How to Fund Higher Education

The Dreaded and Most Important Talk: Financials
-Everyone wants universities to change, but exactly how is not so clear

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TECHNOLOGY JOURNAL / NET INTEREST

Software Seeks to Breathe Life Into Corporate Training Classes

Workers Avoid Long Courses— And Long Trips

Information Technology

'Studio' Classrooms

Rensselaer uses computers to replace large lectures in introductory courses

By Thomas J. DeLoughry

Is the Cost of Higher Education Out of Control?

- Probably not.
  - Or
- It depends

- But
  - Cost IS a problem for many students.
  - Public and political perceptions are that costs are too high.
  - Costs HAVE outrun inflation in many years
    (not necessarily recently and not everywhere)

- It will take some careful analysis to make some meaningful recommendations for action.

Is the Cost of Higher Education Out of Control?

- Meaning no disrespect….
- Is "Higher Education" a meaningful term for data comparisons.
- Which of these is representative of "Higher Education?"
  - Harvard?
  - UMass?
  - Phoenix University?
  - Bowdoin College?
  - Middlesex Community College?
  - WPI: Worcester Polytechnic Institute?
  - Hampshire College?
  - Mt Holyoke?
  - Mass Maritime?
  - Etc.
- Hmmm. Perhaps we will need to sharpen this question?

The Fallacy of "Higher Education"

- Any discussion of Higher Education MUST be done in the context of the huge diversity of institutions. Making generalities on averages is futile.

- One way to create some comparable categories:
  - Public Research Universities
  - Private highly endowed research universities
  - Private highly endowed liberal arts colleges
  - Private tuition dependent liberal arts colleges.
  - Public comprehensive universities (moderate research and PhD production)
  - For-profit online universities (a dying breed being subsumed by publics)
    - Purdue (Kaplan), Arizona State U(Ashford U-Zovio), U. of Arizona (Ashford U), UMass (Chapman U.-Brandman), U. Arkansas (Phoenix U –tentative), etc.
  - Two year or Community Colleges

- The financial and educational models of these institutions are dramatically different. Quite a diversity.

Data-NCES – 2010-2021

- ## National Center for Educational Statistics
  - https://nces.ed.gov/fastfacts/display.asp?id=76

Average tuition and fees of degree-granting institutions for first-time, full-time undergraduate students, by level and control of institution: Academic years 2010–11 and 2020–21

https://nces.ed.gov/fastfacts/display.asp?id=76

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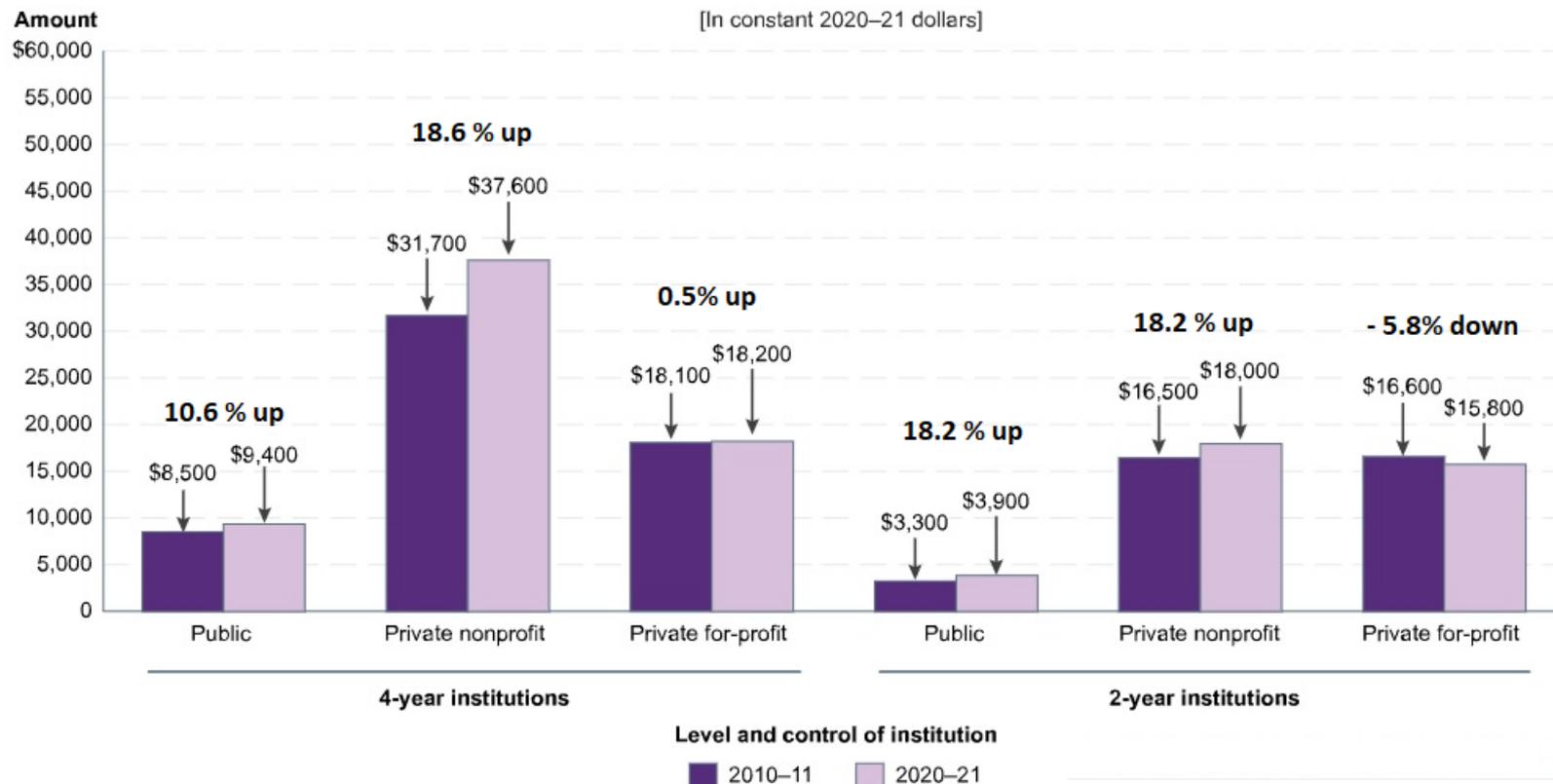
NCES -Consider the decade cost data for 4-yr institutions.

- Public Universities Up 10.6% to $9,400

- Private Universities Up 18.6% to $37,600

- Private 4-year institutions up 0.5% to $18,200

- This illustrates the silliness of the generalization of "higher education," and looking at the 2-yr institution data makes the issue even more clear.

- Next imagine the range of institutions within these classifications!
  - Public 4yr would include UCLA, Michigan, Fitchburg State, and St Mary's College Maryland!
  - Private 4yr would include Harvard, Stanford, Endicott, and Hillsdale

- Look them up. Some of these things are not like the others.

- There is a huge diversity in cost, mission, size, and everything else.

- Answering the question of costs being too high requires a more detailed analysis.

Many will survive, but not all

- There is no such thing at an "average" institution
  - They are highly diverse
- Highly endowed universities have the least to fear.
- Other universities are turning to entrepreneurial behavior to diversify their revenue streams in order to fund the mission.
- Tuition dependent universities are struggling to attract students
- The pandemic left many with decreased revenues and declining enrollments.
- Online education is increasingly an important source of alternative revenue.
  - The pandemic forced institutions into more online learning. Those more experienced institutions and faculty members often did it very well. The less experienced universities and faculty members struggled, and students suffered.

- **The path to economic and social development in the world goes through our world class universities.**

  o Public Universities and Research Universities have the highest impact on the Economic and Social Development of regions.

  o Just a fact. Small institutions also have a huge role.

    – Disclosure: I graduated from a small liberal arts college.

The need is clear, but the support is not there

- Most states have been through a period of disinvestment in higher education that began in 2008 and has only begun to flatten recently.

- Even over the longer term, the relative share of the cost of education that is born by the state has declined.

- California has perhaps been the most watched, since it HAD been the exemplar of public support in the past.

  o My bad joke at a national conference:

  "At UMass we always wished we were more like California with their terrific support from the state."
  "Well we got our wish to become more like California, but not the way we wished."

  Audible groans came from the crowd –particularly those from California

States Have Cut Higher Education Funding Deeply in Recent Years

Percent change in state spending per student, inflation adjusted, FY08 – FY13

Percent change	State
-50.4%	Arizona
-49.9%	New Hampshire
-43.6%	Oregon
-42%	Louisiana
-41.2%	Florida
-39.8%	Alabama
-39.6%	Idaho
-38.8%	South Carolina
-37.5%	Washington
-37.4%	Massachusetts
-36.7%	New Mexico
-32.4%	Mississippi
-32.4%	Michigan
-32.3%	Colorado
-31.2%	Nevada
-30.6%	Utah
-30.4%	Minnesota
-30.1%	Tennessee
-29.9%	Pennsylvania
-29.7%	Missouri
-29.5%	Georgia
-29.3%	California
-28.9%	Ohio
-27.8%	Virginia
-27.7%	Iowa
-27.2%	New Jersey
-26.3%	Kentucky
-26.2%	Oklahoma
-25.3%	Hawaii
-25%	Delaware
-24.8%	Rhode Island
-24.5%	Kansas
-23.3%	Illinois
-23.1%	Connecticut
-22.7%	Texas
-22.1%	South Dakota
-18.9%	Arkansas
-18.6%	Vermont
-18.3%	Maryland
-17.8%	West Virginia
-17.5%	Wisconsin
-17.3%	Montana
-17.2%	Indiana
-16.6%	Nebraska
-15.7%	Maine
-14.7%	New York
-14.6%	North Carolina
-3.2%	Alaska
7.5%	Wyoming
16.5%	North Dakota

Source: CBPP calculations using data from Illinois State University's annual Grapevine Report. Illinois data is provided by the Fiscal Policy Center at Voices for Illinois Children. Because enrollment data is only available through the 2012 school year, the enrollment data for 2013 used in these calculations is estimated based on enrollment trends from past years.

