Challenges Facing Higher Education in the Twenty-First Century

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The twenty-first century has brought with it profound challenges to the nature, values, and control of higher education in the United States. Societal expectations and public resources for higher education are undergoing fundamental shifts. Changes both within and outside the academy are altering its character – its students, faculty, governance, curriculum, functions, and very place in society. As Clark Kerr and Marian Gade noted nearly 20 years ago, crisis and change in higher education "have been the rule, not the exception." Nevertheless, current changes are transforming higher education to an extent perhaps greater than since the end of World War II.

This chapter focuses on the impact of major external influences on U.S. higher education, particularly government and market pressures, and in turn, the impact of resulting institutional decisions in matters such as program choices, tuition charges, and the conduct of research on outcomes of higher education for society at large. The five issues addressed here discuss changing answers by the public, policy makers and higher education to central questions about the value, role and control of higher education: Who pays for higher education? Who benefits? Who decides who should benefit, what should be offered, and what the outcomes should be? By necessity, of course, other significant issues are omitted from this discussion. While each of the five issues raises all three questions, for this discussion they are organized as follows:

ISSUES EXAMINED

Who Pays? — Growing privatization of public colleges and universities
— A more commercialized and politicized research system?

Who Benefits? — Who will attend college? Challenges to access
— The changing and uncertain job market for Ph.D.'s

Who Decides? — Accountability, governance, and coordination

A common thread runs through these issues: challenges to the content of colleges' and universities' "social contract." These challenges are apparent in ongoing conflicts over public and private benefits of higher education, equity and merit, undergraduate and graduate education, "basic" and commercially oriented research, or institutional autonomy and public control.

The Growing Privatization of Public Colleges and Universities

States today have become "minority partners" in the colleges and universities that typically bear their names. On average, states now supply only a little over one-third of public colleges' revenues. Yet because these funds generally pay most basic instructional costs, such as faculty and staff salaries, state support remains

critical to public institutions. Over the next decade, a combination of acute state revenue constraints, competing demands for state resources, and ongoing changes in public attitudes toward higher education will likely result in continued shrinking and unpredictable state support for higher education. Although many private colleges are also facing serious budget difficulties due to rising costs, market limits on tuition increases, reduced private giving, and declining endowment income, public institutions, which generally have less ability to tap private sources, will be hit harder. This section addresses the far-reaching impacts of declining state support for public institutions in the U.S., which enroll three-quarters of all college students and two-thirds of all students in four-year colleges.

Shrinking State Funding for Higher Education

Because higher education is the largest discretionary item in states' budgets, state funding for higher education tends to rise when the economy and resulting state revenues are good and to drop during recessions. Even during boom times, funding may be less than it appears once inflation and rising enrollments are taken into account. During the U.S. economic recession of the early 1990s, states cut higher education appropriations by amounts unequalled in constant dollars since at least World War II, despite enrollment growth. In the late 1990s, state funding per student finally began returning to pre-1990 levels – only to be cut almost immediately during the recession early in the new century. As a result, state dollars per student in public institutions were 12 percent lower in fiscal year 2004 than they were 15 years earlier, as Figure 5.1 shows, despite an improving revenue picture in many states. Although state funding patterns varied widely, 23 states allocated less money in 2004 than in 2003, even without considering inflation or enrollment growth, with nine states reporting cuts of five percent or more.

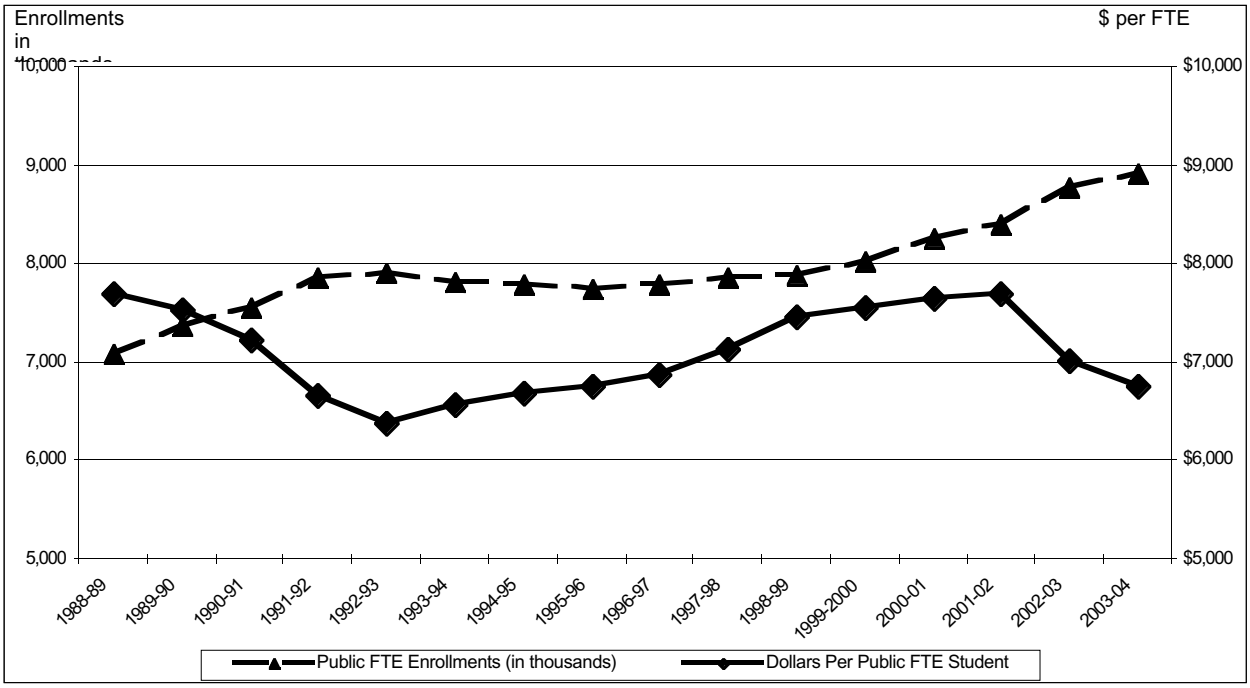

Figure 5.1 Public Higher Education Enrollments & State Appropriations to Higher Education Per Student, 1988-89 to 2003-04 (in constant 2003 dollars)

Sources: (1) Funding: "Appropriations of State Tax Funds for Higher Education Operating Expenses — 50 States," *Grapevine* (Normal: Illinois State University, Center for the Study of Education Policy, 2004), and State Higher Education Executive Officers (SHEEO), 2003: http://www.sheeo.org/finance/fiscalres.htm; (2) Students: National Center for Education Statistics, *Projections of Education Statistics to 2013* (Washington, D.C.: U.S. Department of Education, 2003), table 22. (Enrollment data for 2001-02 to 2003-04 are projected.)

Long-term prospects for state higher education funding are not favorable. Many experts believe that states' revenue problems will persist even after the economy improves because state tax systems are obsolete – for example, a growing percentage of economic activity is in non-taxed services and Internet sales – and because voter-imposed limits have made raising revenues more difficult. At the same time, an estimated 40-50 percent of state expenditures is locked up in mandated program costs, particularly for K-12 education and Medicaid. These mandated costs are expected to increase, especially for Medicaid, which already consumes about 20 percent of state budgets, as the rising numbers of the elderly require more health services. Also, state actions taken during economic boom times, such as tax cuts or implementation of popular new programs, are hard to eliminate when the economy weakens. In this environment of restricted revenues and mandated expenditures, higher education funding is a tempting target to cut, not only because it is discretionary but also because colleges, unlike many other state programs, can tap other revenue sources, and because a growing proportion of the public believes that students should pay more of their college costs.

Unpredictable state funding is equally problematic. In fiscal year 2003, 27 states imposed mid-year reductions

in their higher education allocations, including a 16 percent mid-year cut in Colorado and cuts of five percent or more in 11 other states. Unexpected cuts made during the academic year, after faculty have been hired, programs put in place, and student fees set, leave institutions with difficult choices.

Declining capital dollars for funding to construct, renovate, and maintain classroom or research buildings and campus infrastructure may be as big a constraint on institutions' ability to accommodate enrollment growth, recruit faculty, and conduct research as are state appropriations for operating expenses. A 1995 survey (the most recent available) by the Association of Higher Education Facilities Officers and the National Association of College and University Business Officers estimated that higher education institutions had a $26 billion backlog in deferred maintenance of existing facilities. A new survey, to be conducted in late 2003, was expected to show that this estimate had increased by at least 25 percent. Ultimately, these repairs will cost more than if maintenance and replacement had been made on schedule. In addition, fewer state bonds for capital construction at public colleges may be placed on the ballot in the next decade if they are seen as lowering a state's credit rating or as competing with bonds for other purposes, including to cover state deficits. Although many policy makers are looking to distance education and computer-based technologies to reduce space needs, technology costs remain high, and computers will not supplant the need for teaching and research laboratories.

