Preaching Beyond the Choir: 
Communicating the Vast and Complex Value of Public Research Universities Succinctly and Effectively

--OR--

The Public Value of Public Universities In the National Dialog

Teri Lucie Thompson, Kay Bailey Hutchison, Philip Trostel, and Julia Weede
Making the Invisible Visible
Connecting public and practitioners
Message Penetration: Medium & Message
Insights from many perspectives:
THE VALUE OF PUBLIC RESEARCH UNIVERSITIES

The Honorable Kay Bailey Hutchison
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Every Secretary of Defense I have known has said that a major part of the margin of victory possessed by our military forces must be attributed to advancements in science and technology.

Numerous studies show that up to 87 percent of GDP growth in this country comes from advances in just two closely related disciplines: science and technology. Yet only 5 percent of the workforce in America are scientists or engineers!

Norm Augustine  
Former CEO, Lockheed Martin
Anchor institutions are nonprofit institutions—such as universities, hospitals, museums, performance centers, and Libraries—that take root in and serve a community through economic development, their missions, and the development of intellectual and human capital.

From Public Research Universities: Serving the Public Good
(American Academy of Arts & Sciences, 2016)
In 2012-2013, public research universities employed over 1.1 million faculty and staff nationwide, and were among the top five largest employers in twenty-four states.*

Between 2012 and 2013, research at public universities resulted in more than

13,322 patent applications

522 start-ups

3,278 patents awarded

3,094 licenses issued

20/50 Among the fifty higher education institutions worldwide most successful in creating venture capital–supported entrepreneurs, twenty are U.S. public research universities.

Of the 168 members elected in 2015 to the National Academy of Inventors, more than half (90) work at public research universities. These inventors have made significant contributions to our economy and daily life, producing research breakthroughs and creating successful start-up companies.

From *Public Research Universities: Serving the Public Good*  
(American Academy of Arts & Sciences, 2016)

Of first-year students
- 83% receive some form of financial aid
- 71% receive federal, state, local, or institutional grant aid
- 31% receive Pell Grants

Of graduating students
- 54% graduate with student loan debt (federal and nonfederal)
- 19% graduate with debt over $25,000

Average Price of Attendance per Year at Public Research Universities

$23,591

“Sticker” Price
for In-State Students
(including tuition, fees, room and board)

$14,305

Net Price
In-State Students
Pay after Grants and Scholarships

Percent Change in State Support for Public Higher Education (All Colleges and Universities) per Full-Time Equivalent Student, in Constant 2014 $, since 2000

From Public Research Universities: Changes in State Funding (American Academy of Arts & Sciences, 2015)
Higher Education (All Colleges and Universities) and Medicaid as Share of State General Fund Expenditures

From Public Research Universities: Changes in State Funding (American Academy of Arts & Sciences, 2015)
Major State Spending Items that Compete with Higher Education for Resources

Medicaid

Medicaid is an entitlement, as a practical matter, as enrollments rise, states must raise their expenditures, at least in the short run. Approximately two-thirds of Medicaid spending is for the elderly and disabled. Demographic forces will put increased pressure on the elderly component of this spending. Between 2014 and 2034, the population aged sixty-five and over is expected to grow by approximately 2.6 percent annually, compared with 0.8 percent for the population overall. Further, many economists believe that health care will continue to struggle with "excess cost growth," in which costs grow more rapidly than the economy as a whole. Moody's Analytics projects that total state Medicaid spending will grow faster than state tax revenue in every year from 2017 through 2024.

Pensions

State and local government pensions for all workers (not just higher education) are underfunded by at least $1.1 trillion according to conservative estimates. While some states are trying to cut these benefits, with varying degrees of success, states are likely to have to pay the vast majority of this obligation. In aggregate, states and localities are underpaying actuarially determined contributions by approximately $21 billion annually, and under some scenarios, expenditure needs could be much higher still. This will place great pressure on state finances in many states, crowding out funds that might otherwise be available for higher education.

