A few quick notes to start

Thank you!

I encourage you to:

Engage students personally: in person, online, written feedback
Reach out to your new faculty colleagues

Why I am doing these

....more to come!
Introduction

- Some national/global trends
  - Demographics
  - Skepticism about higher education
  - Increased importance of education
  - Role of Research universities
  - Future of Lehigh

- Q/A
College enrollment is declining (slightly)

Figure 1: Percent Change from Previous Year, Enrollment by Sector (Title IV, Degree-Granting Institutions)

https://www.insidehighered.com/quicktakes/2019/05/30/college-enrollment-declines-continue
Potential applicants are declining

US Highschool Graduates

International student enrollment in US

Forecasted growth in enrollments 2012-2029

Regional

Top 50
Demographics of college enrollment

Figure 2. College enrollment rates of 18- to 24-year-olds, by race/ethnicity: 2000, 2010, and 2017

The Master’s Degree is the New Bachelor’s Degree

HIGHER EDUCATION BUBBLE?

Eight percent of the population now holds Master’s degrees, the same percentage that held bachelor’s degrees (or higher) in the 1960s.
Share of Recent High School Graduates Enrolling in College, by Income Group

- Top 20%
- Middle 60%
- Bottom 20%

Year:
- 1975
- 1977
- 1981
- 1985
- 1989
- 1991
- 1993
- 1995
- 1999
- 2001
- 2003
- 2005
- 2007
- 2009
- 2011
- 2013
- 2015
Declining public support of higher education

Increase in the share of Americans saying colleges have a negative effect on the U.S. is driven by Republicans’ changing views

% saying colleges and universities have a positive/negative effect on the way things are going in the country

Among all adults

<table>
<thead>
<tr>
<th>Year</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>26</td>
<td>60%</td>
</tr>
<tr>
<td>2015</td>
<td>28</td>
<td>63%</td>
</tr>
<tr>
<td>2017</td>
<td>36</td>
<td>55%</td>
</tr>
<tr>
<td>2019</td>
<td>38</td>
<td>50%</td>
</tr>
</tbody>
</table>

Among Rep/Lean Rep

- Positive: 53%, 54%, 58%, 59%
- Negative: 35%, 37%, 36%, 33%

Among Dem/Lean Dem

- Positive: 67%, 70%, 72%, 67%
- Negative: 19%, 22%, 19%, 18%

Note: Share of respondents who didn’t offer an answer not shown.

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Reasons for critique of higher education

Vast divide between Republicans and Democrats on reasons behind negative views of higher education

% saying each is a major reason why the higher education system is going in the wrong direction, among those who think it is going in the wrong direction

- Tuition costs are too high
  - Dem/Lean Dem: 84%
  - Rep/Lean Rep: 92%
  - All adults: 84%

- Students are not getting the skills they need to succeed in the workplace
  - Dem/Lean Dem: 65%
  - Rep/Lean Rep: 73%
  - All adults: 65%

- Too much concern about protecting students from views they might find offensive
  - Dem/Lean Dem: 54%
  - Rep/Lean Rep: 75%
  - All adults: 54%

- Professors are bringing their political and social views into the classroom
  - Dem/Lean Dem: 79%
  - Rep/Lean Rep: 100%
  - All adults: 98%

PEW RESEARCH CENTER
Take this Quiz:

The One Question Most Americans Get Wrong About College Graduates NYTimes 2016
Most college graduates say their college experience was valuable, but public is more skeptical that college prepares people for well-paying jobs

% of college graduates saying their college education was very/somewhat useful for ...

<table>
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<th>Somewhat useful</th>
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% of adults saying a four-year/two-year degree prepares people very/somewhat well for a well-paying job in today’s economy ...

<table>
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<th>Somewhat well</th>
<th>Net</th>
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<td>51</td>
<td>67</td>
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<td>Two-year degree from a community college</td>
<td>12</td>
<td>46</td>
<td>58</td>
</tr>
</tbody>
</table>

Note: “College graduates” includes adults with a two-year or four-year degree.  
PEW RESEARCH CENTER
And education is still a great investment

….if it leads to a degree
How the Government Exaggerates the Cost of College

By David Leonhardt - NY Times July 29, 2014

Government estimates for college cost compared with...