Privatization

As institutions seek to offset declining state dollars, public colleges and universities are becoming increasingly "privatized." For the nine-campus University of California, for example, state funds dropped from 37 percent of the total operating budget in fiscal year 1990 to 23 percent in 2004. At Pennsylvania State University, state appropriations declined from 21 percent in 1990 to just 13 percent in 2002. Nor are these declines just at research universities. Nationally, state funds for all public institutions dropped from 46 percent of current fund revenues in 1981 to 36 percent in 2000. While the declining proportion of state funding at some institutions is due in part to success in obtaining more extramural grants and private donations as well as growth in auxiliary enterprises, nationally two-thirds of the change reflects the substitution of tuition and fee income in place of state support. In 1980, tuition and fees constituted 13 percent of public institutions' current-fund revenues; by 2000, they constituted about 19 percent of revenues for all public colleges and nearly one-third of that for public non-doctoral baccalaureate institutions. Although these trends have been going on for at least 20 years, the extraordinary pressures being placed on state revenues and expenditures for competing services today are likely to accelerate the move toward more reliance on private funding for "public" higher education – unless there is a paradigm shift in public support or unless state or federal policy makers impose mandatory tuition limitations.

Many public institutions are themselves pursuing privatization as a means to raise revenues or reallocate scarce state dollars. Some institutions are requiring that certain academic programs, especially high-demand, high-return professional programs like law or business, become fully or nearly fully funded by clients (students), business, or other private sources. The University of Virginia's law and business schools became fully self-supporting by 2004, and many other public research universities have been exploring similar moves; most already charged business, law, and medical students much higher fees than those charged other students. Even teacher or school administrator training programs (which generally are not high-return) have been privatized

in some cases. While institution often want to use the state dollars "saved" for programs less able to charge high fees, the result in some cases may be a further decrease in state funds. Institutions are pursuing other strategies as well. Many are expanding self-supporting part-time degree programs geared to working professionals. Community colleges and other institutions are expanding contract education programs with specific businesses or industries. Both public and private universities have adopted commercial technology transfer and other for-profit collaborations with industry. Colleges and universities are "outsourcing" many institutional functions to private vendors or other education institutions, including operation of residential dorms, employment training, and even academic functions such as remedial education and beginning language instruction. University hospitals have formed partnerships with both nonprofit and for-profit health organizations. Other institutions have established shared-use facilities with private enterprise.

Consequences of State Funding Declines and Privatization

State funding declines and resulting institutional strategies raise the following questions:

— *Access, success, and diversity:* How will further tuition increases affect student access to and success in higher education? Unless sufficient need-based financial aid is provided, low-income students and historically underrepresented ethnic groups may be excluded. Even if students and their parents are able and willing to pay higher tuition, some institutions and state policy makers facing fiscal pressures are preparing to cap or even reduce enrollments, despite growing enrollment demands. If so, what will happen to students unable to get in? These issues will be examined further in a subsequent section.

— *Impacts on faculty:* Over the next decade, many new faculty will be needed, both to replace the large numbers of expected retirements and to teach the growing numbers of students. How will conflicting forces of budget constraints and the need for new faculty affect how many faculty will be hired and for what types of positions? Although student/faculty ratios could rise – indeed, many faculty positions were eliminated during the recession of the early 2000s, primarily by not replacing tenured faculty and not renewing contracts for non-tenure-track faculty – new faculty will nevertheless be needed. In this environment, both public and private institutions may hire an increasing proportion of faculty who are ineligible for tenure, generally at lower salaries than tenure-track faculty. In 1998, about 55 percent of all instructional faculty and over a quarter of full-time faculty at four-year institutions were ineligible for tenure. Budgetary problems and enrollment growth may well accentuate this trend. Growing use of temporary faculty presents both advantages and problems. On the one hand, it increases institutions' ability to respond to changing student demand and reduces institutional costs. On the other hand, it creates a two-tier academic labor force. According to the American Association of University Professors, the increasing reliance on part-time, temporary, and adjunct faculty threatens the tenure system and may harm the quality of higher education.

— *Program reallocations:* In a more market-driven environment, will institutions (private as well as public) respond by shifting program resources toward fields that promise tuition-paying students high-paying jobs or that bring in more external research grants? To date, the impact of budget cuts on programs appears largely unplanned. In some cases, disproportionate numbers of faculty positions in certain fields have been left vacant, leaving an imbalance between faculty expertise and institutional needs. In terminating non-tenure-track faculty, institutions have indirectly made decisions to reduce or eliminate programs such as remedial education, beginning language courses, and teacher education, which often depend heavily upon non-tenure-

track faculty. Repetitive across-the-board cuts have gradually weakened once viable programs until they become obvious candidates for termination. However, as fiscal constraints continue, more institutions are intentionally reducing, consolidating, or eliminating specific programs. State policy makers have at times been the driving force behind program reallocations. In the 1990s, statewide coordinating agencies in Ohio, Virginia, and Illinois, in response to pressures from governors or legislators, encouraged or required institutions to eliminate scores of programs, especially doctoral programs, or to reduce graduate enrollments sharply. By contrast, governors in California, Oregon, Washington and other states in recent years have pushed institutions to *expand* enrollments in high-tech fields perceived as bringing economic growth to the state. Often the programs cut have been identified as academically weak, high cost, duplicative, having low market demand, or less central to institutional mission or state need. Deciding what programs are low quality or less important may be subjective, however. Based on faculty retrenchment cases in the 1980s, Sheila Slaughter suggested that departments serving primarily women or fields unable to tie themselves to market needs may be disproportionately cut. Over the next decade, humanities and social science programs may be at risk if institutions implement budget systems that require departments to generate income equal to their costs. Or to generate revenues, these departments may increase both enrollments and teaching loads and reduce teaching costs by using more adjunct faculty. If so, this would exacerbate the difference, especially within universities, between a relatively low teaching-load and highly research-oriented science and engineering sector and a relatively high teaching-load and less research-oriented humanities and social sciences sector. If institutions are to prevent such imbalances from growing, they may need to consider reallocating scarce dollars to support important areas unlikely to be sustained by extramural dollars or high tuition. Where programs are being eliminated, students should be given adequate resources or alternatives to complete their degrees.

— *Narrowing of institutional missions:* Will budget cuts result in a contraction of institutional missions? In California, after several years of increased state funding for college "outreach" programs to improve the academic preparation of public school students, especially in schools with low-income and limited-English students, the state slashed these funds in 2002 and 2003, undermining efforts to increase college preparation, enrollment, and graduation of disadvantaged students. The state similarly cut university funds for other K-12 and public service programs, as well as for state-funded research centers.

— *Conflicting pressures on governance and control*: Within the institution, budget constraints may lead to both greater centralization and greater decentralization of authority. Slaughter concluded that retrenchment "generally undermined faculty participation in governance and faculty authority over the direction of the curriculum." At the same time, institutional decisions to require academic units, especially professional schools like business and law, to become self-supporting through tuition revenues or private gifts and contracts tend to shift control from central administration to more autonomous units and to diminish adherence to institution-wide missions. At the state level, many states are demanding greater and more detailed accountability of diminishing state revenues, for example, over faculty workload, even as other states are considering reducing controls in exchange for reduced state appropriations.

— *Impacts on the higher education system as a whole:* Will declining state funding, along with government or market limits on tuition, widen the gaps between the "haves" and the "have-nots" in the U.S. higher education system overall – between faculty and student resources at most public institutions and those at well-endowed private institutions, between elite and less elite institutions within the public sector, between tenure-track and non-tenure-track faculty, or between science and non-science fields? The answer in many cases

appears to be “yes.” Over the past decade, the gaps have grown between public and private institutions on a number of measures generally considered quality indicators, such as faculty salaries and student/faculty ratio, leading to questions about whether public institutions can retain past levels of instructional and research quality. This problem may be particularly severe at public two-year or four-year comprehensive institutions, which have fewer opportunities to offset declining state dollars with federal grants or private gifts. Another issue is the distribution of students among institutions. If tuition at public institutions continues to rise, will enrollments shift from public to private higher education or from four-year to less expensive two-year institutions? In recent years some small shifts in these directions occurred. However, enrollment shifts to public two-year colleges assume that two-year colleges will have the resources to enroll more students and that students can afford their rising fees. If insufficient resources force institutions and students to make choices, nontraditional students, including returning adults and those whose initial preparation precludes admission at other institutions, may well be shut out of traditionally open-door community colleges.

