Breaking the Trade-Off
Between Cost and Quality
Sustaining Mission in an Era of Constrained Resources

A Briefing for
Academic Leaders
The era of “quality at any cost” has come to an end in the face of declining state support and flattening net tuition revenues. But with the right tools, academic leaders can continue to enhance quality by reallocating resources from lower impact activities to higher impact, mission-aligned priorities.
Executive Summary

An Unsustainable Financial Model

Revenue growth at most colleges and universities has slowed significantly since the recession, and revenues are actually declining at a growing share of institutions as a result of state budget cuts and pressures on net tuition revenue. While cuts to administrative costs are necessary to get back on the path to financial stability, they won’t solve the problem on their own. Universities—even those with strong finances—must find ways to continue to enhance academic excellence and student success despite limited new funds.

The Cost-Quality Myth

A major barrier to adjusting to the new financial reality is the belief that any reduction in academic resources must necessarily reduce quality. Excellence in instruction and scholarship clearly require significant investments of faculty time and other resources, but the relationship between costs and quality is not linear. Excess spending on the proliferation of courses, specializations, and programs spreads resources more thinly across a broader array of activities, reducing quality by diverting funds from institutional priorities while at the same time producing a level of complexity that creates barriers to student success. Reallocating resources from activities that are not aligned with student success, academic excellence, or institutional mission can improve outcomes even without additional revenues.
Reducing Proliferation to Enhance Quality

EAB research has identified five primary drivers of academic costs and capacity: section offerings, course offerings, course completion rates, curricular complexity, and faculty course loads. These areas offer the greatest opportunities to realign academic resources while maintaining or enhancing quality. Analyzing the “microeconomics” of academic units in each of these areas can often identify targeted opportunities to realign costs in ways that can avoid the negative impact of across-the-board budget cuts or the elimination of entire academic programs.

Academic Decision Support

Better data on the cost, capacity, and quality of academic programs should be used to supplement, rather than replace, the judgment of academic leaders. Providing academic decision makers (especially deans and chairs) with improved data enables them to better understand the trade-offs and the opportunity costs implicit in every resource allocation decision. Achieving this goal, however, requires overcoming the limitations of existing data systems as well as providing incentives to reward academic units for improved performance. This is an incremental and ongoing process, however, not a short-term solution. The slow pace of change at universities makes it even more critical that every decision be made in the light of its long-term implications for quality and financial sustainability.
Sustaining Mission in an Era of Constrained Resources

1. An Unsustainable Financial Model
2. The Cost-Quality Myth
3. Reducing Proliferation to Enhance Quality
4. Academic Decision Support
An Unsustainable Financial Model
The cost of education has outpaced the public’s willingness to pay. Federal and state governments are looking for ways to reduce or slow the growth of public investment in higher education, while families are demanding lower tuition prices.

Paradoxically, while the public sees higher education as more expensive than ever, many universities are struggling with flat or declining revenues. State support and tuition revenue are no longer growing at pre-recession rates. In fact, at a significant share of institutions, revenues per student are declining due to state cutbacks and growing financial aid costs.

**Revenue Stowing for Most, Declining for Some**

Average Annual Change in Real Net Tuition Revenue per Student at Four-Year Private Institutions

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Research</td>
<td>3.9%</td>
<td>1.1%</td>
<td>31%</td>
</tr>
<tr>
<td>Private Master’s</td>
<td>3.3%</td>
<td>0.5%</td>
<td>43%</td>
</tr>
<tr>
<td>Private Baccalaureate</td>
<td>3.1%</td>
<td>0.5%</td>
<td>46%</td>
</tr>
</tbody>
</table>

Average Annual Change in Real Tuition, Fees, and State Support per Student at Four-Year Public Institutions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Research</td>
<td>4.7%</td>
<td>0.7%</td>
<td>(0.2%)</td>
</tr>
<tr>
<td>Public Master’s</td>
<td>5.2%</td>
<td>0.1%</td>
<td>18%</td>
</tr>
<tr>
<td>Public Baccalaureate</td>
<td>6.9%</td>
<td>0.1%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Increasingly, university leaders are concerned that long-term downward pressures on revenues combined with continued upward pressures on costs mean that the current financial model is unsustainable.