**Change in tuition paid**

Sources: Bureau of Labor Statistics, Haver Analytics, College Board
Since the 2008 great recession

Graduate degree holders gained 3.8 million jobs, Bachelor’s degree holders gained 4.7 million jobs, and Associate’s degree holders gained 3.1 million jobs, compared to workers with a high school diploma or less, who added only 80,000 jobs.
A college degree increases annual income by >50%

Figure 10: Average Earnings by Educational Attainment as a Proportion of the Average Earnings of High School Graduates: 1975-2017

A college degree provides broad benefit

An American fault line: High school-only grads left behind

By CHRISTOPHER S. RUGABER     January 13, 2017
Disney will pick up tab for workers to enroll at UCF

Upskilling 2025

Our $700 million commitment will help pilot, launch, and scale training programs to upskill employees in our corporate offices, tech hubs, fulfillment centers, retail stores, and transportation network, providing access to skills that will help them move into more highly skilled roles within or outside of Amazon.

01 Amazon offices
02 Diversity and inclusion
03 Get to know us
04 Opportunities for veterans
05 Our culture
06 Preparing for your interview

Upskilling 2025 programs

As part of Upskilling 2025, Amazon is building on the success of its current programs, creating new training
Some think that college is so important that it should be free
Public support for research is high

88% believe that it is important for the federal government to fund science and technology research, including 94% of Democrats, 86% of independents, and 81% of Republicans.

Voters place the highest priority on science and technology research in new medicines and medical technologies (54% most important area of research), national defense (44% most important area of research), and cybersecurity (43% most important area of research).
Americans Express Strong Support for Public Investment in Research

Support for Basic Science Funding
Percentage of U.S. adults saying government investments in basic scientific research pay off in the long run: 71%

Support for Funding in Engineering and Technology
Percentage of U.S. adults saying government investments in engineering and technology pay off in the long run: 72%

Percentage of U.S. Adults Who Say They Would ___________ for Scientific Research:

But nearly all voters, across partisan affiliations, are certain of the importance of America’s leadership in science and technology research.
Where is Lehigh? My view after about 2 months.

Faculty committed to strong in person, experiential education who expect “grit” in their students

Students who have high expectations about educational quality, but also want a social life

Historical strength in some key research areas and a strong desire to enhance and grow research
Where can we be and how do we get there?

- Quality (actual and perceived) is non-negotiable
- Develop more clarity around what we do very well and why this will be more important in 10 years than it is today
- Offer this quality experience to the broadest possible group
- Elevate research while connecting it to the educational experience and sense of purpose

A “Personal Research University”? 
Questions?
EXTRAs
A college degree provides broad benefit

Helping lift high school graduates' skill levels is critical, given the many ways they are lagging behind their college-educated peers:

— They're less likely to have a job. Just two-thirds of high school-only grads ages 25 through 64 were employed in 2015, down sharply from 73% in 2007. For college graduates in the same age group, employment dipped only slightly from 84% to 83%.

— They're less likely to be married. In 2008, marriage rates for college-educated 30-year olds surpassed those of high-school-only grads for the first time. And women with college diplomas enjoy an 8-in-10 chance of their first marriage lasting 20 years, according to the Center for Disease Control's National Center for Health Statistics. That's double the odds for women with just high school degrees.

— High school-only grads are less likely to own homes. 64% are current homeowners, down from 70% in 2000. By contrast, three-quarters of bachelor's degree holders are homeowners, down slightly from 77% in 2000, according to real estate data firm Zillow.

— A college-educated worker is now more likely to belong to a labor union than a high-school-only worker is, according to Pew Research Center. Unions have played a key role in raising pay for members. Yet just 6% of workers with only a high school degree now belong to one. Public employee unions, which often represent teachers and others with college educations, have generally maintained staying power while large industrial unions have deteriorated.

