

Please share your stories about how Open Access to this article benefits you.

Expanding Undergraduate Education
to Meet National Goals: The Role of
Research Universities

by Peter McPherson and David
Shulenburger

2010

This is the published version of the article, made available with the permission of the publisher. The original published version can be found at the link below.

McPherson, Peter and Shulenburger, David. "Expanding Undergraduate Education to Meet National Goals: The Role of Research Universities," with Peter McPherson, *Change Magazine*, January/February 2010, pp. 51-56.

Published version: <http://www.changemag.org/Archives/Back%20Issues/January-February%202010/abstract-expanding.html>

Terms of Use: <http://www2.ku.edu/~scholar/docs/license.shtml>

Published as “Expanding Undergraduate Education to Meet National Goals: The Role of Research Universities,” with Peter McPherson, *Change Magazine*, January/February 2010, pp. 51-56.

Expanding Undergraduate Education to Meet National Goals: The Role of Research Universities

Peter McPherson, President
David Shulenburg, Vice President for Academic Affairs
Association of Public and Land-grant Universities

President Obama’s higher education goal is to provide “... every American with a quality higher education—whether it's college or technical training. Our objective is to suggest the role degree-awarding colleges and universities, particularly public research universities, can best serve in accomplishing the President’s goal. Thus, we address only the proportion of the population who receive a tertiary degree; we do not discuss goal setting or educational cost for those who attain less than a tertiary degree.

We build on the goals suggested by the 2008 Commission on Access, Admissions and Success in Higher Education,¹ by the State Higher Education Executives’

¹ Commission on Access, Admissions and Success in Higher Education, *Coming to Our Senses: Education and The American Future*, The College Board, 2008.

Officers association in 2008 (SHEEO)² and by the Lumina Foundation in 2009,³ that is approximately 55% of young adults having community college or higher degrees by 2025.

According to the Organization for Economic Cooperation and Development (OECD), in 2006 39% of the 25 to 34 age population in the United States had tertiary degrees. That contrasts to Japan with 54.1% tertiary attainment and Canada with 54.8%. Because our goal is to lead the world, we use the 55% degree attainment goal with the understanding that it will have to be revised upward as educational attainment in the leading countries increases.

New data from the U.S. Census on tertiary degree attainment for 2008, demonstrate a substantial increase from the 39% that the OECD reported based on 2006 data to 41.57% in 2008. Degrees granted have also increased since 2006. According to the U.S. Census Bureau's estimates, the U.S. 25- to 34-year-old population in 2025 will number 46,115,948. Thus the target number for 55% tertiary attainment in 2025 is 25,363,771. The additional number of tertiary degrees required to meet this goal is 8,676,771.

An Immediate and Targeted Goal

Since the 25 to 34 age group has 10 single-year age cohorts within it, increasing the attainment of associate's and bachelor's degrees earned by each cohort by 867,677 will lead to achieving the 55% attainment goal (assuming emigrants balance immigrants and deaths are relatively few). This addition will increase the number of bachelor's and associate's degrees awarded annually from the current level of roughly 2.1 million⁴ to 3 million.

The 2025 cohort of age 25 to 34 individuals is the 2010 cohort of 10- to 19-year-olds. Nearly the full range of interventions that serve to increase degree earning can be employed on the younger cohort members with maximum opportunity to increase their degree earning proclivity by the roughly 42% required. The older cohorts already will have decided on college. The interventions available to increase their degree earning rate will be restricted to those that increase retention and graduation. Thus it is less probable the full increase could be achieved for the 18- and 19-year-old population than for the 10- to 13-year-old population.

Estimation of Enrollment Requirements and Costs

We focus here only on the expansion of undergraduate enrollment, i.e. associate and bachelor's degrees. Assuming graduation rates remain unchanged, if enrollment increases 42%, degrees should also increase by 42%. If that expansion is proportional to current undergraduate FTE enrollments the growth would be distributed across the higher education sectors as displayed in Figure I.

² "Second to None in Attainment Discover and Innovation: The National Agenda for Higher Education," *Change Magazine*, September – October 2008, pp. 42-49

³ "A Stronger Nation through Higher Education," Lumina Foundation, February 2009.

⁴ Based on limited data, we estimate roughly 10% of those holding bachelor's degree have previously received an associate's degree.⁴ Of the 3,018,600 who received tertiary degrees in 2008, 699,000 received associate's degrees and 1,544,000 received bachelor's degrees. Using our 10% estimate for bachelor's recipients who already held associate's degrees, in 2008, 2,088,600 of the associate's and bachelor's degrees awarded increased the tertiary attainment of the population.

