Future of the American Public Research University

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FUTURE OF THE AMERICAN PUBLIC RESEARCH UNIVERSITY
GLOBAL PERSPECTIVES ON HIGHER EDUCATION

Volume 6

Higher education worldwide is in a period of transition, affected by globalization, the advent of mass access, changing relationships between the university and the state, and the new technologies, among others. Global Perspectives on Higher Education provides cogent analysis and comparative perspectives on these and other central issues affecting postsecondary education worldwide.

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This series is co-published with the Center for International Higher Education at Boston College.
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Christian K. Anderson and Roger L. Williams

Introduction

Where the Public Research University Has Been, Where It Is, and Where It Is Going

For the past half-century, the American public research university has been a decisive force in shaping American society. Its development in the first half of the 20th century was precursive of the astounding contributions this institution would make to science, technology, culture, and our understanding of the human condition in the second half of the century. With that backdrop in mind, this volume examines the role of the American public research university in the decades ahead, respecting the past but focusing on its uncertain future. In chapter 8 of this volume, Judith A. Ramaley asks, “How might scholarship change in order to link theory and utility?” She proposes that research be integrated to advance understanding and to solve practical problems. It is our hope that this book accomplishes this goal by advancing our scholarly understanding of the roles and functions of the public research university while also giving university leaders and policymakers the information and insight necessary to address that indeterminate future.

This volume is the scholarly outpouring from a symposium held at The Pennsylvania State University on February 25–26, 2005, on “The Future of the American Public Research University.” Conducted as the capstone of the University’s sesquicentennial celebration (Penn State was chartered February 22, 1855), the symposium attracted more than 200 participants from more than 40 institutions of higher education from across the United States and beyond to discuss the current status and challenges of the American public research university and the opportunities it faces on the road ahead.

This introductory chapter draws on the remarks of the keynote speakers at the symposium: Nils Hasselmo, Richard T. Ingram, Stanley O. Ikenberry, and Graham B. Spanier. These thoughtful leaders provided an assessment of the current state of public research universities and speculation as to what lies ahead. As you will see in subsequent chapters, their remarks complemented many of the ideas discussed by the scholars who addressed the symposium.

Nils Hasselmo, president of the Association of American Universities and former president of the University of Minnesota, spoke on “Innovation in the Public Interest: The Public Research University in the 21st Century.” He highlighted the need for institutional leaders to create an environment in which innovation can thrive. Stanley O. Ikenberry, Regent Professor and President Emeritus of the University of Illinois at Urbana-Champaign and former president of the American Council on Education,
warned and wondered about the future in his talk, “Shifting, Drifting Sands: The Uncertain Future of Public Research Universities.” Richard T. Ingram, president of the Association of Governing Boards of Universities and Colleges, asked “Are Citizen Governing Boards Up to the Task in the Modern Public Research University?” His talk addressed the critical role of boards of trustees and the need for reform in the future selection of board members. Graham B. Spanier, president of The Pennsylvania State University and former Chair of the Kellogg Commission on the Future of State and Land-Grant Universities, remarked on the changing demographics and public good that is higher education in his talk, “A Legacy at Risk: Public Research Universities at the Crossroads.”

These leaders praised the advances brought forth by the public research university but also worried aloud about its future. Although the public research university is one of the nation’s great assets, serving the country through its mission of teaching, research, and service, it also faces myriad challenges: access for underrepresented populations, rising costs and soaring tuitions, and the evolving debate over whether higher education is a public good or private gain.

The U.S. has 166 public research universities (of more than 4,000 total institutions of higher education). Yet these 166 institutions—about 4% of the institutions in the U.S.—teach more than 3 million, about 20%, of the 15 million students enrolled in U.S. colleges and universities. (Total public four-year college and university attendance is about 6.2 million.) American research universities produce the vast majority of Ph.D.s, physicians, lawyers, and other professionals.

The research produced by public research universities is astounding. They account for nearly 70% of all research spending in American higher education (more than $24.5 billion of $36 billion in 2004). Research at public research universities has resulted in numerous innovations and products, from artificial hearts to the compact disc to the field ion microscope to innumerable other inventions in every field of science and technology. And the technology developed at public research universities is increasingly transferred into the private sector, creating jobs and generating tax revenue for states and communities. In addition, the economic impact of public research universities is enormous. For example, the economic impact of Penn State on its sponsoring state economy is $6.1 billion, making it, far and away, the largest economic engine in Pennsylvania. Outreach operations by these institutions touch millions of lives through various programs and services.

