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# **The Economics of Scholarly Publishing**

Kent R. Anderson  
CEO

**RedLink**  
See What You're Missing

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# **It's Never About the Money**

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# It's **Always** About the Money

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Treasurer of the United States

SERIES 2009

*Timothy F. Geithner*

Secretary of the Treasury

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ONE DOLLAR

THE SUNDAY TIMES TOP TEN BESTSELLER

Yuval Noah Harari



# Sapiens

A Brief  
History of  
Humankind

'A RARE BOOK...THRILLING AND BREATHTAKING'  
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# What Is Money?

*“. . . money is . . . **the apogee of human tolerance.** Money is more open-minded than language, state laws, cultural codes, religious beliefs, and social habits. Money is the only **trust system** created by humans that can bridge almost any cultural gap, and that does not discriminate on the basis of religion, gender, race, age, or sexual orientation. Thanks to money, even people who don't know each other and don't trust each other can nevertheless cooperate effectively.”*

- *Yuval Noah Harari, author of "Sapiens"*

# Converting Money Into Science

*“During the last five centuries, humans increasingly came to believe that they could increase their capabilities by investing in scientific research. This wasn’t just blind faith – it was repeatedly proven empirically. The more proofs there were, the more resources wealthy people and governments were willing to put into science.”*

- *Yuval Noah Harari, author of "Sapiens"*

# The Dollar Value of Science

*“The last 500 years have witnessed a phenomenal and unprecedented growth in human power. . . . The total value of goods and services provided by humankind in the year 1500 is estimated at **\$250 billion**, in today’s dollars. Nowadays the value of a year of human production is close to **\$60 trillion.**”*

- *Yuval Noah Harari, author of "Sapiens"*

# The Accelerator of Science

*“[Since 1500]. . . human population has increased fourteen-fold, production 240-fold, and energy consumption 115-fold.”*

- *Yuval Noah Harari, author of "Sapiens"*

FEDERAL RESERVE NOTE

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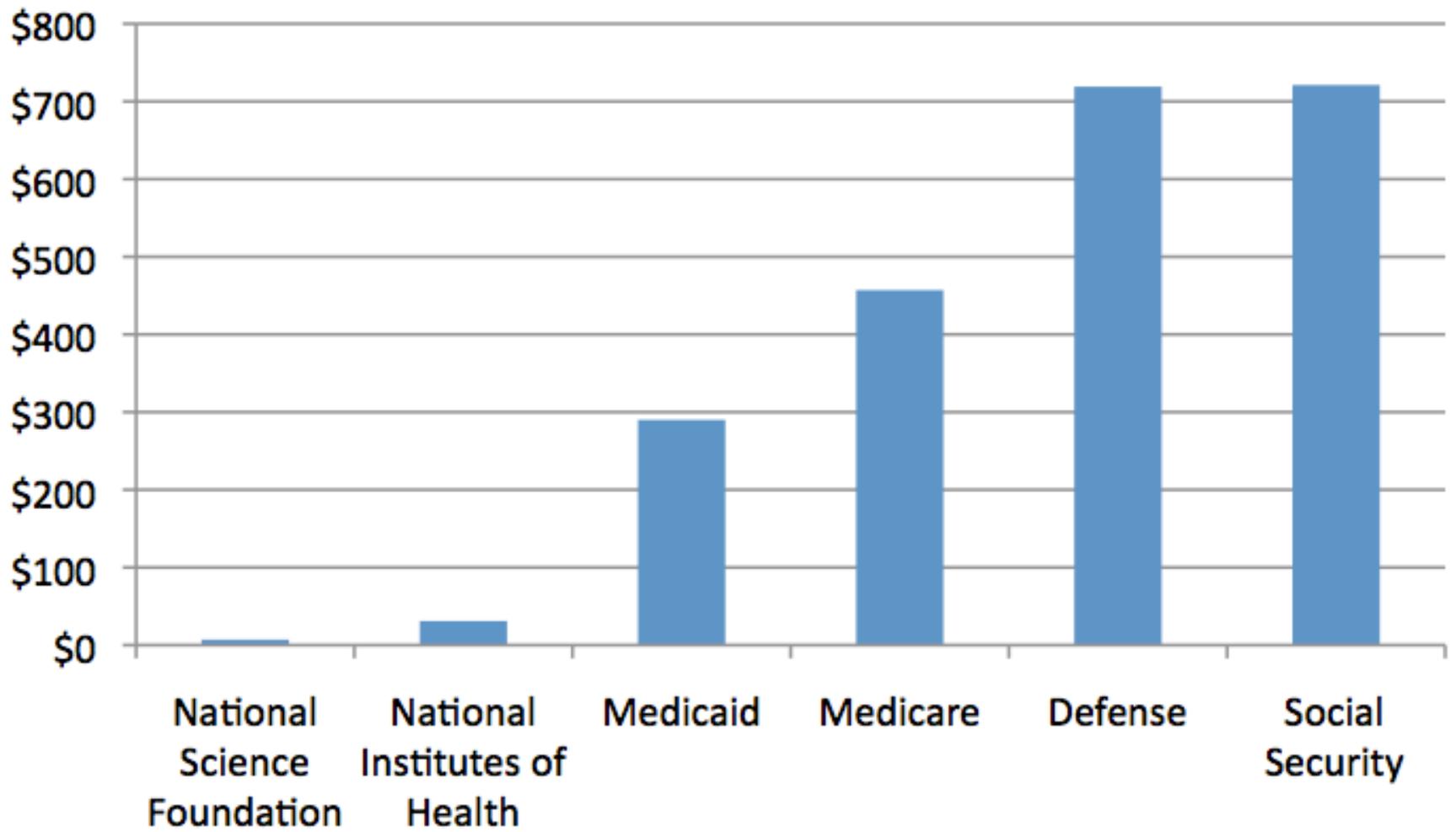
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Treasurer of the United States

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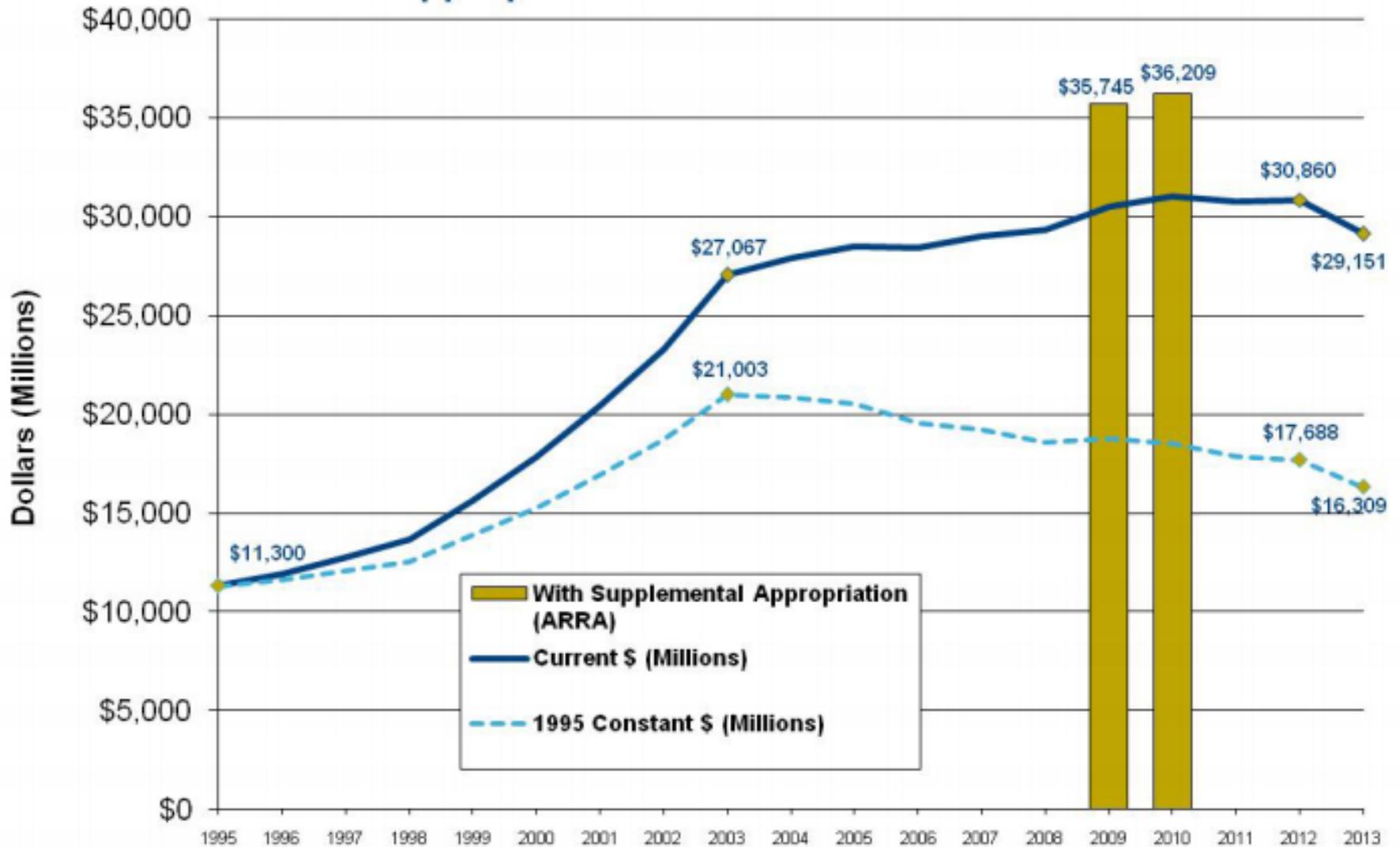
Secretary of the Treasury

ONE DOLLAR



**Figure 1**

## NIH Appropriation in Current and Constant Dollars



Funding source

Foundations, charities, and other private funds

State and local government

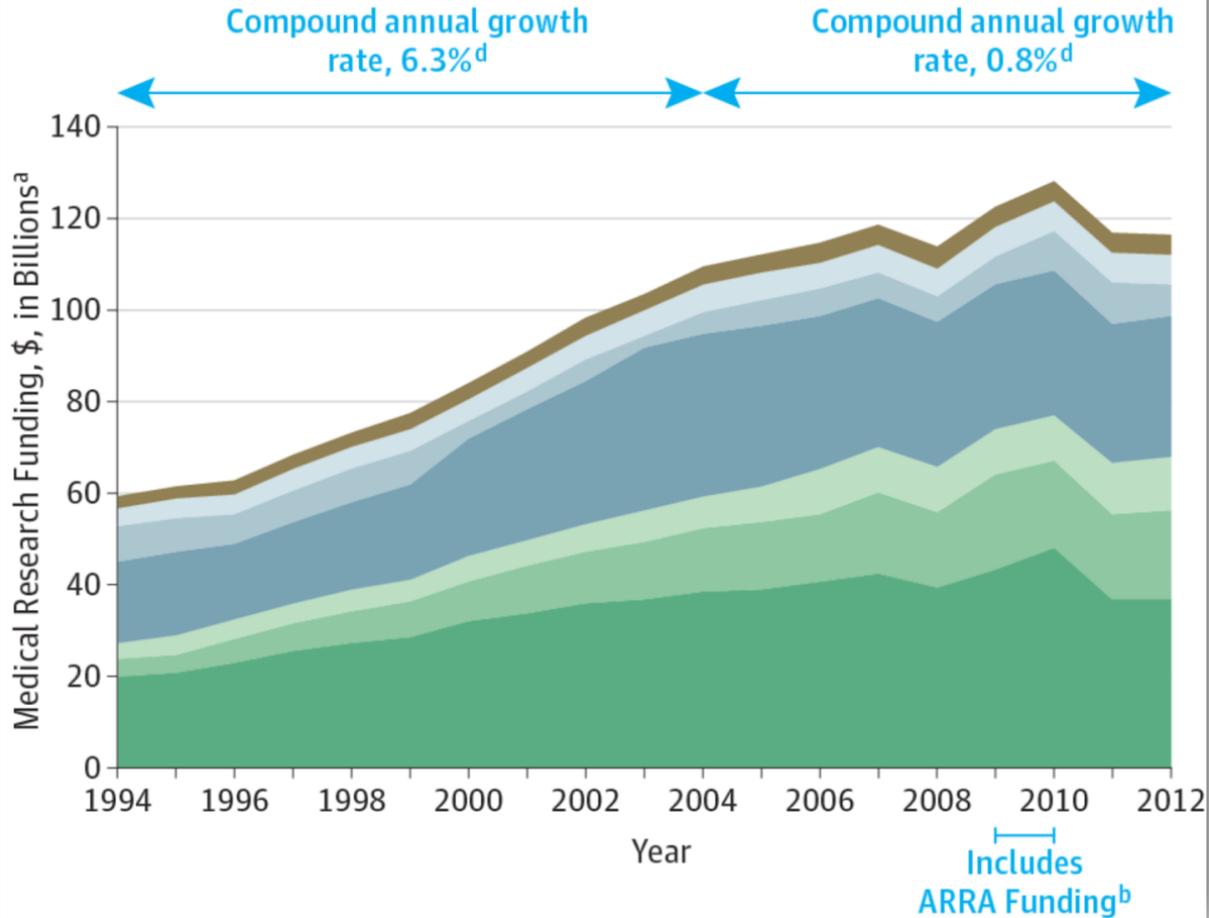
Other federal<sup>b</sup>

National Institutes of Health<sup>b</sup>

Medical device firms

Biotechnology firms<sup>c</sup>

Pharmaceutical firms



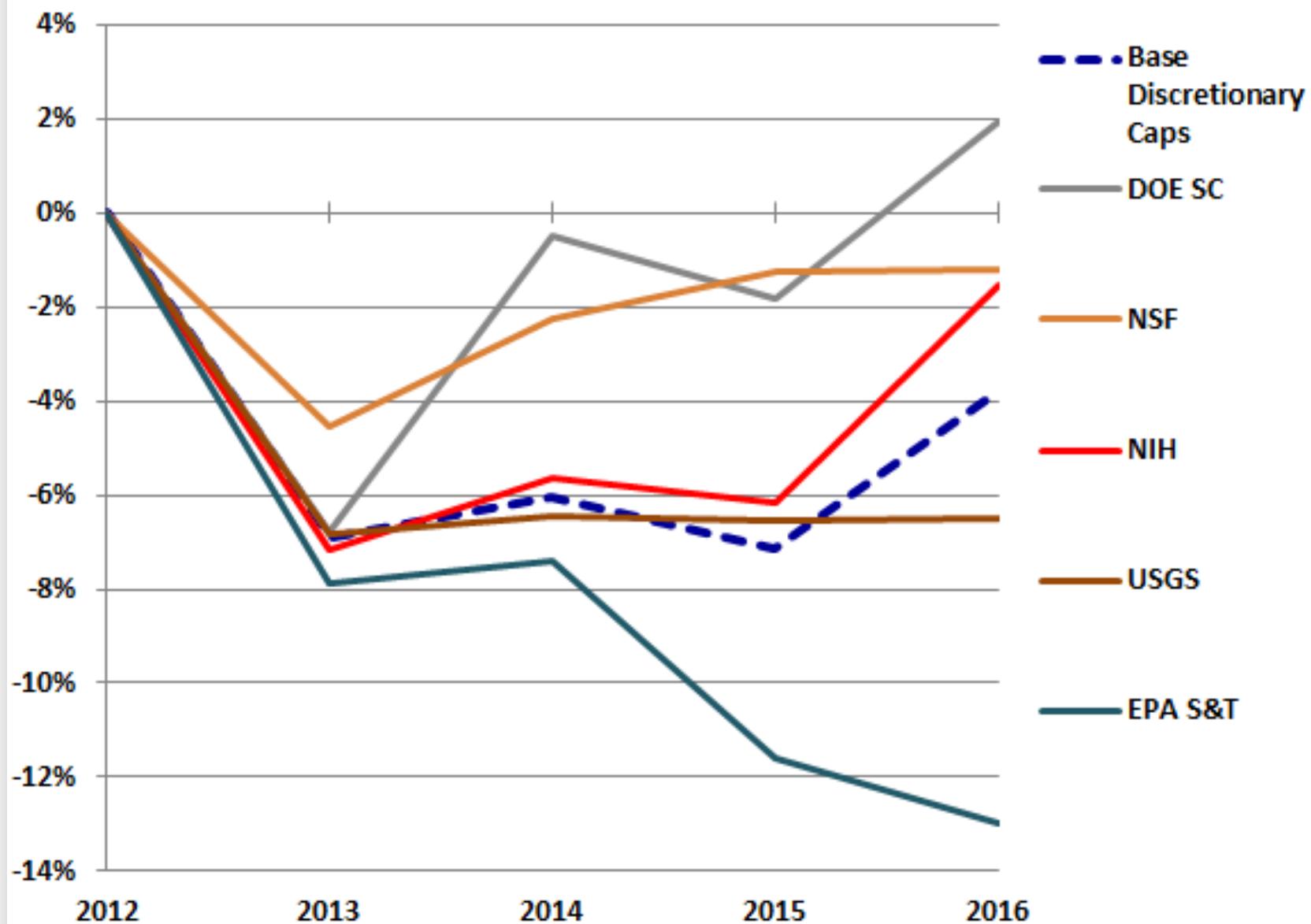
# Recent Progress in the US

Unexpected spending in recent omnibus spending bill

- NIH funding increased by \$2 billion, largest increase in 12 years
- FDA receives 5% increase in funding
- NASA receives a 6.6% increase in funding
- NOAA budget increases 4%
- NSF receives a 1.6% increase
- DOD receives a 1.4% increase

## Agency Budgets, Pre-Sequestration to Present (2)

Percent change from FY12 levels, constant dollars



Based on AAAS analyses of historical and current OMB and appropriations data. © 2015 AAAS

## European Commission reveals details of proposed cuts to science

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Staff Writer

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By Erik Stokstad | 15 January 2015 2:15 pm | 1 Comment

A controversial plan to use research funds to pay for economic stimulus became more concrete this week, as European Commission President Jean-Claude Juncker [unveiled proposed legislation](#) to implement the shift. The new investment fund would take €2.7 billion over 5.5 years from [Horizon 2020](#), the commission's main funding stream for research that will invest about €80 billion between 2014 and 2020. Draft legislation, released on 13 January, lays out the framework for the stimulus.

The single largest share of the Horizon 2020 cuts—€350 million—would be directed at the [European Institute of Innovation and Technology \(EIT\)](#) in Budapest. With a staff of about 50, it funds collaborations between universities and industry to work on issues such as climate change adaptation and sustainable energy. The cut would amount to 13% of its budget. Another victim is the basic research portfolio of the [European Research Council \(ERC\)](#), which would lose €221 million, mostly in 2016 and 2017.

The commission has said it believes that the economic stimulus will ultimately [generate new funds for research](#). It also points out that, even with the cuts, Horizon 2020 and the ERC budgets remain substantially higher than during the previous funding period. (Taking funds from research is also less difficult politically than getting it from agriculture, the commission admits.) The European Parliament is [expected to approve the legislation relatively quickly](#), so that the new stimulus fund may begin in June.

Research [advocacy organizations](#) lobbied last month to protect Horizon 2020, but their response this week has been muted. "I'm surprised that there isn't a louder outcry and no clearer opposition from the scientific community," [Hans-Olaf Henkel, a member of the European Parliament](#), told [Science|Business](#). "What are these ministers for research, presidents of science organisations, and scientists themselves doing? Where is the outcry by all European Nobel laureates?"

Here are the biggest cuts to Horizon 2020 programs called for by the legislation (in € million):

## Parliament and scientists both claim win on reversing Horizon 2020 cuts

Éanna Kelly, Science|Business

**Following tough negotiations, the European Commission has announced it will cut €500M less from the Horizon 2020 research programme, after additional money is found in the EU budget**



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### The 2016 Science|Business Horizon 2020 Conference

Brussels, 16 February 2016

The European Commission will walk back cuts to the Horizon 2020 research programme after a deadlock agreement was reached this morning following all-night negotiations.