Primary and Secondary Education

The 2007 recession was so severe that states cut inflation-adjusted spending on K–12 education by approximately 4 percent between 2008 and 2013. The National Center on Education Statistics projects that the number of pupils will rise 0.6 percent annually from 2015 through 2024. Given the depth of recent state cuts in primary and secondary education and anticipated growth in the number of pupils, states will face pressure to raise spending on primary and secondary education in coming years.

Infrastructure

While it is difficult to obtain objective measures of infrastructure needs, it is clear that states and localities cut back on this spending very sharply during the Great Recession and in the years that followed. Between the fourth quarter of 2007 and the fourth quarter of 2014, real gross investment in infrastructure by state and local governments fell by 18 percent, and net investment (after allowing for capital consumption) plummeted more than 55 percent.

States feel great pressure to increase spending for infrastructure. In fact, it is one of the few activities for which the public appears willing to pay higher taxes. A recent national poll by the Mineta Transportation Institute found that 69 percent of respondents would support a ten cent gas tax increase for improved road maintenance.
Ways to Communicate Importance

• Talk specifics that people relate to and understand
• Jobs – determine the number of jobs your universities provide in your cities and state
• Resources for state and local governments for innovation
• Services to state and local governments (teacher certification; education and teacher training)
• Provide student access to top quality research and professors at more affordable costs
• Collaborate with small institutions for bigger projects
• Arts and entertainment, sports venues, and research purchasing for the economy
Examples of discoveries and products that have improved lives

- The quantum-well laser technology behind modern fiber-optic communications and the first widely used global web browser were developed at the University of Illinois at Urbana-Champaign. Each gave rise to a multi-billion dollar industry.
- Touch screens were developed at the University of Kentucky, and multi-scrolling capabilities originated at the University of Delaware.
- The lithium-ion battery, a critical component of smartphones and tablets, which is used in Apple products, was developed by faculty at the University of Texas at Austin.
- Life-saving safety devices, including retractable locking seatbelts, were created at the University of Minnesota.
- Texas A&M is participating in the construction of the Giant Magellan Telescope in the Chilean Andes. Magellan will have six times the collecting area of the largest telescopes today.
- The CRISPR gene editing system was coinvented by research at the University of California, Berkley.
- Our social security system was developed using social science research conducted at the University of Wisconsin.
Ways to Assure Compliance

- Importance of understanding and complying with government transparency requirements
- Over two dozen federal agencies fund research with their own specific guidelines
- Compliance processes need to be in place in case Inspector General audit is initiated
- Advisable to have a strong team to provide guidance to universities facing government investigations
Key Insights

1. There is a fraying belief in the state of higher education in the U.S.

2. There is a disconnect between academics and the public in the role of universities.

3. You must demonstrate real-world impact, both personal and societal, to change your reputation.
There is a fraying belief in the state of U.S. higher education.
THE STATE OF U.S. HIGHER EDUCATION:
6 in 10 outside of academia say higher education is on the wrong track. Even 1 in 2 academics agree.

Percent who feel the higher education system in the U.S. is headed in the right direction vs. off on the wrong track:

Source: Edelman 2016 University Reputations and the Public
Q21: Do you feel that the higher education system in the US is heading in the right direction or off on the wrong track?
We asked:
Which of the following statements do you agree with most?

1) The traditional role of the university is critical to society

OR

2) Society demands the traditional role of the university needs to evolve
They Responded:
Only 4 in 10 public citizens say the university’s traditional role is critical to society.

Percent who agree the traditional role of the university is critical to society (vs. wanting to see it evolve):

- Academics: 59%
- General Population: 39%
- Informed Public: 39%
- Generation Z (16 - 24): 39%
- Generation Y (25 - 39): 35%
- Generation X (40 - 49): 40%
- Boomers (50 - 64): 41%

As opposed to nearly 6 in 10 academics who agree, only 4 in 10 public citizens say the university’s traditional role is critical to society. The 20-point disconnect.