A More Commercialized and Politicized Research System?

In the past 25 years, significant changes in the nature of scientific research have occurred. These include the development of fields and techniques not even imagined a quarter century ago, growing university/industry collaboration in the commercial marketing of research discoveries, increased targeting of federal research funding for specific projects, more political involvement in funding – and in prohibiting funding – of research in politically charged areas, and a movement toward “big science” projects involving hundreds of researchers and billions of dollars.

University/Industry Collaboration

Between 1980 and 2000, industry funding for university research and development (R&D) in science and engineering grew much more rapidly than any other funding source, nearly doubling as a percentage of total university research dollars, from four to almost eight percent. Although this is a small percentage of total dollars, industry support plays a much larger role in certain fields, such as biotechnology and civil engineering. For example, a mid-1990s survey found that 79 percent of university faculty in engineering received at least some industry funding. During the 1990s, pharmaceutical funding for university biomedical research shot up. At a time when there are concerns that the growing national deficit together with increased expenditures for federal defense and security may lead to reduced federal research funding, researchers may seek industrial sponsorship much more aggressively.

University/industry partnerships, where researchers in both sectors are jointly involved in research activities, have also grown dramatically over the past two decades. This trend reflects the increasing permeability of boundaries between the two sectors, as universities engage in more commercial marketing and as more new Ph.D.’s take jobs in industry but maintain ties with their former faculty advisers. One indicator of this is the growth in the number of university-based research centers with close ties to industry, which increased nearly two and one-half times between 1980 and 1990. Another indicator is the increasing proportion of articles co-authored by academic and industry researchers in fields such as engineering (now more than 15 percent), as well as physics and clinical medicine. Federal and state agencies have further stimulated these

partnerships by linking research funding to industry participation; as a result, even public funding takes on characteristics of industry sponsorship.

University/industry collaboration can provide additional sources of support for university research, access to a broader range of talent, and more rapid development and transfer of useful products like vaccines. However, such collaboration is also subject to potential problems. These include hindering the flow of research information and of graduate students' degree completion when industrial sponsors require researchers to delay release of potentially marketable results; suppressing undesirable results (for example, in drug tests); and skewing research agendas toward corporate interests. Nor are these impacts limited to the hard sciences and engineering. In its battle to overturn jury damage awards in the 1989 Exxon Valdez oil tanker spill, for example, Exxon funded psychologists, economists, law and business faculty to conduct research on the competence of juries to set punitive damages. High-profile cases where corporations have provided millions of dollars to universities in return for prior review of and right to delay presentation or publication of results or for influence in setting the research agenda have raised concerns about bias and inhibition of research, as well as the use of universities' credibility to legitimize industry goals.

Commercialization

A still more problematic trend is the growing involvement of university researchers and of universities themselves in the commercial marketing of scientific and technological discoveries, a trend stimulated by the 1980 passage of the Bayh-Dole Act, which allowed universities to patent inventions developed with federal research funding. During the 1980s, leading university researchers established or became associated with for-profit biotechnology and other "high-tech" companies based on their federally funded university research, a development that prompted Congress to enact conflict-of-interest regulations. Nevertheless, this trend continued throughout the 1990s. Many universities have established for-profit technology-transfer units designed to speed the flow of scientific discoveries and products to the private sector and bring dollars to the institution. They have also encouraged spin-off companies based on faculty research and have acquired equity in the spin-off firms they generated. Universities have moved aggressively into securing commercial patents, especially in drug and other biomedical areas, as well as negotiating royalty and licensing arrangements with private companies. Between 1993 and 2002, the number of patents issued to academic institutions increased almost two and one-half times, although two-thirds of these went to just 13 universities or university systems. As the National Science Board notes, these trends reflect "the confluence of two developments: a growing eagerness of universities to exploit the economic potential of research activities conducted under their auspices and the readiness of entrepreneurs and companies to recognize and invest in the market potential of this research."

Many of these efforts suffered a setback when the high-tech "bubble" burst in the economic recession at the start of the twenty-first century. Nevertheless, despite strong faculty opposition in some cases as well as the limited success of these initiatives at most universities, they are likely to grow, especially during a period of limited state and federal funding, because they promise universities increased revenues. Like industry sponsorship, commercial marketing of university research also poses threats to the research system, among them the possibility that it will create conflicts of interest for individuals and institutions, restrict the flow of information, increase the university's fragmentation into entrepreneurial fiefdoms, and shift power to nonaca-

demic personnel who typically control for-profit enterprises within the university. Critics also charge that commercialization may further shift research priorities toward more marketable areas in science and technology fields, distort traditional academic missions, and replace science dedicated to the public good with the "privatization of knowledge."

Political Involvement in Science

Political involvement in universities' scientific research is not new. Federal and state policy makers have long set aside research dollars for projects intended to stimulate economic development in particular business sectors or to cure specific health problems. But two recent trends highlight how political intervention may subvert the research process to serve partisan or ideological ends. First is Congress's growing readiness to "earmark" research monies for universities in the home districts or states of powerful legislators. In 2003, these noncompetitive earmarks, which bypass the academic peer review system intended to ensure that funding is based on merit, totaled over $2 billion – more than six times the amount earmarked in 1996 and equal to about 10 percent of federal research dollars to universities. Although there have been calls to reduce such earmarks, pressures on legislators to benefit their constituents may ensure that they continue. Second is an ideological cast in some cases regarding what and who are studied. In line with views of some religious groups, for instance, President Bush in 2001 banned federal funding of research using human embryonic stem cells except in limited cases, and Bush Administration staff reportedly warned researchers that grant proposals on AIDS research that contained such terms as "men who have sex with men" and "needle exchange" would receive extra scrutiny.

In sum, these changes in how scientific research is funded, conducted and used provide opportunities for universities to develop new revenue streams and to serve economic and other public needs more effectively and for government to help meet important policy goals. However, they also pose threats to university missions and priorities, academic integrity, and faculty control. The challenge for research universities and for government and private funders of university research will be to address more fully the public's legitimate needs, while implementing policies and decisions to maintain university support for core academic areas; to enforce policies and accountability mechanisms designed to prevent conflicts of interests or acquiescence to external pressures; and to take a more active role in informing and shaping public discussion about national priorities.

Who Will Attend College? Challenges to Access

The United States truly has a system of "mass higher education." In 2003, over 60 percent of recent high school graduates and more than one-third of the traditional "college-age" population (18-24-year-olds) were enrolled in postsecondary education institutions. Total enrollments have increased dramatically, rising nearly 50 percent over the past 25 years, to over 16 million students in 2003. Participation in college remains uneven, however. Moreover, shifting demographic, political, and economic forces are challenging past assumptions about who will—and even who should—enroll in our colleges and universities.

A Changing Student Pool and Rising Enrollment Demand

Students in U.S. colleges and universities today are very different from those of even twenty years ago. A much larger proportion than in the past are older, part-time, and from ethnic minority groups. In 2000, students aged 25 years and older composed about 40 percent of total college enrollments and nearly one-quarter of full-time enrollments. Over one-quarter of all college students were ethnic minorities, up from 16 percent in 1980, with the greatest increases among Latino students, who are likely to surpass African-American enrollments in the next few years.

However, college participation, especially in four-year colleges and universities, remains unequal. Despite growth in numbers, African American and Latino students remain significantly underrepresented in higher education, as Table 5.1 shows, as are Native American students. Fewer minority students complete high school, although in recent decades the gaps in high school drop-out rates among ethnic groups educated in the U.S. are narrowing. Once they graduate high school, however, only a little over half of African American and Latino graduates enter college, compared to nearly two-thirds of white high school graduates. Close to half of underrepresented students who do attend college enroll in two-year institutions. Because most of these students do not transfer to baccalaureate-granting institutions, an even smaller proportion receive bachelor's or higher degrees, although these numbers are slowing rising. In 2000-01, African Americans received less than nine percent of all bachelor's degrees, and Latinos received only six percent, even though together these two groups constitute one-quarter of high school graduates and one-third of the college-age population.

