native Hawaiian households they polled envisioned a postsecondary education for their children (see Fig. 7.1).

- More than four out of five Native Hawaiian respondents (86.4%) expected their children to continue their studies beyond high school, either at a four-year college (62%) or at a two-year college or technical school (24.4%).
- The Native Hawaiian parents who anticipated a four-year degree for the children were evenly split about whether their child would likely attend school in Hawai'i or out of state.

These figures are underscored by additional data showing that education is highly valued in most Native Hawaiian households. Approximately two-thirds of adult re-

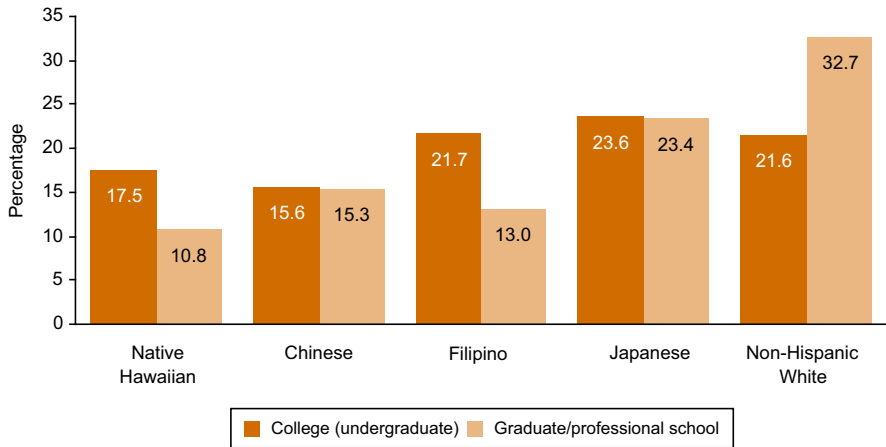


Fig. 7.2 Racial/ethnic distribution of enrolled college and graduate/professional school students (percentage distribution by race and ethnicity, state of Hawai‘i, 2000). (Data source: U.S. Census 2000, summary file 4. *Note:* Except for non-Hispanic Whites, we use Census 2000 multi-race/multiethnic reporting conventions where some individuals (including Native Hawaiians) may be counted in more than one ethnic group (see Appendix A). As a result, distributions may not sum to 100%. Figure from *Ka Huaka‘i: 2005 Native Hawaiian educational assessment*)

spondents agreed that “the more education a person has in life, the more successful he or she is” (66.8%), and that “more education would help me get ahead in my job” (64.6%, not tabled here). These statistics suggest the significance Native Hawaiians attach to education in general and postsecondary education in particular.

Another useful, albeit dated source for data on Native Hawaiian educational activity is the U.S. Census. These data allow the comparison of the distribution the 18–24 year old Native Hawaiian population to the Native Hawaiian population enrolled in college. From the 2000 Census data we know that although Native Hawaiian parents have high educational ambitions for their children, Native Hawaiians are underrepresented among college students and graduate or professional students. These data reveal some useful insights about the ethnic composition of undergraduate and graduate students in Hawai‘i. From Fig. 7.2, for example:

- Although Native Hawaiians constituted 23.1% of the state’s college age population (18–24 years of age) in 2000 (not shown), they accounted for just 17.5% of college students.
- Next to Chinese students, who comprised a relatively smaller share of the state population, Native Hawaiians constituted the smallest proportion of undergraduate students among the state’s major ethnic groups.
- Just 10.8% of graduate students were Native Hawaiian, meaning that Native Hawaiian representation among graduate students was about half their representation in the larger state population.

We also know from these Census data that college enrollment among Native Hawaiian adults—the percentage of Native Hawaiians who are enrolled in college—is also among the lowest in the state (see Fig. 7.3). These data indicate that Native

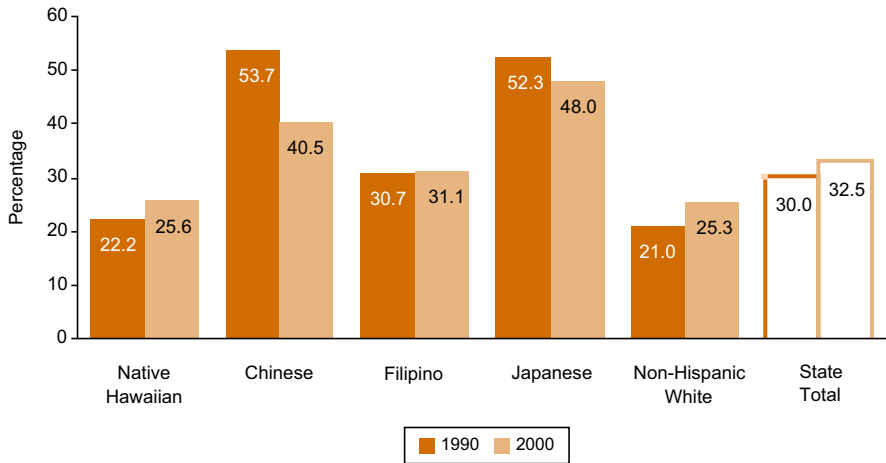


Fig. 7.3 Trends in college enrollment as a percentage of all young adults (adults ages 18–24, by race/ethnicity, Hawai‘i, 1990 and 2000). (Data sources: 1990 Census of population; U.S. Census 2000, summary file 4. *Note:* Except for non-Hispanic Whites, we use Census 2000 multirace/multiethnic reporting conventions where some individuals (including Native Hawaiians) may be counted in more than one ethnic group (see Appendix A). Figure from *Ka Huaka‘i: 2005 Native Hawaiian educational assessment*)

Hawaiians pursue postsecondary education at lower rates than do young adults of other ethnicities.

- In 2000, about one in four Native Hawaiians between the ages of 18 and 24 (25.6%) was enrolled in college.
- Native Hawaiian young adults were two-thirds as likely to attend college as were their Chinese peers and almost half as likely to attend college as were their Japanese counterparts.
- Between 1990 and 2000, the gap between the Native Hawaiian enrollment rate and that of the total state population decreased significantly. In 1990, the statewide rate was 35.1% higher than the Native Hawaiian rate; in 2000 the statewide rate exceeded the Native Hawaiian rate by 27%.

The sections above are drawn from Kamehameha Schools’ *Ka Huaka‘i: 2005 Native Hawaiian Educational Assessment* (Kana‘iaupuni et al. 2005). *Ka Huaka‘i* is the most comprehensive point of reference documenting recent trends and synthesizing an extensive body of research to highlight the interrelated outcomes influencing educational outcomes for Native Hawaiians. As such it should serve as an important primary document for those interested in research related to the Native Hawaiian experience.

While it is difficult to accurately discern patterns of Native Hawaiian postsecondary enrollment nationally, the University of Hawai‘i has taken concrete steps toward tracking Native Hawaiian students entering its system. Moreover, while the UH has received a fair amount of criticism in the past for its lack of systematic attention to Native Hawaiian interests and advancement, the administration has re-

cently taken strategic steps to improve the representation and success of Native Hawaiian students, faculty, and staff on its campuses.

An important milestone in the history of UH was the formation of the 1986 University of Hawai‘i Hawaiian Studies Task Force (Ka‘ū). The task force issued a seminal report in December of 1986 that developed a theme that has subsequently shaped the contours of a growing Native Hawaiian presence at UH today. The authors of the task force report state that theme:

...[A]n expanded commitment to Hawaiian Studies within the University of Hawai‘i will have far-reaching benefits for the Hawaiian people and the entire state of Hawai‘i. The University of Hawai‘i can and should achieve excellence in Hawaiian Studies and be in the forefront of contributing to excellence in research and instruction. Excellence in Hawaiian Studies will set the University of Hawai‘i apart from other institutions of higher education in the world. (Ka‘ū, executive summary)

The Ka‘ū report identified six main issues addressing (1) a lack of devoted physical space on campus, (2) the lack of resources to enable the development and delivery of a coherent curriculum, (3) an underrepresentation of Native Hawaiians on UH campuses, (4) a lack of resources to address research needs on Hawaiian language and culture adequately, (5) an underrepresentation of Native Hawaiians on the university faculty, and (6) the lack of meaningful engagement with the Native Hawaiian community on health, social, and educational problems. Each of these problem areas was addressed with a set of clear and actionable recommendations.

Twenty-five years after the Ka‘ū Report, the University of Hawai‘i boasts the Hawai‘inuiākea School of Hawaiian Knowledge, which is made up of the Kawaihuelani Center for Hawaiian Language, the Kamakakūokalani Center for Hawaiian Studies, Ka Papa Lo‘i o Kānewai, and Native Hawaiian Student Services. Through these four units, the Hawai‘inuiākea School of Hawaiian Knowledge engages in its mission:

...to pursue, perpetuate, research, and revitalize all areas and forms of Hawaiian knowledge, including its language, origins, history, arts, sciences, literature, religion, and education; its law and society; its political, medicinal, and cultural practices; as well as all other forms of knowledge. We recognize the unique status of the Native Hawaiian people and recognize their unique connection to these forms of knowledge by encouraging, supporting, facilitating, and ensuring the incorporation of Native Hawaiians at all levels of the university. We seek to accomplish this mission with a Native Hawaiian perspective that recognizes the holistic aspects of this knowledge, its diversities, and the importance of practical applications. Our mission is to apply this knowledge to provide service and support to the Hawaiian community, as well as extending this knowledge outward from the academy and the community, into the Pacific and other international domains. (<http://www.catalog.hawaii.edu/schoolscolleges/hawaiian/general.htm>)

While targeted reaction to the Ka‘ū Report has resulted in important changes in the area of Hawaiian Studies, the senior administration and regents of the university have recently developed a broader statement on their continued commitment to the Native Hawaiian community and to addressing the many issues arising from the almost two centuries of systematic marginalization outlined across the front half of this chapter. In the spring of 2009, the Board of Regents of the University of Hawai‘i added this statement to their official policy:

As the only provider of public higher education in Hawai‘i, the University embraces its unique responsibilities to the indigenous people of Hawai‘i and to Hawai‘i’s indigenous language and culture. To fulfill this responsibility, the University ensures active support for the participation of Native Hawaiians at the University and supports vigorous programs of study and support for the Hawaiian language, history and culture.

In the context of the historically contentious relationships between the Native Hawaiian community and the state’s educational institutions, this formal policy is noteworthy. The symbolic importance of the change is seen more clearly in the full text of the amendment to Board policy:

The University is committed to diversity within and among all racial and ethnic groups served by public higher education in Hawai‘i. The President, working with the Chancellors, ensures the unique commitment to Native Hawaiians is fulfilled by

- providing positive system-wide executive support in the development, implementation, and improvement of programs and services for Native Hawaiians;
- encouraging the increased representation of Native Hawaiians at the University;
- supporting full participations of Native Hawaiians in all initiatives and programs of the University;
- actively soliciting consultation from the Native Hawaiian community and specifically Pūko‘a, the system-wide council of Native Hawaiian faculty, staff and students that serves as advisory to the President;
- providing for and promoting the use of the Hawaiian language within the University;
- providing a level of support for the study of Hawaiian language, culture, and history within the University that honors, perpetuates and strengthens those disciplines into the future;
- encouraging Native Hawaiians to practice their language, culture and other aspects of their traditional customary rights throughout all University campuses and providing Hawaiian environments and facilities for such activities; and
- addressing the education needs of Native Hawaiians, the State of Hawai‘i, and the world at large, in the areas of Hawaiian language, culture, and history through outreach. (University of Hawai‘i Board of Regents policy 4-1c(3) <http://www.hawaii.edu/offices/bor/policy/borpch4.pdf>)

While these important shifts in UH policy and action may be creating a more culturally sensitive and relevant environment for Native Hawaiians, the deep and durable educational challenges at the K-12 level leave a bottleneck in the college-going pipeline. In the following sections, we first outline the shifts in attendance patterns at the University of Hawai‘i and then turn attention to student voices describing key elements of their experience on the flagship Mānoa campus of the University of Hawai‘i system.

University of Hawai‘i System Hawaiian Student Profile

The most current and accurate source of enrollment data come from the University of Hawai‘i system. While limited to campuses within its system of three four-year campuses and seven two-year campuses, the system serves a large proportion of Native Hawaiians enrolling in postsecondary education. Over the past decade in

particular, the University of Hawai‘i has worked to better ensure an accurate counting of Native Hawaiian students on their campuses.

The term “Hawaiian” in the data reported here refers to the University of Hawai‘i (UH) Institutional Research Office (IRO) definition of “*Hawaiian Ancestry*” which is defined as “the sum of students who self-reported Hawaiian ancestry on the UH System Application form and those who either did not answer the ancestry question or answered in the negative but who indicated Hawaiian ethnicity” (University of Hawaii Institutional Research Office 2010). This Hawaiian Ancestry Methodology is a more accurate reflection of Hawaiian student enrollment because of its more specific Hawaiian ancestry indicator.

Moreover, “Hawaiian or Part Hawaiian” refers to the UH Institutional Research Office ethnicity category, which is part of the Conventional Methodology for determining ethnicity. Prior to Fall 2005, this Conventional Methodology was the only indicator used to determine Hawaiian ancestry or ethnicity. The Conventional Methodology was problematic because many Hawaiian students are also mixed, where there is an opportunity for them to indicate another ethnicity category such as “Mixed race.” This is consistent with our comments above about problems inherent in counting mixed race identifications. UH has found that using the Ancestry question in addition to the ethnicity category (a student may only choose one) provides a more accurate way of capturing Native Hawaiian student enrollment. In Fall 2005, the University of Hawai‘i adopted the more preferred Hawaiian Ancestry Methodology, which is used in the data reported in this section.

There have been notable increases in Native Hawaiian student enrollment within the UH system in the last 5 years. Overall UH system Hawaiian student enrollment almost doubled from 7,329 in Fall 2005 to 14,134 in Fall 2010. Not only has Hawaiian student enrollment grown at every UH campus, but also the percentage of Hawaiian students to overall student enrollment has also grown significantly at each campus (see Fig. 7.4 below). Combined, the UH Community Colleges enroll the largest proportion of Native Hawaiian students in the UH system ($n=9,860$ or roughly 70% in Fall 2010—not shown here).

UH Mānoa

UH Mānoa, Hawai‘i’s flagship campus enrolls the largest number of Native Hawaiian students in the system ($n=2,866$ in Fall 2010). More than 1 in 5 Native Hawaiian students in the UH system were enrolled at UH Mānoa during the Fall of 2010. The vast majority of Mānoa’s students were undergraduates. Consistent with national patterns of undergraduates, the majority of Native Hawaiian undergraduate students at Mānoa are female (54.4%). The gender imbalance is even more pronounced at the graduate level where a full two-thirds of the Native Hawaiian graduate students are female (66.8%).

The majority of Native Hawaiian undergraduate students at Mānoa were seeking a Bachelor of Arts degree ($n=1,437$). The graduate students on the Mānoa campus

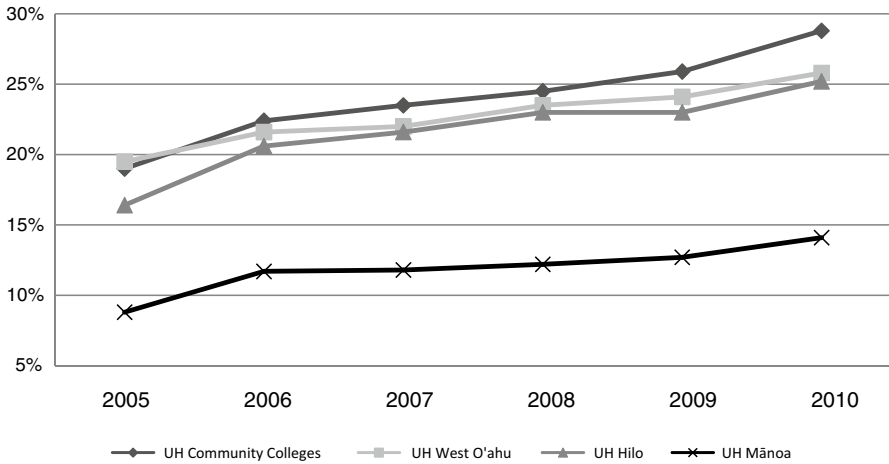


Fig. 7.4 Percentage of Native Hawaiian enrollment (headcount), by Campus 2005–2010

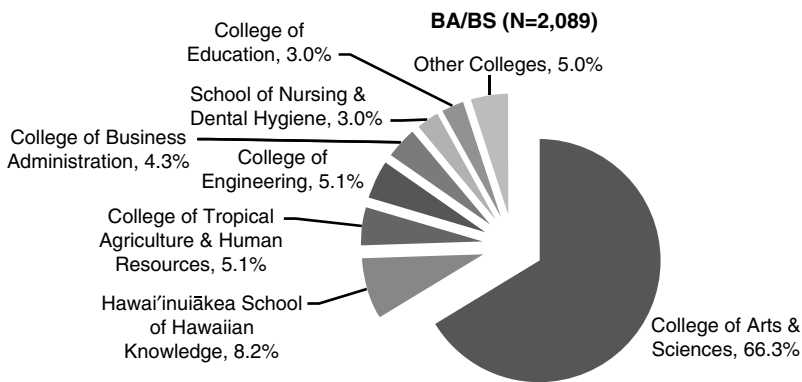


Fig. 7.5 UH Mānoa Hawaiian undergraduate students by College (Fall 2010)

are distributed across degree programs leading to the Master of Education (n=96), Master of Arts (n=95), and the doctorate (n=112).

Native Hawaiian students at Mānoa cluster into several departments, many of which have dedicated programs that focus on Hawaiian student success in those fields. At the undergraduate level, the *College of Engineering* claims 106 Native Hawaiian students—or 5.1% of total Hawaiian undergraduate students—at UH Mānoa in Fall 2010 (Fig. 7.5). This relatively high concentration of Native Hawaiian students is partly attributable to The Native Hawaiian Science and Engineering Mentorship Program (NHSEMP). NHSEMP is designed “to provide assistance, opportunities, and community for students to excel in the fields of Science, Technology, Engineering, and Mathematics (STEM),” specifically underserved students such as Native Hawaiian, Pacific Islander, Alaskan Native and Native American

Fig. 7.6 UH Mānoa Hawaiian MA/MS graduate students by College (Fall 2010)

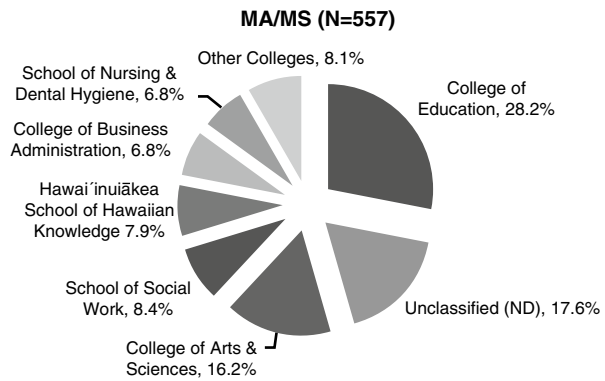
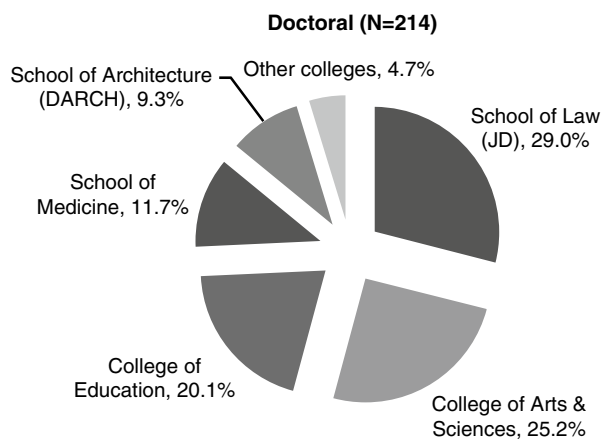


Fig. 7.7 UH Mānoa Hawaiian doctoral students by College (Fall 2010)



students (Native Hawaiian Science & Engineering Mentorship Program). Anecdotal evidence and the enrollment numbers suggest that the program is enjoying a level of success with its mission.

At the Master’s degree level, the College of Education enrolls 157 Native Hawaiian students—or 28.2% of all Hawaiian Master’s level students—at UH Mānoa (see Fig. 7.6). Similar to the College of Engineering, Mānoa’s College of Education hosts a center, Ho’okulaiwi, targeted at Native Hawaiian student success. Ho’okulaiwi is the “center for Native Hawaiian and Indigenous education that provides innovative programs designed to build educational capacity for Native Hawaiians” (Sorensen *n.d.*).

Of the 214 Native Hawaiian students at Mānoa who are studying at the doctoral level (including the J.D., D.Arch, M.D., Ph.D.), a full 29% of these students are found in the *School of Law* (see Fig. 7.7). Native Hawaiian students comprise over 17% of the entire School of Law enrollment at this level. Similar to Engineering and Education, the School of Law has placed an emphasis on Native Hawaiian interests, thus capturing a relatively large share of Native Hawaiian doctoral enrollments.

The Ka Huli Ao Center for Excellence in Native Hawaiian Law is “an academic center that promotes education, scholarship, community outreach and collaboration on issues of law, culture and justice for Native Hawaiians and other Pacific and Indigenous peoples” (Ka Huli Ao Center for Excellence in Native Hawaiian Law).

These data, coupled with anecdotal information about relevant programming, illustrate that targeted programming for Native Hawaiian students can successfully draw Hawaiian student enrollment. It is noteworthy that many programs targeting Native Hawaiian interests are funded externally and have not been formally institutionalized by the University.

The IRO data on enrollments show an encouraging pattern of enrollment growth over the past five years. At Mānoa, these enrollments are distributed across a wide number of programs with notable concentrations in several that have dedicated resources to attract and retain Native Hawaiian students. We also note a significant imbalance in men and women at the graduate level. Not shown here are the challenges faced in a number of fields like those in the School of Ocean and Earth Science and Technology, where Native Hawaiian enrollments are very low. There is likely much to be learned from the successful experiences of the targeted programs in Engineering, Law, and Education.

Enrollment and Graduation Trends at UH Mānoa

A recent study by Freitas and Balutski (2011) tracked a cohort of 271 Hawaiian students who began as freshman at UH Mānoa in Fall 2005. Their analysis followed students across a five-year period and tracked enrollments patterns across all UH campuses. Similar to the findings of the study by Adelman (2006) and Goldrick-Rab (2003), Freitas and Balutski identified a number of distinct enrollment and graduation patterns defining the experiences of these students. Table 7.1 provides a snapshot of the different groupings as well as a longitudinal visual snapshot of the students’ semesters enrolled over time, completion status, as well as the number of students on each pathway.

Of the 271 Native Hawaiian students they followed, Freitas and Balutski found that 105 of them had graduated from Mānoa by Fall 2010. This translates into a five-year graduation rate of just under 39%. Another 135 students in this cohort has stopped enrollment at Mānoa (an almost 50% campus drop out rate).

It is noteworthy that almost two-thirds of those leaving the Mānoa campus left in good academic standing. Many of those students migrated to other campuses within the system and may eventually complete their program of study.

Similar to the patterns found in other student populations and on other campuses, the academic journeys of Native Hawaiian students are complex, often involving significant movement across the system. While some in-roads have been made in understanding how Hawaiian students matriculate through UH Mānoa and the UH system, there are still many unanswered questions.

Table 7.1 Our voices, our definitions of success cohort characteristics

Group	Group description	Semesters enrolled					N
1A	Continuous completer	X	X	X	X	BA	97
1B	Continuous still enrolled	X	X	X	X	X	22
2A	Stop out, return, drop out	X	X		X		22
2B	Drop out, did not return	X	X				113
3A	Stop out, return, completer	X	X		X	BA	8
3B	Stop out, return, still enrolled	X	X		X	X	8
0	Missing data						1

The University of Hawai‘i is taking concrete steps toward improving its data systems for tracking Native Hawaiian students. The future looks promising for studies incorporating longitudinal data from throughout the UH system. Within UH, there is an active and concerted effort to engage in a larger P-20 effort that would better articulate data from the Hawai‘i Department of Education, the University of Hawai‘i, and data collected from outside entities such as the National Student Clearinghouse. Ideally, future research efforts like these could help to inform some of the unanswered questions on Native Hawaiian student matriculation and academic success.

Student Voices: Redefining, Owning, and Celebrating Our Success

Thus far we have examined survey data collected by Kamehameha Schools, data from the US Census Bureau, and institutional data from the University of Hawai‘i system (with a tight focus on the Native Hawaiian student experience at the Mānoa campus). Through these data we have shown (1) the aspirations of Native Hawaiian families are high, (2) Native Hawaiians are underrepresented at the postsecondary level, (3) the rate of five-success is lower than that enjoyed by students from other ethnic groups, and (4) Native Hawaiian students subscribe to a wide range of pathways toward their educational goals.

Circling back around to the context that we developed across the first half of the chapter, we feel it important to example some of the themes that emerge about the Native Hawaiian student experience at Mānoa. Those themes importantly illuminate the cultural context that has served as a barrier to many students from Native Hawaiian backgrounds. What we offer here is not a rigorous ethnography of the Native Hawaiian student experience (although we certainly encourage that) but a sampling of responses to a qualitative follow-up conducted by Freitas and Balutski (2011).

This follow-up focuses on understanding the Native Hawaiian student experience and expectations through their stories in order to redefine, own, and celebrate academic success on their terms. Freitas and Balutski wanted to know qualitatively how Native Hawaiian students navigate their experience on University of Hawai‘i Mānoa campus. Their central question revolved around the issue of success—that

is, why some students persist until graduation and other do not (when it seems that all have similar opportunities to succeed). This led to a host of related questions: how do Native Hawaiian students define academic success? Do Native Hawaiian students define it differently from their non-Hawaiian peers? And if so, what are those unique aspects of success—might these students assign difference to the roles of family, community engagement, or nation building? Or, finally, are Native Hawaiian students' aspirations in alignment with the institutional expectations regarding academic success?

While Native Hawaiian student success is clearly influenced by individual and collective identity, we have argued that the colonizer imposes prevailing expectations and definitions in Western higher education. Achieving educational sovereignty (Benham and Heck 1998) depends on indigenous control and autonomy of the policies, practices, and power to sustain the educational future of indigenous people. To achieve such sovereignty, Native Hawaiians must clearly define and conceptualize education and the future success of their people in higher education.

The motivation for these interviews is rooted in the indigenous understanding that knowledge derives from stories. Their method traverses key points along a spectrum in order to begin a process of redefinition. The first stage of their study was designed to provide a better understanding of Native Hawaiian students' complex academic journeys. In that stage of the analysis they confronted the disconnect between institutional expectations of success (oftentimes gauged by GPA or test scores) compared to a student's aspirations that may or may not be in alignment with the institutional expectations. Where the institution and the Native Hawaiian student's definitions of success are misaligned, they attempted to add definition through student interviews.

The students they interviewed represented a diverse set of majors: finance, Hawaiian language, Hawaiian studies, tourist industry management, psychology, and education. The purpose of their conversations with these Native Hawaiian students was to identify key factors that: (1) describe their academic journeys, (2) explain their definitions of academic success, and (3) identify what they considered to be important strategies in order to persist until graduation. Based on this series of interviews, four common themes emerged about the academic experiences of these Native Hawaiian students: (1) family presence, (2) cultural validation and dynamic learning, (3) "way finding", and (4) seeking refuge.

Family Presence

She already told me, mom, when I get big like you, I'm gonna go to YOUR school...yup, I'm gonna come here. (comments from a student's 3-year-old daughter)

The comments of the three year old daughter of one of the respondents speaks about the first theme in the data and highlights the importance of family and the critical role that generational exposure to higher education plays among Hawaiian families.

The influence of family on the academic journeys of Native Hawaiian students in the follow-up suggested two key factors that added to the evolving concepts of academic success. First, their enrollment at the University contributed to “setting the bar high” for their family members—they saw themselves as a positive role model for their siblings, cousins and their wider community. Second, students developed a keen awareness of *kuleana* (responsibility). As one student explained it, there is “a bigger picture.” School is “for the betterment of us, yes. But it’s for the betterment of our people.”

An issue germane to many students regardless of ethnicity was finding the money to attend college. While some students mentioned that they had no problem financing their education, the majority expressed that paying for college was the most challenging and stressful aspect of college enrollment. While one student said that he was the only one of his siblings expected to attend college, the biggest thing was that he did not have the information necessary to complete his financial aid application; “Pretty much I had to work and had a job all through college to pay for it.” Further, the student would “just take part-time jobs and pay the \$ 1,800 [tuition] that was real minor. But when the tuition started getting up to three, four, and five grand, then I had to work full time.”

Another student who initially enrolled at a mainland institution said that the goal to “go away and experience college life” ended when the financial aid stopped, “so I had to come back [to Hawai‘i], and that’s why, and what made me apply to UH.” Several students noted, perhaps ironically, that without financial aid they had to work more which in turn took time away from their studies and further removed them from the prospect of receiving scholarships based on need. Importantly, in cases where students did not qualify for financial aid, they acknowledge the important roles their families played with offering financial support, housing, or child-care. One student explained her fiscal strategy while attending the University as an undergraduate:

I remember going and begging my siblings like ‘kay, I take your paycheck for this week cuz’ then I’ll have just enough to make the payment for school...’ paying for school always worried me.

While several students refused loans for fear of accumulating debt, one student mentioned that:

When I started off I had my graduation [monies] from high school, so that kind of set me for my freshman year at UH. So that kind of helped me out financially, but after that it was kind of hard for us, um, to make it. I had to apply for loans to get through school, but that was probably the biggest problem...

In other cases, where students had children, their families provided much needed assistance:

It was a lot easier with the support of my family... It was just, if my family didn’t help me, then I would’ve dropped out for sure because taking care of baby would’ve been my, oh, it IS my priority...

Consistent with what we know about the importance of education in the family, a majority of the students interviewed had parents who had either attended university

classes or had received college degrees. Parental exposure to higher education in some cases influenced the students in their decision to attend the university. As one student put it; “Yeah, it was kind of like a given. There wasn’t a question if I was gonna go or not, it was just where I was gonna go and what I was gonna do...” One student reflected on the influence of her grandfather’s aspirations in her family, “... he made sure just like all parents, he wanted better for his kids so he got his kids to go to college and he wants even better for his grandchildren.” Another student described her mother’s role in this way:

I think one big overriding factor that I didn’t mention much is my mom...my mom does not allow certain things to happen (laughs). The conversation of me telling her that I totally messed up my semester...that was rough...But, um, yeah she wouldn’t allow me to do anything but graduate.

While several students worked, applied for scholarships, or accepted the help of their families, another student offered a contrasting experience, “I wasn’t worried about like, financial stuff because I have a poor family... So I didn’t have to worry about that.” What the student did observe was a “home life [that] was completely different from here [on UH Mānoa campus]. Like, the two worlds didn’t seem to intertwine with each other at all.” In this particular case, however, it was the strained relationship that made the student carry a heavy responsibility (kuleana) to be a positive role model for her younger siblings and cousins by going to college and being successful until graduation. When asked about what pushed her to succeed:

I guess setting the bar high for my nieces and nephews...So like I have older brothers... They barely got out of high school. And I figure, well, all through growing up I knew I, I was smart, and so I figure, okay. If I’m smart, then I might as well, you know, set that bar high for my nieces and nephews so that way they’re like, oh, if she, my aunty can do it, then I can.

Thus, the notion of kuleana or carrying responsibility was another important concept that several students mentioned. As one student keenly observed “education validated the future”:

But it’s for the betterment of our people. I think that’s what kept me going. It’s like as good as it is to fight for my own rights, to fight for my own beliefs and for my own personal game. It’s better to know that you’re not alone. You’re taking, you’re upping your people, you’re helping your people, you’re progressing. You’re helping the culture evolve. And yeah...so know that you’re not only helping you, you’re helping everybody. And you’re encouraging the next one to come. You’re validating the future.

Cultural Validation and the Dynamic of Learning

It was just really fun to have a really great teacher, and students that are super interested in being there and not, you know, forced to be there and it changes your whole dynamic of learning, and the whole classroom situation...It changes the way that people want to be there and are interested in what you’re talking about.

The idea of “dynamic of learning” was a term used by one of the students to describe a positive learning environment. The concept is highlighted here because based on conversations with students in which it seemed to adequately depict a cluster of inter-related themes: the significance of program relevance, the desire for applied learning and creating linkages between their personal interests, academic pursuits and career path. Perhaps the most poignant conversation about program relevance came from one student who was raised in a family of kalo farmers. Kalo (taro, *Colocasia esculenta*) was and continues to be a significant food staple for the Hawaiian people as well as a main crop of the Pacific and Asia regions. In Hawai‘i, according to one source, more than 342 names were applied to kalo thus signaling the plant’s importance (Abbott 1992). The story of origin of the Hawaiian people has several versions but all of them offer significant prominence to kalo. The first child of Wākea and Ho‘ohōkūkalani was an unformed fetus named Hāloanaka. They buried Hāloanaka in the earth and from that spot grew the first kalo plant. The story below is indicative of the force that a relevant program can have in the life a Hawaiian student:

And the full circle thing, I ended up actually towards the end of my undergraduate, I got to actually work down at that lo‘i and my grandpa was a taro farmer, so the fact that I get to get paid in a college setting to do what my grandpa did for a living I guess it was kind a trippy and hard for him to understand... When I talked to him about, and he came and saw me working in the place he was like ‘oh no, this is where you belong this is good.’ So the whole full circle thing, yeah. I see that it validates that his lifestyle accepted in a college setting kind of made me proud too. That was shocking.

Academic interests can also resonate with the family lifestyle of students. In the meantime, one student realized how an internship echoed the lessons taught to her by her grandfather which in turn helped to direct her educational focus:

...they allowed me an internship to do um, like conservation. So, like I think that kinda tied me into like, caring about the language and stuff like that and that kinda geared me into where I am now and trying to develop curriculum that’s place-based, and kinda focused a lot about responsibility, taking care of stuff and tying into Hawaiian values and things like that, so it pretty much led me to where I am... So that’s probably why... it ties into a lot of what my grandpa taught me. So, those types of values, taking care. So, probably. Never saw that connection before but thanks!

Several students noted that a relevant program serves to make other Hawaiian students in their classes “feel more like wow, we can study ourselves and what we do isn’t simply a way of life.” Daily life practices that we just did “like pule and oli” now it took on greater significance because it “had a purpose and had so many reasons [for doing it] and things that back it up.” It “validated our lives.” Another persistent theme that emerged centered on the students’ desire for a practical application of the material that they learned at the University. Because the bulk of the students interviewed eventually graduated, they demonstrated the ability to make cognitive links between their personal interests, their academic pursuits and their careers. During the course of the interviews, they were able to describe how these links happen; for example, the lasting impression of enriching faculty mentorship:

Yeah, I mean it sounds kinda lame, but kinda like wanting to be like him [this professor]. Like, be something bigger than yourself and like cause changes that are just positive and support the community. That's kinda what (he) has always been and something I want to try to work towards.

Educational atmosphere and the conditions of facilities can enable a student to learn with all their senses. One student noted how his goal to work in the music industry was catalyzed by state-of-the-art facilities that were coupled with an accelerated program that helped him feel prepared to enter the industry:

We were in studios, they built these multimillion dollar studios with boards and everything and you're like learning hands on. You have the, so you're learning with all your senses and that's like one way to learn, real good to do.

Way Finding and Seeking Refuge

The UH Mānoa campus is situated in a residential valley that is located within the primary urban core on the island of O'ahu. The UH Mānoa campus characteristics are those of a large urban commuter campus. No high school counselor can adequately prepare students, especially those from smaller rural communities, for the first day of the semester when more than 20,000 students come to campus. Several of the students interviewed found the campus environment to be intimidating and unfriendly, and as one student put it: "I just felt lost my first time here." Moreover, while the student was academically prepared for college, there was still a great deal of uncertainty about what exactly to expect:

The fact that there's so much people here, um, the fact that I didn't come in with like a group of friends or stuff like that, so, I think all of that kinda just factored into making me feel intimidated and a little scared and not really willing to try much.

A few students complained about stereotypical attitudes and expressed frustration that the University and others do not see the perceived value of a Hawaiian Studies or Hawaiian Language degree. The result, as some students expressed, was difficulty in trying to explain, legitimize or justify their passion or plans for their future career path.

But if we be like I'm a Hawaiian studies major then it's, I'm pretty sure to this day in the university setting well they be like 'oh okay that's great but what are you gonna do with that?' Cause it's not really accepting and they look down on it. 'So okay you're either gonna be an activist or a probably go into the law school, you wanna become a teacher but what are you gonna do with it, right?' I guess having a place where we wouldn't be, I don't know looked down upon or more so, not to say they're not accepting of us, I think they see it a lot of, 'okay more restless natives getting you know more things to yell about.' So yeah, I think it's just a place where we wouldn't have to justify why we do what we love.

One student, coming from a Hawaiian household and a high school with a high enrollment of Hawaiians explained how she felt "culture shock" when she came to realize that her peers did not know anything about Hawai'i or where they were living:

...I couldn't believe that they just had no idea and that was my first like, culture shock, that yeah, I'm Hawai'i, yeah I'm going to University of Hawai'i, and yeah, a huge majority of these people have no idea where they're living.

Recognizing that it takes adjusting to this kind of learning atmosphere, the interviews with these students revealed that they employed clever strategies to find their way and create their own places of refuge. During registration, one student explained, "there was always like massive phone calls to like, everybody...oh, what do you think about this class?" She noted further, that "besides trying to figure out which classes you wanna take, sometimes you wanna take 'em with your friends." Another student however, expressed how it wasn't really natural to network but eventually you figure it out:

So I think initially I didn't really know how to, you know, network, or make those connections to help me succeed, but I think um, you kinda learn it, you know, or hopefully most people learn it.

Another student reflected thoughtfully that during her undergraduate journey she "learned how to be somebody who asks questions" and learned how to seek knowledge. Another felt that while some students "are all about themselves" there was acknowledgement that "you can't credit your schooling to just to yourself because everybody else um, helps you." Interestingly, finding a "place to belong" was important especially when they believed that the University was not accepting or understanding of their needs.

The University isn't very understanding... And then like, Hawaiian Studies, there's actually somewhere for Hawaiians to go. It gives them a sense of place. And um, it helps them to like, not that they don't belong up there, it just gives them a better like, surrounding down here. That they're, they're supporting you, and you're doing it and, yeah. They're really good at that... They never want you to give up.

Another student expressed how they gravitated towards places on campus that functioned as a *pu'uhonua*—a place where students who care about the same things can gather—are encouraged to gather together, and that are places they can identify with:

...they encourage just a place you know, a pu'uhonua where students can do stuff... I think that's where I knew 'kay, anybody who comes here to hang out, they would have to either care about Hawaiian or would make an effort to come here because they love this place. So just having a place to identify with. I knew that people would foster the same feelings, that I would have the same beliefs. Even if they didn't believe what I believed in, at least we could have conversations over what we believe in. It was that place. If there could be more lo'i like places for the students. You know make them feel like we do have a place, we matter somewhat in the university... Make us Hawai'i people feel comfortable in our own place.

Summary

In this chapter, we have tried to describe through the voices of Native Hawaiian students their academic journeys on the Mānoa campus in order to redefine, own,

and celebrate academic success. We note that the Mānoa campus is the most selective and most expensive in the system. It is therefore the most advantaged and the narratives of students on other campuses in the system would likely have yielded different insights.

Some of the sentiments expressed (like finances) are common to many students in college regardless of racial or ethnic background, but these conversations reveal several reinforcing themes that centered on the family, program relevance, dynamic learning opportunities, and the importance of place. While some students were the first in their immediate families to attend college, several students included in the interviews had parents who had some exposure to higher education by either attending or graduating from college. Students mentioned how their families supported them to stay enrolled and pushed them to graduate. As students journeyed through their programs, they discovered the larger importance of higher education, not only for themselves but also for communities and the evolution of their culture. Several students felt it important to be positive role models and set high standards for their siblings, cousins, and fellow community members. Through this process, we note a redefinition of higher education among families where they get used to being in college and being successful at it. Students recognize and utilize family values to help persevere.

Program relevance was crucial for some students in defining the significance, relevance, and justification for generations of Hawaiian family practices and lifestyles. Coupled with relevance, students also expressed the desire to apply knowledge. Many were successful at creating links between personal interests, academics, and future career choices. Certain students expressed that they developed the skillset necessary to seek knowledge, to know how to ask questions and balance their social lives with the demands of school in order to persist until graduation. The development of academics skills, time management, study structure, and self-discipline shaped students who were not afraid of being successful. In similar fashion to their oceanic ancestors, students were skilled way finders and they embraced the significance of place. It was clear from these conversations that students figured out over time how to network, create their own learning communities, and how to take advantage of programs and services available to them. Students sought out, found, and created their own pu‘uhonua as places of refuge for what seemed to be inhospitable, intimidating, and unfriendly environments. These pu‘uhonua served as safe physical respites as well as intellectual spaces where students shared concerns and embraced practices of helping each other out. Their academic journeys and stories of success and empowerment in the end and perhaps not too surprisingly were collective endeavors meant to serve and benefit not only themselves but also their families, communities, and their lāhui.

Conclusions and Next Steps Toward an Agenda

In this chapter, we have provided a broad introduction to the Kānaka Maoli, indigenous people who form a relatively small but historically and culturally important segment of the U.S. higher education system. We have illustrated the complex and

contentious history that the Kānaka Maoli had had with Westerners generally and the United States in particular. While this is a chapter about the higher education fortunes of a specific subpopulation, it differs dramatically from treatments of minoritized groups that are typically offered in the higher education literature. To understand the unique history and culture of the Kānaka Maoli is a first step towards beginning to understand the challenges surrounding efforts to improve college access and success of Native Hawaiians.

We have offered a narrow window on the educational experiences of Native Hawaiians. Lack of accurate data present a significant challenge in our attempts to understand more broadly the degree to which Native Hawaiians are participating in higher education. Issues of identity, useful administrative classification of ethnicity and ancestral origin, and the lack of an integrated data system create significant barriers for scholars wanting to study broader patterns of Native Hawaiian participation in and completion of higher education.

Our most concrete examples have come from the University of Hawai‘i and, more specifically, from those Native Hawaiian students attending the Mānoa campus. The Mānoa campus is the most advantaged in the system in terms of resource and the most selective in terms of admission. The experiences of students there will no doubt reflect this and are very unlikely to be representative of students at the community colleges or on the other four-year campuses within the UH system. While little work has been done on Native Hawaiians in postsecondary education, there is some work from the higher education field that suggests how different some of these experiences might be (see Hagedorn et al. 2006; Makuakane-Dreschel and Hagedorn 2000). Recent efforts among the community college campuses to increase the lower success rate of Native Hawaiians have involved work with the Achieving the Dream project and preliminary results are encouraging (Achieving the Dream 2011).

It is also important to note that our focus on Mānoa neglects the substantial contribution made by the University of Hawai‘i at Hilo and the University of Hawai‘i at West O‘ahu. The Hilo campus has a rich Hawaiian language school and the first ‘ōlelo doctoral program in the system (Ka Haka ‘Ula O Ke‘elikōlani, Koleke ‘Ōlelo Hawai‘i 2011). The West O‘ahu campus has worked to establish programming and a substantial presence on the Leeward Coast, home to the largest concentration of Native Hawaiians in the islands. Efforts to develop a system-wide tracking capacity would importantly include all campuses within the system.

Beyond the UH system, there are important questions about attendance at institutions within Hawai‘i and migration to institutions on the mainland of the United States. Our traditional mechanisms and data sources for understanding these broader patterns of enrollment and completion are insufficient to permit a tight focus on the condition of Native Hawaiians in higher education and we therefore have no way to evaluate the effectiveness of increasing efforts to encourage educational attainment. Beyond evaluation, there is a powerful opportunity to explore the utility of our existing models of access and success.

Through this chapter, we are encouraging more scholarship around issues of access and success for Native Hawaiian students. We are also encouraging the con-

tinued pursuit of resources to support the collection of better data that will allow us to more clearly understand the degree of participation, postsecondary destinations, the experiences of Native Hawaiian students on different types of campuses. We hope that scholars will carefully watch—and work with—the University of Hawai‘i as it continues to identify the strategic directions required to create an indigenous serving system.

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Chapter 8

The Roles of International Organizations (IOs) in Globalizing Higher Education Policy

Riyad A. Shahjahan

Introduction

International organizations (IOs) are vital players in assembling a higher education global policy space. Since the 1990s, IOs already involved in higher education have increased their scope of activities (e.g., United Nations Educational, Science, and Cultural Organization [UNESCO]), while those less engaged have recently emphasized a higher education agenda (e.g., World Bank [WB]; Bassett and Maldonado 2009). IOs play a significant role in the global flow of new ideas and institutional imperatives of higher education (Spring 2009; Vaira 2004). By participating in IO activities, local policy actors are increasingly networked with their colleagues from other contexts (Rizvi and Lingard 2010). IOs are progressively seen as policy actors, rather than mere policy advisors and mediators (Henry et al. 2001). However, IOs do not diminish the role of the nation-state, but transform the “state forms” (Robertson et al. 2002, p. 472). By introducing changes to national education *policies* and *politics*, IOs influence the content of educational debates in national projects (Leuze et al. 2008, p. 2). Overall, IOs present new complex dynamics to higher education policy and the effects of these processes are various and context-dependent.

Here, IOs refers to intergovernmental organizations that are unions of nation-states joined together to tackle similar domestic and foreign policy issues at the international level. By “global policy space,” I am referring to a policy space/process that is both discursive and includes extra-local actors with different political priorities and power access—nation-states, IOs, international nongovernmental actors (e.g., private transnational corporations, higher education institutions [HEIs])—and international exchange of goods and services (Jakobi 2009). The term “global” here refers to a level of policy connection above the national, but still interconnected to regional, national, and local policy spaces (Lingard et al. 2005).

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In the last two decades, many scholars recognized the significance of IOs in higher education policy (Henry et al. 2001; Marginson and Rhoades 2002; Rhoads and Torres 2006; Spring 2009). However, this research literature remains systematically unexamined in terms of the themes it explores, its strengths and limitations, and the implications for higher education policy making in a global era. This chapter aims to provide a better understanding of the dynamics involved in globalizing higher education policy vis-à-vis IOs (Leuze et al. 2008). To this end, I answer the following questions:

- What roles do IOs play in assembling and maintaining a higher education global policy space?
- How do various contexts (in terms of sociopolitical, national, and institutional contexts) mediate the saliency of IOs' policy initiatives and processes?
- What implications does globalization of higher education policies vis-à-vis IOs have on future research and policy making in higher education?

I respond to these questions by synthesizing the higher education literature to date on four key IOs involved in the globalization of higher education policy, namely the WB, the Organization for Economic Cooperation and Development (OECD), the UNESCO, and the European Union (EU). These four IOs serve as an important entry point to understanding the role of IOs in higher education policy due to the following three points. First, all four IOs have a global scope of influence. Second, they possess multiple instruments of influence and conduct various supranational activities in higher education. Finally, when higher education researchers refer to IOs in the higher education arena, one or more of these four IOs are usually cited as examples (see for instance, Bassett and Maldonado 2009; King 2009; Martens et al. 2007). This chapter focuses on the literature published in English in academic journals, books, and conference papers. To help frame some of the IO policy mechanisms in higher education, I also refer to the IO literature in educational policy, political science, accounting, and comparative and international education.

In this chapter, I use the literature to tease out how IOs enact various forms of influence on higher education policy and add complexities to global policy making. I suggest that these global influences also implicate future research and policy making in higher education. I argue that the study of IOs in higher education is integral to understanding the globalization of higher education policy. I also recommend moving beyond methodological nationalism and higher educationism in higher education research. By *methodological nationalism*, I mean the bias toward understanding higher education policy from within the confines of the nation-state (as well as its constituents). Such a methodological approach overlooks the influences of extra-local forces on national policy processes and the role of global discourses framing higher education policy. *Higher educationism* indicates the exclusive focus on higher educational structures, events, rationales, and processes, when analyzing new trends and regulatory transformations in universities and colleges. This latter approach omits the nonhigher education rationales and processes framing higher education policy agendas (e.g., the foreign policies, export agendas, or the economic performance in a country; Hartmann 2010a; Verger 2010).

I have organized this chapter in the following ways. I first provide a brief overview of the four IOs, respectively. Drawing from critical policy analysis perspectives, I next offer an overview of the literature written on IOs and higher education policy, particularly focusing on the growing literature that emerged in the last decade (2000 to present). I present this body of literature using three themes that help us understand IOs and their relationship with higher education policy. Throughout this thematic discussion, I highlight key higher education policy issues involving IOs. Finally, I conclude with a set of propositions to guide future research in higher education policy and policy making in a global era.

Brief Overview of International Organizations (IOs)

All the IOs discussed in this chapter emerged as a product of “multilateralism” in the aftermath of the World War II. Multilateralism “refers to forms of collective action among states on the international level” (Mundy 2007, p. 19). In this section, I provide brief descriptions of the WB, OECD, UNESCO, and EU, respectively, to highlight how they overlap and differ. For each of these organizations, I discuss briefly their historical origins, objectives, membership and structure, and their past and current activities in higher education. I have also included Table 8.1 entitled “IOs, roles of higher education, and agendas” to provide a comparative synopsis of the IOs’ current views of higher education and their policy agendas.

World Bank (WB)

Historical Origins

The WB, often referred to as “the Bank,” was established in 1944 during the reconstructionist period of post-World War II with the mandate to support the post-war construction of Europe (Heyneman 2003; Samoff and Carrol 2003). Stemming from the International Reconstruct Development Bank, in the late 1950s, the Bank’s objective changed from reconstructing war-torn Europe to focusing on the priorities of newly emerging developing countries.

Objectives

According to the WB, its mission is “to fight poverty with passion and professionalism for lasting results and to help people help themselves and their environment by providing resources, sharing knowledge, building capacity and forging partnerships in the public and private sectors” (World Bank 2011a). The Bank supports equitable and sustainable long-term development by providing various types of loans

Table 8.1 IOs, higher education role, and agendas. (Source: Produced by author by drawing information from EC (2011); Mora and Felix (2009); OECD (2008); Salimi et al. (2009); UNESCO (2011); and World Bank (2010a))

IO	WB	OECD	UNESCO	EU
Views on the role of higher education	Essential player for the knowledge economy Capacity builder for responding to technological advances Higher-order capacity builder necessary for development Supporter of progress toward millennium development goals	Driver of economic competitiveness in knowledge economy Contributor to social and economic development through: Human capital development Construction, dissemination, and maintenance of knowledge	Key factor for cultural, economic, and social development in the knowledge society Endogenous capacity builder Promoter of human rights, sustainable development, democracy, peace, and justice Supporter of progress toward Education For All (EFA) goals	Crucial player for global knowledge-based economy Contributor to human capital development and job creation New knowledge creator that transfers it to students and fosters innovation
Current agenda and/or policy directions in higher education	Institutional diversification and autonomy Quality assurance and relevance Equity mechanisms Science and technology research and development capacity Financial sustainability Management capacity building Information and communication technology (ICT) capacity building	Alignment with national economic and social goals Quality assurance Equality of opportunities and access Research excellence and its relevance Financial sustainability Adequate supply of academic labor Labor market relevance Internationalization	National and research capacity building Quality assurance Equality of opportunities and access Recognition of qualifications Knowledge sharing across borders Teacher training Challenges of globalization Use of ICTs in education	Curricular reform Recognition of qualifications Institutional autonomy Diversification of Funding Quality assurance Internationalization of HE institutions Equity, access, and efficiency Labor market and learner relevance Academic mobility Life-long learning

to middle-income and credit-worthy countries (through the International Bank for Reconstruction and Development [IBRD]) and offering assistance on concessional terms to the world's poorest countries (through the International Development Association [IDA]; World Bank 2010b). The Bank is considered the world's largest funder of education and the largest international development research institute, particularly in the global South (Samoff and Carrol 2003; Spring 2009). The Bank is committed to embedding discourses of marketization, privatization, flexibilization, and deregulation (Griffin 2007). However, the term "neoliberal" is one that many Bank staff would not apply to their work, nor do the Bank's policies replicate the hyperaggression of 1980s' "Washington Consensus" neoliberalism (Griffin 2007).