Three Horizon 2020 budget lines, the European Research Council (ERC), the Marie Skłodowska-Curie Actions and the 'widening participation' programme, have had their budgets ring-fenced.

MEPs, the Commission and member states struck a deal on the vexed issue of how best to finance Jean-Claude Juncker's new stimulus fund at 8am on Thursday.

On the eighth round of talks, the Commission gave in to MEPs and scientists who said a proposed €2.7 billion trim to the Horizon 2020 research programme was too much. The money was to constitute a major part of the guarantee supplied by the EU to Juncker's European Fund for Strategic Investments (EFSI).

MEPs secured a €500 million reduction on this figure after the Budget Commissioner Kristalina Georgieva agreed to divert an extra €1 billion from EU accounts into the fund.

"Yes we did it!" Research Commissioner Carlos Moedas **declared this morning** following news of the end of negotiations.

Figure 2-28  
**Natural sciences and engineering doctoral degrees,  
by selected country: 2000–08**

Thousands

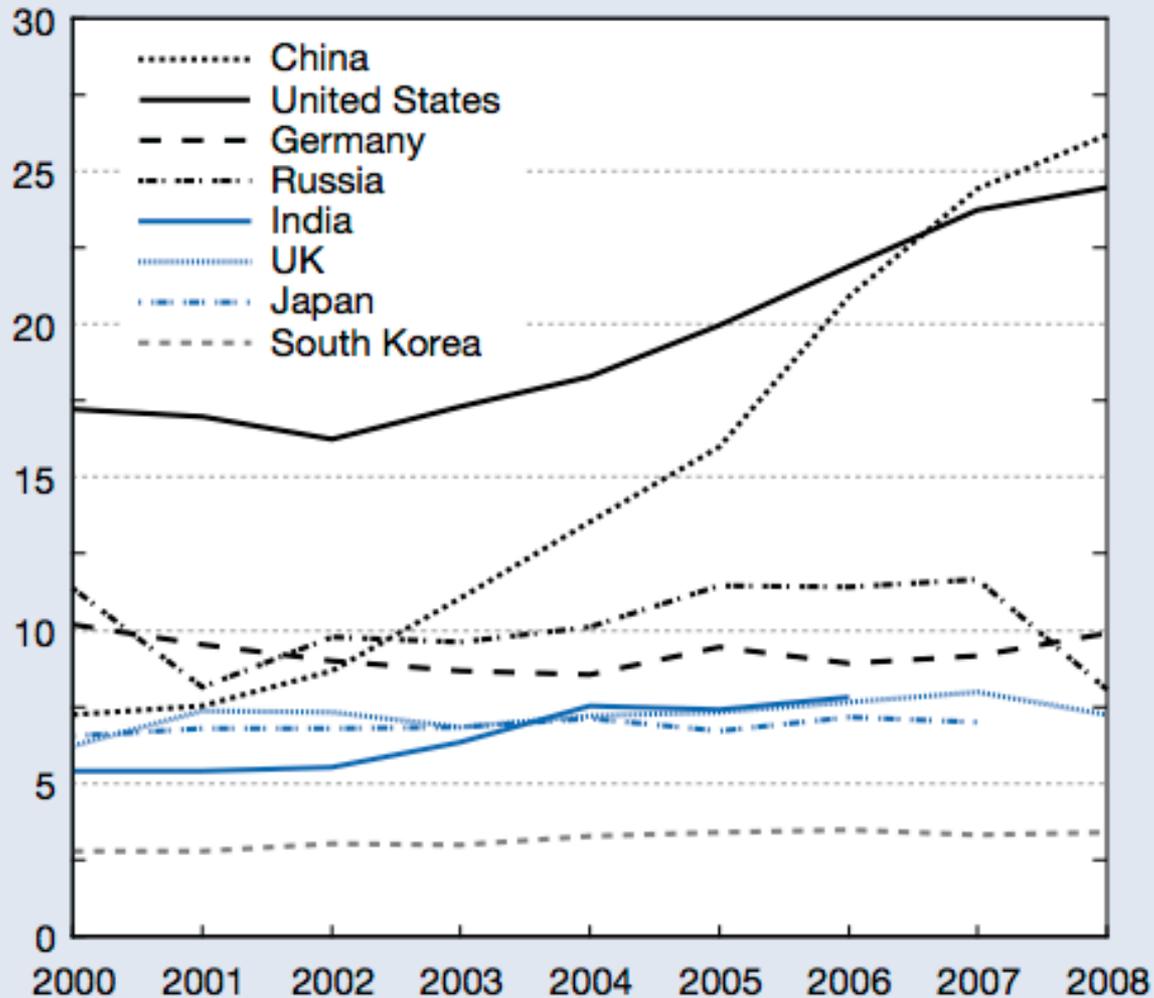
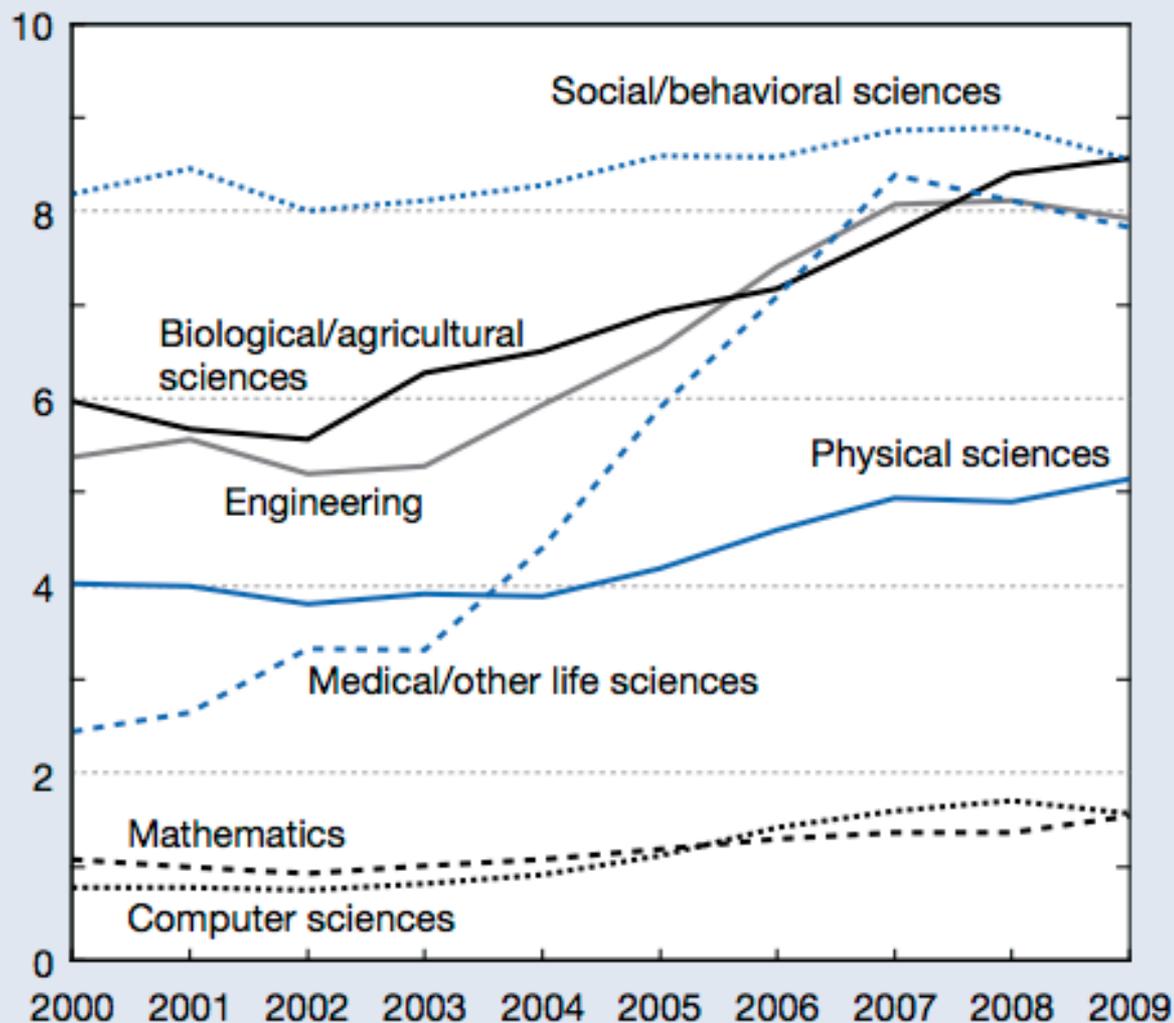
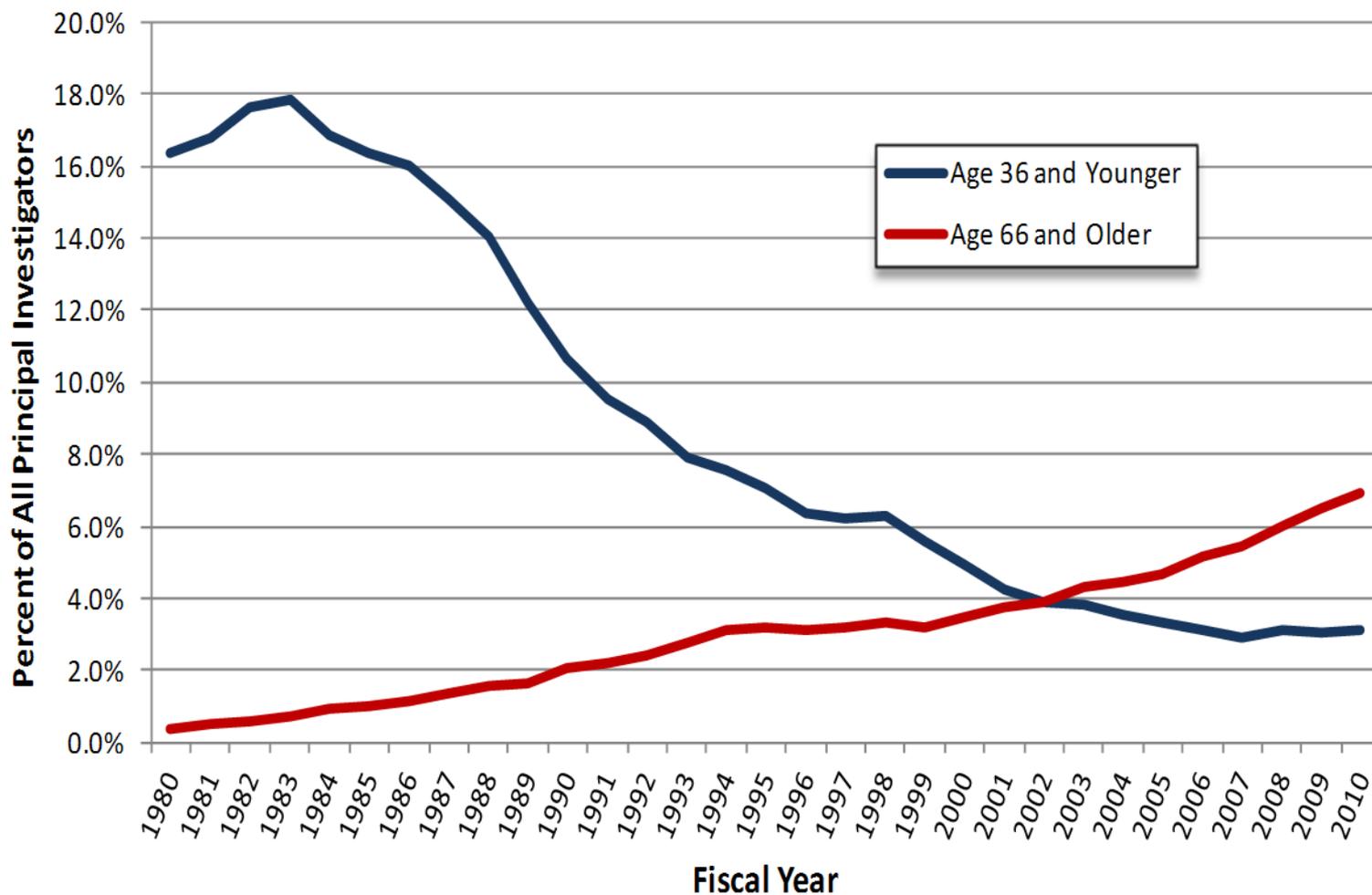


Figure 2-19  
**S&E doctoral degrees earned in U.S. universities,  
by field: 2000–09**

Thousands



## Percentage of NIH R01 Principal Investigators Age 36 and Younger and Age 66 and Older (Fiscal Years 1980 to 2010)



# Talk to actual scientists, and . . .

It's never about the money, it's always about the money

- Top concern is funding
- Younger scientists are checking out
- Glut of scientists
- Older scientists hanging on too long
- Top concern is funding
- Careers are too uncertain
- Contracts are unfair, research is serfdom
- Top concern is funding

# 'Seek Funding' Step Added To Scientific Method

NEWS IN BRIEF

November 12, 2015

VOL 51 ISSUE 45

Science & Technology ·  
Science



PARIS—In an effort to modernize the principles and empirical procedures of examining phenomena and advancing humanity's collective knowledge, the International Council for Science announced Thursday the addition of a "Seek Funding" step to the scientific method. "After making an observation and forming a hypothesis as usual, the new third step of the scientific method will now require researchers to embark upon an exhaustive search for corporate or government financing," said the group's president, Gordon McBean, adding that the new stage of the process, which will be implemented across every scientific discipline, also entails compiling and forwarding grant proposals to hundreds of highly competitive funding sources. "Next, scientists simply modify their study's goals to align with the vision of potential funders and wait for several months to hear back. At this point—should this step be successful, of course—they can move on to the experimental stage, and then to analysis." McBean confirmed that the council was also developing a new initial step for the scientific process, "Assess Profitability of Research," which would help determine if systematic investigation is even worth pursuing in the first place.

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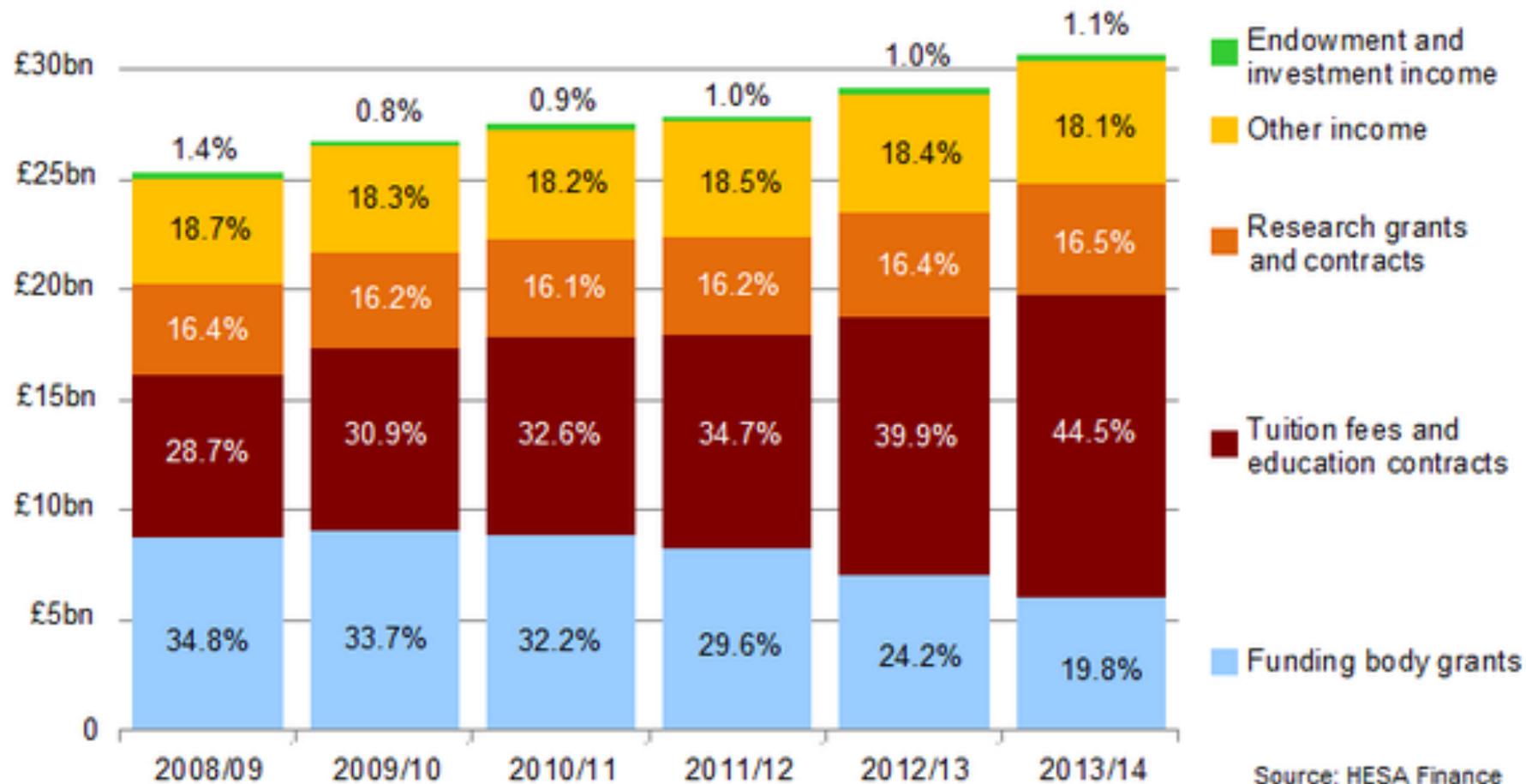
The Or



***“The #1 issue in public access is the public funding of science.”***

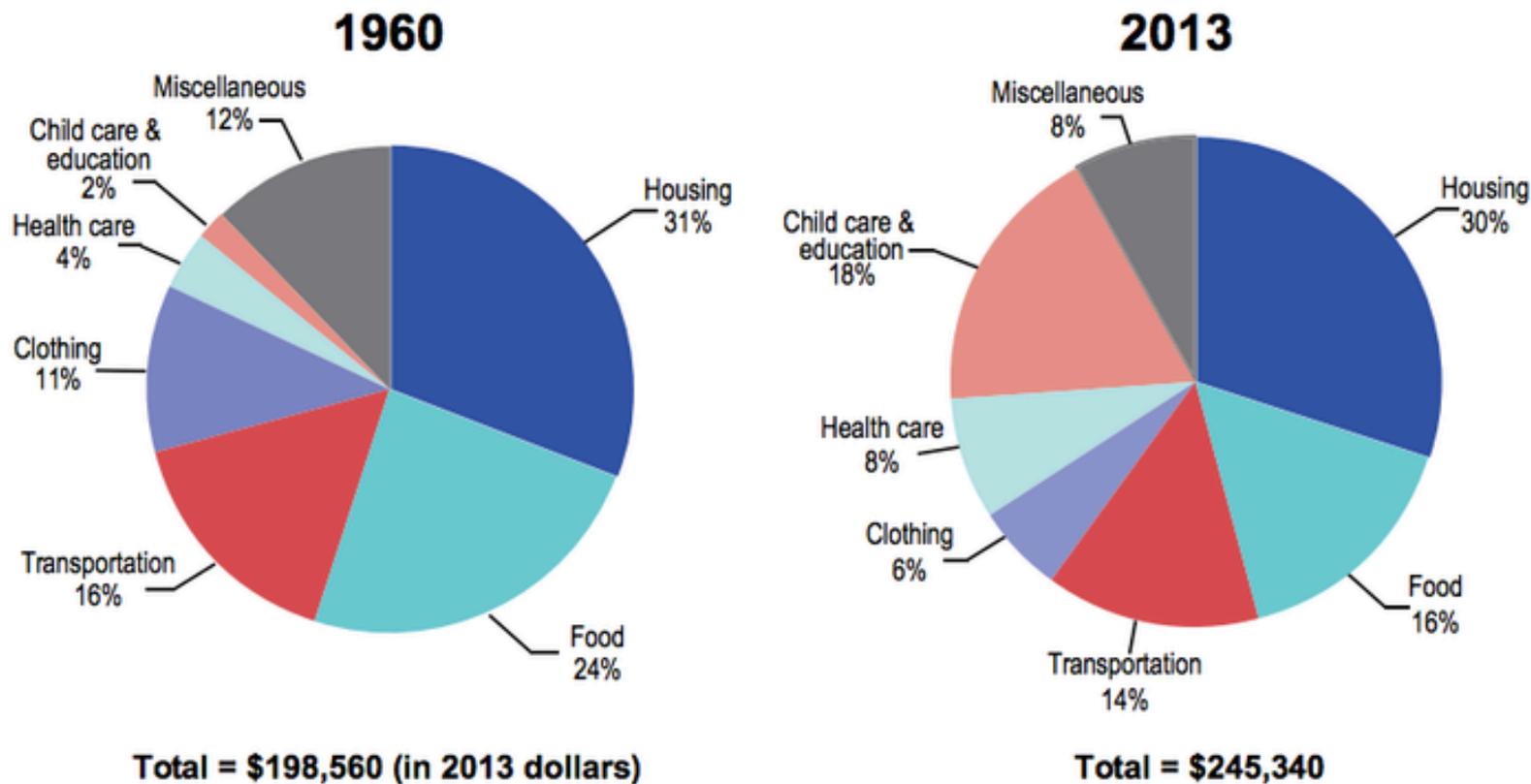
*– Fred Dylla, formerly of AIP*

## Income of UK HE providers by source 2008/09 to 2013/14



Source: HESA Finance Statistics Record 2013/14

**Figure. Expenditures on a child from birth through age 17, total expenses and budgetary component shares, 1960 versus 2013<sup>1</sup>**



<sup>1</sup>U.S. average for a child in middle-income, husband-wife families.

