

By David Ward

the Waves of Change

Catching

IN AMERICAN HIGHER EDUCATION

Although it may be a cliché to remark on the inevitability of change, it is imperative that we not only recognize change but also understand it and respond to it before it finally sweeps over us, obliterating and rearranging our world as we thought we knew it. Irreversible change is the predicament of American higher education today. We are, in fact, already awash in a sea change, caught in currents that we barely understand—some so powerful that we feel overcome by them, others so new that we have only begun to recognize them.

David Ward is Chancellor and Andrew H. Clark Professor of Geography at the University of Wisconsin–Madison.

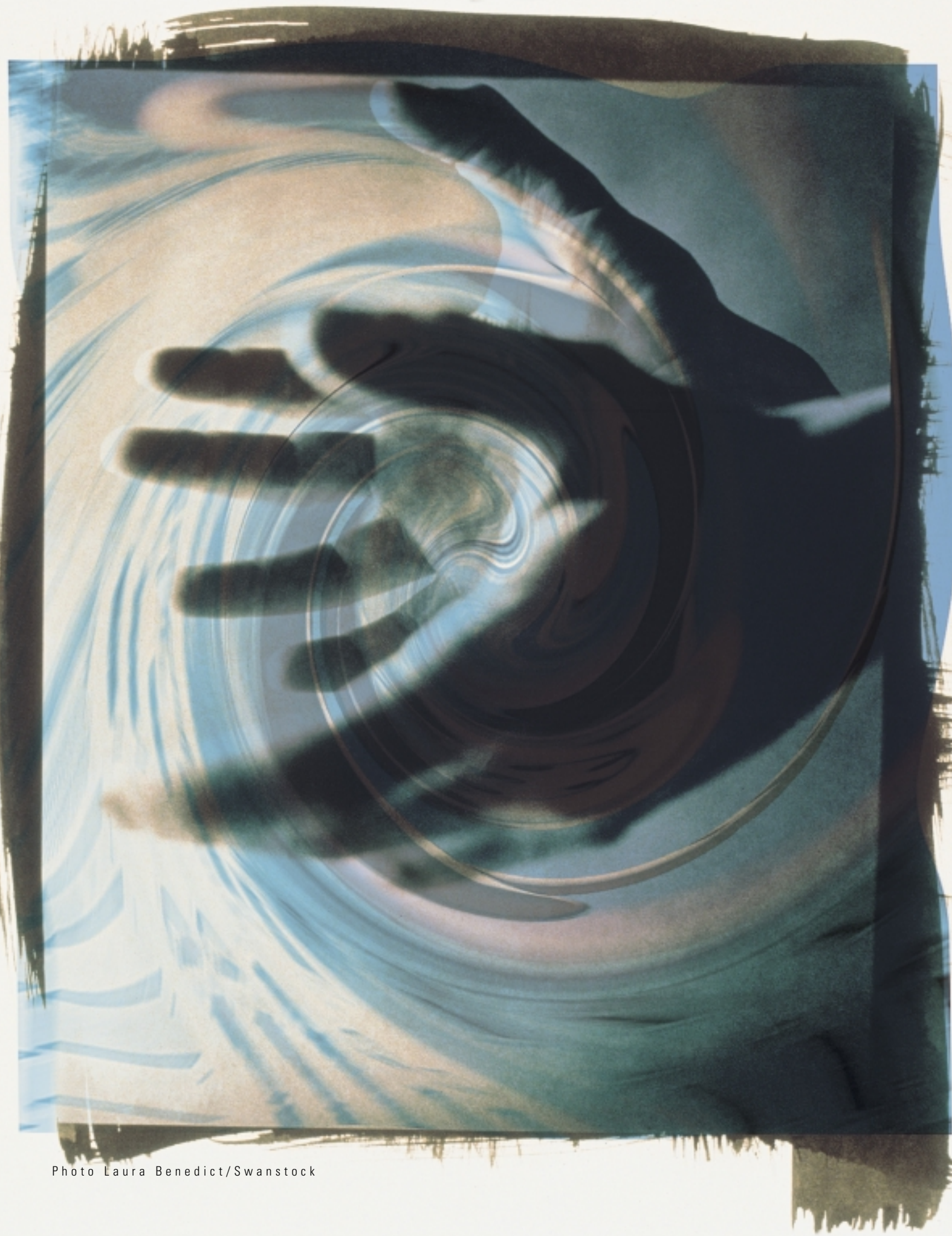


Photo Laura Benedict/Swanstock

Our state of mind notwithstanding, the waves of change in higher education at the end of the twentieth century demand our full attention and our freshest thinking. The result of our response is, of course, unknown, but there is every reason to think that the survivors will be those institutions of higher learning with the courage to reimagine and reinvent themselves and so find a place of intellectual and social relevance on the beachhead of the twenty-first century.

There is, understandably, some reluctance to admit—much less confront—this notion of a sea change in higher education. After all, in the last half of the twentieth century we have enjoyed an era of unprecedented expansion, success, and recognition. At the sunset of this remarkable century, the very words “new millennium” trigger feelings of unease and restlessness over what the future will bring. Indeed, it is far more reassuring to dwell nostalgically on the good things of the past than to gird ourselves for the unknown . . . even though that is our responsibility.

Of course, throughout the history of our country, the many different forms of American higher education have responded to periodic changes in the external environment. In the 1900s, universities survived periods of rapid shifts in public support; they coped with the dire circumstances of the Great Depression, with the cataclysm of war, and then with the extraordinary phenomenon of the tidal wave of returning veterans college-bound on the GI bill. And all that happened before the century was half over. I contend that higher education in the equally tumultuous last half of the twentieth century has adapted very well to many of the underlying conditions in our social fabric, conditions that demanded and received attention.

The question now, however, is not whether we did a good job in the old century but whether we are developing new, viable strategies for sustained preeminence in the new century. Today, internal and external forces continue to affect the American higher education system, itself a sort of academic polyglot of research universities, doctoral universities, master’s (comprehensive) universities, baccalaureate (liberal arts) colleges, associate of arts colleges, and an almost endless stream of specialized and technical schools.