Membership and Structure

The Bank is simultaneously a bank, a development agency, and a research institute (Samoff and Carrol 2003). The term WB typically refers to the IBRD and the IDA. The Bank consists of a large membership of 187 countries, serving member countries' ministers of finance or ministers of development. However, it has a weighted-voting system whereby a country's voting power corresponds to its economic contribution to the organization (Hufner et al. 1997). The WB consists of 10,000 employees with 100 offices around the world, and networks with other NGOs, foundations, donors, civil society organizations, multinational corporations, and academic and professional associations (Collins and Rhoads 2010; World Bank 2011b).

Past and Current Activities in Higher Education

Throughout its earlier reports, the Bank advised developing countries to reduce funding toward higher education since HEIs consumed an uneven share of education resources and provided inequitable access (universities were overrepresented by students from middle-to-high-income groups). In the mid-1990s, the Bank changed its critical attitude toward higher education. This shift is due to the recent view that higher education plays a vital role in developing the knowledge/skills necessary for a nation-state's economic growth (Robertson 2009; Please see Table 8.1 for the Bank's current views and agenda in higher education).

In 1994, the Bank published its first comprehensive policy statement on higher education, *Higher Education: The Lessons of Experience*, which recognized the significance of higher education for economic and social development. Since then, the WB has published other notable reports informing higher education policy directions, including a huge number of country-specific reports, working papers, and technical reports focused on higher education reform (Salmi et al. 2009). Overall, the WB conducts the following seven types of higher education activities, mainly to: (1) *produce policy reports*, (2) *provide financial support* (e.g., loans, funding initiatives), (3) *collect and analyze data*, (4) *offer policy advice*, (5) *sponsor inter-*

national/regional conferences and networks (e.g., South-South networks), (6) *supply technical support*, and (7) *provide analytical assistance* (to help governments decide on possible reforms in higher education; Salmi et al. 2009). Overall, the WB is a very influential global actor in higher education policy. The Bank's influence stems foremost through its economic muscle, but also through its analytic work, policy advice, and technical assistance.

Organization for Economic Cooperation and Development (OECD)

Historical Origins

The OECD originated in September 1961 derived from the Organization for European Economic Cooperation (OEEC). The OEEC was created in the late 1940s to supervise the European Recovery Program (i.e., Marshall Aid Plan), instituted by the United States to economically revive Western Europe after World War II. In the mid to late 1950s, as the recovery reached its peak, the OEEC's mandate came to an end. As a result, the OECD was born whose geographical coverage extended beyond Europe and included the developed world's 30 major national economies. Its mission was committed to promoting democracy and the market economy (Amaral and Neave 2009; Henry et al. 2001).

Objectives

The OECD's current mandate is to support economic growth, promote employment, assist countries in their drive to economic development, and advance world trade and democracy (Amaral and Neave 2009). The OECD's policy influence derives from its knowledge production capacities and the subsequent perception of the "quality of its information and analysis" (Schuller and Vincent-Lancrin 2009, p. 66). It regularly publishes influential cross-national, comparative statistics, and indicators (Amaral and Neave 2009). Unlike the WB, the OECD has a broader political influence because it has a much more inclusive social agenda by balancing economic and social policy objectives (Henry et al. 2001). To this end, the OECD sustains a social agenda without excluding the orthodox economic policy agenda and vice versa.

Membership and Internal Structure

The OECD is simultaneously "a geographical entity, an organizational structure, a policy-making forum, and a network of policy makers, researchers and consul-

tants” (Henry et al. 2001, p. 7). It has 34 member countries including many of the world’s most advanced countries, but also emerging countries like Mexico, Chile, and Turkey (OECD 2011). In terms of higher education, the OECD serves government agencies responsible for higher education and education planning (Amaral and Neave 2009). The OECD conducts higher education activities mainly within the Directorate for Education. In 1969, the OECD created the Programme on Institutional Management of Higher Education (IMHE), which is dedicated to management of HEIs and consists of 250 members over 50 countries (OECD 2010). IMHE is the only OECD forum open to HEI.

Unlike the material-resource heavy WB, the OECD is less centralized, sparser, and a more loosely coupled network. Under the OECD umbrella, there “are about 200 committees, working groups and expert groups,” which “bring together officials from national governments and experts from academia and the private sector, under the guidance of the Secretariat” (Porter and Webb 2007, p. 4). Hence, the less centralized OECD, politically free of its member states can quickly shift in developing new and alternate strategies (Hufner et al. 1997). Unlike the WB, the OECD lacks the material purchase in participating nations, but instead relies on “soft” discursive power. Furthermore, unlike the EU, the OECD misses legislative power (King 2009).

Past and Current Activities in Higher Education

The OECD’s interest in higher education began from the early 1960s, when human capital theory supported the contribution of education to economic development and there was a rapid expansion of higher education among member states. In the 1970s, the OECD’s primary higher education agenda was access to higher education. During the 1990s, the OECD “focused on problems pertaining to scarce financial resources, consequences of massification, internal economies, and improving the links between higher education and employment” (Hufner et al. 1997, p. 333; Please see Table 8.1 for the OECD’s current views and agenda in higher education).

Overall, the OECD carries out seven types of higher education activities, mainly: (1) *data collection* (yearly published in *Education at a Glance*, the OECD’s best seller publication), (2) *data production through surveys* (one in development for higher education is AHELO), (3) *country and thematic reviews* (focusing on one educational aspect and following a quality assurance methodology), (4) *policy research reports* (based on experts and stakeholder development as well as a mix of existing and new research), (5) *nonbinding guidelines* (e.g., guidelines for quality provision in cross-border higher education), (6) *foresight projects*, and (7) *international conferences and networks* (Schuller and Vincent-Lancrin 2009, p. 65). The OECD also publishes the *Higher Education Management and Policy* academic journal, which addresses higher education policy and institutional management issues.

In summary, the OECD represents an opinion muscle in higher education policy making. The OECD spreads its influence by constructing and disseminating knowledge about various higher education issues. It does this by documenting and fore-

casting trends, developing global spaces of equivalence (Rizvi and Lingard 2010), and supporting forums where stakeholders come together.

United Nation Educational, Scientific and Cultural Organization (UNESCO)

Historical Origins

UNESCO began in 1946 and is derived from the International Institute of Intellectual Cooperation (IICI) and the International Bureau of Education (IBE; Daniel 2003). UNESCO grew out of the mid-1940s' war-torn social conditions in Europe. In 1945, a United Nations Conference was convened for the establishment of an educational and cultural organization. In this conference, the representatives of 44 countries gathered and decided to create an organization that would embody a genuine culture of peace (UNESCO 2010a).

Objectives

According to UNESCO's (2010b) Web site, its current mandate is to "contribute to the building of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information." UNESCO is the only United Nations organization with a mandate in higher education (UNESCO 2004). UNESCO plays an important standard-setting role through its regional conventions on recognition of qualifications, which are legally binding instruments that have been ratified by 100 member nation-states (UNESCO 2004). Unlike the WB and OECD, UNESCO has a more inclusive social agenda of higher education by emphasizing human rights and cultural diversity (see Table 8.1). However, UNESCO still supports a higher education regulatory agenda by focusing on cross-border quality assurance that normalizes global (and national) markets (Hartmann 2010b).

Membership and Internal Structures

UNESCO is composed of 193 member countries and seven associate members (UNESCO 2010c) and interconnected with numerous intergovernmental organizations, nongovernmental organizations, United Nations agencies, and multilateral/bilateral agencies (UNESCO 2010d). The higher education division housed at the UNESCO headquarters in Paris fosters cross-national exchange through sponsoring forums about emergent issues and initiating new networks (Mundy and Madden 2009, p. 53). UNESCO also has two regional higher education centers, the European Centre for Higher Education (CEPES) based in Bucharest, and the International

Institute for Higher Education in Latin America and the Caribbean (IESALC) in Caracas for Latin America. These centers facilitate the meeting of scholars and government's representatives from various countries in those regions to discuss higher education issues of mutual interest. UNESCO also created a new UNESCO Institute for Statistics (UIS) that provides comparative statistics on higher education systems (Mundy and Madden 2009).

Past and Current Activities in Higher Education

From the outset, UNESCO's higher education activities focused on member states' national planning by sponsoring forums/conferences, collecting statistics, and partnering with institutions (to nurture information sharing and standard setting). In its first higher education policy paper, *Change and Development in Higher Education*, UNESCO declared itself as informing higher education policy by supplying data, analyses, and monitoring trends. UNESCO continues to foster knowledge exchange across borders and policy networks by sponsoring the UNESCO twinning program (UNTWIN), a newly created UNESCO/NGO Collective Consultation in Higher Education, and the UNESCO Chairs program (Mundy and Madden 2009).

Overall, UNESCO conducts seven types of higher education activities, mainly in: (1) *data collection*, (2) *standard setting*, through its regional conventions, (3) *policy research reports*, (4) *nonbinding guidelines* (e.g., 1997 Recommendation concerning the Status of Higher-Education Teaching Personnel), (5) *foresight projects*, (6) *technical assistance*, and (7) *international conferences and networks* (e.g., the World Conference on Higher Education, UNTWIN network; Mundy and Madden 2009; Uvalic-Trumbic 2009). The two regional centers in higher education produce their respective journals, from CEPES *The Higher Education in Europe*, and from IESALC *Educación Superior y Sociedad* (Hufner et al. 1997). Unlike the WB and the OECD, and given its decentralized and extensive global outreach, UNESCO is more involved with regional policy issues and standard setting in higher education policy.

To sum up, UNESCO is involved in regional efforts due to its decentralized structure. It plays the roles of a standard setter, a sponsor of forums, and a knowledge broker in terms of regional HE policy issues. Finally, UNESCO coordinates the mutual exchange of information on higher education issues (e.g., quality assurance, internationalization, and academic qualifications).

European Union (EU)

Historical Origins

Historically, the idea of a European nations' union grew out of a desire to maintain peace after World War II. This political plan was focused on economic ties. In the

following decades, as more countries joined and economic union became insufficient, a new union was assembled to embrace wider political, economic, and social policies. This broader social perspective changed the title of the union from the European Economic Community (EEC) to the EU after the Maastricht Treaty in 1992 (Dale and Robertson 2002).

Objectives

The EU reflects an economic agreement facilitating free trade and a social and political union among member countries (Dale and Robertson 2002, p. 24). The Maastricht treaty recognized the EU's role in promoting education cooperation among European countries.

Membership and Internal Structure

The EU consists of 27 member states primarily located in Europe (EU 2011a). It is composed of three decision-making bodies: the European Commission (EC), the Council of European Union, and the European Parliament (EP). The EU is also linked with civil society groups, employers, banks, regulatory agencies, and regional and local authorities (EU 2011b). Among the EU institutions, the EC plays an important role in higher education policy through its policy proposals, implementation, and coordination activities (Balzer and Martens 2004). The EC also ensures a collaborative system amid member states. Compared to the other three IOs, the EU has a stronger legislative capacity among members (King 2009).

Past and Current Activities in Higher Education

Historically, the EU had a number of higher education activities that continue today. For instance, the European Community Action Scheme for the Mobility of University Students (ERASMUS) program launched in 1987 focused on credit transfer and university networking. After the Maastricht Treaty, the SOCRATES program was developed to construct a wider range of interuniversity cooperation programs. Furthermore, the TransEuropean Mobility Scheme for University Studies (TEMPUS) program was established in 1990 to support the eventual eastward enlargement of the EU (Keeling 2006). In short, the EU has been historically involved in promoting university networks and improving student mobility.

Currently, the EU's higher education programs address a range of objectives including language support, distance and e-learning, adult education, and supporting curricula reform for the Bologna process (BP; Keeling 2006; see Table 8.1 for its current views and agendas in higher education). Furthermore, the EC's involvement in the BP, initially uninvited, has made the EC a major actor for agenda setting in higher education policy. To increase student mobility and improve recognition of

student qualifications, the BP envisions the creation of a higher education European space through compatible national systems. Among other curricula changes, the BP involves adopting a two-degree cycle system (undergraduate and graduate studies). By 2007, 46 countries joined the declaration and agreed to enable conducting university studies and doctoral programs across their borders (Westerheijden 2003). For recent detailed accounts on the BP please refer to Keeling (2006); Reinalda (2008); and Balzer and Martens (2004)). In the last decade, EU's higher education influence has gone global and is now impacting North America, Asia, Africa, Latin America, and Australia (see Hartmann 2008; Robertson and Keeling 2008). For instance, through its TEMPUS program and Asia-link, the EU provides a normative framework for cooperation on higher education modernization projects with the Western Balkans, Eastern Europe, Central Asia, North Africa, and Middle East (Keeling 2006).

Overall, the EU (most notably the EC) leads six types of higher education activities, mainly in: (1) *data collection and analysis* (through comparative reviews, national reviews, and evaluation), (2) *policy proposals* (e.g., focused on comparable degrees and credit transfer), (3) *funding initiatives* (e.g., ERASMUS, TEMPUS, Asia-Link), (4) *technical assistance*, (5) *coordination of policy implementation* (e.g., Open Method of Coordination), and (6) *conferencing and networking support* (Balzer and Martens 2004; Huffner et al. 1997; King 2009).

To summarize, the EU is a regional actor with multiple roles that globally impact higher education policies. It does this through its funds, technical expertise, sponsoring meetings, and coordinating and monitoring policy implementation. In short, the EU operates from European, economic standpoints and has multiple muscles in shaping higher education policy inside/outside Europe.

Summary

The four IOs converge and diverge in their roles and instruments of influence. They direct higher education reforms by globally networking various stakeholders. The differences and complexity among these IOs are significant in practice and hence, generalizations about these IOs must be handled with care. Thus, we need to question simple representations of these global actors as homogenous and self-contained entities. Instead, IOs are complex hubs of various policy communities.

The different structures and functions of these IOs shape their higher education activities, views, and policy agendas. As evident in Table 8.1, their views converge in terms of higher education's role in economic competitiveness within a global knowledge economy. However, their visions differ in terms of social roles of higher education, with UNESCO emphasizing the cultural, peace, and other social missions of higher education. Furthermore, while their policy agendas converge by focusing on quality assurance and access, their focus varies in terms of financial sustainability, curricula reform, knowledge exchange, or internationalization. For instance, the EU has a strong agenda in curricula reform given the EU's role in the

BP, while UNESCO has a strong emphasis on knowledge exchange across borders due to its intercultural exchange mandate. Thus, these four IOs construct and maintain a higher education global policy space by bringing to the table their various roles, agendas, activities, and complex networks.

IOs and the Higher Education Global Policy Space

I will now outline the critical policy analysis (CPA) perspective from which I engage the concept of *policy* and review the literature. I draw on the works of Sandra Taylor, Jenny Ozga, Stephen Ball, Bob Lingard, and Fazal Rizvi (Ball 2006; Ozga 2000; Rizvi and Lingard 2010; Taylor 1997), to address the roles of IOs in higher education policy. I understand policy as not *only* texts or public rules/laws, but also view policy as a process (Ball 2006; Ozga 2000). A policy process is a vehicle through which policy messages and values are constructed, circulated, contested, or modified (Ozga 2000). These vehicles may include research studies, policy forums, consultations, agenda setting, implementation, and evaluation. Policy also involves the “authoritative allocation of values” (David Easton cited in Rizvi and Lingard 2010, p. 7).

Based on a CPA perspective, I view policy more broadly than the traditional technorational notion of policy in which a policy text (the product) and/or policy problem is taken for granted (Rizvi and Lingard 2010). I assume that there is no singular reading and meaning of a policy (Taylor 1997). Furthermore, a policy text represents a product of struggle among various stakeholders. Rather than viewing policy as static, in this approach, policy is seen as a movement whereby policy ideas flow from one context to another, are contingent, and ad hoc (Ball 2006). Furthermore, policy does not follow a linear path from policy text production to implementation. It instead encompasses a nonlinear set of relationships, which consists of a number of contexts that are interactive and synergistic (Ball 2006). These contexts include a context and framework of influence for the policy, the context of the policy text production, and the context of practice. Policy is also situated within social, historical, and political contexts that consist of power relations, competing discourses, and various players (Ball 2006; Rizvi and Lingard 2010).

Based on this CPA framework, three themes emerged from my review of the literature. The three themes categorize the manner in which I, based on the review, understood the various roles of IOs constructing and maintaining a higher education global policy space. These are: (1) *IOs as discursive forces*, (2) *IOs as networker and coordinator*, and (3) *the salience and mediation of IO policy influences*. In the first theme, I examine the role of IOs in producing a global higher education policy discursive landscape. In the second and third themes, respectively, I explore how IOs introduce complex dynamics to the higher education policy space, particularly in policy making and implementation. These three themes overlap and often more than one theme is present in the work of some authors. In short, these three themes lead us to deeper insights into the roles of IOs and the nuances in globalizing higher education policy.

IOs as Discursive Forces

IOs play a discursive role in constructing a higher education global policy space. They do this by introducing to policy makers their policy texts, categories, ideas, numbers, and spaces of equivalence. By policy texts, I am referring to IO-authored national reports, analytical reports, thematic cross-national reviews, working papers, guidelines, and Web pages. Such texts consist of discussions on current higher education policy problems, proposals, best practices, research evidence, missions, and values.

The Importance and Circulation of IO Policy Texts

During my literature search, I did not find any quantitative research highlighting the causal impact of IO policy texts on higher education policy. Instead, I found numerous qualitative correlations demonstrating their influence. Among various higher education policy communities and academics, I discovered that IOs are predominantly referred to as a reference text. Specifically, it was common to find the names “World Bank,” “UNESCO,” and “OECD,” as a citation with a year next to it, or as a footnote/endnote, and the corresponding title of the cited policy text in the reference section of higher education academic publications (e.g., Altbach 2004; Ginsburg et al. 2003; King 2010; Marginson 2011; Yepes 2006) and national reports (e.g., Bradley Report 2008 [Australia]; Spelling Commission Report 2006 [United States]; Browne Report 2010 [United Kingdom]). Among policy makers and researchers, IOs are often cited for their ideas, graphs, and statistics (e.g., Kritz 2006; Kwiek 2004; Shin and Harman 2009). To take a case in point, the Spellings Commission on the Future of Higher Education Report (2006) suggests that the United States is drastically falling behind as a global higher education leader by citing the 2005 OECD *Education at a Glance*. The report states “While U.S. higher education has long been admired internationally, our continued preeminence is no longer something we can take for granted.... We have slipped to 12th in higher education attainment” (p. 12): This brief US example highlights the increasing use of IO policy texts and global rationales to justify national higher education reform (Yang 2010).

IOs construct a higher education global policy space by widely circulating their policy documents and sponsoring related debates. One noteworthy example is the recent circulation of a WB publication (see Altbach et al. 2004). Fifteen thousand hard copies of the World Bank’s Task Force 2000 report *Higher Education in Developing Countries: Peril and Promise* was printed and distributed. *Peril and Promise* was sent free of charge globally to higher education stakeholders. The report was also available for purchase and experienced high volume sales through the World Bank’s Infoshop. WB staff also disseminated the report through various public forums in Latin America, North America, South Asia, Europe, the Middle East, Africa, and Asia. According to Richard Hopper, a coauthor of *Peril and Promise*,

the document was so well received that it “increased the demands from the WB’s country clients to put higher education reform on the agenda” (p. 74).

However, we cannot assume all IOs receive the same reception for their publications. On the one hand, through its knowledge production activities, the OECD has an undisputable brand identity among policy circles. To this end, Grek (2009) notes that OECD’s publications “are accepted as valid by politicians and scholars alike, ‘without the author seeing any need beyond the label ‘OECD’ to justify the authoritative character of the knowledge contained therein” (p. 25). In contrast, Teferra (2009) writing from the African context observes a “stark disparity in clout” between the WB and UNESCO by noting that the WB’s *Constructing Knowledge Societies* (2002) was a much more visible publication and extensively consulted compared to UNESCO’s less visible *Towards Knowledge Societies* (2005) publication. Thus, IOs construct a global discursive policy space in higher education through the wide circulation and citation of their policy texts (albeit with variable impacts). However, not all IOs are successful in generating dialogue and/or impacting policy with their texts.

IOs as Disseminators of Categories and Language in Higher Education

IOs construct a global discursive policy space by spreading and normalizing particular *ideas* about higher education. For instance, IOs promote the “orthodoxy” that countries need to: increase the student higher education participation rate (Cloete et al. 2006), improve equality of access in higher education globally (Goastellec 2010), encourage life-long learning (Jakobi 2009), and construct a global quality assurance (QA) policy in higher education (Henry et al. 2001). IOs also encourage market-oriented higher education reform by emphasizing “greater efficiency (more outputs for given inputs), greater effectiveness (responding to changing market demands)” and devaluing “state involvement in the operation of universities” (Temple 2011, p. 104). IOs press individual nation-states to incorporate global institutional imperatives and archetypes in their national and sectorial policies (Vaira 2004). As a result, nation-states, because of global competitive pressures, incorporate and translate these global outlooks in national higher education policies by pressuring their higher education sector and HEIs (Vaira 2004).

IOs also discursively construct a global policy space by explicitly/implicitly introducing ideas and categories in their policy texts. This in turn influences national policies. For instance, Rizvi and Lingard (2011) in their analysis of the recent Bradley Report entitled *Review of Australian higher education* argue that the report was consistent with the OECD’s market-based equity reform in higher education. In particular, “the report follows the OECD’s view that a focus on market efficiency can in fact lead to greater equality and opportunities for social mobility” (p. 19). Some researchers have traced the dominant knowledge economy discourse in higher education to OECD and WB policy reports. Olssen and Peters (2005) note that the twin concepts, “knowledge capitalism” and “knowledge economy,”

originated in series of reports emerging in the late 1990s from the OECD (1996) and the World Bank (1998). These terms were later adopted by world governments in the late 1990s. In particular, Godin (2006) notes that the particular concept of “knowledge economy” originated in an OECD meeting and was part of a Canadian delegation’s paper title. The WB embraced this concept in 1996. Thus, the rhetoric of “knowledge economy” became a central part of national policy constructions later in the West and in the developing world (Peters 2001). These above examples illustrate the discursive role of IOs in explicitly disseminating ideas within global higher education policy.

IOs also implicitly standardize particular narratives about higher education by carefully arranging words in their policy documents. For instance, in the influential EU *Memorandum on Higher Education* (1991), the EU foregrounds “quality” as a central higher education policy issue by stating, “The strongly competitive nature of modern society and its dependence on human knowledge and skills is such as to place increasing emphasis on the question of quality” (cited in Saarinen 2008a, p. 347). In this example, the EU normalizes the idea that modern societies are inherently competitive and require high-skilled human resources, thus implicitly arguing that “the quality of higher education is necessary for the competitiveness of the ‘modern society’” (Saarinen 2008a, p. 348). Scholars like Saarinen (2008a, b) thus caution against the atheoretical treatment of IO policy texts. She suggests that IO texts require rigorous textual analytic methods, rather than uncritically using them as data for higher education policy research.

Using critical discourse analysis as a tool, Saarinen examines the “quality” discourse in higher education produced by the OECD and EU (Saarinen 2008a; as seen in the above example). Saarinen focuses on “quality” insisting that it is a loaded political concept. To this end, she teases out how IOs use presuppositions in the “quality” policy discourse to forward a particular outlook of higher education in their policy documents. A presupposition is the “explicit and implicit background knowledge that the producer of the text offers the reader as the joint starting point for communication” and consequently hides their value assumptions and ideological standpoints (p. 342). Saarinen’s study highlights the implicit means by which IOs package the “quality” policy agenda that perpetuate values of competition, consumer choice, and commodification of higher education. She reminds us that IOs use intentional language consisting of assumptions about what exists, or can be, to construct a common ground with their readers, and consequently, do not need to *explicitly* persuade us with their outlooks of higher education. Hence, we cannot take for granted the language and ideas of these IO policy documents. Consequently, through these language arrangements, IOs discursively introduce various “frames of general acceptability” in global higher education policy.

IOs also maintain a global policy space by evoking “crisis talk” resulting in higher education policy convergence among member countries (Beerkens 2008; Keeling 2006; Robertson 2009). For instance, Beerkens (2008) in his analysis of EU policy texts notes how the EU supported “a crisis talk” by evoking a “common problem” among European countries to further the “Lisbonization” of the

BP—the dominating process by which the economic goals of the Lisbon Agenda undermined the cultural and educational ideals of higher education reform. To this end, the EC encouraged catching up with North American higher education and research (and avoid being overtaken by emerging Asian countries) by emphasizing collective action to reach these goals (Beerkens 2008). Keeling (2006) further claims that, in the Lisbon agenda, “the main focus (of the Bologna Process) becomes the European economy itself, drawing higher education reform more firmly within the EU’s policy domain” (p. 211). Consequently, European governments discursively referenced these broad EC objectives to rearticulate their traditional higher education responsibilities (Keeling 2006). To sum up, IOs through their policy documents construct a global policy space by presenting various categories and global obligations. Various policy communities in turn internalize these ideas to articulate higher education policies.

IOs and Their National Reports

IOs also globalize higher education policy (i.e., global discourses enter national/local discourses) through their recommendations merging with national policy discourses. For instance, Gounko and Smale (2006) evaluate the impact of the WB and the OECD on recent Russian higher education policy making. They analyze selected Russian government policy documents and the recommendations of the WB and the OECD. Unlike earlier laws, recent Russian documents reflected the policy content of the OECD and the WB after they had reviewed the Russian higher education system. They found that “concepts of economic growth, competition, human capital, a democratic society, a market economy, effectiveness, efficiency, labor markets, and a knowledge-based economy usually found in the WB’s and the OECD’s publications” were visible throughout recent Russian policy documents (p. 333).

Similarly, Yang (2010) explores how IOs transformed modes of governance in Chinese higher education. Yang points out that post-1997 Chinese higher education policies, such as the *Higher Education Law of the People’s Republic of China* (1998), echoed the WB’s suggestions such as: (1) achieve macro adjustment through policy making and planning, (2) amalgamate higher education institutions to increase resource efficiency, and (3) grant higher education institutions more autonomy in student admissions (p. 423). Yang continues, “The strikingly similar contents between the Chinese higher education policies and the Bank’s suggestions demonstrate that the reform and development of China’s higher education...has been a process in which the impact of the WB on Chinese higher education grew from elementary to profound” (Yang 2010). These examples highlight how IO policy ideas travel and fuse into national higher education policy content. They also raise concerns regarding the “potential loss of education sovereignty” in local contexts (Yang 2010, p. 427). In short, national higher education policy discourses are no longer bound within local policy spaces, however, are increasingly influenced by global discourses promoted by IOs.

IOs as Sources of Global Space of Equivalence

Through their data collection tools, IOs develop global spaces of equivalence through which nation-states compare themselves to certain benchmarks aligned with particular policy outcomes. The indicator work of the OECD, published annually as *Education at a Glance*, is one relevant example of such a space of equivalence. Comprising approximately 30 indicators along with over 100 tables and charts, it includes higher education data such as: enrolment ratios; persistence rates; spending per student; and financial commitment—the share of GDP devoted to tertiary education (Charbonnier 2009). *Education at a Glance* receives wide circulation including media attention, and informs higher education policies around the world (Barriga and Torres-Olave 2009; Mora and Felix 2009; Schuller and Vincent-Lancrin 2009; Yang 2009). For instance, in response to the 2001 *Education at a Glance* results, 20 out of 25 UK press articles consistently mentioned that the United Kingdom was “among six nations where one out of three school-leavers now finish a degree, while at the opposite end of the spectrum, for example in the Czech Republic, Germany and Italy, only one in six school-leavers complete a first degree” (Hendriks et al. 2004, p. 290). As a result, these OECD comparative indicators are used among various policy communities to comparatively assess the effectiveness and quality of their national higher education systems. Yang (2009) further notes that these OECD indicators have a steering effect in that these force many Asian nation-states to apply and import education models from other countries, particularly developed countries. Overall, these indicators result in a “comparative turn” in higher education policy making (Martens 2007).

Through their comparative data systems, IOs also provide the means to make sense of higher education systems. For instance, Goastellec’s (2011) recent analysis of IOs’ higher education inequality indicators (e.g., UNESCO, OECD, and EU) highlights how IOs make sense of access to higher education. All three IOs conceptualize inequality by focusing on the “who” (gender, age, and demographic variables) and the “where” (level of studies, field of education, and program orientation) in access to higher education. However, through their indicators, these IOs erase social, ethnoracial, or geographical origins, privilege access to particular disciplines (e.g., science), and conceptualize higher education purpose as improving employability and economic profitability. Consequently, by “setting up the statistical variables,” IOs are given the power to determine what “ideal” higher education outcomes should be” (Dale 2005, p. 119) and as a result, “encourage higher education public authorities to steer policies in a converging process” (Goastellec 2011, p. 80).

Having said all that is there no utility for having comparative data? For instance, is it not useful to know, across countries, the percentage of women in higher education? While to some extent, there is value in comparative international data informing local policies (particularly in gathering and recognizing patterns of distribution within nation-states); this becomes problematic when these numbers become the so-called “objective” evaluative tools to assess the performance of higher education systems. As many scholars point out, these statistical variables are not objective or ahistorical criteria, but are usually underpinned by instrumental values and out-

looks of higher education tied to a knowledge economy discourse (Dale 2005; Rizvi and Lingard 2010). To this end, some have argued that these comparative indicators privilege capitalist Western models of higher education that poorer countries find impossible to follow (Barriga and Torres-Olave 2009). Others claim that these comparative data are generally insensitive to the importance of local variations and their consequences in comparing outcomes (Samoff and Carrol 2003; Yang 2009). Robertson (2009) insists that these indicators and data systems are tied to market reform and human capital development, and perpetuate the global commodification of higher education. Furthermore, if we accept effective learning as interactive and local, “the problems of cross-national [outcomes] are structural and can never be satisfactorily resolved” (Samoff and Carrol 2003, p. 41).

Unfortunately, these critiques mentioned above are normatively discussed. What seems to be missing is empirically grounded evidence highlighting the consequences of these comparative indicators on higher education policy making at the ground level. Thus, I would suggest that IOs through their data systems and indexes provide useful knowledge for policy tools. However, these tools are embedded in particular values and views about the role of higher education, hence run the risk of steering higher education policy toward standardized models. Overall, through these data systems and indicators, IOs construct global spaces of equivalence (Rizvi and Lingard 2010).

Summary

IOs introduce policy texts, categories, numbers, and indicators on/about higher education to the policy world. Thus, they play a pivotal role in constructing and reproducing the global discursive landscape upon which to make sense of higher education and in turn articulate higher education policy. This section highlighted how IOs’ texts influence the policy content of higher education in different contexts and construct and spread particular visions of higher education. IOs also construct global spaces of equivalence and in so doing, steer higher education policy toward instrumental economic imperatives. Thus, IOs globalize higher education policy through various discursive roles, and increasingly shift the location of policy articulation from the national/local toward the global.

IOs as Networkers and Coordinators

Given that IOs construct a discursive space in higher education policy, how do such ideas spread? What characteristics allow IOs to spread ideas from one location to another? In this section, I answer these questions by examining the role of IOs as networkers and coordinators. I argue that IOs introduce complex dynamics into the higher education policy by building network relations across new higher education policy communities.

Forums as Transnational/Local Networking

As I highlighted in the overview section, IOs nurture transnational policy networks by the fact that they are complex, dynamic, internally heterogeneous institutions, and tied to global networks (Bassett and Maldonado 2009; Henry et al. 2001; Martens et al. 2007). IOs shape opinions and nurture transnational networks by sponsoring and participating within major international conferences (Balzer and Martens 2004; Samoff and Carrol 2003). In these gatherings, IOs unite various stakeholders to *facilitate* and *pool together policy ideas*. For instance, Hartmann (2010b) points out that from 2001 onwards, UNESCO hosted and organized workshops inviting experts from all over the world to discuss strategies expediting the recognition of higher education qualifications across the globe. As a result, in Paris in 2002, the UNESCO Global Forum on International Quality Assurance, Accreditation and the Recognition of Qualifications was launched. The Global forum drew a variety of new stakeholders including for-profit providers (e.g., Apollo Group's Phoenix University), the private sector (e.g., Hewlett-Packard's University Relations Division), and traditional partners—public higher education institutions, teachers/students' associations, and developed/developing countries. As a result, these various policy communities agreed to build bridges between education and trade in higher education services (Uvalic-Trumbic 2009). In other words, IOs such as UNESCO construct a global policy space in quality assurance by drawing together various players and introducing new players (e.g., for-profit providers, the private sector) to the higher education policy process.

IOs use meetings to build consensus and disseminate policy ideas. Through such forums, Amaral and Neave (2009) note that the OECD promotes networking by “winning the hearts and minds amongst key actors...to generate consensus in anticipation of future legislative initiatives or...maintains a body of opinion favourable to policy-in-the making” (p. 86). As one OECD text eloquently puts it, these forums provide “a setting for reflection and discussion, based on policy research and analysis, that helps governments shape policy” (OECD, cited in Porter and Webb 2007, p. 4). For instance, the CERIOECD organized forums on trade in education services in Washington (2002), Oslo (2003), and Sidney (2004). These three forums aimed to analyze trade in education trends and foster debate between the four key stakeholders: universities, the private sector, governments, and students. Through coorganizing these events, the OECD sought to build bridges and foster mutual understanding between education and trade sectors that conflicted on the General Agreement of Trade in Services (GATS) issue (Verger 2010). IOs also use such forums to influence the targets and goals of policy implementation. For instance, after the Prague meeting in 2001, the EC used its mandate to have the floor for a great amount of time during conferences, spreading ideas about how to proceed with the BP (Balzer and Martens 2004).

Within these meetings, IOs construct and disseminate opinions on higher education policy among various stakeholders. Through participating in such forums, IOs also foreground the higher education policy agenda. As these above examples demonstrate, IOs facilitate the building of consensus and common strategies to deal with

issues in higher education by pooling together policy ideas. In short, IOs construct and maintain a higher education global policy landscape by forging transnational, regional, and local links across various policy communities.

IOs as Policy Coordinators Among Members

IOs also globalize higher education policy by forging common policy agendas at the supranational level. They do this by urging compliance and coordinating policy implementation among member states. By the virtue of membership, national decision makers feel institutional pressures introduced by IOs (King 2009). To this end, UNESCO operates through the development of desirable practices and norms. For instance, in 2003, UNESCO urged its members to use the UNESCO conventions as a normative educational framework to respond to the challenges of globalization (Hartmann 2010b). The OECD, on the other hand, seeks adherence to agreed standards through the soft pressures of expert guidance, research, and peer pressure (King 2009, p. 120). In contrast, the WB seeks adherence predominantly through binding funding contracts (Samoff and Carrol 2003). Finally, the EU makes member-binding rules and decisions. According to Dale and Robertson (2002), the EU “clearly determines particular agendas to which all member states...have to pay heed and respond; and it sets the rules of the game, through the effects it has on overall national policy direction in other sectors,...and the sticks and carrots it provides to follow particular programs” (p. 27). Overall, IOs through their coordinative tasks create a global policy space by setting and connecting members’ policy agendas.

Once a policy agenda is set, IOs play a key role in coordinating policy implementation among members (Jakobi 2009; Samoff and Carrol 2003). IOs are thus “able to influence political processes by organising, influencing and speeding up programmes and processes” in higher education policy (Martens and Balzer 2004, p. 4). The EU–EC’s role in the BP is an exemplar of this coordinative task. This was apparent in the overwhelming large body of literature focused on the EU–EC (Croche 2009; Keeling 2006; Ravinet 2008; Reinalda 2008). Given the limited space, I cannot tease out the various facets of EU–EC involvement in the BP (please refer to Croche 2009; Keeling 2006; Ravinet 2008; and Reinalda 2008 for excellent discussions on these topics).

Nevertheless, I will briefly highlight how the EU–EC ensured progress through its coordinative tasks in the BP. Although national governments and higher education institutions have led the way in shaping and implementing the BP, the EC plays an active role in promoting the process (Keeling 2006). Once the EC joined the process in 2001, it strongly articulated the need for a follow-up structure, which included: setting up follow-up/preparatory groups, developing clear strategic plans for reaching targets and establishing target areas to add policy momentum (Balzer and Martens 2004). Moreover, the EC bolstered the implementation process by establishing progress accountability structures. The latter included funding and supporting European University Association (EUA) Trends Reports and the com-

prehensive BP Stocktaking report (Kupfer 2008). These reports allowed the EC, along with national partners, to benchmark the achievement of the two-degree cycle among nation-states.

These coordinative tasks permitted the EC to “mainstream” many policy ideas that it has been attempting for the last 15 years (Balzer and Martens 2004). For instance, diverse communications by the EC led to aspects of life-long learning, research, and the economic competitiveness to be included in the BP. In addition, the EC rearticulated the BP in terms of supporting European research, and in turn, coopted the BP as a means to maximize the socioeconomic returns on EU investment in research (Keeling 2006). On the other hand, reference to the EU’s research policy enhanced the political relevance of the EC’s Bologna initiatives by providing a new rationale for these reforms. This hybridized Bologna-research policy discourse in turn became a widely accepted perspective for articulating higher education policy at the European level (Keeling 2006). As this brief example illustrates, IOs, like the EU, further policy aims by closely connecting themselves to the policy stages of implementation (Jakobi 2009, p. 482). Moreover, in doing so, IOs engage in policy activism by discursively influencing the policy content, setting agendas, and informing the rationales for higher education reform.

IOs Work Together and/or Collide

By working together on common higher education policy agendas, IOs build and maintain vast networks of policy communities. For instance, OECD and UNESCO teamed up to develop the practices and principles to regulate cross-border provision of higher education, which was later published as the *Guidelines for Quality Provision in Higher Education* in 2005 (Blackmur 2007; Hartmann 2010b; Schuller and Vincent-Lancrin 2009). These guidelines, while “nonbinding in character” became the basis for establishing a strong recognition regime at the regional and global level. Both IOs united their staff, national actors, and global networks to negotiate and construct this policy document. Consequently, all OECD and UNESCO member countries and other stakeholders—higher education institutions, student associations, quality assurance and accreditation agencies, recognition agencies, academic staff associations, professional bodies, private sector, and other IOs—were invited to participate in this policy text production process (Schuller and Vincent-Lancrin 2009). These guidelines further led to a partnership between the WB with UNESCO in 2008 to set up the Global Initiative for Quality Assurance Capacity-building (GIQAC) in higher education. This collaborative initiative aims at strengthening the different international and regional networks of quality assurance agencies in higher education in Asia, Latin America, and Africa (Hartmann 2010b; Salmi et al. 2009). Thus, IOs not only bring different policy communities together, but also serve as catalysts for new global policy initiatives in higher education.

IOs also cooperate and compete with each other in responses to globalization and regionalization of social, economic development (Hufner et al. 1997). Each organization seeks to justify legitimacy and preserves its own accumulated knowledge,

while nurturing external networks of experts. Sometimes IOs' activities overlap, however, that does not imply duplication, "since the specific context of their mission, needs, and activities can differ considerably" (Hufner et al. 1997, p. 321). Within such collaborative efforts, IOs may serve convergent and divergent roles.

Jakobi's (2009) analysis of the role of IOs in the life-long learning policy agenda reveals their varying roles. All four IOs discursively emphasized the demand for life-long learning in the context of employability through sponsoring and participating in international meetings. Both the EU and UNESCO further reinforced this policy idea among members by their standard setting activities (e.g., UNESCO recommendation concerning technical and vocational education and EU's OMC benchmarks). On the other hand, the WB and the EU applied their financial muscle to promote life-long learning by funding life-long learning initiatives in developing countries and European countries, respectively. The OECD and UNESCO provided coordinative support for implementing this policy agenda through the OECD's country reviews and UNESCO/EFA monitoring reports that assessed countries' progress toward common aims. The life-long example demonstrates that IOs do collaborate, but they vary in terms of their instruments of influence. As networkers and coordinators, IOs thus steer policy in similar directions. In other words, by collaborating, IOs create a complicated policy network of different players that transmit and receive policy ideas.

As mentioned above, while IOs may work together, their policy agendas may also collide. The recent involvement of these IOs in World Trade Organization's (WTO) GATS negotiations suggests such divergences (see Verger 2010). Before I discuss the role of IOs in these trade negotiations, a brief description and explanation is in order about GATS significance in higher education policy. The WTO/GATS mandate consists of promoting free trade of all kind of services at a planetary scale through consecutive rounds of negotiations. GATS targets 12 services sectors, including education. Within the education sector, higher education is the main focus of the trade activity due to a higher concentration of private sector institutions in higher education in many countries, compared to the other levels of education. Thus, GATS potentially exerts greater influence in higher education policy as it consists of binding international agreements and a sophisticated dispute settlement system (Verger 2010).

The four IOs have taken varying stances toward the liberalization of trade in education. These divergences are apparent in the findings of Verger's (2010) recent study on GATS negotiations involving higher education. Based on intensive fieldwork in the WTO headquarters, Verger examines the internal processes of these trade negotiations. He found that while the trade representative of the WB, OECD, and EU were pro-GATS, UNESCO's educational representatives tended to be cautious, critical of the GATS agenda. UNESCO always saw the regulation of higher education as a state and regional activity. Although UNESCO did not clearly or publicly state it, its representatives were critical of the interference caused by free trade agreements in the education field. UNESCO sought to offset the insensitivity of the WTO to education, social issues, and to ensure that the emerging global education market adhered to minimum educational quality and access standards.

UNESCO thus promoted dialogue and public debate between education stakeholders and provides technical assistance to UNESCO members.

The OECD, on the other hand, sought to influence the GATS education negotiations from the sidelines of the participatory system. The OECD disseminated data showing the comparative advantage of OECD members to trade in education and bid to bridge the gap between education and trade sectors. So, while UNESCO framed the GATS and education debate as “dangers and threats,” the OECD did so in a positive manner, in terms of “opportunities and challenges” (Verger 2010, p. 134). Meanwhile, the WB representatives supported the benefits of educational liberalization, arguing that universities and governments should adapt the new global educational market and take advantage of global knowledge through trade. Similar to the two IOs mentioned above, the WB dealt with trade liberalization by disseminating ideas in public reports and forums. It argued that GATS favored higher education access in developing countries (Verger 2010).

Finally, the EU pushed for the introduction of quantifiable benchmarks under which member countries would adopt liberalization commitments in a minimum number of subsectors in each round (Verger 2010). Although the EU negotiates as a collective, its GATS commitments are often nuanced with individual EU members specifying different levels of liberalization within the overall EU schedule. The trade in education agenda shows how these IOs do not carry the same agendas and thus their policy mandates may collide within a higher education global policy space.

IOs as Interregional Connectors: The Bologna Process (BP) Example

Some IOs are increasingly involved in higher education interregional connectivity. This is evident in recent EU interregional initiatives. The EU is increasingly instigating higher education reform processes outside Europe by diffusing various aspects of the BP across policy networks, which include Latin America, Central Asia, Africa, and Middle East (see Aboites 2010; Jones 2010; Robertson 2008; Singh 2010). The Tuning project is one example of such interregional policy influences. This European curriculum template has become a normative model and was recently introduced in Latin America (Aboites 2010; Figueroa 2010; Leite 2010), while a similar initiative is being planned for African higher education (Singh 2010). The Latin American context provides a good example of this curricula policy travel. In 2002, a small group of representatives of Latin American and European universities agreed to adopt the European model and encouraged its approval by European agencies under the name Tuning–Latin America Project. Through this initiative, the EC (welcomed by numerous Latin American universities) promoted the European model for professional training, including objectives, pedagogy, values, orientation, and evaluation.

However, such interregional policy travel has consequences (see Aboites 2010; Figueroa 2010). For instance, the Tuning–Latin American Project threatens and erases the role of students and faculty as key players in higher education decisions

and the identity of Latin American universities. Moreover, the project failed to consult with faculty, students, university councils, unions, or professional associations of academics and graduates. According to Aboites (2010), the project promotes a competency model that “reduces the university and faculty to a provider of a list of competencies and the students to docile trainees” (p. 452). In other words, such interregional policy travel may take away agency from the local contexts in shaping their higher education systems.

The EU actively diffuses higher education policy from Europe to Central Asia and Asia. To this end, Jones (2010) empirically examines the EU’s interregional strategy to engage Central Asia using initiatives, such as ETF, TEMPUS, and the BP. In 2007, the EU and five states of Central Asia agreed to work together on an interregional basis. In essence, while the TEMPUS program provided the funding and procedures for education policy development activities, the BP delivered ten policy areas for higher education reform. Moreover, the Erasmus Mundus program linked Central Asian higher education institutions, staff, and students, with those from EU member states. In addition, Robertson (2008) notes how the EU facilitates an explicit European competitive agenda through its Asia–Europe interregionalism strategy. Through the latter strategy, the EU seeks to develop a European higher education market by matching Asian higher education structures with European models. It also seeks to recruit Asian “talent” and develop collaborative research networks. Hence, IOs’ influences are not only country-specific or regional, however, we are beginning to see their impacts transregionally as well. Through the activities of IOs, higher education policies (e.g., BP) are no longer static in one region, but move from one regional context to another. To sum up, IOs act as policy bridges between different regional contexts, and in turn globalize higher education policy.

Summary

In this section, I highlighted the networking and coordinative roles of IOs in the higher education global policy space. IOs present complex dynamics in higher education policy by building global networks among various policy communities. IOs thus create a supranational space for higher education policy and facilitate the travel of policy ideas. However, IOs play convergent and divergent roles in these global policy spaces, sometimes leading to collision. Moreover, through IOs’ activities, nontraditional players such as transnational corporations, regional organizations, accreditation bodies, and other nation-states, are beginning to shape higher education policy content and production processes in global contexts.

The Saliency and Mediation of IO Policies

So far, I have discussed the role of IOs as discursive forces, and their roles in maintaining transnational networks to assemble a higher education global policy space.

The questions this leaves us with are: To what extent are IOs complementing or even partly taking over the design or provision of higher education policy in the national/local context? (Yang 2010) How does the higher education global policy space affect the nature of national policies and the policies of higher education institutions? In this section, I answer these questions by discussing how the saliency and mediation of IO policies vary across contexts (i.e., national, regional, and institutional).

IOs' Saliency and National Variants

As mentioned earlier, a higher education global policy space is not only composed of IOs, but also includes a wide spectrum of national players, corporations, NGOs, accreditation bodies, and global trading regimes. To some extent, the location and role of a nation-state in this global spectrum shape the relevance of IOs in their national/local policy cultures. These nation-states' roles range from global hegemons such as the United States whose systems set the global norms and are net exporters of higher education, to regional hubs (such as Singapore and United Arab Emirates), to net importers of HE (such as China and Malaysia), and finally to developing nations shaped by other nations (Naidoo 2011; King 2009; Robertson and Keeling 2008). To this end, for instance, the OECD's work has more salience in the policy cultures of the peripheral high-income countries such as Australia and the Scandinavian countries than in Britain, while the United States is least affected (Lingard 2006; Martens et al. 2007). Similarly, the WB's saliency and policy blueprints are much more visible, though not taken up unconditionally, in the policy cultures of the global South, while their impact is negligible in Europe, North America, or Australia (Lingard 2006). Thus, the salience of IOs are uneven and nationally, regionally variant in higher education policy. I elaborate on this point further in the following subsections.

IOs as Adviser or Complementary to HE Policy

In high-income countries, IOs are more marginal, advisory, or complementary—often influential in framing national policy options (least so in the strongest national player, the United States), but not substituting that process. To this end, national actors articulate higher education policies by sometimes feeding off the policy reports, data, latest trends, and comparative indicators produced by IOs. For instance, in 2001, education ministers of some member countries requested a status report on trade in education from the OECD, particularly at the beginning of the GATS and education debate (Verger 2010). As advisors, IOs thus frame the way nation-states assess the global climate of education systems and maintain a global policy space.

IOs are salient among nation-states when they complement the design of a higher education policy. The supranational arena provides national players with legitimacy

to advance local political agendas by assigning objectivity and technical expertise to IOs (Leuze et al. 2008; Martens and Wolf 2009). For instance, in the BP, some European nation-states used the EU's initiatives to rearrange higher education within their borders by using extra-local excuses. According to Ravinet (2008), European states signed the BP and then rapidly implemented the collective objectives by leveraging it to justify national reforms. As she states, "[m]ost government leaders accepted the growing obligations associated with the Bologna Process as long as they benefited from them" (p. 365). Similarly, African officials favoring similar privatization policies espoused by the WB have used the Bank to pass difficult reforms with little public debate by specifying the reforms as loan conditions (Samoff and Carrol 2003). In general, governments like Russia and China used extra-local IO policy discourses (such as the OECD and the WB), to reinterpret their responsibility for higher education (e.g., reduce their funding) and instead urged universities to cooperate with private sector and respond to market needs (Gounko and Smale 2006; Yang 2010).

IOs are relevant for powerful member nations to advance their agendas in a higher education global policy space. IOs represent arenas of transnational policy decision making that are asymmetrical, nondemocratic, and opaque in governance (Moutsios 2009). Given these asymmetrical relations of governance, powerful members use IOs to serve their foreign and global interests. For instance, high-income countries strongly influence the decision-making processes and set the agenda at the WB (Verger 2009). To this end, some scholars argue that the WB's recent initiatives toward restoring higher education systems of low-income/developing countries reflect the interests of powerful (and client) states of the developed world (e.g. United States, United Kingdom, Australia, Canada), who wish to further develop their service economy through sectors such as higher education (Robertson 2009; Naidoo 2008). Similarly, some argue that UNESCO privileges the interests of the countries of the North and diffuses European norms to other parts of the world (e.g., by recently adapting the international framework of the Lisbon convention; Hartmann 2008; 2010b).

