

Research Integrity: Why Is This Such a Problem?

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Other roles where I am aware of the importance of research integrity

- SWOG (Vice Chair, Translational Medicine)
- JAMA Oncology (Deputy Editor)
- ECOG-ACRIN Clinical Trial Data Monitoring Committee (DMC)
 - Service on 3 other DMCs were terminated during pandemic
- Leading a lab for 30+ yrs
- **Daily emails**

GCC Workshop: May, 2024

Links

- Daily emails

<https://retractionwatch.com/>

<https://forbetterscience.com/>

- Online posts about questionable findings

<https://blog.pubpeer.com/>

Elizabeth Bik and David Sholto

- One example of the craziness we have seen recently

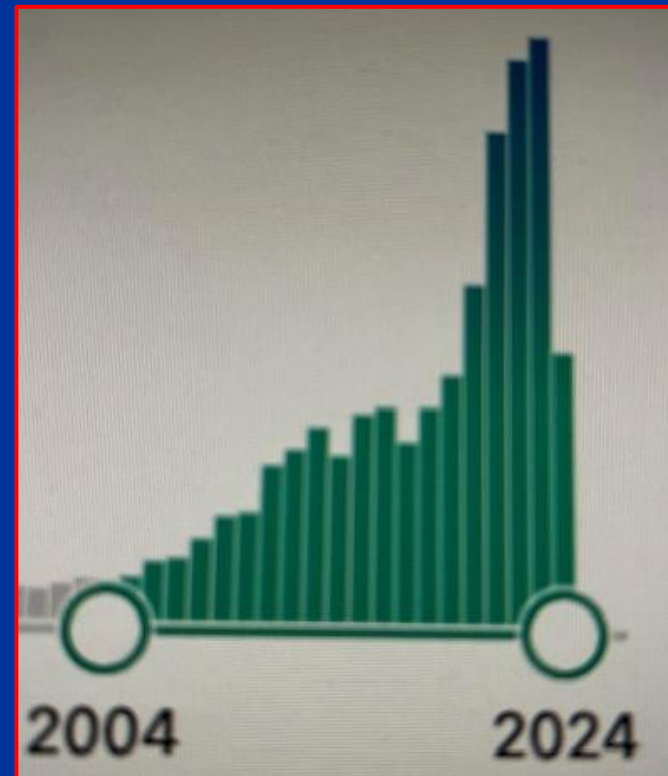
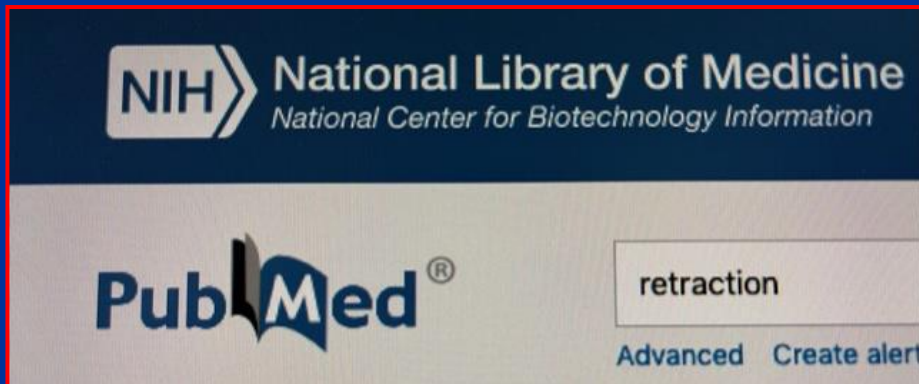
<https://www.dailymail.co.uk/news/article-12993089/dana-farber-cancer-institute-harvard-medical-data-manipulation.html>

Don't Be Surprised if You Feel One or More of the Following Emotions After (or during) This Lecture

- Shocked
- Angry
- Embarrassed (Guilty?)
- Entertained 😊
- Discouraged
- Reinvigorated
 - You don't have to publish in CNS to have a successful career and, more importantly, to make significant contributions!
- All of the above