Rather than attempting to translate and address the cultural and structural changes facing all of these institutions, this article will focus on what I believe are the critical trends affecting the American public research university, if only because this is the arena of higher education in which I have been learning, teaching, managing, and trying to provide leadership for most of my adult life.

THE EMERGENCE AND NATURE OF PUBLIC RESEARCH UNIVERSITIES IN THE TWENTIETH CENTURY

America’s public research universities were created through a fusion of at least three distinct nineteenth-century educational traditions: a commitment to *general education* derived from the venerable New England college model; a commitment to *access and practicality* rooted in the land-grant tradition; and a commitment to *basic research* based on the precedents of graduate education in German universities. These American hybrids, nurtured during the first half of the twentieth century, flowered brilliantly in the years following World War II.

For about four decades after 1945, we experienced a “golden age” in American higher education. Private and public research universities expanded at a rapid pace, fed by large infusions of federal and state dollars. Initially fueled by grants provided under the GI bill, student enrollments grew rapidly, and then federal funding of research accelerated and sustained an unprecedented expansion of both research and knowledge. Certainly, the University of Wisconsin on its Madison campus built a national and international reputation based on access and affordability, as well as on the quality of its teaching, research, and outreach.

The vastly expanded scale of public research universities challenged their capacity to provide an appropriate balance among the various components of their mission as they tried to become many things to many people. At the same time, this was an era of both intense disciplinary specialization of academic programs and research and growing functional specialization in administration and student services. Public research universities began to look and behave much more like large, complex bureaucracies than like the traditional college structures so long associated with university life. Professional academic staff provided most of the key administrative and support functions, and faculty became anchored in disciplinary departments that were often better connected with similar departments worldwide than with related departments in their own university. There were growing anxieties on and off campus about a loss of any sense of a university-based academic community.

This period of growth and specialization also witnessed a massive refabrication of public research universities and, sadly, a loss of internal coherence. During the 1960s, much of this apprehension was expressed through critiques from within the universities themselves, but eventually the more compelling and divisive debates about priorities and public policy over the Vietnam War obscured and perhaps buried concerns about our institutional culture.