IOs are particularly pertinent for countries in the context of economic competition and global trade regimes such as the GATS. Since higher education became a tradable global commodity, trade networks have reconfigured the relationship between nation-states and their higher education systems. To this end, some nation-states use IOs to further their interests in recognizing their higher education qualifications to maintain global market share in higher education services. For instance, Australia signed a joint declaration with the EU to become Bologna compatible (i.e., to cover issues of quality assurance, benchmarking, and qualification frameworks) to secure and maintain Australia's position in the higher education global market (Robertson and Keeling 2008). However, credential recognition is not only relevant to export services of high-income countries, but for low-income countries as well. Hartmann (2010b) observes that countries in the global South are interested in more liberalization via GATS to export their professional labor. As a result, the UNESCO generic standards for the recognition of

higher education qualifications are important for developing nations. These above examples demonstrate how, for national players, IOs are particularly salient as global market demands are increasingly replacing their higher education policy agendas.

IO Salience in “Developing” Countries

IO policy work has a strong salience in the policy cultures of developing countries. In these national contexts, to some extent, some IOs take over the design of higher education policy by providing policy blueprints which are internalized due to these countries’ dependence on IO resources (e.g., financial and/or technical expertise; Neu et al. 2008). To this end, research on the WB’s higher education policies and external loans through Structural Adjustment Policies (SAPS) in the Global South highlight such blueprint policy effects (see Banya and Elu 2001; Rhoads and Torres 2006; Samoff and Carrol 2003). For instance, the WB’s Guatemala lending agreement contained a policy checklist pertaining to: (1) organization and staffing, (2) procedural controls, (3) flow of funds, (4) accounting, (5) planning, budgeting, and financial reports, and (6) external audits (Neu et al. 2008). The WB’s direct influence stems from its technical advice, policy recommendations, as well as the conditions required for the supply of funds (Samoff and Carrol 2003). For instance, the WB’s lending for higher education between 2001 and 2008 among its top ten largest borrowers was a staggering \$ 7.77 billion (Salmi et al. 2009). In the same time period, the WB has conducted studies focused on higher education systems among 14 countries and the African region, while studying higher education indirectly as a part of sector-wide education studies among 11 countries and the regions of South Asia, Eastern Europe, and the Balkans (Salmi et al. 2009). These figures illustrate the global scope, and monetary and epistemic power of the WB in higher education policy.

The WB loan conditions are meant to increase the likelihood of loan repayment which, in turn, requires increasing the likelihood of success in the activities financed by the loan. By attaching conditions to its loans, the WB has the power to encourage particular behaviors among nation-states. For instance, studies examining the impact of the WB’s recommendations toward reduction in public funding in higher education in the 1980s and 1990s, all demonstrate reduced public subsidies for higher education across various national contexts (see Collins and Rhoads 2010; Delgado-Ramos and Saxe-Fernandez 2009; Lebeau 2008). Specifically, the WB’s loans lead to the diffusion of higher education financial practices across countries/institutions (Neu et al. 2008). However, due to external and internal criticisms, the WB has recently shifted from top-down conditionalities toward a “country-ownership model” whereby client countries can now propose projects to be funded (Verger 2009). Despite these recent shifts, the WB has a major policy influence on developing countries’ higher education systems through its financial muscle (Teferra 2009).

In particular, economic independence determines nation-states' autonomy in higher education policy processes and the varying influences of IOs. Collins and Rhoad's (2010) recent empirical study of the WB involvement in Uganda and Thailand helps us delineate these varied IO influences. They conducted a comparative case study analysis of WB higher education policies in these two countries. In their study, they evaluated WB funding patterns in the two regions, analyzed WB policy documents, and conducted interviews with various stakeholders in the WB, Uganda, and Thailand. Officials in Uganda often named neocolonialism and generally condemned the Bank for its neoliberal agenda and for its past enforcement of SAPS. The Bank's conditions for acquiring a loan locked the former policy process to reduce public funding for higher education. However, recently, with the Bank's shift toward acknowledging the importance of higher education in developing countries, Uganda has experienced an increase in the Bank's funding for capacity building in higher education particularly in the areas of science and engineering programs as well as outreach efforts for science appreciation among the public. This shift in lending has definitely raised "an assortment of opinions," some of which are critical of the Bank's role as perpetuating "Uganda's ongoing dependency" on external actors (p. 195).

In contrast, in Thailand, a country that drastically reduced its WB funding, key informants spoke of their independence and self-sufficiency in terms of the economy. The role of the "King's sufficient economy" played an important role in shaping recent higher education reform. To this end, Thailand avoided a neoliberal recipe advocated by the Bank and the International Monetary Fund. Instead, the Thai espoused a curriculum that emphasized, in the words of Thai officials, "a sufficient economy" and Thai principles "to be good, be happy, be academically excellent" (Collins and Rhoads 2010, p. 200). The point here is that Thai officials highlighted their independence in national policies (e.g., sufficient economy), which officials argued limited WB influences in Thai higher education policies. In other words, the saliency of IOs in a policy culture of a nation-state is dependent on the material, cultural, and intellectual resources of that nation. Thus, in the face of IO globalizing forces, different states have varying capacities to "manage national interests" in higher education (Lingard et al. 2005, p. 766) based on the "national capital" (in terms of economic, cultural, and intellectual resources) they possess within the higher education global policy space.

Nonstate Actor Mediation and Salience of IOs

HEIs are important mediators of IO policies. They are vital actors and important sites of action for IO higher education policy. For instance, the EU's emphasis on European research functions was adopted by HEIs to enhance their profiles within their national spheres and internationally. In addition, European HEIs drew on their successes in implementing the Bologna reforms to publicly brand themselves as

dynamic, responsive, regionally relevant, and outward-looking European institutions. These brief European examples suggest that HEIs adopt and use IO policies to further their agendas and enhance their relevance in national policy circles. As a result, HEIs further diffuse IO policies in higher education.

HEIs are particularly relevant in the context of IO policy implementation. For instance, while the Russian government following the WB and OECD policy recommendations, introduced tuition fees and entrance exams, prestigious universities in Moscow and Saint Petersburg resisted such reforms. While the latter had the symbolic capital to resist, less prestigious institutions joined the pilot project to gain legitimacy and ensure future funding. However, this resistance was later curbed when universities in Moscow later joined the pilot project (Goukko and Smale 2006). In short, HEIs may adopt IO policies as a response to institutional, competitive pressures exerted by IOs, nation-states and similar HEIs operating in the same policy space (Vaira 2004).

Some researchers suggest that certain IO policies have little effect on local higher education practices due to insignificant “legal power” (Karran 2009; Page 2007). For instance, Page (2007) examines the UNESCO policy recommendation concerning the Status of Higher Education Teaching Personnel in the context of Australia. The recommendation itself is soft law, yet has the potential to turn into hard law through legislation by respective member states. Page critically analyzes why Australian universities routinely ignore this UNESCO-specific standard-setting instrument, specifically on the issues of commensurability of pay and recognition of research work for casual academics. While the recommendation was approved by Australia (as a member state of UNESCO), Page suggests that Australian universities continue to ignore it as they function as independent entities, and the dominant neoliberal culture within such institutions. Hence, these examples illustrate that HEIs are important mediators and interpreters of IO policies in policy practice based on their autonomy and culture.

HEIs also have reciprocal relationships with IOs, unmediated by nation-states. For instance, the UNESCO Chairs-UNTWIN program was developed to set up university networks and encourage international university cooperation to advance research, training, and program development in higher education (Uvalic-Trumbic 2009). The main goal of these programs is to exchange knowledge across borders. Today, these programs involve 650 UNESCO Chairs, 62 UNTWIN networks and over 770 institutions in 128 countries, covering some 70 disciplines (Uvalic-Trumbic 2009, p. 37). Similarly, the WB has developed a Virtual African Universities initiative (Amutabi and Oketch 2003), which is a distance education project established in 1995 to serve African countries. Through this project, the WB has established campuses in Ghana, Ethiopia, Kenya, Uganda, Tanzania, South Africa, Namibia, Zimbabwe and, more recently, Senegal. Through such links with HEIs, IOs play an important role in supplying the intellectual, cultural, and material resources needed in such institutions, particularly in the area of curricula reform. To summarize, HEIs should not be viewed as submissive policy recipients, nor they are all equal players. Instead, they act as important players with various forms of

autonomy in enacting and mediating these global policy spaces, particularly in the context of policy practice.

Summary

The global policy space constructed by IOs does not play out as a singular influence in all national and institutional domains. The picture is much more complex and more nationally/institutionally variant than a simple unidirectional policy direction from IOs to various contexts. The power differentials among nation-states and the power asymmetries between an IO and the nation-state actor complicate this interplay. It highlights some of the asymmetrical relations in international politics of higher education policy. Some state actors are the subjects, while others are objects of IO policy making at supranational levels. Moreover, HEIs are important mediators of IO policies particularly in the context of policy practice. Finally, IOs are salient for HEIs through reciprocal relationships.

Conclusion and Future Directions

IOs play three key roles in globalizing higher education policy. First, they play an important discursive function by laying out the categories, languages, meanings, and numbers used to construct and articulate higher education policy in various contexts. Second, IOs serve as global networkers by sponsoring and building policy learning platforms whereby policy ideas gather and spread. They also build connections among different stakeholders to tackle and address common policy issues in global higher education. Third, IOs play an important coordinative function among members by offering various technical resources to ensure policy implementation. Through these various roles, IOs elevate and disseminate the importance of higher education for national and international development across different policy communities.

IOs also add asymmetries of power within higher education policy as different actors have different levels of power in such a global policy space. As I highlighted in the last section, nation-states and higher education institutions have various forms of economic, symbolic, and intellectual capital to act and mediate this global policy space. While powerful nation-states have the ability to set agendas in IOs and can often ignore IO policy recommendations, lower-income countries lack the same national capital to maintain autonomy in their higher education policy process. Moreover, through IO activities, new players are brought to the policy space, which in turn displaces, but does not replace, the power of local policy networks. IOs also introduce global networks whereby the state (such as educational ministries, or public offices responsible for higher education) and HEIs increasingly compete with nontraditional policy players, such as transnational corporations,

private higher education institutions, and other NGOs to inform higher education policy decisions. Thus, IOs introduce complex dynamics to global higher education policy.

This review also highlights how higher education global templates get diffused, allocated, and adopted across different regions of the world. It reminds us that IOs are subjects of these global processes (Robertson et al. 2002), and these influences are not neutral or ahistorical processes, but operate within larger sociopolitical processes. To this end, IOs arrange, allocate, and distribute higher education policy values. Thus, a study of IOs as “subjects of globalization” of higher education would challenge the traditional territorial, theoretical, and methodological frameworks we use to study and engage with higher education policy. I will next discuss the implications of this literature review in relation to researchers and policy makers.

For researchers, the study of IOs suggests moving beyond methodological nationalism and higher educationism in higher education policy research (Hartmann 2010a; Verger 2010). As I mentioned at the outset of this chapter, methodological nationalism refers the prevalent assumption that nation-states and their boundaries serve as “the ‘natural’ containers of societies and hence the appropriate unit of analysis for social sciences” (Dale 2005, p. 124). As this chapter demonstrates, such national boundaries are very porous and nation-states (with various forms of capital) lack the same degree of autonomy as they did before in higher education policy. I have highlighted how the higher education policy process has become much more globally complex. With the growing role of global actors, imperatives, and trade regimes, researchers need to move beyond national scales as the primary unit of our analysis and begin embracing a plural-scalar perspective in higher education policy. This means, embracing the idea that higher education policy processes are layered across “local, national, regional and global policy spaces” and recognize the “inter-connectivity of policy development” across these various scales (Rizvi and Lingard 2010, p. 69; see also Marginson and Rhoades 2002).

Researchers also need to engage beyond higher educationism. This means that in our analysis of new trends and regulatory transformations in HEIs, we cannot ignore the extra-higher educational structures, events, rationales, and processes (such as the foreign policies, export agendas, or the economic performance of a country; Hartmann 2010a; Verger 2010). For instance, the GATS negotiations and regional economic competitiveness mandate of many nation-states demonstrate how higher education transformations are influenced by noneducation rationales. Researchers thus need to venture outside the traditional higher education discipline to find the necessary theoretical and methodological tools to make sense of the transformations within HEIs in this globalized era. While such methodological biases are more important in some areas of higher education research (such as organizational change and policy development) and less important in others (e.g., student development theory), I would still argue that all facets of higher education to some extent are influenced by global actors, obligations, and competition (see Rhoads and Liu 2008; Shumar and Canaan 2008).

While the IO literature presented in this chapter is useful for framing and understanding some of the complex dynamics in higher education policy, there remain few empirical and theoretical accounts closely examining how IOs work (Robertson 2010, p. xx). To date, some insider accounts give us a glimpse of what goes on inside IOs in relation to higher education (see Cerych 2002; Henry et al. 2001; Salmi et al. 2009; Schuller and Vincent-Lancrin 2009). Moreover, most of the IO literature linked to higher education focuses on understanding these institutions individually by assessing their external effects on other actors, mainly the nation-state, and/or understanding these institutions by merely analyzing their policy texts. There still remains a scant body of literature providing field-based empirical and/or theoretical accounts of how these institutions work in daily life in higher education policy. This absence may be due to difficulties gaining access to information about the internal processes, as those who have access may be reluctant to speak about those establishments, and/or restricted by job-related academic publishing on IO policy issues (Hufner et al. 1997). Nevertheless, by gaining a complete understanding of what constitutes IOs internally, “we can provide explanations of how certain kinds of bureaucratic behaviour are possible, or even probable, and why” (Barnett and Finnemore 1999, p. 701). Systematic studies focusing on how these IOs collectively work together (or their influences collide), or collaborate with other non-state players (such as NGOs, regional agencies, transnational corporations, research foundations, higher education institutions, etc.) to influence higher education policy remain scarce. Such research is essential to appreciate how IOs behave, work with other policy players, and understand what causes outcomes in the higher global policy space.

I would suggest six future research areas to explore the relationship between IOs and higher education policy:

1. More empirical/theorized accounts of the internal processes of such IOs and how they work in relation to higher education policy. This line of research would provide a more complete picture of the context of influence in higher education policy making in a globalized era.
2. Improved understanding of the interconnections between IOs and nonstate actors (such as corporations, regional organizations, private firms, research foundations, aid agencies, and other players) in higher education policy through comparative case studies and across national contexts. These studies would offer a better account of the intricacies of policy networks involved in global higher education policy.
3. Expanding the study of the relationships between IOs and higher education policies to regions of the world not previously discussed (e.g., Middle East, North Africa, and South Asia). Including perspectives from these regions would give a more nuanced picture of global higher education policy involving IOs in different social contexts.
4. More systematic studies on how IOs impact equity and access issues in higher education. Most research on IOs and higher education policy have focused on

questions of financial reform, cross-border education, curricula, governance, and quality assurance (except for Goastellec 2010, 2011). Given the growing importance of equity in global higher education policies, such discussions would expand the social justice debate from the national arena to a more global focus (Rizvi and Lingard 2010).

5. Increased empirical focus on UNESCO and OECD. Both these IOs are vital players in higher education, however, have received little empirical attention compared to the WB and EU.
6. More theoretical and methodological debates on the study of IOs in relation to higher education, particularly in relation to globalization literature. This will expand the debate on using the nation-state as the unit of analysis in higher education policy.

Given that this chapter has only focused on four IOs, all situated in the global North, it would be important to contrast this discussion with research on regional actors in the global East or South (e.g., The Association of Southeast Asian Nations [ASEAN], or Association of African Universities). Moreover, the increasing role of the WTO in terms of global trade in higher education would be important to consider in delineating the complex dynamics of higher education policy along the lines of local, national, regional, and global scales (see Verger 2010).

In terms of policy making, we need to expand the definition and location of a policy maker and the policy process. As I demonstrate in this chapter, policy makers are no longer confined to the nation-state, public offices, or research foundations, but are increasingly located extra-locally (Rhoads and Liu 2008). Higher education policy today involves a wide array of global actors and discourses. With the increasing role of the “global eye” especially in terms of evidence, in the context of cross-border education, academic mobility, internationalization, and commodification of higher education—policy makers could critically assess such global policy technologies that may perpetuate a predominant culture of improving efficiency and developing human capital for the knowledge economy. Overall, the “awareness of these a priori established positions would help policy makers to challenge these assumptions and, perhaps, design policies that would reflect the nation’s aspirations and values” (Gounko and Smale 2007, p. 547). This chapter demonstrates that global influences vis-à-vis IOs are not inevitable or unidirectional but are contingent on the agency of local actors within HEIs, the state, and civil society. Instead, policy makers in partnership with other stakeholders (such as students, faculty, and civil society groups) need to design higher education policies that reflect the values of local communities and various stakeholders so that HEIs serve the self-determination, healing and social justice goals of various communities. IOs could serve as vital conduits for the dissemination, articulation, and enactment of such social justice values in higher education.

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Chapter 9

Southern Higher Education History: A Synthesis and New Directions for Research

Amy Wells Dolan and John R. Thelin

A Theory or Framework for Understanding Southern Higher Education History

Historians, unlike most social and behavioral scientists, tend not to state explicitly their research projects in terms of advancing or testing a specific theory. However, their research, as well as their subsequent debates and exchanges often do demonstrate or follow the paradigm of hypothesis–thesis followed by antithesis and synthesis. Perhaps this is the case in the research on higher education in the South where the suppositions of scholars working in a variety of academic fields have contributed to what we know today about the history of southern higher education, a literature that has grown since the 1980s. What explains this growth?

On one front, a basic contention that higher education in the South has been absent from the dominant histories of American higher education might explain the growth in historical literature about southern higher education. In fact, as recently as 2011, Johnson and Kimball (2011) declared Smith and Bender (2008) guilty of a failure to capture the “broader map of American higher education” in their documentary history, *American higher education transformed, 1940–2005* (p. 115), even while calling it a “worthy successor” (p. 114) to Hofstadter and Smith’s (1961a, b) two-volume set, *American higher education: A documentary history*, used by many scholars teaching higher education history. If true, this charge hardly denotes much progress from the point when Urban (1981) accused educational historians of donning a “twin set of blinders” he called “Massachusetts Myopia” and “New York nearsightedness” that conflated the histories of activities and institutions in the Northeast as “representative of developments in the nation” (p. 136). Certainly,

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such charges could compel reasonable scholars to add missing chapters to a national story dominated by evidence and anecdotes from other regions. Furthermore, the impulse to tell the story of alma mater and place the history of one's own institution or one nearby within a larger, national narrative makes perfect sense.

Yet, more likely, a personal or professional claim of southern identity or an avowal of a distinctly southern regional and cultural context stands behind scholars' contributions to this nascent area of study. In particular, an over-riding analysis in the higher education literature has prodded defense or explanation, that is, when the South finally arrived on the scene within a normative framework of university development, it offered too little, too late (Geiger 1986, 1989; Graham 2005; Kerr 1963; Rudolph 1962/1990; Slosson 1910; Veysey 1965). For instance, a recent history of American education by Graham (2005) concluded its opening narrative of dominant trends in progressive innovation and expansion with a section on "The Separate South" (pp. 19–27)—a delineation that certainly establishes formal education in the South as distinctive but also as laggard and unfavorable, and simultaneously exemplifies an antagonistic characterization to an affirmed southerner. Roused to offer a critique of the normative or emblematic framework for university progress and development that problematizes the South as incomplete, biased, or wrong-headed, a scholar understandably may seek to provide nuance and complexity to Graham's appraisal.

Graham's (2005) description of a Separate South apart from the nation appears antagonistic because it taps into the longstanding image of a distinct and "benighted South," a view made popular by a Mencken (1920) essay entitled "The Sahara of the Bozart," reinforced by Gunnar Myrdal in *An American Dilemma* (1944), and solidified by academic study in the 1930s. In fact, Mencken (1920) and Myrdal (1944) bookend an intense period of "regional consciousness in southern universities" as described by Tindall (1967). This period gave birth to a number of academic associations and journals, including the Southern Historical Association (1934) and the Southern Sociological Association (1935), as well as the *Southern Folklore Quarterly* (1937) and *Southern Speech Journal* (1935), to name just a few. Furthermore, inspired by but also critical of historian Turner's (1894) "frontier thesis" and notion of geographical sectionalism, University of North Carolina (UNC) Rockefeller-funded sociologist Howard W. Odum led a groundswell of sociological research that documented the South's distinct disparities and contributed to his landmark publication, *Southern Regions of the United States* (Odum 1936).

The academy buoyed southern consciousness significantly as this new scholarly production of the 1930s coalesced to include a growing body of literary and cultural works created by writers from the Harlem Renaissance, the "New Negro Movement," and southern writers such as William Faulkner and the Vanderbilt Agrarians of the Southern Renaissance, who offered up more critical approaches to understanding the South and its past. Thereafter, the notion of a distinct South has dominated academic writing of the twentieth century and drawn strength from the popular imagination and a synergy of the disciplines, including history, literary studies, and literary criticism, as well as sociology. Newfound introspective approaches contributed to added growth, and in the case of southern history, the scholarly analysis of Woodward (1966, 1993) revolutionized the field after the 1930s, moving it

toward a greater consciousness regarding race relations, economic development, and populist politics. As new fields of study emerged—such as African American Studies, American Studies, Gender and Women’s Studies—they, too, contributed new critical perspectives to this growing body of scholarship about the South.

Today the contemporary field of Southern Studies, to some a subdiscipline of American Studies, exhibits the familiar “non-static” pattern of discipline development whereby areas of study split off, expand, and come together, as well as “reject” and “absorb” each other (Vinao as cited in Johanningsmeier 2004, p. 427). No doubt, this evolutionary pattern comprises the dense root structure of the study of the American South, its history and culture, within the American academic enterprise.

Southern Higher Education: A History of Striving and Dissent

Similar to the scholars in these other fields, higher education historians have relied upon this prevailing conception of the distinct South in their work. The body of literature they have created is characterized best by two thematic strands. The first strand focuses on the theme of *striving*, portraying southern higher education as struggling and its institutions as aspiring to achieve success within an established national framework. The second strand focuses on the theme of *dissent*, portraying southern higher education as oppositional to national ideals, and individuals and institutions as nonconforming to established cultural orthodoxy.

In the first strand of literature represented as striving, higher education historians largely offer up: (1) detailed analyses to confirm and document the prevailing allegations of the South’s benighted status in higher education and (2) various stories of struggle to overcome. Included in this group is Stetar (1985), whose article, “In search of a direction: Southern higher education after the Civil War” has been reproduced in several editions of readers on the *History of Higher Education* published by the Association for the Study of Higher Education, thereby laying out an argument readily absorbable by many researchers. Another group of scholars seizes upon dominant themes in higher education historical research, such as the development of the research university or the college or university presidency, to argue that the overarching national story is incomplete—and that the South or southern institutions have something to add to the story, including a portrait of success with substantial gains and significant catch up for most aspects of higher education in the South. Assuredly, many institutional histories (e.g., Durden 1993; Sansing 1999; Snider 1992) and biographies of academic leaders (e.g., Boles 2007; Covington and Ellis 1999; Link 1995; Moyen 2011) exemplify this overarching theme of striving toward success. Journal articles also depict the striving nature of southern colleges and universities, such as Diamond (1999) on the development of Emory University’s capacity since World War II or Henry Lesesne’s article, “In Pursuit of Prominence: James B. Holderman at the University of South Carolina: 1977–1991” (1999), which details the rise and “turmoil”-ridden departure of an ambitious university president.

In the second strand of literature thematically depicted as dissent from orthodoxy—the word “dissent” borrowed from Wallenstein (2008a)—higher education

historians have captured stories of opposition, with a focus on a “dual tradition of dissent” (p. 2) dividing along racial lines (for Wallenstein) but which could also include dissent from gender orthodoxy. Regarding race, one line of higher education history covers White southerners resisting desegregation (e.g., Downs 2009; Kean 1999; Mohr 1999), and in addition, national models and patterns of university development (Wells 2001a, b). A second line covers Black southerners who oppose the South’s racial orthodoxy by seeking universal education and liberty from oppression (Anderson 1988). By virtue of its critical nature, the strand of dissent offers up a more intentional focus on southern higher education via the lens of race and racial caste. Importantly, this group has included histories of Black education (Anderson 1988; Ihle 1990), Historically Black Colleges and Universities (HBCUs) and their students and leaders (e.g., Engs 1979; Gilpin and Gasman 2003; Williamson 2004, 2008b), the civil rights movement and opposition to political orthodoxy (e.g., Billingsley 1999; Michel 2004; Shabazz 2004; Wallenstein 1999), and philanthropy to Black education and southern higher education institutions (e.g., Anderson and Moss 1999; Gasman 2007a). A third line of history exposes gender and sexual orthodoxy by providing deeper analyses of women’s education (e.g., Farnham 1994; McCandless 1999); histories of women’s institutions; critical analyses of men’s experience as education for masculinity, the military, and intercollegiate athletics; and importantly, new histories accounting for gay and lesbian experiences (Graves 2009).

Identifying how scholars respond to this notion of southern distinctiveness and the two thematic strands of striving and dissent assists in reading and understanding the literature of southern higher education. To research and write so as to diminish limitations and avoid very serious weaknesses, a number of obstacles must be confronted in corraling this scholarship in the first place. For example, early on, systemic segregation and significant racial bias limited the Black scholars’ opportunities for work in southern colleges and universities and for publication in “southern” journals such as the *Journal of Southern History*. This segregation contributed to the formation of new journals, such as *The Journal of Negro History* founded in 1916, later to become *The Journal of African American History* (Goggin 1983). For scholars of southern higher education history, this means that, in addition to studying the vast literature known as southern history, the study of African American history is also requisite but complicated by the divisions institutionalized within the academy itself, a division made larger by Whites’ adherence to the “Lost Cause” and the history of racial violence perpetrated by Whites against Blacks. These cleavages have prevented, and understandably so, scholars who ostensibly write southern education history from open embrace of southern distinctiveness or identification as a southern higher education historian because of the social, political, intellectual, or racial connotations of doing so. To a lesser extent, some of the same divisions and politics of publication may apply to historians of women’s education. Thus, southern higher education historians must expand their literature search to consider work in African American Studies, Gender Studies, and Southern Studies, along with work in journals housed in traditional history departments and

publishing in time-honored historical journals (e.g., *American Historical Review*, *Journal of American History*, and *English Historical Review*).

Eisenmann (2004) contends that as a “relatively young field,” higher education requires “disciplinary contributions to stretch its analyses, both conceptually and methodologically” (p. 19). This essay seeks to answer Eisenmann’s challenging call by offering a framework for understanding the disparate, complicated, multi-disciplinary literature on southern higher education history, which heretofore has developed largely upon the central tenet of southern distinctiveness and around the themes of striving and dissent. Without claim to comprehensive coverage of the wide-range scholarship that includes institutional histories, biographies, journal articles, and dissertations, this essay will explore how various key works illustrate these dominant directions—again, with some care for those that appear to fall somewhere in between the dominant themes of striving and dissent.

This essay has two additional goals. First, it will provide a critique of the research in terms of conceptual and methodological rigor, addressing some of the deficiencies of the literature in the process. Some distillation by historical genre such as sanctioned institutional histories, biographies of great leaders, and “horizontal histories” which seek to capture cross-institutional efforts or trends, will provide viewpoint and historiographic signposts along the way. Second, this essay will set forth an agenda and direction for future research and scholarship that will help the field advance toward a more coherent synthesis. The final portion of the essay will discuss new directions in the field of Southern Studies, which has turned away from the notion of regional or historical distinctiveness to embrace, for example, postmodern claims of identity, neoslave narratives, and globalization, among other trends (Kreyling 2005). This turn, of course, will push southern higher education historians in new directions, bidding them to shed familiar patterns and cross new analytic and interpretative borders.

Southern Higher Education: A History of Striving Toward Success

Collectively, institutional histories of specific colleges and universities, the biographies of college and university leaders, and various journal articles have all seized upon the theme of striving toward success to tell the story of higher education in the South. To explain in simple terms, these works are diverse in character and problematic on the whole for understanding the development of higher education in an entire region. The quality of research rigor varies substantially; for instance, some works are commissioned anniversary books by retired professors and loyal insiders whose grounding in historical analysis is scant and desire to portray the institution favorably is considerable (Thelin 1987).

Outside of institutional histories, biographies, and journal articles, we find other interesting books that make significant contributions to the history of southern higher education. For example, glossy pictorial histories with captioned archival photos that portray important institutional milestones offer an abbreviated but vital

analytic presentation of organizational development. In this genre, Powell's (1992) *The First State University: A Pictorial History of The University of North Carolina*, Cone's (1989) *The University of Kentucky: A Pictorial History*, Barefoot's (2001) *The Corner: A History of Student Life at The University of Virginia*, Boney's (2000) *A Pictorial History of The University of Georgia*, and King's (1997) *If Gargoyles Could Talk: Sketches of Duke University* stand out for their historical quality and popular appeal, making them informative and nicely appointed coffee table books. Oral history accounts such as the Southern Women's Institute's (2009) *Golden Days: Reminiscences of Alumnae, Mississippi State College for Women* and other collections containing primary source materials such as Matalene and Reynolds' (2001) *Carolina Voices: Two Hundred Years of Student Experiences* offer a fresh, student-centered viewpoint on institutional history apart from the "top-down" perspectives often derived from the official records of presidents and chancellors. Certainly, market dynamics and the background characteristics of students and alumni play roles in the publication of such volumes. The existence of a cohesive and potent student culture, a high number of loyal alumni, and an intergenerational legacy of attendance among students, parents, and grandparents enhances the sales prospects for any publication—surely contributing to the viability of production. Here, especially, a celebratory stance that focuses upon the institution's story of struggle toward achievement makes sense, and becomes an invaluable tool for implanting pride and boosting confidence in alma mater.

In terms of the notion of southern distinctiveness, how authors approach the institution's southern identity and cultural context makes a difference. Too much adherence to superficial aspects of southern culture, e.g., "moonlight and magnolias," prevents a work from being recognized as serious scholarship. Nice prose and coverage of new subjects does contribute to the larger body of literature on southern higher education history. In a positive vein, they imbue the literature with certain strengths today characteristic of qualitative research, such as subjectivity, thick description, and enriched narrative (Glesne 2011). However, at the same time, they may also exemplify the weaknesses of navel-gazing, lack of generalizability, and biased interpretation of evidence. Thus, failure by an author to connect to the extant national scholarship or to offer systematic or significant critique of an institution or a leader results in a limited house history that simply celebrates the local scene or sings the praises of an individual or institution.

Key to understand the amalgam of these works is that most rely on the framework of the emerging university as conceptualized by Veysey (1965). Hence, the body of historical interpretation and analysis rests at its core upon Veysey's four "rival conceptions" for the purpose of American higher education—widely understood through his characterizations as "discipline and piety," "utility," "research," and "liberal culture." This established framework was also captured by Slosson (1910) in the historic late-1880s to early-1990s period of "university building," affirmed by Rudolph (1962/1990), and more recently specific to the South, by Carter (1965) and Thelin (2004). It shows that the unifying narrative arc for a number of works has involved the theme of striving toward success within a typical pattern of

institutional development: in sum, an institution's struggle from old time college to bona fide, modern university.

Specifically, Cartter (1965) characterizes the trajectory of southern higher education as falling into three eras:

1694–1830, when collegiate education was both fostered and respected; 1830–1920, when higher education rather passively reflected the withdrawal of the South from the main currents of American intellectual thought; and 1920s to the present, representing the new emergence of education symbolized by the growth of major universities (p. 279).

The notion of the South and its institutions as culturally distinct within a national pattern or a typical model of development emerges as a central tenet of the theme of struggle toward success—and certainly has driven the production of these publications for captive audiences who easily accept this belief and take pride in the notion of southern institutions rising from the ashes.

Since the 1980s, higher education historians have frequently relied upon Stetar's (1985) application of Veysey's framework to the development of southern universities in "In search of a direction: Southern higher education after the Civil War." Drawing on the notion of southern cultural distinctiveness, and even using the words of Wilber J. Cash, author of *Mind of the South* (1941), Stetar declares the South's "insularity" prior to the Civil War, noting its difference from the North, Midwest, and West, areas that "were becoming more alike culturally" (p. 344), and the South's extreme deviance after the War. Hence, Stetar's analysis affirms the laggard condition of southern colleges and universities following the Civil War, deeming them "all but destroyed" (p. 343) and woefully unable to restore former enrollments or equal the quality found elsewhere. Stetar discerns that in the process of rebuilding higher education in the region, southern academics engaged Veysey's notions of "rival conceptions," placing primary attention on the role of higher education for instilling piety and mental discipline, and secondarily, building liberal culture, with an extra nuance for Christianity. Although he grants some "inroads" to scholars for considering the useful purposes of higher education, Stetar declares that a focus on the role of research was largely missing from southern academics' worries at the time, putting the South at great distance from university development in other regions (p. 344).

Given Stetar's assessment of the latent development of research in southern universities, higher education historians have taken particular interest in charting this issue in the twentieth century, a direction of inquiry that builds on scholarship by Geiger (1986, 1993) and Graham and Diamond (1997). Here, for example, measures such as membership in the prestigious Association of American Universities (AAU), successes in attracting sponsored research dollars, and the increasing conferral of doctoral degrees tell an overarching story of regional success (Thelin and Wells 2011). The ascent of southern universities from the Civil War to the end of the twentieth century makes for a compelling narrative, a history which touts the advance of nine southern universities into AAU membership, giving them an honored place among the nation's most elite institutions. Declarations by other southern universities of aspirations to be included among the top universities (e.g., Arnone

Table 9.1 Chapter titles for Porter (1964) *Trinity and Duke 1892–1924: Foundations of Duke University*

Chapter I	“In the Days of Crowell,” 1887–1892
Chapter II	A Time of Troubles, 1892–1894
Chapter III	Kilgo: The Holy Wars, 1894–1903
Chapter IV	The Bassett Affair: “Eighteen-seven, thus they voted”
Chapter V	The Aftermath, 1904–1910
Chapter VI	Few: Patience and Tenacity, 1910–1918
Chapter VII	The College Becomes a University, 1919–1924

2003; Lesesne 1999) further enhance the utility and market value of the striving toward success narrative—especially for a region with a longstanding tradition of competing with other regions eager to prove its legitimacy, if not superiority.

Institutional Histories

Many institutional histories of southern colleges and universities exist, in fact, so many that a comprehensive discussion could consume the remainder of this essay. These histories constitute the largest of the genre that uses the narrative arc of striving toward success within the emerging university. Thus, we will first use several examples of institutional histories to illustrate how this theme has played out. Then, we will focus on a few histories that represent the more challenging approach advanced by Smith (1961) a half century earlier in his seminal essay, “The new historian of American education” in the *Harvard Educational Review*. These latter works exemplify instances where institutional historians commissioned to write about universities in the South fulfilled the standards of scholarship and context that Smith presented as a manifesto and goal in 1961, namely that they “widened their sources of inquiry” and “related the institution to its social setting and to other cultural settings around it” (p. 136).

A quick glance at the book and chapter titles of a few of the South’s institutional and pictorial histories demonstrates the theme of the institution’s striving along an established developmental path toward emergence as a university. Sometimes the evolving struggle appears in different volumes—as is the case for the University of Kentucky’s history conveyed through Hopkins’ (1951) *The University of Kentucky: Origins and Early Years* and Talbert’s (1965) *The University of Kentucky: The Maturing Years*. In other cases, photographs and maps depict growth into an ideal of what a “greater” university looked like, as highlighted in the table of contents for Bedsole and Richard’s (1959) *Louisiana State University: A Pictorial Record of The First Hundred Years*.

The chapter titles within institutional histories also evoke the theme of striving southern universities on their way to emergence as bona fide universities. Take, for example, Porter’s (1964) *Trinity and Duke 1892–1924: Foundations of Duke University*. Table 9.1 replicates the book’s seven chapter titles, which together convey

Table 9.2 Chapter titles for Jennings (1955) *Transylvania: Pioneer University of the West*

Chapter I	The Birth Throes and Early Struggles of Transylvania Seminary
Chapter II	Administration of Harry Toulmin and the Opposition Thereto
Chapter III	James Moore's Administration, 1799–1804
Chapter IV	The Troubled Administration of Acting President Blythe
Chapter V	The Liberal Fight to Secure an Acceptable President
Chapter VI	Transylvania's Golden Era Under President Horace Holley, 1818–1827
Chapter VII	Attack on, Defense of, and Resignation of Holley
Chapter VIII	Alva Woods and the Baptist Era
Chapter IX	The Episcopalian Era, 1833–1837
Chapter X	Uncertainty—and Then Presbyterians Once More
Chapter XI	The Methodist Era, 1842–1850
Chapter XII	Deepening Shadows Illuminated by One Gleam of Sunshine
Chapter XIII	Rising from the Ruins

an institutional history of struggle and challenges successfully overcome on the university's developmental path.

Durden's (1993) *The Launching of Duke University 1924–1949*, a 15-chapter volume, rests upon a similar narrative arc, though doubled in the number of chapters. In his work, Durden (1993) chronicles how Duke evolved from Trinity College into a more complex university structure and campus operation offering advanced study in the Arts and Sciences, Theology, and Medicine, taking on the Duke Forest and beginning a school of Forestry. Here, the growth in organizational structure, curriculum, and physical plant all represent new opportunities for additional histories—as would be the case for the University of Kentucky and Stanley's (1996) lively account of early years of intercollegiate athletics, *Before Big Blue*, and Smith's (1981) 534-page volume on the history of the College of Agriculture.

An interesting counternarrative within the theme of struggling southern colleges is depicted in the history of Transylvania University, chartered in 1780 as the first college or seminary west of the Allegheny Mountains. Jennings' (1955) *Transylvania: Pioneer University of the West* details the emergence of a more complex institutional structure that arrived in a “false dawn” for the state university in America, according to Borrowman (1961). Table 9.2 lists the eight chapter titles for Jennings' (1955) volume, illustrating Transylvania's embattled sectarian struggles along with its eventual triumph and rebirth as a liberal arts college.

These chapters also show Transylvania's protracted period of “Holy War” as compared to the early years of Trinity College. In fact, as a result of the failure of the denominations to provide adequate support to the struggling institution, the school offered itself up to a fraternal order, the Grand Lodge of the Independent Order of Odd Fellows, who subsequently rejected the proposition (Jennings 1955). Later to receive the state's land grant for agricultural and mechanical education and become Kentucky University (KU), Transylvania eventually separated from KU to become a liberal arts college (Jennings 1955; Wright 1975). The drama that is seen here, exemplifying what Cartter (1965) characterized and Stetar (1985) described as the South's drawn-out deviation from a larger, trend toward secularization of

American higher education. Though played out in higher education, the Transylvania and Trinity “Holy Wars” affirm the South’s religious predisposition and affinity for spirituality (see Wilson 2007, 2011), the result being that denominational controversies long influenced higher education in the region, even slowing the development of state universities when similar institutions in other regions had unloosed themselves from such ties (Nixon 1934; Stetar 1985).

In contrast to some of the difficulties associated with official, uncritical, and narrowly focused institutional histories derived primarily from local sources (e.g., Snider 1992; Durden 1993), a promising development over the past quarter century are numerous works that stand out as exemplary models of how an institution can celebrate its past without sacrificing critical analysis and even serious self-criticism. Especially comprehensive throughout, Dyer’s (1985b) bicentennial history of the University of Georgia stands out, along with Lesesne (2001) and Mohr and Gordon (2001). For instance, Dyer’s chapter on desegregation in the post-World War II era is balanced, insightful, and stands the test of nationwide scrutiny. Lesesne’s (2001) history of the University of South Carolina since 1940 continues this trend, with the added dimension of writing critical history close at hand. The follies and foibles of an ambitious but failed president, along with coverage of tensions from campus expansion, are examples of serious historical analysis. Mohr and Gordon (2001) extend this scholarly tradition in their sophisticated analysis of modern Tulane. One hallmark of these exemplary works is that the authors take care to place their institutions integrally into national higher education trends. Though the latter statement can be applied to the centennial history of Georgia Tech University, *Engineering the New South: Georgia Tech, 1885–1985*, by McMath et al. (1985), especially in their effort to show Georgia Tech’s “national orientation” (p. ix), this six-author history comes off as a clunky read when compared to the substance and style of Dyer (1985), Lesesne (2001), and Mohr and Gordon (2001).

Biographies of Great Leaders

Perhaps reflective of reduced market potential, stand-alone biographies of official university leaders, especially college and university presidents, number far less than institutional histories. Most often, a biographical focus enters into institutional histories as a lens for understanding institutional development. Such is the case for Wilson’s (1957) *The University of North Carolina, 1900–1930: The Making of a Modern University*, a history divided into five books with total 41 chapters. In this history, books two, three, four, and five cover presidents Francis Preston Venable, Edward Kidder Graham, Marvin H. Stacy, and Harry Woodburn Chase, respectively, and the narrative arc bends toward the familiar theme of striving toward a successfully emerged southern university; here, the presidents play the role of chief architect.

In this way, academic leaders and institutions have been historicized as inextricably connected to their institutions, just as Link (1995) cautioned readers of his book on William Friday, the president of the UNC from 1956 to 1986, noting that his is “not a biography in the usual sense” (p. xv). Moyon’s (2011) recent biography

of University of Kentucky (UK) President Frank McVey (1917–1940) suffers just a bit from the conundrum identified by Link (1995). Whereas Moyen’s is also not a biography in the usual sense, it occupies an interesting middle ground wherein the author attributes the university’s modernization to McVey, but without providing the flowing profile usually associated with dedicated biographies or using the secondary source materials associated with strong institutional histories. Nevertheless, when paired with Michael’s (2008) book about Jimmy Carter as an educational policymaker, Moyen’s (2011) work may signal an interesting trend from authors with education policy backgrounds isolating leaders’ contributions to educational policy for dissemination into broader markets.

Part and parcel of institutional histories, then, biographies of the South’s great academic leaders show some of the same weaknesses as commissioned institutional histories, particularly, a focus on *successful* leadership and institutional development. In other words, there has been a strong pressure, whether direct or indirect, for such works to chronicle and celebrate the presumed favorable achievements and accomplishments of the biographical subject. For serious scholarly analysts, the situation is not that all such celebrations are unwarranted; rather, it is the more subtle and complex dilemma of balancing a “top down” official account with multiple perspectives, such as those outside the immediate official leadership circle (e.g., students and faculty), and the inclusion of critical analysis and dissent along with predictable narrative and praise for the alleged Great Man leading the alleged Great University.

However, it is important to note that even commissioned, official biographies of southern university presidents are useful in providing essential information and landmarks for understanding institutional development. In other words, a discerning scholarly reader can learn and distill a substantial amount of social and institutional history from these works, while at the same time exercising restraint and discretion to avoid taking at face value the normative praise and condemnation—the “heroes and villain” syndrome that colors such literature. When read along with works such as the Southern Women’s Institute’s (2009) oral history collection from early alumnae of Mississippi University for Women and the Matalene and Reynolds’ (2001) book about students’ experiences at the University of South Carolina, new perspectives are gleaned that counterbalance histories derived primarily from presidential files. Caution must apply here, too, as in the case of the Southern Women’s Institute’s (2009) oral history collection where interviews of alumnae provide a rich window into student life and culture at this state-supported women’s college in the first half of the twentieth century, yet reveal that that nearly every alumna interviewed feels she owes most of her life successes to attendance at the Mississippi State College for Women (now, Mississippi State University for Women).

Horizontal Histories

One effective strategy pursued by historians of higher education to counter the limits and biases of institutional house histories has been to view higher education

in the South through the lens of “horizontal history” (Thelin 2010). These histories oblige researchers to survey and analyze across a broader swath of colleges and universities but alongside numerous other organizations such as philanthropic foundations and government agencies. With this strategy, the ultimate goal involves reconstructing the significant trends that have shaped colleges and universities and their constituencies across an entire region or a good portion of it. This approach has yielded fertile insights and reinterpretations. Among these, Anderson and Moss (1999), Frost (2000), and Dennis (2001) stand out.

Anderson and Moss’ (1999) *Dangerous Donations: Northern Philanthropy and Southern Black Education, 1902–1930* inspires higher education historians to think anew about the role of philanthropy in public policy, primarily through their exploration of the philanthropic streams and key players funding Black education in the early part of the twentieth century. They examine the Rockefeller-funded General Education Board and its inaugural chairman William H. Baldwin, entrepreneur Julius Rosenwald and the Rosenwald Fund, and the Episcopal American Church Institute for Negroes and its second director Robert W. Patton. Familiar figures such as Booker T. Washington and W. E. B. DuBois also enter this sophisticated history of interlocking circles of influence. The real gem of this history comes from the authors thorough explication of the “mixed motives and unintended consequences” that characterized philanthropic giving and receiving related to Black education (p. 12). Ultimately, Anderson and Moss (1999) provide a more realistic perspective on the limitations of foundation philanthropy in setting the agenda for Black education, as African Americans also contributed “millions of dollars” to “educational self-help,” pursuing philanthropic gifts with agency, action, and ideas of their own (p. 4).

Whereas Anderson and Moss (1999) used records of various foundations that supported Black education, Frost’s (2000) *Thinking Confederates* relied on the collective biographies of various presidents of several colleges and universities in the South during the immediate postbellum decades. Frost’s research raises questions about the facile stereotype of Southern institutions as nostalgic, reactionary hosts of what social historians call the “moonlight and magnolias” phenomenon of the South’s cultural and institutional development. What Frost (2000) finds, in contrast, is that no fewer than 17 former Confederate States of America (CSA) generals who had served with Robert E. Lee took seriously Lee’s model of leaving military service to serve as a college president. Furthermore, this group remained in touch as a fraternity of sorts and overwhelmingly pursued change through educational policies that were counterintuitive to their shared, ostensibly conservative heritage. For example, the CSA generals-turned-presidents showed little remorse about the disappearance and failure of an agrarian military model of education. They were respectful of and interested in the innovations that colleges and universities in the North, Mid-Atlantic, and Midwest had made in professional, scientific, and applied fields of study.

Dennis’ (2001) collective profile of state universities in the South and their presidents (Edwin Alderman, University of Virginia; Samuel Mitchell, University of South Carolina; Walter Barnard Hill, University of Georgia; and Charles Dabney,

University of Tennessee) showed the region's progress in higher education for utility. An emphasis on enhancing professionalism and service to society by these four presidents and their universities in the late nineteenth and early twentieth centuries followed dominant trends. As a result, legislators and governors became persuaded to fund advanced, progressive higher education as part of a new program of state government and social reform. Dennis' work brings attention to this understudied movement, deeming it a concerted effort whereby the university emerged as key player through the involvement of faculty and university experts working in new-found consultation and collaboration with state agencies.

This strand of scholarship that surfaced in the 1990s has continued for two decades, prompting a major rethinking of southern higher education history. These popular horizontal histories compensate for the isolated nature of institutional histories and biographies, and they address the scholarly limitations made evident in them. Furthermore, these histories have led to new studies that will be discussed later in this essay under the thematic strand of dissent.

Journal Articles

Although the medium of books (including institutional histories, biographies, and horizontal histories) demonstrates the gains and innovations in historical writing about southern higher education, the most influential and rigorous contributions have occurred in the corpus of journal articles. These have been a sort of "DEW Line" of historical research on higher education—the Distant Early Warning field reports and analyzes which, originally published for relatively small, specialized scholarly audiences, end up having deceptively strong influence and endurance.

One finds, for example, in initial articles about race and desegregation the new, daring research on individual institutions that surfaces later in longer histories. Good examples of this include Kean's (1999) article on the "intelligent White men of the South" and her longer volume on desegregation of private universities in the South (2009); Mohr's (1999) article on desegregation at Tulane, and the important focus on race and desegregation in Tulane's institutional history (Mohr and Gordon 2001); and the important plot line unveiled in Lesesne's (1999) article on University of South Carolina president James B. Holderman and his failed quest to achieve elite status, brought down by financial extravagance and other personal controversies, discussed in the subsequent 2001 institutional history. Although important research has been conducted and published in the reverse—as is the case for Diamond's (1999) study of Emory University's ascendant research profile as follow-up to her comprehensive study of research universities in the postwar era (Graham and Diamond 1997)—journal publications generally constitute the workshops and trenches where a combination of new information and new interpretations has been most fecund, representing a discernible cross-fertilization across institutions and among authors. Here, too, the work on southern higher education history has grown more critical, offering new studies on dissent from orthodoxy—the second thematic strand to which this discussion now turns.

Southern Higher Education: A History of Dissent from Orthodoxy

In the introduction to this essay, the figurative language used to portray the study of the American South within academia as a “complicated root structure” purposefully evokes an agrarian metaphor to explain the literature’s multidisciplinary dimensions. A discussion of the origin of the critical study of southern history and higher education is a suitable starting point for exploring the multilayered theme of dissent, a direction that became institutionalized when historians departed from the uncritical approaches that had dominated southern history after the Civil War—a history that emphasizes the glory of the Confederacy, for example, asserting that Blacks were happily obedient to benevolent slave masters in a well-ordered and productive society (Cobb 2005). Moreover, this history became characterized as being “sealed by a hypersensitivity to dissent and distaste for open disagreement as unseemly and unflattering” (Wells-Dolan 2010, p. 194).

By the 1930s, the larger postwar context, the Great Migration, and the Great Depression had brought tremendous “economic and demographic change” to Blacks and Whites. This sparked a period of detached and critical reflection of the past-in-the-present, primarily through a fresh outpouring of literary and scholarly productivity known as the Harlem Renaissance and the Southern Renaissance (Cobb 2005, p. 148). Now, the dissent and disagreement that lay under the surface made its way to the page and became solidified in the academy.

When historians began to critically question the past-in-the-present of the 1930s American South, southern history markedly changed directions, especially for White writers and thinkers engaged in the Southern Renaissance. Cobb (2005) summarizes this new focus:

The emergence of a more objective, scholarly approach to studying southern history led in the short run to a more critical, analytical perspective on the Old South, but the romance of the antebellum South and the Lost Cause was not the only emotional and ideological challenge confronting the region’s professional historians. There was also the obligatory, uncritical optimism of the New South Creed with its insistence on miraculous achievement, thorough-going progress, and complete racial and class harmony (p. 106).

As this period exposed the realities behind the Old South’s illusion of grandeur and the New South’s illusion of optimism, a newfound critique pitted agrarianism against northern industrialism, at least on the surface (Cobb 2005). On a much deeper level, this period stirred a defense of the “Southern way of life against what may be called the American or prevailing way” (Twelve Southerners 1930/1977, p. xxxvii). Arguably, this cultural defense in the face of a national orthodoxy evolved into the oppositional perspective that later became known as massive resistance to integration and desegregation by Whites (Wallenstein 1999, 2008a; Orfield 1969).