Center on Budget and Policy Priorities | cbpp.org

- Median Cuts were 27.7%
- Press reports like to focus on two numbers for effect:
  - The high posted price of privates
    - Which are often deeply discounted
  - The large percentage increases of publics
    - Which are applied to much lower costs and driven by state cuts.
    - Actual cost increases are only 1.2% over many years.

ROI: Return on Investment

- Increasingly colleges are being ranked on value or return on investment. Payscale.com is the most quoted example.

  o http://www.payscale.com/college-roi/full-list

  o This rewards institutions that graduate students who get higher salaries and penalizes those schools with the highest net tuition.

- This is quite a change from the time when higher education was seen as being price insensitive. (Price signaling)

- Selected Examples: MIT – 8.2%, Stanford-7.8%, Harvard-7.2%, Georgia Tech.-11.9%, Columbia University-6.8%, UMass Lowell-9.8%, Tufts University 6.3%, Boston College-6.1%, UMass Amherst 8.5%, USC-5.2%, Northeastern University- 5.3%

ROI- For a prospective student from MA (2015 Article)

Return On Investment (http://www.payscale.com/college-roi/full-list)
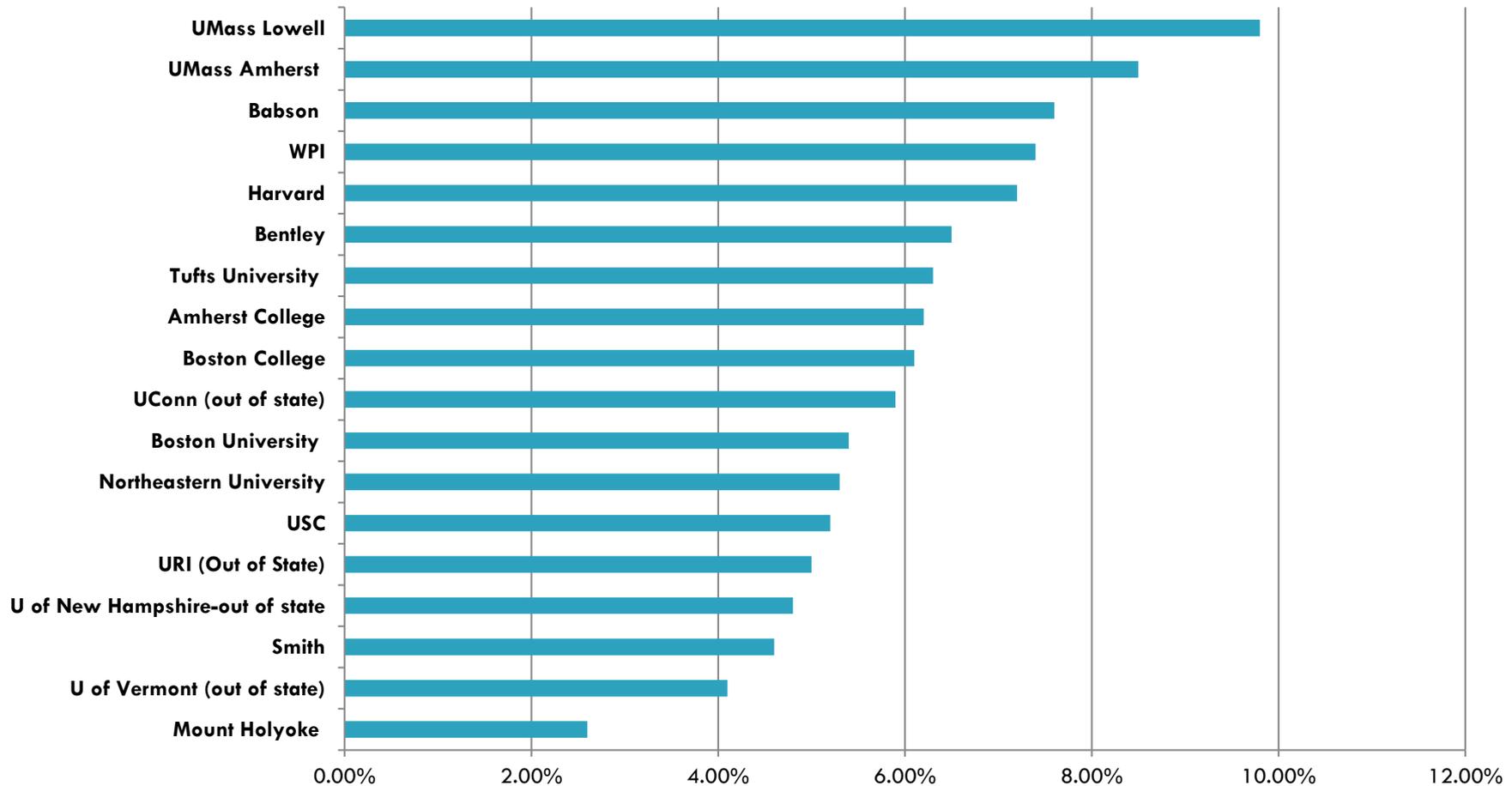
And then there was the pandemic

- The pandemic blew up the business models of pretty much every university except those that were highly endowed.

- Stimulus money insulated many of the institutions until this year.

- Enrollments declined precipitously and have not recovered in many institutions.
  - For the tuition dependent this may prove to be fatal.

- Online education became imperative for most institutions –including those that had ignored it in the past.
  - Good news: The institutions are learning to adapt
  - Bad news: Many of the adaptations were incredibly inept.
  - Good news: Online ed is more available to students
  - Bad news: students are demanding online access rather than being forced back onto campus as many institutions would like.

The Dreaded and Most Important Talk: Financials

- It is the **mission** that drives most faculty and administrators, and they are often uncomfortable with discussions of how exactly do we fund the mission?

- But if there is **no margin**, then there will be **no mission**.

  o How can a Higher Ed institution raise the revenues that they need to execute the mission? Why do some fail? Many administrators of higher education institutions are not excited about financials, and often not comfortable with numbers.

  o In this session we will take a deeper look into this crucial yet neglected and unsettling topic, in order to untie any knots to thrive as a sustainable institution.

  o There are no "one size fits all" solutions.

- The worst part is that both the margin and the mission of many universities are under attack.

Universities face political as well as financial challenges

- Politicians are complicating things further by exerting their power over both public and private universities.

- Florida has passed several regulations that affect what and how both public and private universities can teach.

- Florida replaced the Board of a unique public small liberal arts school, fired the leadership, and vowed to transform this liberal arts school into a college modeled on Hillsdale College, a small Christian conservative school that refuses to accept government funding.

- The U of North Carolina Trustees voted to create the "**School of Civic Life and Leadership**" over university objections and without university involvement in the planning.

  o A Wall Street Journal editorial published within hours of the vote cast the proposed school as a counter to academia's echo chamber. Fox News called it "a rare win for free speech," as the chairman of the university's board of trustees said on the program that while there's no shortage of left-of-center faculty members at UNC, the same can't be said of right-leaning professors. "This is an effort to try to remedy that," chairman David Boliek said, and allow "for both views to be taught at the university."

    – https://www.washingtonpost.com/education/2023/02/01/unc-school-civic-life-leadership-sparks-debate/

Strategies for the Future -Challenges

- Challenges:
  - Public disinvestment
  - Curtailed growth in research funding
  - End of growth in potential students
  - Demand for online access to education
  - Perception that higher education cost too much.
  - Reality that higher education costs have risen faster than anything except healthcare.
  - Increasing political interference in all universities, but particularly in public universities.

Strategies for the Future

- Universities must become more entrepreneurial
  - Find new sources of revenue
    - Online education, fund raising, international students, enrollment growth, joint programs with industry, etc
  - Constrain expense growth
    - Online education, blended learning,
    - Course redesign ala NCAT, etc.
      - Pew Charitable Trusts $8.8 Million (Twigg Wilson) for course redesign to improve Quality, Access, and **COST**
    - Faculty and Political Leaders both see administrative costs as out of control! ☺
  - Commercialization of Intellectual property at Research Universities
    - NSF I-corps Program
    - Patents and Licensing (UMass is consistently in the top 15 in the US)
    - River Hawk Venture Fund

But far too many are in denial

- While change has actually been rather large scale in online education, the conventional wisdom is that there has been little change.

- It is also probably accurate to say that even the large scale changes have not penetrated the culture of higher education nearly as much as necessary.

- There is no shortage of contrarian voices that decry even those changes that HAVE occurred.

- **The disparity is creating a vacuum into which politics is inevitably drawn.**

Higher Education costs too much?

- This widely held political position is most notable for the lack of understanding of why this might be –if indeed it really is!