**Sports**

**Why students foot the bill for college sports, and how some are fighting back**

**Colleges**

**The latest extravagances in the college sports arms race? Laser tag and mini golf.**

**Colleges**

**College athletic departments are paying themselves to lose money**

**Colleges**

**As college sports revenues spike, coaches aren't only ones cashing in**

**Colleges**

**College sports' fastest-rising expense: Paying coaches not to work**



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Following

Scott Walker cut \$250 mln from Wisconsin colleges. Now he's blowing it on a basketball arena. [slate.me/1L6AHmT](https://slate.me/1L6AHmT)



EDUCATION

# Illinois cuts off funding for its public universities

By [Nova Safo](#)

March 18, 2016 | 10:22 AM



# University Presses Cope with Budget Cuts

By Claire Kirch | Jun 03, 2016



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A number of states throughout the country have reduced funding to public universities. In trying to cut costs, some university systems are taking a hard look at their presses. While one university is considering shutting down its press, others continue to support theirs—but expect them to rely more on their own resources and less on institutional funding.

Illinois, which has a Republican governor and a Democratic legislature, has been hobbled since July 2015 by a budget stalemate with no end in sight; without a budget, the state cannot release funds to its nine public universities, including the three housing scholarly presses, forcing them to trim budgets to deal with the shortfall. Laurie Matheson, director of the University of Illinois Press, at the state's flagship campus in Champaign, said that UIP continues to “publish the best books we can with the resources we have available.” UIP publishes more than 120 titles and 33 journals each year.

## RELATED STORIES:

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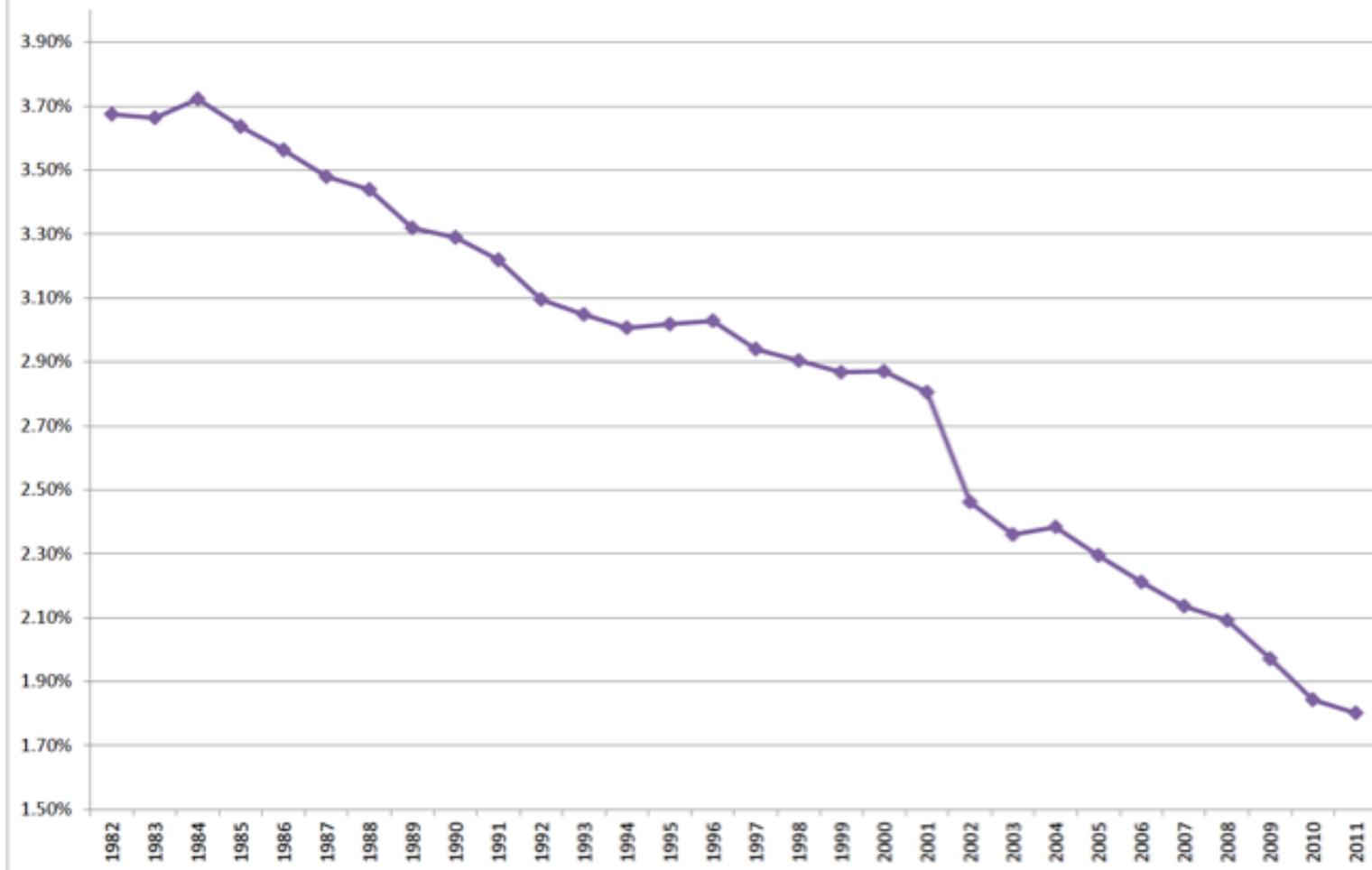
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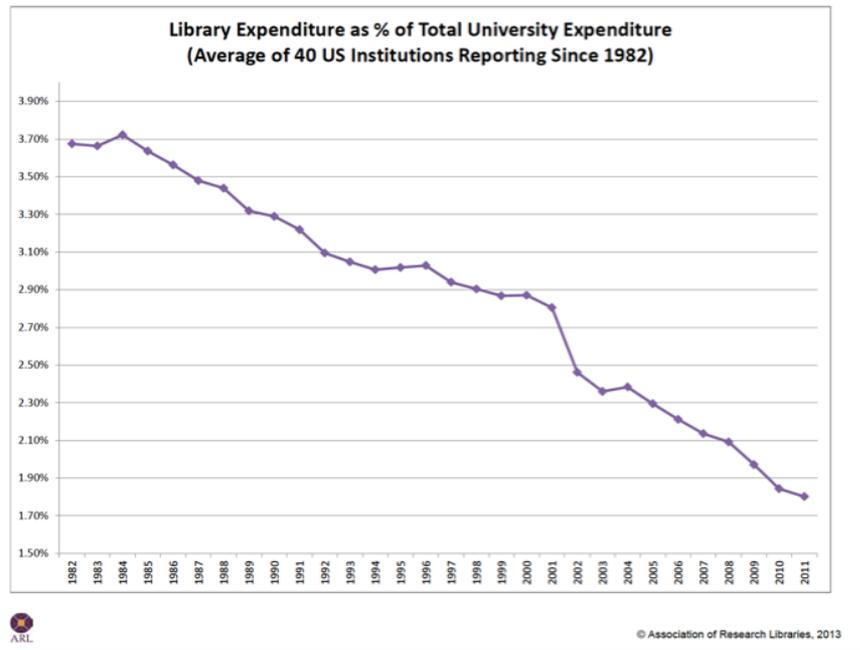
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Barb Martin, the director of Southern Illinois University Press, in Carbondale, echoed Matheson's sentiment, but was more forthcoming about the cuts to its budget. SIU Press has lost 60% of its funding from the university in the past six or seven years, Martin said; 12% was cut this past year. About 17% of SIU Press's budget, or \$170,000, comes from a university subsidy. SIU Press, which had about \$1.1 million in revenue last fiscal year and publishes about 40 titles annually, has cut back on staff since 2010, down from 16 to 11, and because of a hiring freeze, it will lose another position when its typesetter retires this fall. SIU wants to keep its press, Martin said, but she added that she wasn't sure if it will be able to.

### Library Expenditure as % of Total University Expenditure (Average of 40 US Institutions Reporting Since 1982)

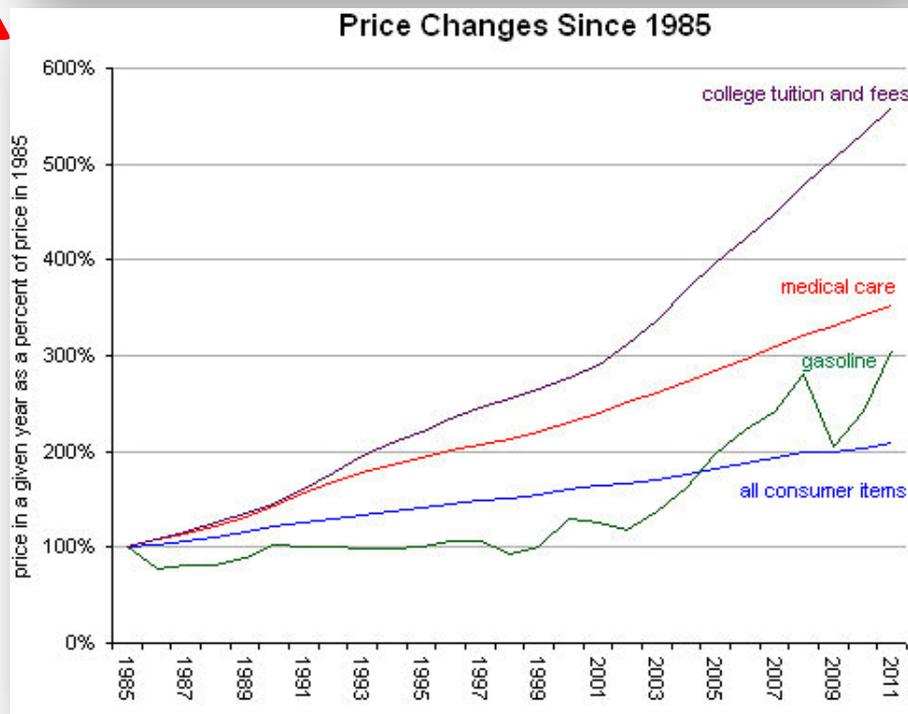




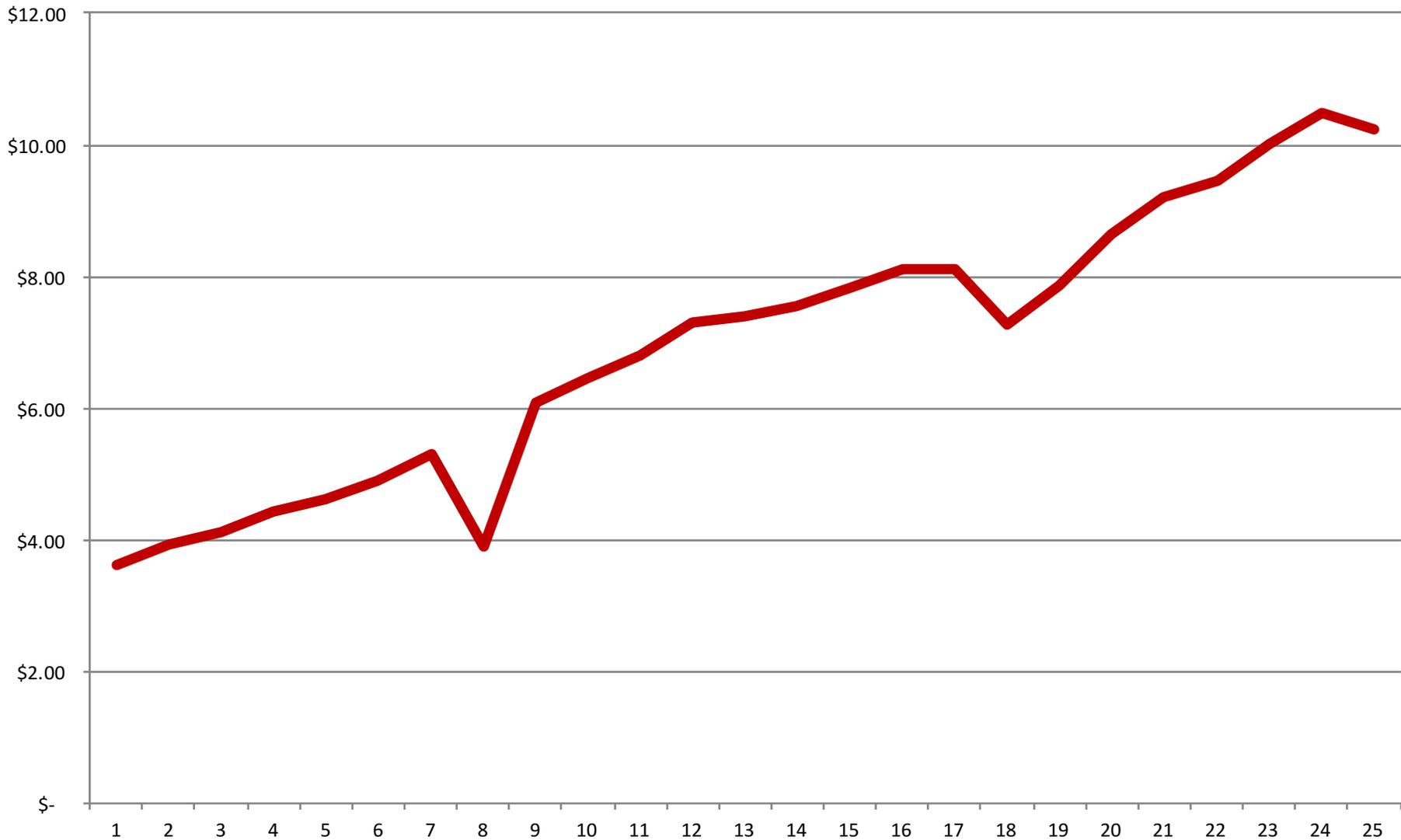
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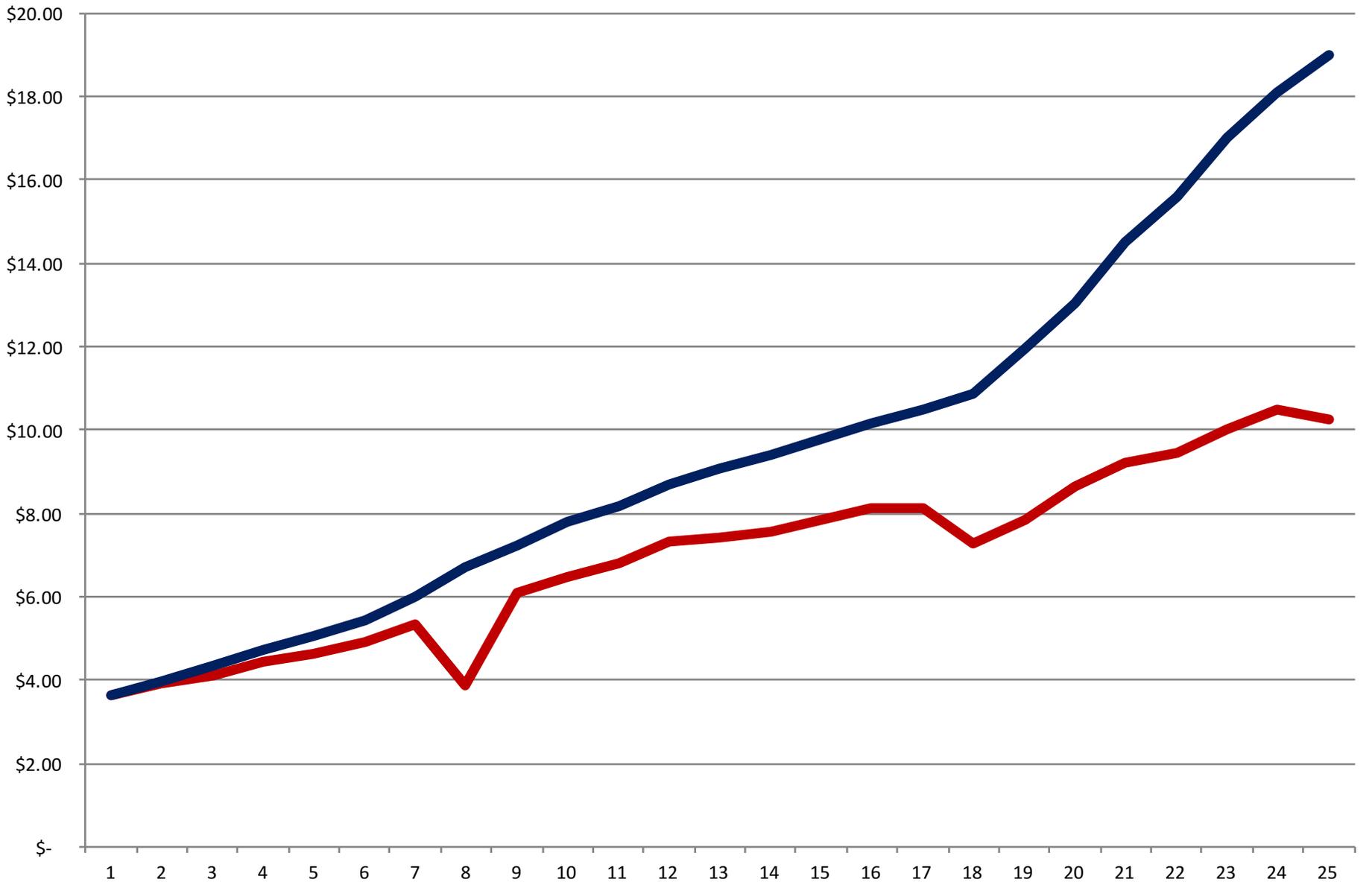