While Whites fought against a national orthodoxy that pressured the South to better accommodate the demands for full citizenship for Blacks, Blacks continued their longstanding attack on southern cultural orthodoxy and an educational system that largely ascribed them second-class citizenship (Anderson 1988). Sepa-

rated approximately two generations from slavery, Blacks, who had faced urban crowding and discrimination in new environs, grew more wary of unfulfilled promises and began to explore their southern roots—looking more closely at the past, sensing also “the disorienting experience of social change in the present” (Gray as cited in Cobb 2005, p. 147). Cobb elaborated upon this shared period of critical reflection:

In fact, a number of themes that would engage the leading white writers of the Southern Renaissance had already been raised by black writers during and even before the Harlem Renaissance that blossomed in the 1920s. Because it so closely associated with black migration out of the South and with the flowering of black literary, musical, and artistic talent in the less constricted atmosphere of the Urban North, the Harlem Renaissance has generally been seen as a “northern” rather than “southern” phenomenon. Yet, in many key aspects the Harlem Renaissance was simply a geographically detached but no less real or important part of the Southern Renaissance.

According to Cobb (2005), writers such as Richard Wright, a part of a southern diaspora, experienced what L. D. Reddick described as a “love and hate” relationship or “confusing frustration” about the South. Cobb argued that, when Wright left the South in 1927, he did so not to “forget” but to “understand” the region (p. 149). Wright himself explained (as cited in Cobb 2005), “I could never really leave the South, for my feelings had already been formed by the South, for there had been slowly instilled into my personality and consciousness, Black though I was, the culture of the South” (p. 149).

This common period of detached and critical reflection centered upon the notion of the distinct South also conveys the theme of dissent where race takes omnipresence, suffusing the physical, psychic, intellectual, and emotional spaces occupied by its authors (scholars) and readers (scholarly audiences). Perhaps apart from historical study of higher education in other regions or the ostensibly “national histories” of higher education (Lucas 2006; Rudolph 1962/1990; Thelin 2004; Veysey 1965), the history of dissent in southern higher education places race and the mixed legacies of slavery for Blacks and Whites on center stage—a departure from southern cultural custom where matters of race loom ever-present but veiled—the proverbial elephant in the room. Yet, because of the South’s apartheid social structure, this dissent developed into a growing body of literature hinged upon two opposing racial experiences and perspectives on the South, Black and White. As cultural institutions, academic organizations followed this segregated trajectory as well, drawing strength from law and custom. As a result, colleges and universities, academic units, the disciplines, and academic journals all contributed to a polarized production and dissemination of research about the South. Over time, this bifurcated research raised questions about credibility and authority of voice in writing the history of the opposing races, further influencing how different audiences received scholarship and made meaning of it. Nevertheless, the 1930s period of vigorous inquiry about the past-in-the-present around questions of higher education in the South set the stage for dissent, providing necessary conditions for future scholarship to thrive.

A History of Dissent: Divided Perspectives on National and Cultural Orthodoxy

Rockefeller-funded social scientists working in racially divided southern universities conducted the first critical studies of higher education in the region during the 1920s and 1930s. However, none of these researchers would have identified themselves as higher education scholars per se, nor were the foundation grants they received targeted expressly for higher education research. Rather, the balance of the scholars' work covered topics such as agriculture, the development of the social sciences, and rural life, all within the traditional disciplines of history, economics, and sociology. This somewhat intermittent scholarship on higher education documents the drawbacks and deficiencies in quality of life for faculty, support for research, and public support that stalled the progress of the region's state universities. It also characterizes student outcomes in terms of occupation or employment for Blacks (Johnson 1935, 1938).

Titles of various reports by these social scientists such as "The 'drag' of talent out of the South" (Gee 1937), *Research Barriers in the South* (Gee 1932), and "The Negro college graduate: How and where he is employed" (Johnson 1935) hint of the seriousness with which these scholars approached the task of exploring higher education in the region. Often their research involves the "questionnaire method" (Gee 1932, p. viii), which allows reporting of numerical data and calculation of means in multiple tables comparing, for example, the work of faculty in the South with faculty in other regions. Averages for the number of teaching hours per week, average salaries for each academic rank, and location of graduate study and faculty placements of southern-born scientists present a sampling of the kinds of measures that mattered.

Wallenstein (2008a) has confirmed the racially segregated nature of the southern university, explaining that the 17 states of the former Confederacy "maintained segregation at all levels of public education elementary (everywhere) through doctoral and professional (if available), without exception between at least 1890 and 1935" (p. 4). Rockefeller philanthropy catered to this dual system primarily through the General Education Board (GEB), incorporated in 1903. The GEB sought to build support for public education, first at the elementary and later the high-school level, by working cooperatively with southern Whites to address the region's problems (Fosdick 1962). GEB works with public education in the South opened the door for support to state universities to flow beyond privately endowed colleges and universities. When the Laura Spelman Rockefeller Memorial (LSRM) embarked upon its ambitious plan to support the social sciences in 1922, funds flowed first to the Universities of Chicago, Iowa, and Wisconsin and, by 1924 to Harvard University-Radcliffe College, Brookings Graduate School-Institute of Government Research, and the University of North Carolina. Later, LSRM funds reached the University of Virginia in 1926 and the University of Texas in 1927 to establish social sciences research institutes.

Among southern states and universities, North Carolina and UNC became reputed for demonstrating a more progressive spirit (Leloudis 1996; Dennis 2001),

though it would be 1966 before UNC hired its first Black faculty member, placing UNC within 5 years of Yale (1962), Stanford (1970), and Cornell (1970) in the dates of their first Black faculty hires (Slater 1998–1999). At the time it received LSRM funding, UNC had secured membership in the AAU and, under the leadership of President Harry Woodburn Chase, had secured increased funding from the state, enabling North Carolina to attain a level of national recognition in several fields (Wilson 1957). UNC sociologist Howard W. Odum figured prominently in the “progressive” effort to advance research in the social sciences at the university, attracting philanthropic support from the LSRM and later the Rockefeller Foundation (RF) for an Institute for Research in the Social Sciences (IRSS) which he founded and directed, beginning in 1924. The UNC IRSS will soon celebrate its ninetieth anniversary and known today as The Odum Institution for Research in the Social Sciences.

In terms of Black universities and the social sciences, Fisk University emerged as a key player in this effort, attracting a \$ 200,000 grant from the LSRM to establish a “strong department of social sciences” focused on the study of US “race relations” (Gilpin and Gasman 2003, p. 26). In 1928, Dr. Charles Johnson, a 1916 graduate of Virginia Union who earned a Ph.D. in sociology from the University of Chicago, became a leading scholar in that department; in 1947, Johnson became President of Fisk. Johnson’s international perspective stood out from his White social sciences contemporaries who studied the South. In this way, Johnson’s international focus placed him ahead of his time, nudging him away from the overarching focus on southern distinctiveness and closer to today’s Global South scholarship—a topic discussed in the concluding section of the essay. A related discussion of Johnson will resume later.

Born in Bethlehem, Georgia, Howard Odum graduated from Emory University in 1904. Upon graduation, he took a teaching position in Toccopola, Mississippi, where he began his observations of “Negro folk songs and town life” and earned a master’s degree in classics at the University of Mississippi. Pursuant of observations of Black life and his emerging interest in social sciences, he took a fellowship and earned a first doctorate at Clark University (1909) in psychology, studying with G. Stanley Hall. Odum graduated with a second doctorate in sociology from Columbia University (1910), under the direction of Franklin H. Giddings. He began his faculty career in the field of education at the University of Georgia and then moved to Emory in sociology (Kantor 1973). Though Odum’s initial studies of “Negro Life” appear racist through a contemporary critical lens (Gilpin and Gasman 2003; Challen 1992) and he later chided them himself, his work in the very early part of the twentieth century constituted a direction that assuredly departed from other White southern sociologists and previous research by social scientists emphasizing the biological, intellectual, and moral superiority of Whites (Downs 2009). Arguably, Odum’s book *Race and Rumors of Race* (1943) showed his evolved and more critical understanding of the southern cultural context around race, especially exposing the cultural myths and fears among Whites about Blacks that fueled Whites’ preoccupations and violence.

UNC recruited Odum in 1920, and he rapidly organized the School of Public Welfare and the department of Sociology. Recognized as a Kenan Professor, Odum distinguished himself and UNC, founding the national sociology journal *Social Forces* in 1922, earning accolades for that publication from Mencken who identified Odum as a “brave spirit”—in contrast to the “morons, hill-billies, peasants, and country preachers” he frequently scorned (Tindall 1967, p. 208). Later, Odum founded the IRSS, and served as president of the American Sociological Association in 1930.

Outside UNC and academic work, Odum bred jersey cattle and wrote novels. Clement (1944), the African American President of Atlanta University, acknowledged that Odum was “prominently identified” with the Commission on Interracial Cooperation in War and Peace (CIC), a private organization composed of “leading Southerners, Negro and White” established in Atlanta in 1919 to ease racial tensions upon the return of Black servicemen from World War I and to sponsor education and action programs to prevent and reduce lynching (p. 319). In CIC membership and activities, Odum purposefully associated with Mary McLeod Bethune of Bethune-Cookman College (now University), John Hope of Atlanta University (now Clark Atlanta University), and Charles Johnson, among other African American academic, civic and church leaders—moving him beyond the segregated spaces of academia to community spaces where leaders ostensibly worked together to address social problems.

Odum (1936, 1938, 1947) attracted national attention for his work on regionalism and regional planning, collaborating with strong scholars at reputed universities, such as William Fielding Ogburn of the University of Chicago. Odum made his mark by revising Frederick Jackson Turner’s concept of geographical sectionalism to account for regional patterns of cultural folkways within a “balanced” schema for national development. His approach rejected isolationism and aspired to use the region’s natural and cultural resources to promote cooperation among federal, state, and private agencies for better population and land management, reduction in dependency on cotton and tobacco, and enhancement of manufacturing and consumption, to name a few examples. Odum’s vision of regional planning spawned a number of regional associations including the Southern Regional Committee (SRC) of the influential LSRM-funded Social Science Research Council (SSRC) that garnered resources to enhance research in the social sciences in southern universities. Though he led the SRC as a founding member, Odum relinquished leadership to direct the monumental 4-year Southern Regional Study funded by the SSRC and the GEB, a project published as the nearly 700-page *Southern Regions of the United States* (Odum 1936).

Odum served as a liaison with Rockefeller Foundation officials, planning an automobile trip to southern universities and giving entrée to academics who wished to meet foundation officials—similar to the efforts of Booker T. Washington and Charles Johnson for Black educators. Wilson Gee, a social scientist at the University of Virginia, benefited from Odum’s sponsorship, attracting LSRM and RF monies to direct the University of Virginia’s IRSS. In the preface to his 1932 volume,

Gee (1932) acknowledged Odum's "sympathetic interest and criticism" as "valuable" to his work (p. vii).

However, Odum's vision for regionalism exerted a broad influence (Tindall 1967; Pope 1943) and powered an increase in regional planning groups. These groups also created open venues for debating and voicing dissent against Odum's ideal of moving the region into a national stream of development—a direction which, for example, directed southern colleges and universities toward established models of excellence for research and graduate education. This vision drew fire from southern academics in the circle of regional affiliates on the SRC and the Twelve Southerners or Vanderbilt Agrarians who authored the landmark, *I'll Take My Stand* (1930), a stirring defense of the South's agrarian tradition that critiqued American industrialization (Conkin 2001; Tindall 1967). This group led by Donald Davidson and John Crowe Ransom included ten other poets, essayists, historians, and social scientists affiliated with Vanderbilt University: John Gould Fletcher, Henry Blue Kline, Lyle Lanier, Andrew Nelson Lytle, Herman Clarence Nixon, Frank Lawrence Owsley, Allen Tate, John Donald Wade, Robert Penn Warren, and Stark Young (Wells 2001a, b).

Nixon, one of the Twelve Southerners and head of the Tulane department of history and political science, and Benjamin Burks "B. B." Kendrick, from the Women's College of North Carolina and Chairman of the SRC of the SSRC, along with Charles Pipkin, a professor of Comparative Government at Louisiana State University, fanned the flames of dispute with Odum. Offering up proposals for unique, all-southern approaches to higher education, Nixon, Kendrick, and Pipkin sounded early tones of the defiant segregationist philosophy that would shape the States' Rights Democratic Party or Dixiecrats in 1948. Their insular plan for graduate education radically departed from established patterns of excellence, patterns that Odum had embraced in founding the journal *Social Forces* and the UNC IRSS. Then, too, Odum's comparatively more progressive viewpoints on race contrasted with the conservative views espoused by the Vanderbilt Agrarians, views that have been documented by biographers and caused members of the Twelve Southerners such as Robert Penn Warren to eventually distance themselves from the group (Conkin 2001).

Nixon in particular evidenced distaste for Odum's interpretation, personally jabbing Odum in his *I'll Take My Stand* (1930) essay, "Whither Southern Economy?" Nixon claimed, "there are those who would standardize Southern economy after the manner of the industrial North, although Frederick J. Turner, the greater interpreter of the American frontier, has lately emphasized the constructive significance of permanent sectionalism in American life" (p. 177). Nixon's advocacy for Turner's sectionalism—which would have allowed for a flourishing of distinct regions over a more unified or national approach—came out in Nixon's ideas for southern higher education. Nixon's (1934) essay in *Culture in the South* accounted for the South's problems in higher education, namely, feeble graduate education programs, conservative attitudes of faculty and university leaders, outdated approaches to women's education, and Protestant interference at state institutions. Furthermore, he prescribed a tough remedy of closing weak institutions. However, Nixon also proposed

that the region establish an “All-Southern” college or university with only the best “All-Southern” faculty and students (Nixon 1934, p. 246).

Nixon’s proposal might be perceived as tongue-in-cheek if its central theme had not also been echoed in a more formal, elaborated form by Kendrick in a *Southwest Review* (1934) article entitled “A Southern Confederation of Learning: Higher Education and the New Regionalism in the South.” Kendrick’s article proposed a new confederated university comprising “southern-born,” “southern-trained” faculty teaching from a new periodical to be established to study “peculiarly local and Southern problems” (p. 189, 191)—all under the direction of an executive officer and governed by a Board of Control. The next article, Pipkin’s (1934) “The Southern Philosophy of States’ Rights and the New Regionalism,” connected the proposal with the patterns of thinking and approaches designed to preserve Old South traditions tempered by “New South” ideas, marking the antecedents of an emerging philosophy and strategy of resistance that focused upon minimizing integration and maintaining White supremacy in the South. In addition to the inward-looking nature of the 1934 Nixon and Kendrick proposals, the language used to denote credibility to conduct research, offer critique, or provide guidance to the South conveyed the scholars’ belief in the salience of White southern identities for such efforts. Consider Gee’s (1932) preface, for example, where in addition to Odum, Gee acknowledged B. B. Kendrick and “Professor W. F. Ogburn of the University of Chicago, a distinguished South-born social scientist and a constructively minded friend of the South” who also offered advice on “method and interpretation” (p. xx).

Although regionalism eventually gave way to more scientific and behavioral approaches in the social sciences at UNC and regional planning efforts waned along with the New Deal, faith in the regional imagination for solving southern higher education’s problems prevailed (Grantham 1979). In focusing on the problem of graduate education in the South, Pipkin (1933, 1934, 1939), Pierson (1947), and the Conference of Deans of Southern Graduate Schools continued the scholarly agitation that interestingly, in combination with the work of Odum, caught the attention of southern governors (Tindall 1967). At the Southern Governor’s Conference on December 7–8, 1945, leaders who felt increasingly pressured by influential patrons sought to forge a solution to the educational and political problems they faced. Specifically topping their list of concerns were requests for admission to oversubscribed professional programs at state universities and a financial crisis mounting at the historical Black Meharry Medical College in Nashville, a situation that foreshadowed the possibility of requiring state medical schools to admit Black students (Browning 1949; Sugg and Jones 1951; Popham 1948a, b).

Supported by an exploratory grant of \$ 30,000 in 1948 from the GEB, the interstate compact organization known first as the Board of Control for Southern Regional Education, and later as the Southern Regional Education Board (SREB), was ratified on June 11, 1949 by six southern states. Membership grew to include 16 states by 1956 (Regional Action in Education 1949). In many ways, form followed function for the SREB. The Board’s membership comprised three members from each state: the governor, one legislator, and one educator (Sugg and Jones 1951). This form took shape as members worked to establish the first regional contract in

the field of veterinary education, a high-cost and high-demand field. Despite some increasing industrialization, the South's still-dominantly agricultural economy needed expanded support for veterinary education because the region offered veterinary medicine programs at only four institutions: Alabama Polytechnic, Oklahoma A. & M., Tuskegee Institute, and the University of Georgia. The resulting contract, a standard-bearer for other SREB agreements, read:

Each of the veterinary schools pledged itself to admit a quota of qualified students from designated states other than the one in which it was located on payment by the states of \$ 1,000 a year per student. The council was to contract with the states, and in turn with the schools, and to give general supervision although each school retained complete authority over admissions. The money was to be paid through the Board to the schools and used only for maintenance and operation, not for capital improvements, which remained the responsibility of the home states of the schools. Those at Alabama Polytechnic Institute, Oklahoma A. and M., and the University of Georgia were to serve subregions; that at Tuskegee was to serve the entire region. Each state further agreed if it fell short of its quota of students for any given year, it would pay at least three-fourths of the sum required by the full member (Sugg and Jones 1951, n.p.).

In the first year, the Board accommodated "119 first-year students" in veterinary medicine (Regional Action in Education 1949). It should be noted that the historically Black Tuskegee served the entire region because the South's Black students were directed to be enrolled only at Tuskegee, while White students were directed to the other three schools at Alabama Polytechnic Institute (now Auburn University), Oklahoma A & M (now Oklahoma State University in Stillwater), and the University of Georgia, depending on proximity to their home states.

Soon the agency also began crafting the intricate details for regional contracts that would send students in a "pooling arrangement" to the region's accredited professional schools of medicine and dentistry, at a per student cost ranging from \$ 1,000 to \$ 1,500 (Fine 1949). Reportedly, the contracts benefited states and institutions by curtailing costly new programs or duplication, providing steady new funds, and ensuring a broader, higher quality applicant pool for professional programs (Fine 1949). For students, the contracts modestly increased opportunity at the charge of in-state tuition. By 1956, the SREB boasted 1,000 "regional students" enrolled in professional programs at 18 of the region's universities and professional schools (SREB 1965).

Scholarship by Bartley (1969/2003), Orfield (1969), and Vander Zanden (1958, 1959a, b, 1962) assists in understanding the SREB as a strategy perpetrated by governors such as Georgia's Herman Tallmadge and South Carolina's Strom Thurmond, in concert with educational leaders, as a way to adapt slowly to unwanted change, thereby stalling federal intervention and the unavoidable integration of southern universities, especially in the fields of professional education. Hence, White resistance to integrated education evolved from separate state colleges for Blacks and Whites legalized in *Plessy v. Ferguson* (1896), to the practice of providing scholarships to send African Americans to other states for graduate and professional education, a plan which was legislated in Kentucky as the Anderson Mayer State Aid Act in 1936 and practiced by 16 other states (Thelin 2004; Larkin 2001), to the SREB

agency that utilized state contracts to minimally expand professional education for Black students only at the historically Black institutions in the region (Tuskegee and Meharry Medical College).

Although interstate compacts did not require congressional approval, SREB proponents originally sought such endorsement in 1948 (Popham 1948a, b). However, the SREB met resistance from the Senate because it “became involved in the civil-rights discussion,” according to Senator Spessard Holland of Florida, and a vote of 38–37 ultimately “recommitted” the resolution to the “judiciary committee for further consideration” (Holland 1950). Met by interesting timing—just before the landmark *Brown v. Board of Education* reached the courts and at the same time that conclusions from the 1947 President’s Commission on Higher Education were disseminated (Thompson 1949)—the SREB proposal sparked controversy that loomed over the organization’s early years. Glossed over in the official histories (e.g., Haskew 1968; Sugg and Jones 1951), the controversy was confirmed by Thompson (1949), editor of *The Journal of Negro Education*, GEB archival records and reports resulting from the exploratory grant (Interviews: RDC 1948; 1949; Interviews: JHP 1950), and SREB public-speaking training materials (*A Manual for Speakers on Southern Regional Education* 1950). It is also seen in the reaction of Odum who, although his UNC graduates primarily comprised the leadership of the nascent organization, felt that his own participation would be misunderstood as a stance against integration and therefore diminish his credibility with the Black community (Interviews: RDC 1948; Johnson and Johnson 1980). To give added insight into perception of the organization at the time, one GEB officer attending a September 1959 work conference noted a “disproportionately large” Black representation and commented that, with the exception of “housing and food, there was not the slightest evidence, either in spirit or geometry, of segregation in general assembly, committee, or in the hotel lobby. I saw no adverse newspaper comment, and have seen white sheets only in my hotel room” (Interviews: JHP 1950).

This statement by a GEB program officer mockingly comparing the SREB to the Ku Klux Klan reveals external perceptions surrounding the organization within a polarized racial landscape for southern higher education in the 1940s and 1950s. For example, when state governors and SREB council members testifying before Congress were queried about the problem of segregated education, they dismissed concerns that the regional program was segregationist by claiming that the programs were “subject to applicable to Federal laws and court decisions.” To this, Thompson (1949) expressed his outrage at their skillful rhetoric:

It has seemed almost inconceivable that a group of the most potent politicians in the South, complemented by a group of the most intelligent white educators in the South, could or would sit around a conference table on more than one occasion and arrive at the conclusion that segregated education is none of their business; or come to the conclusion that even if it is their business they are powerless to do anything about it, except to make an ineffective attempt to improve the situation within the segregated framework (pp. 1–8).

Thompson felt it logical that, if any level of schooling was to begin the process of integration in the South, graduate and professional education remained the obvious candidate. Yet, he opposed the SREB plan on the grounds that successful integration

of graduate and professional school had occurred in other regions, that there was only a small pool of Black applicants for advanced education, and that there was a high cost of institution and program-building in the advanced and professional fields. The disingenuous spirit evidenced by the governors and educators infuriated Thompson, and likely others. Yet, he understood the precarious position of Blacks in rectifying the alarming need for increased educational opportunity. Thompson summarized his stance: “Negroes not only reject the position which is implicit in the Council’s plan, but resent the ‘take-it-or-leave-it’ attitude that goes along with it. They are pretty certain that it would be shortsighted to ‘take it’ and they feel that there are other alternatives to that of ‘leave it’” (Thompson 1949).

Although the 1948 conference meetings of the Presidents of Negro and Grant Colleges and the Association of Colleges and Secondary Schools for Negroes proclaimed opposition to the newly formed SREB, some Black college leaders offered their support. For example, a 1949 interview by SREB Executive Director Dr. John Ivey and GEB officer Robert Calkins indicated that presidents Benjamin Mays (Morehouse) and Davis (West Virginia) opposed regional education and presidents R. E. Clement (Atlanta University) and Charles Johnson (Fisk) remained “cooperative” (Interviews: RDC 1949). Thompson affirmed this tally and suggested that, of the few Negro educators who supported the SREB, they had “ulterior motives for doing so.” Undoubtedly, this reference referred to Thompson’s assessment of the longstanding funding relationship of Clement and Johnson with Rockefeller-supported philanthropic foundations (Anderson 1988; Gasman 2002; Peeps 1981).

The origins of the SREB and its early years of conflict demonstrate the longstanding disputes and oppositional perspectives that built the higher education historical literature on White resistance to national orthodoxy and Black resistance to southern cultural orthodoxy. One impulse of historians has been to uncover the orchestrated efforts by Whites to deny equal educational opportunities to Blacks. Herein, the evasive maneuvers, political rhetoric, coded language, and claims of “southern cultural distinctiveness” by White social scientists, educators, and politicians (e.g., the Vanderbilt Agrarians) are painted as racist, effecting a denial of citizenship if not humanity, to Blacks. The historical literature built on the effort to make transparent southern Whites’ disavowal of responsibility for Black education, exposing the various schemes perpetrated by individuals as well as local and state agencies and authorities to maintain White supremacy.

One very interesting strategy pursued by historians has been to more fully excavate the cultural ground that upheld slavery before the Civil War and an apartheid society afterwards. Here, historians reach back to the eighteenth and nineteenth century and find entrenched, distinctly southern cultural values around gender and class. Glover’s (2003) study of the letters from one of South Carolina’s “wealthiest and most powerful” plantation family patriarchs, John Ball Sr., to his son, John Ball Jr. (who attended Harvard College in the late 1700s) shows how Ball Sr. taught lessons in “masculine conduct, and respect for family duty” so as to “cultivate leadership” and pass along the skills needed by Ball Jr. to assume responsibility for the family dynasty (pp. 39–40). Studies of southern military schooling by Andrew (1998, 2001) and, most significantly, Green (2008) uncovers more about how the

region used military education to instill certain ideals and virtues as well as to promote manhood and social mobility.

In terms of women, femininity, and sexuality, Farnham's (1994) *The Education of the Southern Belle* describes how the processes of student socialization and curriculum at southern female colleges cultivated refinement as a marker for status and class. She even exposes the details of females' romantic relationships with each other, a featured part of boarding school life but with a distinctively southern character. This work adds to classic studies of southern womanhood such as Scott (1970) and departs from the direction taken by previous scholars who studied the experiences of southern women attending northern colleges. Of this genre, Johnson's (2008a) study of southern women attending the Seven Sister colleges is most significant. An important work that expands Johnson (2008a, b) is Morelock's (2008) study of collegiate culture in Lexington, Kentucky. Through a focus on social elites, Morelock chronicles the collegiate experiences of White women and men who lived in the late 1800s and early 1900s and exemplified the shifting terrain between New South, Victorian culture, and the period around World War I when expertise and professionalism ushered in new demands related to gender roles in southern society.

As interesting and important as works on gender and class are for understanding southern cultural ways, the predominance of the literature on southern higher education history has tackled the politics of the Jim Crown South. This includes work on Whites' resistance as an analysis of integration and race relations within sanctioned institutional histories (e.g., Dyer 1985b; Mohr and Gordon 2001), as well as literature that focuses centrally on race and Whites' resistance to Black civil rights. In the case of official institutional histories, authors add nuance and depth to the typical "success narratives" discussed in the first part of this essay to expose institutional shortcomings in the integration of southern colleges and universities. Within the framework of those "success-oriented," sanctioned institutional histories, this departure represents a bold step within the southern cultural context where the pressure to conform and be positive about one's institution is deeply valued and even enforced through penalties, ranging from social shunning to destruction of financial livelihood. Arguably, the recruitment and selection of loyal institutional insiders to write official stories of the South's colleges and universities over historians who may take a more critical stance has represented a strategy used to protect institutions from deeper scrutiny.

Over time, the literature on resistance has grown to include numerous articles and books that centrally focus on race and Whites' failings relative to the civil rights movement. For example, Kean (1999) addressed the weak leadership of the South's private institutions (particularly Emory, Vanderbilt, and Tulane), describing how the region's White educational leaders, that is, the "intelligent White men of the South," evaded integration or otherwise manipulated access, admitting very slowly only a few "exceptional" Blacks (p. 60). Mohr (1999) honed in on race integration at Tulane, showing how the university was poised to take a leadership role for integration at the time of *Brown v. Board of Education* (1954), but soon folded in order to preserve the support of its Board of Trustees and protect its endowment. Tulane

integrated in 1963, only after its aspirations were shaken by a Ford Foundation rejection for a significant Challenge Grant due to its failure to integrate, a situation where Tulane had merely followed the lead of other universities.

Other scholars have chronicled the violent resistance to enrollment of the first African Americans to state university campuses in the years after *Brown v. Board of Education* (1954). Incidents involving Charlayne Hunter and Hamilton Holmes at the University of Georgia (Dyer 1985a; Trillin 1964/1991), James Meredith at the University of Mississippi or “Ole Miss” (Cohodas 1997; Doyle 2001; Eagles 2009; Sansing 1990), and Autherine Lucy at the University of Alabama (Clark 1993; Synnott 2008) illustrate that access to the state universities for even a small number of African Americans occurred at the high price of intense personal struggle in the face of violence, extreme hostility, and exclusion. Here, the potent images of Mississippi Governor Ross Barnett personally blocking the enrollment of Meredith in 1962, and Governor George Wallace who, later in 1963, took his symbolic stand, then stepped away from “the schoolhouse door” to protest the entry of Vivian Malone and James Hood at the University of Alabama, show the imposing stance of the statehouse in matters related to the state’s flagship universities.

Billingsley’s (1999) history of the speaker ban law passed in 1963 by North Carolina’s General Assembly demonstrates the measures taken by politicians to stall the civil rights movement. The speaker ban policy, ratified to address a nonproblem, namely Communist Party members and sympathizers speaking on the campuses of North Carolina’s state colleges and universities, showed the extremity of legislative measures. Billingsley argues that the timing of the ban signaled its true intent: curbing the potential political power of African Americans and urban areas over rural conservatives in the aftermath of anticipated desegregation. The ban played as extreme theatrics in this case, undercutting North Carolina’s more progressive reputation and connecting it to the political rhetoric and drama of Deep South states where politicians such as Judge Leander Perez led the notorious White Citizens Councils (Conaway 1973; Wells 2004), a resistance group that actively opposed integration of schools and claimed “65 chapters and 80,000 members” in Mississippi alone (Vander Zanden 1959b, p. 385). The ban sparked the protest of UNC’s Students for a Democratic Society (SDS) and other student activists who successfully argued that the ban violated their constitutional rights and further challenged supposedly progress-oriented academic leaders such as Terry Sanford and William Friday (Covington and Ellis 1999; Link 1995).

Against the backdrop of White resistance to Blacks’ civil rights, the stories of Whites who acted contrary to public sentiment have also made for interesting history. As the North Carolina students squared off with the state (Billingsley 1999), Michel’s (2004) *Struggle for a Better South: The Southern Student Organizing Committee, 1964–1969* also tells a story of youth. Michel chronicles the rise and dissolution of the SSOC, a unique social activist organization created by young Whites intent upon addressing “poverty, racism, and oppression” (p. 3). Attractive to White moderates, the SSOC reached across different predominantly White colleges and to a number of communities. Significant to the history of the New Left, the group stood apart from the “Black-led Student NonViolent Coordinating Com-

mittee (SNCC) and the northern-led Students for a Democratic Society SDS, the leading activist youth organizations of the decade” (p. 2). Inspired by the notion of southern distinctiveness as a motive for membership and method of appeal, the SSOC used the Confederate battle flag in its imagery. SSOC members eschewed radicalism and militancy to forge a middle ground—though even this stance exacted personal costs, according to SSOC former members who faced “loss of friends, condemnation and rejection of one’s family, and expulsion from school” (p. 3).

A second impulse of historians has involved chronicling the lingering struggle of Blacks to assert their civil rights and thereby resist southern cultural orthodoxy, i.e., the belief that Blacks should accept second-class citizenship. Among the scholarship in this genre, Anderson’s (1988) *The Education of Blacks in the South, 1860–1935* stands out, emerging as required reading in both the history of education and higher education generally. Anderson’s complex critique answers Urban’s (1981) call for multidimensional portrayals of Blacks and their experiences in the historiography of education, using Wolters’ assessment (1980) to explain that previous scholarship had too much relied on a “simplistic, moralistic ideology which causes both authors to misinterpret events and individuals” (p. 139). Noting how the contemporary climate shapes historiography, Urban describes via Wolters the prevailing pressure exacted upon scholars to emphasize the “noble” character of Blacks or be tagged as racist. Not only did Anderson’s work depart from the current of the time, but his seminal study has generated a literal tide of scholarship in the history of higher education.

Anderson’s (1988) book represents the valuable type of horizontal history discussed in the first portion of this essay as it analyzes the interlocking streams of philanthropy from the American Missionary Society (AMA), the Anna T. Jeanes Foundation, the Rosenwald school building program, and the General Education Board, to name a few, and shows how these funds coalesced with the larger force of Black self-agency and action to shape schooling for Blacks at various levels. Building on his own (1978) previous study of philanthropy for rural education, Anderson shows greater depth in the longstanding debates that characterized Black thought about industrial education after emancipation—adding a longer viewpoint to the divergent perspectives often depicted as a simple square off between Booker T. Washington and W. E. B. DuBois in the early 1900s. Moreover, Anderson sets the stage for continued analysis of Black grass roots philanthropy and activism (e.g., Williamson 2004, 2008b) as well as foundation philanthropy, inspiring new critical studies of the AMA role in Black education by Anderson and Moss (1999), the biography of Julius Rosenwald by Ascoli (2006), the biography of Charles Johnson by Gilpin and Gasman (2003), and Gasman’s work contrasting Charles Johnson’s perspective on philanthropy with that of W. E. B. DuBois (2002) and her history of the United Negro College Fund (2007), to name a few.

Ihle’s (1990) chapter on Black women’s education provides important additional nuance and complexity around gender to Anderson’s (1988) study. Though constituting only one brief chapter, Ihle’s description of the “dual burden of sex and race” has captivated students of the history of higher education at the University of Mississippi, for example, its resonance made clear through lively class discussion each

semester. In this way, Ihle's (1990) work stands as the little chapter that could go a long way in illuminating how Black women's education differed from that of Black men and White women (p. 69). The education of Black women, influenced heavily by the notion that they were sexually promiscuous, made for stricter rules for Black women attending Black institutions. Given this moral concern, Ihle describes the contrariety that Black males and females were coeducated—a tradition differing from White women's experience in single-sex environments—likely underscoring financial constraint as well as limited social concern for Black education generally. The fact that Black women's schooling prepared them for work outside the home and assigned them responsibility for moral leadership in the family and community also helped liberate Black women from the purview of White men who had longed disregarded their sexual autonomy.

In terms of understanding the history of twentieth-century southern higher education for women, few works are as significant as McCandless (1999), with its distinctly southern take on the history of women's education beyond the classic work of Solomon (1985). McCandless' exploration of the education of the region's "forgotten women," a legion of White and Black nonelites, differs tremendously from other studies of plantation elites (e.g., Farnham 1994; Glover 2003; Stowe 1985; Wakelyn 1985). She shows how the prevalent model of finishing school education for manners and the parlor arts which placed the "lady on the pedestal" dependent upon men was ill-suited to a new century where many women—White and Black—needed to support their families (p. 12). Scanning the entire century, McCandless explores women's increased access and opportunity to participate in higher education despite opposition to coeducation at public universities, as well as the cultural norms of social life at southern colleges and the constraints of the ideal college woman. She also explores World War II and the subsequent protest period, giving new depth to Eisenmann's (2006) history of women in the postwar era and Johnson's (2008b) study of the Southern Association of College Women to institute reform of southern curriculum and standards for women's education.

If we compare this scholarship on Black perspectives of dissent from cultural orthodoxy to a landscape photograph, we might find that how the photo is framed brings out different elements of the work and offers cohesion among the various aspects, even though the photograph stays the same. Two frames assist in understanding these works: the first is the civil rights movement and the second, historically Black colleges and universities.

Many scholars writing the history of Black education cast their scholarship within the frame of the civil rights movement. Here, the literature has grown by historians' chronicling stories of integration's pioneers, for example, the first Blacks on campuses of the South's public colleges and universities. Wallenstein (1999, 2008a, b) has led this considerable effort, and his analysis has made room for the emergence of new stories of activism and student protest. These histories of pioneers dot the map of the South and depict the history of different institutional types. They have included but are not limited to the desegregation of state flagship institutions such as Pratt's (2008) story of Horace Ward and the University of Georgia or Farrar's (2008) work on Black student protest at the University of Maryland at College Park.

In addition, this scholarship has covered the integration of Southeastern Conference (SEC) football (Martin 2008) and depicted the court cases that brought change to an entire state, as was the case in Louisiana with *Constantine v. Southwestern Louisiana Institute* (Wade 2008).

Recalling the discussion of southern higher education from scholars outside the field of higher education, the rich scholarship of Shabazz (2004), American Studies professor and director of African American Studies at the University of Alabama, has shown the value of drawing from different disciplines to better understand higher education in the South. Shabazz's history of African Americans' struggle for equity and opportunity in Texas higher education makes a significant contribution to the literature as well as advancing the broader themes of equity and democracy that connect the history of the South to a larger American story. Drawing from an impressive density of source materials, Shabazz (2004) exemplified new directions for research beyond the dominant conception of southern distinctiveness that has overwhelmingly typified the literature on the South.

Williamson's scholarship on Black student activism (2008b) and the political dynamics faced by Mississippi's historically Black colleges and universities (2004, 2008a) bridges interesting terrain in its dual focus on activism and the struggles of public and private historically Black colleges. Williamson's (2008a) *Radicalizing the Ivory Tower: Black Colleges and the Black Freedom Struggle* contributes significantly to the field, giving new context to issues of faculty activism, in particular, and showing how Black faculty "tested the boundaries of acceptable dissent" within a framework of "academic freedom" (p. 62). Furthermore, she taps into the ongoing struggle faced by Black educators in college environments to negotiate the demands of the academy without forsaking Black communities and their issues they faced. Finally, Williamson's (2004) article about Tougaloo College reveals how even a private institution faced consequences and the wrath of segregationists who called it "Cancer College" for its student activism and teaching of "principles of racial equality" (p. 555). Confronted by economic challenges and the loss of state accreditation, a move which hampered teacher certification for graduates, Tougaloo entered into an uneasy partnership with Brown University and won Ford Foundation monies at the cost of its autonomy, ultimately sacrificing its president to appease reactions to the agreement.

Just as Williamson (2004, 2008a, b) has led the scholarly effort to analyze the price paid by HBCUs in Mississippi for their participation in the civil rights movement, Gasman (2002, 2006, 2007a; Gilpin and Gasman 2003; Gasman and Tudico 2008) has forged new ground in understanding the history of HBCUs generally, exhibiting nuance and depth in her coverage of multiple facets. Prior to Gasman's work, interested scholars relied heavily upon Drewry and Doerman's (2001) *Stand and Prosper: Private Black Colleges and Their Students* to understand these distinct institutions; however, that work, while important, provides only an analytic history with limited sources. Gasman's productivity and sponsorship of emerging scholars who study HBCUs through coauthored publication and edited volumes is significant. As a result, the history of HBCUs has expanded to include scholarship on public institutions (Francis and Wells 2008; Giles 2008;

Safier 2008; Williams 2008), in-depth exploration of fundraising and foundation philanthropy (Epstein and Gasman 2005; Gasman 2002, 2004, 2005, 2007a; Gasman and Drezner 2008, 2009), Black college leadership (Gasman 2002; Gilpin and Gasman 2003), and contested and critical viewpoints (Gasman 2006, 2007b, c; Gasman and Tudico 2008).

Conclusion and an Agenda for Future Research

In his 1965 classic, *The Emergence of the American University*, Laurence Veysey cited G. Stanley Hall, who in 1891 described the swelling movement of concern for higher education that had occurred near 1870 as the “Anno Domini of educational history” (p. 1). If 1870 marked the nation’s transformation into modern times, the period around 1930 marked the South’s transformation relative to higher education. The 1930s, fueled by a new spirit of detached and critical reflection about the South, drew energy from the Harlem Renaissance and the Southern Renaissance so that southern social scientists and historians joined with poets, novelists, journalists, and essayists, Black and White, to look upon the South with fresh eyes. When they looked, they saw too much of the failed past-in-the-present—a sight so sobering that it deteriorated any vestiges of Old South glory and New South optimism with its illusions of racial harmony (Cobb 2005). Assuredly, all this presaged William Faulkner’s (1951) often paraphrased take on the past: “The past is never dead. It is not even past.”

This 1930s regional fancy was met by the broad influence of UNC sociologist Howard Odum, whose work sparked many efforts in regional planning (Grantham 1979; Kantor 1973; Pope 1943; Tindall 1967). Crafting a philosophy of regional progress toward established national trends, Odum (Odum 1936, 1947; Odum and Moore 1938) met resistance to his ideas for higher education as he worked with other social scientists and academics on the SRC of the influential LSRM-funded SSRC and the GEB, as well as the Vanderbilt Agrarians who opposed industrialization and defended aspects of southern culture that maintained White supremacy. The philosophical disagreements later spilled into practice when the SREB was established in 1948 to expand opportunities for graduate and professional study at the behest of southern governors but within a segregated framework. The rhetoric around states rights’ philosophies, then the Dixiecrat movement, and later, the violent response by southern Whites to school integration after *Brown v. Board of Education* (1954), solidified images of hatred and shared racism among White southerners (Vander Zanden 1959a). Yet, within this landscape of opposition, the seeds of dissent fell upon fertile soil, establishing conditions for future scholarship on higher education to thrive.

Since the 1920s and 1930s, the scholarship on the South has increased markedly and drawn strength from the idea of southern distinctiveness. This notion, which has dominated an array of scholarship on the South in a number of academic fields, sets the South and its colleges and universities apart from the national story (Graham

2005). Particularly since the 1980s, higher education historians have run with this conception, creating two thematic strands in the literature: striving and dissent.

The first strand has focused on the theme of striving, portraying southern higher education as struggling and its colleges and universities as aspiring to achieve success within an established national framework. Within this genre, scholars have written institutional histories, biographies of academic leaders, and journal articles such as Stetar (1985), who used Veysey's (1965) competing ideas about higher education that fully emerged after the Civil War—discipline and piety, utility, research, and liberal culture—as an analytic framework to explain the development of southern colleges and universities. This frame affirmed the dismal condition and considerable comparative deficits of southern higher education after the Civil War, and it set the stage to demonstrate significant growth of higher education over time, particularly along the lines of increased capacity for research (e.g., Diamond 1999; Graham and Diamond 1997). Many institutional historians and biographers seized upon the evolving established trajectory (Geiger 1986, 1989; Graham 2005; Rudolph 1962/1990; Slosson 1910; Veysey 1965) and have written narratives of achievement and progress (Dyer 1985a; Whitehead 1986).

Over time, this literature on striving colleges and universities saw advances as scholars produced balanced, critical histories. These more complex histories contextualized or grounded an institution's history within a larger narrative of higher education and exposed institutional shortcomings (e.g., Conkin et al. 1985; Dyer 1985b; Lesesne 2001; Mohr and Gordon 2001). Yet, isolated stories of colleges and universities made for an inability to capture and comprehend the history of an entire region. As a strategy to better understand the South, some historians adopted the convention of the horizontal history (Thelin 2010) to survey and analyze across a number of colleges and universities through lenses such as philanthropy (Anderson and Moss 1999), the leadership of former Confederate generals (Frost 2000), and university-state collaboration to promote progress (Dennis 2001).

The second thematic strand has focused on dissent (Wallenstein 2008a), portraying southern higher education as oppositional to national ideals, and individuals and institutions as nonconforming to established national and cultural orthodoxy. In particular, this dissent literature has become robust in its attention to race and the mixed legacies of slavery as a central focus. A visibly stark contrast exists within the parameters of one institution's history. Take, for example, the University of Mississippi. In that university's story, the more narrow focus on race told through the story of James Meredith in Sansing's 1999 sesquicentennial history of the university is contained merely within one chapter entitled, "Conflict, changes, and continuity, 1960–1968" (pp. 281–313); this pales in richness and visibility to the story of Meredith and Ole Miss written 10 years later by Eagles (2009)—a 584-page hardcover volume now released in an electronic version for wireless reading devices.

Within the framework of dissent, the opposing experiences of Whites and Blacks as social beings within a regional context has served as a primary lens for analysis—though it has also fed a polarized production and dissemination of research within the academy. The body of scholarship has increased markedly in quantity and quality since the 1980s. On one hand, the literature on dissent to national orthodoxy has

sought to uncover the mixed motives and activities of Whites in maintaining White supremacy in the South, ostensibly against an emerging national trend toward egalitarianism. On the other, the literature on dissent to cultural orthodoxy has aimed to reveal the mixed motives and activities of Blacks to oppose second-class citizenship after emancipation. The former resulted in new studies of White southerners resisting desegregation (e.g., Kean 1999; Mohr 1999), and in addition, national models and patterns of university development (Wells 2001a, b); and the latter brought new studies of the history of Black education (Anderson 1988; Ihle 1990), philanthropy to Black higher education institutions (Anderson and Moss 1999; Gasman 2007a), histories of HBCUs and their students and leaders (Engs 1979, 1999; Gilpin and Gasman 2003; Williamson 2004, 2008b), and the civil rights movement (Billingsley 1999; Michel 2004; Shabazz 2004; Wallenstein 2008a).

Yet, this story of polarized history and historiography—emotionally and psychologically charged by divergent perspectives and experiences on race—has contributed to a seemingly intractable divide among people about which scholars of southern history have become concerned. Cobb (2005) explains:

African American racial pride helped to ignite the crusade against Jim Crow, but in the mid-1960s and the 1970s, the divisive politics of Black identity helped not only to sap the strength of the civil rights movement but also fuel the mounting White backlash against it and, some think, even undermine efforts to expand federal programs to assist disadvantaged Blacks. Regardless of its radical-populist trappings, identity politics typically rebounds to the ultimate benefit of elites, who can use it to divert and divide the masses and even exploit them economically. In a broader contemporary setting, the emphasis on group distinctiveness and exclusivity, as Carl Plesch has argued, pits “this ethnic group against that race, this race against those women, these women against those men, and many identity groups against civil society as a whole. This reduction of American society into a “multichrome mosaic of monochrome identity groups,” Roger Brubaker and Frederick Cooper have argued, “hinders rather than helps the work of understanding the past and pursuing social justice in the present” (p. 334).

Contemporary partisan politics contributes tremendously to this intractability with “archconservative” adherents of the “Lost Cause” unwilling to break ties with members of organizations such as the Southern League, the Sons of the Confederate Veterans, and the Council of Conservative Citizens (Brundage 2005, p. 340). To promote healing and racial reconciliation around the indomitably racialized stand-off, scholars demanded new takes on old frameworks to understand southern history and the role of the South within the national story.

If the dominating conception was to see the South apart, the reverse has taken hold among scholars who have argued that the South *is* the national story (e.g., Cobb 2005; Edwards 2009). Edwards (2009) explains that within this viewpoint southern distinctiveness matters, “but in the form of amplification or variation.” This means, according to Edwards, that the region’s “peculiarities” enhance the South’s “representative” qualities, bringing “attention to aspects of history operative in other places but in forms so subtle that they might be missed” (p. 563). Here, Edwards points out that the region’s “distinctively oppressive social system” allowed historians to see deeper “connections among race, class, and gender,” for example, illuminating relationships among social constructs as well as broader struc-

tural issues (p. 563). However, she warns that southern exceptionalism becomes a historian's "trap," used both to "explain what is seen in the region" and to detach from "the nation's most persistent problems" (p. 563). Thus, Edwards summarizes:

Segregating the South obviates the need to confront the most difficult truths and contradictions in the nation's past. In political terms, southern exceptionalism performs a similar role, absolving the rest of the country of responsibility for endemic social problems. If the problem is a southern issue, then there is no need to tamper with the broader political culture (p. 564).

From this contemporary viewpoint, the South's penchant for religion, patriotism, consumer-driven capitalism, conservative politics, antilabor stance, and antiintellectualism *appears* not only southern but also, quite American.

For southern higher education historians, the South is relevant because it tells the *American* story. While there is plenty of room for narratives of striving and success, we need to know more about the limitations of colleges and universities within a larger social context for addressing issues of poverty, promoting literacy, improving health, fostering civil society, and healing racial divides—all important topics for future research. The history of postsecondary education in rural, nonelite spaces filled with persons of color, those of the working class or migrant laborers such as community colleges, land-grant universities, regional state universities, and even adult literacy programs are all ripe for historians' treatment. In terms of future research, more room exists for historians to explore the South's enduring and contested contradictions—articulated very eloquently by Brundage (2005):

Slavery was an inhumane institution and yet both slave masters and slaves found ways to retain their humanity. How do we discuss this central facet of slavery? The oppressiveness of the Jim Crow South was un-questioningly soul-numbing, and yet Blacks were never reduced, in the words of Ralph Ellison, to the "sum of [their] brutalization." How can this apparent contradiction be presented? And, however much the civil rights movement was a triumph for social justice, it was accompanied by incalculable losses for southern Blacks. These are the nuances of the South's history that complicate any search for simple historical "truth" and inspire sharply divergent interpretations. Although some historical narratives cannot be condoned, it is equally important to acknowledge that many of the most important historical questions are messy confusing, and ambiguous (p. 344).

Most certainly, the American story relative to slavery manifests these contradictions and many more.

Historians of higher education would be wise to take note of the "paradigm shift" now occurring in the wider field of Southern Studies (Kreyling 2005). Kreyling acknowledges the transition, arguing that the field is "struggling to absorb several 'new' discourses." Among these new scholarly foci, an "interest in globalization" and "memory and trauma studies" have emerged as the "most prominent" (p. 4). Kreyling characterizes the nature of this transition as a movement from the field's past "strict borders" to more lenient ones (p. 4). This means that former questions no longer suffice, such as "who was White and who was not, what was literature and what was not, what was southern and what was not" (p. 4).

In addition to being an American story, southern higher education history is now a *global* story. Southern distinctiveness once dominated by Howard Odum's frame-

work now draws inspiration from another 1930s social scientist and founder of the department of Race Relations and later the president of Fisk University, Charles Johnson. In the time when Rockefeller funding fed the social sciences in the South, Johnson's scholarship focused on the study of race relations and higher education, as well as in-depth studies of rural Black counties, connecting to issues of mental health, physical well-being, poverty, economics, and family structure (Gilpin and Gasman 2003). As an "adjunct to the department" at Fisk, Johnson sponsored race relations institutes and meetings that attracted academics and associations, such as the National Urban League, the National Association for the Advancement of Colored People, and prominent members of President Roosevelt's administration (Gilpin and Gasman 2003). The second institute held in 1945, began with Johnson's keynote address on race relations in a global context (Gilpin and Gasman 2003)—further revealing his like-mindedness with a new era of research on the South.

Johnson's research explored the lingering effects of racism and isolation for Blacks living in the South's rural communities and the patterns of thought and morality arising from such conditions. Always maintaining a scholarly distance, he offered comparisons to isolated rural White communities and the "rustic villages of Bavaria, Austria, Norway, Switzerland," where, Johnson explained, the presence of "illegitimate children" did not deter marriage for women, for example (Gilpin and Gasman 2003, p. 129). Certainly, within the contemporary pattern of globalization, the problems of rural isolation appear more challenging and have become the new focus of research, including conditions where economic forces have tended to leave people and communities behind.

Moving to this understanding expands research opportunities and perspectives relative to globalized conceptions of southerners and the South, offering a more panoramic viewpoint. Edwards (2009) captures this trend best:

Southern slaves are now part of a broader African diaspora, composed of people who were taken from their homes, forced into the slave trade, and scattered across three continents. Southern slaveholders are now part of the intellectual community of the Atlantic world. Their children, who set about industrializing the South, now keep company with aspiring capitalists elsewhere. Southern yeomen are now like subsistence farmers all over the globe who struggled to find their way through the economic thickets of capitalism. Freedpeople are similar to rural laborers in other times and places who made the difficult transition to wage labor in an industrializing economy. So are white southern mill workers, although they undertook that journey under different circumstances than did former slaves. And slavery is now connected structurally to inequalities of race, class, and gender that know no regional bounds (p. 563).

So as the boundaries of the South have expanded to include a Global South, the boundaries of the academy have similarly expanded, making new demands on professional historians.