- Nonetheless- we should buckle our seatbelts for a ride to drive down the cost of higher education -and many of the "well meaning" efforts will be far more damaging than helpful. Some will be downright foolish
    - like government attempts in Florida and Texas to mandate $10,000 bachelor's degrees –based upon political rather than academic considerations.
    - "New University of California," an institution with no faculty and no tuition

- As state support for higher education has been withdrawn, it is partially replaced by financial burdens on students.
    - "*Our public higher education institutions have faced the dual challenge in recent years of falling state appropriations and large increases in student enrollment*," APLU President Peter McPherson
    - "*These factors have caused a substantial increase in tuition, even though public schools have kept their education cost per student to an average of just 1.2 percent above the rate of inflation for many years*,"

The $10,000 degree?

- **FL Gov. Scott (2012) challenges community colleges to offer $10,000 degrees**
  - As more and more students struggle with college affordability, Florida is planning to offer a $10,000 bachelor's degree (Miami Herald –Nov 26, 2012)

- **23 Florida Colleges Accept Governor's $10,000 Degree Challenge**
  - All 23 institutions in the Florida College system that offer bachelor's degrees have accepted a challenge from Gov. Rick Scott to create degree programs that will cost no more than $10,000 in tuition over four years, the governor announced on Monday. (Chronicle Jan. 28 2013)

- **Texas Could Offer a Stripped-Down Degree for Just $10,000, Commissioner Says (Chronicle Apr 27, 2000)**

- **$10,000 Bachelor's Degree Is Proposed in California Legislation**
  - Assemblyman Dan Logue, a Republican, has introduced a bill to create a pilot program for students to earn a bachelor's degree at a cost of no more than $10,000. (Chronicle Jan 3, 2013)

Attacks on "Administrative Bloat" or "Student Frills."

- True that administrative costs have increased as a percentage of total.

- This appeals to both the faculty and politicians. Faculty decry the rise in the number of assistant and associate Deans etc. Politicians are increasingly going after DEI investments.

- FL Governor Ron DeSantis has ordered all Florida universities to report everything they spend on DEI. He has also begun to limit this spending with both legislation and executive orders.

- It is also the case that universities are spending more on students services of all kind including recreational facilities, dining halls, and other things that the public likes to call "frills."

- Others complain that technology has not enhanced productivity as it has for so many other areas of the economy.
  - Ex: Clayton Christensen – "Disrupting Class"

What about "Free College"

- This appeals viscerally to me and many others in higher education.

- Once you study that, it presents some significant challenges and may not be the panacea we would love.

- The cost is staggeringly high.

- Controlling the cost might mean means testing.

- Most focus on free two year college.

- Equity: Perpetuates a divide based upon economics.

  - High priced privates, especially the tuition dependent, need to recruit students who can pay high tuitions in order to survive.

- Equity: Resources available to the institution. Rich places-poor places.

- Survival: High priced tuition dependent privates will find it difficult.

- UMass was already meeting most of the FAFSA determined financial aid for over half of the students.

- Compare two scenarios if the University was given say $10 million.

  o Either reduce the tuition by $10 M or use the $ 10 M as financial aid

- Who get the money in those cases?

- Uh oh! A spreadsheet quickly shows that reducing tuition sends the money to the wealthiest students.   Using it for financial aid sends it to those with the most unmet need.

UMASS AMHERST - IN-STATE UNDERGRADS. WHO FILLED OUT A FAFSA AND RECEIVED NEED-BASED AID - FY2009 EST

UMA - FY2009 EST. FY2009 EST.	A AVG. INCOME OF RECIPIENTS	B AVG. EXPECTED FAMILY CONTRIBUTION (EFC)	C = (B / A) EFC AS A % OF AVG. INCOME	D AVG. UNMET NEED	E = (B + D) AVG. EFC + AVG. UNMET NEED	F = (E / A) AVG. EFC + AVG. UNMET NEED AS A % OF AVG. INCOME	G AVG. LOAN AWARDS FOR AID RECIPIENTS
Less than $30,000	$14,984	$772	5%	$932	$1,704	11%	$4,344
$30,000 - $40,000	$35,117	$1,933	6%	$827	$2,760	8%	$4,210
$40,001 - $50,000	$45,020	$3,113	7%	$869	$3,982	9%	$4,183
$50,001 - $75,000	$62,005	$6,396	10%	$1,391	$7,787	13%	$4,614
$75,001 - $100,000	$86,160	$11,382	13%	$1,136	$12,518	15%	$4,135
Greater than $100,000	$125,344	$14,219	11%	$789	$15,008	12%	$3,631

The Reality of Online Education transcends

- If one reads the traditional press coverage of online education it is dominated by either
  - Skepticism
    - Can students learn?
    - Cheating
    - etc
  - Hype
    - MOOCs will change the world and make higher education obsolete
    - The hyper prestigious universities drive the change
- **Not!**
- So what is the reality and the future?
  - Let's look at the past……………

Relentless growth nationally 2002-2012

Sloan-C- Growth in Online Fall Enrollments
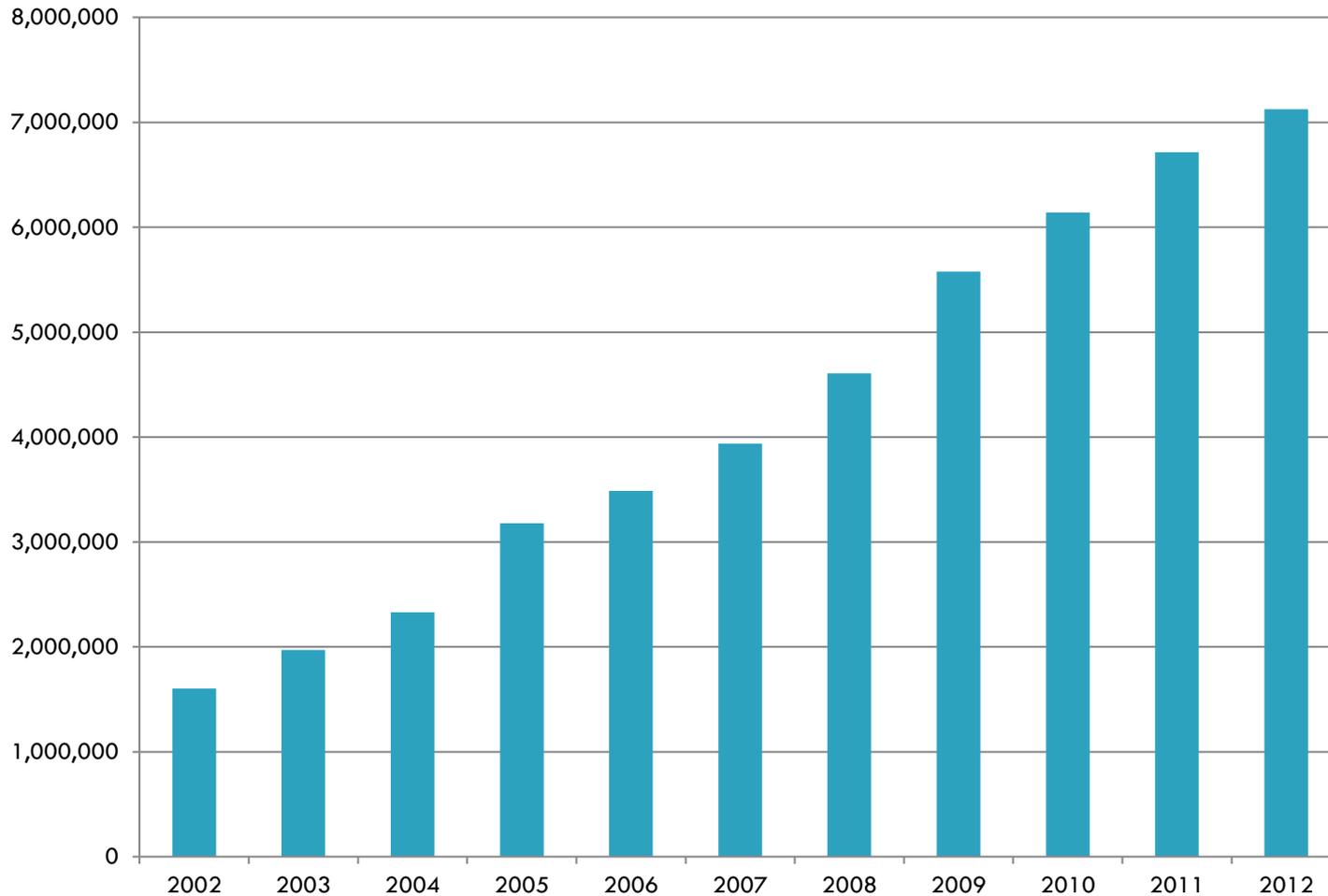
Why do Universities do Online?