Despite these contributions, the future of the American public research university is uncertain at best. Stanley Ikenberry sees:

. . . at least two somewhat contradictory futures. One is bright, and with all its challenges, the one I see most clearly. That future acknowledges higher education at the pinnacle of America’s educational ladder. It understands Americans believe in education and understand the benefits of higher education; they see it as the road to personal opportunity, the key to the American Dream. To a lesser degree they also see colleges and research universities as a solution to many of society’s problems and the wellspring of innovation and creativity, the foundation for economic growth and competitiveness. (Ikenberry, 2005, p. 1)
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Yet Ikenberry also envisioned a future that is less reassuring:

For over two decades state support for public higher education has diminished, whether measured as a fraction of the overall state budget, a percent of the university’s budget, or in terms of state support per student, adjusted for inflation. By virtually any metric, state support has waned. (2005, p. 2)

Such trends cannot go unchecked. Educational leaders and supporters everywhere need to help shape a positive future for public research universities. This will require action on at least three fronts: “One has to do with attitude; one has to do with actions; and third is the challenge of conveying changed attitudes and constructive actions to the American public in ways that strengthen support for our public purposes and brighten the prospects for our nation” (Ikenberry, 2005, p. 3). This volume is about the attitudes and actions that university leaders—and their supporters—can take to shape the future.

Ultimately, the American public research university is about the future—it has played such a vital role in the past that American society will expect the same in the future. The future depends on the strength of public higher education because of its contribution to economic vitality, personal opportunity, social progress, improved quality of life, healthy communities, and democracy in American society.

Why should we look to the future of the American public research university? The rapid changes in technology—in no small part fueled by research universities—make clear that tomorrow’s university may not resemble today’s. Changes in technology are fueled by the changes in academic fields, which are in a constant state of flux. Yet while these changes bring about new opportunities for new knowledge at “unimaginable speed,” the fluidity of these fields forces scientists at universities to choose more “productive” areas on which to focus (Hasselmo, 2005, p. 4).

The innovation brought on by scientists pushing the boundaries of the ever-expanding areas of knowledge is what keeps a university vibrant and relevant. Universities must be flexible and creative in how they deal with the myriad external and internal challenges that influence their existence—be they environmental, social, economic, demographic, cultural, or psychological. The contribution of research universities lies in more than merely educating students but in innovating in ways that benefit the public good (Hasselmo, 2005).

In their capacity as innovators, faculty also are learners. And while faculty learning is critical to the future vitality of American universities, so too, of course, is the learning of students. Whether you buy into the notion of students as “consumers,” as “customers,” or as “learners,” it goes without saying that the composition of the student body at public research universities is important. The demographics of the students are changing rapidly. Many students see education as something other than intellectual fulfillment; for most, it has become the means to financial security. Many states are undergoing rapid and profound demographic shifts. But we wonder if all states, and their universities, are prepared for these radical changes. More students of diverse background—racial, economic, and age groups that have been traditionally underrepresented—are seeking entrance into public universities in increasing numbers.
It is easy to understand why. Simply put, the highest salaries go to those with a college education. But the benefit of a college education does not end with the student. A more-educated workforce is more productive, more engaged with social and political issues, and more likely to contribute in many different ways to the health of the economy and the social good. It is this combination of private gain and public good garnered from an educated populace that creates incentives for students and states to invest money and energy in higher education.

So it comes as no surprise that more students are looking to higher education as a means to employment security. As Graham Spanier points out, “Education is often seen as the great fault line that determines who can be part of the American dream” (p. 4). Over the past 50 years an increasing number of jobs have required a college degree. In 1950, 80% of jobs were considered “unskilled,” and now nearly 85% are classified as “skilled,” meaning that they require education beyond high school.

A critical problem for public research universities will be to find a way to not only accommodate but also welcome and embrace underrepresented populations. Accessibility without regard to income has long been a “bedrock principle of the land-grant ideal.” The historical reasons for this underrepresentation can be debated, yet, as Nils Hasselmo notes, “few would argue with the accuracy of the numbers. And they tell an uncomfortable and unacceptable story” (p. 6). As such, universities must “assure the American people in word and deed that our universities will not be reserved only for those who can afford to pay full tuition, that we have a deep and abiding commitment to access and diversity” (Ingram, 2005, p. 8).