The revival of these institutional concerns began as iso-

lated expressions of cynicism in the mid-1980s, and by the early 1990s the increasing public suspicions about educational quality and institutional values had developed into a torrent of criticism. Suddenly the images of our vaunted institutions of higher learning had become tarnished. Typically in these criticisms, universities were the victims of assassination-by-anecdote, but there was a core of truth to many of the indictments. Students, parents, policy-makers, and commentators openly questioned whether public research universities provided the proper balance of teaching, research, and outreach. These questions demanded explanations and responses and, in some instances, reform. Every aspect of our mission was fodder for this debate. As concern swelled, the leadership and faculty of public research universities began to understand and acknowledge existing imbalances.

In 1988, a self-study conducted prior to the accreditation process at the University of Wisconsin–Madison captured these concerns by listing the needs of the university:

- The need for a broader understanding of the university’s educational mission
- An enhanced sense of the university as a community fostering the development of new knowledge in the increasingly technologically driven society
- An improved resource allocation among competing needs
- A process for setting clear goals and priorities by colleges and schools within the university
- A better management of enrollments to fit the university’s strengths

In my judgment, our responsiveness to these needs has been underestimated. Universities began to turn considerable research capabilities inward. We developed student surveys, probed attitudes and sought feedback via focus groups, and enlisted a more systematic involvement of faculty and staff through governance systems.

Many of our responses to concerns about the quality of undergraduate education were directly focused on the curriculum and the learning experience itself. Efforts to increase the involvement of undergraduates in research and in the use of instructional technology were especially productive. We created undergraduate research fellowships, providing opportunities for students to pair with faculty and engage in original research. We redesigned residence halls as “learning communities” by linking them to specific curricular themes in a contemporary expression of Alexander Meiklejohn’s experimental college ideals that had briefly flourished before World War II. And using a combination of public and private funds, we vastly

improved residential and distance educational opportunities by enhancing student access to computers and e-mail. The result was a significant improvement in students’ access to faculty and staff.

But where were the accolades for all this? Why was the silence so deafening? Simple. We were doing what students, parents, and others believed we should have been doing all along. We were simply catching up with their most basic expectations of us. It was not that our efforts were unrecognized; it was that they were expected. This “silence of the marketplace” had the right effect: it reenergized our commitment to undergraduate education within the existing paradigms of public higher education.

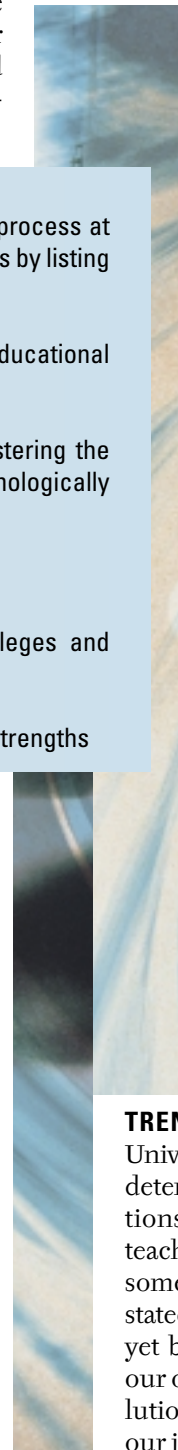
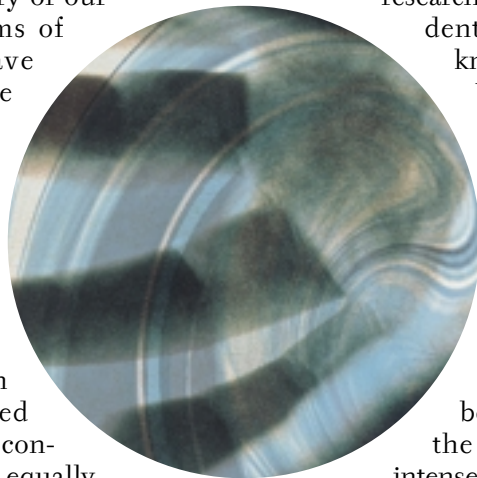
This was all well and good, but even as we addressed these basic concerns about undergraduate education in the larger context of the major public research university, other currents of change were taking shape around us, building into a new tidal wave far larger and more forceful than the issues we had confronted in the 1980s and 1990s and, in their converging subtlety and complexity, even more difficult to deal with.