- To serve under-served populations
- To allow growth in enrollment without expensive capital outlays for facilities.
  - University of Central Florida Strategy and others.
- To gain revenue to cross subsidize more expensive programs
  - Not new in higher ed. Average cost is reduced by using revenues from low cost portions of the program to support high cost areas.
    - Management <-> engineering
    - Introductory courses <-> advanced courses
    - Online courses <-> face-to-face
- And… to survive the pandemic.
  - And now students are demanding more

UMassOnline Growth 2001-2012

Revenue ($ Millions)
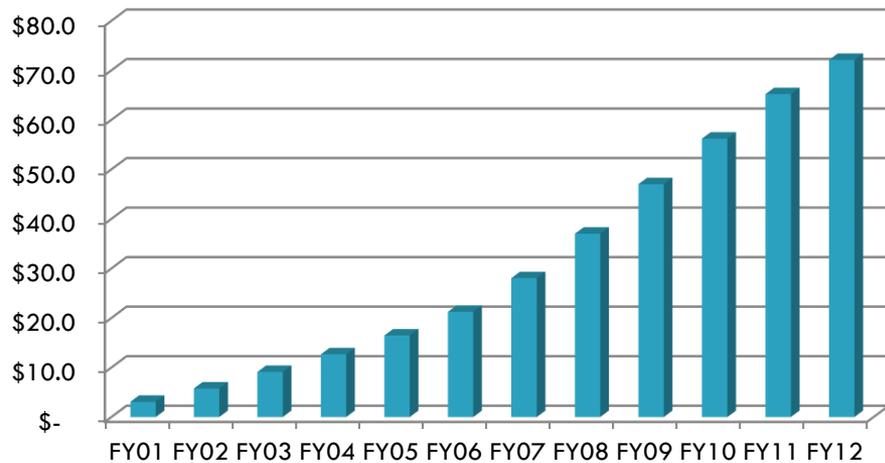
Enrollment
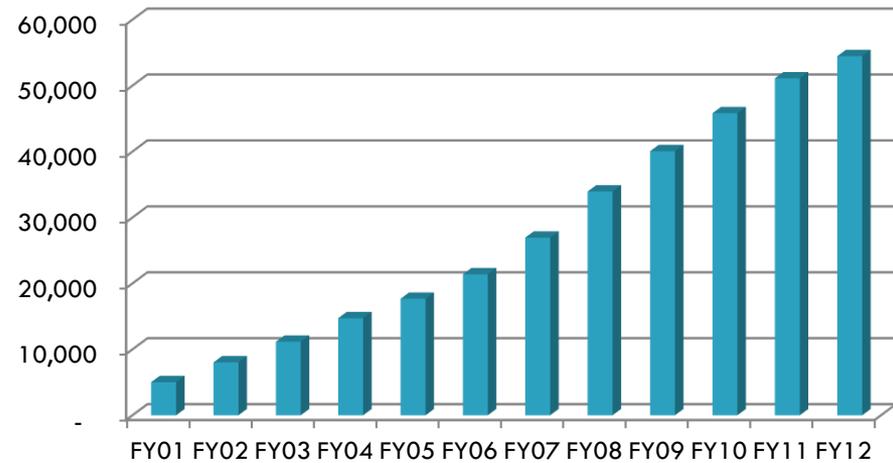
Revenue is generating
nearly 60% net margins

A Relentless Force that Will **Not** Be Denied

Hype

Online Education

Luddites

End of the Ivory Tower?

- http://www.jackmwilson.com/ArticlesTalks/WillTheIvoryTowerSurvive.pdf

Will the Ivory Tower Survive the Electronic Village?
EDUCOM Review, Vol. 32, No. 2, pp. 12-16, March/April 1997
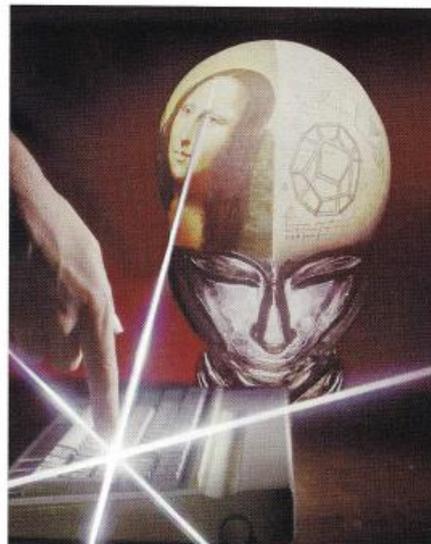
Will the Ivory Tower Survive the Electronic Village?

They say that it is harder to change a university than it is to move a cemetery, and there is over two centuries of evidence to back up that assertion. Recently, at a gathering of corporate and university leaders, a Fortune 500 CEO tweaked the assembled presidents about their reluctance to change. One of the presidents retorted that "our stability means that there was a university long before your company existed and will be a university long after your company is gone." Who is right? Will the advent of ubiquitous access to learning and communication technologies change the university? Will it replace the university? Or, will the World Wide Web just be another technology that changes the way we work and live while having negligible impact on higher education? After all, television came and went with only minor effect. The automobile changed our living, working and dating patterns but had almost no effect on our learning patterns.

The bets are being placed now. New approaches to universities, like the University of Phoenix, the Mind Extension University, and now the Western Governors University, aim to change the status quo, with profit the motivating factor behind the first two, and taxpayer savings the motive for the last. Existing universities are not going to throw in the towel without a fight. Notable examples of univers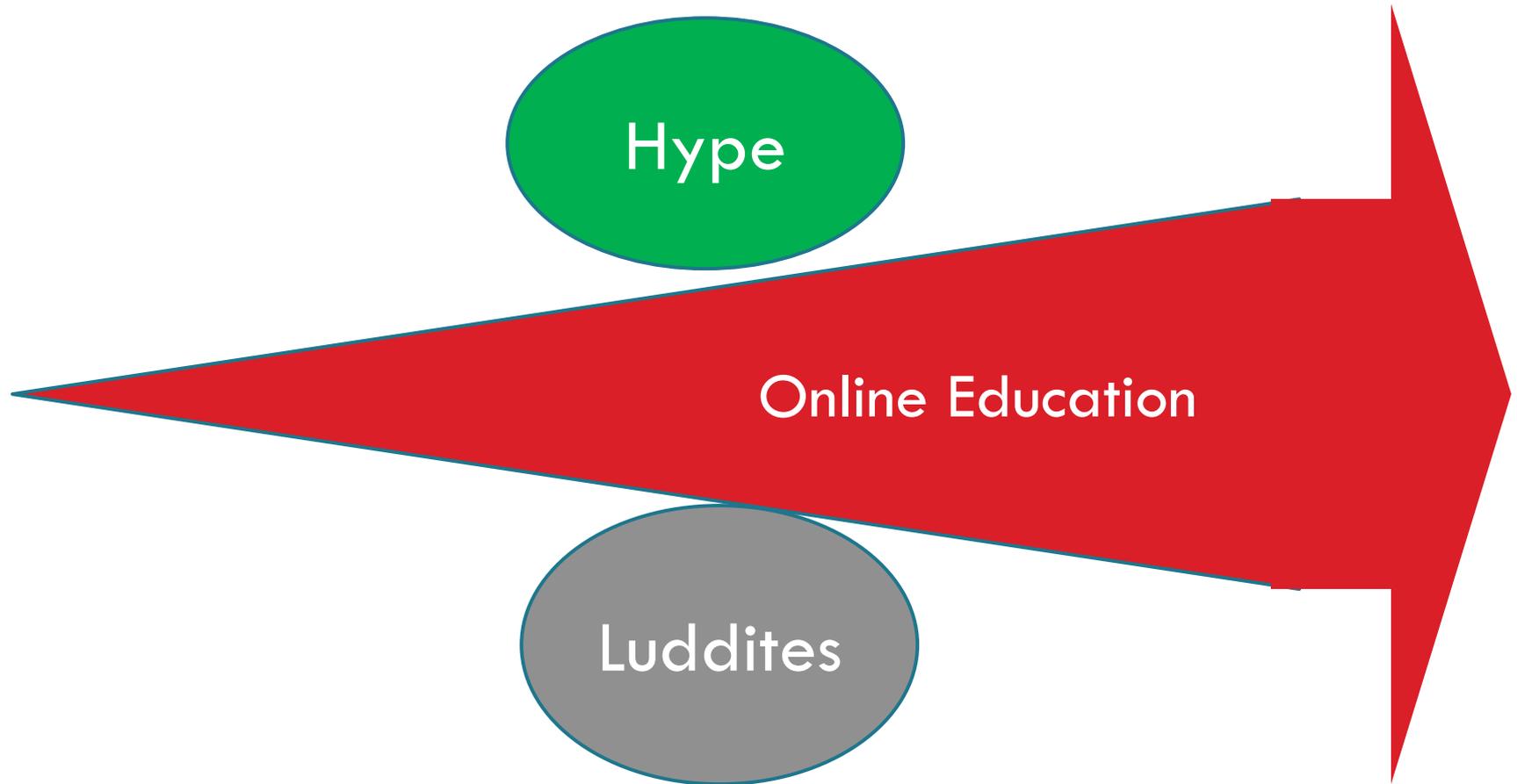ities that have responded include the University of Maine System, which created the first public virtual university from the Augusta Campus; the use of interactive networked multimedia studio courses to replace the large enrollment lectures (and many other courses) at Rensselaer Polytechnic Institute; the Kent State University project that teaches classes statewide live over the network using desktop videoconferencing coupled with collaborative software sharing, and the introduction of asynchronous educational methods at a variety of campuses under the sponsorship of the Sloan Foundation.

