

Securing Hawaii's Future through the University of Hawaii

James J. Duderstadt

September 10, 2010

My remarks today are intended to complement those given earlier this morning by Secretary Martha Kanter, who focused on that will be necessary to reach the bold challenge of President Obama to restore the United States to a position of leadership on college degree attainment by 2020. Secretary Kanter discussed the role of the university in providing human capital, the educated citizens with both the skills to compete in the global economy as well as the broader education and values to participate as citizens in a democratic society.

But the university has a second critical role, that of producing intellectual capital—scholarship, research, and innovation—necessary for economic prosperity and social well being in a knowledge-driven economy.

The Brave New World Facing American Higher Education

Both Secretary Canter and I begin with the same premise:

Today our world has entered a period of rapid and profound economic, social, and political transformation driven by a hypercompetitive global economy that depends upon the creation and application of new knowledge and hence upon educated people and their ideas.

Yet achieving the imperatives of a knowledge-driven global economy requires resolving several seemingly incompatible challenges:

1. It has become increasingly apparent that the strength, prosperity, and welfare of a nation in a global knowledge economy will demand a highly educated citizenry enabled by development of a strong system of tertiary education.
2. It will also require institutions with the ability to discover new knowledge, develop innovative applications of these discoveries, and transfer them into the marketplace through entrepreneurial activities.
3. Yet it must do achieve these goals while facing pressures to reduce the relative burden on taxpayers who face other public spending priorities such as health care, retirement, and national security.

The Europeans term this challenge as being caught between “massification” (broadening college attainment to much of the population), “league tables” (“achieving prominence in various higher education rankings of academic quality”, and tax relief...

In this country we might rephrase this as facing the competing demands of a workforce requiring a dramatic increase in college degree attainment, building and sustaining world-class colleges and universities, and coping with the shifting priorities of an aging

baby boomer population that seeks retirement security, health care, safety from crime and terrorism, and tax relief.

Clearly these priorities and challenges are tightly interwoven.

For example, while increasing the attainment of college degrees in a population helps to build a world-class workforce, this by itself DOES NOT CREATE JOBS. In a knowledge-driven global economy, new jobs are created by new knowledge, and this requires world-class research, technological innovation, and entrepreneurial skills.

Clearly these imperatives require strong public and private investment. Yet in the wake of the Great Recession, state after state has experienced tax revenue declines that have triggered deep budget cuts to public colleges and universities in the range of 20% to 30% or higher. These deep cuts of public support fall on top of two decades of eroding tax support of public universities as the states have struggled with the burdens and priorities of aging populations.

(An aside here: This decline in public support was nothing new for my university, the University of Michigan, located as it is in the Rust Belt close to Detroit and the collapsing American automobile industry. Over the past 30 years we had seen our public support decline from 70% of our operating budget to less than 6%. As university president I used to explain that during this period we had evolved from a state-supported to a state-assisted to a state-related to a state-located university. In fact, with campuses in Europe and Asia, we remain today only a state-molested institution.)

It is worth noting here that the nation's leading public university, the University of California has been high particularly hard hit by serious cuts in state appropriations leading to salary decreases, payless furlough days, and ramping up employee contributions to retirement and health care plans. Last week it was announced that the UC pension fund is now underfunded by over \$20 B, which will require over \$700 M/y of annual investments for years to come—roughly what the UC campuses spend on instruction!

For private universities, endowments heavily dependent upon long-term, ill-liquid assets have taken big hits (30% or greater) causing temporary declines in operating revenues for the wealthiest institutions. At last count, Harvard lost almost \$14 billion of its endowment, with comparable losses at other prominent private universities such as Yale and Stanford. At the same time, the tuition, room and board, charges of private universities are now bumping up against market ceilings as they have surged past \$50,000/year (and even higher for professional schools).

My own hunch is that these financial challenges are not due to the usual ebb and flows characterizing a cyclic economy but rather a consequence of the fact that our current system of supporting American higher education is no longer sustainable, particularly in view of the increasing needs of our society.