Setting the Tone for Today's Talk/Workshop

2,256



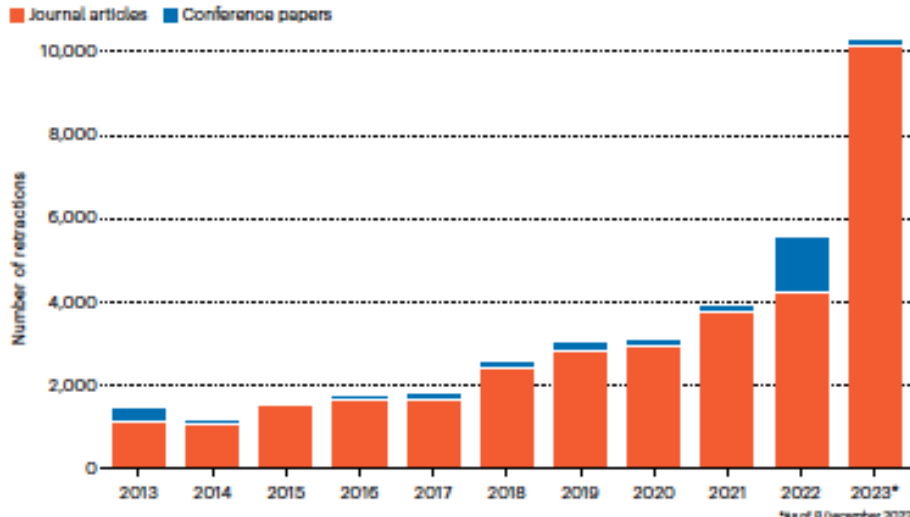
MORE THAN 10,000 RESEARCH PAPERS WERE RETRACTED IN 2023 — A NEW RECORD

The number of articles being retracted rose sharply this year. Integrity experts say that this is only the tip of the iceberg.

Richard Van Noorden
Nature, Dec 2023

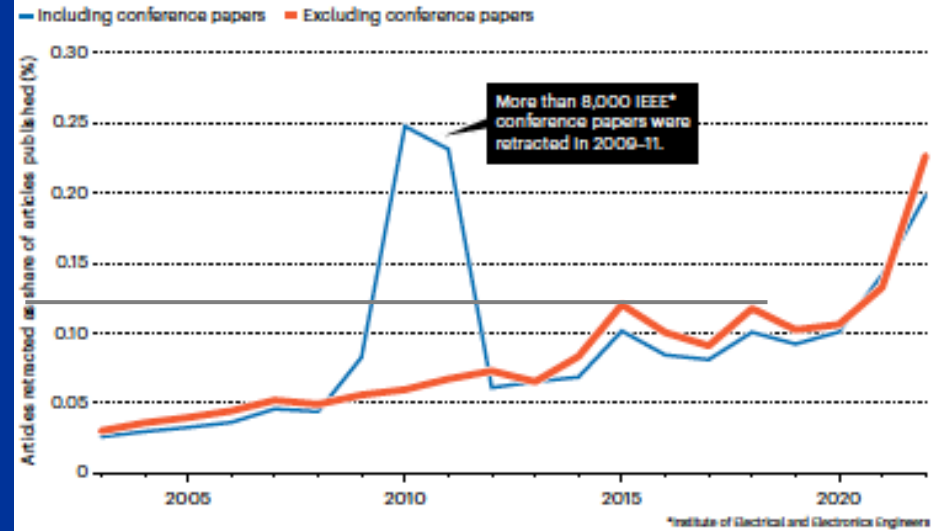
A BUMPER YEAR FOR RETRACTIONS

Retraction notices in 2023 have passed 10,000, largely because of more than 8,000 retractions by Hindawi.



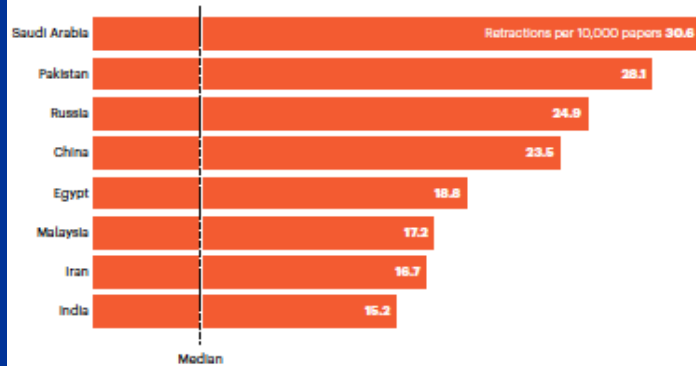
RISING RETRACTION RATES

The ratio of retracted papers to articles published has risen to above 0.2%.