Apart from the usual value of sending away 18-year-olds to allow them to grow socially while allowing their parents some relief, universities have much to offer the new learning environments. The oft-expressed fears that the one great teacher of economics, psychology or physics will teach all the classes in the respective discipline or that a Web site could somehow replace an educated professor, profoundly misunderstands the way people learn. Learning is about a "conversation" amidst resources. Distributed cognition on the World Wide Web will provide unprecedented access to resources on a network where every student and every instructor is an important resource. I'm betting that universities will change, and we already are seeing the results. If the last few decades have been marked by universities all trying to hew to the same mold of the comprehensive research university, the next few will see a remarkable differentiation based upon the core strengths of each. It may be the end of "teaching," but it is far from the end of learning at the university.

— J.M.W.

Chronicle of Higher Ed.
Survey KPMG - 9/17/2014

- Eighty-five percent of those surveyed said they were very or somewhat concerned about **maintaining enrollment** at their institution. That figure is 14 points higher than it was in last year's survey and 19 points higher than in the 2012 results.

- A major factor that could drive down enrollment is an **inability to pay tuition**, according to two-thirds of the survey's respondents; it's competition from other institutions, said half.

- Eighty percent of those surveyed said their college would probably increase or maintain the size of its faculty. Only 13 percent said the institution planned to cut full-time faculty members and increase its number of adjuncts.

- In response to cuts in state and federal money for higher education, 44 percent of the respondents said their college had raised tuition or planned to do so. Forty-three percent said their college would **offer more online cou**rses as a antidote to declining public support.

  - http://chronicle.com/blogs/ticker/higher-ed-leaders-worry-most-about-declining-enrollment-survey-finds/86223?cid=pm&utm_source=pm&utm_medium=en

- That was over eight years ago and it has only become more difficult.

  - https://nscresearchcenter.org/publications/ (2023)

Jeff Seaman, Babson University Survey in 2021

- No. 1. Leaders at **community colleges are far more worried about future enrollments** (97 percent) than those at public or private four-year colleges (around 80 percent). While I know enrollments are down now at two-year colleges, that surprised me a little because those institutions aren't as reliant on traditional-age students, and so seemingly wouldn't be as affected by the coming drop in 18-to-24-year-olds, the notorious demographic cliff. But as Seaman noted, demographics are just one of the blows coming at higher ed. The other — the pandemic — already landed, and it affected students unevenly. Those at, or likely to attend, community colleges were hardest hit. Community colleges also don't have the option of using new master's-degree programs to bolster enrollment, which some of the four-year institutions may be counting on.

- No. 2. **Two-year and four-year public colleges show the most interest in adding online and hybrid courses**, but more than half of leaders from private institutions say they too are adding them. While it's hard to know how deep these changes go — some colleges might be adding just a few courses, but others, maybe dozens of full degree programs — Seaman said colleges can't ignore students' continuing interest in these more-flexible options. The thinking is, "If any reasonable fraction of my student body wants this, I have to do it," he said. This trend began years before the pandemic. In 2017 I reported on findings from Bay View (then called Babson Survey Research Group) that showed overall college enrollment falling but online enrollment growing. Now online, along with hybrid, is accelerating.

- No. 3. The interest in offering **new microcredential options is, unsurprisingly, greatest at two-year colleges** (76 percent are either offering them now or plan to). But four-year institutions are showing a lot of interest too. Currently only about 11 percent of four-year private colleges offer microcredentials, but the survey shows an additional 38 percent said they planned to. "For a lot of institutions," Seaman said, "this is a whole mind-set change."

- No. 4. It's nice to see more colleges turning their attention to **recruiting students who previously stopped out**. (There's nothing like a worldwide pandemic and looming demographic cliff to focus the mind.) But I also hope colleges realize that this isn't as easy as it might appear. Yes, there are now 39-million adults with some college and no degree, but as I've reported often (most recently, here) it takes a lot of effort and intention to succeed. For one, in the current economy, returning to college now might not even be a good choice for some students. And, as Seaman noted of those prospects: "Most of them stopped out for real good reasons that have not gone away."

- No 5. Among other strategies colleges are using or planning to use, I was struck that so many **community colleges are looking to work with alumni to improve their outreach**. That surprised me because historically, those institutions on the whole haven't had the resources to assiduously stay in touch with their graduates. But maybe that's changing, and as Seaman said, at the very least, "a lot of them have a lot of alumni." I was also surprised to see relatively less interest from colleges in working with enrollment-management firms — even among private four-year colleges that now rely upon them the most. But as Seaman noted, along with concerns about the costs of those services, many of those strategies take time to play out. And for many institutions, time is not on their side.

- - https://www.chronicle.com/newsletter/the-edge/2022-12-07   Jeff Seaman Babson Survey Research

- https://www.bayviewanalytics.com/reports/pulse/dealing_with_declining_enrollments.pdf

Online as part of an entrepreneurial financial strategy

- Some traditional universities (UMass, Penn State, Maryland, etc) have been quite successful in building online education as a revenue source.

- Proprietary Universities have exploited online education and seen huge growth in revenues –until recently.
  - o Concerns about the use of federal financial aid and the lack of success of students at the proprietary universities have caused a retrenchment.
  - o They have shrunk dramatically and many have sought out refuge by selling themselves to large public universities.

- Prestigious private universities, who largely sat out the dramatic growth of online education have tried (largely unsuccessfully)to jump back in with the creation of MOOCs.
  - o MITx, edX, Coursera, Udacity, etc

President Obama's Goal

- To be first the world by 2020 in the proportion of college graduates.
    - -Address to Congress on Feb. 24, 2009.

- The US was tied for 6th place at 30% according to 2006 data.

The Paradox

- Universities are facing extraordinary financial pressures due to a collapse of state revenue and endowments

- Everyone is looking to universities to prevent economic decline and stimulate economic growth.

- We are creating futures for students and communities

- And solving social challenges like
  - improving college readiness
  - Reducing disparities (racial, economic, gender, etc.)
  - Increasing graduation rates
  - Attracting students into fields that need more people
    - Nursing, STEM, and others
  - Better matching workforce needs

Unprecedented Challenge

- Higher Education Institutions are facing unprecedented challenges.
  - States are disinvesting in public higher education
  - Costs, particularly at the private institutions, are becoming unaffordable for many students.
  - Student loans, which have been used to fill the gap, have become unwieldy
    - ($ 1 trillion in debt –average about $24K)
  - The number of traditional college age students is declining.
  - Value calculations such as those done by Payscale.com are becoming common in the college selection process.
    - Creating a kind of price resistance –which is a fairly new phenomena

Thank you.

- Jack M. Wilson
  - President Emeritus and Distinguished Professor of Higher Education, Emerging Technologies, and Innovation.
  - www.jackmwilson.com

Other information.

- Further Reference and Concepts Follow as a kind of appendix

FIPSE: Fund for the Improvement of Post-Secondary Education.

- FIPSE is a unit of the Higher Education Programs within the Office of Postsecondary Education, U.S. Department of Education. FIPSE's mandate is to "improve postsecondary educational opportunities" across a broad range of concerns. Through its various grant competitions, FIPSE seeks to support the implementation of innovative educational reform ideas, to evaluate how well they work, and to share the findings with the larger education community.

- Applicants for FIPSE competitions include a wide variety of nonprofit agencies and institutions offering education after high school, such as colleges and universities (public and private, two- and four-year, undergraduate and graduate), technical and business schools, testing agencies, professional associations, employers and unions, state and local education agencies, student organizations, cultural institutions, and community groups. FIPSE supports new as well as established organizations, but it cannot award grants to unaffiliated individuals or for-profits. Like all federal agencies, FIPSE's ability to run competitions each year is determined by congressional appropriations and program priorities that are set by Congress or the Department of Education.

- FIPSE conducts a number of competitive grant competitions each year. Each competition is announced in the Federal Register and typically, on the same day, the guidelines and application materials are separately made available online. The entire application process and subsequent management of grants is electronic. For a detailed explanation of each competition, it is important to read the respective grant application package carefully.

President Obama appointed me as the Chair of the FIPSE Board

- National Board of the Fund for the Improvement of Postsecondary Education
  - Dr. Jack Wilson (FIPSE Board Chair) President Emeritus, University of Massachusetts
  - Mr. Francisco Aguilar, Corporate & Comm. Counsel, Andre Agassi Foundation for Education
  - Mr. Raimundo Krishna Esteva, Student Member, Massachusetts Institute of Technology,
  - Dr. Bill Graves, Senior Vice President for Academic Strategy, SunGard Higher Education
  - Dr. Annie Ruth Leslie, Bowie State University
  - Ms. Gayle Conelly Manchin, President-Elect; National State Boards of Education (NASBE)
  - Mr. Jose D. Padilla, Vice President & General Counsel; DePaul University
  - Dr. Camille Preus, Commissioner, Dept of Community Colleges & Workforce Dev. (CCWD)
  - Ms. Deborah Santiago, Vice President of Policy and Research, Excelencia in Education
  - Mr. Louis Soares, Director, Center for American Progress
  - Mr. Carl Takamura, Accrediting Commission for Schools/Western Association of Schools and Colleges (WASC)
  - Dr. Paula Whetsel-Ribeau, Howard University
  - Dr. Tony Zeiss, President, Central Piedmont Community College
    - https://www2.ed.gov/about/bdscomm/list/nbfipe.html

High Aspirations-Political Obstacles

- President Obama State of the Union 2011

- *Maintaining our leadership in research and technology is crucial to America's success. But if we want to win the future – if we want innovation to produce jobs in America and not overseas – then we also have to win the race to educate our kids.*

- *Think about it. Over the next ten years, nearly half of all new jobs will require education that goes beyond a high school degree. And yet, as many as a quarter of our students aren't even finishing high school. The quality of our math and science education lags behind many other nations. America has fallen to 9th in the proportion of young people with a college degree. And so the question is whether all of us – as citizens, and as parents – are willing to do what's necessary to give every child a chance to succeed.*

  - https://obamawhitehouse.archives.gov/the-press-office/2011/01/25/remarks-president-barack-obama-state-union-address-prepared-delivery

- But Congress was divided and did not fund any of the requested programs.