Another new direction in Southern Studies that will impact the story of Southern higher education involves the use of memory and trauma studies as work to promote racial reconciliation collides with efforts to "anesthetize" the past (Clarke and Fine 2010). For instance, the presidential session, "Coming to Terms with Our Past: Historical Memory, Trauma, and Healing" at the 2011 annual meeting of the American

Educational Research Association sponsored by Roland Coloma gave attention to diverse postcolonial perspectives on education history. This session exemplified how scholars of higher education history can contribute to racial reconciliation and healing. For instance, at the University of Mississippi, a robust Southern Studies program exists alongside the grassroots work of the William Winter Institute on Racial Reconciliation to bring justice and social justice efforts to Mississippi's predominantly rural communities gripped by the pain of the past. This effort to anesthetize the past also figures into the teaching of history—another important area for future scholarship.

In 2010, Wells argued that silence, and how history has been taught and learned by generations of southerners (White and Black), has contributed to a lack of knowledge about the trauma of slavery and its aftermath. The power of this longstanding silence, sealed by a hypersensitivity to dissent and social pressure promoting conformity at all costs, prevented the healing process for individuals and communities. Yet, this is also a curious and painful process rife with complexity and contradiction.

The teaching of history at the University of Mississippi and many other southern universities often calls for the use of archival images to explore the historical context of students' readings, for example, about desegregation or the civil rights movement. Sometimes teachers of history are motivated by an impulse to show that racial hatred and protest were real. Yet, unwittingly, in the act of teaching history and using archival images and film, teachers may discover that some students, even graduate students, are viewing images of protest and violence for the first time. A common reaction is for Whites to feel guilt for the behavior of Whites against Blacks. In this way, White students can experience an effort to promote an "empathetic witnessing of injustice" that scholar Kaminer (2006) describes as a necessary part of the healing process. Yet, trauma occurs, too, for a few African American students who are also seeing the images for the first time.

Classroom teaching episodes with archival materials exemplify some of the dilemmas of interracial psychoanalysis and psychiatry written about by Suchet (2004). Suchet assures that, "We all carry the haunting presence of shame and guilt as the heritage of our history, soaked as it is in the trauma of oppression, whether it is slavery, apartheid, or anti-Semitism" (p. 430). Are classroom spaces subject to the same "ripe[ness] for the enactment of these historical and current tensions" as therapeutic spaces? (p. 430). In the area of trauma and memory studies, scholars have contemplated the value and uses of therapeutic spaces, asserting that there exists a tension of remembering difficult historical knowledge (Rupprecht 2008). This problem is exacerbated by the fact that persons inhabit racialized bodies with varying experiences of privilege and subjugation, and in a higher education context, they experience relative privilege and relative subjugation as compared with others in communities outside the university.

Clarke and Fine (2010) have written about institutional responses to slavery and the "discourse of remonstrance" at two universities where apologies for slavery have been offered effectively (at Brown) and ineffectively (at Alabama). Clarke and Fine explain that institutions must take time to examine the past and offer a meaningful apology, noting that this requires an extended process of active consideration,

an openness to a process of apology, and a likening of “an ideal-type image of a university and an ideal-type image of a museum—a glass box that attempts to be dispassionate, permitting contemplation with the hope of draining an issue of emotion while maintaining its relevance” (p. 84). In these efforts, Clarke and Fine agree that historians are essential “to keeping people honest” and that in its ideal form, the university is positioned to act as a “crucible of debate and a center for nonpolarized analysis” (p. 105). Yet, even this is difficult because, as Clarke and Fine explain, there are costs of “granting the other person face, to imply that he or she matters and will get better treatment in the future. To apologize is also to accept blame and possibly lose faith in oneself” (p. 105), and by extension, perhaps, to lose faith in the higher education enterprise.

The history of southern higher education demonstrates that we have a long way to go to confront the prevailing cultures of silence, especially around the history of slavery, apartheid, and race relations within our national borders and beyond. Yet, it is true that vast strides have been made in how historians have addressed this moral imperative—a process that began in earnest when historians began to write openly about the trauma of slavery and social oppression around race, class, and gender. The increased diversity among students, faculty, and staff in southern universities has also supported this effort, demonstrating that, rather than diluting institutional quality, southern universities have become more vibrant as well as more intellectually and academically serious as they have become more diverse. Larger enrollments of students in academic programs such as African American Studies and Gender Studies, as well as an increased emphasis on cocurricular programming, cultural exhibits, and general education history courses could go a long way in helping the region to anesthetize its past, to give it the museum-like quality necessary for healing. Historians have the opportunity—if they seize it—to be in the forefront of this work.

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Chapter 10

Rural Community Colleges

Promoting Access and Building Sustainable Regional Rural Innovation

Stephen G. Katsinas and David E. Hardy

For millions of students, the choice is not between a community college and another institution, it's between a community college and nothing.

*Arthur M. Cohen and Florence B. Brawer,
The American Community College, 5th Edition, 2008*

For the 3.5 million students attending America's rural-serving community colleges (using numbers from the 2007–2008 academic year), Cohen and Brawer's words ring true. This chapter describes the critical role rural-serving community colleges play in providing access to higher education by delivering for-credit general education for transfer, improving the skill level of the existing workforce through noncredit courses, and creating regional advantage by building economically and culturally sustainable communities. Given the great differences across and within states in terms of state-assigned missions, functions, organization, and finances, the chapter begins with a review of the evolution of state community college enabling laws that typically date to the 1960s, when the waves of post-World War II "baby boomers" reached traditional college-going age.

These state laws set "the rules of the game" that are in effect today, nearly a half century later, in an era of rapidly changing assumptions about the role of the state in financing universal access to the 13th and 14th year of schooling. We find community colleges generally and rural community colleges¹ specifically operating in

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a very changed environment, where state-assigned missions in no way match the levels of state financing or public expectations. This makes operating rural community colleges particularly demanding. The relative invisibility of rural community colleges in policy making—a problem made much worse by the lack of a consistent definition of “rural” recognized in 1978 by Arthur M. Cohen in his role as Director of the ERIC Clearinghouse for Community Colleges (Cohen 1978)—has resulted in an overreliance on anecdotal stories to tell how rural community colleges serve as regional place-based institutions that provide postsecondary access, economic skill building, and cultural enrichment. This chapter offers a quantitative analysis of the rural differential through use of the 2005 “Basic Classification” released by the Carnegie Foundation for the Advancement of Teaching (CFAT) in February 2006. The new Carnegie Basic Classification is a powerful tool that can be easily applied to U.S. Department of Education/National Center for Education Statistics (NCES) data to identify differences among and across rural, suburban, and urban community colleges.² The chapter concludes with a discussion of future issues. We begin with discussion of the invisibility of rural community colleges in policy.

Rural Community Colleges are Invisible Almost by Definition

On February 24, 2009, in his first speech to Congress, President Barack Obama pledged to make America first among industrialized nations in adult baccalaureate degree attainment by the year 2020 (Obama 2009). Major foundations, especially the Lumina Foundation for Education and the Bill and Melinda Gates Foundation have strongly endorsed this goal. Lumina Foundation President Jamie Merisotis spoke of the need for a “moon shot” goal (Lumina 2009). The Gates Foundation has funded the education programs of major Washington DC-based “think tanks” such as the American Enterprise Institute, to host sessions for research that the Gates Foundation has underwritten. A major shortcoming, however, is that these foundations are only focused on large urban institutions, as they see these institutions as the only points of leverage large enough to “move the numbers” nationally to increase college degree completion. As *InsideHigherEd* Editor Doug Lederman noted in his October 28, 2010 story, “Reframing College Completion,” “The bigger and broader the objective, the more diffused the responsibility for achieving it can be. For instance, with a mammoth undertaking like the college completion goal that President Obama and like-minded foundations and associations have laid out for the

education, but postsecondary education as well. This unpublished work was to have been Chap. 9, with the working title of “Access, Economic Development, and Sustainable Communities: The Role of Rural Community Colleges.” The content of this publication does not necessarily reflect the views or policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the US Government.

² The authors of this chapter coauthored, with Vincent A. Lacey, the two-year college classification system used as the basis for classifying associate’s degree-granting institutions within the new 2005 Carnegie Basic Classification.

United States over the next 10–15 years, saying that ‘the country’ needs to increase its college-going rate to 60% is so general that it makes both everyone and no one responsible for doing the heavy lifting.” The focus tends to be on states and individual colleges, and not metropolitan areas that straddle state lines, such as Kansas City, Memphis, Portland, or St. Louis.

A Center for American Progress paper identified 44 metropolitan areas that cross state boundaries, and suggested that state policies were inadequate to promote policies to dramatically increase college completion, which they argue should be metropolitan-wide. Sponsler et al. argue:

Indeed, the lack of a coordinated approach to postsecondary opportunity and success in multistate areas stands out for its distinctiveness. In several other policy domains—transportation, natural resource development, utilities management—local, state, and federal authorities work together (with varying levels of involvement depending on the issue) to provide regionally based management of critical components of economic growth. A governing model that does not explicitly account for and leverage the regional nature of postsecondary education markets in multistate metro spaces underserves national attainment goals. (Sponsler et al. 2010, p. 23).

They propose that federal legislations create coordinative councils that straddle state lines to better mesh regional policies for college attendance and completion, to remove unnecessary state-level barriers in the form of financial aid, tuition and credit transfer policies that inhibit the flow (and success) of students, particularly the increasing number of students who attend multiple colleges. “[A]n institution’s graduation rate is not what we truly care about,” they write; “what matters more is whether a student completes a degree anywhere in the system – regardless of that student’s pattern of mobility” (Lederman 2010).

While this new regionalism was presented only in the urban and suburban (or metropolitan) and not a rural context, it clearly does demonstrate that policymakers are beginning to examine the efficacy of the present patchwork of federal laws and regulations related to higher education. Can a careful examination of employment, and training, and adult literacy federal and state laws and regulations be very far behind?

Federal policymakers do not often recognize rural community colleges. Table 10.1 shows that well over a third of all US community college enrollments are at rural community colleges, however, none of the 13 commissioned issue briefs and papers published as part of the October 5, 2010 White House Summit on Community Colleges specifically addressed rural challenges. Topics of the papers included the evolving nature of community colleges, industry partnerships, apprenticeships, student support services, student persistence and attainment, boosting college completion, the state role, community college student earnings, developmental education, financial aid, partnerships with high schools, transfer policy, services to veterans, educational technology, and data collection. The 13 papers totaled 92 pages of single space type, yet the word “rural” was mentioned only once, by George Boggs, then president of the American Association of Community Colleges (AACC; Boggs 2010, in Biden [Ed.] 2010).

This lack of recognition of rural issues is a longstanding problem. The chapter on rural community colleges to be included in the 2006 update of NCES’ *The Con-*

dition of Education in Rural Schools (1994) was not published during the Bush Administration that commissioned it. As Topper Sherwood noted in a March 2001 report entitled, *Where Has All the "Rural" Gone? Rural Education Research and Current Federal Reform*, "time and again, rural areas have been declared the orphaned 'stepchild' of the national education research program, which has largely failed to adequately identify and address conditions specific to them" (p. 1). Sherwood argues that "missing information...not only keeps us from learning more answers. It keeps us from asking the right questions. More solid and dependable information from and about rural schools would increase their ability to present a unified, powerful rural America to legislators and other policy makers. The lack of data insures that many rural issues will continue to be ignored" (p. 3). Joyce Stern, writing in the 1994 *Condition of Education in Rural America*, states "Lack of adequate research and impact evaluations, together with definitional inconsistencies severely limit policy makers' ability to know either the effect of federal, state, and local programs on rural schools or whether rural interests are being equitably addressed. Until this deficiency is corrected, policy making on behalf of rural students will be impeded." (Stern 1994, p. 4).

Sherwood further notes that intense study of rural education issues have

suffered from a lack of consistent support by government and academic institutions, largely due to: 1) lack of appreciation for urban-rural differences; 2) lack of academic appeal comparable to the excitement generated for urban work; 3) relatively little networking in the professional and research communities around rural education research; 4) a paucity of professionals devoting their careers to continuous study of rural education; 5) longstanding lack of consensus concerning rural education's domain and research priorities; and, finally, 6) a lack of the sense of crisis associated with urban schools, and the accompanying focus by policy makers. (Sherwood 2001, p. 2)

Many of Sherwood's observations about rural elementary and secondary education research and policy issues clearly extend to the rural higher education environment as well.

A bias is built into the very definitions of community colleges used by a federal government that cannot identify exactly how many community colleges even exist. Citing work by Hardy and Katsinas (2006), Katsinas in his presentation at the U.S. Department of Education on rural community colleges in February 2010 noted:

The major data system for federal reporting, the National Center for Education Statistics' Integrated Postsecondary Education Data System [IPEDS], counts community colleges by units of accreditation. For example, the five-campus Tarrant County College District in Fort Worth, Texas, accredited by the Southern Association of Colleges and Schools as a single institution, sends one piece of data to IPEDS, while neighboring Dallas County Community College District with seven separately accredited campuses sends seven separate pieces of data to Washington. (Katsinas 2010)

When economists, political scientists, and sociologists conduct studies of earnings of US community college students, the divisors that they use in their calculations are almost always imprecise, if not flatly wrong (Katsinas 2010). Instead, the U.S. Department of Education continues to use its "urbanicity" definition, one that rates communities based upon how "urban" they happen to be, as if cities of 150,000 people like Peoria, Illinois is as urban as Chicago. "If foundations, economists, and

others unfamiliar with this ‘inside baseball’ community college information use the ‘urbanicity’ definition, it can lead to unintended projection” (Katsinas 2010, p. 27). As with K-12 data, national averages often mask a large, often invisible rural differential. To improve the precision of community college research, the CFAT unbundled this accreditation issue in its 2005 Basic Classification, which for the first time provided multiple classifications for Associate’s Colleges (CFAT 2006; Hardy and Katsinas 2006).

In Table 10.1 we note that when urban and suburban multicampus districts are considered together, the 147 urban multicampus and 100 suburban multicampus community colleges together comprise 14% of all institutions, yet enroll 40% of the total public and private 2-year college enrollments. These are the dominant community colleges in the world of US higher education policy circles. For example, Robert McCabe, who served for many years at what is now Miami-Dade College, was the first community college CEO to ever serve as President of the College Board. Similarly, over the years, several community college presidents have served as Board Chair of the American Council on Education, however, all were from multicampus community college districts. In December 2008, the College Board released its report, *Coming to Our Senses: Education and the American Future*, the report of its Commission on Access, Admissions, and Success in Higher Education. Among its 28 members, not one was affiliated with the 575 publicly controlled rural community colleges that serve 3.5 million students. Large institutions such as Ohio State, Southern California, Indiana, Michigan, University of North Carolina-Chapel Hill, Case Western, University of Texas at Austin, City College of New York, Dartmouth, the California State University, and University of California systems were represented. The two persons with community college affiliations listed were the president of an urban community college in a multicampus urban system, and the president emerita of a multicampus suburban system (College Board 2008). Similarly, the College Board’s Center for Innovative Thought includes 15 current or former university system chief executive officers in Kansas, Louisiana, and Virginia, as well as representatives of five private institutions (Texas Christian, New School, and Princeton Universities; Teacher’s College, Columbia University, and Williams College), and a middle school social studies teacher, however, no community college president (only AACC President George R. Boggs was included).

The College Board’s National Commission on Community Colleges in January 2008 issued the report *Winning the Skills Race and Strengthening America’s Middle Class: An Action Agenda for Community Colleges*. This report was widely disseminated in the national higher education media, as the presidential candidates in both parties were engaged in highly competitive primaries. Still, this commission was hardly representative of the extant diversity among public community colleges. While rural community colleges serve 3.5 million students, this 11-member national commission included five presidents with urban multicampus affiliations, four presidents with suburban single and multicampus affiliations, and one state system head (Gallego 2008). That none of the nation’s 575 rural community college presidents were tapped to serve, despite the fact that rural community colleges serve 33% of all community college students—more than urban or suburban community

Table 10.1 Public and private 2-year colleges in the United States 2007–2008 and unduplicated headcount enrollments in 2001–2002 and 2007–2008, by 2005 Carnegie basic classification of associate's colleges

2005 Carnegie basic classification	Colleges reporting to NCES, 2007–2008		Enrollment		Change in enrollment, 2001–2002 to 2007–2008		Percentage of 2007–2008 enrollment by type of college
	Number	Percentage	2001–2002		Number	Percentage	
<i>Private</i>							
<i>Not-for-profit</i>							
Associate's	83	5	37,316	46,505	9,189	25	0
4-Year primarily associate's	16	1	12,327	16,192	3,865	31	0
Baccalaureate/associate's	28	2	63,999	90,602	26,603	42	1
<i>Not-for-profit total</i>	127	7	113,642	153,299	39,657	35	1
<i>For-profit</i>							
Associate's	490	27	309,300	460,488	151,188	49	4
4-Year primarily associate's	70	4	52,721	105,257	52,536	100	1
Baccalaureate/associate's	50	3	58,247	160,394	102,147	175	1
<i>Private for-profit total</i>	610	34	420,268	726,139	305,871	73	6
<i>Private colleges, total</i>	737	41	533,910	879,438	345,528	65	8
<i>Public</i>							
Rural small	129	7	185,900	194,417	8,517	5	2
Rural medium	304	17	1,311,610	1,472,639	161,029	12	13
Rural large	142	8	1,724,901	1,810,393	85,492	5	16
<i>Rural total</i>	575	32	3,222,411	3,477,449	255,038	8	30
Suburban single campus	109	6	1,320,135	1,367,237	47,102	4	12
Suburban multicampus	100	6	1,669,434	1,737,516	68,082	4	15
<i>Suburban total</i>	209	12	2,989,569	3,104,753	115,184	4	27
Urban single campus	32	2	404,524	444,121	39,597	10	4
Urban multicampus	147	8	2,744,375	2,864,451	120,076	4	25
<i>Urban total</i>	179	10	3,148,899	3,308,572	159,673	5	29
<i>Rural/Sub'n/Urban Subtotal</i>	963	54	9,360,879	9,890,774	529,895	5	86

Table 10.1 (continued)

2005 Carnegie basic classification	Colleges reporting to NCES, 2007–2008		Enrollment		Change in enrollment, 2001–2002 to 2007–2008		Percentage of 2007–2008 enrollment by type of college
	Number	Percentage	2001–2002	2007–2008	2001–2002 to 2007–2008		
					Number	Percentage	
Special use	11	1	57,077	58,061	984	2	1
2-Year under 4-year	54	3	165,756	196,491	30,735	19	2
4-Year primarily associate's	18	1	211,070	229,950	18,880	9	2
Baccalaureate/associate's	32	2	168,710	182,610	13,900	8	2
<i>Other types total</i>	115	6	602,613	667,112	64,499	11	6
<i>Public colleges, total</i>	1,078	59	9,963,492	10,557,886	594,394	6	92
<i>All colleges, total</i>	1,815	100	10,497,402	11,437,324	939,922	9	100

colleges, at 31% and 29%, respectively—reinforces how invisible rural community colleges are in public policy formation.

Similarly, the 16 pilot colleges selected for Pew Trusts' twenty-first Century Learning Outcomes program include none of the nation's 129 Rural-Small, none of the nation's 304 Rural-Medium, and only 3 of the nation's 142 Rural-Large community colleges. Their average enrollment of 25,453 was far above the national average for all community colleges, which will likely limit the applicability of learnings that might result from the project (Katsinas 2010). That the last major foundation program targeting rural community colleges, the Ford Foundation's \$ 17 million Rural Community College Initiative, ended in 2003 speaks to an apparent lack of interest of philanthropy to work with these institutions, and a numbers game that is being played.

The purpose of this review is *not* to suggest that the foundations, their officers, and the colleges participating in these efforts were in any way uniformed or not well meaning, nor does this review in any way denigrate the important recommendations that these reports and demonstration programs may generate. A general philosophical underpinning to all community colleges is their commitment to access, without regard to race, color, creed, origin, gender, or age. Advanced here is the notion that chief executive officers of multicampus urban and suburban community colleges do not have as many day-to-day campus management responsibilities as do their rural counterparts. They work in places with easier and quicker transportation to and from national meetings, and their institutions can offer cabinet officials major media markets for visits, speeches, and public forums. We applaud the commitment and involvement of major urban and suburban multicampus district CEOs to be involved in national policy discussions, and we further recognize that organizations such as the College Board must be responsive to their members, and often it is their largest enrolled members who serve on their boards and commissions. Unfortunately, however, if rural community college CEOs are the least published leaders within the community college world, their story is by definition not being told by their leading practitioners.

Within the academy, political scientists, economists, and sociologists writing on rural policy issues are often housed at the nation's great land-grant universities. Often, their understanding of community colleges is limited. For example, William A. Galston and Karen J. Baehler's 1995 book, *Rural Development in the United States: Connecting Theory, Practice, and Possibilities*, comprehensively reviews approaches to rural development policy. In the 353-page book, Galston, a senior domestic policy advisor in the first Clinton Administration, and his coauthor discuss the role of land-grant universities in some depth, however, scarcely mention rural community colleges (Galston and Baehler 1995). If private foundations such as the Bill and Melinda Gates Foundation or the Lumina Foundation for Education choose to target their philanthropy only to community colleges with the largest enrollments, it is their right as private sector organizations to do so, however, it should be noted that rural community colleges can be left behind. It is a very different matter, however, for the federal government of the United States to not be deliberately inclusive in its demonstration grant programs, and representative of reality in its publications.

We note some positive changes with the publication of the August 11, 2009 White House memorandum signed by Peter Orszag, Director of the Office of Management and Budget, Melody Barnes of the Domestic Policy Council, Adolfo Carrion of the Office of Urban Affairs, and Lawrence Summers, Chairman of the National Economic Council, to heads of executive departments and agencies entitled “Developing Effective Place-Based Policies for the FY2011 Budget.” The memorandum specifically called for geographically differentiated policies:

The Nation’s rural communities will require a different place-policy approach. Nearly 64% of the counties across the country are rural. These communities will continue to be integral to the Nation’s food security while also serving as an engine of renewable energy production. In addition, the special needs and potential of Indian Country must be addressed. Already, rural and Indian Country communities have to overcome issues that are taken for granted in urban areas (clean drinking water, affordable and flexible transportation choices, widely available broadband, and education infrastructure are examples). Addressing these shortcomings while planning smartly for sustainable progress is a key balance for sustainable place-policy. (Orszag et al. 2009, p. 1)

A similar White House memorandum to promote interagency cooperation was issued in August of 2010. It will be interesting to see if rural community colleges are fully utilized in future interagency projects and programs, as federal agencies work creatively to allow different cabinet-level funding streams to better lean upon each other to accomplish national policy goals. We are not optimistic this can occur, however, if the U.S. Department of Education continues to use its “urbanicity” definition of community colleges, which makes rural community colleges invisible.

The Struggle for Geographic Access and Diversity of State-Assigned Missions and Functions

The struggle to extend geographic access has not been easy. Problems resulting from poorly structured state community college enabling laws passed to extend geographic access to the states’ citizenry during the 1960s typically have a much more negative impact on rural community colleges than on their urban and suburban counterparts. For this reason, we begin with a brief review of the two major eras of 2-year college establishment in the twentieth century, prior to and immediately after World War I, and the post-“Baby Boom” era of 1965–1975.

Establishment Prior to World War II

The period preceding World War II is often ignored by economists, political scientists, and sociologists writing about community colleges, yet this era sets the stage for the largely successful efforts to bring universal access to the “thirteenth and fourteenth grades” by the end of the “Baby Boom” in the mid 1970s. Geographic

access was just a dream after World War I. Koos reports that 137 private and 70 public junior colleges existed in the United States in the 1921–1922 academic year (Koos 1924). While public junior colleges made up only about a third of all of the institutions, 1922 marked the first year where the total enrollments at public junior colleges (8,349) exceeded that of private junior colleges (7,682; Bogue 1948). Many of these early institutions had enrollments below 500 students, and were located in underserved rural areas. Religiously affiliated private junior colleges, particularly in the rural south, often hosted high school programs and the first 2 years of college.³ A major educational function of these 2-year institutions, in a time before state teacher certification laws required the baccalaureate degree, was teacher education (Frye 1992). In 1928, Koos found significant growth in the number of enrollments at public junior colleges, from 46 in 1922 to 128 in 1927, with an increase in student enrollments from 5,163 to 16,382, a 217% increase (Koos 1928, p. 471).

In his 527-page 1950 doctoral dissertation, *An Analysis and Evaluation of General Legislation Pertaining to Public Junior Colleges*, community college pioneer Raymond J. Young reviewed the first 50 years of junior college establishment in the twentieth century. Young concluded that while the rise of the public junior college was clear, its form was not. In 1931, Eells defined a junior college to include: (a) university branch campuses offering lower-division work in separate campuses or on the main campus; (b) state junior colleges controlled by state boards and funded by state funds; (c) district junior colleges, typically organized and often subordinate to a local school board; and (d) local or municipal junior colleges created by a group acting without legal authority. In 1950, Young found programs of 1-, 2-, and 3-year duration, with the majority being 2 years in length.

Pedersen (1993) argued that the approximate 275 public junior colleges established between 1900 and 1940 were “still far from a national movement. With surprisingly few exceptions, these colleges were established in small and medium-sized cities of the middle and far west. Public junior colleges east of the Alleghenies, as found in Newark, New Jersey, and Springfield, Massachusetts were the exceptions, and most did not survive the period” (p. 502). Pedersen found most public junior colleges were established in cities and towns with populations between 10,000 and 25,000. He also argued that a “bottom up” review of school records, local newspaper accounts, and community histories provide better source materials from which to construct a history of the establishment and early public junior college functions than do national reports and studies. Frye (1992) echoed this, arguing that the early public junior colleges were influenced by not only the sponsoring high school or university, however, as Pedersen noted, “to an even greater degree, by the social and economic interests of its sponsoring community” (1993, p. 501).

³ One of the authors of this chapter worked in a consultative capacity with Brewton-Parker College in the mid 1980s. Its private boarding school was established in 1905 and accredited by the Southern Association of Colleges and Schools in 1917. BPC founded its junior college in 1922; however, it did not gain SACS accreditation until 1962. In 1986, BPC’s conversion to a 4-year institution was recognized by SACS (Brewton-Parker College 2010, 2010–2011 Catalog, p. 10).

The early state enabling laws prior to the community college expansion era of 1965–1973, when the post-World War II-era Baby Boomers reached traditional college age, were *permissive in nature*, with the notable exception of California’s. They *allowed* municipalities the *right* to tax themselves for college establishment and operations, however, did not require them to do so (Young 2002). The seven municipal junior colleges established in nine southeastern Kansas counties, and the five junior colleges begun in Minnesota’s Iron Range were financed exclusively by extractive industry taxes administered by local municipalities on oil and mining, respectively, in the years after their founding. Poor roads promoted municipal colleges, and their key function of preparing local teachers helped “keep them home” (Hutcheson 2002; Pedersen 1987). That the form for 2-year college establishment was unclear was underscored by Young’s experience upon arriving in Illinois in the mid 1950s, when he found no state statute existed authorizing Joliet Junior College (Young 2002). The role University of Chicago President William Rainey Harper played to establish what many believe to be the nation’s first junior college is widely cited in the literature, yet Pedersen documents no record is made of a junior college there until 1913 (1993).

In this era, institutions of higher education could be chartered by their state and sometimes even their county governments, and new degree programs could be recognized and approved by one of the regional accrediting bodies. There were no state coordinating boards to create colleges. Some states such as Ohio would seek attorney general opinions issued prohibiting universities from establishing junior college branch campuses. George F. Zook, who organized the initial St. Louis meeting of what became the American Association of Junior Colleges in 1920 (Pedersen 1993), and would later chair the Truman Commission after World War II, found his efforts to establish new branch campuses as President of Akron University in the late 1920s thwarted by a 1927 opinion of Ohio’s attorney general, who opined that an enabling statute passed by the Ohio Legislature was required. It would take at least five tries over more than three decades before Ohio passed its initial enabling law in 1961 (Katsinas et al. 1999).

Uncertain Form and Functions: Junior College Establishment World War II to the Baby Boom

Planning for post-World War II demobilization began within the Roosevelt Administration just months after the Japanese attack at Pearl Harbor. The Serviceman’s Readjustment Act of 1944 with its landmark “GI Bill of Rights” resulted. The post-World War II *Report of the President’s Commission on Higher Education for Democracy*, the Truman Commission (Zook 1947), was a natural outgrowth of President Truman’s commitment to sound planning. As county executive of Jackson, County Missouri, Harry S Truman helped establish a national organization of county planners (McCullough 1992). The Truman Commission popularized the

name “community college” (AACC 2011), and recommended “the establishment of free, public, community colleges which would offer courses in general education both terminal and having transfer value, vocational courses suitably related to local needs, and adult education programs of varied character” (Zook 1947, Vol. 2, p. 69). Yet the Truman Commission did not formally recommend a preferred method for the governance, organization, and finance of the new institutions:

There is no single pattern or design for adult activities of “technical institutes”. They vary from private schools offering training in only one specialized vocational field such as radio repair or commercial art to publicly controlled institutions offering a variety of courses in related fields. The basic differentiating features are their high specialization in preparation for specific vocations with limited inclusion of general education, and their emphasis upon programs of a subprofessional or semiprofessional nature. They frequently are not separate units but are parts of other educational institutions, including secondary schools, community colleges, and extension divisions of universities and colleges. They may also be organized as proprietary schools operating for profit, as independent agencies of Government, or as nonprofit public or private institutions. In some States they must be licenses or chartered; in others, in spite of their educational importance there is no control of these institutions...The programs vary from only a few weeks to those that are 1, 2, or 3 years in length...(p. 64)

The present chaotic situation in the field of technical training represents a great waste in adult education. *This Commission recommends that technical institutes be integrated into the total educational system, be more adequately supervised, include more general education in their required course, and as far as possible, become part of the community college system.* (p. 64)

The Commission also noted “One of the gravest charges to which American society is subject is that of failing to provide a reasonable equality of educational opportunity for its youth. For the great majority youth, the kind and amount of education they may hope to attain depends, not on their own abilities, however, on the family or community into which they happened to be born or, worse still, on the color of their skin or the religion of their parents” (Zook 1947 Vol. 1, p. 27). While noting that, on average, tuition charges rose by 30% from 1939 to 1947, the Commission cited the need to expand geographic access to directly address economic barriers to college attendance, explicitly concluding “There are not enough colleges and universities in the country, and they are not distributed evenly enough to bring them within reach of all young people” (Zook 1947 Vol. 1, p. 28).

It was not until 1949, however, as the 14.6 million returning World War II GIs produced record enrollments at all higher education institutions that the *number* of public exceeded that of the private junior colleges (Bogue 1949). Enrollment at private junior colleges was 56,165 in 1940, 58,364 in 1945, and 121,692 in 1949. In contrast, enrollment at public junior colleges was 140,545 in 1940, 191,424 in 1945, and 378,844 in 1949 (Bogue and Sanders 1950). By 1949, there were 1,063 public and 346 private junior colleges (Bogue and Sanders 1950, p. 58). Timoshenko estimated that 2,232,000 World War II-era GIs attended college at a cost of \$ 5.5 billion (1960, in Olson 1973) as Olson notes:

For the half decade following the war veterans dominated the nation’s campuses by their numbers and their academic superiority over nonveteran classmates. Aware of their oppor-

tunity, veterans tolerated with general good will crowded classrooms, inadequate houses, crammed libraries and overworked professors. (Olson 1973, p. 596)

The federal government, through the GI Bill and its companion Surplus Property Act of 1947, provided funds to quickly construct World War II-era Quonset huts on many college campuses.

Thus, in the years after World War II, public junior colleges came to dominate in terms of both number of institutions and enrollments. The issue remaining was what form and function would evolve. Edmund Gleazer, whose tenure from 1958 to 1982 as President of the American Association of Community and Junior Colleges (AACC 2011) coincided with this growth, is the last private junior college president to serve in that role.

In his 527-page study of the missions, functions, governance, and finances of public junior colleges in 1950, Young first collected and closely analyzed the enabling laws of 26 states. He then devised a survey of two distinct groups: Public junior college chief executive officers, and a 23-member panel of experts who included luminaries such as Koos, Zook, and Bogue, to compare their perceptions about what experts thought the organization, functions, and finances of public junior colleges in the United States should be. Young obtained responses from 260 junior college chief executive officers (whose titles included president, dean or director, or coordinator). He found key functions to include college preparatory, terminal education (for employment), general education (for upper-division transfer), adult education, later and postadolescent education, popularizing postsecondary education, a salvaging function, a guidance function, and a reorganizational function to change school organization (Young 1950). Young also analyzed public junior college institutional data reported by Bogue and Sanders in their 1950 *Junior College Directory*, and found programs of varied length, with some 1-year in length (7 colleges), most as 2-year programs (581), some 3-year programs (8), and a number of 2-year programs under 4-year institutions or extension campuses not adjacent to 4-year institutions (39). In terms of control and affiliation, local junior colleges (usually under the same board as the local elementary and secondary schools) numbered 115; district junior colleges (again, typically under the same board as the local elementary and secondary schools) numbered 88; state junior colleges as extensions of 4-year universities numbered 74; county junior colleges (typically with the county board of education as the governing board) numbered 23; union district junior colleges, with two or more contiguous high school districts binding together to create a single junior college, numbered 22; joint county junior colleges that had multicounty service delivery areas numbered 10; and joint union district junior colleges, where more than one high school district banded together to create a single junior college district, numbered 2 (Bogue and Sanders 1950; in Young 1950). Young therefore reinforced the findings of the Truman Commission, that establishment of junior colleges was very inconsistent.

The idea of extending universal access proposed by the Truman Commission to the 13th and 14th years for all citizens was novel. Young found diversity of governance among the 260 public junior college CEOs he surveyed, with 74 or 28%

governed by universities, 52 or 58% governed by elementary and secondary school boards, and 34 or 13% governed by independent boards. Young also found diversity in functions, with the general process being “bottom-up” prior to 1950, through varied uses of regional accreditation and state enabling laws. Thus, most junior colleges were governed by K-12 school boards, with the dean or director of the junior college often reporting to the district school superintendent.

Achieving geographic access—addressing the shortage and inadequate placement of institutions identified by the Truman Commission—was a major policy goal of education planners and political leaders during the “baby boom” era. Prior to that, many major urban areas including Atlanta, Cleveland, Dallas, Miami, and St. Louis had no public junior colleges at all; and 2-year college planning did not occur in a vacuum, as major changes also occurred within the 4-year sector. No public university existed in Chicago until a compromise was reached in the late 1950s whereby Southern Illinois University was given a campus on the eastern side of the St. Louis metropolitan area, and the University of Illinois its new Chicago campus. Cleveland State University in Ohio’s largest city was not created by the Ohio Legislature until 1964.

As previously noted, in the pre-Baby Boom era, most state enabling laws were *permissive in nature*, allowing municipalities and in some cases counties or even several counties taken together the *right* (but *not* the obligation) to vote to tax themselves to establish a college and to operate it (Young 2002). A second era of community college establishment began soon after World War II, as the states dealt with defense conversion and the waves of returning veterans. Again, if state enabling laws were passed, they were permissive in nature. For example, Texas’ 1947 enabling law *permitted* local counties and groups of counties to come together to create junior college districts. However, it would take until 1996—50 years later—before Texas finally recognized the need for universal geographic access to the 13th and 14th years, and assigned each of its 254 counties to an existing community college district.⁴ As the Baby Boomers approached traditional college-going age, this demographic imperative would result in fundamental change.

Noting the higher birth rates in the years after World War II—the nation was already facing a severe housing crisis—the 1947 Truman Commission suggested a national college enrollment goal of 4,600,000 students, of whom 2,500,000 would be enrolled in the freshman and sophomore years of college, 1,500,000 in upper-division programs, and 600,000 in graduate and professional studies. In 1949, John Dale Russell observed that these predictions were more than double the “unprecedentedly swollen enrollments of 1947–1948, or almost three and one-half times above the prewar peak in 1940,” yet he also notes that “the estimate was conservatively drawn” (Russell 1949, p. 496). By 1950, about 2.3 million students would be

⁴ Sadly, while the 1996 Texas law assigned all of the state’s 254 counties to an existing community college district, it did not enable those colleges to conduct district-wide elections to raise ad valorem taxes. Thus, Southwest Texas Junior College, a rural community college created in 1947 with a 3 county-taxing district, added 8 additional counties, however, cannot have a single 11 county-wide vote.

enrolled in US institutions of higher education; by 1960, 3.5 million were enrolled, still well below the 4.6 million goal of the Truman Commission. It would not be until the Baby Boomers came of college age for numbers to zoom past this figure, with 7.5 million students enrolled by 1970.

The coming enrollment boom in US higher education, which stretched from 1965 to 1973, was no surprise to higher education experts in the mid 1950s. A 1953 American Association of Collegiate Registrars and Admissions Officers report compared fertility rates of 5 Great Depression years with the 7 that immediately followed World War II, and found an increased birth rate of 167% (Thompson 1953). By projecting the number of students already in elementary schools and the rate of college-going in each state—roughly 25% of the high school graduating class—two models of enrollment demand for the 1971–1972 academic year were offered. The low estimate projected a 31% increase in college enrollment to over 4.2 million, while the higher estimate projected 50% more—6.7 million undergraduates. This report did not anticipate how the GI Bill spurred larger percentages of high school students to seek the benefits of higher education, however. By 1970, 7.5 million students were enrolled, some 800,000 beyond the Truman Commission’s higher projection. The crush of new enrollments as the Baby Boomers approached traditional college age would create the need for a greatly expanded postsecondary system, motivating states to establish community colleges (Young 2002).

The connection between the enrollment boom immediately after World War II and the expansion of public higher education, including the establishment of community colleges, during the Baby Boom is not that well understood. A total of 2.3 million veterans used their GI Bill benefits to access higher education institutions, and another 4.5 million attended trade schools of some kind. Young argued that the GI Bill was critical in propelling federal, state, and local support for community college establishment in the Baby Boom era. A decorated World War II veteran who obtained his graduate degrees on the GI Bill, Young helped establish 60 new community colleges across the United States between 1955 and 1976, mostly in the states of the old Northwest Territories (Katsinas 2008). In a 1999 interview with Katsinas, Young said:

While just over 2.3 million of the more than 14 million World War II era GIs used the education benefits to enroll in higher education, all 14 million of us thought, simply because of the existence of these benefits, that a higher education was within the reasonable realm of possibility for our children in the Baby Boom. (Young 2002)

In a 1998 interview with Katsinas, Clyde L. Choate, a World War II Congressional Medal of Honor winner who later served 28 years in the Illinois General Assembly, rising to become Minority Leader, said “It’s important to remember that we veterans did not *ask* for it. The GI Bill was what a grateful nation *gave* us for our service. In turn, it motivated us to give back to our communities, states, and nation.” As the 1960s began, political candidates of both parties argued over who could do the most to expand public higher education. The world’s first mass higher education system, including community colleges, would emerge; a system Nobel Laureate economist Milton Friedman termed “the best in the world” (Friedman 2006).

Universal Access and the Uneven Establishment of Community Colleges in the Baby Boom Era

Cohen and Brawer (2003) note that, on average, one new community college campus opened up each week from 1965 to 1975. Given the great diversity of the public higher education systems among and between the states going into the 1960s, and the permissive nature of many state enabling laws, it is hardly surprising that the missions, functions, organization, and financing of 2-year colleges would be very different across state lines and even within states (Young 2002). In 1999, the lead author teamed with Young and a team of his University of Toledo graduate students to produce a monograph on the history of 2-year college development in the five states of the old Northwest Territory: Illinois, Indiana, Michigan, Ohio, and Wisconsin (Katsinas et al. 1999). A chapter was written on each state, citing substantial differences in the enabling laws and resulting history, missions, functions, organization, governance, finances, and educational outcomes among the 2-year systems. In 1999, over a generation after the Baby Boom ended, Indiana's state technical college system still offered no general education at all (Metz and Gosetti 1999). Just 3 of Wisconsin's 16 technical colleges offered lower-division general education for transfer; most did not (Snider 1999). Ohio's 1961 enabling law permitted its 67 counties to host five distinctly different types of public 2-year colleges: (1) community colleges with local taxation and boards picked locally; (2) state community colleges with no local taxation and boards appointed by the governor; (3) state technical colleges with no general education for transfer, no local taxation, and with boards appointed by the governor; (4) branch campuses adjacent to universities; and (5) university branch campuses located away from the home campus (Katsinas et al. 1999). Michigan and Illinois developed statewide networks of community colleges with comprehensive missions, with Michigan developing a relatively weak statewide coordinating function (Kolins and Stackpole 1999) and Illinois a stronger one (Krebs et al. 1999). How did this happen?

In an extended interview with graduate students at a 1993 Council for the Study of Community Colleges meeting, the late S.V. "Marty" Martorana, James L. Wattenbarger, and Raymond J. Young stated that from World War II until 1970, two key challenges facing community college leaders were the creation of statewide networks to provide universal access to underserved populations (including rural Americans), and the separation of governing control from secondary education boards and systems (Wright and Katsinas 1994). Reflecting on this era in 2002, Young, perhaps the only community college establishment pioneer to write extensively for publication about his role in that work, notes the critical role played by flagship university presidents as the Baby Boom of the 1960s approached. In an era before statewide planning agencies, public flagship university presidents convened education interests (flagship universities, regional universities and teachers colleges, junior and community colleges, and elementary and secondary education) together to present unified biennial budget requests to their governors and legislatures, as few states had annual budgets prior to 1970. In most states, only flagship

universities had specialized experts in state finance and education planning on their staffs. As Young notes, forward-looking flagship presidents and chancellors such as David Dodds Henry at the University of Illinois and Clark Kerr in California saw the coming Baby Boom, realized their institutions could not possibly serve the approaching Tidal Wave, and therefore supported regional university expansion and community college establishment (Young 2002). However, the vision was uneven, as Illinois and Michigan may have had good leadership while Indiana did not (Katsinas et al. 1999).

In addition, in the immediate post-Brown South, the focus was more on preventing integration than planning for growth, as Wayne Flynt documents in his history of Alabama (2004). So strong were the existing segregation sentiments that to expand the number of public junior colleges in the south and in border states, Koos himself in 1947 actually supported the busing of rural African Americans to a proposed urban segregated Black public junior college in Baltimore (Koos 1947, pp. 333–334). In her Pulitzer Prize-winning book about the desegregation struggle in her native Birmingham, Alabama's Diane McWhorter cites the challenges President Oliver Carmichael had in thwarting efforts of his segregationist board to undermine his efforts to allow Arthurine Lucy to become the first African American to enroll at the University of Alabama in 1956. The chairman of the board of trustees sent Lucy a letter expelling her "for her own safety" 3 days after her successful February 1956 enrollment (2001). Carmichael closely reviewed the establishment of the State University of New York in his 1955 book, largely written prior to his leaving the presidency of the CFAT to return to his native state. In that work, he recommended that as a matter of state policy, "Equality of opportunity in higher education must be offered to all youth without regard to race, color, creed, sex, or national origin," echoing the Truman Commission's commitment to equality of access, on which he served a decade before (Carmichael 1955, p. 68; see also Dennes 1956).

From all of this we can conclude the high likelihood that it was easier for flagship university presidents to use their latent convening authority to pull together common interests for broader planning in states like California and Illinois than in deep southern states, whose political leaders were obsessed with preventing integration.

Despite the Truman Commission's stated national goals, it would take until the Baby Boomers came of college age in the 1960s before significant progress toward the policy goal of equalizing geographic access in many states would be meaningfully attempted. Rural community colleges were a part of an active state government role in extending access to the 13th and 14th years to all their regions' citizenry (Tollefson 1999). In his studies of state community college systems, Tollefson finds high variability in mission, function, revenue streams, and governance. In terms of governance, some states have a separate state board to coordinate community college-related issues at the state level, while state-level issues are handled in other states by the same department that oversees elementary and secondary education or the university sector. This diversity greatly affects the ability and capacity of rural-serving colleges to serve as engines delivering both access and economic development-related programs and services.

Simply stated, some states did a better job with their 1960s-era enabling laws in creating a comprehensive system of comprehensive community colleges (with general education for transfer, technical education programs of 18–24 months in length, and community services [including workforce training and adult literacy]) than did others. Mississippi's community colleges started as K-14th grade agricultural schools in the 1920s, and today continue to struggle mightily to extend services broadly to adult learners (Garrett 1999). Kentucky initially placed the governance of its community colleges under the auspices of the University of Kentucky (Mayes 1999); it would take many years before an independent statewide governing board would be created. As a result, Kentucky's community colleges developed strong transfer components, however, it would take nearly four decades before they would be combined with the states' secondary vocational schools (Kentucky Community & Technical College System 2008). Louisiana faces somewhat similar problems, as do Oklahoma and Kansas (Tollefson et al. 1999). Alabama, with its strong trade school and technical college roots, has traditionally bifurcated transfer; it was only in the administration of Governor Bob Riley (2003–2011) that the Governor's Office of Workforce Development was placed within the Alabama Community College System (Hill 2011), to formally place state workforce efforts under the purview of the state's community colleges. Tennessee operates a network of technology centers that offer noncredit vocational training alongside a community and technical college system; in its largest metropolitan area, the separately accredited technical college and community college were combined only in the last decade (Katsinas 2008). The diversity of organization, governance, and funding patterns across the states is great—much greater than at any other postsecondary institutional type; a point not well recognized, if acknowledged at all, by Ivy League economists.

Different patterns of governance, organization, mission, and finance have not been without consequence in the nearly four decades that have passed since the Baby Boomers passed through college. In their 1999 analysis of population and enrollment data, Katsinas, Johnson, and Snider found that the 5 states of Illinois, Indiana, Michigan, Ohio, and Wisconsin had virtually the same percentages of their statewide populations, between the ages of 18 and 64, yet total enrollment in higher education ranged in 1995 from a high of 9.9% in Illinois to a low of 7.9% in Ohio. Enrollment in 2-year colleges as a percentage of the adult population ages 18–64 ranged from a high of 4.7% in Illinois to a low of just 1.1% in Indiana (Katsinas et al. 1999, p. 9). These differences are particularly pronounced in rural areas: Snider found just 3 of Wisconsin's 16 technical colleges offered general education for transfer; 2 were located in the state's two largest cities, Milwaukee and Madison. This means that even today, most residents of rural Wisconsin, based solely upon where they were born, lack access to lower-division general education transfer (Snider 1999).⁵ It also means that if economists use Wisconsin data when examin-

⁵ The late S.V. "Marty" Martorana assisted Governor Nelson Rockefeller in launching the State University of New York's community colleges. In Florida, Governor LeRoy Collins hired James L. Wattenbarger to implement his forward-thinking master plan for junior colleges. Martorana also worked in the U.S. Office of Education providing assistance to institutions and states to establish

ing the earnings of transfer students, they are likely ascribing a mission (general education for transfer) to institutions who are not commissioned by their states to offer it.

Thus, the late 1950s represented a major fork in the road in many states. With higher education needing to expand significantly to meet Baby Boom demands, more state money would have to be invested. What would state-level higher education planning, governance, and coordination look like? States began to study how to best serve the coming Baby Boom, with the fastest growth states leading the way. The federal government was active, even more so after Sputnik. White House conferences on education beyond high school spurred state-level planning efforts (Urban 2010), again often led by flagship university presidents (Young 2002).

How the Enabling Laws from the Baby Boom Era Impact Rural Community Colleges Today

The significant flaws in many statewide enabling laws dating to the 1960s remain today. For example, Ohio in the early 1990s encouraged its 15 technical colleges to begin offering general education curricula. However, Ohio's 1961 enabling law prohibits multicounty district-wide property tax referenda, creating "haves" (Cuyahoga in Cleveland, Sinclair in Dayton, and Lorain in suburban Cleveland) and "have-nots" (technical and state community colleges like Owens Community College in Toledo with no local funding, whose students pay much higher tuition). Many rural west Missouri counties were not attached to districts until the mid 1990s (Katsinas et al. 2003).

There is significant diversity in state-level community college governance and coordination, as well (Tollefson 1999). There are 36 states with local governance for their community colleges. Among these 36, 13 place coordination for their community colleges under boards separate from those governing their elementary and secondary systems and their 4-year universities (typically, under independent state community college boards). Three states place the state coordination function under the same board that coordinates elementary and secondary education but separate from their public 4-year universities. Seventeen states place state coordination under same board for both community colleges and public 4-year universities, and three states have local governance for community colleges, however, have no state-level community college coordination. There are 14 states with no local governance for community colleges; of these 6 states have the same state board governing and coordinating both their community colleges and their universities; 7 have the same board governing and coordinating community colleges, yet that board is separated

community colleges. The success of pioneers like Martorana, Wattenbarger, and Young in establishing regional approaches to address geographic access, including rural areas, is demonstrated by the higher adult educational attainment rates in the Land of Lincoln, which today rank a close second behind only California (Katsinas et al. 1999).

from both elementary and secondary education and 4-year universities; and 1 state (Alabama) has no local governance for community colleges, with the same board to govern all 25 of its public 2-year colleges also coordinate both the community colleges and elementary and secondary education systems (Katsinas 2011). There is clearly much greater extant diversity in the organization and governance patterns for public community colleges across states than for public flagship and regional university sectors.

Similarly, there are significant differences in the funding patterns for community colleges, both across and within states, which are directly tied to extant flaws in 1960s-era state enabling laws. The flaws are almost always rural-based, as the Missouri, Ohio, Texas, and Wisconsin examples show, and have a particularly pronounced negative effect for multicounty rural community colleges in the 25 states that allow local funding for community colleges. According to *GRAPEVINE*, which has tracked state appropriations for public higher education since 1960, local appropriations for community colleges in 25 states in 2001 did not exceed 1% of total revenues (Center for the Study of Higher Education 2004). Yet the 25 states in 2004 with local funding included 8 of the 9 “megastates”—our nation’s largest—which together account for over 50% of total appropriations and 58% of all US community college enrollments.⁶ The tendency of some policymakers, scholars, and media to project the organizational structure, financing, and cultural milieu of large multicampus urban-serving community college districts onto property tax-poor rural regions when considering community college policy may stem from this fact. This is compounded yet again with the deep cuts in state appropriations for operating funds that community colleges in the 25 states with local funding have taken in the 2 recessions since 2000 (Katsinas and Friedel 2010), an issue that will be addressed below.

Katsinas (2008) argues that as workforce training and welfare-to-work funding streams became available to community colleges during the Reagan Administration, the extant flaws in state community college enabling laws of the 1960s magnified in effect. Following the passage of the Reagan Administration’s Job Training Partnership Act (JTPA) of 1982 and the Job Opportunities Basic Skills Act of 1988 (Katsinas and Lacey 1989), governors were required to submit state plans to the U.S. Departments of Labor and Health and Human Services to access the spending of federal flow-through dollars. Under the approved plans, the regional offices in urban areas were always placed in population centers such as St. Louis or Kansas City, whereas in rural areas the state job training, welfare-to-work, and adult literacy plans often do not recognize or closely match the state-assigned geographic service delivery areas of community colleges. Over time, this has made the meshing of diverse programs and funding streams more problematic, and has had negative consequences on the ability of rural community colleges to achieve economies of scale as the national economy demands access to lifelong learning for older adults.

