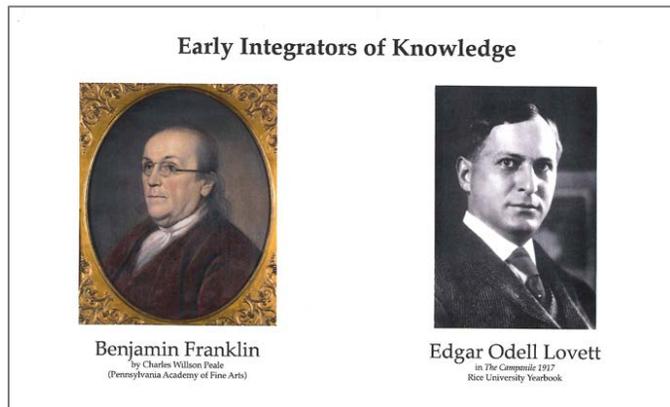


How Universities Can **MAKE THE MOST DIFFERENCE** *Locally and Globally*

Editor's Note: *These remarks were delivered by President Gutmann on February 27, 2012 at the De Lange Conference VIII – The Future of the Research University in a Global Age. She was introduced by conference host, David Leebron, Rice University President.*

Thank you, David. Congratulations to Rice on 100 years of educational excellence. At Penn we call Rice's first century a mighty good start. As Rice enters its second century, you will find that with advanced age comes advanced wisdom...along with inadequate office space and endless parking problems. All kidding aside, David, here's to another great century of teaching and learning at Rice.



In 1740, when Benjamin Franklin founded the University of Pennsylvania, he called for students to be taught "every Thing that is useful, and every Thing that is ornamental": this was an innovative 18th century approach to break down the barriers between practical and theoretical knowledge.

More than 170 years later, when Edgar Odell Lovett became the first president of Rice, he too called for "an institution of liberal and technical learning"... not one that

specialized in only the liberal arts or only technical, professional education.

The visions of these two great men were strikingly similar, focused on what the most talented students and society needed most, even though the world that Lovett knew was so very different from the one in which Franklin lived. Here we are today, living in a high-tech, highly global world that neither man could have imagined, once again contemplating what universities should aim to achieve for our students and society.

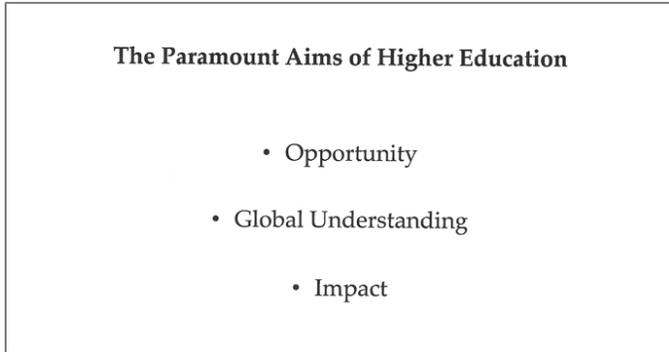
For centuries, the most thoughtful minds have agreed that higher education should prepare students to be creative thinkers, to be able to constructively change the world in which they live, and just as important, to influence a world they cannot yet envision.

How best to implement this mission, of course, varied over the centuries. The challenge we face today, in the midst of a truly transformative global age, is how we can best educate students anxious about the cost of higher education, and who are also concerned about their immediate job prospects. How can we ensure they will be not only immediately employable, but also adaptable and innovative? What kind of education will they need to prosper in a continuously changing global society?

American higher education is immensely varied. Trying to apply a single uniform standard to measure every institution's success would be a fool's errand. We focus

today on one important sector of American higher education, which by many measures leads the world: selective research universities. I want us to ask: What's our mission in educating undergraduates for the 21st century?

I think of our mission as encompassing three paramount aims:



The first aim speaks to who is educated, and it calls for broad access to higher education based on talent and hard work, rather than family income and wealth. Our aim is to enhance Opportunity, for short.

The second aim speaks to our core intellectual mission. We should strive to enable students to integrate knowledge globally, not just locally, by which I mean bringing knowledge together not only within the liberal arts and sciences, but also between the liberal arts and professional education. Our aim, in short, is optimizing Global Understanding.