I am confident in the sustainability of my institution’s financial model over the next 10 years

- **50%** Presidents
- **41%** Chief Business Officers

Administrative Cuts Necessary, but Not Sufficient

Since the recession, many universities have looked to cut administrative services, hoping to protect core academic programs. A series of large consulting engagements found a range of common cost savings on the administrative side, amounting to nearly $100 million at some large research universities.

Typical Areas for Administrative Cost Savings

“Base Case” Savings (in Millions of Dollars) at Three Large Research Universities, as Identified by Consultant

<table>
<thead>
<tr>
<th>Area</th>
<th>University A</th>
<th>University B</th>
<th>University C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement</td>
<td>30.0</td>
<td>12.5</td>
<td>15.0</td>
</tr>
<tr>
<td>Org. Redesign</td>
<td>32.0</td>
<td>17.1</td>
<td>12.0</td>
</tr>
<tr>
<td>IT</td>
<td>15.0</td>
<td>3.7</td>
<td>7.8</td>
</tr>
<tr>
<td>Facilities and Energy</td>
<td>14.7</td>
<td>3.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Finance</td>
<td>1.8</td>
<td>0.0</td>
<td>2.6</td>
</tr>
<tr>
<td>HR</td>
<td></td>
<td>1.0</td>
<td>1.8</td>
</tr>
</tbody>
</table>

The underlying drivers of administrative costs—increasing regulation, market diversification, rising benefits costs, and institutional complexity—indicate that costs in this area are likely to continue to grow, even with an increasing focus on administrative efficiency. However, EAB research indicates that it is possible to slow the growth or “bend the cost curve”.

Even more importantly, administrative savings opportunities—while significant—are not large enough to close the growing gap between revenues and costs on their own. Administrative costs represent a relatively small share of overall costs. And even the most successful major consulting engagements were rarely able to achieve savings of more than 5% of operating expenditures.

**Administrative Costs Not Large Enough to Absorb All Cuts**  
*Operating Expenses by Function*

**Expense Breakdown Across Four-Year Institutions**

- **Public Research Universities**
  - Mostly Academic (Instruction, Research, Public Service): 26%
  - Mostly Administrative (Academic Support, Institutional Support): 14%
  - Other (Independent Operations, Auxiliary Enterprises): 60%

- **Public Non-research Universities**
  - Mostly Academic (Instruction, Research, Public Service): 25%
  - Mostly Administrative (Academic Support, Institutional Support): 20%
  - Other (Independent Operations, Auxiliary Enterprises): 55%

- **Private Research Universities**
  - Mostly Academic (Instruction, Research, Public Service): 17%
  - Mostly Administrative (Academic Support, Institutional Support): 16%
  - Other (Independent Operations, Auxiliary Enterprises): 67%

- **Private Non-research Universities**
  - Mostly Academic (Instruction, Research, Public Service): 18%
  - Mostly Administrative (Academic Support, Institutional Support): 25%
  - Other (Independent Operations, Auxiliary Enterprises): 57%

Source: EAB analysis of IPEDS data.
The Dangers of Across-the-Board Cuts

Universities have shielded the academic enterprise from painful cuts in order to avoid any changes that might reduce the quality of education or scholarship. Clearly, decisions about program offerings, curricular requirements, faculty mix, course loads, and class size are inextricably tied to the fundamental academic mission of the university. Changing any of these can have significant unintended consequences to academic quality.

Simplistic, across-the-board attempts to reduce academic costs without any considerations of the impact on quality can do significant harm to the university.

The Unintended Consequences of Academic Cuts

<table>
<thead>
<tr>
<th>Mandate</th>
<th>Objective</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Across-the-board cuts to all academic departments</td>
<td>Distribute cuts “fairly” across all departments</td>
<td>Cuts not allocated based on specific departmental resource needs likely to damage some units while missing savings opportunities in others</td>
</tr>
<tr>
<td>Mandated increases in teaching load</td>
<td>Improve instructional productivity</td>
<td>Some faculty already at or above maximum capacity, increasing load further could impact quality of teaching and scholarship</td>
</tr>
<tr>
<td>Closing all majors with fewer than 10 graduates per year</td>
<td>Reduce resources in low-demand majors</td>
<td>Some programs have few of their own majors but serve many students in other majors</td>
</tr>
<tr>
<td>Cancelling all courses with fewer than 5 students</td>
<td>Reduce resources in low-demand courses</td>
<td>Some small courses are critical for pedagogical, curricular, or mission reasons</td>
</tr>
</tbody>
</table>
A New Era of Difficult Choices

While untargeted or across-the-board academic cuts can have negative consequences, this does not mean that academic units should remain immune from scrutiny. Many universities are finding that they can no longer sustain all of the programs, practices, and structures that proliferated during an earlier period of rapid growth in revenues. They must find a way to reverse or slow the growth in costs without sacrificing academic quality.