How can we do this?

- The **only way we can possibly approach these goals** is through a much more intense focus on professional education, continuing education, online learning and technology enhanced learning – from MOOCs to flipped classrooms..

- Otherwise we do not have the traditional capacity to meet the increased needs for both quality AND quantity.
  - Need to deliver educational experiences to K-12 that are not presently uniformly available.
  - Improve success, retention, persistence, and graduation rates through higher quality learning experiences.
  - Reach students unable to participate in traditional learning settings for a variety of reasons.

- Are we ready?

Universities began to try to go do this on their own.

- Research in the cognitive sciences showed that students were not learning as well as they should be in classes with an over reliance on lectures.

- It became apparent that the key to learning was engagement. This required discussion , dialog, hands-on activities, group activities and other well validated techniques

- But this is expensive!

- Or is it?

Quality-Access-Cost

- Some of us began to develop alternatives to the large lecture classes.

- The goal was to
  - improve quality,
  - Increase access, and
  - reduce cost.

- The first two were universal aspirations. The third was quite controversial.

- The Chronicle highlighted the work at RPI in which large lectures of 500 or more students were replaced by Studio Classrooms of 40-50 students engaged in hands on activities.

March 31, 1995 • The Chronicle of Higher Education • A19

Information Technology

On Line

Three governors who champion the use of technology in education practiced what they preach last week. They used audio and video signals delivered by satellite and telephone lines to talk with more than 200 distance-learning professionals meeting near Washington.

Technology makes available to rural parts of Iowa and other states "the best educational opportunities in the world," said Iowa Gov. Terry Branstad, a Republican.

Iowa has invested $170-million to create a statewide fiber-optic network. Rural schools can receive advanced courses from other schools or colleges over the network.

Frank Keating, the new Governor of Oklahoma, said his state was using technology so that students in farm communities can receive the same education as those in cities.

"Admissions officers don't care if they come from a town of a hundred or a town of one million," said Mr. Keating, a Republican.

Vermont's Gov. Howard Dean, a Democrat in another rural state, said he was advocating more state spending on technology because it provides opportunity and can ultimately save money.

"Without it we will surely fail in our mission to control costs in education," he said.

The National Science Foundation has given the Los Alamos National Laboratory $1-million to expand an electronic collection of scientific abstracts.

Originally developed in 1991 as a repository for research on high-energy physics, the system now contains abstracts of papers on physics, mathematics, and economics.

The three-year N.S.F. grant is intended to expand the data base to cover all areas of physics and other fields in which users express interest. The money will also help Los Alamos improve the system by providing direct links to citations, images, data, and a system that allows for feedback from readers.

The archive is available on the Internet to users who have Mosaic, Netscape, or another World-Wide Web program. The Uniform Resource Locator is: http://xxx.lanl.gov.

A new survey indicates that tomorrow's college students are not likely to have much experience with information technology by the time they arrive on campuses.

The survey, by the American Electronics Association's National Information Infrastructure Task Force, found that just 59 per cent of teachers surveyed said they had access to multimedia computers, 29 per cent had networked computers, and 20 per cent had an Internet connection.

Eighty-five per cent of school librarians had multimedia computers and half had Internet accounts.
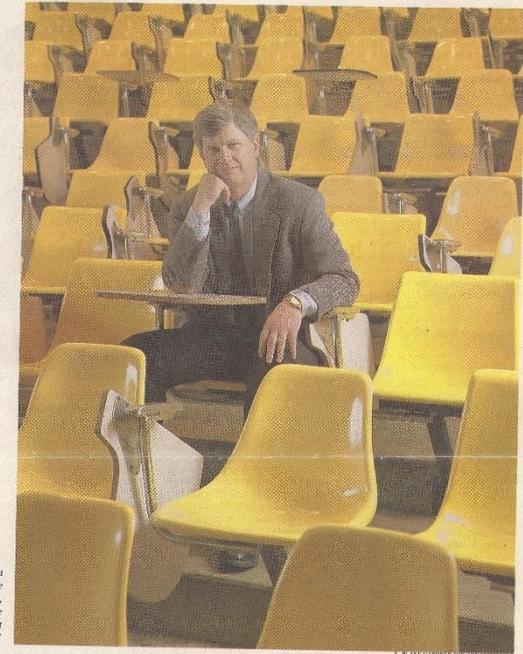
Jack M. Wilson: "If we can identify savings, then we're glad to have them, especially if that means we can do some of the things that we want to do."

'Studio' Classrooms

Rensselaer uses computers to replace large lectures in introductory courses

By Thomas J. DeLoughry

TROY, N.Y.

JACK M. WILSON makes an unscheduled stop as he crosses the campus of Rensselaer Polytechnic Institute. He wants to demonstrate the wrong way to use computers in the classroom.

He ducks into the rear of a half-empty lecture hall, where an unsuspecting professor stands next to a computer at the front of the room. Images flash on the screen above the instructor while reclining students glance upward, some scribbling notes.

This, Mr. Wilson says, is "the horseless-carriage model." Rensselaer, like many other universities, has added new technology to old teaching methods without thinking about how things could be done differently.

The next stop is what Mr. Wilson wants to show off: Pairs of students working in front of computer screens, engaged in what they are doing, participating in a class of about 50 that enables them to discuss ideas with the whole group or with instructors roaming around the room.

Introductory physics is now taught this way here, as are some calculus, biology, and engineering classes. Introductory chemistry is expected to adopt these methods in the fall of 1996.

HIGH RATINGS FROM STUDENTS

Students give the new "studio" classes higher approval ratings than they gave traditional lectures in the past. Professors say the new methods have caused them to think more about their teaching. They are delighted to hear students ask questions that are more thoughtful than any asked in lectures.

If student and faculty satisfaction were not reason enough to support widespread use of the studio methods, officials here offer another: The smaller, computer-assisted classes cost the institute less than traditional courses that feature large lectures, discussion groups, and laboratory sessions.

Across higher education, all of those attributes have helped to attract the attention of administrators and faculty members who are hungry to find ways to improve instruction and use technology more productively, without drastically increasing costs.

More than 60 visitors have been here in the last two years to see the studio classes firsthand. The College of St. Catherine and Dickinson College have similar programs, California Polytechnic State University at San Luis Obispo is testing the idea, and the

Pew Charitable Trust Gives $8.8 M to help replicate.

- Founded by Carol Twigg and Jack Wilson in 1999, this brought Twigg to RPI where Wilson was serving as Provost and had founded the Anderson Center for Innovation in Undergraduate Education. Together they approached the Pew Charitable Trusts to convince them to support an effort to get other universities to focus on *Quality, Access and Cost*!

- The Pew Charitable Trusts provided initial funding of $8.8 million. Later funding came from the Gates Foundation the Dept of Ed. FIPSE program, and other Foundations.

- NCAT Website (https://www.thencat.org/NCATHistory.html) :

- *NCAT was committed to providing the expertise necessary to help higher education institutions achieve their student access, success and retention goals while reducing their instructional costs. Through constant testing and refinement of its course redesign methodology and by working with a diverse group of public and private colleges, universities and community colleges, NCAT demonstrated that all post-secondary institutions are capable of achieving improved outcomes at a reduced cost. NCAT has been internationally recognized for translating its vision for achieving improved learning outcomes at a reduced cost into a proven track record of success.*

- *Altogether, NCAT worked with more than 200 institutions to demonstrate that it is possible to improve quality while reducing costs in higher education. A total of 195 redesign projects were initiated, 80% of which were completed. These redesigns impact about 250,000 students annually and serve as models for higher education in the United States and elsewhere.*

- *Of the 156 completed projects, 72% improved student learning outcomes; 28% showed equivalent student learning. Overall, these redesigns reduced their instructional costs by 34% on average, ranging from 5% to 81%. Other positive outcomes included increased course-completion rates, improved retention, better student attitudes toward the subject matter and increased student and faculty satisfaction with the new mode of instruction.*

The National Center for Academic Transformation

Experts in improving learning and reducing cost in higher education.

- *Established in 1999 with funding from an $8.8 million grant from the Pew Charitable Trusts, NCAT was initially a virtual university center at Rensselaer Polytechnic Institute. Building on her experience as vice president of Educom (now Educause), Dr. Twigg created the Program in Course Redesign (PCR). From 1999 to 2003, NCAT worked with 30 diverse two- and four-year colleges (50,000 students annually) to prove that it is possible to improve quality and reduce cost in higher education. Course redesign using information technology is key to achieving both outcomes.*

- *The results of the PCR were exceptional. Twenty-five of thirty course redesign projects showed significant increases in student learning; the other five showed learning equivalent to traditional formats. Of the twenty-four projects that measured retention, eighteen reported a noticeable decrease in drop-failure-withdrawal rates, ranging from 10 to 20%, as well as higher course-completion rates. Most dramatically, all thirty institutions reduced their costs by 37% on average, ranging from 20% to 77%, and produced a collective annual savings of about $3 million.*

- *In 2003, NCAT became an independent, not-for-profit organization.*

  - https://www.thencat.org/NCATHistory.html
  - Carol Twigg was the driving force as President and Jack Wilson served as Chairman of the Board

- In 2018 (Dec 31) NCAT suspended operations due to retirement of staff.