FOUR CURRENTS OF CHANGE AFFECTING HIGHER EDUCATION AS WE KNOW IT

A convergence of four trends has begun to reshape the operating environment of American higher education as we have known it for the past forty years, and this convergence is already surging around the bastions of public research universities. The four trends—technical, intellectual, fiscal, and demographic in nature—are not new topics. No one of them is individually capable of reshaping the landscape of higher education, but by their very convergence and interrelatedness, they are flowing together in a force powerful enough to test our ability to create and share knowledge in ways that will be genuinely relevant in the new century.

TREND #1: THE COMMUNICATIONS REVOLUTION

Universities and K–12 schools share the challenge of determining the degree to which the communications/information revolution drives the way we teach and what we teach our students. We know that some aspects of this revolution have been overstated. Some of the pedagogical promises have not yet been fulfilled. However, we must all fully face our obligation to discern which aspects of this revolution will ultimately benefit our students and make our institutions more accessible and effective.



FOUR CURRENTS OF CHANGE

THE COMMUNICATIONS REVOLUTION

SHIFTS IN THE INTELLECTUAL DIVISION OF LABOR

SHIFTS IN THE FUNDING STREAMS

DEMOGRAPHIC SHIFTS AND ACCESSIBILITY

Distance learning and new forms of instructional technology are serving as catalysts in the creation of new learning opportunities, here and abroad. Digital technology continues to blur the distinction between on-campus and off-campus learning. The British Open University has for decades depended heavily on technology—first BBC television and radio and now the Internet and CD-ROMs—to help deliver classes. Closer to home, several universities and new for-profit institutions like the University of Phoenix are filling educational gaps.

Communications and processes of information gathering, retrieval, and analysis are improving at a rapid pace. Advances in computer chip development and memory storage are occurring at awesome speeds. The powerful and immensely popular information superhighway is already inadequate for meeting the needs of the academic research community. Its successor, Internet2, is helping to shape future learning opportunities.

All of the hardware and software innovations and the dramatic improvements in communications methods have potential educational implications. We are faced with a core issue: to what degree will—or should—these innovations drive changes in what is taught or in how it is taught?

Information technology has transformed the way our libraries operate. We can access information from our desktops, and we can search collections locally, across the country, and around the world. To date, however, although instructional technology has produced notable changes in some courses, few academic departments or programs have systematically transformed themselves through the use of new technologies. Indeed, most recognized research universities remain extremely tentative in their strategic responses to the rapid growth of distance learning as start-up ventures.

Historically, universities have developed curricula and teaching methods based strictly on what faculty members believed students should know and how they believed that knowledge should be delivered. However, changes in public expectations, the impact of instructional technology, competition from non-university-based learning, and

the explosion of new knowledge will all, to one degree or another, exert some influence over the process we think of as higher education.

We need to be more cognizant of the differing needs of our students, and we need to offer both courses and learning opportunities that respond to those needs. For example, universities have tended to teach courses in mathematics and foreign languages as though students were pursuing degrees in the subjects. And yet many students may require proficiency, rather than mastery, of such subject areas. By developing multiple learning contexts, we can meet the needs of students who are seeking only a threshold of knowledge in a subject.

Against such examples of new needs and expectations, we face the reality that large-scale systemic change in instructional methods demands massive investments in both technology and training methods. And the constant argument that investments in information technology can save money in the long run is probably exaggerated and is certainly premature.

TREND #2: SHIFTS IN THE INTELLECTUAL DIVISION OF LABOR

Collaboration with scholars across the oceans is something most of our faculty and students take for granted today. Again, thanks largely to the power of the computer and advanced communications technologies, there are few barriers to working with colleagues anywhere on the globe.

Yet faculty on the same campus, colleagues separated by departmental or programmatic boundaries, still face significant organizational barriers to collaboration. When such collaboration succeeds, it is usually due to individual resources rather than institutional intent. Some of our best people seem to find ways to work together, in spite of how hard we seem to work at keeping them apart.