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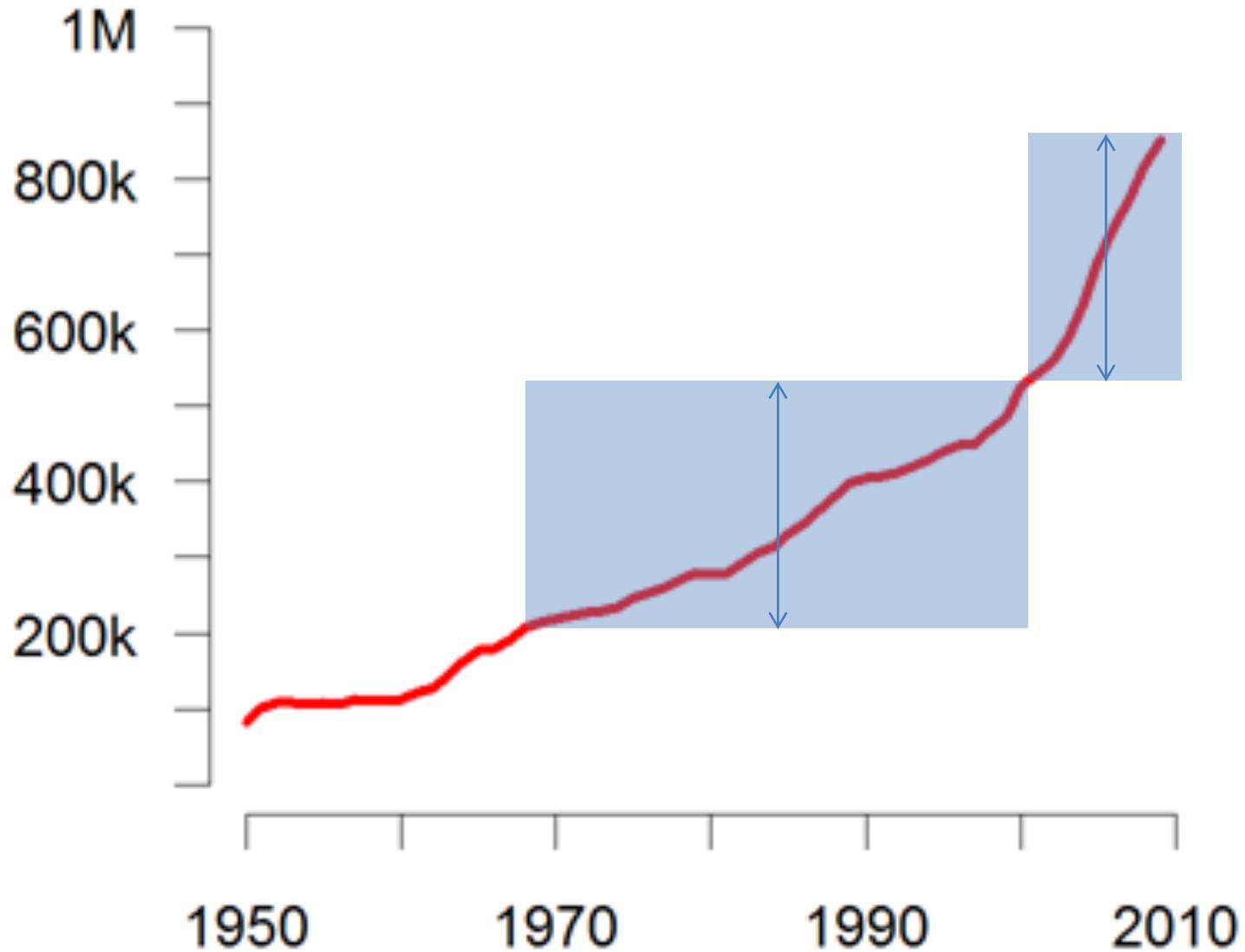


# Total Library Budget

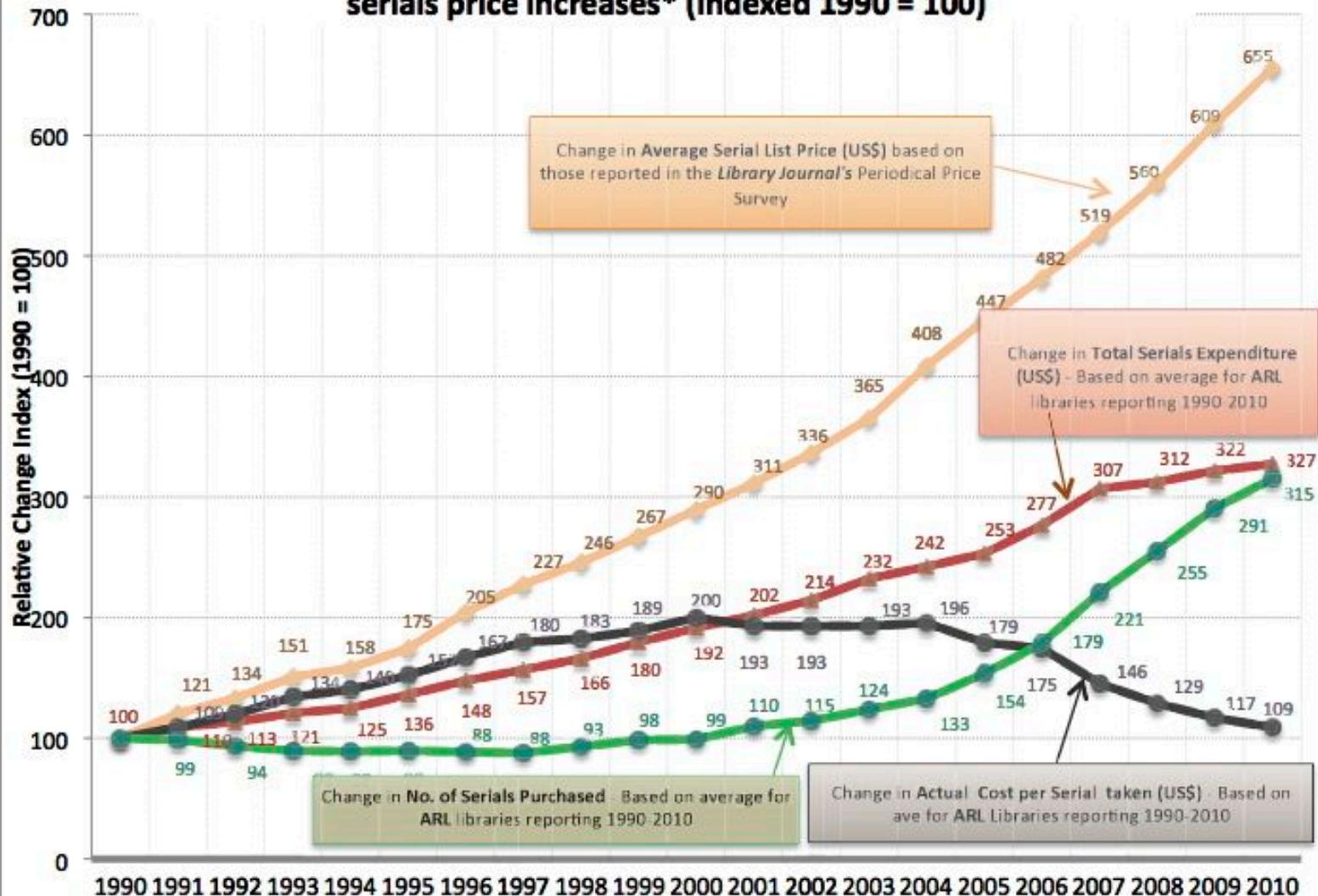




# MEDLINE-indexed articles published per year

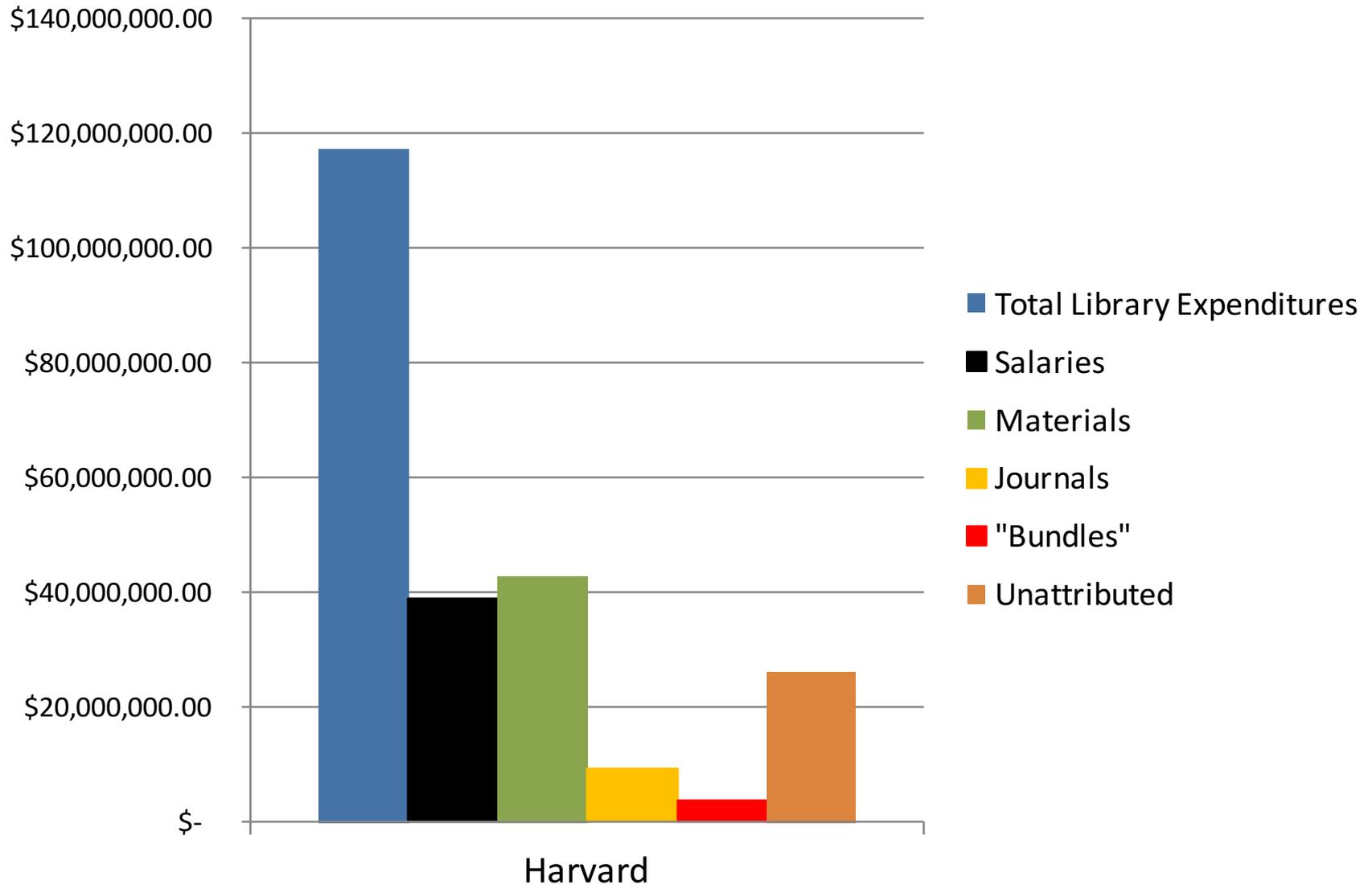


## Changes in actual serials expenditures and number of serials purchased and resultant unit costs at ARL universities - a comparison with reported serials price increases\* (indexed 1990 = 100)



\*Expenditures not indexed for inflation

# Harvard's "Journals Crisis"

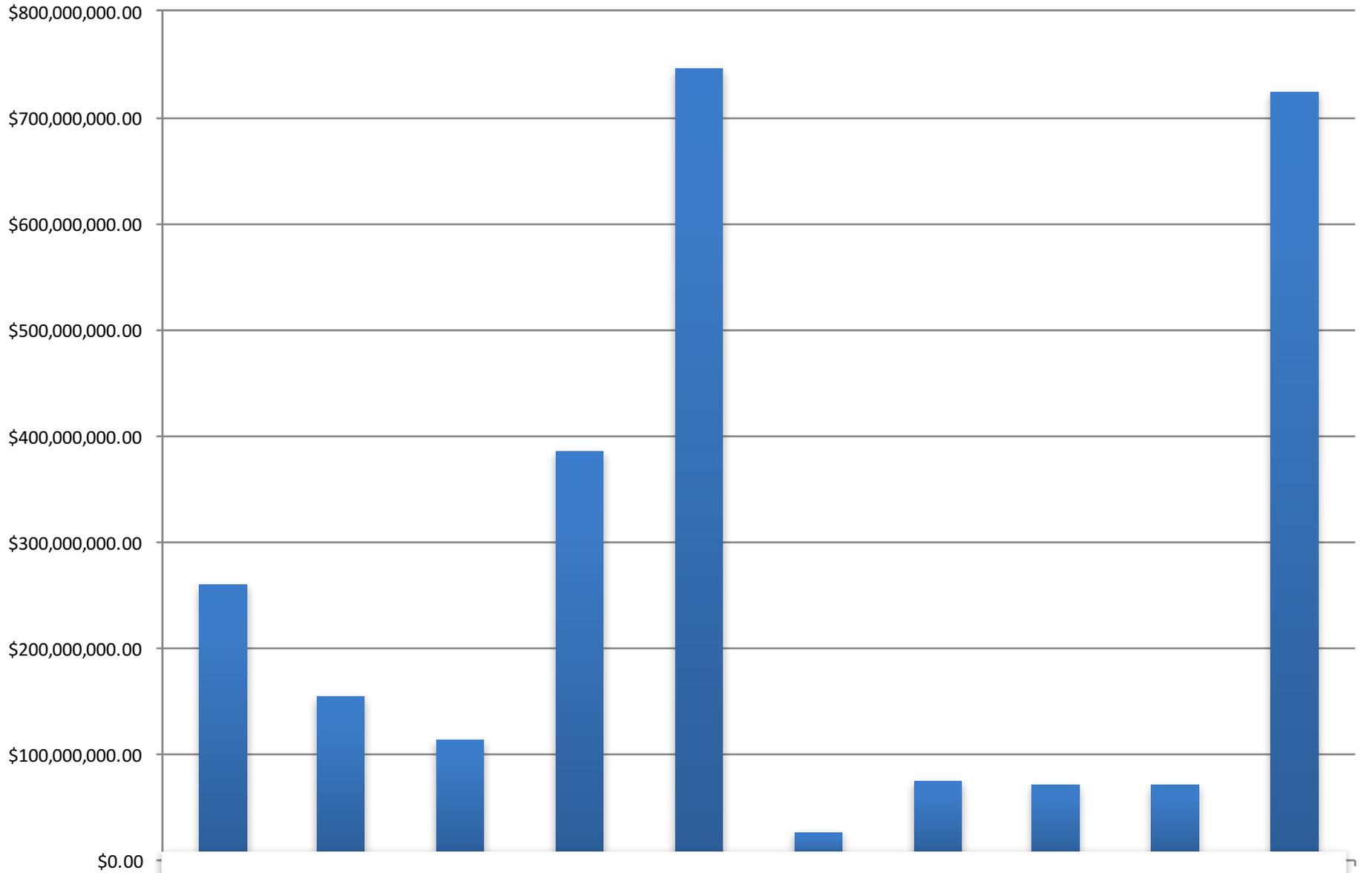


# What a Strange World We've Made

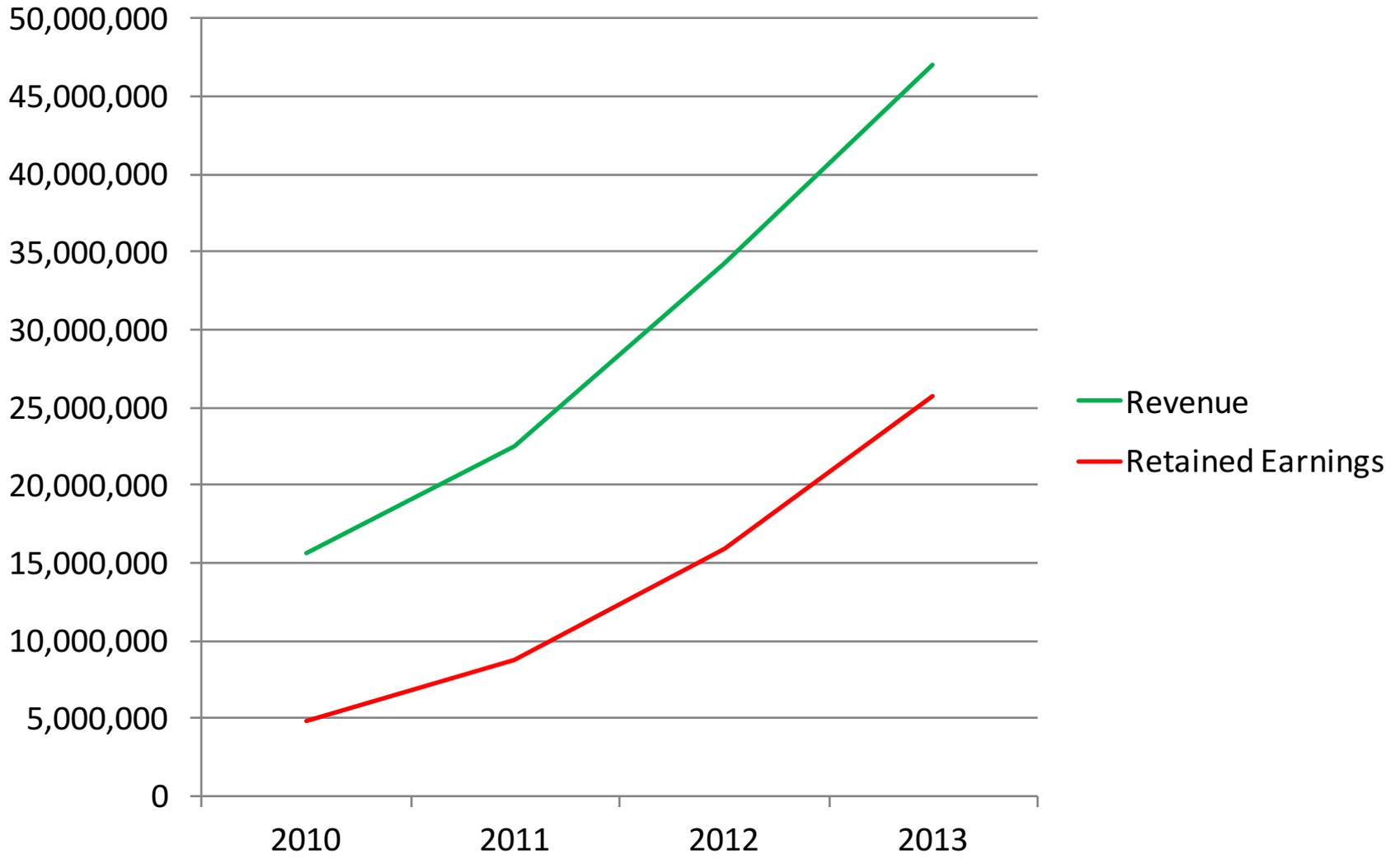
Science is now a political tool, as is science publishing

- Policymakers, bureaucrats, politicians, and funders are more involved than ever
- Academics purposely misuse the impact factor to advance their careers
- Library budgets are constrained, creating tensions
- Academic institutions are raising tuition as endowments increase
- Inequities in access to higher education are increasing
- We are backing policies that will only make things worse
- We are gutting a generation of promising scientists
- New ideas don't promise to solve these root problems