Source: Edelman 2016 University Reputations and the Public
Q26: Which of the following statements do you agree with most? 1) The traditional role of the university is critical to society; 2) Society demands the traditional role of the university needs to evolve.
T H E Y  R E S P O N D E D:

6 in 10 say that the role of the university must evolve.

Percent who agree that society demands the traditional role of the university needs to evolve (vs. the traditional role is critical):

- Academics: 61%
- General Population: 61%
- Informed Public: 61%
- Generation Z (16 - 24): 65%
- Generation Y (25 - 39): 60%
- Generation X (40 - 49): 59%
- Boomers (50 - 64): 26%

Source: Edelman 2016 University Reputations and the Public
Q26: Which of the following statements do you agree with most? 1) The traditional role of the university is critical to society; 2) Society demands the traditional role of the university needs to evolve
INSIGHT: TWO

There is a significant disconnect between academics and the public in the role of universities.
We asked:
Which of the following statements do you agree with most?

1) It is more important that universities focus on providing a well-rounded education and student experience

OR

2) It is more important that universities focus on providing students with tools and resources they need to succeed in a specific career
THEY RESPONDED:

Academics want to provide a well-rounded education...

Percent who feel it is more important that universities focus on providing a well-rounded education and student experience (e.g. strong academics, moral/social development, exposure to new ideas, personalized attention):

Source: Edelman 2016 University Reputations and the Public

Q25: Which of the following statements do you agree with most? 1) It is more important that universities focus on providing a well-rounded education and student experience (e.g., strong academics, moral / social development, exposure to new ideas, personalized attention) 2) It is more important that universities focus on providing students with tools and resources they need to succeed in a specific career (e.g. career-specific classes, internships, career services, networking opportunities)
THEY RESPONDED:

... while the public wants tools and resources for a successful career.

Percent who feel it is more important that universities focus on providing students with tools and resources they need to succeed in a specific career (e.g. career-specific classes, internships, career services, networking opportunities):

Source: Edelman 2016 University Reputations and the Public

Q25: Which of the following statements do you agree with most? 1) It is more important that universities focus on providing a well-rounded education and student experience (e.g., strong academics, moral / social development, exposure to new ideas, personalized attention) 2) It is more important that universities focus on providing students with tools and resources they need to succeed in a specific career (e.g. career-specific classes, internships, career services, networking opportunities)
INSIGHT: THREE

You must demonstrate real-world impact, both personal and societal, to change your reputation.
DRIVERS OF TOP UNIVERSITY REPUTATIONS:
Not Just Prestige and Academic Excellence:
5 of 8 Top Drivers are Training and Impact

These attributes fell in the top right-hand quadrant and are considered to be the drivers of university reputation.

Prestige
• Enrolls a high caliber class of motivated and high performing students

Teaching
• Has high quality faculty and professors who are renowned in their field
• Provides resources and relationships that allow students and faculty to achieve breakthroughs in their research and areas of study

Training
• Prepares students to be leaders post-graduation
• Provides students with access to top job opportunities

Impact on Real World
• Is future-focused and solves long-term challenges facing the world
• Focuses research and innovation on creating things that are actually introduced to the market and work in the real world
• Promotes an interdisciplinary approach to problem solving that is relevant to how challenges are solved in the real world
Drivers for other audiences can be found in the appendix.

**Drivers of Top University Reputation:**

Real-world impact must have both personal & societal benefits.

