The Future of the Arts & Sciences

A Briefing for Research Universities
A Weakening Foundation

The “Ivory Tower” Depends on a Specific Set of Social Supports

The Traditional Academic Model

Instruction
- Daytime face-to-face instruction during academic terms
- Comprehensive academic program offerings
- Broad general education requirements taught by faculty
- Most instructors tenure track faculty promoted based on scholarship

Student Population
- Residential education
- 18-24 year old students who attend full time
- Selective admission of academically prepared students

Student Population

Family Finances

Public Support

Career Outcomes

Competition
Student Populations

Growth Populations Look Very Different from Traditional Students

Demographic Growth Ends

- Dramatic slowdown in the growth of HS graduates with significant variation by state/region
- Vast majority of projected growth from Hispanic students
- Little progress on engaging underrepresented groups

‘Post-Traditional’ Students Now the Majority

- Full time, residential students a minority
- Majority of students combining credits from multiple institutions

Growth Markets Less Predictable

- Volatile working adult enrollments
- International enrollments strong overall but national sources subject to rapid swings

Implications

No longer possible for all institutions to grow at historic rates
Increasing access to underserved groups essential to maintaining enrollments
Growth will require managing more volatile changes in enrollment

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Traditional Demographics Declining


10 States produce a majority of high school graduates
36 States will see slower growth or declines in the high school graduation rate
22% Estimated decline in private high school graduation rates by the early 2020s

Legend
- Less than -10% growth
- Between -10% and 0% growth
- Between 0% and 10% growth
- Greater than 10% growth
Not As Dire As We Thought

More Detailed Demographic Projections Show Growth in Elite Students

Forecasted growth in students who will attend a REGIONAL four-year institution, 2012 to 2029

Forecasted growth in students who will attend an ELITE NATIONAL institution, 2012 to 2029

Source: Nathan D. Grawe, Demographics and the Demand for Higher Education' http://www.people.carleton.edu/~ngrawe/HEDI.htm
The Post-Traditional Student

Many Ways to Be a Student

Sources: “America as 100 College Students,” Bill and Melinda Gates Foundation; EAB interviews and analysis.
An Increasingly Critical, But Volatile, Market

Economics, Politics, and Prejudice Impact International Enrollments

Annual Change in Enrollment in U.S. Institutions, 2005-2015

India
- Strong growth returns after three years of declines
- Australia saw 71% decline 2007-11

South Korea
- Accelerating declines since 2011
- Economic challenges depressing enrollments

Saudi Arabia
- Growth moderates after govt funded expansion
- Saudi govt now cutting spending, limiting support to top 100 universities

Brazil
- Massive growth fueled by government program
- Funding at risk given economic and political issues

Kuwait
- Kuwait suspends Idaho State after reports of racism on and off campus
- International students at ISU were generating $40M annually for the local economy

Sources: IIE, Open Doors 2015; EAB interviews and analysis.
Family Finances

An Increasing Financial Burden on Already Struggling Families

The Economic Growth Engine Stalls

- Longest post-war economic boom ended in 2007
- Slow growth projected for foreseeable future

The Hollowing of the Middle Class

- Nearly all gains in income and wealth going to the top 5%
- Middle class families have less income and wealth than before the recession

Struggling to Pay for College

- Net price rising as share of family income for middle class
- Decline in home equity and lack of savings
- Net price down for low income families but many remain debt averse

Implications

Investments in institutional student aid will continue to grow, further straining tight university budgets

Price competition will increase driving down net tuition revenue growth

Public pressure to moderate tuition increases/ reduce debt burden will grow making it harder for institutions to grow revenue
How Will We Fund the Future?

