

Scientific Misconduct II & Professional Ethics

Bioengineering 100

Fall 2016



UNDERGRADUATE RESEARCH & SCHOLARSHIPS FAIR

**September 15, 12-4 pm
Hearst Mining Hall**

Visit with representatives from dozens of research and scholarship programs.



Please join us for the first annual

BioE Undergraduate Town Hall

Friday, Sept 16, 4:00 - 6:00 PM
Sibley Auditorium, Bechtel Engineering

See your input in action!



New career events



New strategic plan



Student survey results

Talk with BioE faculty

Special gift for attendees

Food!

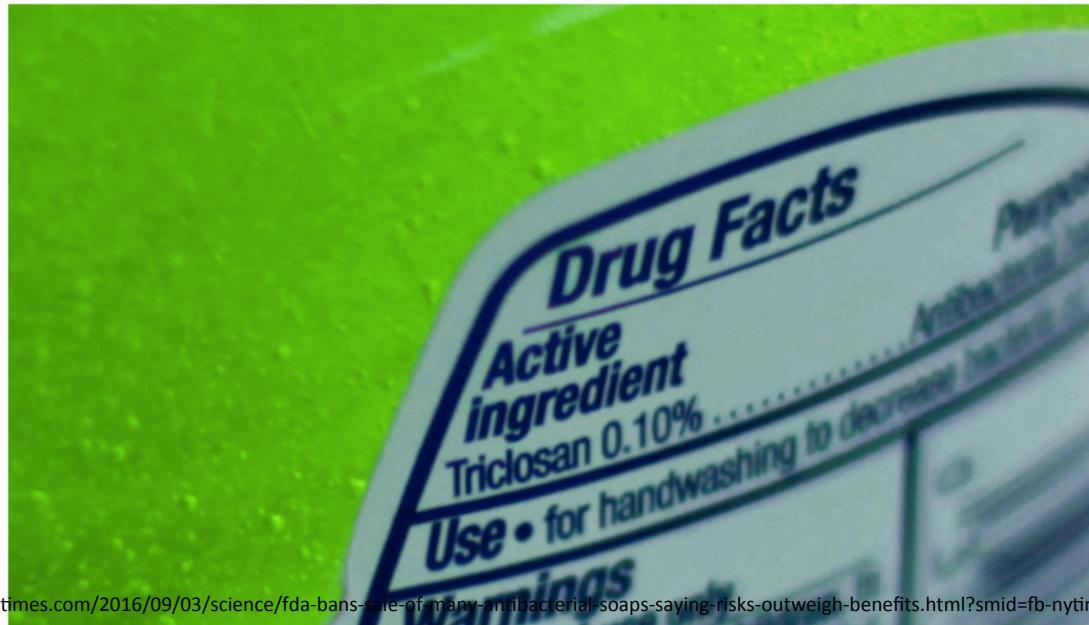


News

HEALTH

F.D.A. Bans Sale of Many Antibacterial Soaps, Saying Risks Outweigh Benefits

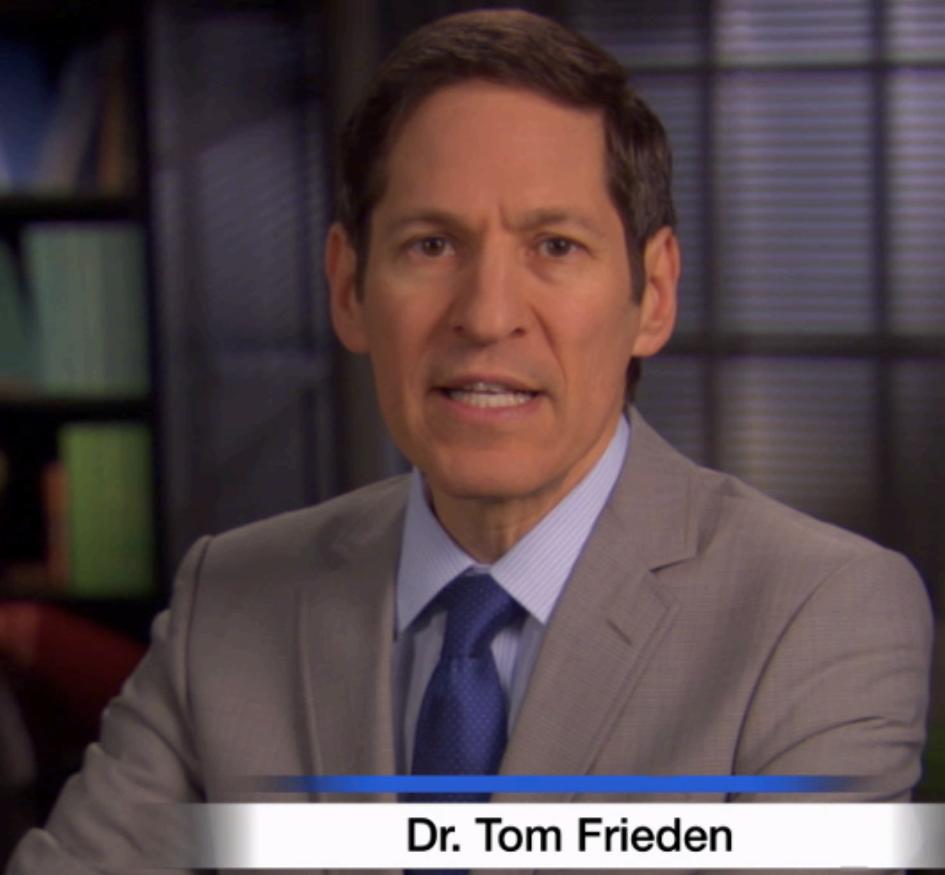
By SABRINA TAVERNISE SEPT. 2, 2016



Shout out to Anjali Jain
for the article!

Post your ethics
related news to
bCourses>Discussion>
Ethics in the News

Important PSA



Dr. Tom Frieden

CDC Director

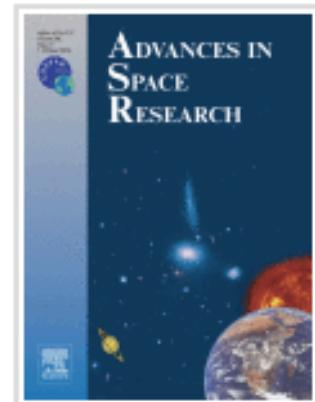
U.S. gov't researchers withdraw climate paper after using pseudonyms

with 8 comments

Climate scientists from the U.S. Department of Agriculture have withdrawn a study they wrote under eyebrow-raising pseudonyms.

The [withdrawn paper](#), about predicting surface temperatures of planets, appeared in *Advances in Space Research* in August, 2015, and is authored by [Den Volokin](#) and [Lark ReLlez](#).

Normally, a withdrawal wouldn't raise our eyebrows, but climate scientist Gavin Schmidt [pointed out on Twitter](#) that the authors' names are eerily similar to another pair who have [published climate papers together](#): Ned Nikolov and Karl Zeller. Yes, that's correct — [Den Volokin](#) and [Lark ReLlez](#) are Ned Nikolov and Karl Zeller spelled backwards. [Nikolov](#) and [Zeller](#) are currently listed as a physical scientist and a meteorologist, respectively, at the U.S. Department of Agriculture.