But another challenge exists for public research universities with regard to students: the trend of globalization and increased intensity of competition. Students who once came in large numbers to the U.S. from other countries are now increasingly staying in their homeland or going elsewhere. As Nils Hasselmo notes, since World War II, we could always count on the world’s best and brightest students flocking to U.S. universities from here and around the world to study. Today, they have more options, and tomorrow, those options will be extraordinary. Europe, Australia, and Canada are competing with increasing success for the world’s students, but in the long run, the greatest competition will come from the great sending countries themselves, such as China and India. They are determined to educate their own people and reap the benefits of economic growth and prosperity, and they are building great research universities and producing more and more scientists and engineers. Ironically, these universities are based on the land-grant model. And why not? They know it works. (Hasselmo, 2005, p. 4)

In this world of increasing competition for the most talented students, American universities must resolve to not fall behind. If American students do not fill in where foreign student numbers are dropping off, especially in the fields of science, mathematics, and engineering, it means potential trouble. American universities are not as well prepared for these changes due to globalization as they should be (Hasselmo, 2005).

A key question is how will the American public research university rise to these challenges?
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The American public research university is rooted in the ideals of the Morrill Land-Grant College Act of 1862. This act stipulated that land-grant institutions were to “teach agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes in all the pursuits and professions of life.” But this act, along with successive acts of Congress, including the Hatch Act of 1887 and the second Morrill Act of 1890, helped direct university activities toward the community. The Hatch Act, for example, provided funds for the creation of agricultural experiment stations at land-grant institutions that would benefit farmers and the entire agricultural community.

The idea that public universities would provide service to their communities, states, and the nation as a whole is at the foundation of the land-grant ideal. The land-grant tradition embodies American idealism that states can provide for the national welfare. This ideal, this tradition, is as “valid today as it was in 1862” (Hasselmo, 2005, p. 2).

Yet educational leaders would do well to ask if their institution is indeed living up to the ideals of the land-grant tradition. Are institutions engaged in ways that help transfer the research into opportunities for the community? What is under consideration here are not just research universities, but public research universities, and “those who care about the future of the public research university need to ponder what being ‘public’ means in this day and age” and how universities can “better reflect the ‘public interests’” (Ikenberry, 2005, p. 7).

At the heart of the debate about the future of the American public research university is how they are and will be financed. Who will pay for the escalating cost of instruction, research, service, and administration? This question is one that is most visible in the public eye—especially of those who must pay for a college education: students and their parents. But the issue of financing public higher education has received increasing attention from lawmakers and governors. State appropriations for public higher education have decreased in recent years while tuition and reliance on fundraising has increased. This has caused a subtle but detectible shift toward the privatization of public higher education. In some cases, this type of change has happened gradually, and, in others, it has reached the tipping point where state universities and their sponsors are openly discussing “going private.” And all of this relates to the question of whether a student’s receiving a higher education is a private benefit or if it serves some public good.

A major challenge universities face is the escalating costs coupled with decreasing appropriations from their sponsoring states, on which public research universities have always been dependent for substantial portions of their budgets. But as Nils Hasselmo observes, “A legislature giveth and a legislature taketh away, and indeed, state financing of public higher education often follows a kind of biblical cycle—seven years of fat followed by seven years of lean. But we can no longer count on the fat” (p. 5). Institutions have become increasingly reliant on aggressive fundraising campaigns while still trying to maintain relationships with their states.

Clearly, something must be done about the escalating costs. This may include streamlining services, using technology in new ways, reducing administrative overhead, or any number of other measures. Each campus will have to grapple with these problems in its own way, but whatever the solutions each institution proposes,
it is clear that answers must come sooner rather than later because being accountable by controlling costs is “part of being public” (Ikenberry, 2005, p. 7). As legislators call for greater accountability, universities must find new and creative ways to reduce costs without reducing quality. As Nils Hasselmo points out, “We will never make an effective case for funding to government at any level without being able to prove our commitment to controlling costs” (Hasselmo, 2005, p. 7). Institutions must be prepared to answer hard about where and how they are allocating resources—what they are spending and why. Legislators, already slashing higher education budgets, are not likely to reverse the tide without seeing strong efforts by universities to answer tough questions about institutional management. This becomes even more apparent considering the competition for public funds in state government, especially when principal areas of competition include health care and other services for the elderly, a population whose allegiance for funding education may not be as strong as for these other sectors (Spanier, 2005).

So how can universities work with their sponsoring states to reverse—or at least slow—the decrease in state appropriations? Stanley Ikenberry believes that greater transparency is essential because “to be public is to be transparent.” Two types of transparency are essential: tuition transparency—so that students, families, donors, and policymakers can see what the actual cost of attendance is—and “functional transparency,” which explains who pays for what. Without these two types of transparency no one can know for sure what is going on in the institution, including the groups mentioned previously but also the boards of trustees, which are charged with making the difficult and important decisions about the governance and direction of the university (Ikenberry, 2005, p. 5).