Figure I: Current Undergraduate Full Time Equivalent Enrollment and Additional Enrollment Required to Meet Goals

	2006 UG FTE	Additional UG FTE Required by 2025 for 55% Attainment
Public 4 year	1,934,989	812,695
Public Very High	1,258,049	528,380
Public High	867,798	364,475
Private 4-yr, nonprofit	1,221,200	512,904
Private Very High, nonprofit	229,574	96,421
Private High, nonprofit	160,185	67,278
Public 2 year	2,772,899	1,164,618
Private 2 yr, non profit	48,250	20,265
Private 4 yr, profit	342,604	143,894
Private 2 yr, profit	49,700	20,874
Total 4 year	6,014,399	2,526,047
Total 2 year	2,870,849	1,205,757
Total Tertiary	8,885,248	3,731,804

Source of current enrollment data: IPEDS

These projections assume colleges and universities will be no more or less efficient at converting college enrollments into graduates in 2025 than at present. We believe that greater efficiencies are possible and that enrollment expansion of a smaller magnitude might be adequate to meet the 55% degree attainment goal.

Is it possible to achieve a 42% enrollment increase? Yes, though not without great effort. The United States has sustained periods in the past when proportionate increases in higher education enrollment were at or above the rates required to meet these goals. To meet the tertiary degree production goals with no change in graduation rates or related factors, annual higher education enrollment must grow by 3.7 million FTE students (42%) during the next 15 years. The context in which the possibility of reaching these goals is found in the record of the last 60 years.

Figure II

Year	College Enrollment (head count)	Growth Over Prior 15 Years	Compounded Annual Growth Rate	Proportion of the Population Age 20 to 21 in School
1947	2,311,000			10.2%
1962	4,208,000	82%	4.08%	23.0%
1977	11,546,000	174%	6.96%	31.8%
1992	14,035,000	21.6%	2.71%	42%
2007	17,232,000	22.8%	1.38%	48.4%

Source: U.S. Bureau of the Census, School Enrollment: Historical Tables, Table A-6. Age Distribution of College Students 14 Years Old and Over, by Sex: October 1947 to 2007 and School Enrollment -- Social and Economic Characteristics of Students: October 1991 (P20-469), and Table A-2. Percentage of the Population 3 Years Old and Over Enrolled in School, by Age, Sex, Race, and Hispanic Origin: October 1947 to 2007

During this 60-year period, college enrollment grew 646%. During two of the four 15-year sub-periods, enrollment grew more than the 42% required to achieve the 55% tertiary goal within the next 15 years. Interestingly, the greatest proportional growth period was not triggered by the GI Bill of Rights period that began in 1947, but in the subsequent 1962-77 period when enrollment grew an astounding 174%. During that sub-period, enrollment grew by nearly 7.4 million students. Enrollment growth has stabilized at around 22% growth in each of the last two 15-year periods.

We have lost momentum during the last 30 years. Between 1947 and 2007 the proportion of the prime college age group, 20 to 21 year olds, attending college grew from 10.2% to 48.4%. We are far from any realistic limit on growth.

Figure III

	Total	Black, non-Hispanic	Hispanic	White, non-Hispanic
% of Recent High School Completers Enrolled in College in 1973	46.6%	32.5%	54.1%	47.8%
% of Recent High School Completers Enrolled in College in 2006	66%	55.5%	60%	68.5%

Source: Digest of Educational Statistics, 2008, Table 192

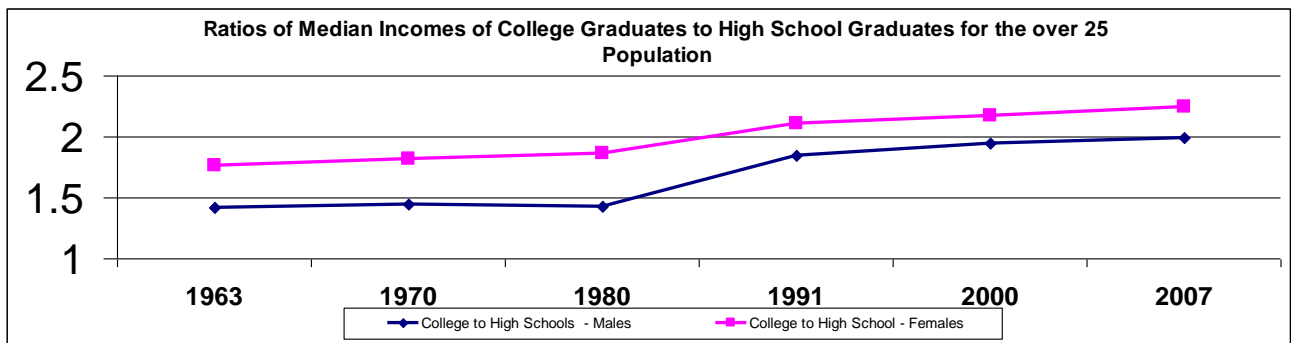
The overall proportion of high school graduates enrolling in college can and should grow significantly as college attendance by minority students is still significantly

below that of whites. Increasing minority participation to the level of majority students would serve to increase total enrollment and, more important, to increase social equity.