Our third aim is the critical step that follows from the global integration of knowledge. We strive to educate university graduates to use their global understanding to make meaningful contributions to society and the world: Impact, for short.

Let's begin with opportunity, which depends on affordability, an increasing challenge for all of higher education. The escalating cost of universities has repeatedly made national headlines.

Most recently, President Obama raised the issue in his State of the Union address, and then delivered a major speech on the subject at the University of Michigan. State lawmakers are also struggling with the issue of affordability.

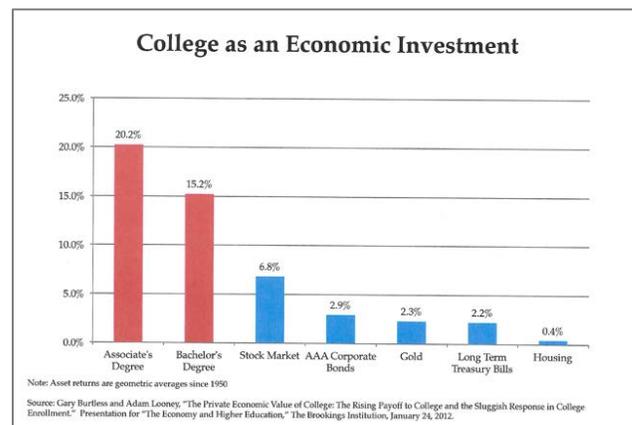
Americans are faced with rising costs, declining income, and zero savings, and many no longer take the value of a college education for granted. Many are now asking the

value-added question: Do universities provide benefits commensurate with their costs?¹

To answer this question of economic payback, economists tally the added income benefits a university education provides to its graduates, subtract its added costs, and then see whether the benefits exceed the costs. The most reliable answer is that a college education has paid off—handsomely—for most graduates to date, and can be expected to keep doing so.²

The average American with a college education earns a lot more over her lifetime than the average high school graduate, even after subtracting the cost of college. A recent study concluded that college is, "expensive, but a smart choice."³ It showed that "college graduates are making on average almost double the annual earnings of those with only a high school diploma. And this advantage is likely to stick with them over a lifetime of work."⁴

Moreover, since 1950, "the investment in college has a rate of return of a whopping 15.2% a year on the \$102,000 investment for those who earn [only] the average salary for college graduates."⁵



A 15.2 percent annual return is a great investment, both absolutely and relatively speaking. It compares, for example, to a 6.8% return from the stock market, 2.3% from Gold, 2.2% from Long-Term Treasury Bills, and shockingly low .4% from Housing.

Another striking – and significant – economic fact is that, even in the depths of the Great Recession, the unemployment rate of college graduates was less than half that of high school graduates. And it never exceeded 5.1%.⁶

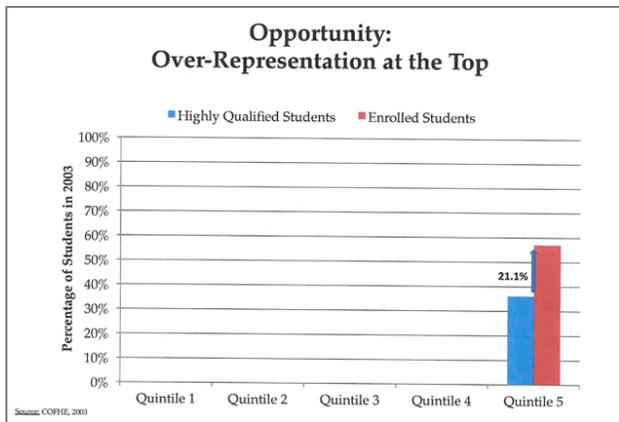
For all of us who care about the value of higher education, these economic data are reassuring. But they should not be too reassuring. The economic payback to

university graduates must not become our first and last word on this subject because economic payback to individual graduates is not the only—or even the primary—aim of a university education. The paramount aims of higher education—opportunity, global understanding, and impact—are more ambitious. They include, but also go far beyond, getting a job.