Public universities must be prepared to give answers to the tough questions posed to them by the public and the representatives of the public, the lawmakers and governors. If universities are unable to answer these tough questions and demonstrate a new level of transparency, “states will continue to cut, universities will continue to scramble, cross subsidies will continue to grow, and the vulnerability of public research universities will continue to spread” (Ikenberry, 2005, p. 6).

The troubling trend for students, families, and politicians is the rising cost of tuition. This has caught the attention of governors and legislators in more than a few state houses and even the U.S. Congress, which in 2003 proposed drastic measures for institutions unable to keep tuition increases at bay. With tuition rising faster than inflation and faster than family incomes, the issue of how to keep tuition at reasonable levels will be a central issue for every public university in the decades ahead. “The public wrings its hands, genuinely worried, and maybe rightly so” (Ikenberry, 2005, p. 2).

The simpler days when the state paid for nearly everything are long gone. The increasingly diverse missions and functions of the public university necessitate a diversity of funding streams. Different groups—students, families, governments, foundations, donors—all contribute but in different ways and to different aspects of the university’s mission (Ikenberry, 2005, p. 6). But a clear trend is that costs are shifting from government to students and their families.
A consequence of these conditions of declining state support is the move toward privatization. In fact, the Commonwealth of Virginia currently is experimenting with its public institutions to allow them to act more and more as private institutions. And other states around the country are contemplating similar measures. A recent headline asks, “Do the best state universities need to privatize to thrive?” (quoted in Ingram, 2005, p. 5). Graham Spanier has observed this movement toward privatization: “Other indications of public higher education’s slow slide toward privatization include the heavier emphasis on fund raising, the increased loan burden on our students, and the growing trend toward partnerships with the private sector” (Spanier, 2005, p. 7).

While some see the opportunity to privatize public universities, it is important to remember that, in most cases, state appropriations are still the “largest single source of funding for current operating expenses at many public universities, making a move to full privatization a risky scenario” (Spanier, 2005, p. 7).

The answer may be that public institutions need to reassert what it means to be public. The gradual convergence of public and private higher education institutions, where they slowly begin to morph into one, indistinguishable institutional type, does not serve the public interest or the interests of public universities. The diversity of institutional types is an asset, not a weakness. But what does an institution gain by going too far down the path of privatization? To look at it pragmatically is to realize that privatization “promises a false bargain, accelerating the decline in public investment with no reciprocal reduction in state controls” (Ikenberry, 2005, pp. 3–4). A public institution could gain its financial independence while not completely losing the regulatory control of the state.

Related to the shift toward privatization is the increasing reliance on fundraising. This growing dependence on private donations means that university leaders must spend more time and energy on fundraising. Of course, with all of the money that universities are raising, they “better explain to the American people just what it is we do with all of that money we raise, especially from the billion-dollar-and-more campaigns” (Ingram, 2005, p. 8).

This is a complex chore for the modern university. It is not simply a matter of soliciting funds from wealthy donors. Entrepreneurial relationships that go beyond simply soliciting funds need to be created with economic communities. But in creating these entrepreneurial relationships, along with raising money for ever-larger endowments, the university must be prepared to confront the accompanying ethical issues. Universities need capable and creative boards that can help guide them into and through these relationships, advocating for new means of obtaining resources while still advocating for the institution’s mission (Ingram, 2005).

A central question in the financing of public higher education—who should pay?—is whether receiving a higher education is only a private gain or if it also serves some public purpose. Many people, including many elected officials, see a college degree as a private benefit rather than a public good.

While most Americans consider themselves “pro-education” and support more funding for higher education, it also is the case that anti-tax pressures are strong. Public universities are an easy target because they have the distinct problem that they are able to raise tuition when state budgets falter while other public services are
solely dependent on the state. And if students receive such benefits from a higher education as higher wages and a better standard of living, why shouldn’t they pay? At least that is the rationale used by many policymakers when faced with the dilemma of how to fund a public university (Hasselmo, 2005; Ikenberry, 2005; Spanier, 2005). But this can be the “easy way out.” State leaders need to take a serious look at the public benefits of supporting higher education and, while they call on institutions to make tough choices, they, too, will need to make important choices about the future of public higher education. If these state leaders “value an educated citizenry, if they value a better qualified workforce, if they value the economic benefits of a major research engine, and if they value the other cultural and educational benefits of their land-grant colleges and universities, then they need to provide the resources that make these things possible. It is one of the best investments they can make. In the long run, it may be the only investment that will really pay high dividends” (Hasselmo, 2005, p. 8).