Net Tuition Revenue Not Keeping Pace With Sticker Price Increases

Published vs. Net Tuition, Fees, Room, And Board at Private Universities

*Four-Year, Not-For-Profit Institutions, Selected Years*

<table>
<thead>
<tr>
<th>Year</th>
<th>List Price</th>
<th>Net Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2007</td>
<td>$36,060</td>
<td>$24,580</td>
</tr>
<tr>
<td>2008-2009</td>
<td>$36,980</td>
<td>$24,040</td>
</tr>
<tr>
<td>2010-2011</td>
<td>$40,250</td>
<td>$23,620</td>
</tr>
<tr>
<td>2012-2013</td>
<td>$41,430</td>
<td>$23,980</td>
</tr>
<tr>
<td>2014-2015</td>
<td>$42,870</td>
<td>$24,320</td>
</tr>
<tr>
<td>2016-2017</td>
<td>$45,370</td>
<td>$26,080</td>
</tr>
</tbody>
</table>

List Price:
- $36,060 (2006-2007)
- $36,980 (2008-2009)
- $40,250 (2010-2011)
- $41,430 (2012-2013)

Net Price:
- $24,580 (2006-2007)
- $24,040 (2008-2009)
- $23,620 (2010-2011)
- $23,980 (2012-2013)
- $26,080 (2016-2017)

- **38.6%**
  - NACUBO-reported discount rate for FTFT freshmen in 2006-2007

- **49.1%**
  - NACUBO-reported discount rate for FTFT freshmen in 2016-2017

**Missed Target**
- 3%
  - Annual growth rate required to keep up with costs, according to Moody’s

The Affordability Issue

Students Ruling Schools Out on List Price Alone

- 69% of students have some (or major) concern about financing college
- 59% of students consider only list price when evaluating schools early in the process
- 17% of students ruled out a school they will apply to because of cost
- >50% of students from families earning less than $120,000 per year say they cannot afford to attend a private college or university

Attitudes Shifting with Demographics

Percentage of students reporting “major” concern about financing college

- 9% White
- 25% Latino

Getting a Job Becoming the Primary Reason Most Students Attend University

‘Lost Generation’ Threatens Belief in Value of College Degree

- Graduates during the recession continue to face poor employment and salary outcomes
- BA no longer seen as guarantee of middle class income
- Enrollments in liberal arts decline rapidly while engineering, computer science, health professions oversubscribed

‘New Learning Economy’ Emphasizes Shorter, Just-in-Time Credentials

- Rise of bachelors degrees in workforce require students to look to post-bacc training as differentiator
- Rapid changes in hot jobs/ skill requirements
- Experience more valuable than formal education alone

Skill-Biased Technical Change Driving Growth in High and Low Skill Jobs

- Automation and global trade reshaping occupations with strong growth, good wages

Implications

Rapid shifts in enrollment as students seek career-aligned programs/ institutions

Students and employers favoring experience over formal education

Proliferation of post-baccalaureate credentials for job seekers
## A New Kind of Ranking

**Proliferation of Rankings and Search Tools Based on Career Outcomes**

**New Resources to Measure ROI Emerge Post-Recession**

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>PayScale</td>
<td>College salary and ROI reports</td>
</tr>
<tr>
<td>2012</td>
<td>College Measures</td>
<td>State-level salary data for VA, AR; later expanded to CO, FL, TN, TX</td>
</tr>
<tr>
<td>2013</td>
<td>Forbes</td>
<td>Alumni giving as indicator of outcomes, ROI</td>
</tr>
<tr>
<td>2013</td>
<td>The Daily Beast</td>
<td>20% of ranking based on earnings</td>
</tr>
<tr>
<td>2014</td>
<td>LinkedIn</td>
<td>Placement rate at top companies in hot industries</td>
</tr>
<tr>
<td>2015</td>
<td>Brookings</td>
<td>Value added vs. predicted salary</td>
</tr>
<tr>
<td>2015</td>
<td>The Economist</td>
<td>Colleges’ value added based on Scorecard data</td>
</tr>
<tr>
<td></td>
<td>NICHE</td>
<td>Increased weight for outcomes in rankings formula</td>
</tr>
<tr>
<td></td>
<td>College Scorecard</td>
<td>Median earnings 10 years out; Percent students earning &gt;$25K</td>
</tr>
</tbody>
</table>