College is a smart choice. But it is a smart choice for those who have the choice, and every qualified student in this country should be afforded the choice. This is the American promise and the American challenge of opportunity.

So let's start by looking at the practical implications of the aim of opportunity: What can selective universities do to help increase access to higher education? The more affordable we make ourselves to qualified young people from low- and middle-income families, the more we contribute to opportunity.⁷

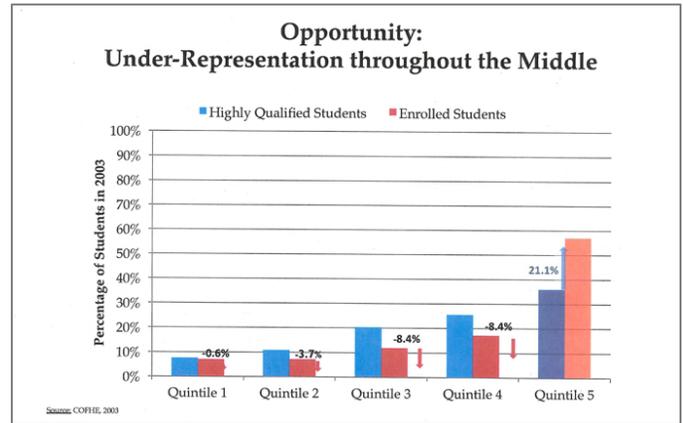
Concern for increasing access to our universities began with a focus on recruiting qualified students from the lowest income group.⁸ But our concern must not stop with low-income students. We also need to tend to the state of access for middle-income students. We know that educational attainment at the K-12 level varies with income in this country, and we therefore expect higher income groups to be disproportionately represented at selective universities. Consider the top 20% income group or quintile.



Of all highly qualified students in the U.S. (with high grades and 2 combined SATs over 1200), 36% come from the top 20% of families, measured by income. So we might expect 36% of students in selective universities to be in the top income group. Yet the proportion of students on a large group of selective university campuses (like Penn and Rice) who come from the top 20 percent of American families,

measured by income as of 2003, was 57 percent (not 36 percent).

This means that, controlling for qualifications, the wealthiest 20 percent of American families are overrepresented on our campuses by over double their percentage of the population: by an immense margin of 21 percent.



As you can see here, every other income group is under-represented. But most striking is the fact that, taking qualifications into account, the vast range of middle-income students is the most under-represented.

Students from the lowest 2 quintiles or 40 percent of income—families earning less than about \$41,000—are underrepresented by 4.3 percent. Students from the middle quintile (3)—families earning \$41,000 to \$61,000—are under-represented by 8.4 percent, as are students from the second highest quintile (4)—families earning between \$62,000 and \$94,000.

Numbers don't tell the human story of why increasing access is so valuable. The value becomes vivid when we meet the many incredibly talented students who come from these groups who have excelled educationally against the odds.

Let me mention just two current Penn students of the many who happen to be from Texas. There is a student from El Paso, whose father is unemployed and whose mother works at a seniors' health facility. This student is majoring in urban studies because she is passionate about going back to her hometown and helping others.

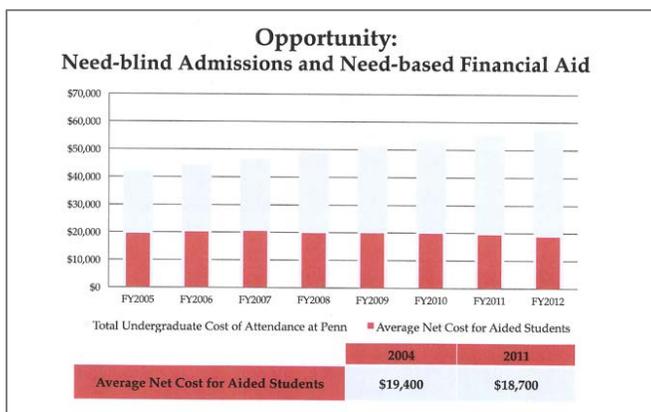
In a letter she wrote about how attending a selective university has changed her life, she said, "I am no longer that minority student with unfavorable statistics that predict

an almost certain failure... My entire family and I appreciate this gift. Trust it will not be wasted on me."