**Impact**

- **Expected**
  - Faculty provide personalized attention / invested in success of students
  - Instills students with courage / confidence to achieve personal goals
  - Balanced teaching approach
  - Future-focused / solves long-term challenges
  - Inter-disciplinary real-world approach
  - Research/innovations introduced in the real world

**Drivers**

- Personal impact is required/table stakes
- Societal impact is a key reputation driver

Source: Edelman 2016 University Reputations and the Public

Q38: Thinking about what you now know about <INSERT UNIVERSITY> and what you knew before, how well does each of the following statements describe <INSERT UNIVERSITY>? If you are not familiar with <INSERT UNIVERSITY>, please use your best judgment. Please use a scale of 1 – 10, where 1 means “Does not describe at all” and 10 means “Describes completely.”
Parting Stat: The Inversion of Influence

Source: 2016 Edelman Trust Barometer Q11-14. Below is a list of institutions. For each one, please indicate how much you trust that institution to do what is right using a nine-point scale, where one means that you “do not trust them at all” and nine means that you “trust them a great deal.” (Top 4 Box, Trust) Informed Public and Mass Population, 28-country global total.
Academics’ media preferences shouldn’t be the primary driver of external/public communication strategy.
MEDIA PREFERENCES:

The public collects their news and information from different sources than academics. The public’s top sources are increasingly peer-influenced.

Percent who regularly use the following media sources for news and information:

- Online news: 78% Academics, 73% General Population
- TV: 69% Academics, 74% General Population
- Newspapers: 69% Academics, 72% General Population
- Search Engines: 43% Academics, 49% General Population
- Radio or Radio News: 52% Academics, 51% General Population
- Magazines: 42% Academics, 49% General Population
- Government websites: 26% Academics, 22% General Population
- Social Networks: 49% Academics, 24% General Population
- Content Sharing Sites: 17% Academics, 24% General Population
- Blogs: 11% Academics, 14% General Population
- Corporate Commns: 11% Academics, 10% Corporate or Product Advertising
- Corporate or Product Advertising: 10% Academics, 6% General Population
- None of the above: 1% Academics, 3% General Population

Source: Edelman 2015 University Reputations and the Public
Q40. Which of the following media sources do you use regularly for news and information?
IT’S NOT JUST THE MONEY
The Benefits of College Education
to Individuals and to Society

Lumina Issue Papers

Philip Trostel
University of Maine
The Curse of the College Earnings Premium

• The substantial monetary payoff to college education has been demonstrated countless times.

• Two unfortunate side effects:
  – Numerous other important benefits tend to get overlooked.
  – It fuels the perception that college education is primarily a private good (i.e., primarily benefits the individuals earning degrees) and thus there is little need for taxpayer support.

• Our actions are speaking. Public support for higher education:
  – Falling relative to national income (since early 1980s)
  – Falling relative to total government spending (since about 1980)
  – Falling relative to net student/family contributions
Average Annual Earnings

- Less than High School Diploma: $14,342
- High School Diploma: $24,010
- Some College: $31,565
- Associate's Degree: $36,178
- Bachelor's Degree: $32,112
- Advanced Degree: $82,139

The chart shows the average annual earnings for different levels of education.
Present Value of Lifetime Earnings
(At Age 19 using a 3% Discount Rate)

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than High School Diploma</td>
<td>$344,001</td>
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<tr>
<td>High School Diploma</td>
<td>$205,009</td>
</tr>
<tr>
<td>Some College</td>
<td>$152,926</td>
</tr>
<tr>
<td>Associate's Degree</td>
<td>$246,396</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>$625,483</td>
</tr>
<tr>
<td>Advanced Degree</td>
<td>$1,593,959</td>
</tr>
</tbody>
</table>
“If you can’t measure it, it doesn’t exist”

- The “other” benefits are at least as important as the well-known effect on earnings.
  - They are not just the gravy.
  - The typical college education picture is worth maybe 200 words.
- The report compiles evidence from several different literatures (and shows a few new things too).
- All data are recent, typically 2012.
- The benefits from college attainment are emphasized, not the benefits from college education generally.
  - Colleges also create substantial benefits from research and public service activities.
Caveats

• Numerous effects are separately summarized, but they are unlikely to be independent.
  – A simple summation risks double counting.
  – There is no attempt to calculate the total benefits.