— College grads are more likely than high school-only graduates to contribute to a 401(k)-style retirement plan, according to research by Christopher Tamborini of the Social Security Administration and Changhwan Kim, a sociology professor at the University of Kansas. College grads contributed 26% more even when members of both groups had similar incomes and access to such plans, their research found.

Participation in 401(k)-style plans requires decisions — whether and how much to contribute and how to invest — that can become barriers for the less educated.
Tipping toward a white minority

Non-Hispanic whites will drop below 50 percent of the U.S. population sometime around the year 2043, according to census projections.

*Includes people of more than one race
**Considered an ethnicity; Hispanics may be any race
Tennessee state GOP lawmaker says getting rid of higher education would 'save America'

BY JUSTIN WISE - 09/09/19 09:52 PM EDT
Senator Josh Hawley (R-Mo)
Is College Worth It?
Is College Worth It?
Some think that college is so important that it should be free
Free College - NY State Excelsior Scholars
Change #2: Demographics are changing who will be going to college - creating financial problems for some colleges
College closures are on the rise

The Higher Education Apocalypse

A steady drip of crises in Massachusetts and across New England may just signal its arrival.

By Lauren Camera Education Reporter  March 22, 2019, at 6:00 a.m.
Expert predicts 25% of colleges will "fail" in the next 20 years
Small private colleges struggling to succeed

(Wheeling, Hiram, Bucknell, Thiel, LaRoche, Muskingum, Bethany)
Yet higher education is more important than ever
And more degrees are being awarded
New/non-traditional educational providers
Colleges are responding in different ways

Enhancing quality

Pursuing different students

Unbundling degrees

Partnering with employers

Closure/consolidation
Rise of Mega-Universities

The graph shows trends in student enrollment from 2007 to 2017 for various types of universities:
- 4-year public (median)
- 4-year private (median)
- 2-year public (median)
- Arizona State University
- Grand Canyon University
- Liberty University
- Southern New Hampshire University
- Western Governors University

The enrollment data indicates a significant increase in student numbers over the years for most categories, with particular growth observed in the 2-year public, 4-year private, and Western Governors University.
“The shortage of students is a fallacy,” says Michael M. Crow, president of Arizona State University, which enrolled more than 95,000 undergraduates in 2017, about 28,000 of them online. The number of Americans with some college but no degree presents “an unbelievable market,” he adds, but most institutions that educate students on a brick-and-mortar campus are not equipped to recruit, or serve, such students.

TAKEAWAYS:

● Mega-universities’ inexpensive, flexible, streamlined education is in tune with how many Americans now think about college degrees.
● They have grown huge enrollments by focusing on the 30 million American adults who have some college credits but no degree.
● Their head start in the older-learners market, and their national brands, make it difficult for other institutions to catch up.
● Demographic pressures and changes in the nature of work may necessitate a strategy that includes serving adult learners for all but elite colleges.
College education as an employment benefit

Starbucks College Achievement Plan
Education meets opportunity

The Starbucks College Achievement Plan is a first-of-its-kind partnership that creates an opportunity for all eligible Starbucks employees to earn their bachelor's degree through ASU Online.
Disney will pick up tab for workers to enroll at UCF
Guarantee a job post-graduation
States are investing in higher education

Tuition-Free Degree Program: The Excelsior Scholarship
New York State is now home to the nation’s first accessible college program.

We’ve made college tuition-free for middle class New Yorkers.

With the passage of the S 2010 State Budget, New York is now home to the nation’s first accessible college program: The Excelsior Scholarship.

Under this groundbreaking program, more than 440,000 middle class families and individuals making up to $90,000 per year will qualify to attend college tuition-free at all SUNY and CUNY two- and four-year colleges in New York State. The new program begins in the fall of 2017 and will be phased in over three years.

In order to apply, students must:
- Be residents of New York State
- Attend a SUNY or CUNY two- or four-year degree program
- Take 30 credits per calendar year (including January and Summer sessions)
- Plan to live and work in New York following graduation for the length of time they participated in the scholarship program.
Research as a key differentiator for Pitt

But competition is increasing
Figure 5-1
Academic R&D expenditures, by source of funding: FYs 1972-2016

Note(s): Totals for FYs 1972-2009 represent R&D expenditures in S&E fields only. Beginning in FY 2010, totals include R&D expenditures in S&E fields and non-S&E fields. Academic institutions' funds exclude research funds spent from multipurpose accounts. Percentages may not add to 100% because of rounding.