And there is the young man from right here in Houston, whose mother cleans homes for a living and raised him on her own. This young man told us that he dedicated himself to earning good grades in high school to thank her for working so hard. "I wanted to make her proud and feel as if her amazing sacrifices were worth it," he said. "There was nothing better to show how much I appreciated everything she has done for me than to attend an Ivy League institution."

We all know students like these, students who are immensely talented and hardworking but require a great deal of financial aid to gain access to our universities.

If we are serious about attracting and retaining these students and others like them, we need to lower our costs to all students from families with demonstrated financial need.



Since 2004, the average price of a Penn education for all these students has, in fact, decreased. In addition, we have replaced their loan burden with an all-grant financial aid policy.

In 2007, Penn substituted cash grants for loans for all undergraduates eligible for financial aid. Penn is not alone in decreasing costs to all students with financial need. The impact on opportunity is significant, and we need to drive home the point that it is not our sticker price, but net cost that matters to families with financial need.

Only the most affluent families at Penn—those who make more than \$200,000 a year—pay the full sticker price. Families with incomes less than \$90,000 pay no tuition, and those with incomes less than \$40,000 pay no tuition, room, or board. This enables middle- and low-income students to graduate debt-free, and opens up a world of career

possibilities to graduates who might otherwise feel pressure to pursue the highest paying, rather than the most satisfying, careers.⁹

Increasing opportunity increases socio-economic, ethnic and racial diversity on our campuses, and this benefits everyone by creating an intellectual community rich in differing life experiences and perspectives.

This speaks to the second aim of a university education: optimizing global understanding.

Students and their parents are understandably concerned about their immediate job prospects after graduation. And universities certainly want to prepare students for gainful employment.

But we cannot afford to lose sight of our aim of educating students to be capable of creatively addressing the most challenging problems facing the world today. It's their creative understanding that makes highly educated American students both globally competitive and primed for the ongoing satisfaction of life-long learning.

What does cultivating global understanding in the 21st century demand of our universities?

The Age of Global Understanding

Integrating Multiple Perspectives
Spanning the Liberal Arts and Professional Education

Why (in the World) Combine Finance with Far Eastern Literature?

A Successful CEO's Answer:

"To be strong you have to be like water: if there are no obstacles, it flows; if there is an obstacle, it stops; if a dam is broken, then it flows further; if a vessel is square, then it has a square form; if a vessel is round, then it has a round form, because it is soft and flexible, it is the most necessary and the strongest thing."

-Lao Tzu

It demands a system that can optimally educate students by better integrating the liberal arts with a robust understanding of the societal role and responsibility of the professions. The boundaries of useful knowledge have irreversibly expanded. Our students are living in an age that requires global understanding, and I use that term in the broadest sense: "global" as in "comprehensive"—global as in integrating multiple perspectives, which span the liberal arts and professional education.

Most universities today embrace the idea of interdisciplinary learning. Increasingly, students are offered interdisciplinary majors that help them integrate knowledge

across the traditional liberal arts disciplines. This integration cultivates students' capacity to understand complex problems.

Consider, for example, the thorny issue of providing affordable health care to all Americans. We all know that increasing coverage needs to be coupled with controlling costs. But how to do so most effectively and humanely is no simple matter: it requires an understanding of economics and medicine, politics and technology, culture and communications. If lawyers, doctors, technicians, businesspeople, and major institutions, including universities, are not part of the solution, we will be part of the problem.

This means that interdisciplinary education—or, more precisely, the integration of knowledge—can no longer stop at the traditional boundaries of the liberal arts. It must also extend to integrating technology and the professional disciplines.

When I advise undergraduates interested in business to broaden their intellectual reach, I like to tell the story of a friend, Howard Marks. Howard's success as CEO of a global investment company is inseparable from his being an avid writer and a contrarian thinker. He is a proud Wharton graduate, but when Howard talks about the courses that truly changed his life, he doesn't cite any finance or marketing course.