# Publisher Reserves

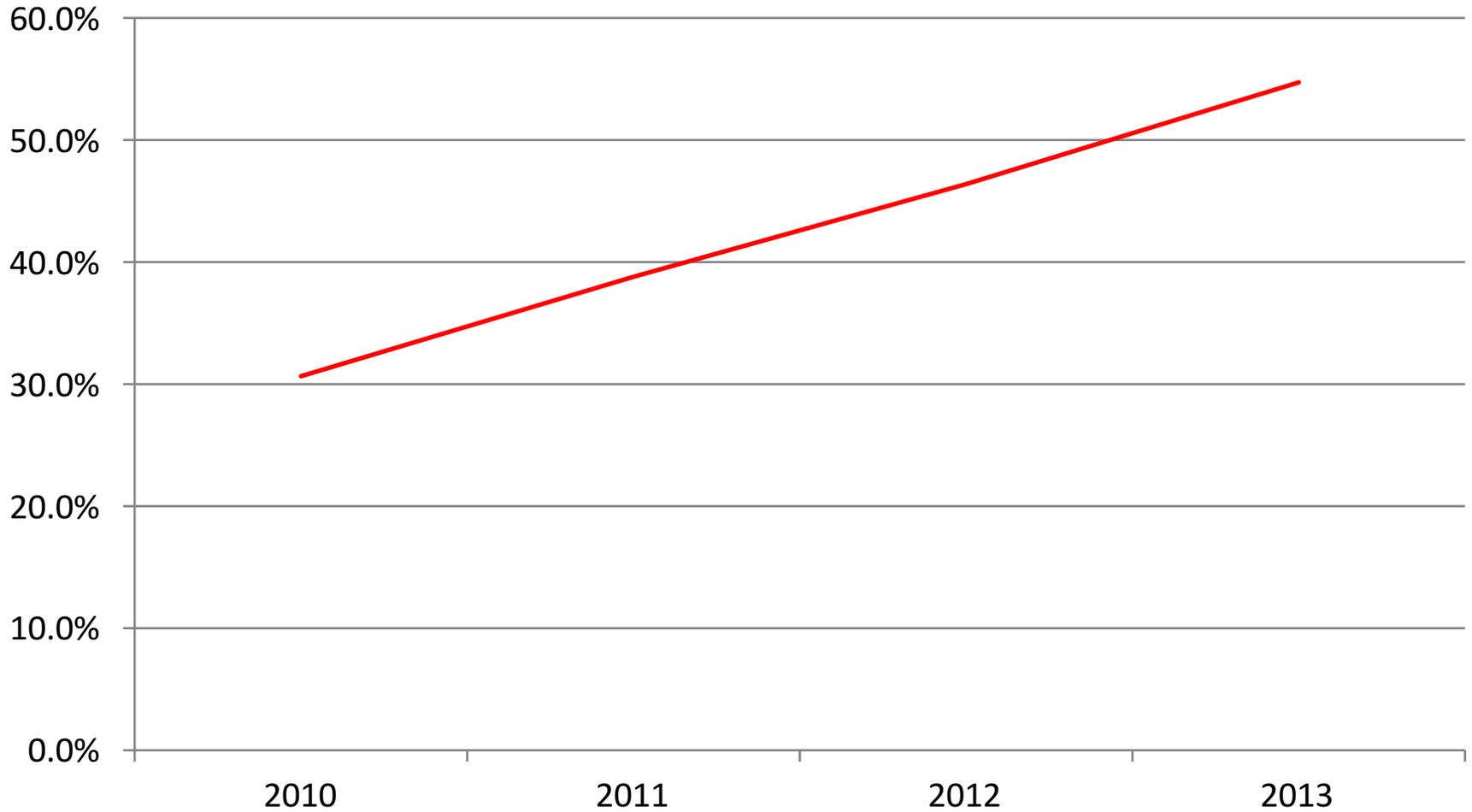


# Organizational Behavior 101

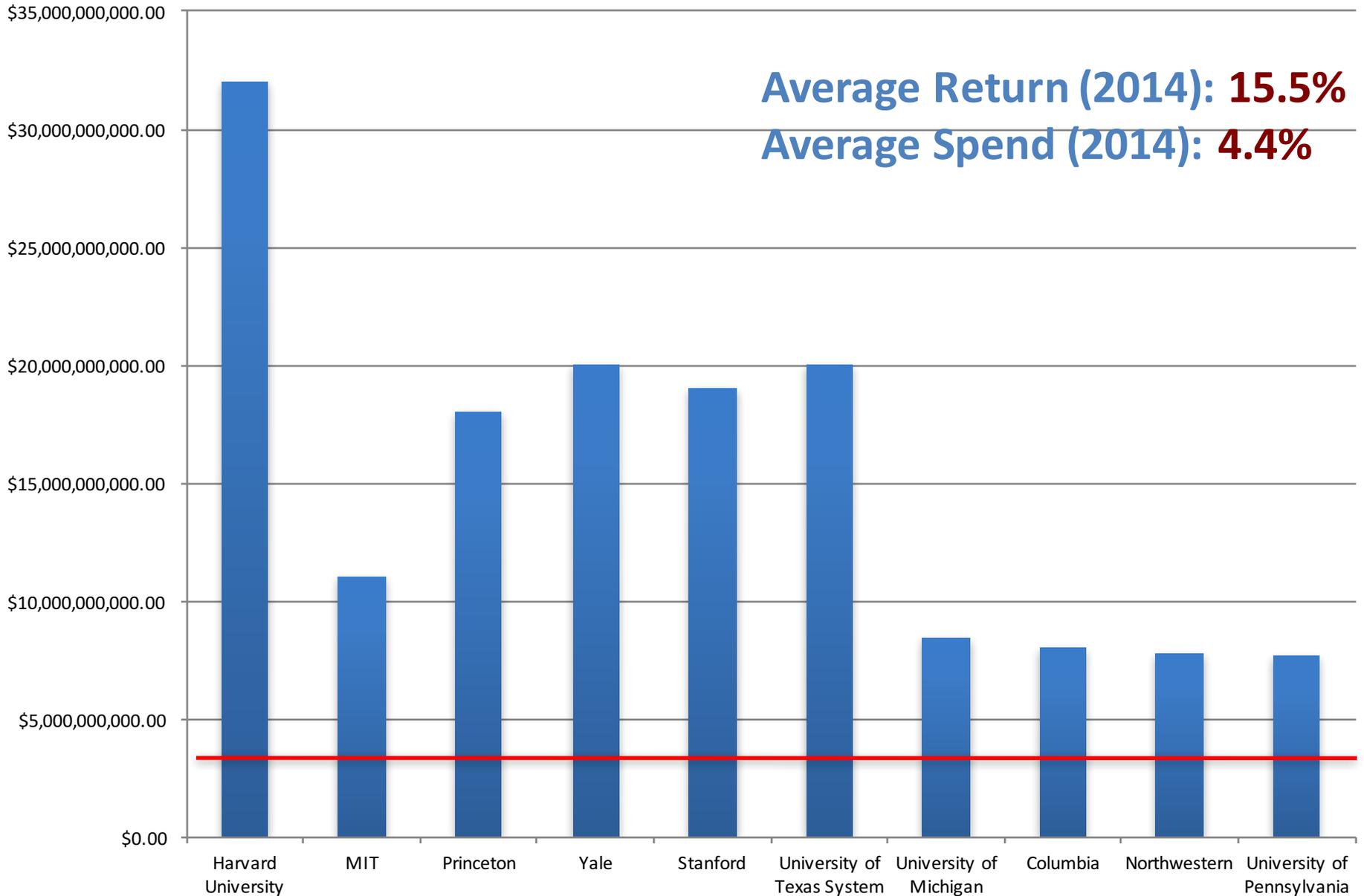


# Organizational Behavior 101

Retained Earnings as a Percent of Revenues



# University Reserves



# Stop Universities Hoarding Money

August 19, 2015 – *The New York Times* – Victor Fleischer

Last year, **Yale paid about \$480 million to private equity fund managers** as compensation — about \$137 million in annual management fees, and another \$343 million in performance fees, also known as carried interest — to manage about \$8 billion, one-third of Yale's endowment.

In contrast, of the \$1 billion the endowment contributed to the university's operating budget, **only \$170 million was earmarked for tuition assistance, fellowships and prizes.** Private equity fund managers also received more than students at four other endowments I researched: Harvard, the University of Texas, Stanford and Princeton.

# Sitting on Piles of Money

The funding of universities



**Malcolm Gladwell** 

@Gladwell

 Follow

I was going to donate money to Yale. But maybe it makes more sense to mail a check directly to the hedge fund of my choice.

2:06 PM - 19 Aug 2015



369

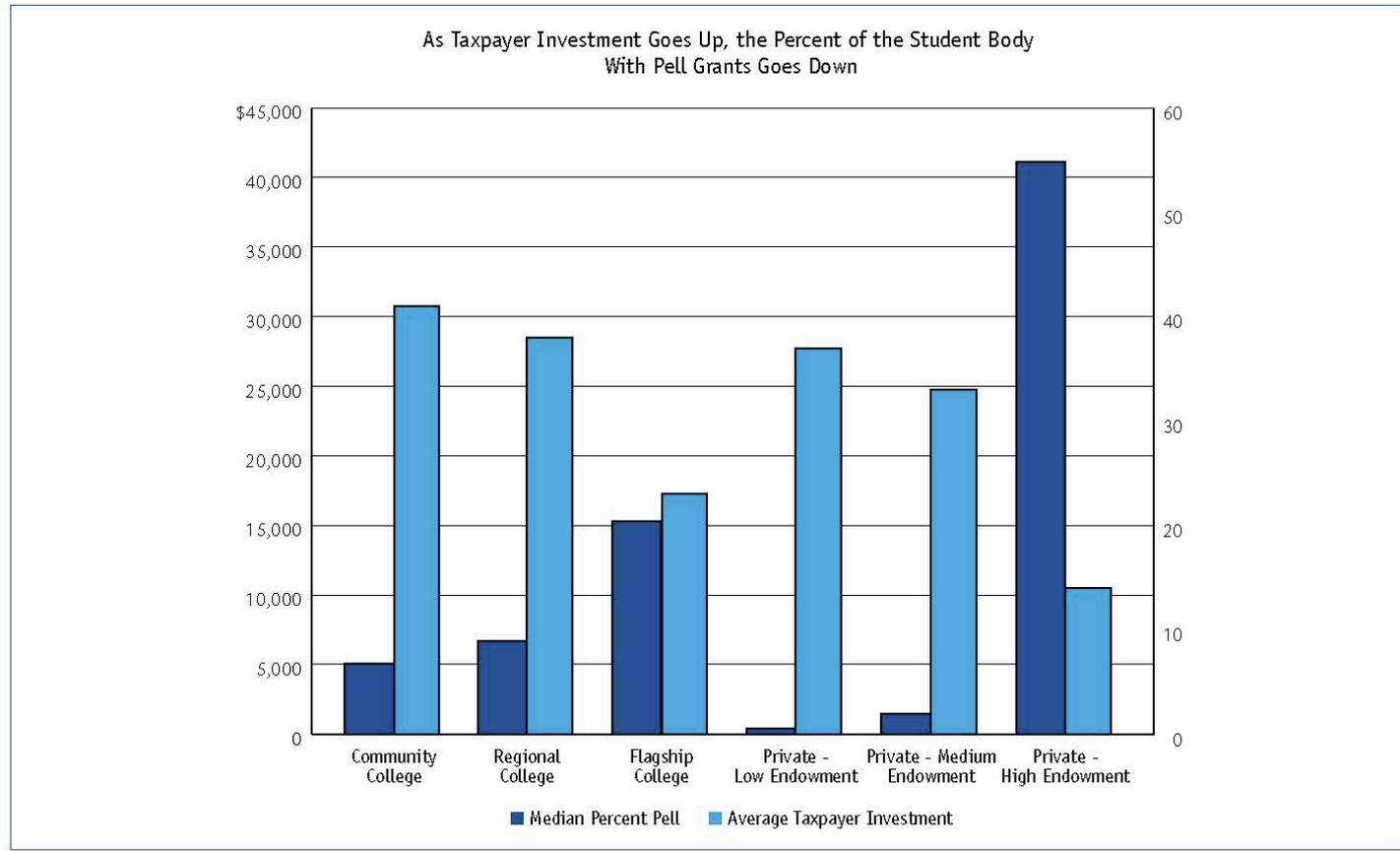


434

# Rich Schools, Poor Students

January 2015 – American Institutes for Research

Figure 1: Median Percentage of Federal Pell Grant Participation Versus Average Taxpayer Subsidy by Type of Institution, 2013



*“ . . . the highest-endowment colleges and universities, which need government subsidies the least, get the greatest subsidy per student.”*

# The 1.36% Solution

Taxing endowments could make community college free for 9 million good students

Table 2: Proposed Annual Excise Tax Rates, Number of Colleges Affected and Expected Tax Revenue Based on 2014 Endowment Size

Size of Endowment	Number of Private Colleges Affected	Tax Rate	Total Endowment	Expected Tax Revenue
>\$3 Billion	20	2.0%	\$210,621,635,000	\$4,212,433,000
>\$2 Billion	8	1.5%	\$18,057,573,000	\$270,864,000
>\$1 Billion	28	1.0%	\$39,003,557,000	\$390,036,000
>\$0.5 Billion	39	0.5%	\$27,816,551,000	\$139,083,000
<b>TOTAL</b>	<b>95</b>	<b>~1.36%</b>	<b>\$295,499,316,000</b>	<b>\$5,012,416,000</b>

Source: 2014 NACUBO-Commonfund Study of Endowments<sup>56</sup>

Companies

Revenues

7.4%

71%

92.6%

29%

Tier 1 Companies (\$1B+)

0.4% Share of companies  
19% Share of revenue  
0.0% One-year revenue growth  
\$446K Average revenue per employee

Tier 2 (\$500M to \$999M)

1% Share of companies  
21% Share of revenue  
-0.1% One-year revenue growth  
\$173K Average revenue per employee

Tier 3 (\$100M to \$499M)

6% Share of companies  
31% Share of revenue  
0.1% One-year revenue growth  
\$144K Average revenue per employee

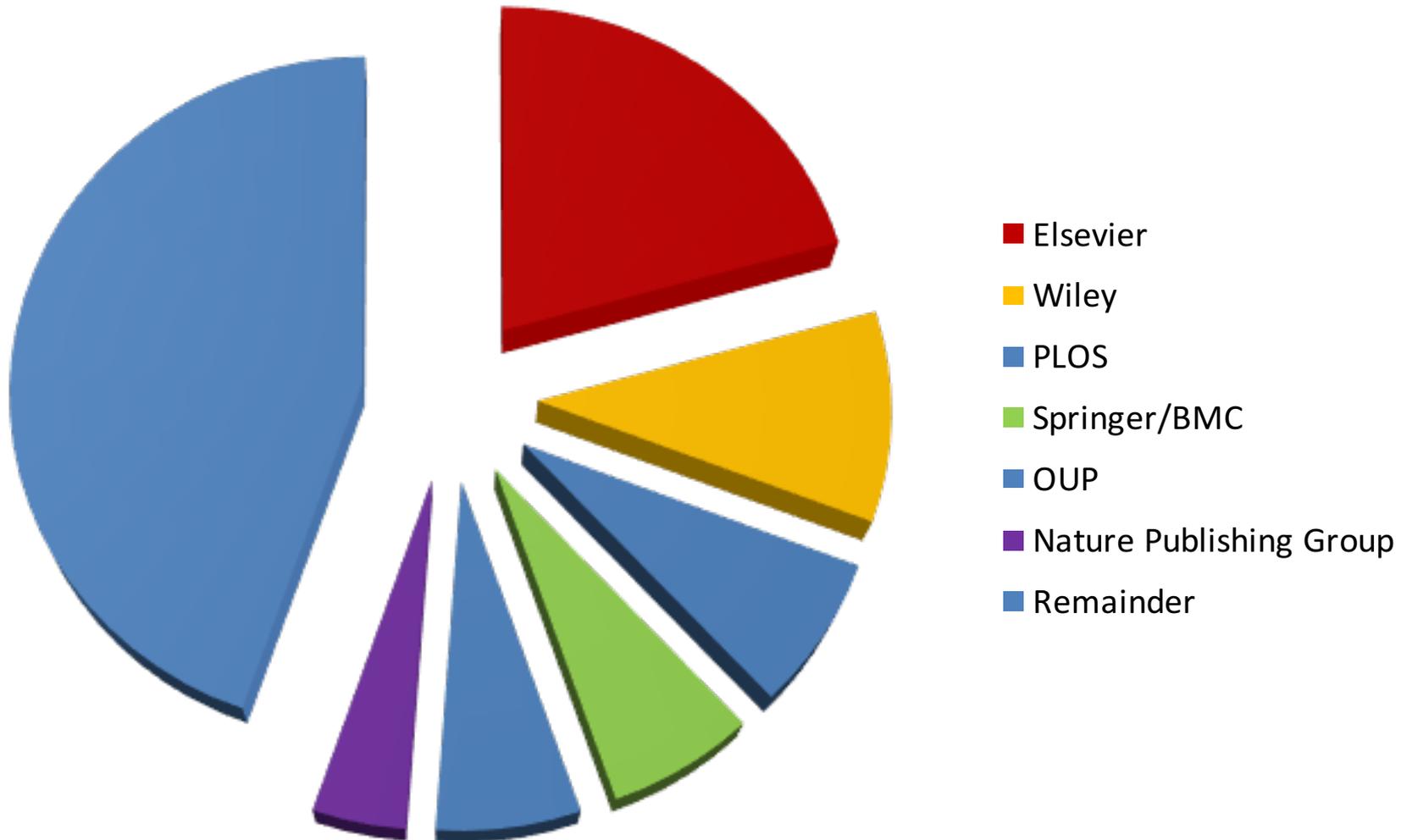
Tier 4 (\$25M to \$99M)

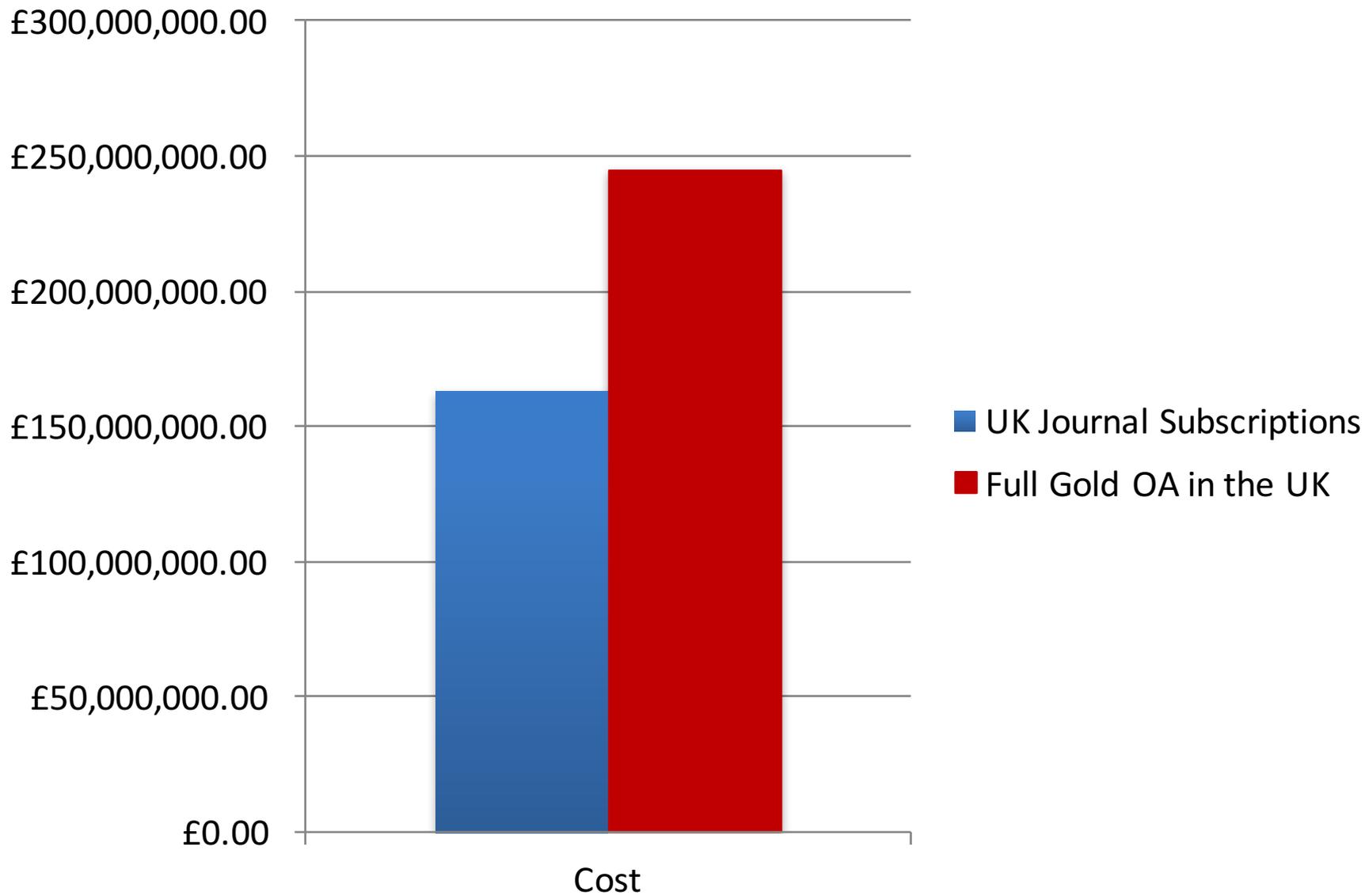
12% Share of companies  
14% Share of revenue  
0.4% One-year revenue growth  
\$187K Average revenue per employee