For generations, faculty members have been rewarded for increasingly specialized research within disciplinary or even subdisciplinary intellectual mine shafts. During that same period, disciplinary departments became the dominant element or building block in the organization of universities. This model supported the rapid develop-

ment of new knowledge and has served society extremely well. Of course, the intellectual division of labor was always connected by a variety of interdisciplinary programs, but ironically, many of these programs developed a professional identity that became virtually indistinguishable from that of departments. Most faculty members were rightly convinced that this departmental status was the key to resources and prestige. Thus we have continued to create and then replicate mine shafts within the university structure.

Nevertheless, a growing awareness of the limitations of our historic organizational and professional cultures is raising questions. How should we better support the expansion of knowledge that is, increasingly, arising from more than one discipline? Are there improved, more efficient organizational structures that we can use? Are there incentives that would further encourage and reward the cross-fertilization of ideas?

The architecture of the pursuit of knowledge is changing, and although the deconstruction of some of our traditional disciplines has led to an almost individual level of specialization, other disciplines have creatively combined their intellectual power and their focus into larger areas of inquiry. Although we often complain about the impacts of fiscal, demographic, and technical shifts on the traditional roles of scholars, changes in the intellectual division of labor may, in my judgment, alter the research university more profoundly than any of the other currents in the sea change around us.

TREND #3: SHIFTS IN THE FUNDING STREAMS

The revenues of American public research universities are derived from four distinct sources. First, state appropriations and, to a much lesser, degree tuition have historically supplied the basic and largest proportion of the budgets. Second, federal funds, obtained competitively by faculty and staff, largely fuel the research engines and, in addition, provide much of the support of graduate students. Third, endowments, sustained by private gifts and intellectual properties, have for many years provided the competitive margin of excellence. Fourth, auxiliary revenues come from services provided to students, the campus, and the community.

A steady and seemingly inexorable shift in the political economics of higher education has occurred in the last two decades of the twentieth century, reflected in significant shifts in virtually every aspect of our funding mix. Historically, the state was the dominant player in most public university budgets, and the traditional role of legislators was to balance appropriations in order to set tuition as low as possible. For most of the last one hundred years, in fact, the combination of tax dollars and tuition repre-

sented a major portion of the budget. Today, however, these two sources provide a declining fraction of our financial needs, and it appears unlikely that this trend will be reversed.

The impact of this trend has of course been felt within and throughout the university. One result has been the emergence of entrepreneurial activities and revenues, gradually exceeding revenues derived from state appropriations. This phenomenon has, in turn, led to another major issue facing public research universities in particular: the need for greater flexibility and autonomy in the management of the university and its intellectual properties.

Many states have shifted their social spending priorities toward priorities other than higher education, including building prisons, constructing highways, reforming welfare, and reducing taxes. While more aggressive tuition policies have helped cushion the effects of state fiscal priorities and policies, they have also exacerbated public anxieties regarding the affordability of a college education. Federal financial aid, increasingly delivered in the form of student loans, now dominates the public support of education while the interrelated issues of living costs and long-term student debt have become key elements in the debate and concern about the cost of obtaining a college degree.

In contrast, federal research support has been an extremely stable part of the university budget, and for the past quarter-century it has provided a significant portion of that budget. However, when federal deficit reduction became a political preoccupation of the 1990s, this essential source of financial resources was placed in serious jeopardy. Indeed, certain categories of federal support, mainly in the arts and humanities, were sharply reduced. Today they still show no sign of rebounding, in spite of the apparently rosier outlook on the federal budget. Selected areas of the social, physical, and biological sciences have, however, maintained or even increased their levels of federal support. In response to these uncertainties in the levels and areas of federal funding, faculty and staff continue to develop a variety of alternative research funding from industrial and foundation sources.

This shift is most pronounced in the area of capital budgets. To advance new knowledge and remain accredited, universities require quality faculty and state-of-the-art facilities. Private support, in addition to state or federal financing, will continue to finance capital infrastructure improvements. Over the past decade, these private and philanthropic sources have had a dramatic effect on public universities' capital budgets, once the primary responsibility of government.