He points to his study of Far Eastern literature at Penn. Why (in the world) combine finance with Far Eastern literature? In one of his widely read memos on the market, about the failure of investors to comprehend the shifting contexts of investing, Howard employs what he learned from Lao Tzu: "To be strong you have to be like water: if there are no obstacles, it flows; if there is an obstacle, it stops; if a dam is broken, then it flows further; if a vessel is square, then it has a square form; if a vessel is round, then it has a round form, because it is soft and flexible, it is the most necessary and the strongest thing."

Our adaptability as institutions of learning is also the strongest and most necessary thing. We must re-think the conventional relationship, or should I say rift, between liberal arts and professional education. We would do well to bridge the divide.

Ask yourselves: Is there any good reason why liberal arts curricula are not rich in courses that teach students to think about the role and responsibility of the professions—such

as medicine, business, and engineering—that are so powerful in modern society? It is wildly unrealistic to assume that students will simply figure out the implications of a conventional economics or ethics course for the responsible practice of the professions. Yet their lives and those of their society—regardless of whether they enter any of these professions—will be profoundly affected by the ethics and economics of the professions.

The Age of Global Understanding

Integrating Liberal Arts and Professional Education

Launching New Courses:
The Future of the American Health Care System: Access, Cost, and Quality
Taught by Drs. Ezekiel Emanuel and Sanford Schwartz

Question:
Is This a Course in Liberal Arts or a Course in Professional Education?

Offering Dual-degree Programs:
Vagelos Integrated Program in Energy Research (VIPER)

Breaking down the divide between old academic silos is a reason for universities to recruit world-class scholars with joint appointments between schools. At Penn, we call these our Penn Integrates Knowledge (or PIK) professors. Our most recent PIK recruit, Zeke Emanuel, an MD/Ph.D., and Dr. Sandy Schwartz, also jointly appointed between Wharton and our Perelman School of Medicine, are co-teaching a new course on the "Future of the American Health Care System." The course tackles the tough questions of access, cost, and quality, asking students to come to terms with many hard-to-digest facts. In 2010, the U.S. spent \$2.6 trillion dollars on health care.

It's safe to say that few people comprehend the magnitude of \$2.6 trillion dollars. For a start, students learn that that's the entire GDP of France. The U.S. spends as much on health care as 65 million French people, the fifth largest economy in the world, spend on everything: housing, transportation, education, health care, food, wine, clothes, entertainment, defense, research, children, pets, and did I mention wine?

While providing students with knowledge they need across economics, ethics, medicine, and law, the course tackles questions key to public policy decisions. It asks students to think carefully about what they could consider the rationing of health care, whether they would reform medical malpractice, and how they would approach health care reform, and why. These are questions critical to this

country's future, yet almost impossible to ask in American politics.

Here's my question: Is this a course in the liberal arts or is it a course in professional education? It is clearly both. It has enrolled liberal arts undergraduates and professional school students alike from across our School of Arts and Sciences, Medicine, Wharton, Law, Nursing and Engineering. And for good reason: smart students who never intend to become doctors or healthcare economists have as much to learn from a course about the American health care system as do professional school students.

In addition to offering more hybrid courses that span the liberal arts and professional education, research universities in the 21st century are likely to offer more dual-degree programs. Penn's latest is co-sponsored by our School of Arts and Sciences and our School of Engineering and Applied Science, and it focuses on cultivating the understanding necessary for innovations in the area of alternative energy sources and systems.

Students who major in the Vagelos Integrated Program in Energy Research—VIPER, for short—study the science, the economics, and the social impact of new energy, a broad field of study critical to our nation's future and also likely to inform fulfilling careers for generations to come.

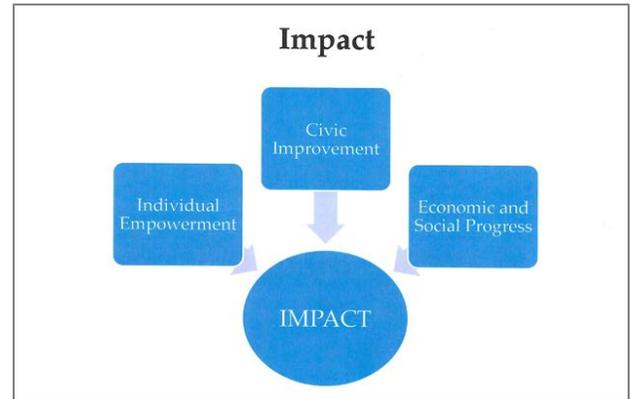
Historically, the rigid separation of liberal arts from professional and technical education became the norm at research universities, but today this divide is difficult to defend—other than as a bureaucratic convenience.