Does the Country Need More Degree Holders?

The fact that other countries lead the United States in tertiary degree attainment demonstrates that advanced economies need more individuals with higher degrees. Those with higher degrees both earn more and experience less unemployment. These are strong signals that the labor market rewards degree holders. The ratio of earnings of college graduates to that of high school graduates has climbed in every year since 1980, indicating that employers are willing to pay an increasingly higher premium for degree holders.

Figure IV

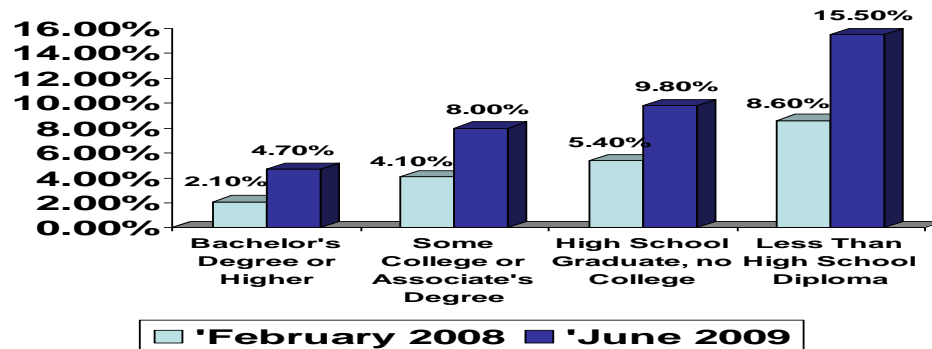


Source: Historical Income Statistics, U.S. Census Bureau.

While we have learned from recent experience that nothing is recession-proof, the data in the table below clearly demonstrate that the rapidly worsening economy of the last year was less damaging to those with higher degrees than those without them.

Figure V

Unemployment by Educational Level Before and During this Recession



Source: U.S. Bureau of Labor Statistics, Table A-4, 2009

Paul Osterman examined whether our labor market can accommodate a major increase in college degree holders:

The economic case for expanding higher education is strong . . . there has been a long-term trend for the U.S. economy to require more skill in its labor force. This shows up in the pattern of wages over time, but there is also more direct evidence. Occupational projections as well as observations of work organization and technology point in the same direction. Fears that education is a signaling device with no productivity implications are allayed by the observation that the productivity of cities and regions is tied to the educational level of their residents . . . To top it off, the supply of college-educated employees is stagnating due to enrollment trends, and this creates both a need and an opportunity to intervene.⁵

Osterman's overall conclusion is that "it would be good public policy to expand access to higher education."⁶ Indeed, this is confirmed by the U.S. Bureau of Labor Statistics projection that through 2016 occupational demand for those with Associate's degrees will grow by 18.7%; with bachelor's, by 16.5%; and for all occupations, by 10.4%.⁷

What will it cost? Figure VI provides the additional annual costs under two scenarios. Scenario I calculates the additional full educational cost using the actual full educational cost rates for the various providers. Scenario II calculates the additional cost using the full educational costs of the public institutions for both those institutions and for their private counterparts, e.g., the public 4-year, non-research university's cost is substituted for the private 4-year, non-research university's cost.

⁵ Paul Osterman, "College for All, the Labor Market for College Educated Workers," Center for American Progress, 2008 p. 24

⁶ Ibid.

⁷ Economic News Release, Bureau of Labor Statistics. Table 9, December 4, 2007 also cited in "Preparing the Workers of Today for the Jobs of Tomorrow", U.S. Council of Economic Advisers, July 2009, p12.

Scenario II's counterfactual substitutions are presented as the new GI Bill grants tuition to veterans at the highest rate charged by a public university in their home state, rather than at the rate charged by some private university. While the legislation does not require returning veterans to attend public institutions, it specifies that veterans are to be reimbursed for their higher education expenses on the basis of the inexpensive alternative that is readily available to them.⁸ Reliance on the federal government to fund a significant portion of the expansion probably would involve careful scrutiny of the size of subsidy and conceivably mean that adoption of Scenario II's GI Bill of Rights-like public costing methodology.