Tier 5 (<\$25M)

81% Share of companies  
16% Share of revenue  
1.5% One-year revenue growth  
\$180K Average revenue per employee

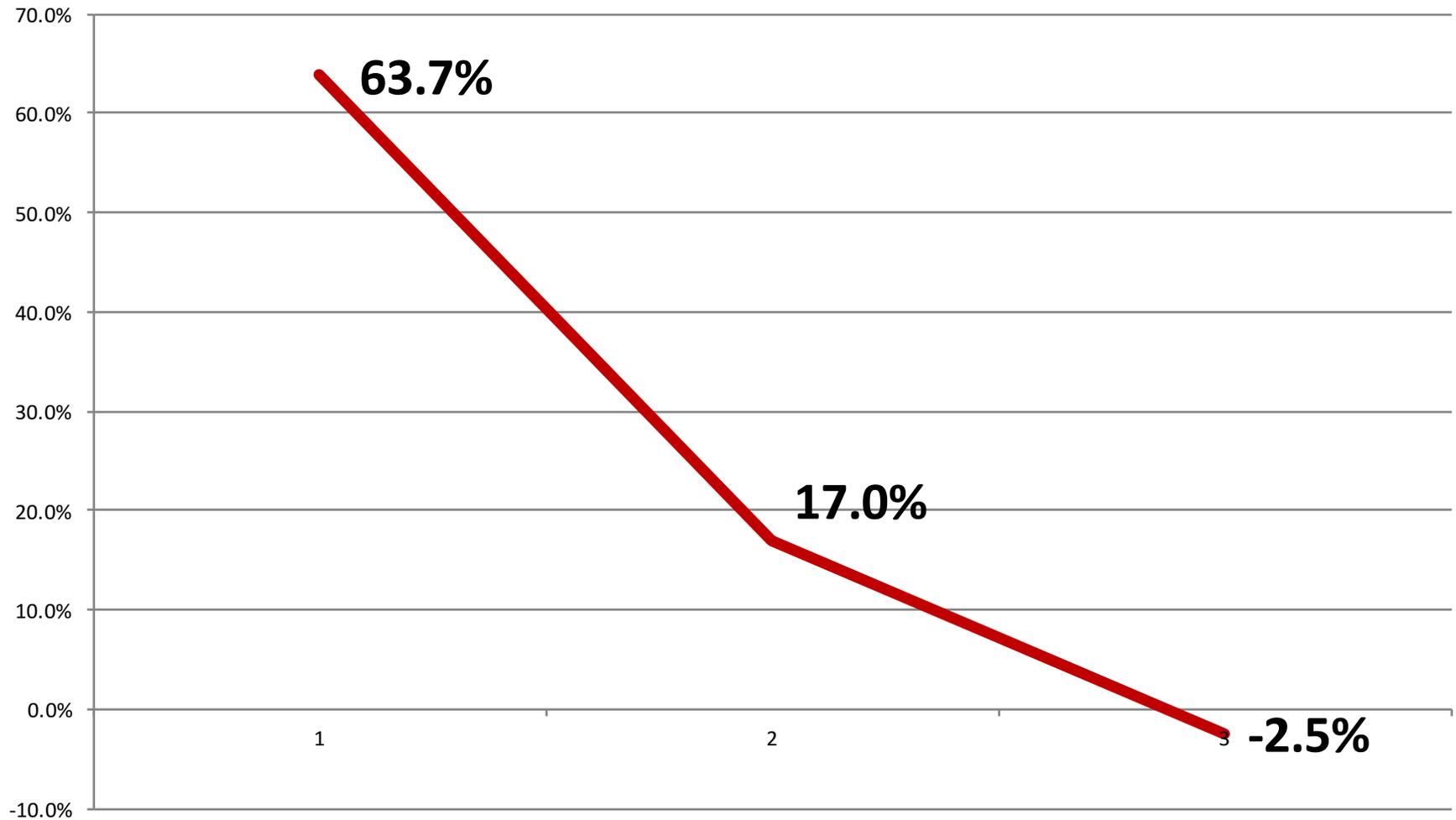
# RCUK OA Funding from Wellcome Trust





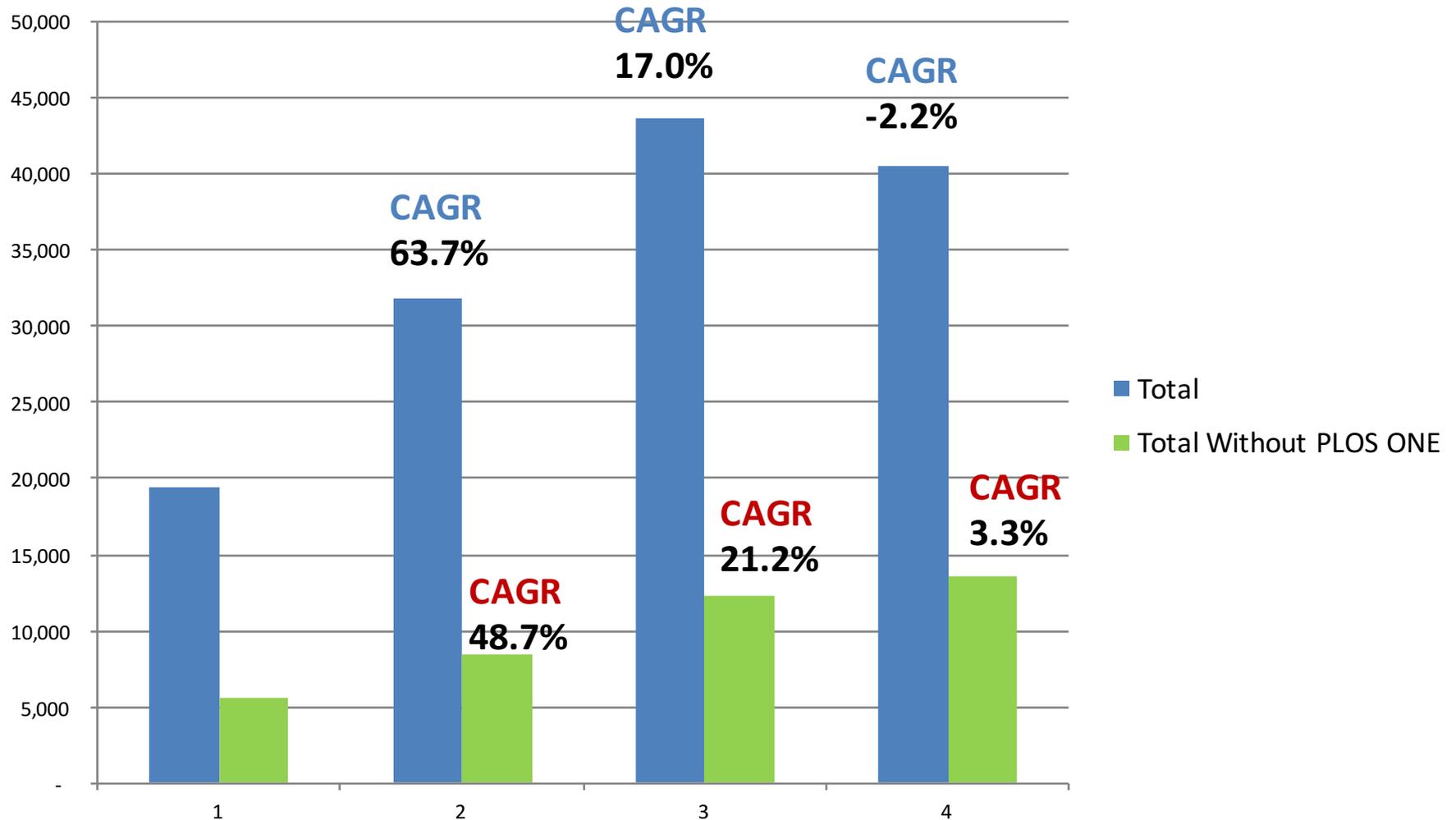
# Growth in OA Slowing Dramatically

Publication rates of 20 major OA journals, 2012-2014



# Growth Slowing Dramatically

CAGR of article publication for 20 major OA journals, 2011-2014



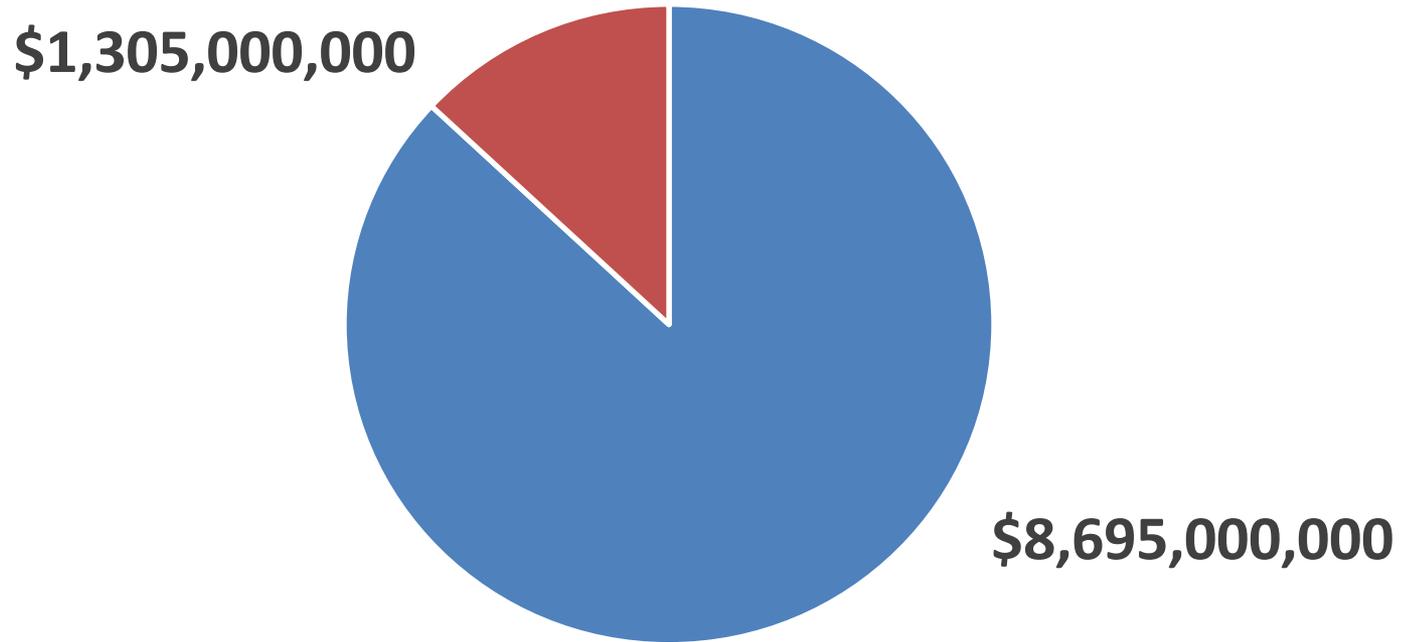




*But Sci-Hub and its ilk break our trust in money. . . . [it] is a dead end. It makes no economic contribution, and has no economic future. . . . it represents a fundamental threat to a major human achievement -- **the ability through money to transform one thing into another.** Sci-Hub represents the end of human alchemy. It represents **economic death.***

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# What Do Publishers Spend?



■ Expenses    ■ Profits/Surpluses

# Think academic publishers are greedy? Do your research

Academics bemoan the cost of journals but, argues a publisher, the industry funds innovation and development in myriad ways

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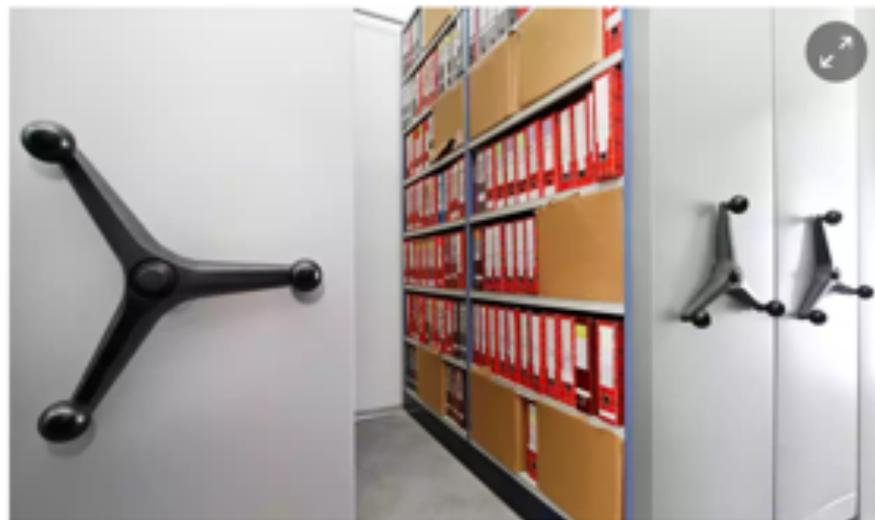
Stephen Lotinga

Chief executive,  
Publishers Association

Wednesday 18 May 2016  
11.24 EDT



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The academic publishing industry invests heavily in areas such as scholarly communication, says Stephen Lotinga. Photograph: Alamy

The academic publishing market is worth £4.4bn to the UK economy. It encompasses global academic publishers and sector-specific publishers, as well as a thriving and learned society publishing community. If you read the recent article "It's time to stand up to greedy academic publishers" you could be forgiven for confusing publishers with printers, thinking that all they do is passively receive research articles, proof, typeset and then publish them. This is not the case.



Publishers serve researchers by undertaking a wide variety of tasks that the community needs but cannot complete on its own. The fact that they are able to do these things means that those scientists, their institutions, funders, policymakers and other benefactors can focus on

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## Kate Taylor: Kids will suffer if Canada's copyright legislation doesn't change

**KATE TAYLOR**

The Globe and Mail

Published Friday, Apr. 22, 2016 2:25PM EDT

Last updated Friday, Apr. 22, 2016 2:28PM EDT

13 Comments

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If you are sitting in a Grade 10 classroom in Ontario studying civics this year, you may well be using *Civics and Citizenship*, published by Oxford University Press. It's a standard text for the compulsory course, examining how the Canadian political system works and asking students to consider such questions as whether our justice system is just or whether, if you didn't live in Canada, you would want to. It was written and edited by Canadians and also offers online access to an interactive workbook and a directory of 250 primary and secondary sources.



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## What If Academic and Scholarly Publishers Paid Research Authors?

POSTED BY **KENT ANDERSON** · MAY 25, 2016 · 37 COMMENTS

**FILED UNDER** ACADEMIA, ACADEMIC JOURNAL, ACADEMIC PUBLISHING, APC, AUTHOR, AUTHOR PAYMENTS, AUTHORS, CONFLICT OF INTEREST, ECONOMICS, FEES, OPEN ACCESS, PAYMENTS, PRICES, PUBLISHING, ROYALTIES

A recent article in the *Chronicle of Higher Education* sought to explore what the authors of the 10 most-downloaded Sci-Hub articles think of Sci-Hub. Aside from cherry-picking its facts (the journalist interviewed three authors out of dozens involved in the papers), the question itself is a red herring. After all, because publishers assume financial risk for scholarly and academic authors,



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- RT @hoganpj: Just published! @Looptopper essays <https://t.co/WkSYNekqE8> 5 hours ago
- CrossRef: Our memories of #SSP2016 [blog.crossref.org/2016/06/our-me...](http://blog.crossref.org/2016/06/our-me...) 7 hours ago
- RT @billtrippe: An Awareness Crusade Against the Online Piracy of Books - IPWatchdog.com | Patents & Patent Law <https://t.co/bIR1k...> 7 hours ago
- RT @rschon: Thoughtful post from @CameronNeylon ... Canaries in the Elsevier

# The Guarded *Guardian*



*Under Mr. Rusbridger, The Guardian invested hundreds of millions of dollars in expansion, fueled in part by proceeds from the sale of a trade publication, Auto Trader. The Guardian Media Group's investment fund had been shrinking recently at an alarming rate — to **£740 million in January, from £838.3 million in July.***

- A central point of disagreement within *The Guardian* has been its refusal — **for Mr. Rusbridger, virtually an ideology** — to charge online subscribers, as news organizations like *The Financial Times*, *The Times of London*, *The Wall Street Journal* and *The New York Times* have come around to doing. . . . Mr. Rusbridger insisted that a digital pay wall would be at odds with the newspaper's editorial mission.