Submitting a scientific paper
under a pseudonym is unethical

Agree or Disagree?

What are potential upsides to
anonymity/pseudonyms in
science?

What are potential downsides?

Scientific Misconduct... continued

Research Scenarios

'Data' Scenario: Has the researcher falsified, fabricated, or unethically modified data in this case?

What percent of scientists have falsified, fabricated, or otherwise modified/altered data to improve outcomes?

What's the prevalence?

- 2% of scientists admit to fabricating, falsifying, or modified/altered results to improve outcomes
- 14% have personal knowledge of a colleague who has fabricated, falsified, or modified/altered results

WHY RESEARCHERS STUMBLED

Instructors on the Professionalism and Integrity Program assessed underlying causes (often more than one) for researchers' lapses.



'Researcher Rehab' Survey



‘Authorship’ Scenario: Should A. Futurephd be included as a co-author?

Controllable risk factors for heart disease?

Sugar industry secretly paid for favorable Harvard research



Dr. Cristin Kearns finds 50 year old case of industry sponsored research

- In the 1960s, Dr. Stare and Dr. Hegsted, two prominent Harvard nutritionists, published two reviews in NEJM that promoted fat and cholesterol as the main dietary causes of heart disease, and downplayed the risk of sugar.
- The authors did not disclose they were paid (~ \$48,000 in 2016 dollars) by the Sugar Research Foundation (not required to disclose at the time)

Impact Factor

- Average number of times published papers are cited up to two years after publication normalized by the total number of articles published by that journal
- <http://www.sciencegateway.org/rank/index.html>
- NEJM (New England Journal of Medicine) impact factor: 59.6 (2015)

How meaningful is impact factor as a metric for scientific papers?