COUNTRIES WITH HIGHEST RETRACTION RATES

Saudi Arabia, Pakistan, Russia and China have the highest retraction rates among countries with >100,000 papers* published over the past two decades.



*Total number of research papers according to Scopus, articles and reviews. Analysis excludes conference papers (and their retractions)



In Case You Drift off to Sleep, Remember This Slide

Why Research Misconduct?

- “Publish or perish”
- “Impact factor mania”
- Promotions, travel, fame, etc.
- “My H-index is higher than yours”

<https://imagetwin.ai/>

Increase the Quality in Science
Imagetwin is an AI-based software
for detecting integrity issues in
figures of scientific articles.

Sources of Info on Research

Misconduct (I will show examples in a minute)

- RetractionWatch.com
- Pubpeer <https://pubpeer.com/>
- Office of Research Integrity
<https://ori.hhs.gov>
- For Better Science
<https://forbetterscience.com>
- Follow Elizabeth Bik and David Sholto on Twitter/X (image manipulation/duplication experts)
- redactek.com (brand new!)

Drivers of Breaches in Research Integrity and Challenges

- Drivers
 - Impact Factor Mania
 - Promotions, fame, career advancement, invites to lecture (frequent flyer miles and honorarium)
- Challenges
 - Punishment does not fit the crime
 - What punishment?
 - It is rare to see the whole story via the Journal
 - Most frequently, one sees the correction of a fraudulent or questionable image, but not the original image

Welcome to another edition of The RW Daily.
Know someone who would enjoy The RW Daily? They can subscribe [here](#).

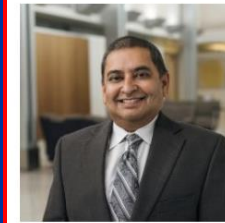
4.29.24

The Retraction Watch Leaderboard

Who has the most retractions? Here's our unofficial list (see notes on methodology), which we'll update as more information comes to light:

1. [Joachim Boldt](#) (194) See also: [Editors-in-chief statement](#), [our coverage](#)
2. [Yoshitaka Fujii](#) (172) See also: [Final report of investigating committee](#), [our reporting](#), [additional coverage](#)
3. [Hironobu Ueshima](#) (124) See also: [our coverage](#)
4. [Yoshihiro Sato](#) (122) See also: [our coverage](#)
5. [Ali Nazari](#) (100) See also: [our coverage](#)
6. [Jun Iwamoto](#) (90) See also: [our coverage](#)
7. [Diederik Stapel](#) (58) See also: [our coverage](#)
8. [Yuhji Saitoh](#) (56) See also: [our coverage](#)
9. [Adrian Maxim](#) (48) See also: [our coverage](#)
10. [A Salar Elahi](#) (44) See also: [our coverage](#)
11. [Chen-Yuan \(Peter\) Chen](#) (43) See also: [SAGE](#), [our coverage](#)
12. [Fazlul Sarkar](#) (41) See also: [our coverage](#)
13. [Shahaboddin Shamshirband](#) (41) See also: [our coverage](#)
14. [Hua Zhong](#) (41) See also: [journal notice](#)
15. [Shigeaki Kato](#) (40) See also: [our coverage](#)
16. [James Hunton](#) (36) See also: [our coverage](#)
17. [Hyung-In Moon](#) (35) See also: [our coverage](#)
18. [Dong Mei Wu](#) (35) See also: [National Natural Science Foundation of China finding](#)
19. [Jose L Calvo-Guirado](#) (34) See also: [our coverage](#)
20. [Antonio Orlandi](#) (34) See also: [our coverage](#)
21. [Dimitris Liakopoulos](#) (33) (NB: We're counting a book he co-authored as a single retraction. The book has 13 retracted chapters with DOIs that are not included in this figure.) See also: [our coverage](#)
22. [Jan Hendrik Schön](#) (32) See also: [our coverage](#)
23. [Amelec Vilorio aka Jesus Silva](#) (32) See also: [our coverage](#)
24. [Naoki Mori](#) (31) See also: [our coverage](#)
25. [Jun Ren](#) (31) See also: [our coverage](#)
26. [Prashant K Sharma](#) (31) See also: [our coverage](#)
27. [Bharat Aggarwal](#) (30) See also: [our coverage](#)
28. [Victor Grech](#) (30) See also: [our coverage](#)
29. [Soon-Gi Shin](#) (30) See also: [our coverage](#)
30. [Tao Liu](#) (29) See also: [our coverage](#)