Educause: Models for Online Learning, Carol Twigg 2003

- Every college and university in the United States is discovering exciting new ways of using information technology to enhance the process of teaching and learning and to extend access to new populations of students. For most institutions, however, new technologies represent a black hole of additional expense. Most campuses have simply bolted new technologies onto a fixed plant, a fixed faculty, and a fixed notion of classroom instruction. Under these circumstances, technology becomes part of the problem of rising costs rather than part of the solution. In addition, comparative research studies show that rather than improving quality, most technology-based courses produce learning outcomes that are simply "as good as" their traditional counterparts—in what is often referred to as the "no significant difference" phenomenon. By and large, colleges and universities have not yet begun to realize the promise of technology to improve the quality of student learning and reduce the costs of instruction.

- Preliminary results show that all thirty institutions **reduced costs by about 40 percent on average**, with a range of 20 percent to 84 percent.

- Supported by an **$8.8 million grant from the Pew Charitable Trusts**, the Program in Course Redesign (http:// www.center.rpi.edu/ PewGrant.html) was created in April 1999 to address these issues. Managed by the Center for Academic Transformation (http://www.center.rpi.edu/) at Rensselaer Polytechnic Institute, the Program is supporting colleges and universities in their efforts to redesign instruction using technology to achieve quality enhancements as well as cost savings.

- Selected from hundreds of applicants in a national competition, **thirty institutions received a grant of $200,000 each**, with the grants awarded in three rounds of ten. The thirty institutions include research universities, comprehensive universities, private colleges, and community colleges in all regions of the United States. The Center has required each institution to conduct a rigorous evaluation focused on learning outcomes as measured by student performance and achievement. National experts have provided consultation and oversight regarding the assessment of learning outcomes to ensure that the results are reliable and valid.

- To date, results show improved student learning in twenty of the thirty projects, with the remaining ten showing no significant difference. Each institution has also been required to develop a detailed cost analysis of both the traditional and the redesigned course formats, using a spreadsheet-based course-planning tool (http://www.center.rpi.edu/PewGrant/ Tool.html) developed by the Center. Preliminary results show that all thirty institutions reduced costs by about 40 percent on average, with a range of 20 percent to 84 percent. Other outcomes include increased course-completion rates, improved retention, better student attitudes toward the subject matter, and increased student satisfaction with the mode of instruction. Collectively, the thirty redesigned courses affect more than 50,000 students nationwide and produce a savings of $3.6 million each year.

   o https://www.educause.edu/ir/library/pdf/erm0352.pdf

It is proven to work. Why is it not widely adopted?

- In 1998 the National Academy of Sciences (NAS) took a systematic look at the effect the progress in Information Technology and research on learning in the cognitive sciences was having on the way we taught the sciences.

- While the report came out with some excellent recommendations, it was a fight all the way. Established scientists (including some Nobel Prize winners) said things like "The lecture is an established technology that has worked for centuries!"   or "It worked for me and many of my peers, so why change it now?"

1998 NAS Recommendations

- Recommendation 1: Institutions of higher education should undertake a review of the implications of IT for three components of their educational mission, namely their curriculum, the pedagogical practices of faculty members, and the students they serve.

- Recommendation 2: New IT-based initiatives which emerge from the institutional review of curriculum, teaching and learning, and access should be planned to:
  - build on what we know about learning and teaching;
  - serve diverse populations of students including those that are not well served by higher education at present;
  - incorporate both formative and summative assessment of learning outcomes into the project design;
  - be sustainable;
  - receive adequate support from the institution;
  - create or extend collaborations within the institution, with other institutions of higher education, with industry and with government; and
  - widely disseminate the outcomes of program assessment and evaluation.

- Recommendation 3: Higher education institutions and funding agencies, in cooperation with appropriate sections of the government and the private sector, should support research to advance SME&T learning with IT.

- This was focused on science, but most other disciplines were having similar debates.

Not much has changed.

- Whether due to human inertia, higher education structures, or financial challenges most of the vision is unfulfilled.

- There remain some great examples, but the changes have been incremental, reactive, and of marginal effect.

- This is in spite of the challenges of
  - public disinvestment in higher education
  - declining enrollments in higher education
  - a rise in costs rivaled only by healthcare
  - Mounting failures of private tuition dependent universities
  - An increase in options provided by online education –public, private, profit, and non-profit.

Who cares about universities anyway?

- Why are universities important to
  - citizens,
  - communities,
  - regions,
  - companies and
  - the world?

The Catalyst for the Future

- What do Boston, Bombay, Beijing, Bangalore have in common with
- San Francisco, Austin, Raleigh, Cambridge, and other world economic leaders?

- They are vibrant economic regions nucleated by world class universities.

- The President Obama was right: we must do better!

The Secret Sauce?

- Universities pouring out highly educated graduates with skills and intellectual property.

- World class research that is curing illnesses and creating new jobs, companies, and even entirely new industries.

- And doing this at very large scale.
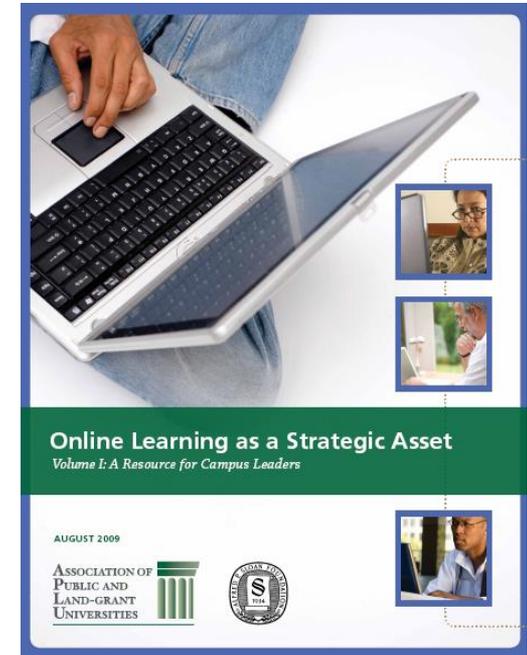
American Public and Land-grant Universities

- APLU-Sloan Survey -2009
  - ○ Strategic Importance of Online Learning
    - – interviews conducted with administrators, faculty, and students at 45 public institutions across the country and more than 10,700 responses from faculty across the spectrum of teaching positions – tenure/non-tenure track; full- and part-time; and both those who have and those who have not taught online

- Critical to long-term strategy of institution   - 68%

- Represented in institution's strategic plan   - 41%

- Not critical to long term strategy   - 4%

www.jackmwilson.com   53
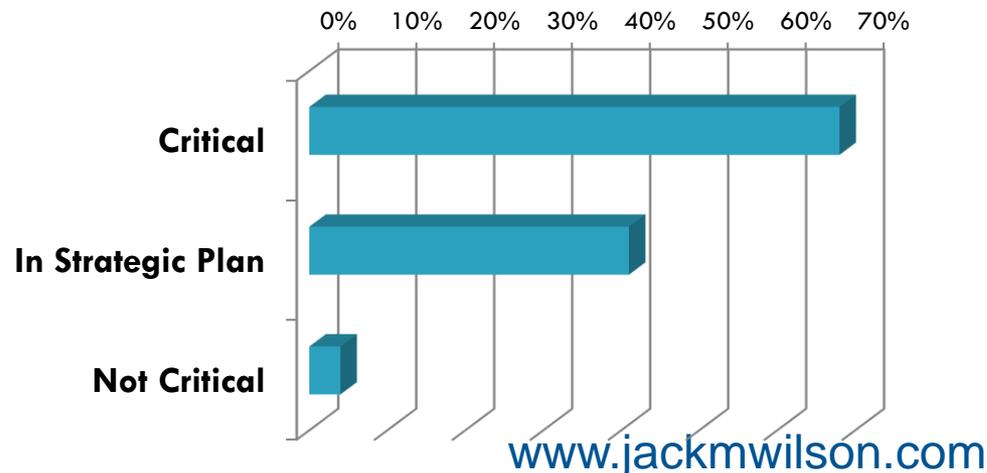
Online Learning as a Strategic Asset

- Survey revealed that President's know that continuing education and distance learning needs to part of the strategic plan,

- However, many of them **were not well equipped by past experience** to understand how these programs, once considered peripheral, could become an **integral tool of their institutions strategic plans**.

Online Learning as a Strategic Asset
Volume I: A Resource for Campus Leaders

AUGUST 2009

ASSOCIATION OF
PUBLIC AND
LAND-GRANT
UNIVERSITIES

Summary

- Past financial models for universities are no longer viable

- Public disinvestment has driven this process in the publics

- Market resistance to higher prices and a focus on return on investment is challenging private universities that are not highly endowed.

- Proprietary universities (Phoenix, Bridgepoint, Kaplan, Corinthian, etc.) had a rapid growth and are now enduring a period of rapid decline.

- The future will continue to be quite a challenge for leaders of higher education. Some will go out of business. (Many already have!)

- Universities that are in denial will experience the most difficulty.