⁶ The megastates with local funding in 2004 were California, Illinois, Michigan, New York, North Carolina, Ohio, Pennsylvania, and Texas; the sole megastate without local funding was Florida (in 2008 for the first time Georgia, which has no local funding, replaced Michigan as a megastate).

This is why the coordination and effective delivery of secondary education, higher education, workforce training, welfare-to-work, and adult literacy programs is more difficult to achieve in rural areas.

These realities also challenge policymakers and scholars—particularly from economics, political science, and sociology—to develop evidence-based workforce training policies that fully engage community colleges. This is because funds from the Workforce Investment Act (WIA, which succeeded JTPA), the Temporary Aid to Needy Families program (which succeeded JOBS), and other federal programs typically come from noneducation state and federal budget sources. The numbers of students served are sizable: The AACC website as of May 2011 notes that of the 12.4 million students at US community colleges, 7.4 million or 60% were for-credit, and 5 million or 40% were enrolled in noncredit courses and programs (AACC 2011).

The diverse patterns of organization, governance, and funding make it much more problematic to even convene groups of leaders to address issues of employment, training, and adult literacy in rural areas. Bevill State Community College serves six poor, sparsely populated counties in northwest Alabama. Its college administration must deal with three different Workforce Investment Boards and two regional economic development councils. “Sometimes, by the time the money finally dribbles down, the procedures can be so cumbersome and the amounts of funding so small, it’s hard to create reinforcing programs that result in sustainable rural communities and regions” (Katsinas 2008, p. 61). In terms of practice, this adds to the challenges facing rural community college leaders, as Pamela Eddy notes in her 2007 study, *Grocery Story Politics: Leading the Rural Community College*. Eddy notes how rural community college leaders have less anonymity within their communities, typically place greater reliance on relationship building to accomplish goals, and possess a smaller local peer network to aid in reflecting upon their presidential duties (Eddy 2007).

Thus, while extending geographic access to all citizens and particularly to underserved rural areas to accomplish the access goal of the Truman Commission was a major state priority during the 1960s and early 1970s, extending equal programmatic access through establishing a comprehensive statewide network of comprehensive community colleges played out very differently across the states. As S.V. Martorana, James L. Wattenbarger, and Raymond J. Young noted, the starting point on which to build statewide plans and funding models to serve the Baby Boom tidal wave of students in the 1960s was from wherever they were. This typically meant working to broaden the missions, functions, and service delivery areas of the existing municipal junior colleges, and adding new institutions as well (Wright and Katsinas 1994). This, in good measure, explains the diversity that emerged across the states.

The case of Missouri provides an excellent example of how the history of community college establishment impacts today’s actors. Missouri’s first 2-year institution, Kansas City Polytechnic Institute, opened in 1915. A permissive 1927 statute created a process whereby local school districts, by obtaining sufficient citizen signatures, could petition the Missouri State Board of Education to add grade

13 and 14 courses, and charge tuition for that purpose. That statute limited the size to be no more than a single school district, which meant only cities and large towns could benefit (Stroup 1999). The lack of state and local tax funding and district size limitations motivated many school districts to eliminate their early efforts to provide junior college instruction by the 1950s (Aery and McLain 1992). A 1961 statute provided for larger, multicounty junior college districts, if voted on by the people, however, did not assign each and every county in the state to a junior college district. Seven new districts, including St. Louis, were created, and others expanded from municipal to county or multicounty districts (Joplin and Kansas City). In 1972, legislation was passed to transfer state-level supervision from the Missouri State Department of Education, which oversees elementary and secondary education, to the newly constituted Missouri Coordinating Board for Higher Education (Stroup 1999). St. Charles Community College and Ozarks Technical Community College, which includes all or part of 14 contiguous school districts near Springfield, were then established. "From the onset of the first three junior colleges in the early 1920s to the late 1980s, the Missouri General Assembly gave little attention to state policy regarding the nature, scope and equity among community college taxing districts" (Stroup 1999, p. 236). In light of the lack of state action to create a statewide community college system that assigned each and every citizen to a community college district, the Missouri Community College Association in 1993 proposed assigning each of the previously nonassigned counties, which included most of the northwest and central portions of the state, to one of the 12 existing community college districts. College trustees could only come from counties whose citizens paid taxes into the districts, and students served at outreach centers outside of the taxing areas pay higher tuition. Missouri's history played out remarkably similar to Texas, whose out-of-taxing-district students today pay much higher tuition, based solely upon where they happen to have been born.

Missouri's complicated history is instructive for several reasons. First, each act had to incorporate what had already been approved, from the 1920s onward. Second, as the functions of community colleges later widened to include workforce training, adult literacy, and other programs funded by noneducation sources, if the funding source was federal, a state plan had to be submitted by the governor through a state cabinet agency to a federal cabinet agency. If there is not clear coherence at the state level for community college establishment, chances are that the plans submitted to the federal agencies for workforce training do not match the state-assigned service delivery areas for community colleges. Third, the confusion in missions, functions, organization, and financing makes it difficult for researchers outside of the field to study community colleges. For example, a number of national and regional studies of earnings of community college graduates who obtain baccalaureate degrees can falsely assume common state-assigned functions across state lines or within states that do not exist. An October 2008 Federal Reserve Bank of St. Louis study compared earnings of baccalaureate degree recipients who received an associate's degree first with those started at a 4-year college. No mention is made in this study that Missouri law never extended postsecondary access to the 13th and 14th grades, or that some students pay much lower tuition than do others. Instead, readers are left

with false impression that state establishment was exactly the same in each of these seven states of this Federal Reserve District (Kolesnikova and Shimek 2008), it was clearly not. Indiana only began to offer transfer across its system in 2003. Those articles with the expert knowledge imprimatur of the Federal Reserve Bank of St. Louis fail to even acknowledge these clear differences that speak to the challenge rural community college officials face.

John R. Wittstruck, who in the early 1980s represented the State Higher Education Executive Officers/NCES Network at meetings that discussed transitioning the U.S. Department of Education's Higher Education General Information Surveys into the Integrated Postsecondary Education Data System (IPEDS), believes that the IPEDS universe is larger than originally thought. The broader institutional roles and missions of public community colleges are not well captured, he notes, adding that a vocational and recreational, customized and contract training, continuing education, short-term program enrollments and completions, distance learning and programs for adult learners, are not captured. Wittstruck said IPEDS captured *public junior colleges*, not the broader community college role in regional development and workforce training that emerged later. He advocates a comprehensive data system capturing credit and noncredit program enrollments, revenue and expenditures, adult learners completing education and training programs, staff, and the number and types of programs delivered and companies involved, recognizing that the workforce and training programs are housed among different agencies and departments of state governments, and among different departments of the federal government. "The time to change IPEDS is now," he said, adding, "Times have changed, tools have changed, instruction and training needs have changed, and learners have changed" (Wittstruck 2005). A 2005 Southern Regional Education Board report said,

Because responsibility for adult education and workforce training programs is typically scattered across multiple state agencies, states should focus on coordinating these efforts. These agencies can include the departments of education, labor, economic development, social services, postsecondary education, and governing boards, as well as the governor's workforce commissions. But among these agencies, seldom is there a single, powerful policy-making group advocating for adult learning. (Southern Regional Education Board 2005, p. 12–13)

The August 9, 2006 *Draft Report* of the federal Commission on the Future of Higher Education similarly recognizes the need for lifelong learning, education, and training, and calls for a national strategy with the Secretary of Education, states, and other federal agencies, to foster "better integration of policy, funding and accountability between postsecondary education, adult education, vocational education, and workforce development and training programs" (U.S. Department of Education 2006, p. 26). Yet a 2010 study of state community college directors found that just four states assigned responsibility for the administration of WIA programs to their community colleges (Katsinas and Friedel 2011).

A "one size fits all" approach to distributing higher education operating budgets and noneducation workforce training funds at the state level generally works against rural community colleges and the regions they serve. Since megastates are

the most urbanized, it is perhaps not surprising that some project an urban model of financing mechanisms, funded missions, and functions of their home state onto the other 49, whether or not it makes sense to do so. Projection can have a far-reaching impact for rural community colleges within states with local funding and in those that do not.

Consider the long-term decline in state funding as a percentage of total revenue that has occurred over the past quarter century (Katsinas and Palmer 2005), which when combined with a lack of access to local funding—if such funding is available—dramatically impacts rural colleges (Katsinas et al. 2003). From Fiscal Year 1980–1981 to 2000–2001, Roessler (2005) found state appropriations for community colleges declined by 13.4%, with other revenue streams (tuition and fees, local funding, grants and contracts) not making up the difference. His analysis of IPEDS Finance data revealed 16 states in FY 1980–1981 provided 60% or more of the total budget to their community colleges. In FY 2000–2001, none did so. In FY 1981, community colleges in the 22 states that provided 50% or more of the total budgets served just over 55% of total US community college enrollments. By FY 2001, only seven such states serving just 8% of total US community college enrollments did so (Roessler 2005). Since tuition and fees comprised a smaller portion of total revenue in FY 1981, states with no local funding had to raise tuition significantly to offset even small declines in state funding.

These changes are not without consequences. In 1989, Minnesota ranked first among all states in the percentage of its 18–24-year olds enrolling in higher education following high school graduation. By 2003, Minnesota ranked 17th. In the 2005–2006 academic year, community college students in Minnesota paid \$ 4,600 in tuition and fees, compared to under \$ 1,000 in California. Within the 25 states that have significant local sources of revenue for their community colleges (which includes eight of the nine megastates), differences in access to local appropriations has created haves and have-nots, with rural-serving colleges in the latter category. Today, in locally funded states a given college's success is dependent on two keys—access to a strong local revenue stream, and the willingness of the local citizenry to tax themselves.

The differences in funding patterns that tie directly to state enabling laws passed long ago can create projection problems within states. In 1994, a \$ 394 million facilities bond issue was approved by citizens of Phoenix and its surrounding suburbs for the 11 campus Maricopa Community College District. It is not difficult to see how legislators, lay readers of the state's largest newspaper, *The Arizona Republic*, and policymakers unfamiliar with community colleges might assume that if a local region's citizens want to improve community college facilities, they should simply vote to tax themselves as Phoenix did. However, what if most of the taxable land in the *state-assigned* service area is owned by federal agencies, as is the case for Northland Pioneer College in rural northeastern Arizona (Katsinas et al. 2003)? A 2004 survey of 50 National Council of State Directors of Community Colleges members reported rural-serving colleges facing greater fiscal strain than any other community college type in FY2005 (Katsinas et al. 2004), a point confirmed in subsequent state community college directors surveys in 2007, 2008, 2009, and 2010.

The financial disparities of the community college landscape were confirmed by Jose F. Maldonado, who applied the Carnegie 2005 Basic Classifications to analysis of data from the IPEDS Faculty Survey for FY2003 to study salaries and fringe benefits of full-time community college faculty. It is well known that personnel expenditures are the largest single cost factor in the budgets of higher education institutions. The national average salary for the 224,260 full-time faculty in FY2003 was \$ 63,012, with faculty at urban-, suburban-, and rural-serving community colleges earning an average of \$ 55,942, \$ 59,960, and \$ 46,535, respectively. If a full-time community college faculty member has a 35-year career, the \$ 13,450 annual salary difference between rural- and suburban-serving community colleges balloons to \$ 469,875. Cost-of-living adjustments raise this salary differential to \$ 1.2 million (Maldonado 2006). With fewer part-time students for which adjunct faculty can be hired to effectuate cost savings, which in turn allow the spreading of expensive high-cost, high-tech programs, the internal budget flexibility of rural community colleges may be much lower than their urban and suburban counterparts (Katsinas et al. 2003). One of the authors of this work remembers that in his final year of employment at a large, multicampus urban community college district some two decades ago, income from the vending machines at the five campuses exceeded \$ 2 million, all of which were unrestricted funds. The ability of different types of community colleges to internally generate venture capital is very different across urban, suburban, and rural community college types. Such differences may not be well recognized, if at all, by economists, political scientists, and sociologists concerned with policy at our elite universities, and often not by national policymakers in Washington.

Since rural community colleges are largely not involved in front-end state and federal policy development, and their senior staffs often wear many hats at one time, it is difficult to develop and sustain involvement in front-end policy development at the federal and state levels. This is compounded by the challenges in quantitatively identifying rural community colleges (Cohen 1978) in order to obtain the hard data needed to drive public policy. As a matter of practice, many of the models of effective practice that work well for large urban and suburban multicampus districts promoted by organizations such as the League for Innovation in the Community College (2011, whose board has long included some of this nation's largest multicampus districts) do not work well in rural America. Size and scale matter a great deal, and this reality pertains to other rural sectors such as elementary and secondary education or health care (Katsinas et al. 2003).

In 1989, Katsinas and Lacey wrote "Community colleges are the largest delivery system of formal (for-credit) and informal (noncredit) courses and programs in America...and they are nearly everywhere." In 1994, Katsinas noted how a plethora of employment, training, and adult literacy programs were offered a typology of distinct groups served by community college workforce training programs: (1) New Workforce Entrants (often served through Perkins-funded programs), whose numbers could be divided into two distinct groups, (a) Recent High School Graduates and (b) Recent High School Dropouts; (2) Temporarily Dislocated Workers (served via WIA programs); (3) Currently Employed Workers (often served by direct cor-

porate funding); and (4) Long-Term Unemployed Workers (often served through Temporary Aid to Needy Families and other U.S. Department of Health and Human Services programs). Later, in 2008, Katsinas argued that,

On top of the diversity of state community college and higher education coordination and governance structures and systems lay the three silos of employment and training, welfare-to-work, and adult education programs, which themselves are highly diverse in terms of laws, policies, programs, and structures across the federal and state governments. (Katsinas 2008, p. 43)

Over time, the purposes of the different programs change when reauthorized. The Comprehensive Employment and Training Act (CETA) of 1973 funded public sector employment. This emphasis shifted to private sector-based jobs with the 1982 JTPA (American Association of Community and Junior Colleges 1984) and its successor 1996 WIA. Similarly, the employment and training goals for welfare recipients shifted from providing an education base prior to training as envisioned by the Reagan-era Job Opportunities Training Act, created by the Family Support of 1988 (Chilman 1992) to the work-first provisions contained in the controversial Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA 1996) with its Temporary Aid to Needy Families program. The purposes of these programs changed over time—CETA’s goal was to reach out to the hard-to-employ, while critics of JTPA and WIA argue that provisions of those programs promote “creaming,” the training of the easiest to employ while leaving most unserved or underserved. Typically, in terms of procedures, practices, and oversight, the states want flexibility while the federal government tends toward uniformity.

“The challenge for rural community colleges is to lead, run, coordinate, or convene local and regional leaders to foster effective practice *on the ground*” (Katsinas 2008, p. 44). He notes that,

On top of the diversity of state higher education coordination and governance systems and structures lay the three silos of employment and training, welfare-to-work, and adult education programs, which themselves are highly diverse in terms of laws, policies, programs, and structures across the federal and state governments. (2008, p. 43)

These programs were created at different periods to accomplish different purposes that changed over time. At the federal level, administration is performed by three different cabinet agencies (Education, Health and Human Services, and Labor), and data definitions are not common across the programs. The federal legislative oversight in Congress occurs in two different major committees in the House and the Senate, and the laws reauthorizing the various programs are typically not considered simultaneously. Katsinas argues “Such divisions in federal administration and oversight are all too often repeated in the states” (p. 59), and that states often run these programs through two or three state-level cabinet agencies, mirroring the federal government, particularly in large states. In an argument similar to that offered by Sherwood (2001) about elementary and secondary education, Katsinas further argues “The data management systems of state cabinet agencies are typically built on top of the federal data sets. Thus, flaws in

the federal data systems (inconsistent definitions across the programs, etc.) are mirrored in the states” (2008, p. 60). The fragmentation, Katsinas argues, “... makes it challenging to pull together the disparate pieces, especially in rural, low population areas. The reality Bevill State Community College’s leadership faces is played out over and over again in rural America, and the practical question of ‘who convenes?’ is itself be a barrier” (2008, p. 61). This problem is of a “self-inflicted” nature, in that each of these federal programs requires the states to submit a state plan that must gain federal cabinet agency approval. *Thus, if the service delivery areas of these programs do not fit together, it is the fault of the states and not the federal government.* Yet failure to make the programs fit with the state-assigned community college service delivery areas “often has profound consequences at the local level,” (2008, p. 62), particularly for rural community colleges.

From a community college perspective, workforce training is an unfunded mandate, with no dedicated revenue streams (Katsinas and Lacey 1989). When state community college directors were asked in 2009 if responsibility for workforce training was formally assigned to community colleges, just four states (Delaware, Idaho, Rhode Island, and Virginia) indicated it was (Katsinas and Tollefson 2009). In 2009, when state community college directors were asked to respond to the item, “In my state, unemployed workers can attend community colleges tuition-free for retraining purposes,” 11 responded “strongly agree” or “agree,” while 28 states responded “disagree” or “strongly disagree.” In 2010, with the deep recession continuing and with sluggish state tax revenues due to a slow recovery, just four indicated they offered free tuition for unemployed workers (Katsinas and Friedel 2010).

Despite these challenges, rural community college faculties are highly committed to place. The 1989 National Survey of the American Professorate conducted by the CFAT found community college faculty more satisfied with their careers of any higher education institutional type (CFAT 1989). Bin Ning in 1998 reviewed 17 qualitative case studies, and found faculty very satisfied with the career decision to teach at a rural community college (Ning 1998).

Building Sustainable Communities: Economic Development, Fine Arts, and K-12 Linkages

Attention is now turned to a discussion of how rural community colleges build sustainable communities. This section is organized as follows, first a brief review of economic development and workforce training issues from the rural perspective is presented. This is followed by a discussion of the new rural regionalism and special role of community colleges in the development of indigenous cultural and fine arts, and the role rural community colleges play in their K-12 linkages to lift up rural America’s most important asset, its human capital.

Economic Development: Developing the Workforce in Place

From Alabama's "Black Belt" to the Rio Grande Valley to the heads of the hollers in Appalachian Kentucky, rural Americans share a strong commitment to place. While in-migration has occurred, particularly by Latinos, often the key demographic reality is a flat population that is aging. These realities, and personal computers in a globally competitive economy, require a capacity to continuously improve the skills of America's rural workforce. This is precisely what comprehensive rural community colleges do, *if* they simultaneously are able to provide: (1) general education transfer to the baccalaureate; (2) for-credit locally needed workforce programs such as allied health and nursing, and engineering technology; and (3) noncredit courses for existing workers. To this is added a fourth function essential to fulfilling the other three, developmental education⁷. For-credit and noncredit workforce training programs are both critically important to rural colleges and the regions they serve. Of the 160,881,843 contact hours generated in 2000–2001 in occupational programs nationwide, 75,578,091 or 47% were generated at rural-serving community colleges, higher than their 38% enrollment share (Hardy 2005).

The modern community college's role in workforce training became particularly important at the time of the severe recession of the late 1970s and early 1980s. The JTPA of 1982, with locally administered Private Industry Councils, for the first time provided community colleges relatively easy access to federal job training funds (Katsinas and Swender 1992). Katsinas and Lacey provided five examples of rural community colleges successfully blazing new trails in their 1989 American Association of Community and Junior Colleges monograph, *Economic Development and Community Colleges, Models of Institutional Effectiveness*, and termed this new role "non-traditional economic development"; as contrasted with traditional general education and technical programs leading to transfer degrees, diplomas, and certificates (Katsinas and Lacey 1989). Nontraditional economic development functions are funded by employers and governments via performance contracts (Katsinas et al. 1999).

The evolution in the workplace brought by automation in the 1960s and 1970s, and the personal computer revolution of the 1980s and 1990s, has challenged states to develop a system of nonformal continuous lifelong learning for adults. In many states, community colleges are well-suited to assume this function, *if* service boundaries were well-constructed and *if* colleges have ease of access to the necessary non-education revenue streams. The wide disparity between state-assigned missions and functions, the broad differences in operating budget revenue flows, and the variety

⁷ Cohen and Braver offer five functions of community colleges in the four editions of *The American Community College*: (1) general education for transfer, (2) technical/occupational/vocational education, (3) continuing education, (4) developmental education, and (5) community services. We agree on the first two functions, as well as developmental education, and term the other three functions noncredit workforce training, extension to elementary and secondary education, and community and cultural enrichment, which we describe in the section following.

of organization for noneducation funding in the workforce training arena mean that the “rules of the game” are very different from one state to another, however.

This explains the challenge rural community colleges face if they choose to make a difference in their communities. Leading foundations have recognized this; during the 1980s and 1990s, the W.K. Kellogg Foundation funded Project ACCLAIM at North Carolina State University and the state community college systems of Maryland, North and South Carolina, and Virginia. Most of the eight pilot colleges were rural. A 17-step process model was developed that emphasizes environmental scanning of assets and needs at the front end, to assist colleges in choosing how to best deploy community-based programming to address regional issues, in recognition that dedicated revenue streams did not exist for this work (Boone 1997; Boone et al. 1998). The Ford Foundation’s Rural Community College Initiative (RCCI), administered by MDC, Inc. of Chapel Hill, North Carolina, was initiated during the same period. The RCCI served rural community and tribal colleges in high-poverty regions of the nation (Barnett 2003).⁸ Valuable lessons were learned from both efforts, which were expanded by the continuing work of the Rural Community College Alliance, the MidSouth Partnership for Rural Community Colleges (Rubin et al. 2005), the AACC’s Rural Policy Forum, and the fledgling National Institute for Rural Community Colleges.

Because community-based organizations often do not exist in rural areas, if the community college does not assume responsibility to organize and deliver lifelong learning, no other entity is available to do the job. Thus, workforce training is an unfunded mandate for which no dedicated revenue streams exist. Without dedicated revenue streams, personnel attached to college workforce training efforts are often caught in the “last hired, first fired” syndrome, which negatively affects program continuity. Given their smaller budget base, the function is more precarious at small and medium rural colleges. Training funds are spent in accordance with funding agency strictures (Palmer 1996), and the gaming is wholly different than state education budget processes. Often, state-level input to ensure that the governor’s plans account for spatial dimensions of distance and geography is needed. All too often, in rural America by the time the money comes, the pots can be so small and paperwork burdens so large as to limit involvement.

This is why the “maps must match” between noneducation workforce training state agencies and state rural community college service delivery areas (a high overlap of these service delivery areas always exists in urban regions). As the largest entity delivering noncredit training for the workforce in rural America (Katsinas 2005), the question begs: What entity can provide lifelong learning and computer literacy opportunities to an entire region other than the rural community college?

Rosenfeld (1992, 1995, 2000) documents how small manufacturing enterprises of 250 and fewer workers maintain a high skills/high rural wage base, and the

⁸ An extensive set of tool packages based upon MDC’s work with 24 pilot colleges is available from MDC, Inc., for those interested in learning more about the efforts of this program of the Ford Foundation, which grew out of a study by the Community Colleges of Appalachia under the leadership of Eldon Miller and Robert Pedersen of West Virginia University-Parkersburg.

role of engineering technology programs. Katsinas and Miller (1998) found rural community colleges serving high-poverty areas of the nation challenged to provide high-cost, for-credit technical programs. Issues of capacity related to funding high-cost, high-tech programs to lift up the wage level of rural areas were identified, consistent with Rosenfeld's findings. Gibbs et al. (1998) present empirical data on education and training in rural America, and make a compelling case for the lifelong education and skills-upgrading workforce training that rural community colleges provide. The impact of a nearby college—be it 2- or 4-year, public or private—on overall college-going rates was found to be significant in stemming rural America's brain drain. They suggest comprehensive strategies to link K-12 and senior institutions that include community colleges. These strategies include addressing the digital divide (Katsinas and Moeck 2002). The Higher Education Act's Title III Strengthening Developing Institutions Program provides competitive grant funds community colleges access to expand institutional training capacity (Katsinas et al. 2003). The AACC has made Title III funding and bridging the digital divide a legislative priority. A \$ 500,000 Title III grant for 5 years added to a total budget of \$ 10 or \$ 22 million—the average budget of a rural-serving small and medium college, respectively—can lift up a rural region's workforce.

Some argue community colleges should not be involved in workforce training because it channels students into programs that prepare them for careers with lower lifetime earnings (Brint and Karabel 1988), or that such involvement creates a contradictory sense of institutional mission (Dougherty 1994). While we may disagree, we acknowledge concerns raised by Palmer (1996), who reviewed community college involvement in welfare-to-work programs in Illinois, finding only marginal impact on participant earnings. An assessment of the direct and ancillary contributions of community college involvement in workforce training must wait until the comprehensive tracking system advocated by Wittstruck (2005) is enacted. Still, Roessler's work (2005) shows community colleges are being paid to do different things than in past decades. More study is needed to show if involvement in workforce training comes at the expense of traditional transfer and general education. That missions have expanded while dedicated revenue streams for noncredit workforce training do not exist, is beyond question.

We again note the numerous examples from the literature as to the challenges rural community colleges have in self-generating internal funds for venture capital and professional and staff development, and externally for the agencies that partner with community colleges. In her 2007 survey of community college chief executive officers, Rankin asked CEOs to respond to the item "does your college participate in programs for long-term unemployed workers?", to which 83% of urban community colleges agreed, compared to just 67% of rural-medium and 50% of rural-small colleges. When asked if turf protection on the part of other organizations, agencies, and institutions is a barrier to college involvement in economic development, 71% of CEOs from rural-large, and 67% from rural-small were in agreement, compared to 56% at urban community colleges; and when asked if lack of access to broadband and telecommunications in our area (digital divide) is a barrier to economic development, 13% of suburban CEOs indicated it was, compared to 32% of urban and 43% of rural community college CEOs (Rankin 2007).

Building Economically and Culturally Sustainable Communities: A New Regionalism

Today, a “new regionalism” is advocated by many rural experts as a key strategy for successful rural development. Charles W. Fluharty, Director of the Rural Policy Research Institute, notes that 80% of the nation’s rural counties have nonfarm economies (2005). He believes that building rural innovation depends on building sustainable communities, and that special attention should be given to addressing poverty and underresourced communities and families. He believes a “regional rural innovation policy” is needed, focused on assets and contributions, not deficits. Creating regional frameworks for public policy investments in strategies capturing regional competitive advantage that will foster value-added productivity growth in niche-targeted, clustered sectors must include entrepreneurship from grade school to high school (Fluharty 2005). His findings are consistent with Katsinas and Lacey (1989), and with many works in the literature of community colleges.

The regional cooperation Fluharty suggests is needed for economic development finds a natural ally in rural community colleges, many of which have had a regional orientation since their establishment. In 1954, 7 years after the release of the Truman Commission report, Raymond J. Young, while helping to establish a rural-serving community college in Canton, Illinois, found people would drive as far to “purchase” college services and programs as to obtain durable goods such as refrigerators or washing machines. The multicounty regional districts, Young (1957) advocated in Illinois, also were adopted in the states of Washington, New York, and Florida. Governors, including South Carolina’s Fritz Hollings, established new state community college systems for economic development and vocational training.⁹ Regional multicounty college districts were not created everywhere, however, as the experiences of Alabama, Kansas, Pennsylvania, and Texas demonstrate. Developing a rural workforce training capacity is consistent with rural colleges’ role on the “demand side” to build sustainable, livable regions and communities. This directly leads to two long-standing, yet underdiscussed and undocumented functions of rural community colleges: Delivering fine arts and connecting with K-12 schools.

Rural Community Colleges and Fine Arts

The role of rural community colleges in the fine arts has grown as the colleges have evolved. Eells’ 1931 survey of 279 junior colleges found 45% offered courses in art, 57% offered courses in music, and according to Florence B. Brawer, a similar study conducted in 1937 by Colvert found 48% offered courses in art and 62% in music

⁹ In their analysis of the state summaries contained in Tollefson et al.’s 1999 edition of *Fifty State Systems of Community Colleges: Mission, Governance, Funding and Accountability*, Katsinas et al. (2003) found that economic development justified the establishment of community college systems in virtually every state.

(Brawer 1987). By the 1960s, as the community services role of the comprehensive community college expanded, fine arts programming expanded as well. In 1956, Reynolds suggested community colleges should develop cooperative art, music, and other cultural programs along with health professions, safety programs, and recreational facilities to meet college community needs (Reynolds would later write three editions of a graduate school textbook widely used in preparing community college leaders in the 1960s and 1970s). Fields' (1962) study, *The Community College Movement*, included a description of how rural east Texas' Tyler Junior College shared cultural events in the community. A broader role in community services was envisioned by Blocker et al. in (1965), Gleazer in (1968), and Harlacher in (1969). In 1969, Goldman (1969) found California's rural colleges offered cultural programs of various scopes that included lectures, films, exhibits, theater, and music. In 1971, Cohen and associates found that "the community services function of the community college is very important, overshadowing in many cases the transfer traditional academic curriculum" (Cohen and Associates 1971, p. 124). By 1982, Simpson argued that since community colleges, especially in rural areas, are the only means by which residents can gain exposure to cultural events, it is their *responsibility* to provide such programming to citizens.

The evangelistic spirit of Gleazer, Harlacher and others to "bring the college to the community" by offering courses "anytime, anywhere" foretold an expanded role for community colleges in the fine arts as a means of building communities. The enthusiasm was justified—by 1970, total Fall enrollment at US community colleges was 2,195,412, of which 49% enrolled part-time. By the Fall of 1980, a decade later, enrollments had doubled to 4,328,782, of whom 63% were part-time students (NCES 2004). In 1992, Cohen and Ignash reported that music appreciation, art history, and fine and performing arts constituted 0.8, 1.0, and 9.6%, respectively, of all community college courses.

The 1988 Report of the Commission on Small and/or Rural Community Colleges of the AACJC received survey responses from just under half of the 600 rural and small community colleges the Commission estimated existed at that time. When asked if their colleges were viewed as cultural centers, 158 colleges (67%) indicated yes, and 75 colleges no (32%). When asked if cultural programming was a high priority at their colleges, 125 colleges (56%) indicated a high priority, 70 colleges (31%) a low priority, and 28 colleges (13%) indicated no priority. Colleges that made cultural and civic institutional responsibility a high priority were constantly involved in their communities, often through civic groups and arts councils (Weiss 1988).

Katsinas' field visits to rural and tribal colleges in the mid 1990s on behalf of the Ford Foundation that preceded its RCCI program found indigenous arts used to promote a positive regional self-concept against a backdrop of negative stereotypes of rural as backward and unsophisticated. An AACC presentation in 1995 entitled "Transforming Economically Distressed Rural Areas through the Promotion of Local Indigenous Cultures" featured Hazard Community College's Appalachian Arts Festival, and Northern New Mexico Community College's assistance in marketing

fine arts of their nine Indian Nations (Katsinas and Hughes 1995). Rosenfeld argues that creative communities are better able to both attract jobs and talent, as arts and crafts firms produce wealth for their local economies through use of latent talent (Rosenfeld 2004).

Ultimately, however, the provision of fine arts and cultural programming—like that of providing noncredit instruction for skills upgrade and personal enrichment—is an “unfunded mandate” for rural community colleges. States, business leaders, and local communities may have high expectations for their colleges to provide plays, concerts, art exhibitions, literary festivals and, in some cases, to operate museum facilities. Given their central position in their regions, they are in fact well-positioned to act as service providers, yet they need financial support. Sadly, most external funders of fine and performing arts do not provide much support to rural community colleges. Terry et al. (2006) found the National Endowment for the Arts made a scant 0.1% of its total awards to US community colleges from 2000 to 2005, an average yearly investment by NEA in community college arts programming of \$ 116,917 from an average yearly grant-making of \$ 112,600,000. Still, these institutions work hard to find institutional funds and local support to serve as “artistic lighthouses,” shining like beacons in the night in areas of our nation far from the bright lights of Broadway and the Kennedy Center.

Linkages with Elementary and Secondary Education

Connections between community colleges and K-12 education have historically been strong. Early junior colleges grew as appendages of K-12 systems, often under their direct control (Young 2002). In addition to offering general education for transfer, a major function of early junior colleges was preparing teachers. A 1925 study of 19 colleges by Koos found three-fifths of their graduates were preparing for careers in teaching (as cited in Hutcheson 2002). Palmer writes that throughout its history,

the community college has remained constant in one important way: it continues to provide instruction at the thirteenth and fourteenth grade levels to the citizens of defined, local communities. It therefore acts as the neighborhood school of American higher education, extending the reach of local school districts and connecting them to state university systems. This is what the community college uniquely does. (Palmer 2000, p. 93)

As long as state policymakers promote programs such as Tech/Prep, middle college high schools, and alternative teacher certification programs to foster seamless bridges between higher education and the high schools, community colleges will be linked to local education agencies. However, is there anything special about the role of the rural community college and its local rural public schools? We believe so. The aging population in many rural areas can sometimes mean that a rural community college can increase its market share of traditional-aged students, yet face flat and/or declining overall enrollments.

As previously noted, Cohen and Brawer (2003) argue five basic functions exist for community colleges: general education for transfer, vocational/occupational/technical education, continuing education, developmental education, and community services. We believe that in the rural context, a sixth function exists—linkages with elementary and secondary education. Southwest Texas Junior College, a four-campus community college along the border in south Texas provides a good example of such K-12/college partnerships to lay broadband services and increase high speed internet access, as Thomas describes in his 2005 study, which documents Southwest's participation as a pilot college in the Ford Foundation's Rural Community College Initiative (Thomas 2005). In the rural context, when an individual joins the faculty or staff of the community college, *that person is joining a community*. This means participating in the community's civic and religious organizations as do K-12 faculty and staff, and often means personal interactions with the families of the students they teach and serve. This often is not the case in suburban or urban America.

Community Colleges: A Quantitative Analysis, with Emphasis on Rural Community Colleges

The next section presents a descriptive, quantitative analysis of today's community college. This analysis is divided into four sections: First, data on the number of institutions and enrollments, including enrollment growth in recent years, are presented. Data on all types of private (including both not-for-profits and for-profits) and public 2-year colleges are presented, so that readers can see how rural community colleges fit into the nation's 2-year college universe generally and the community college universe specifically. This is followed by sections on student financial aid, revenues, and faculty, to show the striking differences across types of community colleges, and to identify the rural differential that exists.

Enrollment at Rural Community Colleges and the 2-Year College Universe

Table 10.1 presents the total number of private and public 2-year colleges in the United States, and the annual unduplicated undergraduate headcount enrollment of colleges that reported to NCES in the 2001–2002 and 2007–2008 academic years, disaggregated by the 2005 Basic Classification of Associate's Colleges published by the CFAT (2006). The six types of private colleges are presented in the top half of this table, and the 11 types of public colleges in the bottom half. The number and percentages of each college type in the Carnegie universe are presented in the second and third columns, and the next four columns show undergraduate unduplicated headcount enrollments in the 2001–2002 and 2007–2008 academic years as

well as changes in enrollment headcounts and percentages. The final column on the right shows the percentage of 2007–2008 enrollments for each type of private and public 2-year college; both private and publicly controlled 2-year colleges and the subclassifications within both sectors are presented, so readers can appreciate the much fuller picture the Carnegie universe provides, and to better see how all public community colleges and different types of rural community colleges fit.

In the 2007–2008 academic year, there were 1,815 identifiable separately accredited institutions with designated Unit ID numbers reported through the U.S. Department of Education’s NCES, IPEDS. Of these, the majority were publicly controlled. Among the 737 reporting privately controlled 2-year colleges, for-profit institutions outnumber not-for-profit institutions by over five to one. Within the 1,078 public colleges, 575 are rural, 209 are suburban, and 179 are urban, and within the rural sector there are 129 Rural-Small, 304 Rural-Medium, and 142 Rural-Large community colleges. Thus, Table 10.1 shows that the majority of 2-year colleges in the country are publicly controlled and that, within the public sector, the majority are rural institutions.

Table 10.1 shows that in 2001–2002, over 10 million students were enrolled at the 1,085 privately and publicly controlled 2-year colleges in the United States, with the overwhelming majority at public institutions. By 2007–2008, total enrollments topped 11 million, an increase of 9%. The percentage growth at private Associate’s Colleges—65%—far outstripped the 6% growth at public Associate’s Colleges. Within the private sector alone, the for-profit colleges dominate. They represent nearly four of every five of both institutions and enrollments. Over the 6-year period, the 127 private not-for-profit colleges saw enrollments grow by nearly 35%, while the 610 private for-profit colleges grew by 73%.

Nonetheless, despite aggressive television marketing and media campaigns, enrollments at private 2-year colleges are dwarfed by public community college enrollments. In 2007–2008, just 8% of all students were enrolled at private institutions, compared to 92% at public 2-year colleges. *Public community colleges enroll more than 12 times the total enrollments of private institutions.*

Within the public sector alone, there are a total of 1,078 institutions of which 963 or 54% of the total are rural, suburban, or urban, and 115 or 6% are among the four institutional subclassifications of “Other Types” of 2-year colleges. Eleven 2-year colleges are classified as Special Use, including colleges that award associate’s degrees like Marion Military Institute, a public 2-year military school in Alabama that awards the Associate’s Degree. Fifty-four institutions are classified in the Carnegie universe as “2-Year Under 4-Year;” these include the stand-alone branch campuses such as those at Ohio University, Kent State University, and Pennsylvania State University. Eighteen are classified as “4-Year Primarily Associate’s,” and 28 are classified as “Baccalaureate/Associate’s,” including a number of Florida’s 2-year colleges that award baccalaureate degrees.¹⁰ In all, there are 115 of these “nongeo-

¹⁰ We note that Florida Chancellor Willis D. Holcombe in a presentation at the 2008 AACC Convention reported that baccalaureate degrees did not count for more than 3% of the total degrees for any of Florida’s 8 Baccalaureate/Associate’s colleges.

graphically classified” institutions. Together these four types of “Other” colleges enrolled 667,112 students in 2007–2008 or 6% of the total, and had increased in enrollment of 64,499 over that recorded for 2001–2002. This contrasts with the Rural/Suburban/Urban Subtotal of 963 institutions, which represent 54% of all institutions and enrolled 86% of all US private and public 2-year college students; these 963 institutions taken together saw their student enrollments increase by over half a million students or 5% in just 6 years. (Note: Due to space considerations, none of the tables below present data on privately controlled not-for-profit or for-profit colleges, and most do not present detailed data on the four “Other” types of public community colleges).

Geographically classifying community colleges not only identifies the rural differential, it also cleans out “noise” in the NCES data to provide a much more precise analysis of both urban- and suburban-serving community colleges. In 2007–2008, among the 1,078 identifiable publicly controlled 2-year colleges, the 575 rural community colleges enrolled roughly 3.5 million students; by percentage they comprise 32% of all 2-year colleges and 30% of all enrollments. The 209 suburban community colleges enrolled just over 3.1 million students; by percentage they comprise 12% of all 2-year colleges, and enroll 27% of all students. The 179 urban community colleges enrolled just over 3.3 million students; by percentage they comprise 10% of all colleges and 29% of all enrollments. Within the public sector alone, the 575 rural community colleges comprise 53% of all institutions and enroll 33% of all public community college students, compared to the 209 suburban and 179 urban community colleges, which comprise 19 and 17%, respectively, of all institutions, and 29 and 31% of all enrollments, respectively.

When the multicampus urban and suburban colleges are considered together, we find, not surprisingly, that the 147 urban multicampus and the 100 suburban multicampus community colleges comprise together only 14% of all institutions, yet enroll 40% of the total public and private 2-year college enrollments. As noted earlier in this chapter, institutions of these types are the dominant community colleges in the world of US higher education policy circles. *Nevertheless, rural community colleges are the fastest growing type of geographically classified public 2-year colleges.* In the six academic years from 2001–2002 to 2007–2008, the suburban multicampus community colleges saw an enrollment increase of 4%, and the urban multicampus community colleges increased by 4%, *while the rural community colleges grew by 8%, a total headcount increase of more than the other two types combined.*

Furthermore, Table 10.2 shows the significant role rural-serving community colleges play in extending access to first-time/full-time degree-seeking students. Among 731,220 first-time/full-time degree- or certificate-seeking community college students identified in the IPEDS Student Financial Aid Survey, 39% were enrolled at rural-serving institutions, compared to 28% at suburban and 25% at urban colleges. *Within the rural classification, the smaller the college, the more likely it is serving first-time/full-time degree-seeking students.* At rural, small colleges 18% of all students were first-time/full-time, the highest proportion in any college type. Extending access clearly is important to all rural community colleges.

Table 10.2 First-time/full-time degree-/certificate-seeking undergraduate students as a percentage of all undergraduate students by 2005 Carnegie basic classification in the IPEDS student financial aid cohort study, 2007–2008

2005 Carnegie basic classification	Colleges reporting by		Undergraduate students enrolled		First-time/full-time degree-/certificate-seeking students		Percentage of all students in the cohort at this type of college	
	Number (UnitIDs)	Percentage	Number (total)	Percentage	Number	Percentage	Number	Percentage
Rural small	129	12	129,787	2	23,394	18	3	
Rural medium	304	28	987,238	14	140,400	14	19	
Rural large	142	13	1,115,135	16	119,438	11	16	
<i>Rural total</i>	575	54	2,232,160	33	283,232	13	39	
Suburban single campus	109	10	894,922	13	100,967	11	14	
Suburban multicampus	99	9	1,121,979	16	101,572	9	14	
<i>Suburban total</i>	208	19	2,016,901	30	202,539	10	28	
Urban single campus	32	3	289,072	4	32,783	11	4	
Urban multicampus	146	14	1,826,909	27	148,475	8	20	
<i>Urban total</i>	178	17	2,115,981	31	181,258	9	25	
Special use	5	0	28,127	0	2,288	8	0	
2-Year under 4-year	54	5	133,831	2	21,169	16	3	
4-Year primarily associate's	18	2	152,095	2	19,153	13	3	
Baccalaureate/associate's	32	3	136,892	2	21,581	16	3	
<i>Other types total</i>	109	10	450,945	7	64,191	14	9	
<i>Grand total</i>	1,070	100	6,815,987	100	731,220	11	100	

Table 10.3 Credit hour production at public 2-year colleges in the United States, by 2005 Carnegie basic classification of public associate's colleges, 2007–2008

Carnegie classification	Number of...		Percentages of...	
	Colleges ^a	Total Credit hours	Colleges (%)	Credit hours (%)
Rural small	122	2,971,567	12	2
Rural medium	296	20,954,019	28	15
Rural large	139	22,780,433	13	17
<i>Rural total</i>	<i>557</i>	<i>46,706,019</i>	<i>53</i>	<i>34</i>
Suburban single campus	107	17,685,392	10	13
Suburban multicampus	96	21,262,784	9	15
<i>Suburban total</i>	<i>203</i>	<i>38,948,176</i>	<i>19</i>	<i>28</i>
Urban single campus	32	6,928,326	3	5
Urban multicampus	145	35,177,756	14	26
<i>Urban total</i>	<i>177</i>	<i>42,106,082</i>	<i>17</i>	<i>31</i>
Special use	11	741,079	1	1
2-Year under 4-year	53	2,739,921	5	2
4-Year primarily associate's	18	3,398,411	2	2
Baccalaureate/associate's	32	3,281,524	3	2
<i>Other types total</i>	<i>114</i>	<i>10,160,935</i>	<i>11</i>	<i>7</i>
<i>Grand total</i>	<i>1,051</i>	<i>137,921,212</i>	<i>100</i>	<i>100</i>

^a By number of identifiable UnitIDs reporting to NCES

Table 10.3 shows the total credit hours of instruction reported by type of community college. The 1,051 reporting colleges to NCES generated almost 138 million credit hours in 2007–2008, compared to the approximately 108 million credits generated in 2000–2001 (Hardy 2005). Of the credit hours generated in 2007–2008, 34% were generated at rural colleges, 28% at suburban, and 31% at urban colleges. Just over 10 million credits, or 7%, were generated at other types of public 2-year colleges. Thus, from the first three tables, we see that: (1) rural community colleges represent surprisingly large numbers—almost 3.5 million students, or 33% of total community college unduplicated headcount enrollments (Table 10.1); (2) they serve larger percentages of first-time, full-time degree-/certificate-seeking students (39%) than the percentage of undergraduate students enrolled (33%; Table 10.2); and (3) numerically, they generate more credits—about 47 million—than do their suburban and urban counterparts, at 39 and 42 million, respectively. Clearly, these are access trunk institutions for rural America.

Table 10.4 shows that among the 10.6 million unduplicated annual headcount student enrollments in 2007–2008, 56% were white, 13% were Black, 15% were Hispanic, 1% were American Indian or Alaskan Native, and 6% were Asians or Pacific Islanders. Minority students comprise 23% of enrollments at rural community colleges, compared to 38% at suburban and 46% at urban community colleges. Rural colleges serve substantially larger percentages of white students (71%) than their suburban (53%) and urban (45%) counterparts. Blacks comprise 11% of the enrollments at rural and suburban colleges, and 17% at urban colleges, while His-

Table 10.4 Unduplicated headcount undergraduate enrollments at public 2-year institutions in the United States by race and ethnicity, by 2005 Carnegie basic classification of associate's colleges 2007–2008

Institution type	Colleges ^a	Total	White	Black	Hispanic	Asian/ Pacific Islander	American Indian/ Alaskan	All minorities combined	Unknown	Non resident alien	Two or more races
<i>Enrollment by race and ethnicity by type of associate's colleges, expressed in numbers</i>											
Rural small	129	194,417	133,334	41,060	6,998	1,580	3,661	53,299	7,294	476	14
Rural medium	304	1,472,639	1,094,629	177,332	86,064	19,874	20,830	304,100	68,007	5,865	38
Rural large	142	1,810,393	1,226,145	168,746	206,759	50,684	23,712	449,901	120,690	13,655	2
Rural total	575	3,477,449	2,454,108	387,138	299,821	72,138	48,203	807,300	195,991	19,996	54
Suburban single campus	109	1,367,237	719,512	162,604	251,983	108,723	8,204	531,514	97,115	18,318	778
Suburban multi-campus	100	1,737,516	914,611	191,159	262,606	188,215	11,613	653,593	133,608	35,663	41
Suburban total	209	3,104,753	1,634,123	353,763	514,589	296,938	19,817	1,185,107	230,723	53,981	819
Urban single campus	32	444,121	255,502	90,279	47,265	14,915	3,618	156,077	28,257	4,099	186
Urban multi-campus	147	2,864,451	1,240,953	479,246	617,708	241,689	27,874	1,366,517	203,765	53,185	31
Urban total	179	3,308,572	1,496,455	569,525	664,973	256,604	31,492	1,522,594	232,022	57,284	217
Other types total	115	667,112	358,057	93,697	113,187	49,084	12,496	268,464	28,283	12,188	120
Grand total	1,078	10,557,886	5,942,743	1,404,123	1,592,570	674,764	112,008	3,783,465	687,019	143,449	1,210

Table 10.4 (continued)

Institution type	Colleges ^a	Total	White	Black	Hispanic	Asian/ Pacific Islander	American Indian/ Alaskan	All minorities combined	Unknown	Non resident alien	Two or more races
<i>Enrollment by race and ethnicity within types of associate's colleges, expressed in percentages</i>											
Rural small	129	100	69	21	4	1	2	27	4	0	0
Rural medium	304	100	74	12	6	1	1	21	5	0	0
Rural large	142	100	68	9	11	3	1	25	7		
Rural total	575	100	71	11	9	2	1	23	6	1	0
Suburban single campus	109	100	53	12	18	8	1	39	7	1	0
Suburban multi-campus	100	100	53	11	15	11	1	38	8	2	0
Suburban total	209	100	53	11	17	10	1	38	7	2	0
Urban single campus	32	100	58	20	11	3	1	35	6	1	0
Urban multi-campus	147	100	43	17	22	8	1	48	7	2	0
Urban total	179	100	45	17	20	8	1	46	7	2	0
Other types total	115	100	54	14	17	7	2	40	4	2	0
Grand total	1,078	100	56	13	15	6	1	36	7	1	0

panics comprise 9, 17, and 20% at rural, suburban, and urban colleges, respectively. Asians are more highly represented at suburban colleges than at urban (8%) and rural (2%) colleges.

Table 10.5 shows the unduplicated headcount enrollments by race and ethnicity across community college types. Rural colleges serve a plurality of white students (41%), with urban and suburban colleges serving 25 and 27%, respectively. The enrollment of American Indian and Alaskan Native students somewhat follows this distribution with 43% at rural colleges, 18% at suburban, and 28% at urban colleges. Urban colleges enrolled 41% of all Black and 42% of all Hispanic students, compared to suburban colleges that enrolled 25% of Black and 32% of Hispanic students, respectively. In contrast, rural colleges enrolled 28% of all Black and 19% of all Hispanic students. Suburban colleges led in enrolling Asian/Pacific Islander students (44%), followed by urban (38%) and rural colleges (11%). Thus, urban colleges served 40% of all minority students, compared to 31% at suburban and 21% at rural institutions.

Enrollment by Full- and Part-Time Status

Table 10.6 shows the very different full- and part-time student enrollment patterns across types of community colleges. Over the five editions of their touchstone text, *The American Community College*, Arthur M. Cohen and Florence B. Brawer documented the rise of part-time enrollments in US community colleges, citing NCES data to show part-time enrollments rose from 49% in 1970 to 66% by 1990 (Cohen and Brawer 2003, p. 47). We find that among the nearly 6.8 million full-time and part-time students enrolled in the Fall of 2007, over 2.6 million or 39% were enrolled full-time, and about 4.1 million or 61% were enrolled part-time. By type of college, however, major differences are observed: The ratio of full- to part-time students only approaches 50% at the nation's 130 rural-small and 305 rural-medium community colleges (45%). This contrasts sharply with part-time enrollments at suburban and urban colleges. Rural colleges serve much higher percentages of full-time students, a point we have noted in our past works (Hardy and Katsinas 2006, 2007). Federal and state policymakers interested in "moving the needle" to raise the nation's college degree completion rates would be wise to focus resources on the nation's rural community colleges, given: (a) their reach to nearly one million full-time students, (b) the fact that numerically, more students enroll at these institutions than do at urban and suburban community colleges, and (c) the reality that rural community colleges since 2000 have grown faster than their urban and suburban counterparts.