# More Is Not Better

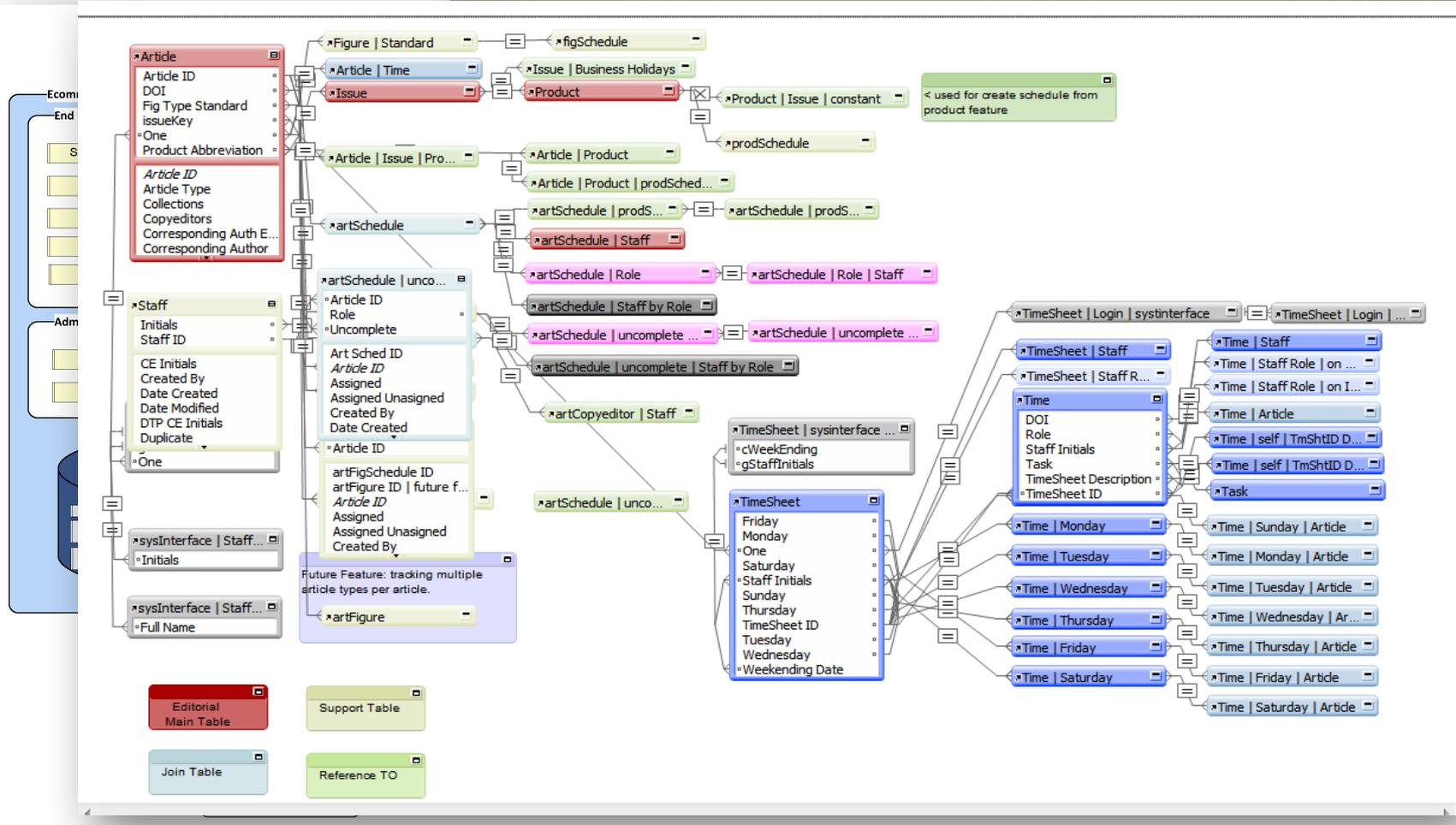
*“... this industry ... began to cede its power in the delivery and distribution process to other people. People who didn't care about or understand the media business. **People who told them the answer wasn't the best of something, it was the most of something.** Partially this was done out of fear, but mostly it was done out of ignorance. So over time, we built up scale in digital to replace user value. . . . And with every new set of eyeballs (or clicks, or views) we added, we diminished the merit of what we made. And advertisers asked for more, because those eyes were worth less. And we made more. And it was less valuable.”*

- Joshua Topolsky

(<https://medium.com/@joshuatopolsky/your-media-business-will-not-be-saved-1b0716b5010c#.mwb7m3310>)

# Publishing Online = Cheaper, Easier

Economic assumptions may be wrong



# The Core Problems

What I see as the biggest problems facing us currently

- Eroding trust in the scientific communication process
- Inadequate funding to support the scientists who have been trained to work as scientists
- Trends toward more centralized power in the system
- Democratizing aspects of science being overtaken by commercial and ideological concerns
- Lack of purpose in effort, no clear shared goals
- Technophilia in place of actual, substantive ideas
- Politically/financially naïve and self-defeating behavior

# Data (Big and Small)

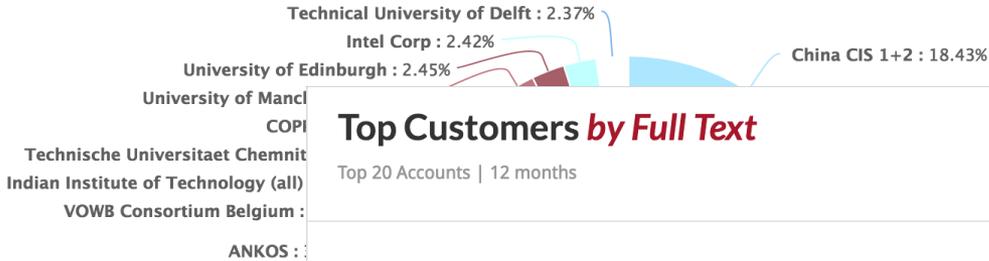
Practical funding solutions don't seem to exist yet

- Data itself is not freely available.
- Provenance, discovery, standardization, storage, and accessibility all are table stakes
  - Not inexpensive table stakes
- Data sharing incentives not clear
- Data publishing processes not incentivized
  - Validation, vetting, curation, integration, interpretation

# Top Customers *by Denials*

Top 20 Accounts | 12 months

Metric ▾



# Top Customers *by Full Text*

Top 20 Accounts | 12 months

Metric ▾

Usage

Usage Distribution

Usage Year on Year

Revenue

Subscriptions



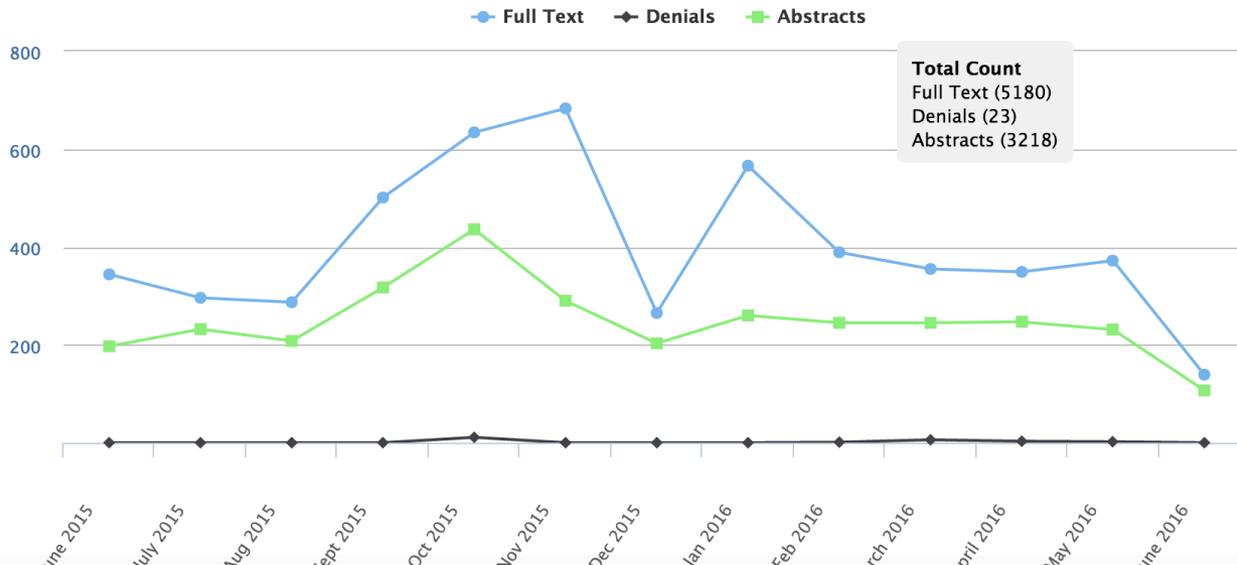
Date Range ▾

Metrics ▾

Products ▾

Customers ▾

## Usage - University of California - All (June 2015 - June 2016)



12.26%

55%

ego : 4.61%

1.16%

RedLink - Dashboard

## Data troves in transition

These databases supported by the National Human Genome Research Institute have 4 years to develop new funding models.

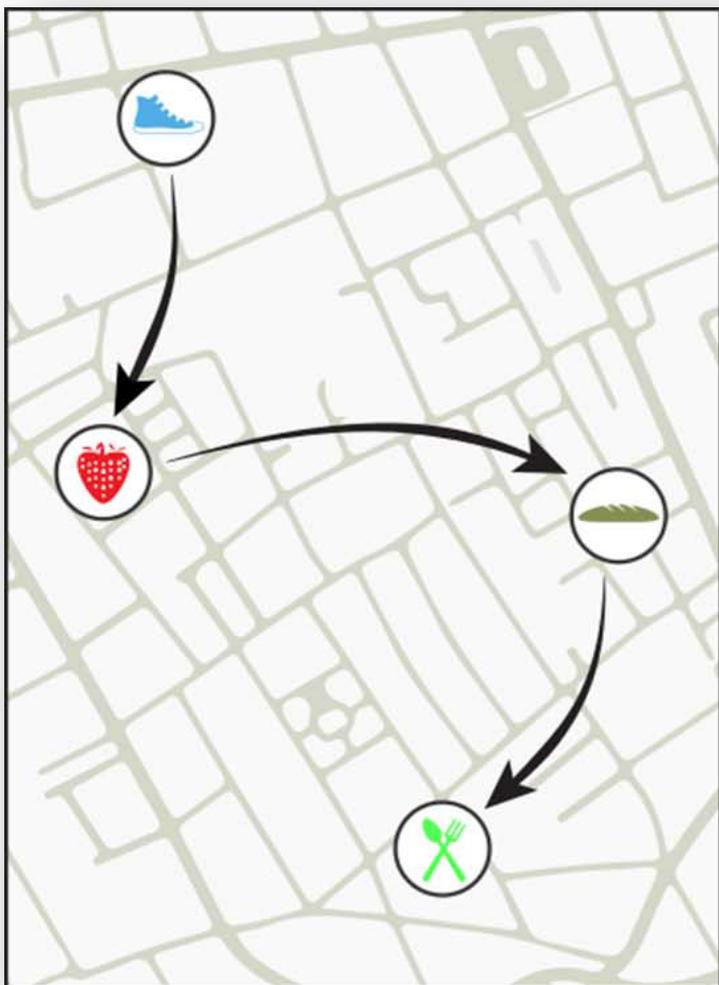
DATABASE	ORGANISM	UNIQUE USERS PER MONTH	2015 NHGRI FUNDING
FlyBase	<i>Drosophila</i>	51,300	\$4.2 million
Gene Ontology Consortium	Multiple	36,000	\$3.7 million
Mouse Genome Database	Mouse	53,100	\$4.7 million
Online Mendelian Inheritance in Man	Human	300,000	\$2.1 million (2014)
Reactome (biological pathways)	Human	19,400	\$1.2 million
Saccharomyces Genome Database	Yeast	65,000	\$2.7 million
UniProt (protein function)	Multiple	433,100	\$4.9 million
WormBase	<i>Caenorhabditis elegans</i>	15,500	\$2.9 million
Zebrafish Model Organism Database	Zebrafish	23,300	\$3.1 million

*“... he and other NIH leaders are searching for ways to cut costs, and they are urging the databases' overseers to consider charging for use.”*

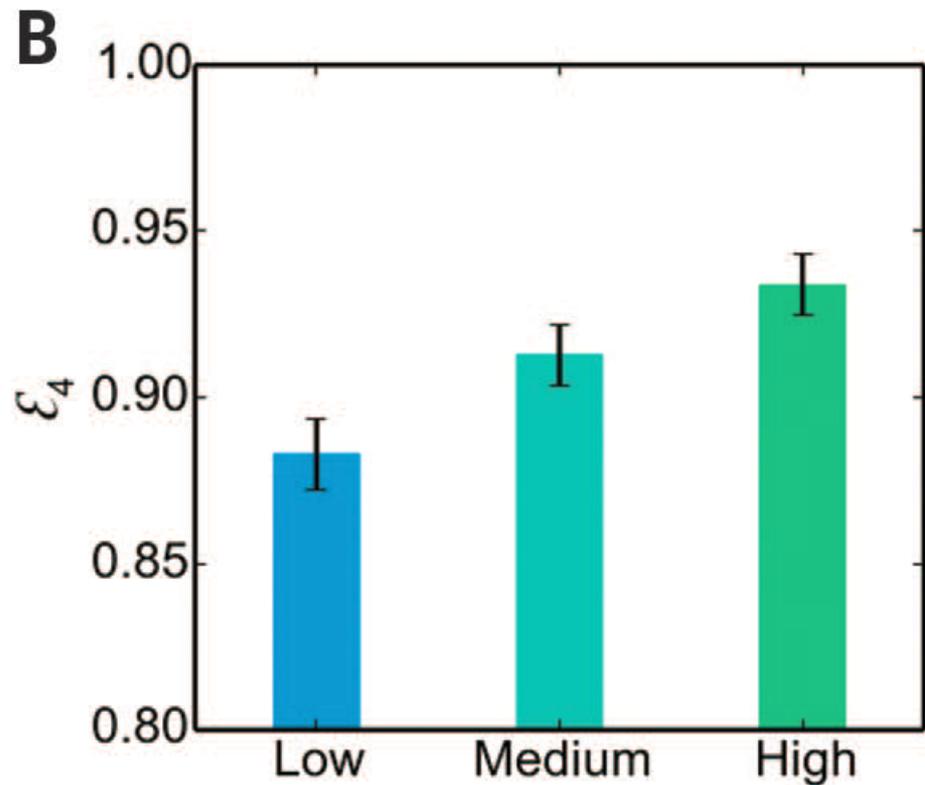
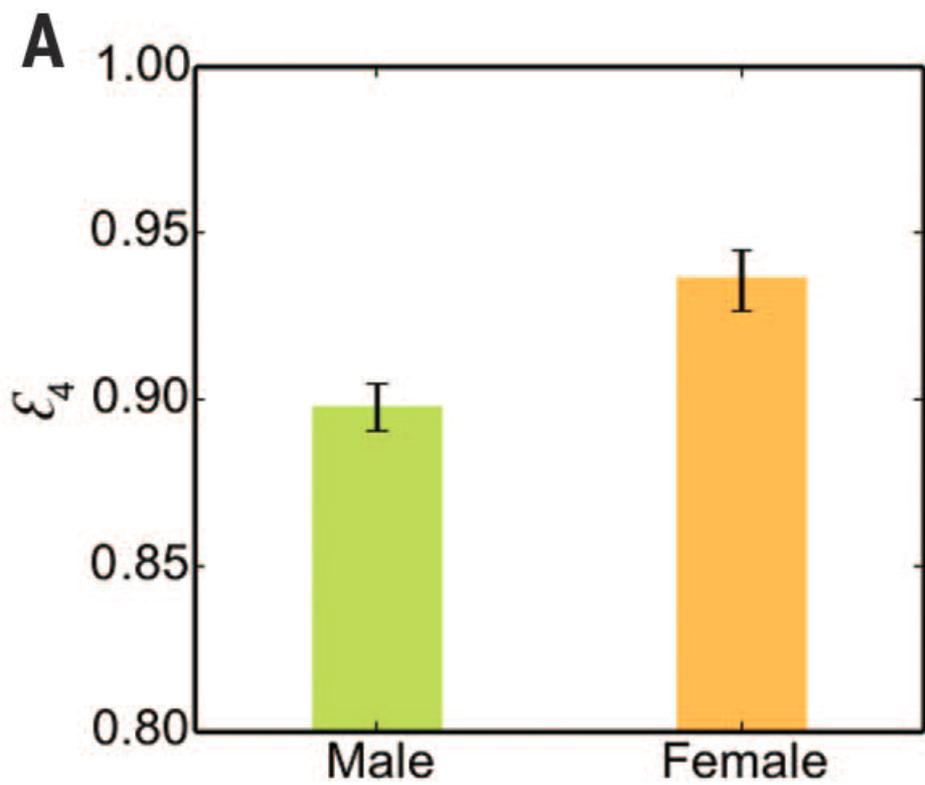
# Open Data and Data Publishing

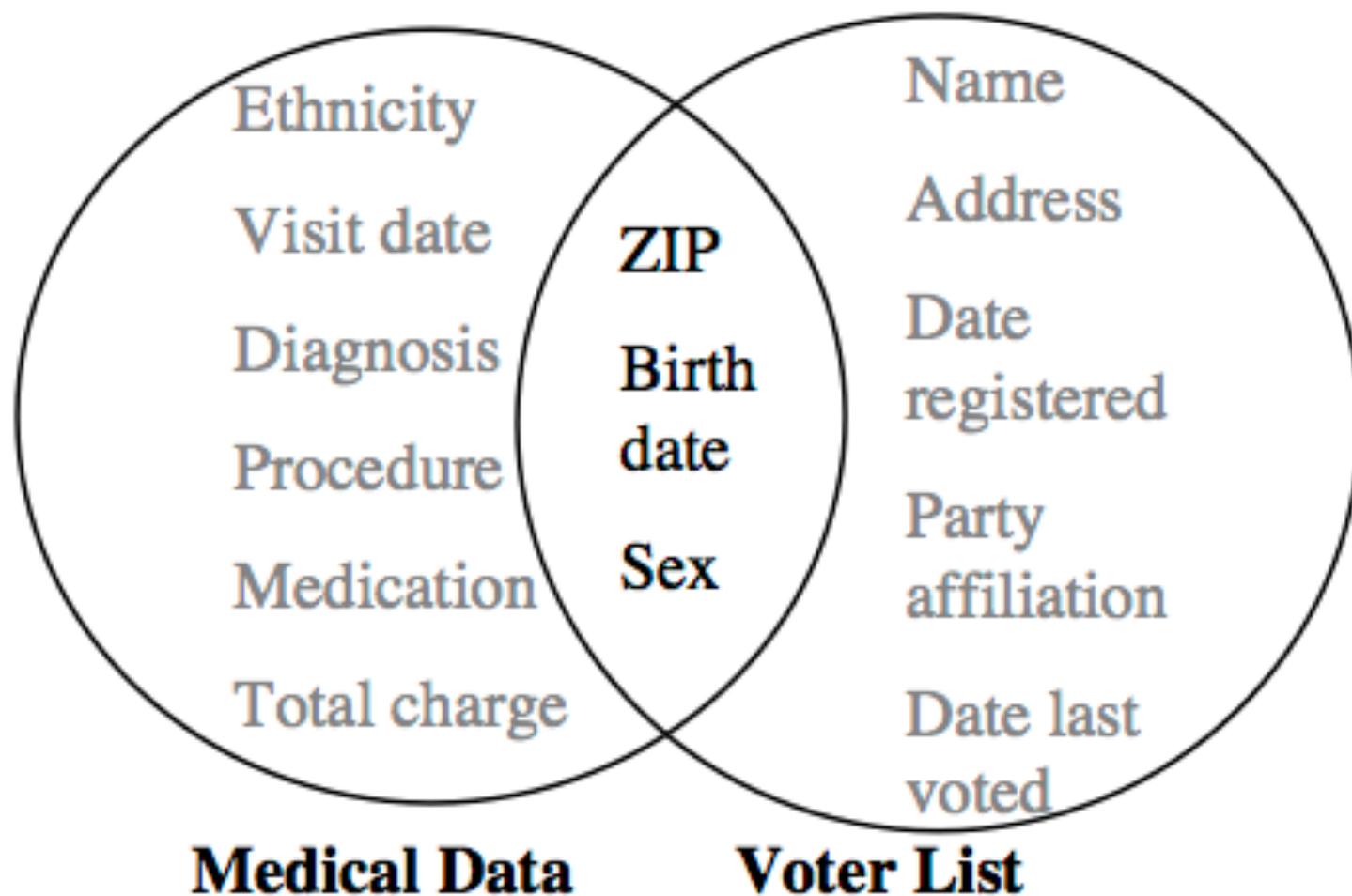
The road ahead needs work





shop	user_id	time	price	price_bin
	7abc1a23	09/23	\$97.30	\$49 – \$146
	7abc1a23	09/23	\$15.13	\$5 – \$16
	3092fc10	09/23	\$43.78	\$16 – \$49
	7abc1a23	09/23	\$4.33	\$2 – \$5
	4c7af72a	09/23	\$12.29	\$5 – \$16
	89c0829c	09/24	\$3.66	\$2 – \$5
	7abc1a23	09/24	\$35.81	\$16 – \$49