• The report does not deal with issues of causation.
  – The correlations could be the result of omitted-variables bias (a.k.a. “ability bias” in this context).
  – The literatures have found that instances of causal estimates being noticeably lower than the observed correlations are uncommon.
Other Private Benefits

• Some other private benefits of college attainment:
  – Greater fringe benefits from employment
  – Reduced risk of unemployment
  – Better health and reduced risks of disability and mortality
  – Increased savvy in making consumption and financial decisions
  – Reduced risk of imprisonment
  – Better marriages
  – Increased life satisfaction
  – These benefits are partially passed on to their children
Hummer and Lariscy (2011) found that the mortality rate is 25% lower for bachelor’s degrees compared to high school.

They also show that college attainment is inversely related to all broad categories of mortality, but particularly for the most preventable causes.

- The strongest negative effects on mortality are for diabetes and lung cancer, followed by respiratory disease and external causes (homicide, suicide, and accidents).

Meara et al (2008) estimated life expectancy at age 25 (in 2000). Life expectancy for those with at least some college was 81.6, compared to 74.6 for those who never attended college.
Compare to:
External Benefits

• College education also creates substantial benefits to the rest of society.

• Some external benefits of college attainment:
  – Probably the most important is knowledge creation and technological change fostered by college education, but this is not quantified.
  – “Productivity externalities”
  – “Fiscal externalities”
  – “Philanthropic externalities”
  – “Civic externalities” (a.k.a. “social capital”)
Productivity Spillovers

• Education may not only increase the incomes of those being educated but also increases the incomes of others.

• Regional data on income and college attainment suggest that productivity spillovers are important.
  – The greater regional income associated with greater regional college attainment is substantially more than can be explained by the greater incomes of graduates.

• Estimating the magnitude of productivity spillovers is challenging because correlation is not causation. But the best evidence indicates that it is comparable in size to the college earnings premium.
Fiscal Externalities

• Greater earnings associated with higher education create greater tax revenues, which benefit others by financing public services.

• The lower incidences of poverty, unemployment, disability, etc reduce spending on public assistance and social insurance, which benefit others by freeing government resources for other programs and/or reducing taxes.
Present Value of Lifetime Public Assistance
(At Age 19 using a 3% Discount Rate)

- Medicaid
- SNAP
- School Lunches
- Cash Assistance
- Energy Assistance
- Housing Subsidy

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Medicaid</th>
<th>SNAP</th>
<th>School Lunches</th>
<th>Cash Assistance</th>
<th>Energy Assistance</th>
<th>Housing Subsidy</th>
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</thead>
<tbody>
<tr>
<td>Less than High School Diploma</td>
<td>$95,454</td>
<td>$33,430</td>
<td>$33,430</td>
<td>$24,772</td>
<td>$11,097</td>
<td>$7,638</td>
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<tr>
<td>High School</td>
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<td>$15,430</td>
<td>$15,430</td>
<td>$9,394</td>
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<tr>
<td>Some College</td>
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<td>$10,059</td>
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<td>Associate's Degree</td>
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<td>$6,626</td>
<td>$6,626</td>
<td>$981</td>
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<tr>
<td>Bachelor's Degree</td>
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<td>$553</td>
<td>$14,480</td>
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<tr>
<td>Advanced Degree</td>
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<td>$51,090</td>
<td>$51,090</td>
<td>$2,116</td>
<td>$9,394</td>
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</table>