Men continue to dominate the leaderboard, which agrees with the general findings of a [2013 paper suggesting](#) that men are more likely to have papers retracted for fraud.



Deepak Kaushal

Leading primate researcher demoted after [admitting he faked data](#).



"Several of the results" [in a homeopathy paper](#) "can only be explained by data manipulation or falsification."



A study of ivermectin, COVID-19, and the microbiome [has been retracted](#). [Earlier](#).

Nobel Prize winner Gregg Semenza retracts four papers

A Johns Hopkins researcher who shared the 2019 Nobel Prize in Medicine or Physiology has retracted four papers from the *Proceedings of the National Academy of Sciences* (PNAS) for concerns about images in the articles.



Gregg Semenza

Gregg Semenza is "one of today's preeminent researchers on the molecular mechanisms of oxygen regulation," the work for which he shared the [2019 Nobel](#), [according to Hopkins](#). But even before that, the pseudonymous Claire Francis began pointing out potential image duplications and other manipulations in Semenza's work on PubPeer, as [described in October 2020](#) by Leonid Schneider.

The four papers retracted yesterday are:

- [Hypoxia-inducible factors mediate coordinated RhoA-ROCK1 expression and signaling in breast cancer cells](#)
- [Mutual antagonism between hypoxia-inducible factors 1α and 2α regulates oxygen sensing and cardio-respiratory homeostasis](#)
- [Anthracycline chemotherapy inhibits HIF-1 transcriptional activity and tumor-induced mobilization of circulating angiogenic cells](#)
- [Hypoxia-inducible factors are required for chemotherapy resistance of breast cancer stem cells](#)

Former Stanford president retracts 1999 Cell paper

Marc Tessier-Lavigne, the former president of Stanford University who [resigned following scrutiny of his published papers and an institutional research misconduct investigation](#), has retracted a third paper, this one from *Cell*.



Marc Tessier-Lavigne

Last week, Tessier-Lavigne [retracted two articles from Science](#) that had been published in 2001.

The *Cell* paper, [A Ligand-Gated Association between Cytoplasmic Domains of UNC5 and DCC Family Receptors Converts Netrin-Induced Growth Cone Attraction to Repulsion](#), was published in 1999. It has been cited 577 times, according to Clarivate's Web of Science.

What's In the News?

Inside Higher Education, September 2023

Two former scientists at Cornell University used made-up data in 12 different scientific papers published between 2008 and 2016, according to new reports by the federal Office of Research Integrity.

The researchers—biochemistry professor [Kotha Subbaramaiah](#) and medical professor [Dr. Andrew Dannenberg](#)—taught at Cornell's Weill School of Medicine, and much of their research focused on cancer. They were found to have engaged in misconduct in research conducted with federal grant money; specifically, they “recklessly reused Western blot images from the same source and falsely relabeled them to represent different proteins and/or experimental results,” according to the ORI report.

According to [Retraction Watch](#), Dr. Dannenberg had received nearly \$8 million in grants from the National Institutes of Health since 1995, and Subbaramaiah received over \$1 million between 2005 and 2009.

What's In the News?