**Figure 1 Linking to re-identify data**

# B944 - 02/06/2014

02/12/2014

02/11/2014

02/10/2014

02/09/2014

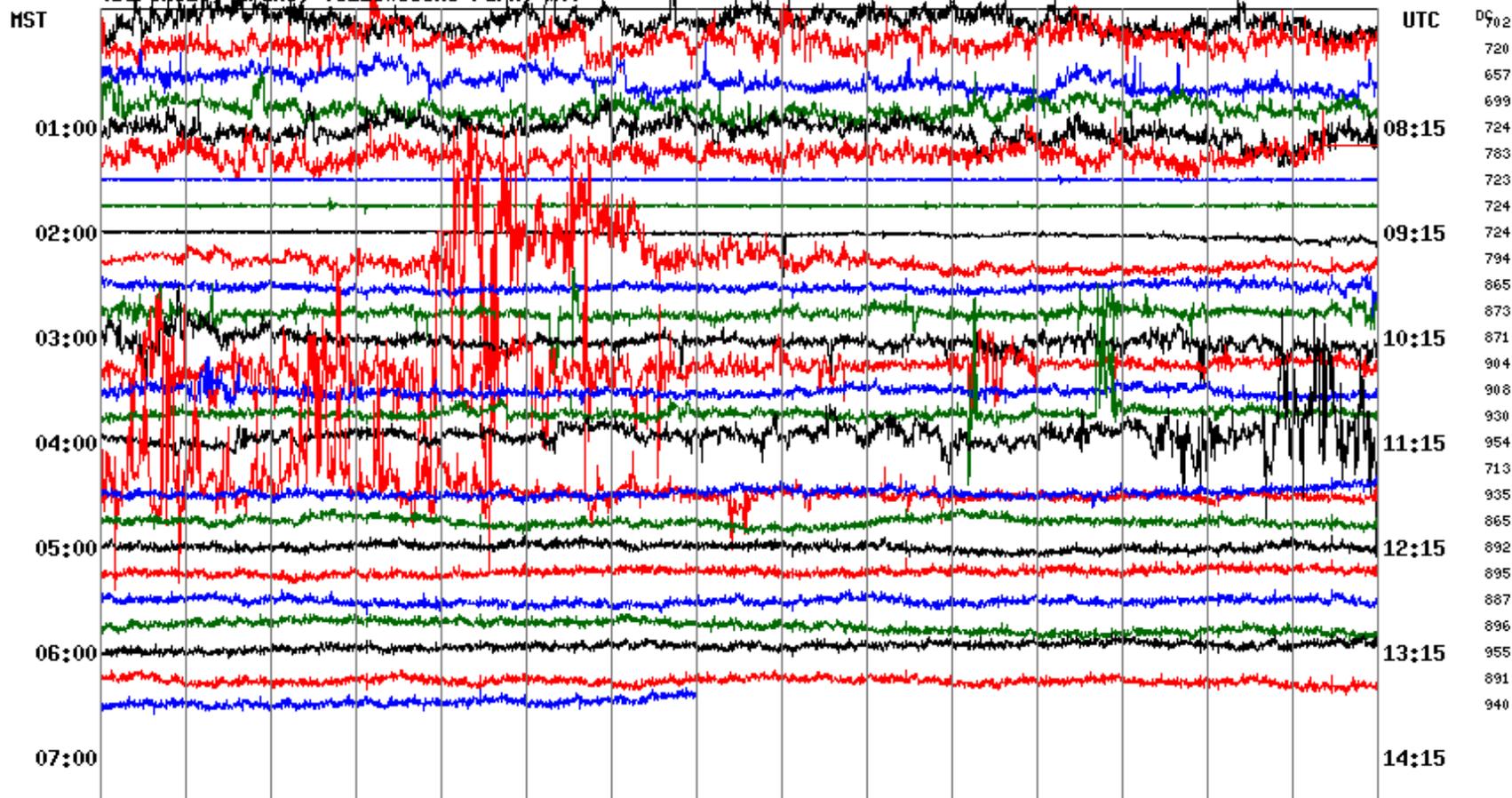
02/08/2014

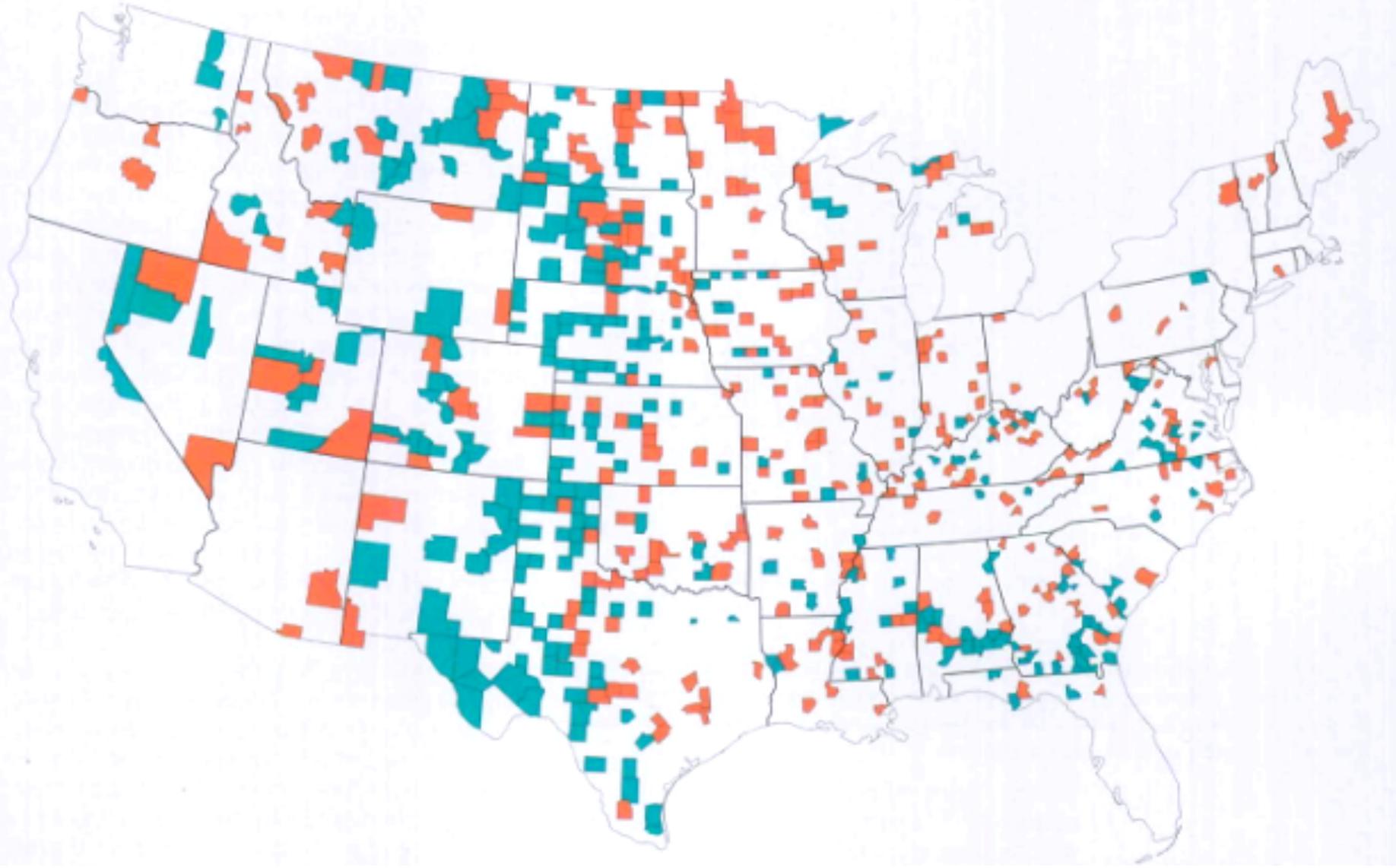
02/07/2014

Feb 6, 2014

B944 EHZ PB 01

(Borehole Grant, Yellowstone Park, WY)





Current Issue > vol. 111 no. 24 > Adam D. I. Kramer, 8788–8790, doi: 10.1073/pnas.1320040111



# Experimental evidence of massive-scale emotional contagion through social networks

Adam D. I. Kramer<sup>a,1</sup>, Jamie E. Guillory<sup>b,2</sup>, and Jeffrey T. Hancock<sup>b,c</sup>

Author Affiliations

Edited by Susan T. Fiske, Princeton University, Princeton, NJ, and approved March 25, 2014 (received for review October 23, 2013)

A correction has been published

A correction has been published

Abstract Full Text Authors & Info Figures Metrics Related Content

## Significance

We show, via a massive ( $N = 689,003$ ) experiment on Facebook, that emotional states can be transferred to others via emotional contagion, leading people to experience the same emotions without their awareness. We provide experimental evidence that emotional contagion occurs without direct interaction between people (exposure to a friend expressing an emotion is sufficient), and in the complete absence of nonverbal cues.

## Abstract

Emotional states can be transferred to others via emotional contagion, leading people to experience the same emotions without their awareness. Emotional contagion is well established in laboratory experiments, with people transferring positive and negative emotions to others. Data from a large real-world social

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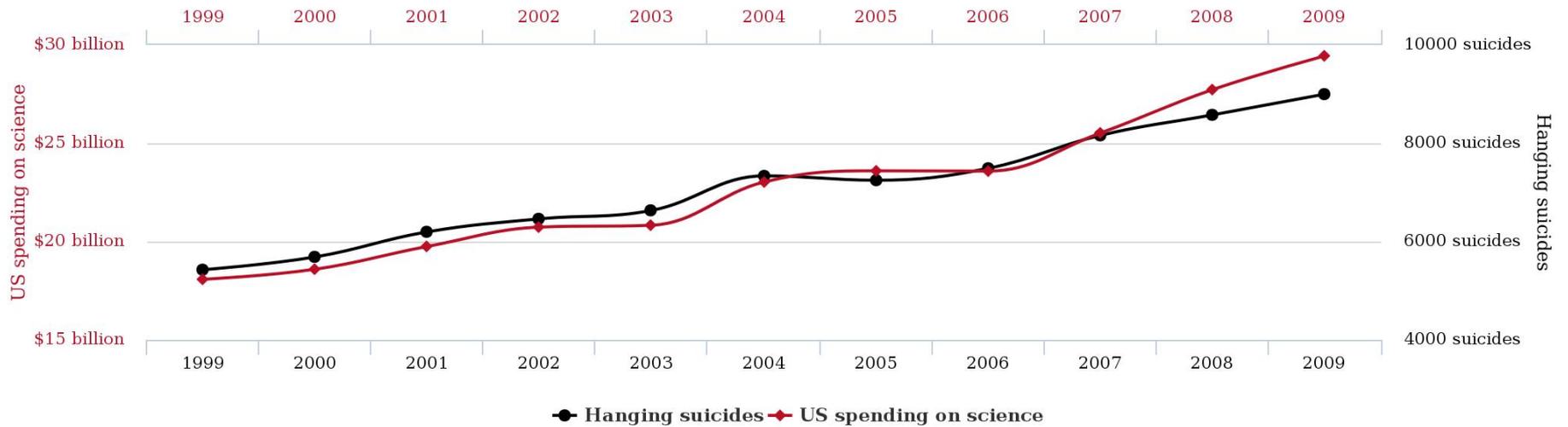
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# US spending on science, space, and technology correlates with Suicides by hanging, strangulation and suffocation



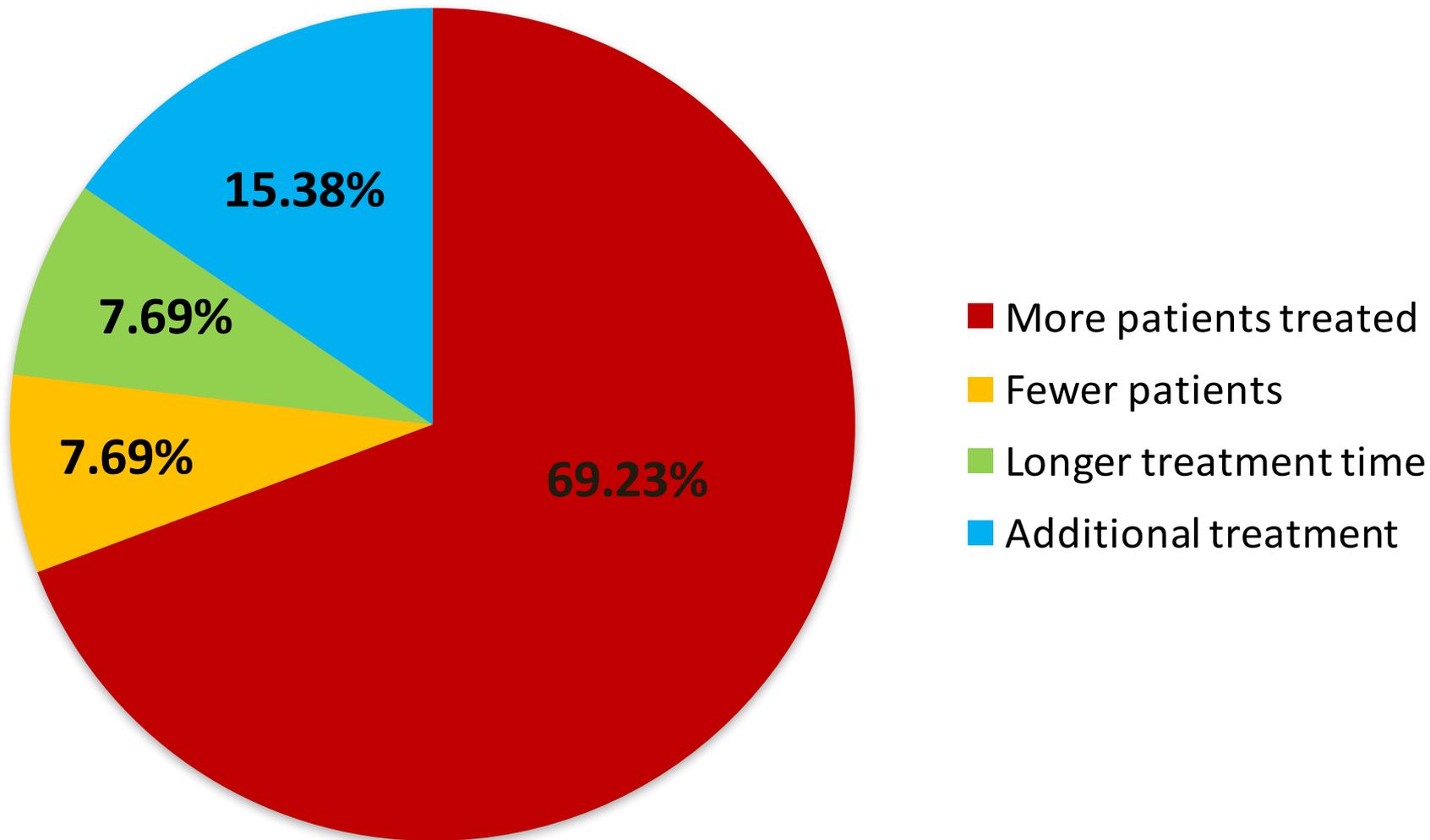
# Correlation ≠ Meaning

<http://www.tylervigen.com/spurious-correlations>

*“Companies should remember that while big data is very good at detecting correlations, it does not explain which correlations are meaningful.”*

*- US Federal Trade Commission*

## Reanalyses of 13 Null Results Medical Studies



# PACE Trial Controversy

*“I have not given up in my efforts to get the data to demonstrate that this trial did not show that psychotherapy extends the survival of cancer patients, but I am blocked by the unwillingness of authorities to enforce data sharing rules that they espouse.”*

*- James Coyne, PhD, PLoS Blog*

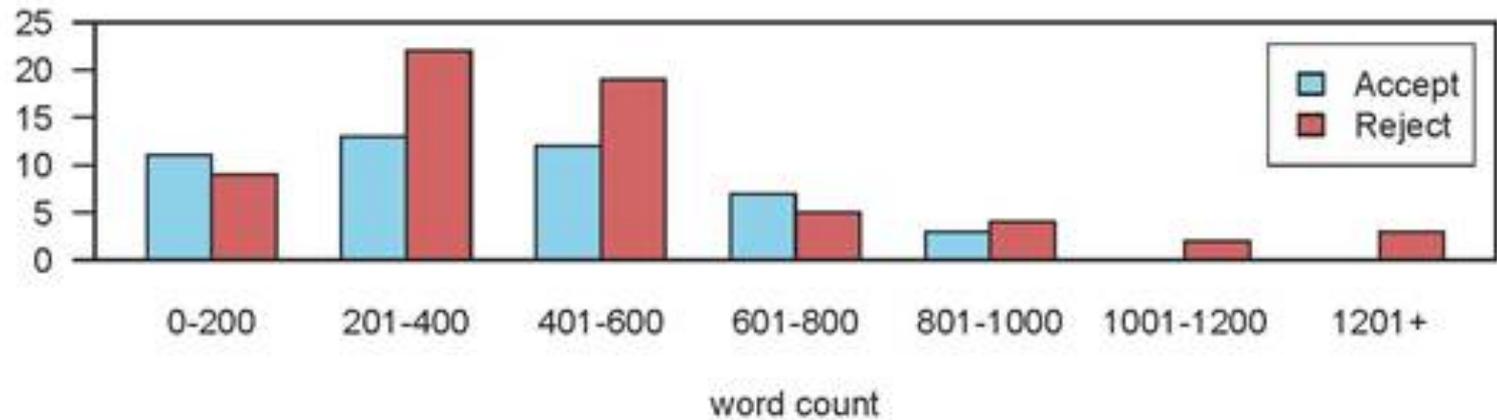
# Reproducibility Means More Screening

A coarse filter lets through more we can't reproduce

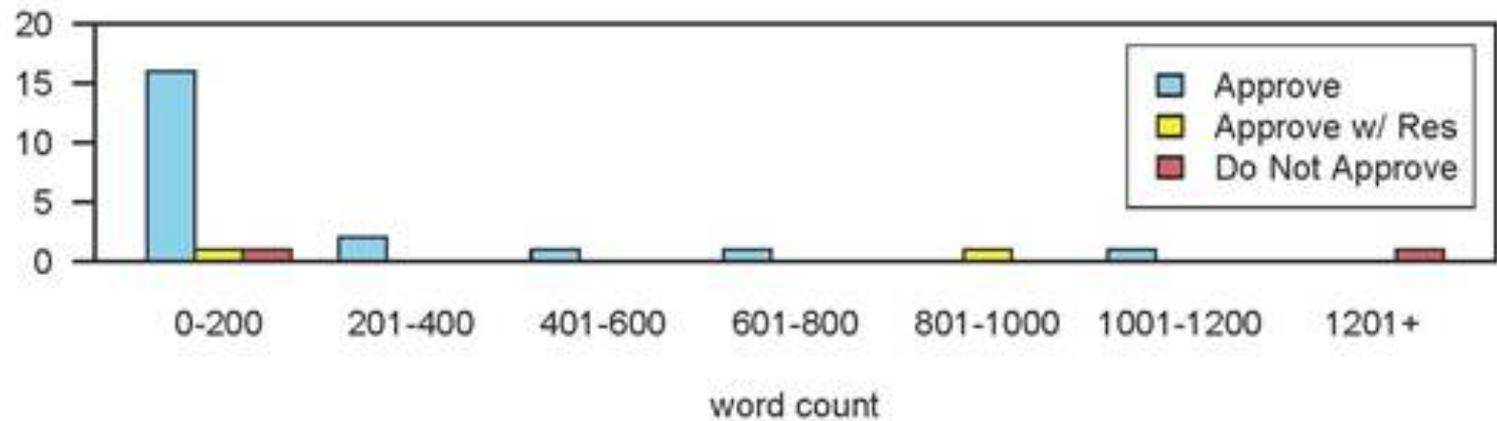
***“If you want better, more reproducible papers, you’re going to have fewer of them. Shorter publication lists, fewer journals, and especially fewer lower-tier journals. The number of papers that are generated now cannot be maintained under more reproducible conditions . . .”***

***- Derek Lowe, In the Pipeline***

### Medical Journals



### F1000 Research



# The Importance of Independence

## Funders

Foundation

Corporation

Government

Institution

Individual

## Authors

Individual

Collaborative



How Good  
Is It?

Brand

# Summary

It's always about the money

- Overall funding of the sciences is below par
- Young scientists are abandoning ship
- New “open” models are more expensive
  - *Current funding sources appear inadequate*
- Financial pressures are forcing shortcuts
- Publishers are being attacked in many ways
- “Big data” may be expensive to do right
- More research being produced, less supported
- Research funding’s “Tragedy of the Commons”?

***“The #1 issue in public access is the public funding of science.”***

*– Fred Dylla, formerly of AIP*

**Aries Systems**  
*Editorial Manager User Group*  
June 16, 2016

# Discussion and Questions

Kent R. Anderson  
CEO

**RedLink**  
See What You're Missing