The right side of Table 10.6 shows how full- and part-time enrollments are distributed by gender. Among the nearly 6.8 million students enrolled in the Fall 2007 term, almost 2.9 million or 42% were male, and 3.9 million or 57% were female. While the percentage of female enrollment is similar at all types of community colleges—between 56 and 59%—regardless of gender, rural colleges enroll more

Table 10.5 Unduplicated headcount undergraduate enrollments at public 2-year institutions in the United States by race and ethnicity, across 2005 Carnegie basic classification type of associate's college, 2007–2008

Carnegie basic classification of associate's colleges	Colleges (%) ^a	Total (%)	White (%)	Black (%)	Hispanic (%)	Asian/Pacific Islander (%)	American Indian/Alaskan (%)	All minorities combined (%)	Race unknown (%)	Non resident alien (%)	Two or more races (%)
Rural small	12	2	2	3	0	0	3	1	1	0	1
Rural medium	28	14	18	13	5	3	19	8	10	4	3
Rural large	13	17	21	12	13	8	21	12	18	10	0
<i>Rural total</i>	53	33	41	28	19	11	43	21	29	14	4
Suburban single campus	10	13	12	12	16	16	7	14	14	13	64
Suburban multicampus	9	16	15	14	16	28	10	17	19	25	3
<i>Suburban total</i>	19	29	27	25	32	44	18	31	34	38	68
Urban single campus	3	4	4	6	3	2	3	4	4	3	15
Urban multicampus	14	27	21	34	39	36	25	36	30	37	3
<i>Urban total</i>	17	31	25	41	42	38	28	40	34	40	18
Special use	1	1	0	1	1	0	1	1	0	0	10
2-Year under 4-year	5	2	2	1	1	4	6	2	1	2	0
4-Year primarily associate's	2	2	2	2	5	1	2	3	2	3	0
Baccalaureate/associate's	3	2	2	2	1	1	3	1	1	3	0
<i>Other types total</i>	11	6	6	7	7	7	11	7	4	8	10
<i>Grand total</i>	100	100	100	100	100	100	100	100	100	100	100

^a By number of identifiable UnitIDs reporting to NCES

Table 10.6 Undergraduate enrollment at public 2-year institutions in the United States by enrollment status (full- and part-time, and by gender), and by 2005 Carnegie basic classification type of public associate's colleges, expressed in numbers and percentages, Fall 2007

Carnegie basic classification and number of colleges ^a	Full-time/part-time by gender									
	Full-time/part-time				Full-time/part-time by gender					
	Grand total	Full-time total	Part-time total	Grand total	Total men	Full-time men	Part-time men	Total women	Full-time women	Part-time women
<i>Full- and part-time enrollment by type of college and by gender; expressed in numbers</i>										
Rural small (130)	128,307	64,364	63,943	128,307	52,240	28,490	23,750	76,067	35,874	40,193
Rural medium (305)	978,841	442,155	536,686	978,841	389,729	187,457	202,272	589,112	254,698	334,414
Rural large (142)	1,114,229	448,939	665,290	1,114,229	467,501	203,161	264,340	646,728	245,778	400,950
<i>Rural total (577)</i>	<i>2,221,377</i>	<i>955,458</i>	<i>1,265,919</i>	<i>2,221,377</i>	<i>909,470</i>	<i>419,108</i>	<i>490,362</i>	<i>1,311,907</i>	<i>536,350</i>	<i>775,557</i>
Suburban single campus (109)	888,519	346,603	541,916	888,519	385,620	162,733	222,887	502,899	183,870	319,029
Suburban multi-campus (100)	1,097,354	390,371	706,983	1,097,354	484,987	185,586	299,401	612,367	204,785	407,582
<i>Suburban total (209)</i>	<i>1,985,873</i>	<i>736,974</i>	<i>1,248,899</i>	<i>1,985,873</i>	<i>870,607</i>	<i>348,319</i>	<i>522,288</i>	<i>1,115,266</i>	<i>388,655</i>	<i>726,611</i>
Urban single campus (32)	289,072	119,854	169,218	289,072	119,388	53,942	65,446	169,684	65,912	103,772
Urban multicampus (148)	1,808,247	614,456	1,193,791	1,808,247	760,296	272,198	488,098	1,047,951	342,258	705,693
<i>Urban total (180)</i>	<i>2,097,319</i>	<i>734,310</i>	<i>1,363,009</i>	<i>2,097,319</i>	<i>879,684</i>	<i>326,140</i>	<i>553,544</i>	<i>1,217,635</i>	<i>408,170</i>	<i>809,465</i>
<i>Other types total (115)</i>	<i>451,013</i>	<i>210,595</i>	<i>240,418</i>	<i>451,013</i>	<i>193,817</i>	<i>94,254</i>	<i>99,563</i>	<i>257,196</i>	<i>116,341</i>	<i>140,855</i>
<i>Grand total (1,081)</i>	<i>6,755,582</i>	<i>2,637,337</i>	<i>4,118,245</i>	<i>6,755,582</i>	<i>2,853,578</i>	<i>1,187,821</i>	<i>1,665,757</i>	<i>3,902,004</i>	<i>1,449,516</i>	<i>2,452,488</i>

Table 10.6 (continued)

Carnegie basic classification and number of colleges ^a	Full-time/part-time by gender											
	Full-time/part-time, total	Grand total	Full-time total	Part-time total	Grand total	Total men	Full-time men	Part-time men	Total women	Full-time women	Part-time women	
<i>Full- and part-time enrollment by gender within types of associate's colleges, expressed in percentages</i>												
Rural small (130)	100	100	50	50	100	41	22	19	59	28	31	
Rural medium (305)	100	100	45	55	100	40	19	21	60	26	34	
Rural large (142)	100	100	40	60	100	42	18	24	58	22	36	
Rural total (577)	100	100	43	57	100	41	19	22	59	24	35	
Suburban single campus (109)	100	100	39	61	100	43	18	25	57	21	36	
Suburban multi-campus (100)	100	100	36	64	100	44	17	27	56	19	37	
Suburban total (209)	100	100	37	63	100	44	18	26	56	20	37	
Urban single campus (32)	100	100	41	59	100	41	19	23	59	23	36	
Urban multicampus (148)	100	100	34	66	100	42	15	27	58	19	39	
Urban total (180)	100	100	35	65	100	42	16	26	58	19	39	
Other types total (115)	100	100	47	53	100	43	21	22	57	26	31	
Grand total (1,081)	100	100	39	61	100	42	18	25	58	21	36	

^a By number of identifiable UnitIDs reporting to NCES

full-time students than do their urban and suburban counterparts. Intercollegiate athletics (Castañeda et al. 2006) and on-campus housing (Moeck et al. 2006) have been identified as key factors to increase male student enrollments in higher education generally and rural community colleges specifically.

Student Financial Aid and Rural Community Colleges

Table 10.7 shows student aid expenditures at US community colleges in 2007–2008 by type of aid and by Carnegie type of Associate’s College (Note: In the interests of space, totals and percentages for the four “Other” subcategories in the Carnegie universe are presented together). A total of \$ 7.3 billion in student aid and scholarships was provided to help academically promising, economically disadvantaged students attend America’s publicly controlled 2-year colleges in 2007–2008. Of this, about \$ 2.9 billion or 39% was spent at rural, about \$ 1.5 billion or 21% was spent at suburban, and about \$ 2.3 billion or 32% was spent at urban colleges.

Just under two-thirds of the \$ 7.3 billion of student aid spent at community colleges in 2007–2008 came in the form of Pell Grant aid, overwhelmingly the dominant type of student financial aid expenditure at all types of community colleges, be they rural, suburban, or urban. By far, the largest dollar volume of Pell Grants—\$ 1.84 billion—went to students attending rural community colleges; by comparison, the suburban and urban college Pell Grant expenditure totals were just under \$ 1 billion and \$ 1.55 billion, respectively. More state student financial aid goes to students at suburban colleges than at urban or rural community colleges, widening spread that suggests an information gap may exist for rural and urban students with respect to applying for student aid.¹¹ Of the \$ 855 million in institutional aid expenditure, more was spent by rural community colleges than their suburban and urban counterparts *combined*: \$ 424 million or 50%—compared to \$ 133 million or 16% at suburban and \$ 206 million or 24% at urban colleges, demonstrating the strong commitment among rural colleges to help their students succeed, reconfirming their commitment to place.

Most important, *rural community colleges serve greater percentages of aided students*. Rural community colleges represent 33% of all community college students, yet serve larger percentages of students on Pell Grants—39% (see Table 10.1, far right column). These percentages, when combined with the large numbers and percentages of first-time, full-time degree- and/or certificate-seeking students that rural community colleges serve, reflect the access these colleges provide to poor, rural students, especially in regions of high and persistent poverty. We note that the original purpose of the largest private foundation support program for rural commu-

¹¹ These three contract and grant categories are combined in both tables. The revenue categories “Educational Activities,” “Independent Operations,” and “Federal Operations” were too small to be rounded up to 1%, and are not included. Auxiliary enterprises made up 4% of total revenues; and revenue from other sources accounted for 11%.

Table 10.7 Student aid and scholarship expenditures at public 2-year colleges in the United States, by 2005 Carnegie classification, 2007–2008

Carnegie classification	Total	Pell grants	Aid	State aid	Local aid	Institutional aid
Rural small (105)	213,003,834	139,865,919	10,332,751	26,152,240	1,836,610	34,816,314
Rural medium (302)	1,369,099,237	880,757,062	72,169,559	201,866,775	5,379,564	208,926,277
Rural large (142)	1,310,773,793	821,715,350	91,742,833	209,718,717	7,135,242	180,461,651
<i>Rural total (549)</i>	<i>2,892,876,864</i>	<i>1,842,338,331</i>	<i>174,245,143</i>	<i>437,737,732</i>	<i>14,351,416</i>	<i>424,204,242</i>
Suburban single campus (109)	761,980,653	474,239,635	56,480,519	163,116,384	3,891,001	64,253,114
Suburban multicampus (95)	759,872,540	486,831,617	55,182,951	140,242,739	9,110,597	68,504,636
<i>Suburban total (204)</i>	<i>1,521,853,193</i>	<i>961,071,252</i>	<i>111,663,470</i>	<i>303,359,123</i>	<i>13,001,598</i>	<i>132,757,750</i>
Urban single campus (32)	387,784,424	272,814,849	14,335,092	71,325,068	702,804	28,606,611
Urban multicampus (131)	1,944,471,716	1,282,371,229	135,257,209	324,794,795	24,795,868	177,252,615
<i>Urban total (163)</i>	<i>2,332,256,140</i>	<i>1,555,186,078</i>	<i>149,592,301</i>	<i>396,119,863</i>	<i>25,498,672</i>	<i>205,859,226</i>
<i>Other types total (96)</i>	<i>617,072,817</i>	<i>369,731,824</i>	<i>28,210,657</i>	<i>125,570,194</i>	<i>1,203,176</i>	<i>92,356,966</i>
<i>Grand total (1,012)</i>	<i>\$ 7,364,059,014</i>	<i>\$ 4,728,327,485</i>	<i>\$ 463,711,571</i>	<i>\$ 1,262,786,912</i>	<i>\$ 54,054,862</i>	<i>\$ 855,178,184</i>
<i>Student aid expenditures within types of community colleges</i>						
Rural small (%)	100	66	5	12	1	16
Rural medium (%)	100	64	5	15	0	15
Rural large (%)	100	63	7	16	1	14
<i>Rural total (%)</i>	<i>100</i>	<i>64</i>	<i>6</i>	<i>15</i>	<i>0</i>	<i>15</i>
Suburban single campus (%)	100	62	7	21	1	8
Suburban multicampus (%)	100	64	7	18	1	9
<i>Suburban total (%)</i>	<i>100</i>	<i>63</i>	<i>7</i>	<i>20</i>	<i>1</i>	<i>9</i>
Urban single campus (%)	100	70	4	18	0	7
Urban multicampus (%)	100	66	7	17	1	9
<i>Urban total (%)</i>	<i>100</i>	<i>67</i>	<i>6</i>	<i>17</i>	<i>1</i>	<i>9</i>
<i>Other types total (%)</i>	<i>100</i>	<i>60</i>	<i>5</i>	<i>20</i>	<i>0</i>	<i>15</i>
<i>Grand total (%)</i>	<i>100</i>	<i>64</i>	<i>6</i>	<i>17</i>	<i>1</i>	<i>12</i>

Table 10.7 (continued)

Carnegie classification	Total	Pell grants	Aid	State aid	Local aid	Institutional aid
<i>Student aid expenditures across types of community colleges</i>						
Rural small (%)	3	3	2	2	3	4
Rural medium (%)	19	19	16	16	10	24
Rural large (%)	18	17	20	17	13	21
<i>Rural total (%)</i>	39	39	38	35	27	50
Suburban single campus (%)	10	10	12	13	7	8
Suburban multicampus (%)	10	10	12	11	17	8
<i>Suburban total (%)</i>	21	20	24	24	24	16
Urban single campus (%)	5	6	3	6	1	3
Urban multicampus (%)	26	27	29	26	46	21
<i>Urban total (%)</i>	32	33	32	31	47	24
<i>Other types total (%)</i>	8	8	6	10	2	11
<i>Grand total (%)</i>	100	100	100	100	100	100

nity colleges over the past three decades, the Ford Foundation's Rural Community College Initiative (1994–2002), targeted rural community and tribal colleges that serve economically distressed counties in Appalachia, the Mississippi Delta, the Four Corners and Texas border region of the southwest, and selected areas of the High Plains (Kenamer and Katsinas 2011). We also note that like rural community colleges, urban colleges also serve larger percentages of students on Pell Grants (33%) than their percentage of total community college enrollments (31%).

We believe the percentages of students on Pell Grants, which clearly shows financial need and economic disadvantage, should be used by policymakers and government programs to establish a funding preference in a manner similar to the way that the percentage of children on free and reduced school lunches is used in the elementary and secondary education sector. Given the high percentages of students on Pell Grants, the lack of any significant sustained targeted federal and private foundation investment in the nation's rural community colleges is troubling (Hardy and Katsinas 2008; Kenamer and Katsinas 2011). The larger dollar volume of Pell Grants awarded to rural students also indicates the need for financial aid to assist students with services such as transportation and child care, both of which are more difficult to access in rural America.

Table 10.8 shows that the numbers of first-time, full-time students enrolled in rural community colleges is much higher than at suburban or urban colleges. *Significantly, nearly as many rural community college students in the cohort study received some type of federal student aid and received Pell Grants specifically as suburban and urban community college students combined.* More rural-serving college students receive state and local grant aid, and rural students received two-thirds of all institutional aid awards as well.

Despite receiving more aid at all levels, far more rural students incur student loan debt: Of the 151,380 students incurring loans in the entire cohort, roughly half (48%) were enrolled at rural community colleges, compared to 19% at suburban, 17% at urban, and 16% at the other 2-year colleges (especially 2-year branch campuses under 4-year universities, where students typically pay the higher main campus 4-year tuition price). We note the number of loans incurred is up sharply from the analysis we previously reported using the 2000–2001 IPEDS Student Financial Aid Cohort Study. In that year, 48,585 students at rural community colleges reported incurring loans, compared to 15,966 and 12,510 at suburban and urban community colleges, respectively (Hardy and Katsinas 2007). *Thus, loans incurred have increased for all types of community colleges and, again, more rural community college students incurred more debt.*

The disproportionate numbers and percentages of needy low-income students served at rural community colleges explodes the “urban myth,” that urban and suburban community colleges enroll more needy students than do rural community colleges. Among first-time, full-time, degree- or certificate-seeking students enrolled at rural community colleges, 73% received some type of financial aid, compared to 49% at suburban and 61% at urban community colleges. When the institutional subtypes are reviewed, however, an even more striking picture emerges. It can be assumed that publicly subsidized mass transportation is most likely to exist in

Table 10.8 Financial aid awards to first-time/full-time degree-/certificate-seeking undergraduate students by 2005 Carnegie classification in the IPEDS student financial aid cohort study, 2007–2008

Carnegie basic class and colleges reporting to NCES ^a	Total, enrolled students in the financial aid		Percentage of enrolled students in the financial aid cohort who incurred						Percentage who incurred loans ^b
	Number	Percentage	Any financial aid	Federal, state/local or institutional aid	Federal aid	Pell grants	State/local aid	Institutional aid	
Rural small (129)	23,394	100	83	76	55	53	32	20	28
Rural medium (304)	140,400	100	76	68	46	44	34	19	28
Rural large (142)	119,438	100	66	57	40	38	32	13	23
<i>Rural total (575)</i>	<i>283,232</i>	<i>100</i>	<i>73</i>	<i>64</i>	<i>44</i>	<i>42</i>	<i>33</i>	<i>17</i>	<i>26</i>
Suburban single campus (109)	100,967	100	52	45	31	30	34	6	16
Suburban multicampus (99)	101,572	100	46	40	28	27	27	6	12
<i>Suburban total (208)</i>	<i>202,539</i>	<i>100</i>	<i>49</i>	<i>43</i>	<i>30</i>	<i>28</i>	<i>31</i>	<i>6</i>	<i>14</i>
Urban single campus (32)	32,783	100	69	62	44	43	36	6	25
Urban multicampus (146)	148,475	100	59	55	41	40	38	5	12
<i>Urban total (178)</i>	<i>181,258</i>	<i>100</i>	<i>61</i>	<i>56</i>	<i>41</i>	<i>40</i>	<i>38</i>	<i>6</i>	<i>14</i>
Special use (5)	2,288	100	68	65	35	34	51	14	29
2-Year under 4-year (54)	21,169	100	71	56	41	40	31	18	36
4-Year primarily associate's (18)	19,153	100	72	63	42	41	43	22	35
Baccalaureate/associate's (32)	21,581	100	79	69	44	43	46	19	43
<i>Other types total (109)</i>	<i>64,191</i>	<i>100</i>	<i>74</i>	<i>63</i>	<i>42</i>	<i>41</i>	<i>40</i>	<i>19</i>	<i>38</i>
<i>Grand total (1,070)</i>	<i>731,220</i>	<i>100</i>	<i>63</i>	<i>56</i>	<i>39</i>	<i>38</i>	<i>34</i>	<i>11</i>	<i>21</i>

^a By number of identifiable UnitIDs reporting to NCES

^b NCES reports these data as “loans awarded”; since loans must be repaid we record them here “incurred” and not awarded

the nation's urban areas, and if it does exist in rural America, it is most likely to be found in larger towns and cities. For several decades after it was first created, however, the Pell Grant program's eligibility guidelines assumed students lived at home or on campus, and could easily access publicly subsidized mass transportation. Even today, students living in areas served by the nation's 129 rural-small and 304 rural-medium community colleges do not have access to publicly subsidized mass transportation. As Robert Pedersen has said, for them access to a reliable used car is critical to college attendance, persistence, and degree completion, (Katsinas et al. 2003). The percentage of students receiving Pell Grants and incurring loans is higher at rural-small and rural-medium community colleges than at multicampus suburban and urban colleges. Rural community colleges serve large numbers of students who face personal struggles just to access higher education, yet value it enough to choose to borrow for it.

Table 10.8 also updates for 2007–2008 our 2000–2001 analysis by Carnegie type (Hardy and Katsinas 2008). When we compare, we find higher percentages of students at all types of urban, suburban, and rural community colleges receiving *any* financial aid—56% in 2000–2001 and 61% in 2007–2008—and higher loan indebtedness for students at all community college types. In 2000–2001, 20% of rural, 11% of suburban, and 10% of urban community colleges in the cohort study incurred loan debt (Hardy and Katsinas 2008, p. 48); in 2007–2008 as Table 10.8 shows, those percentages were 26% rural, 14% suburban, and 14% urban, respectively. We therefore extend our argument that students in rural America value higher education, and are willing to assume significant loan debt to acquire it (Hardy and Katsinas 2006, 2007, 2008; Katsinas et al. 2003; Roessler et al. 2006) to suburban and urban community college students as well.

Table 10.9 shows that \$ 7.2 billion of financial aid was distributed in the Fall 2007 term, and that a little over \$ 3 billion was awarded to the 2.2 million students at the 575 reporting rural community colleges, \$ 1.46 billion to the 2 million students attending suburban community colleges, and \$ 1.9 billion to the 2.1 million students attending urban community colleges. The mean dollars of financial aid per campus was about \$ 11 million for multicampus urban community colleges, compared to about \$ 5.3 million for rural community colleges, and the range within the rural classifications is significant, with a \$ 1.8 mean across rural-small colleges, and \$ 5.2 million at rural-medium colleges. Interestingly, while the average number of Pell recipients is 1,549 across all types of community colleges, the range is wide by college type, ranging from at rural-small colleges to 3,256 at urban single campus colleges. The much larger mean enrollments per college, mean aid in dollars per college, mean numbers of Pell Grant recipients per college, and the much larger mean total aid awarded by multicampus urban and suburban community colleges masks a larger picture: *More aid dollars are awarded to larger numbers of needy students at the nation's rural community colleges than at any other institutional type.* This is confirmed by the fact that Pell Grant recipients as a percentage of total enrollments is higher across all rural community colleges at 29% than at their urban and suburban counterparts, at 18 and 24%, respectively. As our 2008 study of student aid and rural community colleges noted:

Table 10.9 Total enrollment, total financial aid, and total Pell grant recipients at public 2-year colleges in the United States, by 2005 Carnegie basic classification of public associate's college, 2007–2008

Carnegie classification	Colleges ^a	Total enrollment ^b	Total aid (in dollars)	Number of Pell grant recipients ^b	Mean enrollment per college ^a	Mean aid to students per college (in dollars) ^a	Mean number of Pell recipients per college ^a	Pell recipients as a percentage of total enrollment ^b (%)
Rural small	129	129,787	243,461,182	51,386	1,006	1,887,296	398	40
Rural medium	304	987,238	1,591,970,250	314,698	3,247	5,236,744	1,035	32
Rural large	142	1,115,135	1,205,607,931	291,112	7,853	8,490,197	2,050	26
<i>Rural total</i>	575	2,232,160	3,041,039,363	657,196	3,882	5,288,764	1,143	29
Suburban single campus	109	894,922	758,360,939	180,089	8,210	6,957,440	1,652	20
Suburban multicampus	99	1,121,979	699,739,208	176,296	11,333	7,068,073	1,781	16
<i>Suburban total</i>	208	2,016,901	1,458,100,147	356,385	9,697	7,010,097	1,713	18
Urban single campus	32	289,072	453,229,143	104,183	9,034	14,163,411	3,256	36
Urban multicampus	146	1,826,909	1,525,136,102	409,418	12,513	10,446,138	2,804	22
<i>Urban total</i>	178	2,115,981	1,978,365,245	513,601	11,888	11,114,411	2,885	24
Special use	6	28,491	20,822,381	5,688	4,749	3,470,397	948	20
2-Year under 4-year	54	133,831	195,257,124	37,134	2,478	3,615,873	688	28
4-Year primarily associate's	18	152,095	233,933,958	39,621	8,450	12,996,331	2,201	26
Baccalaureate/associate's	32	136,892	281,150,818	48,838	4,278	8,785,963	1,526	36
<i>Other types total</i>	110	451,309	731,164,281	131,281	4,103	6,646,948	1,193	29
<i>Grand total</i>	1,071	6,816,351	7,208,669,036	1,658,463	6,364	6,730,783	1,549	24

^a By number of identifiable UnitID reporting to NCES

^b NCES reports this as "undergraduate Pell recipients," it is assured here all Pell recipients at community colleges are undergraduate students

Our analysis shows significant and often striking differences by type of community colleges—differences that are not always well understood by policy makers. In the rhetoric related to student aid within the community college sector, financial aid (particularly the financial assistance provided through the federal Pell and FSEOG programs) is often cast as welfare for underprivileged inner-city students. The data presented here clearly show that this is not the case; policy makers should note that reductions or limitations in Pell Grants, FSEOG, state-provided, and locally funded student financial aid programs can impair the ability of lower-income students in rural America to participate in postsecondary education as well. (Hardy and Katsinas 2008, p. 51)

The Strikingly Different Revenue Patterns at Rural Community Colleges

Even some community college experts may not fully appreciate the strikingly different revenue patterns that rural community colleges have, compared to their urban and suburban counterparts. A February 7, 2011 article entitled “Budget cuts galore” about cuts rural community colleges face, quotes Katherine Boswell, former director of community college policy for the Academy for Education Development, as agreeing rural colleges have “fewer options” when seeking funding. “Still, she questioned whether they are ultimately hurting worse than others in the community college sector. [Boswell] argued that there is simply a larger shift in higher education funding policy, noting that:”

Increasingly, in the rhetoric of some of the politicians out there, I hear them say that higher education is a private good rather than a public good and that individuals should have to pay more for it instead of the state but, at the same time, everyone from the White House to the statehouse is saying community colleges are vital to our economic recovery and success. They’re always getting the short end of the stick. (Moltz 2011)

Tables 10.10 and 10.11 show the very different revenue patterns found at rural community colleges. Over \$ 53.2 billion in revenues from all sources was reported in 2007–2008, of which tuition and fees accounted for 16%; state appropriations 31%; local appropriations totaled 17%; federal, state, and local/private contracts and grants totaled 21%.¹² Auxiliary enterprises made up 4% of total revenues; and revenue from other sources accounted for 11%. Table 10.10 shows wide variations across community college types, with suburban colleges receiving a higher percentage of their total revenues from tuition and fees (18%) than urban and rural colleges (both at 15%). Rural community colleges were more dependent upon state appropriations (33% of total revenues) than urban (30%) and suburban community colleges (28%). Local appropriations as a percentage of total revenues were much

¹² The authors are the principal investigators of 1 of the 10 \$ 1 million demonstration programs funded by the Jack Kent Cooke Foundation to assist academically talented, low-income students in access and succeed in college, and of the 10 poverty areas. Our experience with this program strongly suggests the presence of a serious information gap about not only federal student aid, but state and privately funded scholarship aid as well for rural community college students, a reality we believe likely exists in low-income urban areas as well.

Table 10.10 Financing at 2-year colleges in the United States by revenue source, 2007–2008, by 2005 Carnegie basic type

Carnegie classification and number of colleges reporting to NCES	Total revenues	Tuition and fees	State appropriations	Local appropriations	Federal, state, local/private contracts/grants	Auxiliary enterprises	Revenues from other sources
Rural small (105)	1,426,856,264	167,005,365	577,607,679	111,167,555	321,333,936	70,162,719	177,530,474
Rural medium (302)	8,541,408,831	1,389,644,466	2,978,799,465	864,455,918	1,958,799,569	436,140,449	899,033,589
Rural large (144)	9,184,201,966	1,372,215,752	2,709,372,850	1,566,208,295	2,099,795,757	398,390,961	1,025,094,698
<i>Rural total (551)</i>	<i>19,152,467,061</i>	<i>2,928,865,583</i>	<i>6,265,779,994</i>	<i>2,541,831,768</i>	<i>4,379,929,262</i>	<i>904,694,129</i>	<i>2,101,658,761</i>
Suburban single campus (109)	6,650,866,196	1,263,841,342	2,030,800,148	1,247,308,777	1,156,895,419	251,641,110	685,879,199
Suburban multicampus (103)	8,074,198,904	1,353,740,699	2,084,317,112	2,071,992,163	1,304,297,749	315,634,548	939,838,717
<i>Suburban total (212)</i>	<i>14,725,065,100</i>	<i>2,617,582,041</i>	<i>4,115,117,260</i>	<i>3,319,300,940</i>	<i>2,461,193,168</i>	<i>567,275,658</i>	<i>1,625,717,916</i>
Urban single campus (32)	2,296,923,230	479,253,015	691,098,707	286,034,638	532,809,782	92,354,344	213,751,067
Urban multicampus (142)	13,081,774,766	1,900,631,438	3,988,794,614	2,781,635,959	2,753,845,607	430,008,280	1,221,040,173
<i>Urban total (174)</i>	<i>15,378,697,996</i>	<i>2,379,884,453</i>	<i>4,679,893,321</i>	<i>3,067,670,597</i>	<i>3,286,655,389</i>	<i>522,362,624</i>	<i>1,434,791,240</i>
<i>Other types total (96)</i>	<i>3,955,936,221</i>	<i>820,676,084</i>	<i>1,444,790,350</i>	<i>115,498,154</i>	<i>850,719,110</i>	<i>223,709,663</i>	<i>494,725,499</i>
<i>Grand total (1,033)</i>	<i>53,212,166,378</i>	<i>8,747,008,161</i>	<i>16,505,580,925</i>	<i>9,044,301,459</i>	<i>10,978,496,929</i>	<i>2,218,042,074</i>	<i>5,656,893,416</i>
Rural small (%)	100	12	40	8	23	5	12
Rural medium (%)	100	16	35	10	23	5	11
Rural large (%)	100	15	30	17	23	4	11
<i>Rural total (%)</i>	<i>100</i>	<i>15</i>	<i>33</i>	<i>13</i>	<i>23</i>	<i>5</i>	<i>11</i>
Suburban single campus (%)	100	19	31	19	17	4	10
Suburban multicampus (%)	100	17	26	26	16	4	12
<i>Suburban total (%)</i>	<i>100</i>	<i>18</i>	<i>28</i>	<i>23</i>	<i>17</i>	<i>4</i>	<i>11</i>
Urban single campus (%)	100	21	30	12	23	4	9
Urban multicampus (%)	100	15	30	20	21	3	9
<i>Urban total (%)</i>	<i>100</i>	<i>15</i>	<i>30</i>	<i>20</i>	<i>21</i>	<i>3</i>	<i>9</i>
<i>Other types total (%)</i>	<i>100</i>	<i>21</i>	<i>37</i>	<i>3</i>	<i>22</i>	<i>6</i>	<i>13</i>
<i>Grand total (%)</i>	<i>100</i>	<i>16</i>	<i>31</i>	<i>17</i>	<i>21</i>	<i>4</i>	<i>11</i>

Federal contracts/grants, state contracts/grants, and local/private contracts/grants were combined

The category “Independent operations,” includes \$ 751,000 for one rural medium college, and none for other rural, suburban, or urban colleges. In independent operations in “2-year under 4-year,” \$ 4,497,021, and in baccalaureate/associate’s colleges \$ 552,860 were reported

Only colleges reporting financial data to IPEDS were included

Table 10.11 Percentage of total revenues by revenue type across all type of 2005 Carnegie basic classification of public associate's colleges in the United States, 2007–2008

Type of revenue	Total, all revenues (%)	Tuition and fees (%)	State appropriations (%)	Local appropriations (%)	Federal state, local/private contracts/grants (%)	Educational activities (%)	Independent operations (%)	Federal appropriations (%)	Auxiliary enterprises (%)	Revenues from other sources (%)
Rural small	3	2	3	1	2	5	0	3	3	3
Rural medium	16	16	18	10	16	26	13	24	20	16
Rural large	17	16	16	17	19	9	0	28	18	18
<i>Rural total</i>	36	33	38	28	38	40	13	56	41	37
Suburban single campus	12	14	12	14	10	3	0	34	11	12
Suburban multicampus	15	15	13	23	14	2	0	10	14	17
<i>Suburban total</i>	28	30	25	37	25	5	0	43	26	29
Urban single campus	4	5	4	3	5	11	0	0	4	4
Urban multicampus	25	22	24	31	25	39	0	1	19	22
<i>Urban total</i>	29	27	28	34	30	50	0	1	24	25
<i>Other types total</i>	7	9	9	1	8	5	87	0	10	9
<i>Total</i>	100	100	100	100	100	100	100	100	100	100

Federal contracts/grants, state contracts/grants, and local/private contracts/grants have been combined into a single category. The category, "independent operations," includes just one expenditure of \$ 751,000 for one rural medium college, and none for any other rural, suburban, or urban associate's college. In the "other" sub classification of "2-year under 4-year," \$ 4,497,021 in independent operations was reported; under baccalaureate/associate's colleges, \$ 552,860 was reported. For this chart, the percentages were based upon reporting units from Table 10.10. Only colleges reporting financial data to IPEDS were included.

higher at 23% were higher at suburban community colleges than at urban colleges (20%), and strikingly higher than at rural colleges at 13%. Of particular note is that local appropriations at Rural-Small and Rural-Medium colleges in 2007–2008 were even lower, at 8 and 10%, respectively. The very low local appropriations and lower tuition means rural community colleges are more dependent upon state tax appropriations.

Table 10.11 shows that in terms of comparing the percentage distribution of enrolled students to local appropriations revenue, a misdistribution can be observed, with 28% of all local appropriations going to rural, 37% to suburban, and 34% to urban community colleges. Put differently, multicampus urban and suburban colleges enroll 27 and 16% of all students, respectively, however, receive 31 and 23% of all local appropriations. *In sharp contrast, Rural-Small colleges receive just 1%, while Rural-Medium colleges receive just 10% of their total revenues from local sources.* We note here that Grapevine, which has tracked state tax appropriations for public higher education operating budgets annually since 1960, reports that 25 states local tax appropriations exceed 10% of total revenue, and 25% states are below 10%, many of which approach zero (Grapevine 2009). It is therefore not uncommon to find community colleges in urban and suburban areas where local tax appropriations account for between 40 and 60% of total revenues, a reality that these superaggregated national averages mask. Community colleges in states with local taxes that serve low property tax wealth areas are particularly hurting financially (Katsinas 2005; Katsinas and Friedel 2010; Katsinas et al. 2003; Roessler et al. 2006). We also note that many of the community college systems in the 25 states were designed to flatly prohibit local funding, on the basis of it being inequitable to fund the 13th and 14th years of education on the basis of property taxes, which advantage high-wealth areas over lower ones. The much higher dependency upon state revenues and the often nonexistent local revenues is why the discussion of the state enabling laws presented in this chapter is so essential to understanding how the current situation evolved...to the point where, as Table 10.11 shows, the 129 Rural-Small colleges receive just 1% of their total revenues from local appropriations, and the 304 Rural-Medium just 10%.

Katsinas and Friedel (2010) found that states with local tax appropriations have made deeper cuts in their community colleges in both the FY2003 recession and in FY2010 and FY2011. In January 2011, the Legislative Budget Bureau of the State of Texas proposed closing four rural community colleges (Moltz 2011, February 7). Even as they proposed closing four colleges, Texas' Legislative Budget Bureau continues its questionable practice of counting tuition paid by students and families as part of the state's financial contribution to their community college operating budgets. Similarly, 2 days after taking office in January 2011, California Governor Jerry Brown proposed a cut of \$ 400 million in the state community college operating budgets, and Governor Jan Brewer proposed state operating budget cuts of 20% for Arizona's public universities and 50% for Arizona's public community colleges, with the higher cut for community colleges because they had access to local revenue streams. In 2003, Katsinas et al. noted that in many locally funded states, the ability of the institution to progress was directly tied to two key factors: Access to

Table 10.12 Average size of the budgets of public 2-year colleges in the United States, by 2005 Carnegie basic classification of associate's colleges, 2007–2008

Carnegie classification	Number of colleges reporting to NCES	Total revenues	Average size of budget
Rural small	105	\$ 1,426,856,264	\$ 13,589,107
Rural medium	302	8,541,408,831	28,282,810
Rural large	144	9,184,201,966	63,779,180
<i>Rural Total</i>	<i>551</i>	<i>\$ 19,152,467,061</i>	<i>\$ 34,759,468</i>
Suburban single campus	109	6,650,866,196	61,017,121
Suburban multicampus	103	8,074,198,904	78,390,280
<i>Suburban total</i>	<i>212</i>	<i>\$ 14,725,065,100</i>	<i>\$ 69,457,854</i>
Urban single campus	32	2,296,923,230	71,750,725
Urban multicampus	142	13,081,774,766	92,125,174
<i>Urban Total</i>	<i>174</i>	<i>\$ 15,378,697,996</i>	<i>\$ 88,383,321</i>
Special use	6	198,984,341	33,164,056
2-Year under 4-year	49	1,129,120,936	23,043,284
4-Year primarily associate's	15	1,245,991,164	8,306,677
Baccalaureate/associate's	26	1,381,839,780	53,147,683
<i>Other types total</i>	<i>96</i>	<i>\$ 3,955,936,221</i>	<i>\$ 41,207,668</i>
<i>Grand total</i>	<i>1033</i>	<i>\$ 53,212,166,378</i>	<i>\$ 554,293,399</i>

Federal contracts/grants, state contracts/grants, and local/private contracts/grants were combined. The category "independent operations," includes \$ 751,000 for one rural medium college, and none for other rural, suburban, or urban. In independent operations in "2-year under 4-year" \$ 4,497,021, and in baccalaureate/associate's colleges \$ 552,860 were reported. Only colleges reporting financial data to IPEDS were included.

a solid revenue stream of local revenue, and the willingness of local citizens to tax themselves. Both factors had to be present, and from Table 10.10 it is clear that for many suburban and urban areas, both factors are, however, for many rural areas, particularly in high-poverty areas of rural America, they are not. This, too, is tied also to flawed state enabling laws (Katsinas 2009).

Table 10.12 shows the average size of the budgets of public 2-year colleges in the United States by Carnegie type for 2007–2008. The average size of the total budget varies widely by type of community college, with the average across all rural community colleges at less than half that of the urban community colleges and well below the average for suburban community colleges. Within the rural subclassifications, there is wide variation, from an average budget size of about \$ 13.6 million for the Rural-Small community colleges, to about \$ 28.3 million for the Rural-Medium community colleges, and about \$ 63.8 million for the Rural-Large community colleges. The average budget for the Rural-Large community colleges roughly approximates the average for the Suburban Single Campus community colleges, underscoring the point that in terms of size and complexity, many Rural-Large community colleges resemble their Suburban single campus counterparts (Katsinas et al. 2003). Table 10.12 also underscores the fallacy of projection—projecting the reality of the large multicampus community college with an average budget size of \$ 92 million onto a Rural-Small community college of \$ 13.6 million.

The size of the institution and its budget affects literally every aspect of operations. Curriculum development is different in an urban setting, where presidents can hire adjuncts to test a program prior to hiring full-time faculty (Katsinas et al. 2003). At rural colleges, where access to adjunct faculty is lower, particularly in specialized areas such as allied health, nursing, and engineering technology, a program must be built without a test.

Table 10.13 presents revenue per student by revenue type, and by community college type for 2007–2008. It shows a great variance in total revenues per student, with the top six institutional types in terms of revenues per student: (1) Baccalaureate/Associate's Colleges, \$ 8,211; (2) Rural-Small, \$ 8,025; (3) 2-Year Under 4-Year, \$ 6,022; (4) Rural-Medium at \$ 5,941; (5) 2-Year Primarily Associate's at \$ 5,557; and (6) Urban Single Campus at \$ 5,355. We see here the much higher investment per student at the "Other" types of 2-year colleges (it is worth noting here that Baccalaureate/Associate's Colleges include Miami-Dade College and other urban multicampus Florida districts that also award a small percentage of baccalaureate degrees), and the higher cost per student at Rural-Small and Rural-Medium colleges. This higher cost per student ratio at Rural-Small and Rural-Medium colleges is directly tied to their higher ratio of full-time students served (see Table 10.6), who cost more to serve than part-time students.

The higher per-FTE instructional costs associated with providing geographic access were well-recognized by leading community college experts including the late S.V. Martorana, James L. Wattenbarger, and Raymond J. Young, who consulted institutions and states during the period 1955 to the end of the post-World War II Baby Boomers cycling through higher education institutions in 1975 (see Young 2002). The higher fixed costs of simply opening the doors for business to provide postsecondary education services to sparsely populated and/or poor rural areas were acknowledged by these experts, who believed in developing comprehensive state-wide networks of community colleges with comprehensive missions (Wright and Katsinas 1994) that included general education for transfer, terminal education of 12–24 months leading to certificates and degrees for employment, and community services which came to include workforce training after passage of the JTPA of 1982 (Katsinas and Lacey 1989); and they recognized the same basic economics that Kent D. Halstead and Howard Bowen would also recognize—that there would be higher costs per student to deliver the promise of geographically accessible public higher education at both the 2- and 4-year levels in more sparsely populated areas of the country (Halstead 1974).

Faculty

Table 10.14 uses the 2005 Carnegie Basic classification to show how full- and part-time faculty are distributed across types of community colleges. While 34% of all faculty are full-time and 66% are part-time, we see great differences by community college type, with Rural-Small at 56% part-time, and Rural-Medium at 61% part-

Table 10.13 Total revenues per student and by revenue type at US public 2-year colleges, by 2005 Carnegie basic type of associate’s college, 2007–2008

Carnegie classification	Total revenues per student	Tuition and fees per student	State appropriations per student	Local appropriations per student	Federal appropriations per student	Other revenues per student
Rural small (\$)	8,025	941	3,231	637	8	3,208
Rural medium	5,941	955	2,057	651	8	2,270
Rural large	5,105	752	1,497	890	7	1,959
<i>Rural total (\$)</i>	<i>5,600</i>	<i>845</i>	<i>1,817</i>	<i>779</i>	<i>7</i>	<i>2,152</i>
Suburban single campus	4,873	926	1,486	916	10	1,534
Suburban multicampus	4,824	811	1,247	1,244	2	1,520
<i>Suburban total (\$)</i>	<i>4,846</i>	<i>863</i>	<i>1,354</i>	<i>1,096</i>	<i>6</i>	<i>1,526</i>
Urban single campus	5,355	1,090	1,612	699	–	1,954
Urban Multi-campus	4,719	677	1,432	1,017	0	1,593
<i>Urban total (\$)</i>	<i>4,802</i>	<i>731</i>	<i>1,455</i>	<i>975</i>	<i>0</i>	<i>1,640</i>
Special use	3,861	936	485	488	2	1,950
2-Year under 4-year	6,022	1,158	2,341	94	–	2,429
4-Year primarily associate’s	5,557	968	2,211	–	–	2,378
Baccalaureate/ associate’s	8,211	2,010	2,883	432	–	2,886
<i>Other types total (\$)</i>	<i>6,264</i>	<i>1,299</i>	<i>2,288</i>	<i>183</i>	<i>0</i>	<i>2,494</i>
<i>Grand total (\$)</i>	<i>5,165</i>	<i>843</i>	<i>1,594</i>	<i>899</i>	<i>4</i>	<i>1,825</i>

These following four IPEDS unit reports were not utilized in the calculation of revenue per student. The following four entities reported their data to NCES on a statewide basis, have multiple campuses, and thus cannot be assigned to a single geographical classification:

- Delaware Technical & Community College-Central Office: Rural Medium/Rural Large/Urban Multi
- Ivy Tech Community College-Central Office: Rural Medium/Rural Large/Suburban Single/Suburban Multi/Urban Multi
- Kentucky Community and Technical College System: Rural Small/Rural Medium/Rural Large/Suburban Multi/Urban Multi
- Texas State Technical College-System: Rural Small/Rural Medium

time. Table 10.14 also shows the strikingly different patterns of total faculty in terms of average number of full-time faculty per institution. In practice, this means that when the college-wide faculty and staff meeting occurs at a rural community college, all members of the faculty are likely to attend. It also means that when new programs are established, finding faculty with subject matter competence and entrepreneurial

Table 10.14 Full- and part-time faculty at public 2-year colleges in the united states by numbers, percentages, and mean averages, by 2005 Carnegie basic classification, Fall 2007

Carnegie classification	Colleges reporting	Total faculty	Full time	Part time	Total faculty (%)	Full time (%)	Part time (%)
Rural small	119	10,333	4,511	5,822	100	44	56
Rural medium	298	63,624	24,686	38,938	100	39	61
Rural large	142	64,612	21,495	43,117	100	33	67
<i>Rural total</i>	<i>559</i>	<i>138,569</i>	<i>50,692</i>	<i>87,877</i>	<i>100</i>	<i>37</i>	<i>63</i>
Suburban single campus	109	45,574	13,950	31,624	100	31	69
Suburban multicampus	100	53,376	16,478	36,898	100	31	69
<i>Suburban total</i>	<i>209</i>	<i>98,950</i>	<i>30,428</i>	<i>68,522</i>	<i>100</i>	<i>31</i>	<i>69</i>
Urban single campus	32	17,426	5,287	12,139	100	30	70
Urban multicampus	146	87,458	27,729	59,729	100	32	68
<i>Urban total</i>	<i>178</i>	<i>104,884</i>	<i>33,016</i>	<i>71,868</i>	<i>100</i>	<i>31</i>	<i>69</i>
<i>Other types total</i>	<i>111</i>	<i>26,004</i>	<i>10,666</i>	<i>15,338</i>	<i>100</i>	<i>41</i>	<i>59</i>
<i>Grand total</i>	<i>1,057</i>	<i>368,407</i>	<i>124,802</i>	<i>243,605</i>	<i>100</i>	<i>34</i>	<i>66</i>
<i>Percentages of colleges reporting and faculty status</i>							
Rural small (%)	11	3	4	2			
Rural medium (%)	28	17	20	16			
Rural large (%)	13	18	17	18			
<i>Rural total (%)</i>	<i>53</i>	<i>38</i>	<i>41</i>	<i>36</i>			
Suburban single campus (%)	10	12	11	13			
Suburban multicampus (%)	9	14	13	15			
<i>Suburban total (%)</i>	<i>20</i>	<i>27</i>	<i>24</i>	<i>28</i>			
Urban single campus (%)	3	5	4	5			
Urban multicampus (%)	14	24	22	25			
<i>Urban total (%)</i>	<i>17</i>	<i>28</i>	<i>26</i>	<i>30</i>			
<i>Other types total (%)</i>	<i>11</i>	<i>7</i>	<i>9</i>	<i>6</i>			
<i>Grand total (%)</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>			
	<i>Mean # of faculty</i>		<i>Mean, full-time</i>		<i>Mean, part-time</i>		
Rural small	87		38		49		
Rural medium	214		83		131		
Rural large	455		151		304		
<i>Rural total</i>	<i>248</i>		<i>91</i>		<i>157</i>		
Suburban single campus	418		128		290		
Suburban multicampus	534		165		369		
<i>Suburban total</i>	<i>473</i>		<i>146</i>		<i>328</i>		

Table 10.14 (continued)

Carnegie classification	Colleges reporting	Total faculty	Full time	Part time	Total faculty (%)	Full time (%)	Part time (%)
	<i>Mean # of faculty</i>		<i>Mean, full-time</i>		<i>Mean, part-time</i>		
Urban single campus	545		81		379		
Urban multicampus	599		190		409		
<i>Urban total</i>	<i>589</i>		<i>185</i>		<i>404</i>		
<i>Other types total</i>	<i>234</i>		<i>96</i>		<i>139</i>		
<i>Grand total</i>	<i>349</i>		<i>118</i>		<i>230</i>		

program building skills is essential, at rural community colleges. We also note here selected results from Kristie R. Rankin's national survey of community college chief executive and chief academic officers. Rankin (2007) reports that 79% of chief academic officers (CAOs) of Rural-Small colleges agreed that, "it is difficult to attract full-time faculty for my community college," compared to 17% of CAOs at urban community colleges noting such difficulty. When CAOs were asked to respond to the item "qualified part-time faculty in many academic areas are not available in this area, 79% of Rural-Small and 73% of Rural-Medium CAOs agreed, compared to 47% for Rural-Large, and 55% for Suburban and 52% for Urban CAOs.

The quantitative review presented above shows the relative unknown fact that the nation's 575 rural community colleges enroll the most students *and* are the fastest growing type of public 2-year colleges. The numbers further demonstrate that they serve substantial numbers of minorities, and by far more first-time/full-time students than any other type of community college, many more low-income students than other community colleges when measured by the percentage of students receiving Pell Grants, and many more students who are forced to incur student debts to access higher education. The numbers also show very different revenue patterns, with much higher dependence on state tax revenues, and lower levels of local tax revenues. We now conclude with discussion of how the historical struggle to provide geographic access that culminated in the post-Baby Boom community college expansion era of the late 1960s and early 1970s, and the diversity of state-assigned missions, functions, and financial challenges impact the ability of rural community colleges to deliver on the promise of access, economic development, and building sustainable regional rural innovation.

A Retreat from the Goal of Universal Geographic Access?

This chapter included an extensive quantitative overview of how the nation's 575 rural community colleges fit into the public community college universe in the United States. We also reviewed how the little-known area of enabling laws served

to either advance or impede the institutions' ability to play a vital role in providing access, lifelong learning, and workforce training, and play a key role in building sustainable communities.

Turning to the future, we believe rural community colleges can be policy levers and intermediaries crossing county, city, and township boundaries to create regional advantage. As former Mississippi Governor William F. Winter noted in 1989, their role "has never been so vital. Increasingly recognized by political and business leaders for their unique capabilities, these institutions...have had thrust upon them a myriad of missions looking to the solution of the nation's social, economic, and education problems" (Katsinas and Lacey 1989, forward). Yet recent trends suggest that as our nation emerges from recession, we may well be at a tipping point when it comes to the generally accepted commitment to universal geographic access that emerged over the 60 years following World War II. Each survey of the 51 members of the National Council of State Directors of Community Colleges conducted since 2003 by Katsinas with Palmer and Tollefson, and later, Tollefson and then Friedel, found that state community college directors reporting the rural community colleges in their states were facing the greatest fiscal strain (Katsinas and Friedel 2010; Katsinas and Tollefson 2009; Katsinas et al. 2004). Often cited was the challenge of generating local funding in low property tax wealth community college districts if, indeed, such local funding is even allowed by law.

In 1988, economist Robert Reich, who later served as Labor Secretary in the first Clinton Administration, argued for the development of economic strategies not based upon the production of primary commodities for rural America. With the advance of the service economy and technological capabilities, he argued that much production and business can be conducted anywhere, and thus not tied to urban areas. Reich believed that the nation faced a clear choice: Accept the gradual decline in its rural areas, or help it transition into a new economy, adding that his proposals were "hardly dramatic" and in the long run substantially much cheaper than the billions now spent to preserve an older, primary commodity-based economy. He argued four barriers must be removed to promote rural development: (1) Rural transportation, to link information-based and small-batch manufacturers with their customers; (2) rural communications, to get the new, efficient communications such as fiber optic networks to fully link rural areas in the information age; (3) rural technology extension, to help rural information-based and small-batch manufacturers stay competitive; and (4) rural training and retraining, to link the "legendary work ethic" of rural America with the demands of the new economy (1988).

Fluharty (2006) notes that the American population is roughly divided as 52% suburban, 25% urban, and 23% rural...however, fewer than 2% of rural Americans are engaged in agriculture at all, and fewer than 1% are engaged in agriculture as their primary source of income. In his 1995 book, *The Road Ahead*, Microsoft Chairman Bill Gates (1995) suggested that in the coming era, some areas, and in particular, some rural areas, would be left behind as the nation connects to broadband and other communications technologies. We here note that the structural problems identified by Reich and others remain. According to the Rural Policy Research Institute, 96% of funding from the 1996 Farm Bill went for commodities support

of farmers, and just 4% for rural development including infrastructure; in contrast, in European Union countries, that ratio was a third crop support and two-thirds for infrastructure, creating an enormous long-term disparity.

Still, the fast-growing rural community colleges, despite their lack of visibility in the community college world and in the nation's policymaking circles, including the foundations, are persevering, often despite great odds, to deliver access and economic development, and to build positive, sustainable communities. They do their work quietly and without notice, against the backdrop of a patchwork quilt of federal and state workforce training, welfare-to-work, and adult literacy policies and programs that generally are not well meshed with state-assigned community college service delivery areas. We can only hope policymakers will recognize that expanding these institutions ability to serve for-credit students through student financial aid will help them build the institutional capacity needed to serve noncredit workers seeking retraining opportunities. One size does not fit all; public policymakers need to recognize the leading role of rural community colleges in bringing access to millions of first-time-in-college, first-generation students. We also urge researchers to embrace Pell Grant recipients as a proxy for poor students in their future studies, just as the education research community has done for free and reduced school lunch in the elementary and secondary education areas. As Katsinas noted in 1994, community colleges are the modern land-grant colleges of the twenty-first century, and, later with Lacey, asserted that they are "the largest delivery system of formal (for-credit) and informal (noncredit) courses and programs in our country, and they're nearly everywhere" (Katsinas and Lacey 1989).