Rapid expansion of tertiary education in the past largely has been expansion of only public education. During the two periods of most rapid tertiary enrollment expansion, the proportion of students educated in private institutions fell from 51% of the total in 1947 to 21% in 1972. If this history is repeated, Scenario II is entirely appropriate as almost all enrollment growth will be in the public sector.

The additional annual full educational cost⁹ of achieving the 55% goal is \$40.2 billion under Scenario II's public cost model and \$48.6 billion under the Scenario I actual cost model. To put these numbers in context, tertiary education institutions had total revenues (not just education-related) of \$457 billion in 2005-06¹⁰ and state government appropriations to higher education totaled about \$77 billion in 2006.¹¹

**Figure VI:
Annual Full Educational Cost of 2006 Dollars of
Achieving 55% Age 25-34 Attainment Goal Using
Per-FTE Student Cost for All Categories of Universities
(in Millions of Dollars)**

		<u>Scenario I</u>	<u>Scenario II</u>
	2006 Total	Additional	Additional
	UG	UG	UG
	Actual Cost	Actual cost	Public Cost
Public 4 year	\$19,517	\$8,197	\$8,197

⁸ Congress does permit additional payment to private schools veterans attend if the universities join the "yellow ribbon" program: "The Yellow Ribbon GI Education Enhancement Program (Yellow Ribbon Program) is a provision of the Post-9/11 Veterans Educational Assistance Act of 2008. This program allows institutions of higher learning (degree granting institutions) in the United States to voluntarily enter into an agreement with VA to fund tuition expenses that exceed the highest public in-state undergraduate tuition rate. The institution can waive up to 50% of those expenses and VA will match the same amount as the institution." http://www.gibill.va.gov/School_Info/yellow_ribbon/index.htm

⁹ "Full Educational Cost" is the sum of Instructional, Academic Support, Student Services and Institutional Support expenditures.

¹⁰ Snyder, T.D., *Mini-Digest of Education Statistics*, 2008, (NCES-2009-021) NCES, Institute of Education Sciences, U.S. Department of Education, pp. 47 to 49.

¹¹ SHEEO, SHEF <http://www.sheeo.org/finance/shef/2008%20tables/SHEF%20Data%201997-2007%20by%20state%20in%20current%20dollars.xls>

Public Very High	\$22,144	\$9,300	\$9,300
Public High	\$10,330	\$4,338	\$4,338
Private 4-yr, nonprofit	\$20,738	\$8,710	\$5,173
Private Very High, nonprofit	\$13,712	\$5,759	\$1,697
Private High, nonprofit	\$4,004	\$1,681	\$800
Public 2 year	\$21,262	\$8,930	\$8,930
Private 2 yr, non profit	\$730	\$306	\$155
Private 4 yr, profit	\$2,723	\$1,144	\$1,451
Private 2 yr, profit	\$601	\$252	\$160
Total 4 year	\$93,172	\$39,132	\$30,959
Total 2 year	\$22,594	\$9,489	\$9,245
Total Tertiary	\$115,766	\$48,622	\$40,205

We used “full educational cost per FTE” as the appropriate measure of additional cost in developing the estimates in Figure VI, as it is essentially the average direct cost of educating a student. The cost to build or buy new facilities is not included in this measure, so we are implicitly assuming that this expansion can be accomplished with existing facilities. A decision to include new facilities in the enrollment cost estimate would increase the cost.

We do not include the cost of new facilities because capital for new facilities often comes from non-operating budgets of states or foundations rather than the operating budgets of universities. Facilities such as residence halls and cafeterias tend to be budgeted as auxiliaries, with users paying the cost of new construction. It is traditional to employ direct educational costs only when considering changes such as enrollment increase. Budgeting considerations, however, do not mean that real costs are not involved if facilities expansion is required.

In addition, some part of enrollment expansion can be accomplished by more fully utilizing existing facilities. Expanding classroom use from the traditional 30 hours per week by scheduling more night classes and weekend classes effectively doubles classroom space. Laboratory usage may be expanded in the same manner. Distance education techniques can largely eliminate the need for physical facility expansion. But even if the need for new educational facilities is minimized, the unfunded backlog of past-due maintenance and building repairs will require large capital expenditures to keep existing facilities serviceable.

In a period in which national need motivates universities to increase enrollment, such economies will be realized, just as they were during the 1947 to 1976 period of rapid enrollment growth. This implies expansion of enrollment at existing universities rather than establishing new institutions.

How should additional student enrollments be distributed across degree categories?

Students should make these decisions. While the existing distribution of students across degree categories is affected by subsidies, we see no valid reason to intervene further by effectively making choices that limit students' range of options.