The American tradition has been one of supporting education because an educated populace, in turn, benefits the whole of society. “Since the time of Thomas Jefferson, education has been looked upon as a public good, established to benefit all of society. That has been our legacy. But that legacy is at risk, and our role as public research universities is changing on many fronts” (Spanier, 2005, p. 3). However, as this legacy diminishes, public universities must find ways to reinvigorate public support for their roles. Universities need to “better inform the public about how the public research university directly and indirectly improves the economic health and the quality of life of every citizen—first by serving as a public good, secondly by serving as a private benefit” (Ingram, 2005, p. 8).

At the core of the American public research university is the research it conducts and the innovations that emerge. This type of innovation has played an important role in the national economy. Since the end of World War II, the U.S. has been the world’s leader in science and innovation, which have provided enormous benefits. As Nils Hasselmo commented,

Our society is immensely healthier, wealthier, and—I will venture to say—wiser; our country is stronger militarily; and we have built an infrastructure from which extraordinary benefits can continue to flow. Much of this progress is a direct result of our leadership in research—when we make discoveries, we get the first economic, health, and security benefits. (p. 5)

The American public research university has provided the foundation for this leadership, yet the nation’s long-held preeminence in science and innovation is under serious challenge. What may be required for American universities to not forfeit their place in the world of innovation is a renewal of the land-grant concept.

This land-grant ideal of the American public research university is rooted in its public nature. It also is rooted in the belief that knowledge must be shared for the public good and “the conviction that teaching, research and service are synergistic” (Ikenberry, 2005, p. 4). Indeed, public research universities have laid the foundation for many of the industries that benefit American society, including biotechnology, computing, telecommunications, and manufacturing (Spanier, 2005).
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Universities not only introduce new technologies but also must adapt to the technological and social changes around them. The revolution of technological change is constantly changing the way we live, in ways that we could not have imagined only years earlier. “How students learn, how universities teach and conduct research, and how they administer themselves within more and more complex structures of collaboration and competition will continue to change in ways we can only try to imagine today. In the knowledge society in which the land-grant—and other—universities are already operating, we have also seen an enormous increase in the importance and complexity of questions such as those of intellectual property—patenting, licensing, and copyright—and file sharing” (Hasselmo, 2005, p. 4).

Increasingly, universities work with the private sector to produce new knowledge and new technologies. This increasingly important collaboration fits within the tradition of the land-grant philosophy, because it is one means of ensuring the dissemination of knowledge. The Bayh-Dole Act (1980) facilitated a greater transfer of technology from the research university to the private sector. This legislation has allowed the fruits of research make it to the commercial marketplace and ensured that the public benefits from products and processes that might otherwise have taken many more years to be developed (Hasselmo, 2005).

With the transfer of technology from public universities to the private sector, universities must be wary. There is the risk that commercial interests will influence the type of research that is conducted. There is a risk that universities could, as Richard Ingram puts it, “sell our souls in return for corporate dollars” (p. 8). Universities must be careful not to divert scientists from their attention to pure research, from their “curiosity-driven path” (Hasselmo, 2005, p. 8). We can never know what we are missing once science is driven completely by outside forces.

In order to continue this legacy of producing new knowledge and technologies for public good, and in order to serve the students and other members of the public who benefit from the public research university, these institutions must adapt structurally to a changing future. Will the current structures be adequately flexible to allow universities to adapt in the future, or are universities locked into aging structures, into some form of organizational rigor mortis? A common characteristic of the organization of knowledge units—colleges, departments, institutes—is their isolation from each other because of a “silo mentality.” But more flexible structures allow for cross-disciplinary collaboration and research to accommodate the needs of new intellectual developments and opportunities (Hasselmo, 2005). And on the administrative side, public universities are subordinated to high levels of regulations despite declining appropriations. But institutions need to be nimble enough to proactively respond to new challenges and opportunities (Ingram, 2005). The remedy is to create flexible structures.