Putting a Price on Every Discipline

The Economic Value of a Bachelor’s Degree

Not All Bachelor’s Degrees Are Created Equal

Median annual wage of college-educated workers

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Early-Career (21-24)</th>
<th>Mid-Career (25-59)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture and Engineering</td>
<td>$50,000</td>
<td>$83,000</td>
</tr>
<tr>
<td>Computers, Math, and Statistics</td>
<td>$43,000</td>
<td>$76,000</td>
</tr>
<tr>
<td>Health</td>
<td>$41,000</td>
<td>$65,000</td>
</tr>
<tr>
<td>Business</td>
<td>$37,000</td>
<td>$65,000</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>$33,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>All Majors</td>
<td>$33,000</td>
<td>$61,000</td>
</tr>
<tr>
<td>Humanities and Liberal Arts</td>
<td>$30,000</td>
<td>$52,000</td>
</tr>
</tbody>
</table>

$1M Difference in lifetime wages of college and high school grads

$3.4M Difference in lifetime wages of highest- and lowest-paying majors

Winners and Losers

Students Move to Health & Engineering, Away from Education & Humanities

Change in Number of BA Degree Completions by Major Group, 2007-2015, All Institutions

- **Health**
  - Biology and life sciences: +33,014
  - Architecture and engineering: +30,344
  - Law and public policy: +25,249
  - Psychology and social work: +24,746

- **Industrial arts, consumer services, and recreation**: +23,631
- **Computers, statistics, and mathematics**: +18,031
- **Communications and journalism**: +14,568
- **Agriculture and natural resources**: +12,294

- **Business**
  - Physical sciences: +8,940
  - Social sciences: +8,369
  - Arts: +7,434

- **Humanities and liberal arts**: -11,337
- **Education**: -19,388

Source: EAB analysis of IPEDS data.
Individual Results May Vary

Salary Correlations for Liberal Arts Are Misleading

**Humanities and Social Sciences Map to a Broader Set of Occupations**

_Employed civilians aged 25-64 with Bachelor’s or higher_

<table>
<thead>
<tr>
<th>Humanities</th>
<th>Social Sciences</th>
<th>Engineering</th>
<th>Math, Statistics, Computers</th>
<th>Business</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Agriculture</td>
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<tr>
<td>Office Support</td>
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<tr>
<td>Sales</td>
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<td>Service</td>
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<tr>
<td>Arts &amp; Entertainment</td>
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<td></td>
</tr>
<tr>
<td>Education</td>
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<tr>
<td>Legal</td>
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<tr>
<td>Social Services</td>
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<tr>
<td>Business &amp; Finance</td>
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<tr>
<td>Managers (non-STEM)</td>
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<td></td>
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<tr>
<td>Health Care</td>
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<tr>
<td>Architects</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Social Scientists</td>
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<tr>
<td>Physical Scientists</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Life Scientists</td>
<td></td>
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<tr>
<td>Math &amp; Statistics</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Engineers</td>
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<tr>
<td>Computer Workers</td>
<td></td>
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</tr>
</tbody>
</table>

Source: American Community Survey 2012, BLS; EAB research & analysis.
The Protestant Ethic and the Purposeful Life

Meaningfulness of Work Versus Median Early Career Pay


1) Circle size represents 2015-2016 national conferrals by field.
Revenue Imperative Forcing Universities into New Markets

The Post-Baccalaureate Explosion

- Professional master’s now a significant revenue generator for many universities
- Many programs struggling as more institutions enter an already overheated market

Multi-Local Strategies

- Constrained by local demographics, more institutions seeking secondary markets in other cities or regions
- Urban locations attracting more students as rural institutions struggle
- Intensifying national competition for highly qualified mobile students willing to relocate

Cross-Sector Competitors

- Swirling students create course-by-course competition
- Students comparing wider range of institutions with different cost/quality tradeoffs
- Alternative providers entering most profitable markets

Implications

Revenue from new professional master’s programs no longer sufficient to subsidize struggling undergraduate programs

No market is protected—other institutions with very different cost structures and value propositions will come for your students
Looking for a Better Deal

Increasing Price-Shopping Further Eroding Tuition Revenues and Yield

Students are bargaining...