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Chapter 11

What Do We Mean by Privatization in Higher Education?

Alisa Hicklin Fryar

What Do We Mean by Privatization in Higher Education?

Higher education is changing. Many scholars, reporters, and policymakers have noted shifts in the higher education environment, most often referred to as *privatization*, and have speculated on what these changes will mean for institutions of higher education, especially public research universities. Despite this attention, the field lacks a common set of concepts and measures to define privatization. Instead, we have a diverse range of topics that are sometimes linked to privatization (such as variations in state funding or institutional commercialization) and at other times are treated as distinct issues. It is possible that this lack of a common language is the result of relatively recent shifts that are linked to privatization, but it may also be due to a lack of conceptual clarity in our theorizing about privatization (Ikenberry 2009), and the inevitable measurement issues faced by trying to get some empirical leverage on a very imprecise concept.

Most discussions of privatization point to the decline of state appropriations as a key indication of shifts in public higher education. Yet, others identify a range of issues—changes in governmental regulation, fluctuations in the economy, increases in institutional competition for resources, shifts in public opinion about the value of higher education, changes in program delivery, variations in tuition-setting policies, and a host of other factors—as either components of privatization, causes of privatization, or the effects of privatization. Overall, it is clear that we lack a precise definition of privatization or a conceptually clean way to measure or categorize these various shifts (Ikenberry 2009). Even more broadly, the changes in the relationship between the state and public institutions blur the traditional line between public and private institutions and invalidate, in some ways, the common vocabulary that has served higher-education researchers quite well in differentiating among institutions.

Although we most often focus on public institutions with respect to privatization, there are also important implications for the private sector. For quite some time,

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differences between public and private universities were fairly clear, and differences among private institutions could be reasonably well captured through a few measures—selectivity, religious affiliation, and mission. Twenty years ago, when observers referred to private universities, everyone in the room would assume they were referring to a range of institutions from Princeton to Baylor to Dallas Baptist University—few would have jumped to the University of Phoenix (despite its existence for some time now). The rise of private for-profit universities has changed the higher education environment, it has changed the way we talk about private universities, and it should change the way we study these institutions.

This chapter seeks to offer a framework for conceptualizing privatization. This framework rests largely on a core argument that there is an important distinction between an institution becoming *less public* and an institution becoming *more private*. In laying out a framework for conceptualizing the influences that contribute to what scholars most commonly refer to as privatization, this chapter will first review the literature in higher education on privatization, then move to a review of theories (mostly in public administration) on the factors that contribute to an organization becoming more (or less) public, and will offer an argument for ways to conceptualize the factors that contribute to the variations in the extent to which an organization should be considered a private organization. The chapter then presents a discussion of various ways in which we could measure each of these dimensions (which will be referred to as publicness and privateness). This essay then concludes with a brief discussion of research questions that could offer interesting avenues for future research.

Privatization in Higher Education

Providing an exhaustive review of the work on privatization would be well outside of the scope of one chapter, especially given the discussions that take place outside of traditional academic outlets (blogs, news media, etc.). Instead, this review will focus on a subset of work on privatization appearing in traditional academic outlets (books and journals) and is mostly representative of the ways in which individuals in the field discuss and measure the concept. Even with these boundaries, it is still quite difficult to decide what counts and what does not, given that many factors that are identified as privatization can be linked to literatures that have developed somewhat separate of privatization discussions. In a recent edited volume by Morphew and Eckel (2009), a number of scholars were asked to write on privatization, having been posed the following four questions:

What do we know about the privatization of the public research university? What does your discipline or field tell us about privatizing public universities? What do we already know about this phenomenon? What do we need to know? (Morphew and Eckel 2009, pp. 184–185).

The work that addresses these questions draws on a variety of disciplinary backgrounds, including economics, political science, public administration, public pol-

icy, and others. In doing so, the authors bring in various theoretic frameworks and conceptualizations of privatization. Throughout this volume, privatization is either defined as or linked to certain concepts, measures, or trends in the higher education environment. These include declines in government funding (Eckel and Morphey 2009a; Ikenberry 2009; McLendon and Mohker 2009; Morphey and Eckel 2009; Lowry 2009; Salerno 2009; Stater 2009; Toutkoushian 2009), increased reliance on tuition for institutional revenue (Eckel and Morphey 2009b; McLendon and Mohker 2009; Lowry 2009; Ikenberry 2009; Toutkoushian 2009), increased reliance on private sources of revenue (Lowry 2009; McLendon and Mokher 2009; Morphey and Eckel 2009), decentralization of governmental control (Eckel and Morphey 2009b; Kaplan 2009; Lowry 2009; McLendon and Mokher 2009; Morphey and Eckel 2009; Salerno 2009; Stater 2009), shifts in public opinion about the value of higher education (Toutkoushian 2009), increases in entrepreneurial activities within institutions (Kaplan 2009; Ikenberry 2009; Morphey and Eckel 2009), increased reliance on market mechanisms to govern higher education (McLendon and Mokher 2009; Morphey and Eckel 2009), and increases in competition for resources and students (Toutkoushian 2009; Kaplan 2009).

Although the Morphey and Eckel (2009) volume is not a comprehensive review of the work on privatization, it is mostly representative of the themes discussed in the broader context. Most common among discussions of privatization is the decline in state support of higher education, with scholars arguing that the inability (or unwillingness, depending on the author) of the state to keep up with the increasing costs of operating public universities weakens the relationship between the institution and the state. Yet, it is unclear as to whether privatization should be defined or measured as a decline in public funding or whether a decline in public funding leads to institutional and managerial practices that would be defined as privatization. Stated differently, is state funding a measure of privatization or is it a determinant of privatization? In the current literature, it is hard to identify exactly what privatization means and how it should, or could, be studied.

In addition to the work that is focused on privatization, there is a body of work that considers the ways in which institutions of higher education are becoming increasingly focused on private-sector projects and collaboration, often discussed in terms of commercialization or corporatization (Lyall and Sell 2005; Slaughter and Rhoades 2009; Kezar 2004). In this work, scholars trace the ways in which universities—both public and private—increasingly participate in efforts that would usually be tied to corporations. They document the ways in which universities have put more emphasis on revenue-generating activities (and often away from traditional activities that are aimed at increasing the public values that have often embodied university missions), such as patents, copyrights, licensing of athletic products, corporate partnerships, and a host of other activities that are aimed almost exclusively at bringing in revenue, with few ties to academic advancement. A number of universities—both public and private—continue to look to build private enterprises embedded in and contributing to the academic institution.

These discussions have sparked a wide range of reactions among scholars, policymakers, and pundits (often ranging from intrigue to despair) and raised many

empirical and normative questions. What caused these changes in higher education? How will these shifts affect institutions? Is this an appropriate way to govern institutions of higher education? Why have policymakers backed off in supporting public universities? How are private, not-for-profit, institutions affected by these changes? Do for-profit universities play a role? In order to tackle these questions, one must ask how to go about addressing them in a systematic, theoretically driven manner.

Looking at the variety of ways in which scholars discuss privatization and related terms, two main themes emerge—the themes that make up the backbone of this chapter. Some of focus in the work on privatization centers on changes in the *relationship between institutions and government* (funding, control, opinions of the value of higher education). Other aspects of the work on privatization center on changes in the *relationship between institutions and the market*¹ (competition, private revenue sources, entrepreneurial activities). Among the arguments made in this discussion, the central premise is that these two dimensions are conceptually distinct and should be treated as such. In the sections that follow, this chapter will review some of the theoretical work on the ways in which we can improve our abilities to capture these changes that we attribute to privatization and differentiate between changes in the relationships between institutions and government and the relationships between institutions and the market.

Public/Private Differences and the Concept of Publicness

Despite the widespread concern over the move toward privatization in higher education, one must ask whether it will actually matter. Setting aside the normative issues, what evidence do we have—either theoretical or empirical—that privatization will substantially affect institutions in management, operation, or performance? Early scholars of management and organizations, such as Frederick Taylor, Chester Barnard, Mary Parker Follett, and Abraham Maslow suggested that the differences between public and private organizations were negligible. This is not really surprising when you consider the ways in which they approached their work, each treating an organization as an organization with a singular, overarching goal: efficiency. They believed that organizations could and should strive to be more efficient organizations, learning how to produce the best quality product and the lowest cost. As such, they believed that there was almost always a way to produce a product that achieved the optimal balance of quality and cost. As businesses began to study and develop their processes, the popular school of thought among organizational scholars and management experts came to view efficiency as the gold standard to which all organizations should be held.

¹ Clearly defining the market is a tricky thing to do, but generally this refers to basic norms of a free private sector market, including competition, low levels of regulation, and private sources of revenue.

Over the years, we occasionally see casual discussions that betray biases as to the assumptions that are made about whether public and private organizations are different, how they are different, and why they are different. Some believe that the fundamental values and missions of public institutions lead them to become unaccountable, unwieldy, and—worst of all—inefficient organizations. For many individuals, efficiency and quality are inextricably linked, and discussions of why some level of inefficiency could serve a purpose (increasing access to resources for underprivileged groups, protection of individual rights through due process, efforts to address complex societal problems, a mission to contribute to values that are often intangible or impossible to measure) are unconvincing. Recent governmental reform efforts contend that the key to more efficient and effective public agencies is to have these organizations run like a business (Osborne and Gaebler 1992). Implicit in the belief that public organizations—in this case universities—should be run like a business is that public and private organizations are managed differently and that business management skills are superior.

Although the discussions that advocate a private-industry orientation are widespread and regularly articulated in the political arena, a large segment of the American public has continuously maintained some level of faith in public organizations (Rainey 2003). These beliefs often stem from the idea that the role of government is to intervene when the market fails (Lowry 2009). Most recently, in response to the economic downturn, particularly in the automobile and banking industries, critics have accused these private organizations of being inefficient, largely due to greed, longstanding agreements with external stakeholders, and general mismanagement. Proposed solutions have ranged from moderate increases in oversight and regulation to a full governmental takeover, all of which assumes that political oversight and increased accountability pressures will result in greater efficiency. In short, the American public seems to believe that there are fundamental differences in public and private organizations, and that—with respect to time, place, or context—one model of governance can offer superior outcomes to the other.

In higher education, many of these arguments are made by critics who advocate the adoption of strict accountability policies that tie funding to performance outcomes while decreasing state appropriations. The underlying logic of these reforms is that some universities have been unaccountable (usually taken to mean negligent or lazy), because they lack proper oversight and incentives (McLendon et al. 2006). These calls for accountability assume that if universities are held to incentive systems that create a bottom line much like the private sector, it will force them to become more efficient *and* produce better results. Yet, these policy decisions are all based on key assumptions, many of which lack strong empirical support. First, there is a belief that private organizations are fundamentally more efficient or are better than public organizations because they must respond to market-type pressures. Second, many believe that the management of public organizations is fundamentally the same as managing private organizations (and that the MBA model of training leaders is far superior than other models). And third, exposing public organizations to market-type pressures will induce them to behave more like their (seemingly more efficient) private sector counterparts.

But what does the empirical evidence say? For quite some time, scholars have examined multiple facets of public and private organizations, looking for public-private differences and often coming up with mixed findings. Despite the continued debate over public-private differences, consensus developed around the most common frustration faced when researching these issues—the need for a better way to categorize or measure the differences among and between public and private organizations.

All Organizations Are Public (Sort of)

Some of the earliest work that discussed the blurring of the public and private sectors argued that most organizations could still be categorized as either public agencies or private enterprises (Dahl and Lindblom 1953).² Wamsley and Zald (1973) countered the mutually exclusive dichotomy and considered the public-private distinction to be a function of both ownership (public/private/not-for-profit) and funding (government, sales, donations, etc.). Building on the work of Wamsley and Zald (1973), Perry and Rainey (1988) presented a system of categorization that defined eight categories of organizations, based on funding, ownership, and mode of social control (either polyarchy or market).

Barry Bozeman, in his book, *All Organizations are Public* (1987), proposed a similar three-dimensional framework for measuring differences among public and private institutions. However, instead of using these dimensions for categorization, they are used as measures of the *degree* to which an organization is public—measures that could explain differences in organizational characteristics and outcomes. The first dimension, ownership, is a concept that most closely represents the way in which we discuss public/private differences in casual language. In the literature, it is most often treated as a dichotomous variable capturing the entity that has primary legal property rights over the organization, public (for state-owned organizations) and private (for those that are not state-owned). Despite the wide use of a dichotomous variable for this concept, the prevalence and growth of not-for-profit organizations in society and the growth of for-profit universities in higher education may necessitate a three-category measure, whether it be public, nonprofit, and for-profit (most often used in the public administration literature), or public, private, and quasi-public (McLendon 2010).

The second dimension, funding, is the dimension that is most often the focus of discussions in higher education over the changes taking place at most institutions. At its core, the expectation is that organizations will behave in manner consistent with the source of its operating funds—that with money comes control, but the theoretical work on the relationship between public funding and organizational

² In many ways, this concept of the blurring of the sectors probably best describes the overall feeling in higher education.

outcomes suggest two possible (and contradictory) outcomes. Early work by Niskanen (1971) argues that public funding inevitably leads organizations to be more bureaucratic, less responsive, and less efficient, although the empirical evidence to support this claim is scant. Conversely, scholars of public budgeting, such as Aaron Wildavsky (Wildavsky and Caiden 2002), consider public funding, and the transparency and oversight that often comes with it, is the primary way to ensure that an organization works to meet the needs of the public.

The third dimension, control, is the one that is argued to be most influential on organizational behavior (Bozeman 1987) but the one that has been largely absent from the empirical work on publicness (Boyne 2002). Discussions of control found in the literature on public administration most often refer to the level of oversight or regulatory power that democratic institutions have over public agencies, either through measuring the strength of statutes, powers granted (or not granted) to individual agencies, or the frequency of political oversight (like Congressional hearings). The theory, as presented by Bozeman (1987), is that higher levels of political control make an organization more public, even if that organization is a private enterprise.³

Obviously, these three dimensions trend closely to the important changes in discussion of the literature on the privatization of public universities. However, without an agreed-upon definition, some scholars include some of these dimensions, while others do not. Without a common core of theoretically grounded ways to conceptualize, discuss, and measure the phenomena that we find important, it is hard to distinguish between factors that can be inextricably tied to a particular concept (such as privatization) and those that may be more a function of contemporaneous (but, frankly, unrelated) shifts in the environment.⁴

Although these three dimensions are discussed as pieces of one overarching concept, they are empirically and conceptually distinct, and the use of one in place of another could uncover very different relationships between publicness and our topic of interest. Scholars of higher education who are interested in issues of organizational theory, institutional governance, or performance will likely find that many of these hypotheses focus on issues that we consider to be important to both the internal workings and the overall governance of colleges and universities. In public administration, a number of scholars have examined the ways in which variations in an organization's level of publicness affects various aspects, including management, performance, and human resource management. Because this literature is much too voluminous to offer an exhaustive review in this chapter, I will instead

³ Recent examples of a shift in political control over private companies include the increased oversight of the auto industry and calls for increased regulation of the oil industry.

⁴ For example, the current economic downturn has often been linked to privatization, with many scholars discussing state economic shortfalls, decreasing appropriations in higher education, and institutional reliance on private sources in ways that make it nearly impossible to identify causal drivers and the relationships among these issues.

draw primarily on three reviews of the literature on the consequences of variations in publicness⁵ (Andrews et al. 2008; Boyne 2002; Rainey and Chun 2005).

Theoretical Expectations Discussed in the Literature on Publicness

Rainey and Chun (2005), in a review essay for a volume on public management, outline the primary expectations set forth in the literature that discusses public, private, and mixed organizations. In particular, they discuss the “blurring of the sectors”, a phrase most often used in discussions of public agencies that rely heavily on private contractors, and applied to corporations that receive most of their funds through government grants. Yet, this phrase is equally applicable to universities as we see considerable convergence in the behaviors, structures, and organizational environments faced by institutions.

Environmental Differences When describing an organization, few people would consider it a good thing to be called too bureaucratic or too political. Despite evidence to the contrary, many citizens believe that public organizations are inefficient and ineffective by nature (Goodsell 2003; Gore 1993). In building a case for this criticism, most people will point to the operating environment, usually mentioning culture or the idea that public organizations do not have to work for their funding—they are guaranteed funding from the government. As such, they have no incentive to be efficient, reduce costs, or worry about their performance (Gore 1993). Instead, they are induced to be budget-maximizing bureaucrats (Niskanen 1971), caring only about getting more and getting bigger, with no concern over need or effectiveness. Others argue that a steady stream of government money means that an organization does not have to really serve anyone at all (stockholders, consumers, etc.), can coopt (or capture) the few people to whom they must answer (Bernstein 1955; Kohlmeier 1969), and can pursue their own goals, instead of what the public (however defined) needs or wants.

In higher education, we regularly see both of these criticisms. First, we hear the narrative of the out-of-control university when critics argue against skyrocketing tuition, large-scale capital initiatives, and the continuous chorus of needing more money to cover increasing costs. Others believe that universities lose sight of their instructional mission, instead spending their time and resources only on research or issues that some stakeholders may not consider important, such as diversity (Zumeta 2001). We even see this rationale in the arguments that support the for-profit universities, arguing that these institutions have come into existence to fill a gap left by public universities that would not (or could not) respond to the market.

⁵ Much of this work compares public and private organizations without leaning on the concept of publicness. In reviewing the literature, comparisons of public and private organizations are conceptually similar to comparisons of more public and less public organizations.

Scholars also note the differences in the operating environments of public and private organizations. All organizations face some level of regulation and oversight, but public organizations must deal with higher levels of scrutiny when it comes to many general functions, both formally through legislation and judicial decisions regarding human resources, safety, environmental practices, and other issues, and informally, as state legislators, governors, regents, bureaucrats, and many other groups have a legitimate claim to have some say over the operations of the institution. As such, public organizations (in theory) have a more complex operating environment, a larger and more diverse group of stakeholders, and increased legal liability (Rainey 2003).

Somewhat related to the issues of multiple stakeholders, one could argue that public organizations also have a symbolic responsibility that private organizations do not have. This symbolism can bring benefits but can also invite public scrutiny at higher levels. Compared to other public organizations, this is likely most true for universities. Although the Georgia Department of Transportation probably has some symbolic importance to the people of Georgia, it is safe to say that it probably does not sell as many t-shirts as does the University of Georgia. Both in athletics and academics, public universities—especially flagships—are often part of the heart and soul of a state. The benefits that can come from this state pride (like funding in good economic times, see Doyle and Delaney 2009), also bring more attention and scrutiny that someone (and oftentimes *many* “someones”) must manage.

Organizational Differences One of the most commonly held beliefs about public/private differences is that public organizations must deal with a more diverse set of goals. The goals of a public organization (both internal and external) are often more ambiguous and can regularly conflict with other important goals (Rainey 2003). An easy example of goal conflict in higher education can be seen in the balance between access, affordability, and quality. Public universities regularly strive for prestige, but they also want to be seen as an institution that serves the state by educating in-state students. Do they ramp up entrance requirements to increase the profile of the freshman class and continue to raise tuition, or should they be more aware of the needs and often financial limitations of in-state students and keep tuition as low as possible? These same struggles are played out in the conflict we see between state and public institutions, as state legislatures pressure public universities to do more with less, asking them not to raise tuition and to cope with declining state appropriations.

The private universities deal with many of these issues. Their concerns over cost and access stem from many of the same concerns over serving what they consider to be their target population, especially for private universities that draw on a regional student population or students with a particular religious orientation. In addition, their board of trustees often place expectations on administrators that push and pull in opposite directions. We have a strong body of evidence (Rainey 2009) that suggests the public organizations must operate in areas in which goals are less clear, but we also have evidence that suggests the goal complexity and ambiguity are inescapable in higher education (Cohen et al. 1972; Boulding 1978; Hearn and McLendon

2011; Baldrige 1971). So do public research institutions deal with these issues even more than private research institutions? We have very little research on this topic.

Many scholars have also examined the widely held belief that public organizations must deal with higher levels of red tape or administrative constraints. Interestingly, the evidence on this issue is rather mixed (See Feeney and Rainey 2010, for a recent review of this literature). It seems quite sensible that public universities would face higher levels of red tape, due to higher levels of expectations about openness, transparency, accountability, and diversity, all of which would produce higher levels of paperwork and reporting. Yet, many of the calls for information about universities, especially from accreditation organizations, are quite similar for both public and private universities. It seems as if this could work either way here too.

The perception that public universities have higher levels of scrutiny and increased red tape also leads to the expectation that personnel functions would differ considerably among public and private organizations. In particular, some research has found that, indeed, public organizations have a much more difficult time hiring, firing, and promoting individual employees (Dahl and Lindblom 1953; Downs 1967; Light 2002; Rainey et al. 1995). In addition, they have much more limited ability to tie financial incentives to individual work (Atwater and Wright 1996; Kurland and Egan 1999; Rainey and Bozeman 2000; Rainey 2003; Weibel et al. 2010). However, other studies suggest that public employees are not as motivated by financial incentives and are instead driven more by a desire to serve the public interest (Perry 1996, 2000), which implies that pay-for-performance schemes are unlikely to be as successful in the public sector as they are in private firms.

Managerial Differences Lastly, this work has also focused on the behaviors, beliefs, and strategies of managers within public and private organizations. From the standpoint of managerial behavior, the expectation is that public managers will have to spend more time interacting with external constituencies than do managers of similar private organizations. In addition, managers of public organizations must learn to work within the constraints that are placed on them by political and bureaucratic agencies. They must learn how to collaborate with other organizations, as their organizations are embedded within political and bureaucratic structures that create a system of shared authority, such as multiinstitutional systems (Bogg and Cooper 1995; Rainey and Chun 2005). In some cases, this sharing of authority may make it harder to achieve the organization's goals, as these efforts depend in part on what other organizations are doing (Lynn 1987).

Boyne (2002) conducts a meta-analysis of the work on public and private differences in managerial roles and environments, identifying 13 hypotheses that routinely emerge in the literature, which he groups into four categories: environment, goals, structures, and values. The 13 specific hypotheses closely parallel those identified by Rainey and Chun (2005). In his review, he also looks more closely at how these studies measured public/private differences, noting which of the three publicness dimensions are incorporated into the study. The most striking finding is the lack of a strong empirical record, with only 34 quantitative studies in the 40-year

period.⁶ In addition, he finds a lack of diversity in these studies, as over one-third of research included at least one of the two leading scholars on this subject: Barry Bozeman and Hal Rainey.

Boyne (2002) also notes the limitations in the existing body of work relative to the measurement of publicness. Of the 34 cited studies, only six included measures of funding or control, as most only utilized dichotomous measures of ownership. Five studies incorporated measures of all three dimensions (Bozeman et al. 1992; Bozeman and Brettschneider 1994; Coursey and Bozeman 1990; Coursey and Rainey 1990; Rainey et al. 1995), and interestingly, these five studies found weaker evidence of the effect of publicness than did those that looked only at ownership (Boyne 2002). In his analysis of these studies, Boyne concludes, much like the Rainey and Chun (2005) review, that there is some evidence of sectoral differences, but they are somewhat limited to specific areas, such as public schools, hospitals, nursing homes, and prisons.

More recently, Andrews et al. (2008) offer another view of the literature on publicness, this time arguing that the literature on the topic suffers tremendously from underspecification in most studies. Andrews et al. (2008) argue that we should expect to find some differences among organizations that rank higher on the publicness scale than those that do not. However, they believe that the efforts to link publicness to performance (or to say that private organizations are inherently better performing than public organizations) are problematic for two reasons. One, they rarely have measures of all three dimensions; and two, they rarely control for important organizational, managerial, and/or environmental differences.

In addition, Andrews et al. (2008) identify gaps in our knowledge on publicness, particularly with respect to the ways in which these three dimensions (ownership, funding, and control) combine. So far, the literature on public/private differences only includes one or two of these dimensions, and when more than one dimension is included, it almost always is in an additive form. Yet, the relationships between these three dimensions and organizational outcomes may be much more complicated, with the effect of one dimension moderated by another. For example, why would we expect public funding to matter if there is no effort to exert control over the institution? Why would ownership matter if there is a minimal amount of public funding? These are questions that we will revisit in the later sections in this chapter.

In sum, the literature on publicness offers us an excellent vocabulary and analytic foundation for discussing differences among public universities and between public and private universities. Unfortunately, it tells us much less about private, not-for-profit organizations. Despite a rich history of studying public/private differences, there is a very small set of studies that examine these hypothesized differences in nonprofit institutions (a recent exception being Feeney and Rainey 2010). Higher education scholars are in an excellent position to not only utilize the publicness literature as a framework for the ongoing work on privatization but also to make important contributions to the theoretical development of this line of literature.

⁶ See Boyne (2002) for details on the decision rule for which studies would be included in the meta-analysis.

Privateness: Conceptually Distinct

As mentioned in the introduction, the work on privatization focuses on two main themes, the relationship between institutions of higher education and government and the relationship between institutions and the market. Clearly, the publicness construct mostly captures the relationships between organizations and governmental entities. It does not account for variations in the relationship between institutions and market. Three regularly emerging issues related to increases in privatization include the increase in competition for resources, increases in the institutional pursuits of profit-generating activities, and the increase in which stakeholders view higher education as a private good. These dimensions, along with a few others to be discussed, tap into variations in the extent to which universities are subject to economic authority, or, stated differently, the extent to which an institution is more private.

There are reasons to believe that we lose both explanatory power and conceptual clarity by lumping together the changes in the relationship between institutions and governmental entities (publicness) and the extent to which institutions are subject to economic authority (privateness⁷). In addition, it is unclear whether these two concepts are—empirically speaking—the perfect inverse of the other. Obviously, publicness and privateness, in the aggregate, would necessarily be related, but decreasing one would not, in every situation, result in the increase of the other. The idea of institutional autonomy alone suggests that universities could see fluctuations in governmental control (publicness) without experiencing any real shift in the extent to which the institution must respond to the market. Stated differently, scholars may benefit from differentiating between when a university has become less public and when it has become more private. Obviously, these two shifts would be related, but again, one cannot assume that they will be *perfectly* related, and more importantly, they are conceptually distinct.

As such, it is useful to explore the ways in which one could capture variations in economic authority. It is important to note that, with less existing work that conceptualizes variations in the relationship between organizations and the market from which to draw,⁸ this discussion of how one might go about conceptualizing and operationalizing privateness should be viewed as introductory and largely exploratory, for the purpose of stimulating further research on the topic. So, with those caveats, where does one begin in identifying the core concepts? In many ways, we can look to basic economic concepts to build these measures.

First, it is important to note that when individuals say that an organization is becoming more private or that an institution should be run like a business, they are usually referring to the idea of an institution having to respond to a (relatively) free and competitive market. Most of these ideas tend to point to three characteristics:

⁷ The term privateness will be used in a quicker way to reference the ways in which institutions become more private or display characteristics of more private institutions.

⁸ Fortunately, much of the work on privatization offers a great foundation for developing a more general measure of privateness.

(1) institutional survival is based on its ability to compete for resources, (2) institutions will seek to generate profit when possible, and (3) the idea that a college education is some combination of goods and services that are purchased by a consumer with few spillover effects/externalities (few ways in which an individual's college education benefits others).

Each of these expectations has implications of its own. The more the institutions are forced to compete with others for resources, the more institutional success (wealth, survival) will be a function of public perceptions of need and quality. As students "vote with their feet", institutions will be required to adapt to survive. This competition will (in theory) lead to organizational efforts to better differentiate their product, price their product at market value, such that price hikes will (at some point) cause consumers to go elsewhere, and the institution will have to make decisions that will maximize the quality of their product and the perceptions of the need for their product.

Competing for monetary resources will require many of the same maneuvers on the part of the organization, often seen in efforts like cluster hire initiatives to establish relative (competitive) prominence in a particular field that would attract grant money, corporate-sponsored research, and the ability to attract other high-quality faculty and students. With respect to an institution's effort to engage in more profitable activities, the existing work on commercialization and academic capitalism (Bok 2003; Slaughter and Leslie 1997; Slaughter and Rhoades 2009; Etzkowitz et al. 1998; Weisbrod et al. 2010) in higher education offers an excellent foundation for measuring and incorporating this aspect of privateness in our empirical work.

The increase in competition for resources is a clear recurring theme in the literature on privatization, and we see it emerge in many different ways. In some cases, these differences may not really matter, as we might expect a more competitive environment to affect both public and private institutions in similar ways. However, some of these differences are likely important, and scholars interested in competition for resources should consider differentiating among competitive markets that institutions voluntarily enter into (like developing patents, licensing, etc.) and competitive environments that institutions are (somewhat) forced into, such as when states choose to shift public funding allocations to a competitive model.

Finally, we may find that the extent to which an institution is viewed and managed much like a private organization could be linked to the ways in which stakeholders view the primary product of the university (a college education/degree) as a private good is sold to individuals, rather than a collective good that benefits society as a whole. As more people, especially in positions of authority, believe that a college education is mostly an individual's investment in their own career, and fewer policymakers consider public universities to be valuable to the state in ways that go beyond the production of credentialed workers, public universities will be forced to justify their existence based on these assumptions that their worth in society should be measured by degrees produced.

Clearly, there are many other ways in which universities vary in the extent to which they are engaged in a more market-driven environment. This discussion of dimensions is an effort to offer a first step in thinking about the ways in which the

current work on privatization, commercialization, corporatization, and academic capitalism can be combined to produce a more general theoretical framework that captures variations in the relationship between institutions and the market. In doing so, we can advance our understanding of the changes that both public and private universities face and how we can grapple with universities that exist somewhere in the space between purely public and purely private.

Empirical Exploration

As mentioned earlier, the purpose of this chapter is not only to explore the ways in which we can conceptualize privatization for the purpose of enhancing our theoretical frameworks for the study of the changing nature of institutions of higher education, but this chapter also seeks to explore the ways in which we can incorporate these concepts into our empirical work. This section focuses on the operationalization of the concepts presented thus far, with a more explicit focus on efforts to capture variations in quantitative work. Most of the empirical exploration here is focused on the publicness construct, focusing exclusively on the three-dimensional Bozeman framework.

Another purpose of this discussion is to encourage scholars to consider more unconventional ways to measure these concepts. As highlighted earlier in this chapter, many of these privatization changes involve both shifts in objective characteristics (such as funding or governance arrangements) and shifts in perceptual characteristics (public perception of the value of higher education). As such, scholars have a number of options in choosing how they would like to approach empirical studies of privatization. In many ways, the following discussion offers somewhat of a laundry list of options, but there is a reason for exploring such a diversity of measures. Theory-driven work on privatization (or any other topic) requires scholars to make decisions about how to pair a concept with the measure that most appropriately captures the dynamics and qualities that the scholars seek to explore. With such a multifaceted concept like privatization, scholars may choose to employ different measures of privatization in their work.

Ownership Most often measured as a dichotomous variable (public/private), ownership in higher education, as discussed earlier, would likely be a three-level categorical variable (public, private not-for-profit, and private for-profit).⁹ Yet, we may have other interesting options in measuring ownership. An objective (legal) measure of ownership would only result in three categories, but one could consider the possibility of incorporating perceptual measures of ownership by capturing variations in the population an institution considers to be its primary population.

⁹ Although this discussion is focused on four-year institutions, scholars interested in studying certain community college issues may want to differentiate between state and local ownership, but the focus, in that situation, may be more about the primary locus of control than of legal ownership.

Public institutions vary tremendously in the extent to which they see themselves as being a state institution, a regional university, or an institution that serves the nation. Similar variations exist among private not-for-profit institutions, particularly with respect to ties to religious institutions, and, to some extent, even for-profit institutions. Although the legal definition offers limited variation, measures that capture where an institution considers itself to be a national university versus one that serves a smaller region may open other avenues for exploration.

Funding Clearly, the predominant discussion in the policy arena focuses on direct state appropriations, but many other options could offer interesting avenues for research and theory building. Some universities receive direct federal appropriations, most universities receive some federal money through research and development grants and contracts, and almost all universities (indirectly) receive some money through Pell grants. Granted, each of these funding streams come with varying levels of expectations (or strings attached), but they each represent some level of connection with public sources and each come from taxpayer funds.

For example, Pell Grants are rarely viewed in the same way as state appropriations, as they follow individual students and are not institutional-level appropriations. Yet, the recent discussions related to ways in which for-profit institutions have targeted their recruiting to students who are eligible for Pell Grants and federal subsidized loans have led the federal government to consider passing legislation that would require that for-profit schools demonstrate that their students are able to secure gainful employment in their field of study after graduating (Epstein 2010). If these institutions do not meet the prescribed standards, the federal government would no longer allow their students to qualify for federal financial aid, effectively cutting off the primary source of funding of some for-profits and likely putting them out of business. This combination of funding and control mechanisms, if passed, would result in for-profit institutions becoming, in some sense, more public, meaning that some of their functions would be governed by the federal government, increases their reporting requirements and making them answerable to a democratically elected body (Congress and the President). Furthermore, even if these measures are not passed, some for-profit institutions may be compelled to increase the attention they give to public concerns, more in an anticipatory manner, with the expectation that these issues may arise again.

This discussion of federal oversight of Pell grants to for-profit institutions has implications for public and private not-for-profit institutions as well. Now that Congress has raised questions about loan default rates, this issue has garnered more attention in the public arena and may become more salient for Boards of Regents. If this is the case, Pell Grants, which have been seen much as federal funds that had very few strings for the institution, could come with different expectations on the part of the federal government. This is important, because it could have broader implications for changing the tenor of the relationship between the institutions and the federal government. In addition, the discussions at the federal level could affect the higher education agenda at the state level.

The broader question that stems from a discussion of publicness, relative to funding, is how do public funds affect the management and operation of the institution? A review of the literature that uses state appropriation levels as a variable in their analysis, often a control, is well beyond the scope of this analysis, but some questions should be raised. For example, do increases in public funding lead presidents, boards of regents, chancellors, and other institutional decision makers to place more priority on issues that are important to the state or federal government? Or are the critics right in believing that appropriations lead institutions to be unaccountable?

Although using appropriations or other governmental funding data that capture revenue streams is most prevalent, both in the more general literature on publicness and in the debate over the changing nature of public university funding, few scholars have considered the ways in which we could explore these dynamics even better using subjective (or perceptual) data. It could be the case that the actual level of appropriations may not be as influential in the management and operations of public universities as is the importance placed on those funds. The current policy environment in the K-12 arena provides an excellent example. Abernathy (2007) in his study of No Child Left Behind documents the extent to which principals consider the policy to be quite burdensome and frustrating for districts, despite the fact that the funds tied to the policy only constitute, on average, 7% of the district's funding. However, principals view that 7% to be incredibly important, especially given the strain that No Child Left Behind places on districts. This raises a number of fascinating questions about the ways in which comparable levels of funding may affect institutions differently, relative to a number of factors, including institutional wealth and environmental fluctuations.

We may also find that perception of funding levels also varies. In 2005, a survey of public university presidents (Hicklin 2006) of four-year institutions in Texas gathered data on administrative perceptions of government funding, along with data from the federal government on university revenues for the same year. When asked what percentage of the university's budget comes from government funds, the 19 responses had a mean of 48.4%. However, when drawing on data from the Department of Education's IPEDS dataset (IPEDS 2010), fiscal data from the same year reveal a disconnect between presidential perceptions and institutional reports. Presidential accounts, compared to federal reports of state appropriations (as a percentage of revenue) differ by an average of 9%, and the gap between perceptions and a combination of state and federal appropriations differ by an average of 12%.

While these gaps may be a function of different accounting practices, the president citing old data, or a number of other factors, understanding them is important nevertheless. Administrative perceptions of state support could affect the ways in which presidents and other administrators respond to pressures from the state or federal government, the ways in which institutions are governed, and how decisions are made about revenues and expenditures. If a president reports a substantially lower level of funding that is currently the case, this may reveal interesting information about the president's view of the state and the support the institution receives. Even if the president is drawing on different numbers, does the difference between assuming the institution receives 25% of its funds, versus 40% of its funds, affect

the way in which the institution is governed? Does it affect the administration's willingness to engage with state leaders over disagreements in institutional priorities? If so, why? How? When thinking about the relationship between publicness—or more specifically, funding—and administrative traits, institutional practice, or outcomes, we should consider what we mean by funding and what we think would be the causal mechanism for expecting these changes.

Control The third dimension of Bozeman's concept of publicness is governmental control, an area that has also garnered substantial attention in recent years. When arguing that all organizations are public, Bozeman highlighted the extent to which government regulation of private industry often pushed private agencies to behave more like public organizations, and conversely, public organizations that face low levels of oversight and control are afforded a level of autonomy that may allow them to behave in ways that we would not usually associate with bureaucracy.

Many believe that, in years past, public universities were given levels of deference and autonomy that they no longer enjoy (Zumeta 2001), while others cite governmental interventions in even the earliest American universities (Thelin 2004). Whether the trend toward greater levels of government involvement in higher education is a one-way street or a more cyclical trend is unclear, but it is hard to dispute the fact that we do see fluctuations over time. Consider how the numerous political interventions over the last century—the establishment of land-grant institutions (with some direction over the focus they would have), the GI Bill (which shifted the nature of undergraduate enrollments), civil rights legislation, Title IX, affirmative action case law, human resources shifts, and many other changes that we often lump into legal issues in higher education—actually can change the nature of the institution itself.

As an effort to explore the many dimensions of this concept and ways in which it may be measured, future research would be wise to explore three avenues for operationalizing the at-present, too-broad concept of control. First, the existing scholarship on state governance allows for excellent measure of the structural dimensions of control. Second, the increase in accountability policies with varying levels of stringency provides an opportunity to capture variations in policies designed to increase control. Finally, survey research and qualitative work can provide perceptual measures of control. Each of these options offer a different way to conceptualize and measure control and opens doors for a wide spectrum of questions on how these relationships affect institutions.

Structure/Regulation Some of the most influential work on governance in higher education is the work on how state higher education structures affect both state- and university-level operations and outcomes (McLendon et al. 2006, 2009; Lowry 2001; Knott and Payne 2004; Hicklin and Meier 2008). The work on centralization finds that differences in more centralized versus less centralized governing boards affect a variety of outcomes, including state policy innovation (Hearn and Griswold 1994; McLendon et al. 2005), accountability policies (McLendon et al. 2006), tuition levels (Lowry 2001), and student access (Hicklin and Meier 2008) among many other outcomes.

But *why* do differences in centralization matter, especially in affecting individual institutions? In most cases, more centralized governance structures also have more powers vested at the state level (Knott and Payne 2004), and less decision-making authority at the institutional level (Volkwein and Malik 1997). The development of more nuanced measures of control at the state level could capture the ways in which power is shared between the state's bureaucratic agency and individual institutions. Again (a common theme of this discussion), scholars may choose particular areas of control, such as budgeting or curriculum, to pair with their particular question, but many options exist. If a scholar is interested in the growth of new programs, he could construct a measure that captures curricular and budgetary control that may include variations in reporting and procedural processes at the state level; or one may be interested in student access and could create a measure that captures the limitations that the state government places on institutions, particularly when recruiting students of color.

In a number of areas, further exploration of governance structures and power distributions, especially when grounded in theories of publicness, could build a stronger theoretical basis for studies on questions of politics, organizations, and leadership. Luckily, much of the foundation for this work has been done in existing work. If one were to develop an interest in the state bureaucratic agency's capacity to influence operations at individual institutions (a very broad treatment of the concept of control), much of the theory and many of the measures already exist. An effort to bring together the work on structure (McLendon et al. 2006, 2009; Lowry 2001; Knott and Payne 2004; Hicklin and Meier 2008) and regulatory power (Knott and Payne 2004; Volkwein 1987; Volkwein and Malik 1997) could be combined with measures of bureaucratic capacity (such as staff size and operating budget of the coordinating/governing board) to produce an excellent measure of the state's capacity to exercise control over public universities.

Policy In addition to structural characteristics, there has also been recent work on the relationship between governmental institutions and public universities that focuses on the development and implementation of formal accountability policies, especially at the state level. Theory would suggest that these variations in accountability policies, a mechanism for control, would also predict differences in managerial and organizational characteristics, but again, we have a number of options how we could operationalize this concept. If we want to evaluate the ways in which policy design affect institutions and administration, we could use data on the content and strength of existing state accountability policies.

For example, Education Sector has prepared reports that evaluate each state's accountability efforts, looking at the extent to which the state collects data on certain performance indicators and whether these data are used in any systematic way to evaluate or fund institutions (Alderman and Carey 2010). Similarly, earlier work by Burke et al. (2003) collected accountability data that categorized state policies into three categories—performance reporting (where states require institutions to report data on outcomes, processes, etc.), performance budgeting (where these data were used in some loose fashion in the budgeting process), and performance funding (where states directly tied funding to the data reported).

There are a few analyses that evaluate the effect of these policies on outcomes, finding no discernable impact on student performance (Shin and Milton 2004; Volkwein and Tandberg 2008). Yet, these analyses incorporate a measure of accountability that mostly focuses whether the state ties money to performance in any way. Although this would obviously be important, it does not really tap into how influential these policies may be. It would be reasonable to expect that the effect of these policies would be dependent, at least in part, on the amount of funding that is linked to the policy (as some states have a very small amount of appropriations that are allocated through these systems) and what measures of performance are included (graduation rates, retention, remediation outcomes, transfer rates, etc.). These variations should matter, as few would expect a policy that determines 2% of funding to have the same effect as a policy that determines 50% of funding.

Perceptions While the design and content of accountability policies are likely to matter in many instances, we may find subjective measures of control to be more informative for some questions. If we are interested in how policies affect the management and practices of institutions, we may want to focus more on the softer side of accountability, as many state efforts to direct or control public universities are not codified into formal policies but are rather a function of the informal relationships and interactions between administrators and state legislators, boards of regents and the governor's office, and a multitude of other actors. There are many times that state legislators put pressure on an institution that would be under the radar of formal legislative hearings or policy decisions. We may find that perceptual measures of control or an analysis that tracks important relationships would yield more insight into the link between the state (or federal) government and individual institutions.

Recent work by Hicklin et al. (2009) draws on a survey of university presidents, conducted in 2008, that gathered data on presidential perceptions of relationships with the state, some with specific focus on accountability efforts. In one section, presidents were asked: On average, how much influence do the following organizations have over the operations of your institution? with possible responses including not at all (1), very little (2), some (3), and a great deal (4). When reporting on state influence, 80% of public university presidents responded a great deal, 15% responded some, and 5% reported very little. When asked about the federal government's influence, public university presidents were much more diverse in their responses, with 13% reporting a great deal of influence, 55% reporting some influence, 29% reporting very little influence, and 4% saying none at all.

Consider the ways in which these data could be used to explore the relationship between institutions and the state and federal government. Just as an example, we may hypothesize that state influence on institutions would lead public universities to spend more money on instructional functions than on research, but how would we measure state influence? We now have a number of options including more objective measures (state funding, state governance structures, accountability policies) and more perceptual measures (administrative views of the importance of state funding to institutional operations, administrative views on state influence). What

matters more? To what extent are variations in state-level influence over public institutions driven by financial support? Or by state policy? Or, can the influence of the state on institutions be seen more in the ways in which state pressures (from the governing board, legislature, or governor) are viewed and understood by the institution's leaders?

As mentioned above, it is important to note that we still have limited knowledge as to how these three dimensions are related to each other, to particular organizational characteristics, and to performance. Earlier work found that the three dimensions (ownership, funding, control) were correlated but not perfectly so and should not be considered proxies of one another (Bozeman et al. 1992; Boyne 2002), but this empirical work has not been moved over to address issues of privatization in higher education. Although a number of hypotheses have been mentioned casually in the text, the next section discusses avenues for research and identifies more specific hypotheses that specify the ways in which questions that are important to scholars of governance, management, and privatization in higher education could be framed using publicness or privateness as a theoretical foundation.

A Research Agenda for Publicness and Privatization

Returning to the work on privatization, utilizing a publicness framework will allow for the development of more specific measures of privatization by separating those that could be categorized as changes in the relationship with government agencies (publicness) and those that are pushing institutions to a stronger market orientation. As mentioned before, many believe that this privatization push will lure, force, or incentivize public universities to adopt the values and management practices of private institutions. First, it is important to note that this belief is really an empirical question. Second, it is an empirical question that requires scholars to address a few fundamental assumptions: that public and private universities are managed differently, and that fluctuations in the organization's environment affect the management and operations of the institution.

We can begin to address the first question with existing literature. Volkwein and Parnley (2000) examine differences in administrative satisfaction among public and private universities, looking mostly at the effect of ownership on five dimensions of satisfaction (overall satisfaction, intrinsic satisfaction, extrinsic satisfaction, work conditions, and relationships with others). In general, they find very little evidence that ownership (public versus private not-for-profit) matters. A simple difference of means test finds that administrators at private universities score significantly (but not substantively) higher on extrinsic satisfaction (basically the extent to which they are satisfied with salary, benefits, and opportunities for advancement), but in the multivariate analysis, the variable for ownership is insignificant. Due to this lack of significance, the authors conclude that there is no support for sectoral differences, at least with respect to administrative satisfaction.

However, there are a number of limitations in this study. First, the measurement of public and private differences is limited to a legal, dichotomous ownership variable. Second, only doctoral institutions are included in the analysis. Only incorporating the ownership variable assumes a homogeneity among public universities (and private universities) that is likely inaccurate. In addition, it raises questions about causality. Volkwein and Parmley (2000) draw on the literature in public administration to argue that employees in private organizations have higher levels of job satisfaction because they enjoy more autonomy and less intervention from political authorities. If so, measures of control should be significant predictors. Although not discussed in this context, one could also hypothesize that administrators in private organizations would have lower levels of satisfaction due to the increased levels of pressure to fundraise. If so, the percentage of funds received from governmental sources would be significant predictor.

Including all three dimensions of publicness in an analysis like this, one would not only allow the researcher to capture more of the important variation among institutions of higher education, but it would also allow for the exploration of causality. In addition, if we were to assume that both of the hypotheses stated above were true, related to autonomy and government funding, a model that includes only the ownership variable may have null findings, but a model with all three measures of publicness may find effects that run in opposite directions. If so, it would mean that increased autonomy would be positively related to satisfaction, leading one to conclude that administrators at *private* institutions had higher levels of satisfaction, and increased governmental funding would also be positively related to satisfaction, leading to the conclusion that administrators at *public* institutions would have higher levels of satisfaction.

In addition, this study only included doctoral institutions. In many ways, we may expect public/private differences to be much less noticeable among doctoral institutions, as doctoral institutions are likely to be more similar in their competition for students, faculty, administrators, research funding, and the like. Instead, we may see more pronounced differences among more institutions that focus more on undergraduate education, as private institutions (usually liberal arts colleges) may differ more sharply from public regional undergraduate institutions. Empirically, this may lead us to see an interactive effect between publicness and institutional mission on university management, operations, and outcomes. From a policy standpoint, this could lead to the hypothesis that the privatization movement may affect bachelors and masters granting institutions more than doctoral institutions.

Laband and Lentz (2004) investigate sectoral differences in higher education costs, comparing public, private not-for-profit, and private for-profit institutions. Despite the criticisms of public universities being out of control and unaccountable, the authors found that public universities are able to produce the same product for significantly less cost than their private counterparts. Surprisingly, however, they found no difference between not-for-profit and for-profit institutions of higher education. They offer a number of explanations as to why this finding exists but leave many questions unanswered.

Most importantly, *why* are private institutions more costly than public institutions? When thinking about publicness, we could hypothesize that the autonomy most often enjoyed by private institutions could lead to maintaining higher levels of cost than would be tolerated by state policymakers. Second, drawing on the earlier discussion of privateness, private universities may feel more pressure to offer what seems to be a higher quality or more differentiated product, in an effort to attract students to their institution. If this is the case, it would result in a mostly unexpected conclusion that competition could actually increase cost.

These findings, along with the continual debate of higher education costs, governance, and policy can be linked to the current debates on privatization. First, many of these discussions, especially when it comes to increasing regulation and inducing competition, revolve around the expectation that if the government were to structure incentives differently (usually by linked funding to performance or forcing competition for resources), institutions would perform better. Yet, these expectations have very little empirical backing. We also hear a substantial amount of casual conversation focused on how higher education is changing in relation to the market, either in reference to the large number of traditional universities are being induced to adopt the practices and service-delivery techniques most often associated with for-profit universities or in voicing concerns over the growth of the for-profit sector; but *why* do we see some institutions adopted these practices more than others?

We need a better understanding about how the relationship between governments and institutions of higher education affects the operations and performance of those institutions. We need to better understand how shifts in regulation (or accountability policies) and shifts in public funding (whether they be state appropriations to institutions or the availability of student financial aid) will change the institution, both independently and in combination. How will shifts in state appropriations affect public universities? What if these shifts are coupled with less regulation and oversight? What if they are coupled with *more* regulation and oversight? What does it mean for the scholarship on the governance of higher education if the states decrease funding and formal oversight, but administrators still feel as if they still have less autonomy, more scrutiny, and more state interference? Why do states vary in this mix of funding, regulation, accountability policies, and views of the value of public universities? How does it affect the management of these institutions? What about faculty, staff, students?

Not only should we be looking at how privatization will affect public universities, we need to examine the impact on private institutions as well. We need to examine how for-profit and not-for-profit institutions differ, so that we can better understand what to expect as an institution is pushed toward being run like a business, but most importantly, we should be asking why those differences exist. We have much to learn about how shifts in the political environment and the market (with respect to the institution) will affect administrative decisions, policies, programs, faculty, staff, students, and the many other issues we consider to be important. We need to explore these relationships more fully, and we need to ask more questions about causality.

Conclusion

The work on privatization has introduced a number of ways in which the environment for public universities has changed and will likely continue to change, but how will these changes affect public universities? Will they affect private institutions? Drawing on the literature on publicness and possible measures of privateness should help increase our ability to measure privatization and link variations in privatization to state and institutional operations and outcomes.

Again, one of the central arguments in this chapter is that privatization forces can be separated into two categories: changes in the relationship between institutions and government, and changes in the relationship between institutions and the market. Publicness, as a construct, provides an opportunity to draw on an existing framework to conceptualize and measure variations in the relationship between government and institutions of higher education. Clearly, this framework offers many options in choosing measures that most closely tap into the questions of interest. Similarly, the discussion on privateness, while admittedly less developed, should stimulate more work on how we can better isolate and measure the forces that increase the ties between public institutions and the market.

Not only can theories of publicness and privateness shed light on important questions in higher education, higher education offers avenues for advancing theories of publicness, largely due to the incredible variation that exists among institutions of higher education. Few other domains have public, nonprofit (private, not-for-profit), and private (for-profit) organizations with strong data sources, rich variation, and bevy of interesting, unanswered organizational and managerial questions. With a strong body of research on publicness coupled with a recent, vibrant literature on privatization, we have a great opportunity to address some of these gaps in our knowledge and continue to build stronger theoretical foundations and interesting policy-relevant work.

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