On the academic side faculty members from various disciplines and fields need to be able to come together without undue barriers. For example, “chemists, biologists, and social scientists from a new multitude of subspecialties must collaborate to address the world’s environmental issues. Humanists must work with engineers to connect the structures of the future to our human history, culture, and values” (Hasselmo, 2005, p. 7). It is the universities that need to take the lead to make these interdisciplinary collaborations possible.
On the administrative side, governance structures of public research universities need serious consideration by both states and the universities themselves. Because of their political nature, we must tread carefully in advocating for reforms or changes in their structure. Trustees have been regarded as “‘the keeper of the social conscience,’ ‘the protector of the public interest,’ or ‘the center of a system of checks and balances’ within the academy” (Ingram, 2005, p. 1). Several solutions should be considered for the improvement of governance. First, public research universities need their own governing boards. Some public research universities suffer when they are governed from afar, lumped in with institutions with different missions, goals, and roles. Furthermore, multiple sources of trustee appointments, instead of only gubernatorial appointments, give the board a more diverse makeup and help to depoliticize trustee selection (Ingram, 2005).

Second is the makeup of boards of trustees. Ingram notes that, “We need trustees who comprehend large budgets and complex human-resource challenges, academic health center operations, contracting and intellectual property policies and practices, risk management, and more. The research university needs to be nimble and entrepreneurial as never before, and trustees, carefully selected, can help. Trustees can help shape policies in many tricky areas even as they continue to serve as ‘buffers and bridges’ with the universities’ many traditional and new constituents” (Ingram, 2005, p. 4). These arrangements will work or not depending on how well leaders can work together, but “the essential question is whether system arrangements will work effectively in what seems to be a redefinition of relationships between state government and the public university” (Ingram, 2005, p. 4).

Trustees carry out an important public role. “So much is on the shoulders of so few. The bottom line is that we need more trustees and regents who are able and willing to be educators in the public domain, to protect our universities from those who would use them for their own purposes or profit, to advocate for their institution’s unique public purposes and missions, and to be generous with their own philanthropic capacity as they set an important example to other individual benefactors” (Ingram, 2005, p. 8). In order to strengthen the future of the public research university, governing boards must “rethink what it means to be public” (Ikenberry, 2005, p. 7).

Nils Hasselmo aptly summarizes the state of the American public research university as one of challenges and threats but also of immense possibilities for the next 50 years:

The excitement of teaching the next generation of scientists and engineers, physicians and teachers, managers and civic and political leaders, educated citizens, thinkers . . . . The discoveries yet to take place—the advances in health, the changes in energy, in transportation, in computing, in space, in how we live and how long we live. (2005, p. 9)

Stanley Ikenberry argues that public research universities need to become more engaged with the public to address these challenges and possibilities and “must mount a nationwide effort to open dialogue with the American public, especially opinion leaders and policy makers” (Ikenberry, 2005, p. 9). If we do not engage the public, they may not understand the contributions of the American public research
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university, namely, improving the “overall strength of the economy, keeping
unemployment and crime rates low, strengthening the quality of life in communities,
or whether it is the capacity to compete in international markets, remain at the
scientific and technological cutting edge, or find solutions for the myriad of social
problems society will confront, higher education must be a key element, providing
solutions, one student, one idea at a time” (Ikenberry, 2005, p. 10).

The book is organized around three main themes. Part I addresses “Learning,
Resources, and Competition: Dilemmas of the Public Research Universities.” Roger
L. Geiger examines the differences between public and private research universities
and what the most consequential macrotrends affecting the evolution of public
research universities are. Chapters 3 and 4 deal with financing the public research
university and provide insight into one of the current dilemmas for public higher
education: how to deal with rising costs—Donald E. Heller speaks to the role of
students and their families in this dilemma, and D. Bruce Johnstone provides lessons
from an international perspective. In chapters 5 and 6, on academic research and the
knowledge economy, Irwin Feller argues that, to compete well, universities must
become more “nimble” and Steven Brint explains how public research universities
compete with private institutions.

Part II speaks to “Strategic Engagement: Reconciling Public and Private Benefits
of Education in Public Research Universities.” These chapters address the evolving
roles and structure of the public research university. Gary Rhoades argues that public
research universities must carve out their own niches in the marketplace. Judith A.
Ramaley advocates for a type of outreach from universities that connects the goals of
science to develop theory and advance understanding with the ability to solve
practical problems and develop new useful products.