A major source of private revenue is the potential economic value of the intellectual property of the faculty. An

important assumption is that the faculty and staff have an obligation to the institution that harbors and encourages their work. Forced to be more competitive on all financial fronts, public research universities are forming and solidifying these public-private partnerships. University research parks are a relatively new outgrowth of research universities, frequently springing up around the outer edges of campus like so many new high-tech intelligence factories on a Monopoly board of the future. The faculty and staff whose research interests spawn these commercially viable processes and products either license their intellectual property or leave the university to start up their own businesses. Of course, universities attempt to keep these new entrepreneurial activities as close to home as possible.

The impact of private funding of research by a public university has already raised questions of integrity and identity, as well as some high-visibility disputes over who-owes-what-to-whom. Such arguments are inevitable, and they need to be resolved, not only to satisfy the parties themselves but also to address the much broader ramifications of this issue on universities and the society we serve. Clear procedures are needed to regulate the relationship between private parties and the university in order to avoid inappropriate influence and conflicts of interest.

Private gifts also have the potential to alter the direction or mission of the university itself. At many public research universities, most of the private gifts have been directed to professional schools. That trend could threaten the basic liberal arts mission of the university.

TREND #4: DEMOGRAPHIC SHIFTS AND ACCESSIBILITY

The fourth converging trend in this sea change concerns questions about access and changing demographic realities. Universities have long been challenged to serve an increasingly diverse population. The stakes on this front are extremely high because if we do not find effective ways to serve a wider variety of constituencies, we will lose our legitimacy as public institutions. We will not only cease to be relevant, however; we will also cease to exist.

To offer the finest-possible educational experience, universities must have diverse faculty, staff, and student populations. We have long prided ourselves on the contributions made by faculty, staff, and students who come from countries other than the United States. We have achieved some semblance of an "international diversity." But we must also value the educational impact of an inclu-

siveness that encompasses the full range of identities *within* the United States. We must do at home what we have done abroad.

Public universities are responsible for serving society most broadly, in all its magnitude and diversity. Many of our students' future employers, such as major corporations, are demanding that we educate and produce alumni of diverse backgrounds. These employers operate in a world of diversity, and so must we.

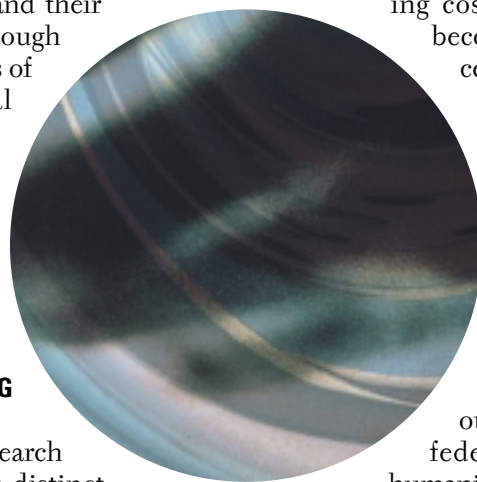
For these reasons, we have to be more effective in our collaborations with the K-12 educational system, in order to help expand the pool of students who are from underrepresented groups and who are qualified to attend our universities. Furthermore, we must open our doors to these students. Universities can play a leadership role in the enhancement of pre-service and continuing teacher-training, in the expansion of pre-college programs to K-12 students at various levels, in the support of scholarly research on K-12 issues, and in the development of direct partnerships with schools and communities to address local needs.

On another, related front, educational needs are evolving in response to changes in life cycles and career trajectories. Most people now need to retrain for new skills or update their current skills during the course of their working lives. Older and returning adult students compose a rapidly increasing proportion of our student bodies. This demand for lifelong learning opportunities with enhanced access to our courses and facilities has forced us all to face the inexorable advance in digital communications.

WE MUST ASPIRE
TO EXPAND THE
LEARNING
EXPERIENCE
WELL BEYOND THE
TRADITIONAL
CLASSROOM TO
INCLUDE
RESIDENTIAL LEARNING
COMMUNITIES,
VOLUNTARY
SERVICE
OPPORTUNITIES,
ENHANCED USES
OF INFORMATIONAL
TECHNOLOGY, AND
INCREASED FIELD AND
RESEARCH
OPPORTUNITIES.

So where does all this leave us? I believe that those of us with roles in the leadership and management of institutions of higher learning, and especially in leading public research universities, have no recourse but to identify, understand, and respond to these currents of change. The communications revolution, the issues surrounding the intellectual division of labor, the new fiscal realities, and the demographic shifts may have varying degrees of influence. But taken together, in converging currents of tidal proportions, they are causing irreversible change in American higher education.