Even well-resourced universities now recognize that they must concentrate resources on a smaller number of institutional priorities in order to support the rising cost of world-class excellence. Efficiency for them is not an end in itself but a means to enhance quality. The end of the era of quality at any cost is not the same as the end of quality.

Academic decisions directly or indirectly drive most of the economics of a university. It is precisely because they are also the drivers of quality that they must be carefully scrutinized.

Academic Decisions Drive Most Costs and Revenues

Academic units generate nearly all university revenue...

...and their decisions drive most costs

Tuition and Fees
Enrollment-Based State Funding
Research Grants
Tech Transfer
College/Departmental Fundraising

The Fundamental Challenge

How can we help faculty understand the cost and revenue implications of their decisions?

Departmental Staffing
Faculty Workload
Research Equipment
Instructional Technology
Facilities
Energy
The Cost-Quality Myth
More Spending Does Not Always Equal Better Quality

Quality instruction and scholarship clearly require significant investments of faculty time and other resources, but the relationship between cost and quality is not necessarily linear. More spending does not always equal greater quality. Variations in program costs, for example, do not necessarily correlate with program quality and often have more to do with a mismatch between instructional capacity and student demand.

In some situations, additional investment may not increase quality, particularly if those investments are not targeted appropriately. In other situations, excess spending may actually reduce quality. While some may argue that smaller class sizes, for example, lead to a better learning experience, others point out that classroom interactions may suffer when class size is too small. And in some cases, a well-designed large class can create the same or better outcomes than smaller classes. For each discipline and for each pedagogical approach there is likely to be an optimal size. And while it may be difficult or impossible to measure quality precisely, it should be possible to identify outliers—those cases where there are clearly too many or too few resources.

Three Models for the Cost-Quality Relationship

<table>
<thead>
<tr>
<th>Quality Increases as Costs Grow</th>
<th>Quality Plateaus as Costs Grow</th>
<th>Quality Declines as Costs Grow</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Graph" /></td>
<td><img src="image2" alt="Graph" /></td>
<td><img src="image3" alt="Graph" /></td>
</tr>
</tbody>
</table>

**EXAMPLE**

Most research universities believe that growth in the total volume of research expenditures reflects an increase in the quality of research. Peer review processes ensure that funding is linked to quality.

Increasing faculty salaries can attract higher quality faculty. After a certain level, however, further salary increases will not improve faculty quality.

Investing in smaller classes can improve instructional quality (particularly if the institution already has very large classes). But below a certain class size, quality may actually decline due to lack of student interaction and less diversity of perspectives.
Health care currently faces many of the same pressures as higher education, specifically a demand for increased access and higher quality at a lower cost.

Recent reforms in health care demonstrate that there are ways to reduce costs while improving quality. To be sure, many approaches to improving health care quality require increased investment—advanced training, new technologies, and new treatments. However, a number of studies show that many variations in the cost of care bear little relation to quality. In fact, excessive health care spending often leads to declines rather than improvements in outcomes. Excessive testing, over-prescribing, and longer hospital stays, for example, not only increase costs, they also reduce the quality of patient outcomes.

**Sources of Waste in the U.S. Health Care System**

- Failures of Care Delivery
- Failures of Care Coordination
- Overtreatment
- Administrative Complexity
- Pricing Failures
- Fraud and Abuse

21%–47% of Total U.S. Health Care Costs

“The savings potentially achievable from systematic, comprehensive, and cooperative pursuit of even a fractional reduction in waste are far higher than from more direct and blunter cuts in care and coverage.”

Berwick and Hackbarth
2012

The High Cost of Comprehensiveness

As in health care, higher education costs have increased in part due to providing an increasingly broad range of specialized options. A major driver of increasing academic costs has been the proliferation of specialized academic offerings. Colleges and universities have added new courses, new academic programs, and new departments without reducing those options that no longer attract students or align with the institution’s core mission. As a result, they experience costly excess capacity in some courses and programs even as they struggle with bottlenecks in other areas.