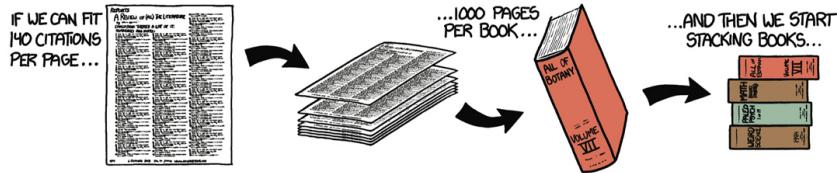
Your (real) Impact Factor

$$\text{Impact Factor (corrected)} = \frac{\# \text{ times your work is cited} - \# \text{ citations that actually trash your work} - \# \text{ times you cited yourself (nice try)} - \# \text{ times you were cited just to pad the introduction section} - \# \text{ citations the editor pressured the author to include to increase the journal's impact factor}}{\# \text{ original articles you've written} + \# \text{ articles you were included in out of pity or politics} + \# \text{ not-so-original articles you've } \text{written} \text{ copied and pasted}}$$

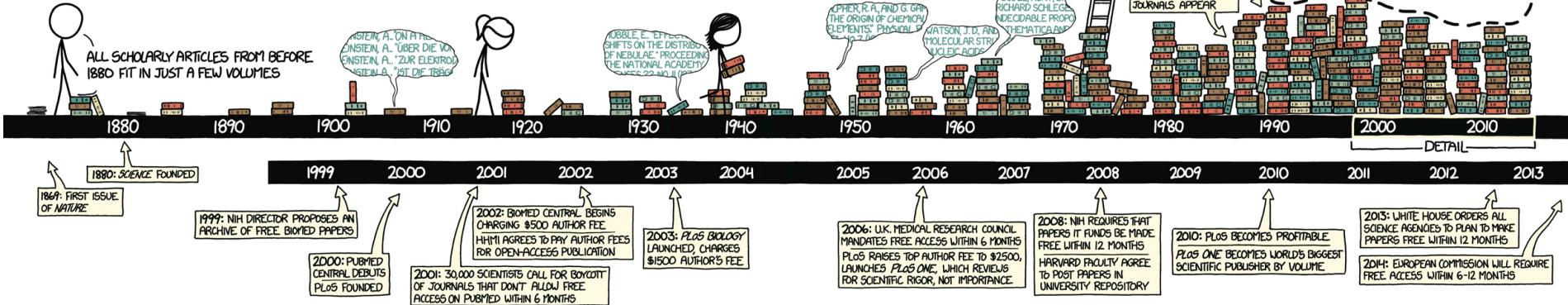
Can you guess the scientific
paper that has almost 1/3 of its
total citations made AFTER it
was retracted?

HOW MUCH SCIENCE IS THERE?

SCIENTIFIC PUBLISHING HAS BEEN ACCELERATING—A NEW PAPER IS NOW PUBLISHED ROUGHLY EVERY 20 SECONDS. LET'S IMAGINE A BIBLIOGRAPHY LISTING EVERY SCHOLARLY PAPER EVER WRITTEN. HOW LONG WOULD IT BE?

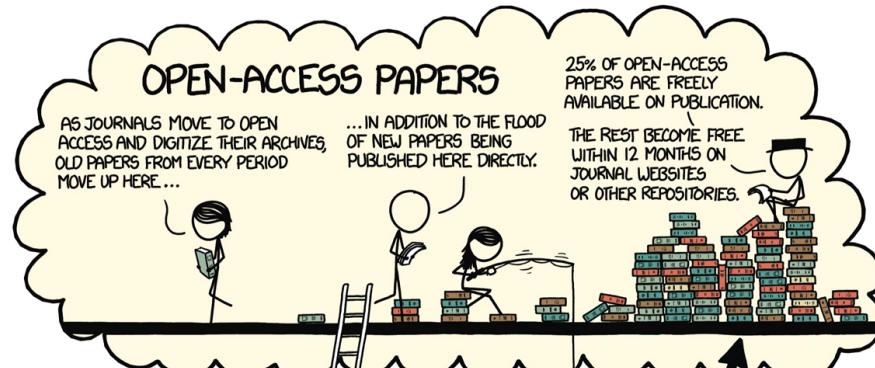


...THIS IS WHAT THE FULL LIST WOULD LOOK LIKE:

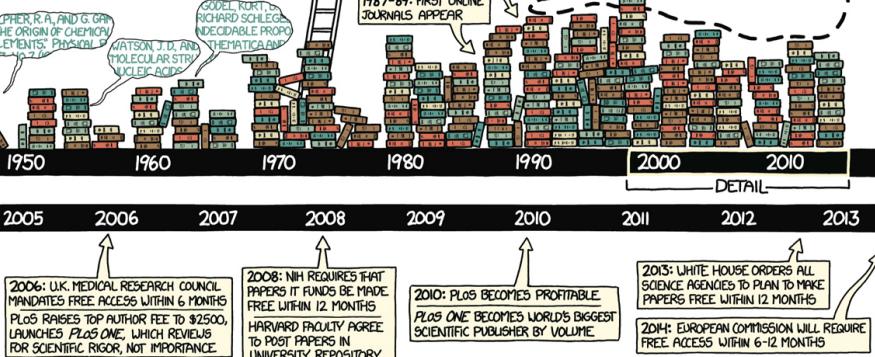


HOW OPEN IS IT?

SINCE THE ADVENT OF THE WEB, MUCH OF SCIENTIFIC PUBLISHING HAS BEEN MOVING TO OPEN ACCESS. ACCORDING TO SCIENCE-METRIX, OPEN ACCESS REACHED A "TIPPING POINT" AROUND 2011: MORE THAN 50% OF NEW RESEARCH IS NOW MADE AVAILABLE FREE ONLINE.



TRADITIONAL PUBLICATION



How does culture influence our ethical decisions?

Alphabet drops Google's famous 'Don't Be Evil' motto

by Daniel Roberts

@readDanwrite

OCTOBER 5, 2015, 8:40 AM EDT



Professional Codes of Ethics

Resources

[Medical Ethics](#)[About the Ethics Group](#)[!\[\]\(4754fc919b2e8116c30595fd4b918f00_img.jpg\) AMA Code of Medical Ethics](#)[History of AMA Ethics](#)[Frequently Asked Questions](#)[Purchase the Code of Medical Ethics](#)[AMA Journal of Ethics](#)[Declaration of Professional Responsibility](#)[Ethics Group Internship Program](#)[!\[\]\(4f4d5875cccdb44c8f60eb9e86279722_img.jpg\) A](#) [!\[\]\(23c9b4f3b54e863b8fbff0836a5ebfef_img.jpg\) A](#) [Text size](#)[!\[\]\(649de4df2d40e7a19ce443fb27273446_img.jpg\) Print](#)[!\[\]\(24f6c2ce6f1490d1d5ae4f3dfdf89611_img.jpg\) Email](#)

AMA Code of Medical Ethics



Since its adoption at the [founding meeting](#) of the American Medical Association in 1847, the *AMA Code of Medical Ethics* has articulated the values to which physicians commit themselves as members of the medical profession. Together, the *Principles of Medical Ethics* and the *Opinions* of the [AMA's Council on Ethical and Judicial Affairs](#) that make up the *Code* offer guidance to help physicians meet the ethical challenges of medical practice.



ETHICS CODES COLLECTION

WHY CODES? AUTHORIZING A CODE BIBLIOGRAPHY COLLECTION POLICY CONTACT US RESEARCH & NEWS PRINT GUIDE CSEP

Search the Ethics Codes Collection

The Ethics Codes Collection (ECC) is the largest database of codes of ethics and guidelines in the world. It contains over 2,500 individual codes from around 1,500 different organizations, and collects both current and historical versions of these documents. The ECC seeks to provide practitioners, students, scholars and the public access to codes of ethics and guidelines and in this way inform ethical decision making in professional, entrepreneurial, scientific, and technological fields.

In January of 2016, the Center received a generous grant from the [John D. and Catherine T. MacArthur Foundation](#) to enhance the Ethics Codes Collection. Funding from the MacArthur Foundation will provide the resources to embark on an extensive design strategy to improve the digital ECC, and will include tools such as better

SEARCH

« PROFESSIONAL CATEGORIES

- AGRICULTURE
- ANIMAL BREEDING AND CARE
- ARCHITECTURE, ART AND DESIGN
- BUSINESS
- COMMUNICATIONS

Companies/institutions have their own ethical norms independent of individual ethics.

Agree or Disagree?

Rank the following companies from
‘most ethical’ to ‘least ethical’

- Google
- Apple
- Facebook
- Twitter
- Instagram

What exceptions will you accept?

Ethics for the Real World
(Ronald Howard, Clint Korver)