Table 5.1

High School Drop-Out and College Enrollment Rates,

by Race/Ethnicity, Income, and Parents' Education, Selected Years

I. High school drop-out rates of 16-19-year-olds

Year	Total	*Race/Ethnicity*				
		African American[a]	Latino		White[a]	
			U.S.-born	All		
1990		11	14	15	22	10
2000		10	12	14	21	8

II. College enrollment rates of recent high school graduates[b]

Year	*Total*	*Race/Ethnicity*				*Family Income*		*Parents' Education*	
		African American[a]	Latino	White[a]		Lowest		Highest	
High School Graduation	Bachelor's Degree								
20%	20%			1981	54	43	52	55	

34	68			1991	63	46	57	65
40	78	51	87	2001	62	55	52	64
44	80	52	81					

Sources: Richard Fry, *Hispanic Youth Dropping Out of U.S. Schools: Measuring the Challenge* (Washington, D.C.: Pew Hispanic Center, 2003); National Center for Education Statistics (NCES), *Digest of Education Statistics, 2002* (Washington, D.C.: U.S. Department of Education, 2003), table 183; NCES, *Condition of Education, 2003* (Washington, D.C.: U.S. Department of Educaton, 2003), tables 18-1, 18-3.

a. Drop-out rates include Latino whites; college enrollment rates exclude them.

b. Rates are for individuals aged 16-24 who graduated from high school during the preceding 12 months. Data for African Americans and Latinos are subject to relatively large sampling errors, due to small sample size.

Poverty is the biggest barrier to college attendance. Students from poor families of all ethnic backgrounds and those whose parents did not have a college education are even less likely than underrepresented minorities as a whole to enroll in college or even to complete high school, as a result of what some critics argue is “an elaborate, self-perpetuating system of social and economic class that systematically grants advantages to those of privilege.” Among those who do enter college, perhaps a third or less enroll in four-year colleges, and very few enroll in the nation’s elite institutions. Young adults from families in the bottom income bracket are eight times less likely than others in their age group to complete a bachelor’s degree. Financial burden, lower levels of academic preparation, and lower expectations – all of which correlate with poverty and parental education – contribute to these negative outcomes.

Demand for college will continue to grow in the next decade. The National Center for Education Statistics projects that college enrollments will increase 11 percent nationally between 2003 and 2013, even though high school graduation rates are expected to level off or decline by the end of the decade. Enrollment demand will be fueled especially by high growth in the numbers of high school graduates in such large

"sunbelt" states as Florida, California, and Texas, as well as in other large states like Michigan and New Jersey. (By contrast, some states, mainly more rural ones, may see declines.) By the end of the decade, students of color will constitute close to 40 percent of the college-age population nationally. Demographic changes will be dramatic in some states, especially the growth of Latino populations in the Southwest and Asian populations in the West. By 2010, for example, California projects that over 40 percent of public high school graduates will be of Latino background, while just over one-third will be white. In some states, many immigrant students may have limited English proficiency, which will restrict their college options. In 2002-03, for example, 16 percent of California's public high school students were identified as "English Learners."

Access Implications

These changes will have important implications for higher education and especially for college access and completion. First, the growing demand for higher education will collide with forces limiting enrollment: budgetary demands on governments that already have limited revenues to meet other social needs, greater public readiness to consider higher education a private good, and consequent reduction in public funding for higher education. Public institutions will face pressures to enroll more students with less funding and to shift admission priorities – to reduce the number of graduate students and deny admission to students needing remedial assistance, for example. Many private institutions and some public ones will have a seller's market, allowing them to become more selective. More institutions may "leverage" financial aid funds by directing more of their limited dollars to relatively well-off, tuition-paying students. Enrollment caps, increased selectivity, and targeted admissions may create what has been described as a "cascading" effect, where higher-income or better prepared students take the place of students who otherwise would have been admitted, who in turn enroll in those institutions one step "down" in selectivity, until those at the bottom have no place to enroll.

Second, rising tuition costs, if not coupled with adequate financial support, may keep low-income students from entering or from completing college. For example, for students from the bottom 25 percent of family income, total costs at four-year public colleges equaled over 70 percent of family income in 2003. Although financial aid reduces these charges substantially (and costs vary greatly among states and institutions), the "net price" for college (tuition and fees less average grant aid per student) has increased at both public and private institutions. Moreover, over the past 25 years, federal, state, and institutional financial aid programs have increasingly shifted away from both grants and need-based support. Federal financial aid has moved overwhelmingly toward loans, rising from about half to about 70 percent of all federal aid, and aid eligibility has been expanded to include more middle-class students. At the state level, non-need-based "merit" aid, which disproportionately aids middle- and upper-income students, rose from 10 percent of state grant dollars in the early 1990s to nearly one-quarter in 2002. Low-income students are most affected by these changes because they are less willing to incur large amounts of debt to finance college and may not be eligible for "merit" aid, and grant programs have not increased enough to cover the expanded pool.

Third, financial support alone will not ensure access and success in college. Low-income, underrepresented ethnic minority, and first-generation students often come from schools with fewer academic resources, have less academic preparation, and may have lower expectations. In Jonathan Kozol's view, the differences in the resources available to rich and poor school districts have created "savage inequalities" in the education their

pupils receive. Unless higher education institutions work with low-wealth schools and communities to advocate for increased resources and to improve their students' college readiness, U.S. society will lose the talents of a growing segment of the population. In addition, relatively few such students will attend four-year colleges and universities without active intervention. Finally, the increasingly diverse student body will continue to change the face of the campus. Colleges will need to develop ways to respond effectively especially to those low-income, first-generation African American and Latino students who do make it to college but who tend to drop out at higher rates than do middle-class white students. This may mean more academic support – including remedial education where necessary – and more support for English as a second language, as more non-native-English speakers enter college. It will also require college climates and curricula that welcome students' differing backgrounds and perspectives as opportunities to enlarge the range of voices and experiences and to build upon students' diverse language and cultural backgrounds in preparing them for a more interdependent global society.

Changing Public Expectations

As noted above, higher education is increasingly viewed by both policy makers and the general public as primarily a private benefit, rather than a broader social good. Over 90 percent of U.S. adults believe that every high school student who wants a four-year college education should have the opportunity to gain one, according to a 2003 survey, and two-thirds believe state and federal governments should invest more money in higher education – but nearly two-thirds believe that students and their families should pay the largest share of the cost of a college education. Given ongoing access barriers, these perceptions may make it more difficult than in the past for historically underserved groups to enroll in college, at a time when they are becoming a larger proportion of the college-age pool.

Ironically, these changed perceptions come at a time when high school students of all ethnic backgrounds are completing substantially more college preparatory and advanced coursework in science and mathematics than previous generations, as a result of higher state graduation and college admission requirements. Having achieved higher levels of academic preparation, however, students may find themselves shut out of four-year colleges if these institutions reduce enrollments or raise admission standards further.

The ongoing backlash against affirmative action is occurring in this context of changed perceptions and scarce resources. Although the 2003 U.S. Supreme Court decision on the University of Michigan's admissions practices reaffirmed the legality of including race or ethnicity as one of multiple admissions criteria, many institutions are still prevented from considering race, ethnicity, or gender in admissions or financial aid. In California and Washington, for instance, the electorate has outlawed such considerations; elsewhere, governors or governing boards have disallowed or discouraged their use. As a result, increasing the numbers of underrepresented students will remain more difficult. Moreover, the continuing opposition to affirmative action or to admissions criteria that go beyond standardized tests and grades has radically changed the debate over equity and access. While supporters see these practices as a means to "level the playing field" for underserved students, recognize a broader range of qualities for admission, and enhance valued diversity, critics portray it as creating new inequities that give access to unqualified individuals and that harm those so admitted who must compete with academically better prepared students. In turn, the latter view is creating a more hostile campus climate for minorities, which could discourage some from even applying to many

colleges and universities. In this environment, how colleges identify ways to maintain and increase access by all segments of the population will be a critical test.

As powerful as the anti-affirmative action backlash has been in altering past consensus on access and equity, reduced public funding and changing public expectations pose even more serious threats to higher education participation. If policy makers and higher education leaders in effect "change the rules" just when a new generation of students—less white, less middle class—is prepared to enter college, questions are raised about equity in a democratic society, as well as risks to social stability. Reducing access to higher education also raises concerns about meeting society's economic and civic needs at a time of increasing technological, economic, social, and political complexity and interdependence. Slowing or even reversing the country's historic movement toward universal access to higher education is especially problematic because it is being driven largely by governmental and institutional decisions made on financial grounds, rather than by explicit policy decisions on higher education access and participation.