- Online education will be perhaps the most important fungible source of margin to fund our mission.

Thank you.

- Jack M. Wilson
  - President Emeritus and Distinguished Professor of Higher Education, Emerging Technologies, and Innovation.
  - www.jackmwilson.com

The Mission Getting it right.

- Much debate on the mission –and even lament.

- I was particularly struck by a comment by Hunter Rawlings, AAU President, at a meeting of the AGB in 2012 who (according to the Chronicle)
  "*warned college leaders against bowing to public pressure to transform into job-training programs.*"

- The article posits some concern over the push away from "*their presumed mission to produce better citizens.*"

- While no one wants universities to be "job training programs," this seems to ignore the original mission of US universities –particularly the land grant public universities.

Mission

- I think most of us in higher education would support producing better citizens as part of our mission, but that does not mean that there is no validity to other parts of our mission –including preparing students to be productive in their chosen careers or being responsive to the economic and social needs of society.

- Choosing words like "job training" or "corporate university" is done specifically to attempt to discredit the calls for Universities to be more responsive to the needs of the regional communities.

- Those, usually outside the university, who are calling for change at Universities, frequently deploy their own disparaging characterizations like "Ivory Tower."

- We must cut through the rhetoric and get the right mission.

Why was the American public university created?

- Vermont's Justin Morrill - the Morrill Act of 1862 –creating our countries great land-grant universities.

  o The act was passed "**in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life**." Certainly Morrill envisioned a close coupling between that needs of society and needs for workforce development.

- Thirty eight years earlier, the Dutch Patroon Stephen van Rensselaer created Rensselaer Polytechnic Institute in Troy NY "**for the purpose of instructing persons ... in the application of science to the common purposes of life**."

- Reading both documents in full suggests that Morrill must have been influenced by the van Rensselaer founding statement.

  o That is not surprising since Morrill was located in a territory once governed by the Dutch Patroon van Rensselaer.

What is the mission society sees for us?

- In 1640 Harvard's Founding statement known as New England's First Fruits "*After God had carried us safe to New England, and we had built our houses, provided necessaries for our livelihood, reared convenient places for God's worship, and led the civil government, one of the next things we longed for and looked after was to advance learning and perpetuate it to posterity; dreading to leave an illiterate ministry to the churches, when our present ministers shall lie in the dust.*" Perhaps that was the most pressing workforce need of the time –educated ministers.

- In 1980, the United State Congress affirmed the importance of Universities to the social and economic health of the country with the passage of the Bayh-Dole act "**to encourage maximum participation of small business firms in federally supported research and development efforts; to promote collaboration between commercial concerns and nonprofit organizations, including universities.**"

Two truths

- Universities were founded to be of service to society and directly contribute to solving social and economic problems.

- If there is **No Margin** there is **No Mission**.
    - o Universities are expensive to operate. Finding the resources to do so has been a challenge for over a century –and has become more challenging in recent times.
    - o Most internal stakeholders are focused on the mission and recoil from (or are hostile to) any focus on the financials.
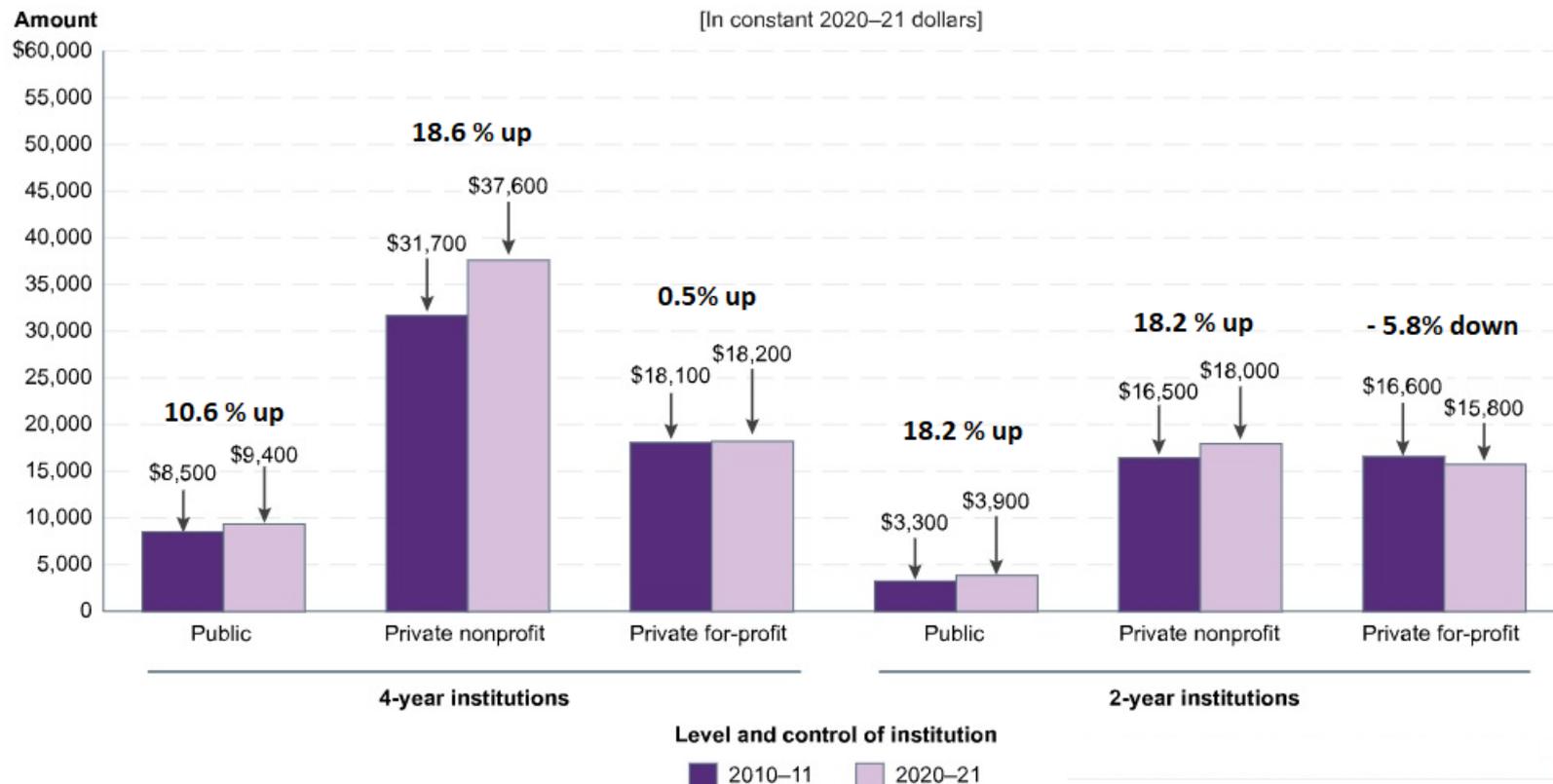
Data-NCES – 2010-2021

- ## National Center for Educational Statistics
  - o https://nces.ed.gov/fastfacts/display.asp?id=76

Average tuition and fees of degree-granting institutions for first-time, full-time undergraduate students, by level and control of institution: Academic years 2010–11 and 2020–21

https://nces.ed.gov/fastfacts/display.asp?id=76

[In constant 2020–21 dollars]

Data; Rising cost of higher education –a look back

- *There's a strangeness—and, frankly, a sadness—to seeing the cover of the Fall 1994 issue of the* College Board Review *nearly 27 years later. Against a black background, a teetering Ionic column cradles the headline "Higher Education Affordability," and at the bottom right is the teaser "Will it be the health-care issue of the twenty-first century?"*

- *"The first line of the piece reads today as an uproarious understatement: "**Public concern about the pricing and financing of a college education seems to be reaching a new intensity**."" (*Fall 1994 issue of the College Board Review*)*

- *Like healthcare, college—previously one of this nation's greatest tools of pulling generations into the middle class (and beyond)—has become a kind of luxury good. Annual average tuition at a public university has doubled, from $10,047 in 1995-96 to $20,050 in 2017-18, according to the* National Center for Education Statistics*. More high schools have pushed their students to apply for federal aid and grants, and there's an* arms race in merit-based aid*. But inflating tuitions, stagnant wages, and increasingly severe economic downturns (the dot-com bubble, the Great Recession, the covid crash) have deprived generations of students with crushing debt loads any chance at pursuing their American Dream."*

  - https://elective.collegeboard.org/will-higher-education-affordability-be-health-care-issue-twenty-first-century *(Feb9, 2021)*

Top Licensing Universities (FY10 –AUTM)

1. Northwestern University, $180 million
2. New York University, $178 million
3. Columbia University, $147 million
4. University of California System, $104 million
5. Wake Forest University, $86 million
6. University of Minnesota, $84 million
7. **Massachusetts Institute of Technology, $69 million**
8. University of Washington/Washington Research Foundation, $69 million
9. Stanford University, $65 million
10. University of Wisconsin-Madison/Wisconsin Alumni Research Foundation, $54 million
11. California Institute Of Technology, $52 million
12. University of Rochester, $42 million
13. **University of Massachusetts, $40 million**
14. University of Michigan, $40 million
15. University of Texas System, $38 million
16. University of Utah, $38 million
17. University of Florida, $29 million
18. University of Iowa Research Foundation, $27 million
19. Duke University, $26 million
20. University of South Florida, $17 million