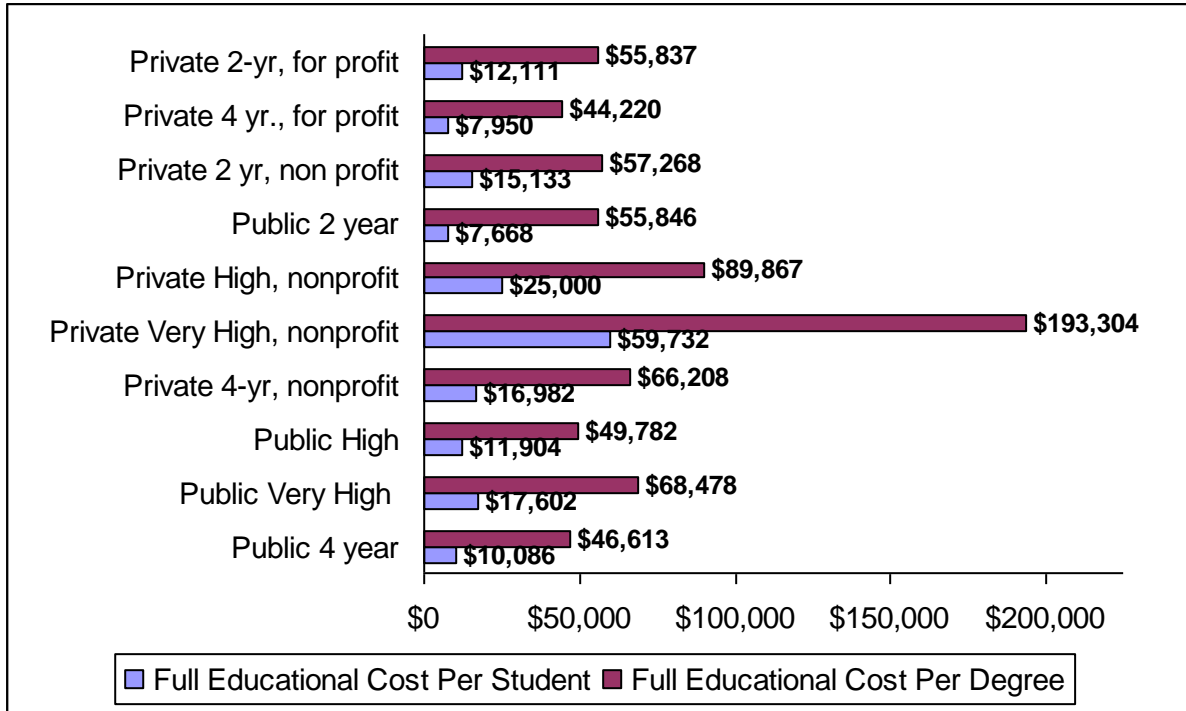
Unless students themselves decide not to attend these institutions, we are persuaded that the proportion of degrees granted by research universities should remain at its current level or increase. We suspect that in the "flat world" described by Thomas Friedman,¹² students, either graduates or undergraduates, will be even more inclined to attend research universities. Public policy should emphasize forcefully to well-prepared students the benefits of the research university education to them and the country.

But isn't research university education too costly to be a real player in increasing enrollment? Given the massive scale of the increase required to meet the tertiary degree attainment goals, it is perhaps natural to suggest that the decision about where enrollment increases occur should be made on the relative cost of education. Figure VII illustrates two ways to measure cost, by FTE student and by degree granted.¹³ The range of cost per FTE at the most expensive set of institutions is nearly 7.8 times the level of the least expensive set of institutions but the ratio of cost per degree is only 4.3 times as great.

Figure VII: Full Education Cost Per FTE Student and Per Degree, 2006

¹² Thomas Friedman, *The World is Flat*, Farrar, Straus and Giroux, 2005

¹³ The quality of instruction cannot be gleaned from this data. There are no generally accepted measures of the quality of educational programs or of the outcomes from those programs. All that can be surmised legitimately from the data in Figure VII are the differences in cost of providing educational services across institutions; no data-informed inferences can be drawn about instructional quality.



Source: calculated from IPEDS

Cost per degree granted is a better way to examine cost as it reflects persistence to degree as well as cost per unit of study. This is particularly so here as the objective is to increase the number of *degrees* held by the target population.¹⁴

If one judges categories of higher education providers by the cost per degree granted, public universities as a group are the best buy when compared directly with their private counterparts, i.e., very high research publics with very high research privates or public four-year and master's with private four-year and master's. Despite the degree mix of bachelors to Ph.D.s and law to medicine degrees they offer, very high public doctoral programs cost only \$11,600 more per degree and public high research universities are \$7,000 less expensive per degree than community colleges that predominately offer 2-year associate degrees.