Before offering some observations about how these challenges might be addressed by the University of Hawaii, let me first broaden both the discussion and the timescale a bit and review some of the near-term challenges facing higher education from a global perspective.

An Environmental Scan

The Emergence of a Global, Knowledge-Driven Economy

Economists estimate that 40 to 60 percent of economic growth each year is due to research and development activity, particularly in American universities. Another 20 percent of the increased resources each year are based upon the rising skill levels of our population. In other words, 60 to 80 percent is really dependent upon higher education in terms of research and development and skills of the labor force (Augustine, 2005).

In fact, in our increasingly knowledge-intensive society, the rate of return from investment in research is rising. While the average rate of return on capital investment in the United States today is roughly 10 percent to 14 percent, the private rate of return of R&D investment is estimated to be 25 percent to 30 percent. The social rate of return—the rate that accrues to society more generally—is estimated to be as high as 50 percent to 60 percent, roughly four times the rate for other types of investment.ⁱ In a recent survey, when asked to identify the one federal policy that could most increase the long-term economic growth rate, economists put further investment in education and research at the top of the list.

Because of the high quality of the people and tools provided by American universities, industries increasingly choose to locate their facilities near major research universities (e.g., Silicon Valley, Route 128, Research Triangle, etc.) where they have access to a continuous supply of technical talent. It is no longer tax burdens or cheap labor that matter. It is the availability of research, technological innovation, entrepreneurial spirit, and most of all, highly educated talent!

It is this reality of the hyper-competitive, global, knowledge-driven economy of the 21st Century that is stimulating the powerful forces that will reshape the nature of our society and that pose such a formidable challenge to our nation and our states and cities.

Changing Education Requirements

Today, a college degree has become a necessity for most careers, and graduate education is desirable for an increasing number. In the knowledge economy, the key asset driving corporate value is no longer physical capital or unskilled labor. Instead it is intellectual and human capital.

This increasingly utilitarian view of higher education is reflected in public policy. The National Governors Association notes that “The driving force behind the 21st Century economy is knowledge, and developing human capital is the best way to ensure prosperity.” (NGA, 2004)

Education is becoming a powerful political force. Just as the space race of the 1960s stimulated major investments in research and education, there are early signs that the skills race of the 21st Century may soon be recognized as the dominant domestic policy issue facing our nation.

But there is an important difference here. The space race galvanized public concern and concentrated national attention on educating “the best and brightest,” the academically elite of our society. The skills race of the 21st Century will value instead the skills and knowledge of our entire workforce as a key to economic prosperity, national security, and social well-being.

Demographics

Aging populations, out-migration, and shrinking workforces are seriously challenging the productivity of developed economies throughout Europe and Asia. Yet here the United States stands apart because of another important demographic trend: immigration.

As it has been so many times in its past, America is once again becoming a highly diverse nation of immigrants, benefiting immensely from their energy, talents, and hope. In fact, over the past decade, immigration from Latin America and Asia contributed 53% of the growth in the United States population (Frey, 2010).

Immigration is expected to drive continued growth in the U.S. population from 300 million today to over 450 million by 2050, augmenting our aging population and stimulating productivity with new and young workers. Such population mobility is also rapidly changing the ethnic character of our nation.

Yet even without immigration the minority population in the United States will continue to grow for decades to come, rising to 42% by 2050. Minorities now comprise 40% of the Millennial generation of students now entering our colleges (Brownstein, 2010).

By any measure, we are evolving rapidly into a truly multicultural society with a remarkable cultural, racial, and ethnic diversity. This demographic revolution is taking place within the context of the continuing globalization of the world's economy and society that requires Americans to interact with people from every country of the world.

The increasing diversity of the American population with respect to race, ethnicity, and national origin is one of our greatest strengths, since such diversity contributes to our capacity to innovate and relate to a highly diverse global economy.