At its best, a liberal arts education prepares undergraduates for success in whatever profession they choose to pursue, and it does so by virtue of teaching them to think creatively about themselves, their society, and the world. By integrating the liberal arts with an understanding of the role and responsibilities of professions, universities can better prepare students for facing the challenges of their private, professional, and civic lives. Conversely, to the extent that we are not helping undergraduates make these connections, we are short-changing both our students and our society.

Bridging this divide is critically important, and doing it now is essential for the future flourishing of our country. It is essential because students educated in this manner will have a distinct advantage. They will have a "global" sense of innovation and creativity.

They will be able to collaborate across disciplinary boundaries. They will have the knowledge base necessary to hold powerful professionals accountable. And they will thrive in advanced fields of technology and thought that have not even been invented yet.

This brings us to the third aim of a university education: Impact.



Universities are important engines of individual empowerment, civic improvement, and social and economic progress, both locally and globally. We serve as employers, purchasers of goods and services, as well as creators of knowledge. We educate civic and business leaders, and we can be institutional models of environmental sustainability, and responsible development.

To sustain our position today, and more critically, to maintain our standing in the world as the thought-leaders of tomorrow, universities must serve humanity both by doing cutting-edge research and by educating creative problem-solvers and responsible professionals.

We need to promote knowledge that not only enriches the soul, but also answers the world's concrete needs. We need to educate global thinkers who are also doers, philosophers who are also practitioners.

Here at Rice, I know the Kinder Institute for Urban Research conducts scientific research, supports educational programs, and engages in public outreach with the goal of fostering the development of more humane and sustainable cities. Rice's Center for Civic Engagement cultivates opportunities for students, faculty, and staff to provide scholarship, service and leadership to the greater Houston community.

At Penn, we weave hands-on civic action into our academic curriculum, giving more than 1,800 students each

year a way to put their research to work. They serve in neighborhood schools and health clinics. They provide nursing, dental, and social services to senior citizens. They tutor. They mentor. They see what needs to be done, and they find ways to do it.

The great thing about the millennial generation is that they are eager to do this. According to a Pew report about this generation, 69% say that one of the three highest priorities in their lives is civic engagement. This should encourage all universities to develop even more ways to make an impact, both locally and globally.¹⁰

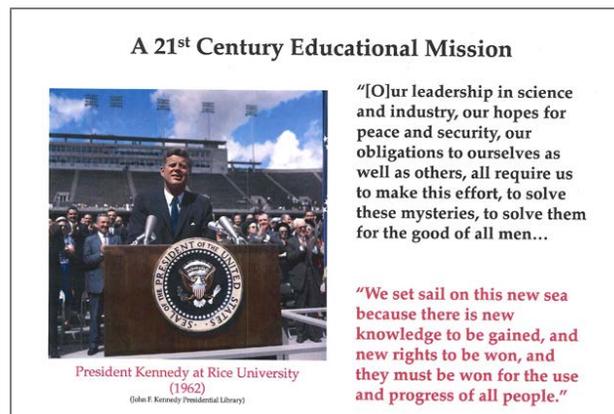
On the global scale, universities are driving the development of translational research that will advance scientific inquiry and problem solving through international collaborations and partnerships. American universities will do more to the extent that we educate our students to think broadly and deeply about the many professions that play powerful roles, not only in our own society but across the globe.

More than a century ago, in his inaugural address as President of Princeton, Woodrow Wilson spoke of the "complex interdependence and interrelationship" of the modern world.

Universities, he said, had to create scholars who "should throw their windows open to the four quarters of the world."