Community colleges often note that the cost per degree calculation disadvantages them as some of their students enter without intention to earn a degree. Recent research, however, suggests that even among those community college students who have expressed intention to earn a degree, the probability of doing so for those who begin their initial enrollment at a community college is markedly lower than if they initially had entered a four year institution.¹⁵ In fairness, a portion of community college students who transfer to a four-year institution do so prior to completion of the associate's degree. Such

¹⁴ We note that the Delta Cost Project's, *Trends in College Spending* 2009 calculation computes this cost per degree metric for the years 1995, 2002, 2005 and 2006. Across these years the relative rankings of the various educational providers does not vary from that in Table IX.

¹⁵ Bridget Terry Long and Michal Kurlaender, "Do Community Colleges Provide a Viable Pathway to a Baccalaureate Degree?" NBER working paper #14367, September 2008, pp. 16-18

students inflate the calculated cost per degree at the community college while reducing it at the four-year institution from which they earn the degree.

Thus, while we do not recommend that cost be the controlling consideration in deciding how best to expand degree production, we note that public research institutions, as a group, maintain the lowest cost per degree even while offering degrees that require much prolonged individualized instruction. Clearly this advanced research-based economy can provide the type of education needed to promote innovation without incurring excessive cost. Those who argue that we cannot afford research university education¹⁶ simply lack the facts on actual cost.

On the projection of costs into the future: Over the period 1989-90 to 2004-05, full educational expenditure per degree granted essentially has been stable in public research universities and public associate's institutions and has increased at more significant rates in the private sector institutions.

Figure VIII: Annual Rate of Increase in Full Educational Cost per Degree Awarded

	Public Research ¹⁷	Public Master's	Public Associate's	Private Research	Private Master's	Private Bachelor's
Annual Rate of Increase in Real per FTE Full Educational Cost 1998-2004-2005	0.2%	-0.2%	.4%	1.6%	.8%	.2%

Source: The Growing Imbalance, Delta Cost Project, 2008, p 35.

Given the public-cost scenario above, and the large proportion of students enrolled in public research universities and public community colleges (75% of the total), what happens to educational cost in public institutions is most relevant to the projection of overall educational cost into the future. Based on the cost increase data for the last 20 years, our assumption is that real full educational cost per degree granted in public higher education institutions during the next 15 years will be little changed from the 2006 figures. Thus the present value of future costs are the numbers provided in Figure VI.

Can graduation rates increase and reduce the cost per degree further?

The overall six-year graduation rate for the cohort of students beginning college in 2000 for four-year baccalaureate granting institutions was 57.5%. For two-year schools,

¹⁶ For example see Tamar Lewin, "State Colleges Also Face Cuts in Ambitions" *New York Times*, March 16, 2009 online edition in which the following text appeared: "It may be that the idea of a 100,000-student research university was never very sustainable," said Patrick M. Callan, president of the National Center for Public Policy and Higher Education, which promotes access to higher education."