But here American higher education faces a serious challenge, since the minorities comprising the most rapidly growing components of our population have traditionally had the lowest levels of college attainment. For example, the percentage attaining baccalaureate degrees for Blacks at 19% and Hispanics at 13% lags far behind those of Whites at 33% and Asians at 52%), a consequence of inadequate K-12 preparation, poverty, and discrimination (Chronicle, 2010).

Our colleges and universities will not only have to dedicate a much greater effort but also develop new paradigms capable of serving rapidly growing ethnic minorities still burdened with inadequate K-12 preparation, impoverished backgrounds, and discrimination.

Markets

These economic, geopolitical, and demographic factors are stimulating powerful market forces that are likely to drive a massive restructuring of the higher education enterprise, similar to that experienced by other economic sectors such as banking, transportation, communications, and energy.

It also seems clear that the financial model that has dominated American higher education for the past several decades is beginning to fray. Traditionally, this has involved a partnership among states, the federal government, and private citizens (the marketplace). In the past the states have shouldered the lion's share of the costs of public

higher education through subsidies, which keep tuition low for students; the federal government has taken on the role of providing need-based aid and loan subsidies. Students and parents (and to a much lesser extent donors) pick up the rest of the tab.

Yet today tuition and fees charged for private universities (and an increasingly number of public universities) have hit the wall (\$40,000 for tuition and \$50,000 total). The tuitions at public universities are also rising rapidly. For example at both U California and U Michigan state residents pay \$12,000 a year, and out-of-state students pay private tuition levels at \$35,000 a year!

This system has become vulnerable as the states face the increasing Medicaid obligations of a growing and aging uninsured population, made even more difficult by the state tax-cutting frenzy during the boom period of the late 1990s. This is likely to worsen as a larger percentage of young people and working adults seek higher education while the tax-paying population ages and health care costs continue to escalate.

A recent Brookings Institution study concluded: "the traditional model of higher education finance in the U.S. with large state subsidies to public higher education and modest means-tested grants and loans from the federal government is becoming increasingly untenable." (It is worth noting that a co-author of this study, Peter Orzag, was the recent director of the U.S. Office of Management and Budget.)

But there is another issue here. We are moving toward a revenue-driven, market-responsive higher education system because there is no way that our current tax system can support the degree of universal access to postsecondary education required by knowledge-driven economies in the face of other compelling social priorities (particularly the needs of the aging).

This is amplified by an accelerating influence of the market on higher education and a growing willingness on the part of political leaders to use market forces as a means of restructuring higher education in order to increase the impact of the competition. Put another way, market forces are rapidly overwhelming public policy and public investment in determining the future course of higher education.

Yet the increasing dominance of market forces over public policy raises two important challenges. Whether a deliberate or involuntary response to the tightening fiscal constraints and changing priorities for public funds, the long standing recognition that higher education is a public good, benefiting all of our society, is eroding. Both the American public and its elected leaders increasingly view higher education as a private benefit that should be paid for by those who benefit most directly, namely the students.

Without the constraints of public policy, earned and empowered by public investments, market forces could so dominate and reshape the higher education enterprise that many of the most important values and traditions of the university could fall by the wayside, including its public purpose.

Concerns at the National Level

To quote *The Economist*: "It is all too easy to mock American academia. But it is easy to lose sight of the real story: that America has the best system of higher education in the world" (*Economist*, 2005).

While public surveys still suggest strong support of higher education, numerous studies sponsored by government, business, foundations, the National Academies, and the higher education community have suggested that the past attainments of American higher education may have led our nation to unwarranted complacency about its future.

The United States currently ranks 10th among OECD nations with only 39% of 25-to-34 year olds having an associate degree or higher (although it ranks 5th for 25-to-65 year olds) and almost last in college completion rates, particularly when the fastest growing component of our population comes from minority groups (particularly Latinos) with the lowest participation in higher education.

If less than 40% of Americans earn a two- or four-year college degree, and much of the adult population in the U.S. has never taken a single college class, then most of our citizens are falling behind. They are vastly underserved by traditional colleges and universities. To fully develop our nation's human capital, new means of knowledge access must be made available.