The Changing and Uncertain Job Market for Ph.D.'s

Projecting the labor market for new Ph.D.'s has perhaps never been more difficult than it is in the current fluid economic, political, and demographic environment. There is ongoing debate over whether U.S. universities are training too many or too few doctorates. Among the questions being raised are these: Is the U.S. training more Ph.D.'s than the labor market can absorb, leading to declining prospects for permanent employment for new doctorate recipients, especially in academe? Are we producing Ph.D.'s at the expense of undergraduate access? Or is the U.S. preparing too few doctoral scientists and engineers, particularly in high-tech-oriented fields, to meet economic and technology needs? Are universities enrolling too few U.S. citizens in doctoral programs, especially too few minorities, to advance the nation's educational, economic, and social well-being and to improve individuals' income levels? Should those who want to pursue the life of the mind have opportunities to pursue doctorates, without regard to the job market?

Current Realities

The job market for new Ph.D.'s appears less secure today than it was 20 or 30 years ago. One measure of this is the percentage of Ph.D.'s who have obtained jobs by the time they have completed their doctoral studies. As Figure 5.2 shows, in most fields a lower percentage of new Ph.D.'s had jobs in 2002 than in the early 1970s or 1980s, although the situation was better than in the early 1990s, a low point in the Ph.D. market. Although this a flawed measure – it does not show the much higher percentage of jobs obtained within six months of the degree, according to professional association surveys, and, conversely, it excludes the rising proportion accepting postdoctoral study rather than employment – it still provides a general picture of employment trends for new Ph.D.'s. The growing proportion of new Ph.D.'s in postdoctoral positions is another measure of this softer job market, especially in the sciences. Nearly three-quarters of new biochemistry Ph.D.'s, over half of physicists, and nearly a third of psychologists sought postdoctoral study positions in 2002, and the number of years spent in postdoctoral positions appears to be lengthening. While the rise in "postdocs" reflects a dramatic change in expectations about how scientists are prepared, it is also a response to a weaker job market.

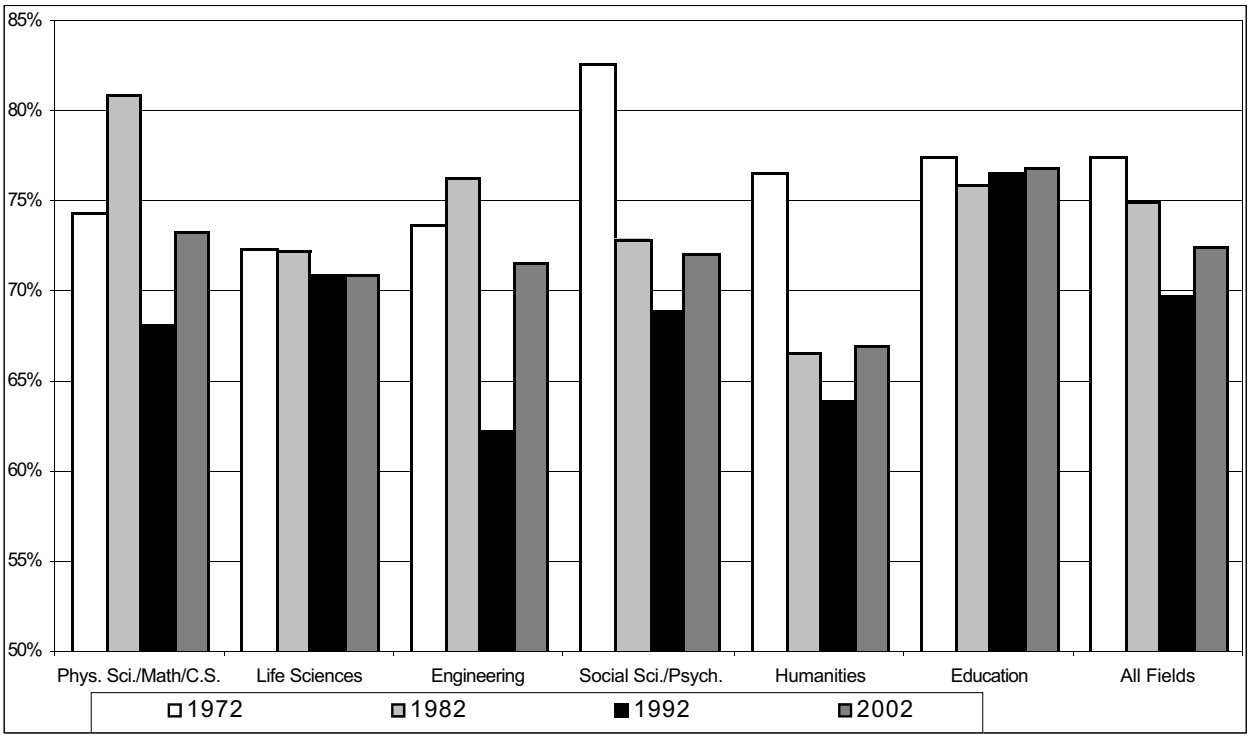

Figure 5.2 Job Placement Rates of New Ph.D.'s at Time of Completing Doctorate
Source: Derived from National Science Foundation, annual Survey of Earned Doctorates, accessed from NSF WebCASPAR database system: http://caspar.nsf.gov/.
Notes: Base includes only those planning immediate employment (rather than postdoctoral study). Placement rates are for doctorate recipients with "definite" employment commitments at time of filing dissertation. "All fields" includes those not shown separately.

The types of jobs that doctoral recipients take has undergone significant changes as well. Most U.S. science and engineering doctorates and over one-third of all social science Ph.D.'s no longer work in four-year colleges or universities, once the traditional employer of most Ph.D.'s. Rather, by 1991 business and industry had become the largest single employment sector for both engineering and physical science Ph.D.'s, now employing about 60 percent of engineers, nearly half of physical scientists, and a growing proportion of those in other fields. By contrast, only a quarter of doctoral engineers and a third of physical scientists work in four-year institutions, including those in postdoctoral positions. Even in history, a placement survey of recent Ph.D.'s suggested that about half would find jobs outside academe.

In recent years, these shifts have been accelerating. Moreover, as noted earlier, the nature of academic employment is also changing. A growing proportion of faculty are in non-tenure-track adjunct or temporary positions, and increasing numbers of other Ph.D.'s are in postdoctoral or other non-faculty research positions. Larger numbers of Ph.D.'s are also taking positions in community colleges, which traditionally have not required the doctorate to teach. As a 1995 national study concluded, "Ph.D.'s are increasingly finding employment outside universities and more and more are in types of positions that they had not expected to occupy."

These and other trends raise several concerns. According to some studies, a majority of doctoral

students in most arts and science fields continue to want faculty careers, despite the fact that the percentage of new Ph.D.'s obtaining the kind of faculty position that most seek – permanent tenure-track positions in four-year institutions – has declined. Compared to 20 years ago, Ph.D.'s take longer to graduate and longer to enter permanent career positions. In most science fields, a lower percentage of full-time faculty in the late 1990s than in the late 1980s received federal research funding, typically deemed necessary to success in these fields. In addition, for the growing number of women in the doctoral workforce, conflicts between professional demands and family responsibilities may limit career options. Perhaps not surprisingly, then, a 1997 National Science Foundation survey found a relatively high level of dissatisfaction among science and engineering doctorates who had graduated one to five years earlier; for example, 24 percent of physicists, 18 percent of biologists, 16 percent of sociologists, and 15 percent of engineers reported they would be "not at all likely" to choose the same field of study again.

Nevertheless, many signs remain positive. Unemployment among science, social science, and engineering Ph.D.'s remains quite low – under two percent in most fields in 2001. The percentage of those involuntarily employed part-time or outside their academic fields in 2001 was also relatively low, although some disciplines, such as physics and political science, had higher rates of five to nine percent.
Conditions fluctuate with the state of the economy, however, and individual subfields may have very different trajectories from the overall discipline.

Future Ph.D. Supply and Demand

While trends are visible in hindsight, projecting future doctorate workforce needs is a risky endeavor. Over the past two decades, labor economists, governmental agencies and professional associations have presented analyses that disagreed not only about the scope and nature of future Ph.D. workforce needs but whether there would be shortages or surpluses. Most have turned out to be wrong, projecting shortages – or, alternatively, gloomy unemployment levels – that did not materialize. Their conclusions were influenced by their assumptions and methodologies as well as by economic conditions at the time in which they were developed. In the late 1980s, for example, several influential studies predicted critical shortages of higher education faculty and other Ph.D.-trained scientists and engineers by 1997 or earlier, but by the mid-1990s, an economic downturn, the end of the Cold War, and higher production of Ph.D.'s than projected dissolved the predicted shortages. Similarly, econometric model simulations of Ph.D. supply and demand based on conditions prevailing in the early 1990s predicted that about 22 percent of U.S. science and engineering Ph.D.'s could fail to find suitable employment – a prediction that also has not occurred.
The future Ph.D. labor market is difficult to predict for many reasons. Demand will depend heavily on the state of the economy and, for faculty positions, on state budgets for higher education. Within academe, new faculty will be needed to teach growing numbers of students, but how many faculty and in which fields will depend on what disciplines students major in, the types of institutions they enroll in, and the student/faculty ratio. Unexpected external events – wars, new breakthrough technologies, or changes in national and state priorities, for example – could have major impacts on increasing or decreasing demand in certain fields. On the supply side, the number of doctorates in the U.S. workforce will depend on how many new Ph.D.'s are produced, retirement ages of those now in the workforce, and employment of foreign doctorate recipients, all uncertain.