Universities added specializations in the name of comprehensiveness during a long period of enrollment and revenue growth, only to find that they are now unable to maintain quality across so many programs, course offerings, and research specializations. The “long tail” of low-demand courses and programs is a major contributor to higher costs. It also diverts resources away from other programs whose impact could be enhanced with additional resources. Program and course proliferation drive up administrative costs within academic units as well. And an excess of choice contributes to a range of student success challenges, including longer time to degree, excess credits taken, and lower completion rates.

The Long Tail
Bachelor’s Degrees Granted by Major, Three Sample Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Bachelor’s Degrees Granted</th>
<th>Majors (Six-Digit CIP Code)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Baccalaureate College</td>
<td>449 degrees</td>
<td>35 majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80% of graduates complete in top 14 majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16 Majors granted 5 or fewer degrees</td>
</tr>
<tr>
<td>Private Master’s University</td>
<td>1,283 degrees</td>
<td>105 majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80% of graduates complete in top 39 majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>53 majors granted 5 or fewer degrees</td>
</tr>
<tr>
<td>Public Research University</td>
<td>3,914 degrees</td>
<td>189 majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80% of graduates complete in the top 59 majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>81 Majors granted 5 or fewer degrees</td>
</tr>
</tbody>
</table>

Source: EAB analysis of IPEDS data.
Proliferation of specialized offerings was a natural result of the aspirations of individual faculty and departments to extend the bounds of knowledge and to increase the diversity and quality of academic offerings. It also grew from each institution’s desire to serve a wider range of constituencies with a broader set of programs and services. But many institutions are now recognizing that the cost of proliferation has outstripped the value of choice.

The Drivers of Proliferation

- **Academic Disciplines**
  - Faculty training, hiring, and tenure practices encourage specialization in both research and teaching

- **Incremental Budget Models**
  - Budget models typically incentivize academics to add new offerings without reducing the old

- **Competition for Students**
  - Universities believe that adding more specialized programs will attract students and prepare them better for careers

The cost of proliferation has outstripped the value of choice.
A proliferation of low-demand courses and programs makes it impossible to appropriately match academic resources to student demand, generating higher costs and excess capacity across the university. Even as all universities experience bottlenecks in certain critical areas (for example, certain kinds of classroom space, seats in high-demand courses, capacity in certain programs), they have underused capacity trapped in other areas. This unused capacity represents a significant investment of resources that are doing little to support academic excellence.

Of course, universities will always have some amount of unused capacity. The highly specialized nature of academic programs, variability of student demand, relatively fixed nature of academic resources, and need to preserve certain mission-critical but low-demand courses or programs mean that universities will never come anywhere close to perfect efficiency, nor should that be the goal. But identifying and quantifying underutilized resources can help identify opportunities to reinvest some of those resources into higher impact activities.
Reducing Proliferation to Enhance Quality
Campuses that have seen the best results have focused not on across-the-board cost cutting but on reallocating existing resources from low-demand and low-impact activities to higher-demand and higher-impact activities. They see efficiency as a means to improve quality and ultimately build a sustainable financial model. Every dollar spent on excess capacity is a dollar that is not being used to enhance quality or support the institution’s mission. EAB research has identified five primary levers or areas of opportunity within academic departments.

### Instructional Cost Drivers

- **Section Fill Rates**
  Underfilled sections use instructional resources that could be better used for other purposes.

- **Course Enrollment**
  Excessive numbers of small courses (<10 students) limit overall capacity.

- **Course Completion Rates**
  Students who fail to complete a course increase the cost to deliver instruction.

- **Curricular Complexity**
  A growing number of required courses, electives, and prerequisites increases the cost to deliver a curriculum and increases time to degree.

- **Faculty Course Load**
  Unequal loads and course releases reduce instructional capacity and increase costs.
Efficiency and Student Success

While student success and cost effectiveness are often seen as two separate areas (and often spearheaded by different individuals), colleges and universities are increasingly recognizing the overlap between these two objectives. This brief focuses on approaches to instructional resource allocation that can reduce costs while improving student outcomes. Other EAB research focuses more specifically on how to help students effectively navigate the curriculum and institutional bureaucracy.