CNN, January 2024

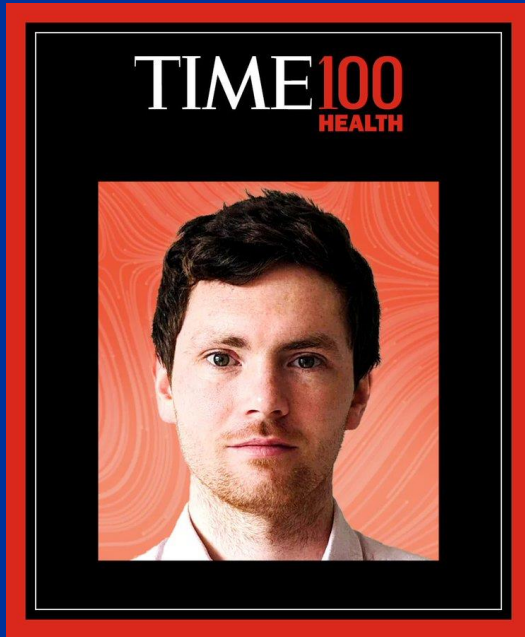
“Harvard cancer institute moves to retract six studies, correct 31 others amid data manipulation claims”

More than 50 papers are part of the ongoing review by Dana-Farber into four researchers, all of whom have faculty appointments at Harvard Medical School. Four of the papers under review were authored by Dana-Farber CEO Laurie Glimcher.

The retractions and corrections add to the pressure on Harvard following weeks of scrutiny over how the Ivy League school responded to allegations of plagiarism facing Claudine Gay, who stepped down as the university's president earlier this month. Gay requested corrections to some of her writings due to what the university described as “inadequate citation.”

Six manuscripts have retractions underway, 31 have been “identified as warranting corrections” and another one with a reported error “remains under examination,” according to Rollins.

A Great Source of Information on Research Integrity Issues



David Sholto
@addictedtoigno1

By his own estimates he's posted entries on more than 2,000 flawed studies since he finished his education at Newcastle University in 2019. This year, he alleged mistakes or image manipulation in dozens of past studies by researchers with the Dana-Farber Cancer Institute; since then, seven Dana-Farber studies have been retracted. His sleuthing resulted in four retractions for Columbia University cancer surgeons in March. The danger is not merely that the public and the medical community lose faith in the integrity of published studies—though that can certainly happen—**but that patient care might actually be affected if treatment recommendations are based on erroneous data.**

Journal Responsibility: We Should See the Pre- and Post- to this Correction

DOI: 10.1002/ijc.34924

ERRATUM

INTERNATIONAL JOURNAL OF CANCER | UICC

Correction to “Triptolide reverses hypoxia-induced epithelial-mesenchymal transition and stem-like features in pancreatic cancer by NF- κ B downregulation”

Liu L, Salnikov AV, Bauer N, et al. Triptolide reverses hypoxia-induced epithelial-mesenchymal transition and stem-like features in pancreatic cancer by NF- κ B downregulation. *Int J Cancer*. 2014;134(10):2489-2503. doi:10.1002/ijc.28583.

Concerns have been raised by a third party about the appearance of Figure 5E, suggesting that the Jagged 1 bands have been cropped and pasted, giving the impression that they were run next to each other on the same gel, whereas the β -Actin loading control bands appear uncropped.

The corresponding author has informed the editors of this error, has provided the original blots underlying this figure, and corrections have been made to Figure 5E as follows:

1. A white line has been introduced to demarcate the BxPc-3, MIA-PaCa2 and AsPC-1 panels, clearly indicating that the Nanog and SOX2 band pairs have been merged by excluding lanes not relevant to Figure 5E.
2. In the original assembly of Figure 5E, the labels for the Nanog and SOX2 bands were inadvertently swapped. This has been corrected.
3. An additional β -Actin control band has been added to the Nanog and SOX2 bands. This decision was made due to the previous incorrect presentation of the Nanog and SOX2 bands under the β -Actin control, which was specific to the Notch 1 and Jagged 1 bands only.
4. The previous β -Actin control for the Notch 1 and Jagged 1 bands has been replaced with a new β -Actin control band from the same gel segment and has been moved up in the corrected figure below the Notch and Jagged bands. This adjustment was necessary because the previous β -Actin control band, although derived from the same proteins, was not extracted from the same gel segment.