There is clear evidence of an increasing stratification of access to (and success in) quality higher education based on socioeconomic status. Students from the highest income quartile are ten times more likely to graduate with college degrees than those from the lowest quartile!

Many question whether our colleges and universities are achieving acceptable student learning outcomes (including critical thinking ability, moral reasoning, communication skills, and quantitative literacy).

But there is another concern. A recent analysis ranked the global competitiveness of 40 leading nations. While the United States ranked sixth overall among 40 leading nations in current global competitiveness according to these measures, it ranked dead last, 40th out of 40, in the progress made over the past decade. The study also noted the degree to which the United States was falling behind in higher education, ranking currently 9th among nations in baccalaureate degree participation and 15th in change over the past decade.

Here part of the problem appears to be that many policy makers in Washington and at the state level simply assume that we will continue to be world leaders in innovation without a national strategy for further progress, while most other nations, particularly in Asia and the Europe, are making major investments in education, R&D, and knowledge infrastructure. When global corporations are polled and asked to identify the most attractive country locations for locating new R&D facilities, China ranks higher than the United States by 61% to 41%, and India is in third place with 29%. Between 1998 and 2003, the share of R&D investment by U.S. firms and affiliates grew twice as fast overseas (52%) as it did domestically (26%). Thus, foreign markets and the climate they provide for investment appear to be outpacing us.

The Spellings Commission

Of particular importance here was the National Commission on the Future of Higher Education (the "Spellings Commission"), launched in 2005 to examine issues such as the access, affordability, accountability, and quality of our colleges and universities (Miller, 2006). This unusually broad commission—comprised of members from business, government, foundations, and higher education—concluded that "American higher education has become what, in the business world would be called a mature enterprise:

increasingly risk-averse, at times self-satisfied, and unduly expensive. It is an enterprise that has yet to address the fundamental issues of how academic programs and institutions must be transformed to serve the changing educational needs of a knowledge economy. It has yet to successfully confront the impact of globalization, rapidly evolving technologies, an increasingly diverse and aging population, and an evolving marketplace characterized by new needs and new paradigms.”

More specifically, the Commission raised two areas of particular concern about American higher education: social justice and global competitiveness.

Too few Americans prepare for, participate in, and complete higher education. Notwithstanding the nation’s egalitarian principles, there is ample evidence that qualified young people from families of modest means are far less likely to go to college than their affluent peers with similar qualifications. America’s higher-education financing system is increasingly dysfunctional. Government subsidies are declining; tuition is rising; and cost per student is increasing faster than inflation or family income.

Furthermore, at a time when the United States needs to be increasing the quality of learning outcomes and the economic value of a college education, there are disturbing signs that suggest higher education is moving in the opposite direction. Numerous recent studies suggest that today’s American college students are not really learning what they need to learn (Bok, 2006).

Although the Spellings Commission proposed a number of recommendations to address these concerns, these were largely ignored by the Bush administration. In sharp contrast, the Obama administration has not only set out bold goals for the nation that address many of these concerns, such as the President’s challenge to raise college attainment by 25% to raise the nation to the world’s leader by 2020 while providing at least one year of college for every American, but it has also launched a number of important initiatives and programs to address these concerns such as the restructuring of federal financial aid in the Reconciliation Health and Education Act of 2009, the Race to the Top and Early Learning programs, a dramatic expansion of the Pell Grant program. The administration has also pledged to move ahead with the goals set by the America COMPETES Act to double federal research funding in key scientific areas of importance to the U.S. economy, an act passed during the previous administration but never funded.

The National Academies Commission on Research Universities

While American research universities continue to provide the nation with global leadership in research, advanced education, and knowledge-intensive services such as health care, technology transfer, and innovation, this leadership is threatened by rising competition from abroad, by stagnant support of advanced education and research in key strategic areas such as science and engineering, and by the complacency and resistance to change of the academy.