**Hardwiring Student Success**  
*Building Disciplines for Retention and Timely Graduation*  
eab.com/AAF/HardwiringStudentSuccess

**A Student-Centered Approach to Advising**  
*Redeploying Academic Advisors to Create Accountability and Scale Personalized Intervention*  
eab.com/AAF/StudentCenteredAdvising

**Guiding Student Choice to Promote Persistence**  
*Tools, Technologies, and Policies That Support Retention and Timely Completion*  
eab.com/AAF/GuidingStudentChoice
**A Note on the Data in This Brief**

While our research has been informed by over 300 interviews with college and university administrators, most of the quantitative examples in this report are drawn from a detailed analysis of data from six regional comprehensive public universities which was funded by the Bill and Melinda Gates Foundation. While the sample size is neither large enough nor diverse enough to extrapolate to all of higher education, these examples indicate the potential scope and scale of opportunities for resource reallocation.
Section Fill Rates

Student enrollment in course sections averages about 60% of maximum capacity at most institutions, with as many as 20% of all sections less than half full (at the same time that many are over-capacity).

In particular, universities commonly offer more sections of multi-section courses than are necessary to meet student demand. In some cases, up to 30% of all sections offered could be consolidated (in theory) while still accommodating all student demand and not increasing existing course caps.

Consolidating Excess Course Sections
Anthropology 101 at a Public Master’s University

<table>
<thead>
<tr>
<th>Excess Course Capacity</th>
<th>Consolidated Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Enrollment=45, Seat Utilization=56%</td>
<td>Max Enrollment=45, Seat Utilization=78%</td>
</tr>
<tr>
<td>Fill Rate</td>
<td>Fill Rate</td>
</tr>
<tr>
<td>31</td>
<td>35</td>
</tr>
<tr>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>19</td>
<td>35</td>
</tr>
<tr>
<td>69%</td>
<td>78%</td>
</tr>
<tr>
<td>67%</td>
<td>78%</td>
</tr>
<tr>
<td>56%</td>
<td>78%</td>
</tr>
<tr>
<td>42%</td>
<td>78%</td>
</tr>
</tbody>
</table>

Excess Institutional Capacity

<table>
<thead>
<tr>
<th>Excess Sections</th>
<th>Adjunct Instructors</th>
<th>Full-Time Faculty</th>
<th>Faculty Credit Hours</th>
<th>Potential Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>289</td>
<td>25%</td>
<td>75%</td>
<td>200</td>
<td>$330K</td>
</tr>
<tr>
<td></td>
<td>Adjunct Instructors</td>
<td>Full-Time Faculty</td>
<td>Faculty Credit Hours</td>
<td>Decrease Bottlenecks, Increase Release Time</td>
</tr>
</tbody>
</table>

Offering sections at a wide range of times is important to ensure that students have access to required courses, but in many cases the number of sections could still be reduced substantially (for example, by 10% or 20%) without significantly inconveniencing students. Cancelling these sections could reduce adjunct costs, or it could free up faculty time to support bottleneck courses or spend more time on research.

Source: EAB analysis of institutional data.
Offering small undergraduate courses (< 10 students) is critical to support specific pedagogical approaches or to offer specialized niche courses with low demand, but institutions often find that the number of these small courses has increased dramatically (sometimes making up as many as 30% of all courses offered) with little analysis of the necessity of each of these courses.

Reducing the number of small courses that lack a valid justification can free up instructional time for higher priority activities. The goal is not to eliminate all small courses, or necessarily to increase average course size significantly, but rather to limit their frequency or to identify courses that have no pedagogical necessity to be small.

Small Courses Drive a Large and Growing Share of Costs
Public Master’s University

30%+
Of Total Faculty Credit Hours Allocated to Small Courses

<table>
<thead>
<tr>
<th>Number of Students Enrolled</th>
<th>2009</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td>2–5</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>6–10</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>11–25</td>
<td>40%</td>
<td>41%</td>
</tr>
<tr>
<td>26–50</td>
<td>22%</td>
<td>17%</td>
</tr>
<tr>
<td>More Than 50</td>
<td>9%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Trending Toward Smaller Courses at Greater Cost

36%
Of faculty credit hours are spent on courses with ten or fewer students

7%
Percentage-point increase in share of faculty credit hours on small sections

$11M
Approximate instructional cost of all small courses

Reducing the number of small courses that lack a valid justification can free up instructional time for higher priority activities. The goal is not to eliminate all small courses, or necessarily to increase average course size significantly, but rather to limit their frequency or to identify courses that have no pedagogical necessity to be small.