Source(s): National Science Foundation, National Center for Science and Engineering Statistics, Higher Education Research and Development Survey (HERED).

Science and Engineering Indicators 2019

Figure 5-2
Federal and nonfederal funding of academic R&D expenditures: FYs 1997-2016

Note(s): Gross domestic product deflators come from the U.S. Bureau of Economic Analysis and are available at https://www.bea.gov/national/, accessed 12 July 2017. See Appendix Table 4-1. Totals for FY 1997-2002 represent R&D expenditures in S&E fields only. Beginning in FY 2003, totals include R&D expenditures in S&E fields and non-S&E fields. However, from FY 2003 through FY 2009, some institutions' totals may be lower bound estimates because the National Science Foundation did not attempt to estimate for nonresponse on non-S&E R&D expenditures before FY 2010.

Source(s): National Science Foundation, National Center for Science and Engineering Statistics, Higher Education Research and Development Survey (HERED). See Appendix Table 5-1.

Science and Engineering Indicators 2019
Trends in Federal R&D, FY 1976-2018

in billions of constant FY 2019 dollars

Note: Beginning in FY 2017, a new official definition of R&D has been adopted by federal agencies. Late-stage development, testing, and evaluation programs, primarily within the Defense Department, are no longer counted as R&D.

Based on AAAS analyses of historical OMB and agency data. R&D includes conduct of R&D and facilities. © AAAS 2019
Federal R&D as a Percent of GDP

Note: Beginning in FY 2017, a new official definition of R&D has been adopted by federal agencies. Late-stage development, testing, and evaluation programs, primarily within the Defense Department, are no longer counted as R&D.

Based on AAAS analyses of historical OMB and agency data. R&D includes conduct of R&D and facilities. | © AAAS 2019
FIGURE 2
NIH funding, FY 1950–2019
in thousands of constant 2013 BRDPI adjusted dollars

Source: NIH funding figures through FY 2014 are based on total budget authority. Projected NIH funding figures for FY 2015 through FY 2019 are based on data from the Congressional Budget Office.
Public support for research is high

88% believe that it is important for the federal government to fund science and technology research, including 94% of Democrats, 86% of independents, and 81% of Republicans.

Voters place the highest priority on science and technology research in new medicines and medical technologies (54% most important area of research), national defense (44% most important area of research), and cybersecurity (43% most important area of research).
Science and technology research is initially seen as a middle-of-the-road priority for the United States among several tested.

Proportions rating each as a VERY IMPORTANT PRIORITY for the United States

- Access to affordable, quality healthcare: 72%
- Education of children and youth: 71%
- National defense: 58%
- Development of wind, solar, renewables: 52%
- Research in science and technology: 51%
- Worker training: 44%
- Large-scale manufacturing: 31%

9-10 ratings on a 0-to-10 scale, 10 = extremely important
But nearly all voters, across partisan affiliations, are certain of the importance of America’s leadership in science and technology research.
Messages focused on STEM education and overall priorities are top overall, Republicans drive enthusiasm in national security messaging.

How convincing is each statement for why the federal government should increase funding for research in science and technology?

- **ESSENTIAL TO OUR PRIORITIES:** Well-funded S&T research is important to education, a safe country, and energy independence.
  - Dem: 55% VERY convincing
  - Ind: 47% VERY convincing
  - GOP: 50% VERY convincing

- **STEM:** More S&T research funding will improve STEM education and encourage youth to pursue STEM careers.
  - Dem: 57% VERY convincing
  - Ind: 50% VERY convincing
  - GOP: 47% VERY convincing

- **NATIONAL SECURITY:** S&T research plays a fundamental role in national security—developing new weapons and cybersecurity.
  - Dem: 45% VERY convincing
  - Ind: 41% VERY convincing
  - GOP: 58% VERY convincing
Confidence in Scientific Leaders Remains Relatively Stable