In Part III, on “Organizing Public Research Universities for Engaged Learning,”
Patrick T. Terenzini and Robert D. Reason ask whether the public research
university’s reputation for poor student engagement is a “bad rap or regrettable
truth.” And David D. Dill asks whether public research universities are effective
communities of learning and argues that developing governance processes that will
truly assure and improve student learning will be one of the most significant and
meaningful challenges for the American public research university in the coming
years. Lisa R. Lattuca and Carol L. Colbeck propose that while universities value
learning, the learning that is most valued in the research university is accomplished
not by students but by faculty. Research universities thrive because their faculty are
expert learners, and therefore organize themselves to support faculty engaged in
knowledge production. In the conclusion, Carol L. Colbeck and Roger L. Geiger
synthesize the grand themes of these chapters.

We now ask ourselves, is the past prologue to the future? Or will the American
public research university look radically different in a decade or century? Already
we see major shifts not only in the way scholars conduct their research, but also in
the speed at which their work translates into new products and innovation. Yet in
many ways today’s research university campus looks remarkably similar to the
campus of 50 or 100 years ago: students living in residence halls, attending classes
with professors, and socializing with friends, and faculty in the laboratory
conducting experiments. The promise of education at a distance has not slowed the
pace of building on research campuses and students continue to apply and attend in record numbers. So today’s campus, radically different than yesterday’s in terms of its capacity to innovate and change the technological landscape, looks similar to yesterday’s. And tomorrow’s campus may be the same, looking similar on the surface yet brimming underneath with unimagined progress. Predicting the future is always tricky business.

NOTE

Copies of these talks are in possession of this volume’s editors. They also are available at the Penn State University Archives. The editors would like to thank Elizabeth R. Price for her editorial assistance on this book.

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The public mission of state research universities rests ultimately on their role as repositories of learning and expertise. In order to disseminate knowledge broadly to students or to provide the services demanded by a knowledge-based economy, research universities must constantly replenish and augment their learning resources. The chapters in this section, however, reveal a dilemma at the heart of this mission: the measures taken to acquire such resources under current conditions may tend to make their benefits less accessible.

In chapter 2 Roger Geiger wrestles directly with that dilemma. He sees the role of “expert” as inescapable for public research universities, driven by knowledge demands and the special commitment of these institutions to engineering, physical science, and applied or practical fields. These activities generate an additional stream of resources but never enough. The universities must endlessly invest in their own learning to enhance the quality and breadth of their commitments. This thirst for resources and the marketplace for higher education have lured universities toward an increasingly elite posture toward undergraduate recruitment. Greater reliance on tuition, merit aid to attract top students, and aggressive recruitment of non-resident tuitions all have contributed to the prestige of the foremost public universities but also have restricted their clientele. The ensuing chapters explore additional contradictions.

Bruce Johnstone’s contribution places this American dilemma in an international perspective. Privatization is a truly international phenomenon, impelled by limitations on government spending for higher education in both developed and developing countries. Given this seemingly inexorable trend, U.S. public research universities are indeed fortunate in having the greatest capacity for privatization. Specifically, they can turn to non-governmental streams of income from tuition, gifts, and commercial undertakings to compensate for governmental stinginess. They also have considerably greater autonomy than universities in other nations, which allows them to adjust internal operations to shortfalls or opportunities.

The travails of foreign universities offer little consolation, as Donald Heller makes clear. Public universities depend on government for core support in a double sense: they look to the states for appropriations and to the federal government for most student financial aid. Their reaction to the relative weakness of state support has been steadily rising tuition, which has presented growing difficulties for lower-income students, and especially underrepresented minorities. Financial aid, mainly student loans, may have cushioned the initial impact of privatization, but there is growing evidence that this is no longer the case. Increasing costs of attendance, Heller concludes, are diminishing access to higher education for this substantial portion of the population.

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Both Irwin Feller and Steven Brint focus on the other horn of the university dilemma, the challenge of upholding quality. In this case the competition comes from private universities, which have experienced an unparalleled run of prosperity. Feller is the more pessimistic, foreseeing a continuing advantage for private institutions in harboring the most highly rated departments (although they always have). Beyond their having less spending power, Feller feels that public universities are handicapped by state interference and a resulting inferiority in managerial capacity. Brint counters that universities in the two sectors follow different business models. Public universities operate on a high volume/low cost model, while private institutions deliberately seek low volume with high unit costs. The latter approach yields more selective student admissions and star-studded faculties. However, the public approach yields the volume that is indispensable for the U.S. society and economy. Public universities produce more research, more Ph.D.s, and the majority of the nation’s scientists and engineers. Upholding the quality of these institutions is obviously essential for sustaining the nation’s human capital.