Source: EAB analysis of institutional data.
Course Completion Rates

When students fail to complete a course, the resources that went into delivering that course (as well as the student’s own resources) are wasted. At some institutions as many as 15% to 20% of all attempted credits are not completed. Typically, success rates are lowest in a handful of critical gateway courses, where failure can have a significant impact on a student’s progress to degree.

Redesigning courses and providing supplemental instruction to increase the number of students who successfully complete a course the first time reduces the number of seats that need to be offered while at the same time reducing time-to-degree and student attrition.

In many cases, completion rates for courses with high average failure rates vary significantly across the different instructors who teach sections of the same course. These variations indicate that the problem is not simply a lack of student preparation but may also lie in the consistency of instruction and assessment. Sometimes better support and collaboration among instructors can significantly improve course outcomes. This is not a matter of lowering standards but rather of setting consistent standards and helping students to meet them.

Variations in Completion Rates by Section
Completion Rate by Instructor for Selected Courses, Public Research University

Source: EAB analysis of institutional data.
Curricular Complexity

Underlying many of the inefficiencies described in this briefing (underfilled sections, small courses, low course completion rates) is the issue of curricular complexity. The proliferation of course options, increasing degree requirements, complicated prerequisites, and specialized tracks can dramatically increase the cost of delivering a curriculum while at the same time increasing the number of excess credits that students graduate with. Studies of engineering curricula (which have very rigid accreditation requirements) show that complexity and cost can vary by a factor of 2x or 3x, even at similarly ranked programs.

The proliferation of specialized electives, concentrations, prerequisites, and degree requirements (both inside the major and within general education) has spread faculty time and student enrollment more thinly over an increasingly complicated array of options.

Comparing the Complexity of Engineering Curricula
Complexity of Engineering Curricula at Three Comparably Ranked Universities

<table>
<thead>
<tr>
<th></th>
<th>Credit Hours Completed at Graduation</th>
<th>Minimum Credit Hours Required</th>
<th>Curricular Efficiency Index</th>
<th>Longest Course Sequence</th>
<th>Number of Bottleneck Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>University A</td>
<td>180</td>
<td>133</td>
<td>4.6</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>University B</td>
<td>148</td>
<td>120</td>
<td>2.5</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>University C</td>
<td>168</td>
<td>128</td>
<td>2.6</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>

A university’s faculty is its greatest asset—and also one of its largest investments. Yet how the members of the faculty allocate their time is only loosely managed and rarely tracked in detail. This is not typically an issue of lazy faculty. Time diary studies show faculty working increasingly long hours (even as many faculty salaries have struggled to keep up with inflation). The broader issue is whether faculty effort is aligned with institutional goals.

For example, at many institutions the majority of faculty are teaching less than the standard course load (however that load is defined). There are many valid reasons why faculty might teach less than the standard load. They may be serving as department chair, program lead, or some other service role, or they may have received a course release to pursue their research. Rarely, however, do institutions consider the cost of these releases (in terms of lost instructional capacity) or measure their benefits (in terms of research output, for example).

### Assessing Faculty Course Loads
Distribution of Faculty by Credit Hours Taught, Public Master’s University

58% Of Faculty Teaching Less Than 24 Credits (Standard Load)

Source: EAB analysis of institutional data.
A growing number of universities have addressed the issue of academic costs by instituting a program prioritization process. All academic programs at an institution (and sometimes administrative programs as well) are assessed according to a standard set of metrics (typically grouped in categories such as alignment with mission, costs, outcomes, etc.). Quantitative scores on these metrics are used to rank programs, putting them into groups such as enhance, maintain, restructure, or eliminate.

The goal of the process is to reduce the resources invested in academic programs that are not as directly aligned with the institution’s mission and to reallocate those resources to higher priority programs. In practice, however, many institutions find that cutting academic programs is politically difficult and rarely generates significant short-term savings (since the majority of costs in any academic program are tenure-stream faculty who will stay even if the program is cancelled). Also, the programs most often cut are relatively small and by definition have fewer resources.