Recently members of the United States Congress has asked the National Academies to conduct a thorough study of the state of the nation’s research university. As stated in their letter: “America’s research universities are admired throughout the world, and they have contributed immeasurably to our social and economic well-being. Our universities, to an extent unparalleled in other countries, are our nation’s primary source of long-term scientific, engineering, and medical research. We are concerned that they

are at risk. Hence we are writing to ask the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine to assemble a distinguished group of individuals to assess the competitive position of American research universities, both public and private, and to respond to the following question: What are the top ten actions that Congress, state governments, research universities, and others can take to maintain the excellence in research and doctoral education needed to help the United States compete, prosper, and achieve national goals for health, energy, the environment, and security in the global community of the 21st Century."

Although it is still early in its studies, some of the major issues and possible recommendations that will receive consideration include:

1. **Unsustainable Financial Models:** Graduate education and research require subsidies from increasingly vulnerable revenue sources: federal support (threatened by growing federal debt), state support (collapsing with state budgets and shifting priorities), corporate support (declining for both research and employee education), tuition (approaching a market ceiling), gifts and endowments (sufficient for only a small number of institutions), and clinical income (threatened by new health legislation).

Possible Recommendation: Institute a new financial model that better distributes the primary responsibilities for the support of the nation's research universities among the states, the federal government, students, and private sector (foundations, corporations, donors).

2. **Global Competition:** Currently the United States has no comprehensive policy for enhancing and sustaining its research universities in the face of growing international competition from nations making major commitments to build world-class universities in Europe and Asia. In fact, many current federal policies and practices actually harm the competitiveness of U.S. universities, e.g., the failure to cover the full costs of federally procured R&D (ICR, cost sharing), federal R&D priorities that drive imbalance among disciplines (biomedical >> physical science & engineering >> social sciences) while failing to adequately address critical national needs such as energy infrastructure and industrial innovation and design.

Recommendations: Complete the objectives of the America COMPETES Act; commit to providing full cost funding of federally procured R&D; develop and implement federal research policies that more strategically target national priorities; and develop a national policy for sustaining world-class American research universities.

3. **Human Capital:** Current federal and state policies constrain the capacity of American research universities to address the nation's critical needs for human capital—particularly in science and engineering—by restricting actions to address the increasing diversity of the American population (e.g., affirmative action) and limiting the ability of research universities in attracting international students and faculty as immigrants who can eventually enter the nation's workforce.

Possible Recommendation: The federal government should place a higher priority on encouraging and supporting programs aimed at providing access to graduate and professional education to underrepresented minorities while modifying immigration policies to both attract outstanding international students and facilitate their eventual immigration following graduation (e.g., "stapling a green card to each diploma"...))

4. **The Capacity for Change:** Research universities face major challenges from the changing intellectual nature of knowledge creation and application (e.g., transformational and translational research), the changing nature of faculty activities (e.g., the growing responsibility for resource generation in addition to traditional responsibilities for teaching, research, and service) and the changing needs and character of a new generation (e.g., the “Millennials”) that will require major transformations in university organization, management, and leadership.

Possible Recommendation: Both governments (state and federal) and the private sector (foundations, corporations, donors) should give a higher priority to stimulating and supporting major experiments in both restructuring existing research universities and launching new university forms (e.g., global universities and cyberspace universities,).

5. **Institutional Competition:** One of the great strengths of American higher education is the presence of a system of world-class public and private research universities, sustained by public policies that ensure sufficient balance in financial assets, flexibility, and quality to serve the diverse needs of the nation. Yet today, shifting state and federal policies (e.g., tax policy, financial aid policies, tuition constraints, sponsored research policies, affirmative action constraints) differentially affect various elements of the U.S. research university enterprise and drive predatory practices and cost escalation in the recruitment of faculty and students.