25% call to negotiate a lower price

...and shopping around...

22% increase in withdrawn deposits\(^1\), students shopping for a deal

...and getting a better price

10% typical increase in discount rate for post-deadline enrollments

Yield Volatility

“...and getting a better price

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...and getting a better price

10% typical increase in discount rate for post-deadline enrollments

Yield Volatility

“For decades leading up to 2008 yield was flat and predictable. Competition between schools, negotiations with families, and discounting experiments have made yield increasingly difficult to anticipate.”

Craig Cornell
Vice Provost, Enrollment Management
Ohio University

Lower Prices

“Before, when families got a scholarship offer they said, ‘Thank you!’ Now they say, ‘Is this your best offer?’”

Tony Amelse
Assoc. Director of Admission
College of Saint Benedict

1) Averaged across 11 four-year colleges and universities of varying enrollments and Carnegie classes; data provided by Hardwick Day.

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Source: EAB Interviews and Analysis.
A Crowded Marketplace

Growth Ambitions Drive Competition from New Segments

A Long Tail of Competitors
Where Admitted Students Who Did Not Deposit Went (n = 81,827)

Competing in Many Markets
Different Student Segments Considering Different Clusters of Institutions

Regional Private Master’s (Illustrative)

<table>
<thead>
<tr>
<th>Student Segment</th>
<th>Competing Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Ability</td>
<td>Private Research, Public Flagship, Selective Liberal Arts</td>
</tr>
<tr>
<td>Engineer</td>
<td>Regional Public, Public Research</td>
</tr>
<tr>
<td>Athlete</td>
<td>Large University</td>
</tr>
<tr>
<td>URM</td>
<td>HBCU or Hispanic-Serving Institution</td>
</tr>
<tr>
<td>Low income</td>
<td>Community College, Regional Public</td>
</tr>
</tbody>
</table>

Sources: Royall & Company, “DepositIQ Survey 2016”; EAB interviews and analysis.
Master’s Market Crowding

New Master’s Launches Remain an Attractive Strategy

- Enrollment growth while space-constrained
- Completion rates higher than other new offerings
- Often taught by practitioners, not tenured faculty—easier to launch/sunset
- New fields emerging for meeting student needs, expanding industry connections

But No Master’s Is a Guaranteed Success

Number of Master's Degrees Conferred by Year

Why the Flat Growth Data?

1. Growth is in Specific Fields—Macro Data Obscures (Local) Opportunities

2. Students Focusing Elsewhere Post-Recession

3. Enrollments Can Be Up, But Credit Hours Down

4. Impact of Short-Format Credentials Still Uncertain

Online Won’t Overcome Local Demographics

**Online Students Still Local**

*Online Student Distance from Institution*¹

<table>
<thead>
<tr>
<th>Distance from Institution</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50 Miles</td>
<td>54%</td>
</tr>
<tr>
<td>51-100 Miles</td>
<td>18%</td>
</tr>
<tr>
<td>101+ Miles</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Access to In-Person Services Valued**

75% Proportion of Students Who Visited Campus or a Campus Center at Least Once During Program

1. To see an instructor
2. To make a payment or resolve administrative issue
3. To meet a study group
4. To use library, lab, computer, etc.