For public research universities there is no escaping the dilemma of their learning responsibilities. They must at once uphold the highest possible standard of learning and expertise and make their learning available to the largest feasible number of people.
Research universities in their most consequential actions behave in ways that serve to maximize learning—the learning of students, the learning of faculty, and the sharing of that learning with other groups in society in ways that enhance learning for all concerned. Universities seek the most proficient learners in the students they enroll, and they also have a proclivity for more advanced over more rudimentary learners. The entire system of recruiting and promoting faculty is based on the evaluation of learning, something for which universities are often criticized. And, the selection of outreach activities in which universities engage is strongly biased toward commitments that draw on their special learning and in turn contribute to additional learning.

The maximization of learning presupposes a competition for inherently scarce resources. Excellent students, talented faculty, and grants to support research and scholarship are sought by all research universities. Learning also depends on the cumulative investment in library collections, laboratories, and an entire infrastructure. All these inputs cost money. Hence, Howard Bowen’s famous law that, in the pursuit of excellence (or, he might have said, scarce inputs), universities raise all the money they can and spend all the money they raise (Bowen, 1980). But money is only a means, and money alone cannot purchase the most crucial inputs.

The inherent competition for scarce inputs nevertheless produces a hierarchical distribution. However, hierarchy in this case is mitigated by two factors—limitations on the scale of individual academic enterprises and the vast size and diversity of the world of learning. A given university will not expand beyond what it considers an optimal size and mix of activities, and for that reason it cannot covet more than a tiny portion of those scarce inputs. For example, no research university conducts more than 2% of total academic research. The result is a highly decentralized industry. Decentralization is further abetted by the myriad specialties and sub-specialties of academic knowledge. No single institution can excel in all, and any qualified university can do some things well.

Each university, in essence, has its own formula for garnering inputs and shapes its own niche within the academic world—what might otherwise be called its unique production function. The term production function is used loosely to refer to the relationships between inputs, technology of production, and outputs of universities. The first section of this chapter contrasts the production functions of public and private research universities and highlights developments that seem to be enhancing their respective roles. The next section looks more closely at public research universities, identifying the major trends that currently are shaping their destinies.

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The final section identifies the points at which pressure has been building between different trends and missions.

PUBLIC AND PRIVATE RESEARCH UNIVERSITIES

In *Knowledge and Money*, Geiger examined the crucial role of subsidization in creating the margin that sustains quality in higher education: “this margin . . . makes possible the conditions that most distinguish universities—what might be called the over-qualification of instructors, the generation of academic knowledge, and the synergies of multiple purposes” (2004a, p. 12). The qualitative margin depends above all on the level of basic revenues that support the academic enterprise. For this study, this figure was estimated for 99 research universities—33 private and 66 public—for 1980, 1990, and 2000. The overall patterns for public and private universities were clearly different. In 1980, the median educational expenditure per student at public universities was $10,000, and at private universities $11,000 (1996 $). By 2000, public universities had increased median expenditures to $14,000, but privates had risen to $22,000.

This extraordinary prosperity of private research universities was fueled principally by escalating tuition, which rose roughly six-fold in current dollars. More accurately, net tuition revenues per student, measured in constant dollars, increased by 138% from 1980 to 2000—still a vertiginous pace. However, total university revenues increased at about the same rate. The contribution of student tuition dollars remained stable at 70% of total revenues. Thus, the average per-student subsidy from endowment also grew at that same vertiginous pace. In fact, endowment values increased considerably more, because the spending rate for endowments fell by roughly one-third (6% to 4%) from 1980 to 2000. The basic revenues of private universities, then, depended first on their ability to impose and sustain price increases (high tuition), and second on the increasing value of gifts and endowments. The first condition was the result of the strategy of high-tuition/high-aid, or differential pricing. That system required large numbers of talented applicants from which to choose—high selectivity, in other words. And selectivity, in turn, depended upon the reputation and prestige of the institution. The second condition—endowment growth—is also closely related to institutional prestige. Market returns to investments played a major role in these decades, but gifts from admiring donors were a critical component of endowment growth—and also a significant factor in the spectacular growth of physical capital.

The 1980s and 1990s were prosperous decades for public universities in historical terms, but not when compared with private universities. Real basic revenues grew by 62%, less than half the rate for private universities. And more of that additional money came from student tuition than from state appropriations. This development was largely a phenomenon of the 1990s, when students supplied an additional three dollars for every one dollar increase from the states, and this trend intensified after 2000. In 1980 students paid about one dollar in tuition for every four from the states; by 2002 that ratio was 2:3. Thus, one-fifth of the cost of education in a public research university was transferred from state governments to students and their