While academic programs are useful units of analysis (since they often have distinct costs and levels of demand), the actual mechanisms for reallocating resources at a university typically cut across programs. In other words, the decision facing a university is not usually whether to cancel a program, but where to allocate a new faculty line or where to cut the budget for part-time instructors. There may be greater opportunities for resource reallocation in fact within a large, vibrant program than within a small, struggling program.
Where the Savings Are

EAB analysis of institutional data indicates that most institutions have significant excess or misaligned capacity. In simplest terms, they are offering more course sections than are necessary to educate their existing students, and some faculty are teaching fewer students than they might. The analyses described in this briefing lead to a number of opportunities to reallocate resources:

1. **Reduce the number of sections offered**
   - Consolidate underfilled sections
   - Limit offerings of nonessential small courses
   - Reduce course repeats by improving pass rates
   - Reduce nonessential curricular requirements

2. **Increase the number of credit hours produced by instructors**
   - Increase the fill rates of courses (within the cap set by faculty)
   - Assess administrative course releases for necessity
   - Evaluate research course releases for impact

3. **Reduce spending on non-tenure-stream staff**
   - Reduce the number of part-time instructors
   - Share support staff across small academic units

**Outcomes and Results**

These approaches will free up resources by amounts that vary significantly by department and by institution. These resources can then be reallocated to improve performance in a number of ways:

- Accommodate mandated budget cuts without negatively impacting students
- Add sections to bottleneck courses
- Launch new academic programs
- Increase research capacity in targeted areas
- Increase support for graduate programs
- Allocate more faculty time to experiential learning or high-impact practices
Controlling for Quality

The ability to protect and enhance quality depends on being able to measure quality, yet few institutions currently have robust methods for measuring the quality implications of course sizes, teaching loads, or even curricula. While health care has developed methods for measuring and comparing outcomes (though much debate still remains), higher education still struggles to find consensus on the quality impact of different instructional approaches. In our analyses, departmentally defined standards (varying by discipline) were taken as fixed. One could also (with appropriate data) use benchmarks from peer or aspirant departments to assess the optimal level of resources required.

Of course, each of the interventions suggested above has the potential to reduce quality if taken too far. Offering the bare minimum number of sections to meet demand may prevent some students from accessing a course. Cancelling all low-enrollment courses would reduce the diversity of offerings and eliminate some unique and valuable courses. Reducing curricular requirements below some minimum level could leave students unprepared. And adding courses to some faculty’s existing load may reduce the quality of instruction. But these are not all-or-nothing calculations, and they are not meant to be administrative mandates. They use the guidelines set by faculty (maximum section size, typical pass rates, standard course loads) to preserve quality while indicating areas of high cost and low impact.

Academic leaders face trade-offs with every decision they make. Currently those trade-offs are made with little or no information about the cost implications (or frankly the quality implications) of a specific course of action. Employing the analyses in this briefing can support improved academic decision making by quantifying many of the trade-offs involved.
Academic Decision Support
The Four Barriers to Optimal Resource Allocation

While many institutions have performed some of these analyses, few if any have comprehensively addressed all areas of opportunity across all academic units. Four major barriers stand in the way:

1. **Incomplete, Inaccurate Data**
   A lack of department-level data on the cost and quality implications of resource-allocation decisions.
   Standard university data systems were designed to meet the needs of external stakeholders such as state and federal government agencies, accrediting bodies, or accounting standards. Within these systems it can be very difficult to link costs to the specific outcomes they generate, making it impossible to evaluate which investments create the most benefit for the institution.

2. **Ad Hoc Allocation Processes**
   Resource allocation processes that depend more on historical precedent and institutional politics than anticipated outcomes.
   Most institutions use a primarily incremental budget model based on the premise that each discipline should receive its “fair share” of resources. Similarly, department-level decisions are often driven more by the need to keep specific individuals happy than by a desire to reward performance or enable growth.

3. **Lack of Unit-level Incentives**
   Incentive systems that penalize departments for improving efficiency or fail to reward them for improving quality.
   Departments and individual faculty often fail to see the benefits of improved efficiency. If they use fewer resources, they know that they will receive fewer resources in the future. In many cases, they are rewarded for inefficiency because it provides them with a buffer in case cuts come in the future.

4. **Few Reallocation Options**
   Limits to reallocating highly specialized resources across departments or schools.
   Academic departments are built around unique resources (faculty experts, specialized facilities, unique technologies) that cannot easily be repurposed if they are no longer in demand. Many inefficiencies simply cannot be resolved in the short term.