In addition, workforce projections themselves influence decisions by individuals, institutions, and government, thereby altering the future demand/supply ratio. In the 1970s, Richard Freeman concluded that a "boom and bust" cycle exists in the academic labor market. When Ph.D. jobs appear plentiful, growing numbers of individuals apply to graduate programs, but fewer apply when Ph.D. jobs are in short supply. Because a lag exists between job market needs and Ph.D. production, job shortages are inevitably followed by surpluses and surpluses by shortages. Responses by universities and departments to these trends also varies. Some departments reduce graduate admissions if applicant quality declines or if they cannot provide students full financial support, but other departments dig more deeply into applicant pools or increase foreign admits to maintain enrollments.

Given these uncertainties, perhaps the best that can be done is to note trends that suggest a stronger Ph.D. job market and those that portend a weaker one, as of late 2003. A number of factors do indeed suggest improved job opportunities for Ph.D.'s over the next decade, especially to meet replacement and growth needs. Large numbers of faculty and other doctorate-holders in the workforce will retire in the next decade and need to be replaced. In 1999, about a quarter to a third of doctoral-level engineers, scientists, and social scientists in the workforce were age 55 or older, depending on field. Nearly one-third of full-time faculty were age 55 or older in 1998. Although Ph.D.'s, especially faculty, tend to retire later than labor force participants, they do retire – just two years or so later than those with bachelor's or master's degrees. Additional faculty will be needed to teach the growing numbers of students expected to enter college. Outside academe, many experts believe that demand will be high in computer-related, biotechnology, and other high-tech fields, despite what is considered a temporary economic slowdown. If historical patterns hold, the economy – and with it, college hires and industry positions – will improve within a couple of years.

Other factors are less promising with regard to improved Ph.D. labor market opportunities. Even when the economy improves, colleges and universities, especially public institutions, may not hire new faculty in the numbers once expected. Rather, in the face of continuing public funding constraints and limits on tuition increases, institutions may continue to raise the student/faculty ratio, rely more heavily on instructional technology, and hire more temporary and part-time faculty at lower salary levels. In addition, if college access and affordability decline as the proportion of the college-age population from poor families and underrepresented minority groups increases, college participation rates could drop. In the nonacademic labor market, prospects remain uncertain as well, given new threats of "outsourcing" of high-skilled jobs to cheaper labor markets abroad and downsizing in private-sector R&D. On the supply side, first-year graduate enrollments have begun increasing in some fields – often due mostly to additional foreign student enrollments – after declining for several years. Although these increases may be temporary if state policy makers refuse to support expensive doctoral enrollments, they may translate into higher numbers of Ph.D.'s entering the labor market in six to ten years, unless most foreign students return to their home countries. In addition, there will be fewer openings for new doctorates from U.S. institutions if more scientists and engineers with foreign doctorates (now perhaps a quarter to a third of the total U.S. S&E doctoral workforce) come to the U.S.

But a list of positive and not-so-positive trends does not give the whole picture. There is not one labor market for doctorates but many hundreds. Whether the outlook is strong or weak depends on very particular subfields and differs by type of position, type of institution, and region of the country. In many fields, employment opportunities outside academe appear stronger than academic ones. Within higher education, faculty employment prospects are better in faster-growing comprehensive colleges than in research universities. "Better" or

"worse" are also relative terms. Individuals' (or their faculty advisers') expectations of what is an appropriate job for a Ph.D. also determines how "good" the job market is and how satisfied the individual is. In this regard, it is important to note that Ph.D.'s not only fill existing workforce needs but also shape them, creating new labor market demand and new opportunities, as well as impacting economic, social and cultural development. Ph.D. recipients in careers that might once have been considered "out of field" or inappropriate have transformed those positions by bringing skills and knowledge to bear on their work, so that holding an advanced degree becomes a job requirement.

Policy Options

The uncertain job market outlook for Ph.D.'s, combined with competing demands for scarce public dollars, has prompted widespread demands for changes in graduate training, ranging from radical restructuring of the doctoral curriculum to sizable reductions in doctoral programs and enrollments. A number of different responses have been proposed, including the following:

— *Broaden the doctoral curriculum to prepare students for alternative careers.* Many reports have recommended that universities prepare Ph.D.'s for nonacademic (as well as academic) careers – in applied R&D positions in industry, in the nonprofit sector, or in K–12 teaching or science writing. To support this option, the Woodrow Wilson Foundation has provided awards to departments, students, and postdoctorates to encourage humanists to pursue careers outside the university, and the Council of Graduate Schools has initiated a "Preparing Future Professionals" project. Many faculty now appear more open to such alternatives than once was true. How many additional openings there will be in such "nontraditional" positions remains uncertain, however.

— *Shift the graduate balance toward master's programs.* Others urge that we "reinvent" the master's degree in the sciences so that it serves as a gateway to science careers, rather than as a consolation prize for failed Ph.D.'s. Professionally oriented master's programs, these advocates argue, hold the most promise. The Alfred P. Sloan Foundation has supported start-up costs for universities to create new two-year professional science master's degree programs, although their total enrollments so far are small.

— *Impose academic "birth control."* A more radical solution is "zero population growth" in doctoral enrollments and, in fields with an oversupply of Ph.D.'s, a moratorium on admissions, at least until the reserve pool of unemployed or underemployed Ph.D.'s is significantly reduced. Critics, both within and outside higher education, argue that unrestrained growth of doctoral enrollments and programs has been a major cause of the Ph.D. surplus. These critics argue that doctoral enrollments are driven less by workforce needs than by internal university interests in obtaining graduate students to teach introductory undergraduate courses, help faculty do their research, attract top faculty eager to work with talented professionals-in-training, and raise institutions' standing in prestige rankings. Critics also charge that some government or industry leaders want to increase Ph.D. supply in order to hold down salaries. Foreign students, who in 2002 constituted over half of new engineering doctorates in the U.S., and from a quarter to nearly half of new Ph.D.'s in life sciences, business, physics, and mathematics, are a particular target of those who would reduce graduate enrollments because they are seen as artificially propping up graduate programs and worsening the job market for U.S. citizens.

— *Make doctoral studies in engineering and the natural sciences more attainable and attractive to U.S. citizens.* If there are shortages of U.S. citizens in some fields, many policy experts argue that the U.S. must better prepare public school and undergraduate students to pursue science and engineering careers. Others argue that the main problem is not preparation but disincentives to pursue lengthy doctoral studies with vacillating career prospects. These critics argue that, among other things, foregone earnings must be lessened by reducing time-to-degree and postdoctoral periods.

— *Eliminate weaker doctoral programs.* Many favor this solution – for universities other than their own. Few institutions voluntarily close doctoral programs. Still, in the face of budgetary constraints, some universities are cutting weaker programs on their own campuses, and some state agencies have forced the termination of doctoral programs judged weak or duplicative.

— *Retain the current system, which has served the United States well, but provide students better information and hold programs more accountable.* Other scholars urge caution. Unemployment rates among Ph.D.'s remain low. Moreover, students entering doctoral programs now will graduate in six to ten years, when employment needs may be far different. If market difficulties are temporary and institutions turn away promising individuals, the ability of academia, industry, and government to conduct essential teaching, research, and other services could be impaired. These analysts urge that institutions take much more aggressive steps to advise students about current and prospective market conditions, provide data on completion rates and times, and hold departments accountable if student attrition, time-to-degree, or financial support is deemed unacceptable.

— *Restructure demand and expand understanding of the value of the Ph.D.* Finally, many in the research community argue that higher education and its allies must not only identify new roles that Ph.D.'s can and should play to enhance society but must make a strong public case for the value of Ph.D.-trained professionals in contributing to national goals. Scholars advocate as well that the higher education community explain why doctoral education, like education in general, is important not only because it serves utilitarian job market or economic development needs but also because it has intrinsic value to the individual and, because it trains individuals to think and create, to society.