Because shifts in public opinion and public policy are often cyclical, it may be tempting to take solace in the notion that if we just wait long enough, the pendulum will swing back to a more familiar and comfortable position. But this is not a pendulum; it is a fundamental shift in our



operating environment, and there is no going back to yesterday. Our efforts to rebalance our mission as well as our way of creating and delivering knowledge will be successful only if we confront these issues and understand the degree to which they will determine our future.

FINDING A STRATEGIC PATH FROM THE PAST TO THE FUTURE

These changes have something in common: these complex currents all involve ways in which the modern university is connected, internally and externally. This commonality suggests what I believe to be a strategy for success in higher education.

The “Age of Digital Communication” is driving exponential changes in our capacity to make worldwide connections and to collaborate at any distance. The trends toward the deconstruction and reconstruction of disciplines also create new opportunities for new connections. Changes in the composition of our revenues push us to be more connected and accountable to our traditional sources and, at the same time, force us to reach out to establish new connections and partnerships. Demographic shifts demand improved connections with the growing diversity of American society—with our K–12 school systems as well as with continuous learners of every age.

How we respond to these challenges, and how we seize the opportunities to direct them, will profoundly affect our ability to exert intellectual leadership in the new century. Rather than continuing our efforts to rebalance teaching, research, and service as if they were distinct, separate activities, American higher education must organize our priorities around three interconnected systems of learning: the learning experience, the learning community, and the learning environment.

We must aspire to expand the learning experience well beyond the traditional classroom to include residential learning communities, voluntary service opportunities, enhanced uses of informational technology, and increased field and research opportunities. We must view education as an opportunity to advance not only knowledge but also learning. In this way we are connected to the world we serve. The promotion of the learning community involves the support of improved connections and collaborations across traditional disciplinary boundaries and expanded partnerships with a wide range of external constituencies. The learning environment conducive to these learning experiences and communities requires the wider application of information technology to improve instruction, administrative services, and external communications.

In this time of uncertain resources, of increased demand for access, of unclear pedagogical changes, and of shifting structures of research, it would be foolhardy to

Now that the new century is upon us, the next questions that American higher education needs to address concern how to expand and move beyond the innovation stage of the late twentieth century:

- If residential learning communities are providing a more effective learning environment for students, how can we offer opportunities like this to any student who is interested?
- Does the restructuring of the biological sciences stand as a precedent for other divisions?
- If some disciplines have succeeded in interdisciplinary teaching and/or research enterprises, what can we learn from them to help support the success of others?
- How can we learn when and where interdisciplinary enterprises promise success?
- If current and prospective students demand capstone degrees, certificates, and the enlarged conception of the master’s degree, how do we deliver a range of self-paced residential and distance courses?
- How do we address the changing needs of continuing education or lifelong learning?

attempt to respond completely and autonomously to all of these currents of change. One institution cannot be all things to all people.

I believe a more viable approach is the development of strategic niches. Appointments of faculty and staff should be responsive to these larger strategic purposes. At the University of Wisconsin–Madison, we have recently initiated a process of “cluster” hires, in which related departments and programs collaborate in the appointment of new faculty and staff based on shared strategic interests. Each participating department receives a position and provides a tenure home but also explicitly connects its recruitment with related programs. On a larger scale, each institution should evaluate its strengths, explore its potential clientele, and then pursue that niche to the fullest. This would require effective collaboration across and within our institutions of higher learning, but the benefits would be great, and they would accrue to the individual institutions and to higher education as a whole.

The survivors in the future landscape of higher education will be those institutions with the courage and determination to understand and to use the currents of change surging around them, to find and embrace their own margin of excellence, and to emerge in the new century stronger than ever before.

This article is a revised version of David Ward, “The Challenges of Irreversible Change in Higher Education: The University of Wisconsin–Madison in the 1990s,” in David Ward and Noel Radomski, eds., *Proud Traditions and Future Challenges: The University of Wisconsin–Madison Celebrates 150 Years* (Madison: University of Wisconsin–Madison, 1999).