**Modality is Not the Deciding Factor**

56% Proportion of online students who, if their chosen program was not available in an online format, probably or definitely would have enrolled in a classroom program

**Sudden Generational Shift Unlikely**

83% Percentage of Gen Z preferring face-to-face connection—despite sending 3000 text messages per day.

A Crumbling Foundation

University Economics Built on Subsidies from Lower Division Courses

- Doctoral: -$250
- Graduate/Professional: $5
- Upper Division Undergraduate: $25
- Lower Division Undergraduate: $95
- Student Services

Marginal Contribution per Student Credit Hour

Public Research University

Source: EAB interviews and analysis.
Subsidizing the High Cost of Research

The Hidden Implications of the Research Climb

Have You Calculated the Costs?

**Faculty Costs**
- Globally Competitive Faculty Salaries
- Faculty Startup Packages
- Increased Facilities and Equipment Costs
- Seed funds

**PhD Program Costs**
- Generous PhD Stipends
- Doctoral Program Subsidies

**Overhead Costs**
- Increased Research Administration Costs
- Unrecovered F&A Costs

**Instructional Costs**
- Lighter Teaching Loads
- Smaller Upper Division and Graduate Classes

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**Dispelling Myths About Costs**

“We’ve done a lot of work over the past decade on understanding what things really cost and dispelling common misconceptions. The biggest myth was that research pays for itself.”

Director of Research Accounting
Large, Private Research University

Source: EAB interviews and analysis.
Those Who Can Afford It Continue to Grow

Less Vulnerable to Sharp Funding Cuts, R1s Grow Enrollment

Most Research-Intensive Institutions Driving Enrollment Increases

Avg. Annual Increase in Total Graduate Enrollment, 2005-2015

<table>
<thead>
<tr>
<th>Institutional Level</th>
<th>Average Annual Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral/Research</td>
<td>-1.3%</td>
</tr>
<tr>
<td>High Research</td>
<td>1.6%</td>
</tr>
<tr>
<td>Very High Research</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Even As Overall Enrollments Rise, AAU Institutions Quietly Prune Programs

- Once-renowned English program shrinks to 20 graduate students in 2012 from 60 in the early 1990s
- History department cuts admissions in half (~20 students) in 2012 alone
- Announces closure of three departments and suspension of four graduate programs in 2012
- Cuts size of a number of doctoral programs while increasing stipends for students in 2016

Cracks in the Foundation

Long-Term Threats to Doctoral Education

Who will pay the high cost of doctoral programs?

- **Federal Funding**: Cuts to R&D impact doctoral opportunities
- **State Funding**: Increased prioritization of undergraduate education
- **Competing on Support**: Competitive graduate student support packages more important than ever
- **Perverse Labor Market Incentives**: Less expensive to hire postdocs/adjuncts than RAs or TAs
- **Less Tolerance for Subsidies**: Critics charge that research increases cost of education

Why are doctoral outcomes still so poor?

- **Completion Still Problematic**: Limited improvement to completion and time-to-degree from large-scale outcomes initiatives
- **Employment Prospects Worsening**: Placement rates fall to 20-year lows, esp. for tenure-track jobs
- **Endless “Apprenticeships”**: Postdocs stints become standard across multiple disciplines
- **Difficult to Establish Research**: Funding competition hardest for early career researchers
- **Weak Support Services**: Lack of career preparation and advising for PhDs
Five Core Competencies for the Next Decade

Adapting to a Rapidly Changing Environment

Collaboration
- Among students and faculty
- Across universities
- With corporations and foundations
- With governments at home and abroad

Opportunity Identification
- New research areas
- New academic programs
- New technologies
- New ventures

Resource Allocation
- Large, targeted investments
- Selective disinvestment
- Activity-based budget models

Value Communication
- New metrics for tracking and demonstrating the impact of the university
- Individually, regionally, nationally, and globally

Data-Informed Decision Making
- Common data definitions
- Easy access to critical data
- Evidence-based decision process

Source: EAB interviews and analysis