<table>
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<th>Education Level</th>
<th>Total</th>
<th>Medicaid</th>
<th>SNAP</th>
<th>School Lunches</th>
<th>Cash Assistance</th>
<th>Energy Assistance</th>
<th>Housing Subsidy</th>
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<tr>
<td>Less than High School Diploma</td>
<td>$188,904</td>
<td>$129,370</td>
<td>$27,930</td>
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<td>High School</td>
<td>$99,605</td>
<td>$58,860</td>
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<td>Some College</td>
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<td>Bachelor's Degree</td>
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<td>Advanced Degree</td>
<td>$43,921</td>
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<td>$2,116</td>
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<td>$2,116</td>
<td>$2,116</td>
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Present Value of Lifetime Social Insurance  
(At Age 19 using a 3% Discount Rate)
Present Value of Net Lifetime Fiscal Impact
(At Age 19 using a 3% Discount Rate)

- Less than High School Diploma: $162,819
- High School: $25,938
- Some College: $126,980
- Associate's Degree: $172,128
- Bachelor's Degree: $381,051
- Advanced Degree: $547,990

$0

$100,000
$200,000
$300,000
$400,000
$500,000
$600,000

$200,000
$300,000
$400,000
$500,000

Less than High School Diploma
High School
Some College
Associate's Degree
Bachelor's Degree
Advanced Degree
Trostel (2010) estimated the fiscal benefits relative to the cost (using 2005 data):

- From taxpayers’ point of view each potential college degree is, conservatively, worth $481,000 ($556,000 in various fiscal benefits minus the $75,000 cost).
- Net government spending per college degree is negative!
  - The reduction in spending after college is greater than public spending on college education.
- The real internal rate of return on taxpayer investment in college students is, conservatively, 10.3%.
- The real internal rate of return to state and local governments is 3.1%, on average.
Value of Volunteered Labor

- Less than High School Diploma: $1,63
- High School Diploma: $410
- Some College: $759
- Associate’s Degree: $840
- Bachelor’s Degree: $1,665
- Advanced Degree: $2,682
Annual Charitable Contributions

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Charities</th>
<th>Religious Organizations</th>
<th>Educational Institutions</th>
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<tbody>
<tr>
<td>Less than High School Diploma</td>
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<tr>
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<td>Bachelor's Degree</td>
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<tr>
<td>Advanced Degree</td>
<td>$682</td>
<td>$981</td>
<td>$2,355</td>
</tr>
</tbody>
</table>
Community Involvement

- Worked on a Community Project
- Attended a Community Meeting

- Less than High School Diploma
- High School Diploma
- Some College
- Associate's Degree
- Bachelor's Degree
- Advanced Degree

- 3.6% for Less than High School Diploma, 6.0% for High School Diploma, 8.8% for Some College, 9.9% for Associate's Degree, 10.8% for Bachelor's Degree, and 20.2% for Advanced Degree worked on a Community Project.

- 2.7% for Less than High School Diploma, 5.6% for High School Diploma, 9.1% for Some College, 10.8% for Associate's Degree, 12.9% for Bachelor's Degree, and 17.3% for Advanced Degree attended a Community Meeting.
Crime

- Crime is essentially negative citizenship.
- Lochner and Moretti (2004) estimated the reduction in the dollar value of the harm to crime victims.
- Extrapolating their estimates:
  - The PV of the lifetime bachelor’s degree premium in the victim costs of crime is 21% as large as the lifetime effect on earnings, and 45% as large as the bachelor’s degree fiscal externality.
Summary

• It is not overstatement to call the typically emphasized effect on earnings just the tip of the college-payoff iceberg.
  – There are more benefits to college education beneath the surface than above it.
• These are just the (imperfectly) measurable benefits of college education.
  – There are numerous important but difficult-to-quantify effects such as the positive influences on innovation, culture, diversity, and tolerance.
“A Mind is a Terrible Thing to Waste”

• In addition to its emotional appeal, the slogan is rationally true even more than UNCF realized.

• Compromising college access makes us *all* worse off.
Downloads

• Report:

• Excel charts:
  – http://network.bepress.com/explore/education/education-economics/?facet=subject_facet%3A%22Phil+trostel%22
Questions?