Who Decides? Accountability, Governance, and Coordination

All of the issues discussed above have significant implications for the relationship between higher education, the public, and government authorities. Higher education is costly to taxpayers and individuals, and it is important to both individuals and the broader society – for economic mobility, preparation of an educated workforce and citizenry, transmission and creation of culture, economic growth and public health and social welfare. A college education may be a path to social and economic mobility, but college can also represent a barrier to mobility for those unable to gain entrance or to gain entrance to the elite institutions that are closely tied to social class. University research provides technological advances and a better understanding of society, but some research may be seen as contrary to certain religious values, pose potential health hazards, or advance private interests at public expense.

Institutional Autonomy and Accountability

Given the costs and value of higher education it should come as no surprise that, as state budgets have become tighter and student fees have risen, governors and legislators have sought to ensure attention to state priorities, to control institutional costs by regulating academic matters such as faculty workloads, and to demand evidence of "accountability" regarding student outcomes such as graduation rates. The kinds of accountability that institutions must meet and the enforcement mechanisms imposed have both changed. Policy makers now demand that institutions not only demonstrate fiscal responsibility but also achieve explicit governmental performance standards such as minimum faculty contact hours and specified student outcomes, and some states have tied institutional funding to performance indicators. Such performance indicators, however, tend to measure only what is readily quantified, and these may not be the essential goals of higher education.

State governments will remain the dominant players in higher education in the foreseeable future. This is because states continue to fund most of public colleges' basic instructional costs, and public institutions enroll most U.S. college students. In addition, states retain extensive regulatory authority over most public colleges, ranging from authority over institutional missions and degrees to regulation of purchasing procedures. Legislative term limits, now in place in 16 states, also put pressure on legislators to make their marks quickly, before many can develop in-depth expertise or experienced staff. In recent years, governors and legislators have been key catalysts in the revision and restructuring of higher education in a number of states, where they implemented statewide review of degree programs, created – or abolished – statewide boards, or pushed institutions to redirect enrollments and research programs toward engineering, teacher preparation, or other state priorities. In some states, legislatures have enacted requirements that once would have been considered inappropriate political intrusions into academic affairs, such as requirements for student learning assessment, increased faculty teaching workloads, and standards for English-language competence for teaching assistants. Legislative regulation of faculty workloads is a case in point. By 1995, twenty-three states had mandated some kind of action regarding faculty workloads. In most states these mandates simply required institutions to report on their faculty workload policies and practices, but 10 states imposed more substantive requirements. In Ohio, for instance, the legislature mandated that the Board of Regents increase undergraduate teaching by 10 percent.

The most frequent and probably most effective state approach to compel or induce institutions to pursue desired actions is through the budgetary process. Performance funding, which directly links state funding to institutions' performance on specified indicators, is one tool. Others are performance budgeting, which lets policy makers consider institutions' achievement on specified indicators as one factor in determining allocations, and performance reporting, which seeks to use the power of information to stimulate change but is not linked to institutional funding. However, the amount of state dollars set aside for these strategies is very small. Much more important is the ongoing negotiation – usually invisible to the public –between state officials and institutional leaders in the development of budget requests. The extensive compromises and agreements between the parties on what will be expected is typically not written into the formal budget document.

In addition to elected state officials, the state's electorate may directly regulate higher education matters, bypassing the legislative process. In a number of states, the electorate has imposed requirements regarding academic governance, admissions, or curriculum through ballot initiatives, including prohibiting affirmative action for student admission and faculty employment in California, as part of a broader initiative against public-sector affirmative action, and re-instituting a university governance system in Florida. Some electoral

initiatives would intrude into core academic decisions about what is taught, for example, the failed initiative in Oregon in 2000 that, by banning instruction that "encourages ... homosexual behavior" in public schools and community colleges, would have prohibited faculty from discussing gay or lesbian issues or AIDS education.

Federal officials, too, are using their funding power to regulate institutional actions in admissions and other areas, under the aegis of accountability. The federal government will continue to have a major impact in shaping higher education through regulations placed on federal student financial aid (essential to virtually all institutions) and research funding (critical to research universities). This involvement may expand. During the debate leading up to the reauthorization of the omnibus Higher Education Act, expected to be enacted in 2005, influential members of Congress threatened to punish institutions that raised student tuition above certain levels. Arguing that college fee increases were "pricing students and families out of the college market, and forcing prospective students to 'trade down' in their postsecondary educational choices" – and rejecting arguments that a main reason for fee increases was the decline in public funding – these Congress members threatened to withdraw institutions' eligibility to participate in federal student aid if fees to "consumers of higher education" were raised too high. Regional accreditation associations have also played an increasingly important role in influencing colleges and universities, especially because of state and federal requirements that institutions be accredited to receive public dollars.

Nevertheless, the threat of governmental or electoral intervention into core academic affairs should not be overstated. To date, most policy makers' demands for evidence of student learning, increased faculty workload, and institutional performance on state-determined criteria have left much discretion to institutions to determine appropriate responses, though sometimes after extended negotiations and discussion. Moreover, higher education institutions, especially universities with strong alumni support, alternative revenue sources, and complex, loosely coupled structures, have considerable ability to adopt strategies to help retain institutional autonomy. Indeed, from the state perspective, research suggests that strategies such as faculty workload requirements or performance funding may not be effective. Of course, when institutions "voluntarily" adopt actions desired by policy makers under threat of regulatory or budgetary action, it is difficult to say whether or not political authorities are wielding inappropriate influence. Three points should be noted here. First, governmental regulation and centralization of decision making in higher education tend to wax and wane over time in response to budgetary crises, salience of higher education vis-à-vis other social needs, and particular incidents or situations. Second, each of the fifty states will follow its own path based on its particular conditions and history. Some states may give institutions greater autonomy in return for reduced state funding, as Maryland and Oregon granted to selected institutions in the 1990s – or may even allow public colleges to become autonomous private institutions if they agree to forego state dollars, as South Carolina's governor proposed in 2003. Third, institutional autonomy and public accountability need not be in conflict, if accountability is broadly and appropriately defined. Given higher education's important role in U.S. society, there are legitimate public demands for institutional accountability. The challenge for higher education is a long-standing one: to respond forthrightly to public needs while establishing with political authorities appropriate expectations for institutional accountability and autonomy.

Changing Approaches to Higher Education Governance and Coordination

The governance and coordination of higher education in the U.S. differs enormously by public versus private control, type of institution, and state, and it differs within each of these categories as well. Historically, most higher education institutions had their own governing boards, although their powers and those of different campus constituencies varied widely. While most institutions and almost all private ones still have individual campus governing boards, most students and faculty in the U.S. now study and teach in institutions that are part of multicampus systems, a few with hundreds of thousands of students. In addition, all but a handful of states have a statewide coordinating or governing board with some degree of authority or responsibility for all public (or at least all public four-year) postsecondary institutions in the state and sometimes for the state's private institutions as well. During the 1980s and 1990s, significant and sometimes unpredicted shifts in the powers and structures of governance or coordination at each of these levels – campus, multicampus, and statewide – occurred. Political and budgetary forces make it likely that additional changes will occur in the next decade. The question is, what will those changes be and how might they affect the functions and control of higher education in American society?

At the campus level, the past two decades have seen contrary movements toward more centralization and more decentralization of authority. College and university presidents and other top administrators have gained more authority to deal with budget pressures and external demands for accountability, and continuing pressures make it likely that this trend will continue. Simultaneously, a number of institutions have decentralized substantial control to individual schools and departments as a means to center accountability in the units directly responsible for instruction and research, and more institutions are exploring this option. Some units, especially professional schools, have in effect been spun off from the larger university. Decentralization and "responsibility-centered budgeting," which rewards entrepreneurship and priority setting, are creating new approaches intended to increase flexibility at lower institutional levels and, in some cases, enable resource reallocation to other institutional functions or units. These approaches, however, also raise questions as to whether universitywide missions and values (for example, commitment to access) will be maintained and whether departments that typically have not had the slack that comes with large amounts of external funding will retain their priority. Shared governance between trustees, administration, and faculty is another ongoing campus governance issue. At some institutions, particularly elite universities with long histories of faculty influence, shared governance remains strong. At these institutions, except in extraordinary cases, faculty in departments and through academic senate committees retain authority to make faculty hiring and promotion decisions, select graduate students, determine the curriculum, and with administration set the broad outlines for campus priorities and directions. However, some scholars argue that at many institutions faculty have become "managed professionals." Moreover, shared governance may be undermined in the future as the percentage of faculty who are not permanent increases.