Possible Recommendation: Encourage the leaders of higher education to reaffirm the importance to the nation of a balanced mix of world-class public and private research universities while modifying federal and state policies that preferentially advantage various elements of the research university system (public or private) to create a level playing field in the competition for students, faculty, and grants.

6. **University Governance, Management, and Leadership:** The current governance, management, and leadership of America’s research universities are increasingly overwhelmed by their complexity, scale, and importance to national priorities.

Possible Recommendation: To dramatically improve the quality of university governance, leadership, and management by adopting the best practices of corporate governing boards and management that stress competence, accountability, and integrity.

7. **Public Understanding:** The American public has little understanding of the role played by world-class research universities in both creating new knowledge (and stimulating innovation critical to economic prosperity, and national security) and in training those capable of generating knowledge and innovation (graduate education).

Possible Recommendation: Launch a major public awareness campaign aimed at persuading voters about the importance in investing in higher education in general and stimulating efforts to restore funding adequate to sustain the nation’s world-class research universities critical to economic prosperity, national security, and social well being.

The Need for a National Strategy

Most nations are taking action to address—or at least cope with—the ongoing challenges of meeting workforce needs while elevating their universities to world-class status, although local cultures, traditions, and politics shape their particular approach.

Because of our origin as a federation of independent colonies (and then states), the United States continues to rely on a highly decentralized market-driven approach, consistent with the constitutional role that the states play in higher education and the autonomy of private institutions, with little strategic direction from the federal government.

In fact, the United States is essentially the only developed nation without a national strategy for higher education in general and for research universities in particular (Weber, 2007). Of course our nation does have a well-organized national research system, based on competitive grants from federal agencies. But the budgets and control of our public research universities, which conduct most of the research and produce most of graduates of advanced degree programs, are at the state level, with only minimal influence by policies of the federal government.

Today, more than ever, the United States needs to develop a national strategy for sustaining (and perhaps expanding) a system of world-class research universities. Actually we have done this before, a century ago, with the Land-Grant Acts that provided the revenues from the sale of federal lands to the states to build the public universities that have provided educational opportunities to the working class and conducted both the basic and applied research to address key national priorities such as agriculture and industry. The federal government stepped in once again after WWII to create a partnership between the research universities and federal agencies through a peer-reviewed competitive grant system. Today many believe we need a new national strategy to sustain and enhance the quality of the nation's higher education enterprise.

Yet since that time, for almost four decades, the nation really has had no agenda for higher education in America. Little wonder that at times we appear to be drifting aimlessly, with changing social priorities putting at great risk the very institutions that earlier generations built and supported so strongly as key to the future of a great nation.

The Challenges and Opportunities for Hawaii and its University

The State of Hawaii has several important assets that positions it well for the global economy:

An unusually effective and highly coordinated system of public higher education capable of :

- 1) rapidly expanding college degree attainment (as illustrated by the bold vision of the University of Hawaii to increase degrees by 25% by 2015)
- 2) proven capacity to provide high quality and responsive adult education (critical to the needs of a society increasingly dependent upon lifelong learning)

An unusually diverse population with strong ties to both the East (the mainland) and the West (Asia).

A location at the crossroads of the Pacific, enabling the University of Hawaii to rapidly assume the character of a global university (particularly with its strengths in information and communications technology).

The rapid emergence of the University of Hawaii at Manoa as a major research university, already attracting over \$450 million/year with leading programs in key areas.

Unusually strong, deep, and experienced leadership.

A bold strategic vision, based on performance-based funding to ensure accountability, but also requiring a major restructure of state higher education policy to provide the institutional autonomy to allow it to adapt to a rapidly changing world.

All the pieces are in place. While significant public policy changes are necessary, along with the restoration of state support at competitive levels, the payoff will to the State and its people will be extraordinary.

Unlike many other regions, the future prosperity and well being of the State of Hawaii is clearly within reach—provided it recognizes and supports the key role that can be—indeed, **MUST** be—played by the University of Hawaii as the unique source of both the human and intellectual capital necessary to compete in a global, knowledge-driven economy.