Percentage of U.S. Adults with a “Great Deal” of Confidence in the Leaders of the Following Institutions:

- Military
- Scientific Community
- Banks and Financial Institutions
- Press
- Congress

Americans Express Strong Support for Public Investment in Research

Support for Basic Science Funding
Percentage of U.S. adults saying government investments in basic scientific research pay off in the long run: 71%

Support for Funding in Engineering and Technology
Percentage of U.S. adults saying government investments in engineering and technology pay off in the long run: 72%

Percentage of U.S. Adults Who Say They Would ___________ for Scientific Research:

Percentage of Respondents Who Consider These Outcomes of Scientific Research to be an “Urgent Priority”:

- Finding Effective Treatments or Cures for Diseases (like Cancer and Alzheimer’s): 79%
- Reducing Poverty and Hunger: 61%
- Improving Education and How Our Children Learn: 58%
- Solving Energy Problems (Renewable Sources, Efficiency): 55%
- Improving Environmental Health and Sustainability: 54%
- Improving Public Health: 53%
- Improving the Lives of People with Disabilities: 43%
- Driving Economic Growth: 35%
- Developing Defense and Military Technology: 32%
- Improving Safety Devices (such as in Cars and Sports): 30%
- Understanding Space and Our Place in the Universe: 16%

SOURCE: ScienceCounts, unpublished data from “Raising Voices for Science: Exploratory and Benchmarking Survey” (survey conducted October 2015).
Most Americans say government investments in medical and science research usually pay off

% of U.S. adults who say government investments in each area...

<table>
<thead>
<tr>
<th>Area</th>
<th>Aren't worth it</th>
<th>Usually pay off in the long run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical research</td>
<td>19</td>
<td>80</td>
</tr>
<tr>
<td>Engineering and technology</td>
<td>19</td>
<td>80</td>
</tr>
<tr>
<td>Basic scientific research</td>
<td>22</td>
<td>77</td>
</tr>
</tbody>
</table>

Note: Half of respondents randomly assigned to the “medical research” question. Other questions asked of all. Respondents who gave no answer are not shown. Source: Survey conducted April 23-May 6, 2018.

PEW RESEARCH CENTER
Federal Higher Education Tax Expenditures Expanded Substantially in the Late 1990s and in the Years Surrounding the Recession
Trend in value of federal tax expenditures for higher education, federal fiscal years 1990-2013, adjusted for inflation

© 2015 The Pew Charitable Trusts
Federal and State Investments in Higher Education Are Similar in Size, Different in Nature

Spending categories by level of government, academic year 2013


© 2015 The Pew Charitable Trusts
Affordability

- Annual cost of education has risen - data
- Total student debt >$1.5T
- Concerns about cost have increased
- “Free college” or “debt free college” proposals have gained support
Unionization efforts of students and faculty
Students Funding Larger Share of Education Funds After Recessions

Tuition as a percent of “total educational revenue,” 1988 - 2016

Source: State Higher Education Financing FY2016, State Higher Education Executive Officers Association. Total educational revenue is the sum of educational appropriations and net tuition revenue excluding any tuition revenue used for capital and debt service. It measures the amount of revenue available to public institutions to support instruction (excluding medical students).
Immigration challenges
Free speech/Campus Climate
Me Too
Number of Degree Holders: 2000 and 2018
(In millions)

Figure 1: Population Age 25 and over by Educational Attainment: 1940-2018

The Master’s Degree is the New Bachelor’s Degree

HIGHER EDUCATION BUBBLE?

Eight percent of the population now holds Master’s degrees, the same percentage that held bachelor’s degrees (or higher) in the 1960s.
Figure 13: Population Age 25 years and over who have completed a Bachelor’s Degree or Higher, by Detailed Attainment: 2000-2018

Most college graduates say their college experience was valuable, but public is more skeptical that college prepares people for well-paying jobs

% of college graduates saying their college education was very/somewhat useful for ...

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% of adults saying a four-year/two-year degree prepares people very/somewhat well for a well-paying job in today’s economy ...

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Note: “College graduates” includes adults with a two-year or four-year degree.