Today that is not just a noble aspiration, it is a necessity. Research universities must cultivate creative thought, meaningful service, and global understanding. We must be models of inclusion, open wells of knowledge, and driving forces of positive change. I submit to you that if we are not, no other equally influential set of American institutions will be.

Fifty years ago, in September of 1962, President John F. Kennedy spoke here at Rice about the importance of America's space program.



What he said about exploring the cosmos resonates with our educational mission, as research universities, in the 21st century. "Our leadership in science and industry," Kennedy said, "our hopes for peace and security, our obligations to ourselves as well as others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men."

The leaders I've cited today—Benjamin Franklin, Edgar Odell Lovett, Woodrow Wilson and JFK—had no way to predict the tremendous changes that would come to pass by the turn of this century. Just as we cannot presume to know precisely where this century will lead. But like them, we must welcome change with clear vision, creativity, and adaptability. We must not shudder at the challenge of global understanding. We must seize it for the sake of making the greatest possible impact on our society and world.

As President Kennedy so eloquently put it: "We set sail on this new sea because there is new knowledge to be gained, and new rights to be won, and they must be won for the use and progress of all people." Thank you.

NOTES

1 See, for example, Greg Ip, "The Declining Value of Your College Degree," *The Wall Street Journal*, July 17, 2008, <http://online.wsj.com/article/SB121623686919059307.html> (retrieved Sept. 21, 2011).

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2 See, for example, Sandy Baum, Jennifer Ma, and Kathleen Payea, "Education Pays 2010: The Benefits of Higher Education for Individuals and Society," College Board Advocacy & Policy Center: 2010.

Anthony P. Carnevale, Jeff Strohl, and Michelle Melton, "What's It Worth: The Economic Value of College Majors," Georgetown University Center for Education and the Workforce: 2011.

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Kevin Carey, "Bad Job Market: Why the Media is Always Wrong About the Value of a College Degree," *The New Republic* blog, <http://www.tnr.com/article/economy/89675/bad-job-market-media-wrong-college-degree?id=c3tDkrWcVzH3jltcgTA2oTDTydf5y5q6/J8/xDMU1/53nKY+kSwzHmksnbcDeVk/> (Retrieved Sept. 20, 2011)

3 Michael Greenstone and Adam Looney, "College: Expensive, but a Smart Choice," *Los Angeles Times*, August 15, 2011. <http://articles.latimes.com/2011/aug/15/opinion/la-oe-looney-greenstone-is-college-wo20110815> (Retrieved Sept. 21, 2011)

4 Ibid.

5 Ibid.

6 Labor Force Statistics from the Current Population Survey, U.S. Department of Labor, Bureau of Labor Statistics.

7 We also know that the economic returns of some majors, such as English and education, are far smaller than those of others, such as economics and engineering. But even with these qualifications, individuals still stand to gain—both economically and non-economically speaking—from graduating college. For example, see Anthony P. Carnevale, Jeff Strohl, and Michelle Melton, "What's It Worth: The Economic Value of College Majors," Georgetown University Center for Education and the Workforce: 2011.

8 See, for example, Michael S. McPherson and Morton Owen Shapiro, "Does Student Aid Affect College Enrollment? New Evidence on a Persistent Controversy." *American Economic Review* 81:1 (1991), pp. 309-318.

Michael S. McPherson and Morton Owen Shapiro, "The Student Finance System for Undergraduate Education: How Well Does it Work?" *Change* 23:3 (1991), pp. 16-22.

Michael S. McPherson and Morton Owen Shapiro, "Financing Undergraduate Education: Designing National Policies," National Center for Postsecondary Improvement: 1997.

Michael S. McPherson and Morton Owen Shapiro, eds. "College Access: Opportunity or Privilege?" New York: The College Board, 2006.

9 Penn was able to implement and sustain a need-blind, need-based, and no-loan financial aid program despite having an endowment that ranks 57th in size per capita in recent data provided by the National Association of College and University Business Officers (NACUBO). One possible lesson is that other universities – with proportionally more resources – can also increase aid for low- and middle-income students, if they make need-based financial aid one of their highest institutional priorities.

10 Pew Research Center report, "Millennials: A Portrait of Generation Next," February 2010, p.18.