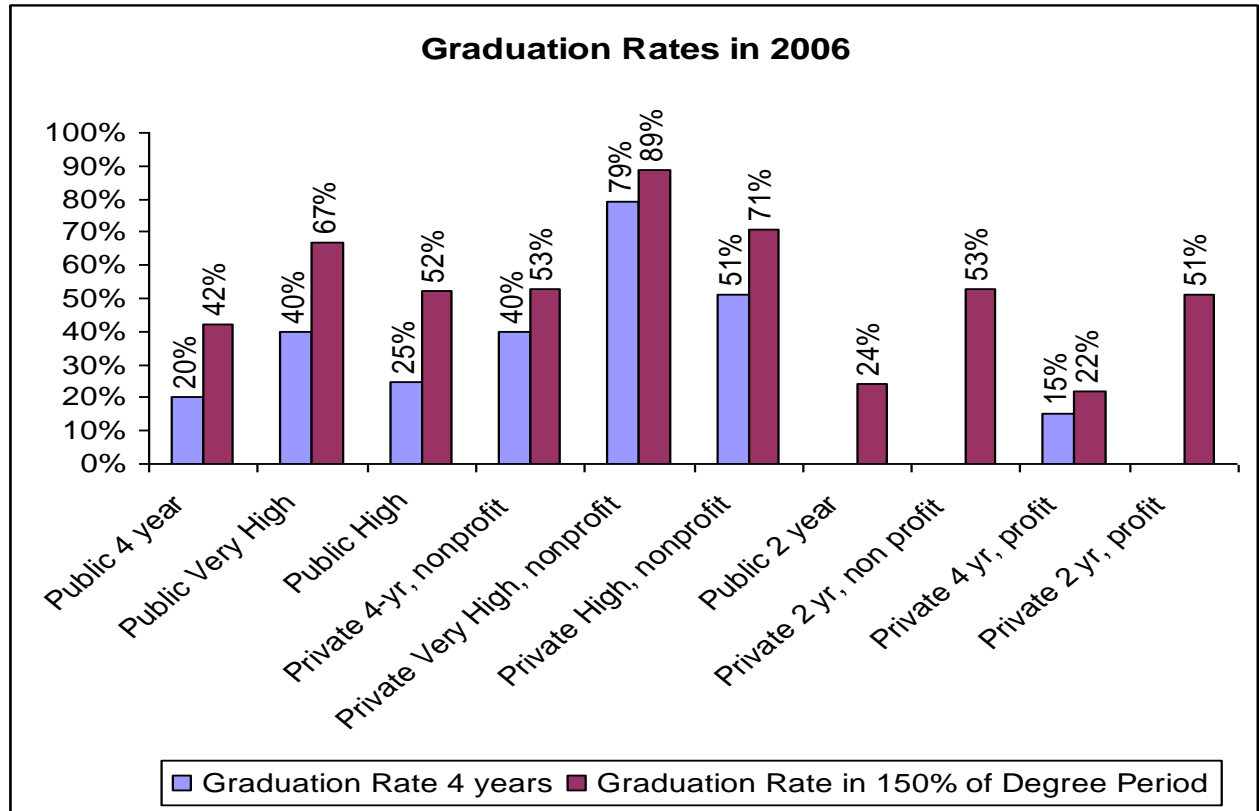
¹⁷ This is the set of institutions classified by the Carnegie Foundation as "research" according to their year 2000 definitions. When grouped by the more precise 2005 definitions the 1987-2006 rate of increase in real full educational cost of public very high research universities was .84% per year; for private very high research universities, 3.88% per year; for high public research universities, .84% per year and for high private research universities, 2.48% per year.

the graduation rate overall was 32.3%.¹⁸ Theoretically, six-year graduation rates could be raised to such a level that the tertiary attainment rate of 55% could be achieved *without increasing the number of Americans who enter college*. Such large increases, particularly at the bachelor's degree level, probably are not attainable as it appears that approximately ten percent of students who begin a bachelor's degree in one university complete that degree in another. That means that the *system* of higher education has a graduation rate that may be sixty-eight percent or more.

Figure IX is the four- and six-year graduation rates for institutions offering the bachelor's degree and three-year rates for those offering associate's. The most dramatic efficiency improvement would come from enhancing four year graduation rates. Perhaps it is feasible to double the four-year graduation rates that currently range from 20% to 40% except in the private research universities. Doing so would permit achievement of the goal without increasing the size of the college-going cohort.

Figure IX

¹⁸ Enrollment in Post-Secondary Institution, Fall 2006; Graduation Rates' 2000 and 2004 Cohorts; and Financial Statistics, fiscal year 2006, NCES, U.S. Department of Education, (NCES 2008-173) June 2008, p. 10



Source: IPEDS

Graduation rates vary directly with institutional selectivity and family income, and differ significantly by race.¹⁹ The least expensive way for an institution to increase graduation rates is to increase selectivity. This strategy likely would produce dire consequences for the social fabric of this country. Therefore, efforts to increase overall graduation rates must either focus on the persistence to graduation within higher education institutions or in the college preparation that occurs in high school or even earlier.

Education Sector, in the 2008 publication *Graduation Rate Watch: Making Minority Student Success a Priority*, identified a number of colleges and universities that have generated minority graduation rates that are above those of their majority student population. Florida State University, for example, has had dramatic increases in black student graduation. In 2006, black student graduation was a full three percentage points above that of white students.²⁰ Philander Smith with a very low budget effort increased overall graduation rates from 16% to 28% from 2006-2009.²¹

Over the last decade the National Collegiate Athletic Association purposely targeted increasing the graduation rates of student athletes. By 2008 the collective efforts of NCAA

¹⁹ For a full discussion of variation of graduation rates with these variables see "Placing Graduation Rates in Context," NCES, U.S. Department of Education, October 2006, NCES 2007-161
<http://nces.ed.gov/pubs2007/2007161.pdf>

²⁰ "Graduation Rate Watch: Making Minority Student Success a Priority," Education Sector, 2008, pp. 4 to 6

²¹ Reaching Black Men, Inside Higher Education, July 14, 2009,
<http://www.insidehighered.com/news/2009/07/14/blackmale>

schools produced a Division I student-athlete graduation rate of 64 percent, the highest rate ever for this group and a rate that is two percentage points higher than that of the general student body. The rate was two percentage points higher than in 2007 and up four percentage points over the past seven years.²²