While many faculty fear that such a data-informed process reduces academic decisions to rigid equations and takes power away from faculty, institutions that have pursued these approaches thoughtfully have found that they actually put faculty at the center of the decision-making process, enabling an open and honest discussion of institutional priorities and necessary trade-offs.
Addressing Faculty Concerns About Decision Support

Common objections to data-informed decision making are rooted in important concerns about potential negative consequences. Concerns include:

- Easily quantifiable metrics (enrollments, costs) will be prioritized over qualitative factors (excellence, alignment with mission)
- Small programs will be sacrificed
- Faculty will no longer play a role in academic decisions
- Decisions will be made on the basis of flawed or partial data
- Student demand will determine all programming decisions
- Quality will be sacrificed in the name of efficiency
- Tenured faculty will be replaced with lower-cost, non-tenured instructors
- Only pre-professional majors will survive
- Faculty will be forced to work harder for the same pay
- Life-changing educational experiences and transformative relationships will be reduced to utilization targets

Faculty are typically less concerned with the validity of data-informed decision making than with how it might be misused on their campus. Those are valid concerns, and it is critical to implement these approaches within a strong shared governance process. The data does not dictate the best course of action. It suggests trade-offs that must be negotiated in an environment of multiple, sometimes conflicting, objectives.

Even under ideal circumstances, however, it is important to recognize that no analytical tool on its own can resolve the enormous complexity and multiple missions of a college or university. These are decision-support tools, not decision-making tools. They rely on the judgment of academic decision makers even as they attempt to enhance that judgment by bringing clarity to the trade-offs.

Efficiency is not the ultimate goal of a university, but in a context of constrained resources, increasing efficiency is essential for sustaining and enhancing mission.
An Incremental Solution

The vast majority (70% to 90%) of the costs at any college or university are compensation costs. Ultimately, becoming more cost-effective requires reducing the number of faculty and staff supporting the current student population, increasing enrollment faster than the number of faculty and staff, or finding new, non-tuition sources of revenue. The challenge then becomes how to change the ratio of students to faculty and staff without reducing quality.

There will always be some degree of mismatch between instructional capacity and student demand given the slow change in the number of faculty compared to potentially rapid changes in program enrollment. The analyses described in this briefing can help to reduce this mismatch and ensure that resources are better aligned with demand and institutional priorities. However, there are few opportunities for large, short-term cuts. Given the relatively fixed nature of many university assets (faculty, facilities, academic programs), change will necessarily be incremental, making it even more critical to ensure that each new investment decision is assessed rigorously for its long-term impact on both cost and quality.

While it is critical that universities bring costs in line with revenues, a single-minded focus on cost savings is not likely to be productive. Continued investment is essential for meeting changing student needs, enhancing scholarship, and maximizing community impact. The goal of the approach described in this report is to help academic leaders find sources for these mission-centered investments even as external funding comes under pressure.
Learn More

This research briefing is based on a larger initiative on academic program analysis, which includes the publications listed below. To learn more about this initiative, please contact your Dedicated Advisor or visit eab.com.

› **Maximizing Space Utilization: Measuring, Allocating, and Incentivizing Efficient Use of Facilities**

This study outlines opportunities for improving utilization of classroom, research, and office space. Approaches include utilization measurement dashboards, explicit standards for space allocation and exceptions management, unit-level incentives for adhering to allocation targets, central space banks, and flexible and collaborative space designs.

› **Smart Growth: Running the Academy by the Numbers**

This report—a joint research initiative between our academic affairs and business affairs research programs—profiles smart growth strategies of top institutions that maximize their instructional capacity based on a thorough analysis of capacity, costs, and student demand at the level of academic programs and individual courses.

› **Revitalizing the Program Portfolio: Elevating Academic Program Performance and Strategic Alignment**

This report profiles how academic planning exemplars use program review as a strategic tool, integrating data on academic quality, student demand, and resource utilization to improve the economics of challenged programs and prioritize programs for investment and expansion.

› **Forthcoming Research**

In the second half of 2015, EAB will publish an extensive toolkit describing how to perform the analyses described in this report, as well as other approaches to analyzing academic program performance.

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The era of “quality at any cost” has come to an end in the face of declining state support and flattening net tuition revenues. But with the right tools, academic leaders can continue to enhance quality by reallocating resources from lower impact activities to higher impact, mission-aligned priorities.
Breaking the Trade-Off Between Cost and Quality

Sustaining Mission in an Era of Constrained Resources

A Briefing for Academic Leaders