Governance and structures of multicampus systems (where two or more campuses have a single governing board and some kind of central administration) are in considerable flux. As with campus governance, there are conflicting trends, and generalizations are difficult because the functions, powers, and integration of these systems vary substantially. In some cases they are loose collections of very different types of institutions. In other cases, such as the University of California system, they are a set of relatively similar campuses (here, research institutions) with common admissions and faculty promotion standards, under a relatively strong systemwide board and administration. During budget crises, systemwide administrations have often been cut more extensively than those on the campuses. Some multicampus systems have been broken up; in Illinois,

for example, two multicampus governing boards were abolished in 1995 and replaced with seven local boards of trust. In other states, multicampus boards have been strengthened and their administrations expanded in the face of external demands and environmental uncertainties. In yet other states, most notably Florida beginning in 2000, multicampus systems and boards have become political footballs – abolished, re-established, and bypassed in quick succession. Although budgetary problems and "bureaucratic bloat" are often given as rationales for changing multicampus or statewide governance structures, Michael McLendon concluded that political agendas unrelated to higher education were often the primary motive.

Depending on their powers and traditions, systemwide governing boards and administrations have the potential to exercise broad leverage over their campuses through budget and program review powers. Systems may act as buffers against political intervention or as channels for it. On the one hand, system boards and administrations may reduce campus autonomy and flexibility if they impose inappropriately standardized priorities or expectations. Systems also increase bureaucratization and make shared governance more difficult to achieve. On the other hand, systemwide leaders can bring to bear broader perspectives on the overall educational needs of the campuses and the state. System leadership — boards, administrators and systemwide faculty committees — may be especially important in matters that have relatively weak campus constituencies but are important to the system or to the state, such as undergraduate general education, teacher education, or improvement of K–12 education. They may also ensure that a last surviving program in a particular field is not eliminated through uncoordinated actions by individual institutions. Especially during tight budget periods or under political pressure, system administrations may provide incentives for intercampus collaborations that individual campuses are unable to mount — for example, for programs in less studied languages. How well these collaborations survive when budgets improve is uncertain, however. Moreover, where a system office does not exercise adequate quality control, other more political actors, such as the state's executive branch, may step into the vacuum.

Statewide coordinating agencies or consolidated governing boards are even more buffeted by changing political and budgetary winds and whims than are multicampus systems. This is especially true for coordinating agencies, which can claim no students, faculty or alumni. Following a period of generally increased budgetary and program review authority to statewide boards, state governors and legislators in a number of states beginning in the 1990s have weakened or even eliminated statewide coordination functions, most notably in New Jersey, where the governor abolished the once powerful coordinating board in 1994 and replaced it with a much weaker agency. In other states, such as California, even where the coordinating structure was left intact, severe budget cuts in 2003 left the agency unable to carry out many of its responsibilities. However, elsewhere, as in South Carolina, state officials continued to pursue reorganizations that would substantially increase statewide control over public higher education. Another potential reorganization of great importance to higher education is the effort in several states, including Florida, to place higher education coordination under purview of the state's elementary/secondary board of education. Such efforts reflect the failure of higher education institutions to persuade state policy makers that there is effective articulation between the public schools and higher education institutions, so that students can move smoothly from high school into college. Unless broadly conceived, however, creating a single system for all of education risks submerging higher education's unique purposes into those of the much larger K-12 system and of holding higher education to the much more prescriptive and uniform standards applied to the public schools. Even without changes in coordination, policy makers appear more willing to apply K-12 approaches to higher

education.

Although in many cases these reorganizations have sought to use structural changes to solve what in fact were budgetary or political problems rather than governance or coordination ones, structure nevertheless makes a difference. James Hearn and Carolyn Griswold found that, independent of other social, educational, and economic factors, states with relatively centralized higher education structures (whether governing boards or strong coordinating boards) were more likely to adopt certain academic policy changes, such as mandatory student assessment, than were states with more decentralized structures. Like multicampus systems, statewide boards may be buffers or conduits for state influence. They may also provide leadership to ensure that the overall higher education system maintains an appropriate balance and range of programs and flexibility to respond to new needs. In any case, given external pressures and political agendas, additional structural and governance changes seem likely in the next decade, but the individual state context will largely determine whether these moves will be toward more centralization, more decentralization, or a mix of centralization and decentralization at different levels. Change itself has costs, however. Structural reorganizations disrupt settled processes and relationships and create greater uncertainty, as new players establish their authority, priorities, and rules of interaction.

Conclusion: Revisiting the Social Contract for Higher Education

Over 30 years ago, the Carnegie Commission on Higher Education asserted that "[b]enefits from higher education flow to all, or nearly all, persons in the United States directly or indirectly, and the costs of higher education are assessed against all, or nearly all, adults directly or indirectly," although benefits and costs are assigned in "quite unequal amounts." Today higher education continues to confer both public and private benefits. Higher education provides high economic returns to individuals, and it develops a skilled workforce and an educated citizenry, among other public benefits.

Since the Carnegie report, however, as this chapter has discussed, there has been a marked transfer of higher education's costs from public sources to individual students and parents, as well as increased payments from commercial sources. These changes reflect the growing perception by policy makers and the general public that higher education is largely a private benefit, rather than a public good. In turn, this perception risks creating the reality of a private-oriented, market-driven system "disengaged from the public interest." Policy makers who focus on higher education's benefits to individual "consumers" and "clients" have been more willing to reduce general government support for higher education or make it contingent on loans and specific outcomes. In part to make up for declining government support, in part to take advantage of what Derek Bok has argued is the enormous growth in opportunities in recent years to market higher education, institutions have raised tuition and have turned to commercial ventures that benefit private firms or narrow and short-term institutional interests. Bok has concluded that the rapid commercialization of American colleges and universities – where everything may be up for sale – threatens to undermine academic values and standards, impair the university's reputation for the kind of objective teaching and research essential for a democratic society, reduce public trust, and increase government intervention. Robert Zemsky has argued that when institutions become market-driven, "their role as public agencies significantly diminishes – as does their capacity to provide venues for the testing of new ideas and agendas for public action."

This chapter has sought to highlight a set of challenges regarding the purposes and outcomes of

higher education, each of which is affected by the intertwined pressures of market and government. There is much to applaud in the record of what has been accomplished in these areas, even as concerns remain. Among the accomplishments and concerns are these:

— *Privatization of funding:* In absolute dollars, more public monies (federal and state) are being allocated for postsecondary education than ever – but more of the costs are being paid by individual students and parents. This is true for both public and private colleges and universities.

— *Research mission:* The university research enterprise, by any number of measures, is extraordinarily strong – but growing incentives for market and commercial orientation, as well as political intervention and demands for quick, practical products from basic research, risks undermining research integrity and long-term advances in knowledge.

— *Access:* A larger proportion of the population than ever before are participating in some form of postsecondary education – but college access and completion remain inadequate for traditionally underserved groups, especially the poor, ethnic minorities, and older students. The increased share of college costs being borne by individuals, so far without a similar increase in financial aid for underserved groups or in improved public school preparation for them, continues this disparity.

— *Ph.D. job market:* U.S. doctoral education remains widely admired around the world, and U.S. doctoral students develop the skills and habits of mind to enter many different careers – but most new Ph.D.'s are not getting the kinds of academic positions that in many fields most still say they desire. Here, too, market pressures as well as internal priorities may influence how many students universities admit and what careers Ph.D.'s expect to obtain.

— *Accountability and governance:* Because higher education is both costly and important, there are legitimate public policy reasons to hold colleges and universities accountable for using funds appropriately and for serving broad public interests – but if political authorities or the electorate intrude into academic functions, they may undermine higher education's critical function of providing open and objective discussion of ideas and reduce institutions' capability to respond to long-term social objectives.

These challenges raise questions about the implied social contract between the public, elected officials, and institutions of higher education. Some critics suggest that this contract has been broken by public officials who are not providing funding sufficient to ensure access, for example, or by institutions that have retreated from academic values and from the public realm. Yet the public and elected officials continue to value higher education greatly and, despite the emphasis on private returns and economic benefits, continue to voice support for access, basic research, and other broader institutional missions. For their part, college and university faculty, students, and staff continue to engage in the public realm, by working with the public schools, staffing community health clinics, and providing expertise on important policy issues, for example, and, despite some egregious exceptions, academic integrity remains high. The open question is whether, in the face of market forces and limited public resources, higher education institutions, elected officials, and the public can nevertheless commit to a revised social contract. Such a contract would acknowledge higher education's role in and responsibilities for achieving broader societal goals, government's responsibility to provide institutions and individuals the resources, autonomy and flexibility necessary to realize these goals, and the public's willingness to endorse and support these agreements and to pay higher education's costs individually and collectively.

Notes