Can the cost of education be reduced? The primary exhibit here is Figure VII that demonstrates the enormous differences in cost per FTE and per degree granted. The actual range of cost is, of course, even greater if the focus is on the individual institution rather than group averages. With such a wide-ranging cost structure there ought to be many less expensive institutions that produce educational products of equal or higher quality those other schools might emulate. There are two barriers to such imitative behavior: a) we have no agreed upon measures of quality and b) our complex cost structures do not enable a sufficiently sophisticated understanding of cost at the program level to permit optimal management.

a) Measurement of Quality: The Lumina Foundation in its 2009 monograph, *A Stronger Nation through Higher Education*, identifies twin barriers to improvement of college education: No uniform definition of “high quality” and very limited data on results and learner outcomes.²³ Lumina challenged higher education to eliminate these barriers.

Until they are overcome, contentions that universities with lower costs per student are producing inferior education cannot be factually refuted or, for that matter, proven. Administrators are blocked from making changes for fear that new strategies would damage educational quality. In such an environment, progress on either cost management or quality improvement is difficult.

Many campuses have initiatives underway to measure and improve quality and to understand costs. These individual efforts might produce models that can be used nationally. What is missing now is uniformity sufficient to allow comparisons.

The 327 universities participating in the Voluntary System of Accountability are in a four-year trial period using various instruments to measure the increase in higher order skills of critical thinking, problem solving and written communications in their students. If the trials succeed, we finally will have useful measures in these three important skills and will be able to learn how variations in costs affect education.

The Data Quality Campaign²⁴ is on track to assemble from individual state systems a national system that will permit the tracking of students from school to school and into careers. We may one day have definitive information that helps evaluate whether alumni benefits, especially their future earnings, correlate with the amounts spent to educate them.

A tentative effort has begun to conduct a Bologna-like process in a few select U.S. states.²⁵ The European solution to degree definition may not be appropriate to the less

²² http://web1.ncaa.org/app_data/gsrAggr2008/1_0.pdf

²³ *A Stronger Nation Through Higher Education*, The Lumina Foundation, 2009, p.4.

²⁴ For a description of the program see <http://www.dataqualitycampaign.org/>

²⁵ “Tuning College Degrees,” *Inside Higher Education*, April 9, 2009

centralized U.S. system of higher education. The Commission on Access, Admissions and Success in Higher Education's recommendation of a "national, ongoing forum to explore and make recommendations about how to facilitate ease of movement among institutions... while maintaining institutional autonomy and program integrity"²⁶ is a sensible way to develop and evaluate options.

Efforts like these are necessary to meet the twin challenges identified by Lumina. Until progress is made, academic administrators will continue experimenting with quality improvement methods that they believe to be cost effective.

b) Complexity of Cost Structures. Our observation that cost data for individual programs is unavailable emblematic of the problem. Most universities are extraordinarily complex organizations that produce many different "products," e.g., undergraduate, masters, professional and doctoral degrees, research, service, clinical services. Each of these products may share the same personnel, libraries, computer systems, personnel staff, buildings, etc. Allocating those costs among programs is difficult with the result that few universities know the true cost of each of individual programs; hence, cost control is difficult.

While some work has been done that permits more detailed understanding of cost by program, much remains to be done. Until better systems are in place, data-informed decisions cannot be made. Industry routinely uses systems that permit simultaneous control of cost and quality, thus, permitting managers to understand tradeoffs and make decisions on cost fully informed about the quality of results. Developing systems that permit data-informed decisions in the academy would help make the best use of resources as enrollment is expanded or graduation rates increased.

Efforts are underway that hold the promise of reducing costs. Innovations like course redesign have been piloted and propagated by the National Center for Academic Transformation demonstrate that per student costs can be reduced dramatically while effectiveness actually increases.²⁷ Reduction in cost per student has averaged about 40% in pilot applications in actual courses in more than 30 universities and community colleges. These techniques require scale for maximum return, producing significant savings in multiple-section courses with large enrollments. Similarly, distance education holds promise that it can both increase learning and reduce cost

Conclusion and Summary

<http://www.insidehighered.com/news/2009/04/08/tuning>

²⁶ Commission on Access, Admissions and Success in Higher Education, *ibid.* p. 33.

²⁷ For a description of this effort and pilot projects at universities around the nation see http://www.center.rpi.edu/PCR/Proj_Success.html

Higher education should commit to increasing degree attainment for the 25-24 age group to 55% by 2025. Our economy requires more degreed individuals and continues to reward them. The costs of this degree expansion are significant but can be reduced if existing facilities are used. Additional costs can be moderated and quality maintained or increased as we increase graduation rates, learn how to measure educational quality, and use sophisticated techniques to control cost.