The authors regret this oversight and any inconvenience it may have caused.

Regarding Figure 3B,E, the authors would like to clarify that identical β -Actin controls are shown for the c-Rel bands in Figure 3B and the Twist2 bands in Figure 3E (panels “N”). This is correct as both images are from the same gels/blots, and therefore share a common β -Actin loading control.

The corrected Figure 5E is shown as follows:

Cell Line	Condition	Notch 1	Jagged 1	β -Actin	Nanog	SOX2
BxPc-3	H	+	+	+	+	+
	H+Trip	-	-	+	+	+
MIA-PaCa2	H	+	+	+	+	+
	H+Trip	-	-	+	+	+
AsPC-1	H	+	+	+	+	+
	H+Trip	-	-	+	+	+

Int. J. Cancer. 2024;155:E1. wileyonlinelibrary.com/journal/ijc © 2024 UICC. E1

Research Integrity And Its Effects On Drug Development

- Integrity of laboratory research and how this impacts clinical outcomes
 - The issue at hand
 - The spectrum
 - Why does this occur?
 - What can we do to fix this?

Everything You Need to Know About Research Integrity From One Site

<https://ori.hhs.gov/infographics>

TIPS FOR PRESENTING SCIENTIFIC IMAGES with INTEGRITY

Images should clearly and correctly represent research results. Minor image processing may be acceptable but, as depicted below there's a fine line between enhancing an image and distorting it.

BE AWARE: Undocumented image manipulations can lead to accusations of research misconduct.

67% of ORI's closed research misconduct cases involved image manipulation.*

*between 2011 and 2015

ORIGINAL IMAGE

COLOR ENHANCEMENTS
Changing the contrast, color, or brightness

Ensure that the meaning of the image stays the same and fine details are not removed.

Contrast increase background

SPLICE & PASTE
Combining multiple images into one

Clearly indicate where two images were joined using a dividing line and labels.

Two images were combined causing them to look like new data.

CROP
Cutting out components and resizing

Use a magnification panel to highlight desired visual data.

Reference information was selectively removed from the image causing loss of data.

WHAT ELSE MUST YOU DO?

- Clearly document all changes made to an image.
- Retain the unprocessed image for your records.
- Follow journal guidelines for permissible processing.

LEARN MORE ABOUT IMAGE PROCESSING:
<http://ori.hhs.gov/ImageProcessing>

WRITE ETHICALLY

FROM START TO FINISH

PREPARE

- USE PRIMARY LITERATURE** Secondary sources might have misinterpreted the work
- HAVE A THOROUGH UNDERSTANDING OF YOUR SOURCES** Accurately communicate their ideas and terminology

WRITE

AVOID SELECTIVE REPORTING Present unbiased information by acknowledging conflicting evidence and alternative interpretations

DO NOT PLAGIARIZE

- USE YOUR OWN WORDS AND SENTENCE STRUCTURE
- MAINTAIN THE INTENDED MEANING OF THE SOURCE
- QUOTE VERBATIM TEXT

PUBLISH

Got Questions? Ask ORI.

HOW DO I MAKE AN ALLEGATION OF RESEARCH MISCONDUCT? *Is it okay to use ORI's educational materials in my RCR course?*

I'm the RIO, and I'm not sure what to do about...?

I reported misconduct; then my contract wasn't renewed. Is this retaliation?

I think someone plagiarized my work. What do I do?

I REPORTED MISCONDUCT BUT HAVEN'T HEARD ANYTHING... WHAT'S HAPPENING?

If we can't answer your question, we can refer you to the people who can.

YOU SUSPECT RESEARCH MISCONDUCT NOW WHAT?

IF YOU ARE SUSPICIOUS

- AVOID CONFRONTATION** Direct confrontation may lead to retaliation and/or tampering with evidence.
- KEEP NOTES** Document details and save communications related to the misconduct. This will help you recall important information needed by the institution.
- EDUCATE YOURSELF** Read your institution's research misconduct policy or contact the U.S. Office of Research Integrity (ORI) with questions.
- SEEK SUPPORT** You may want to get advice from someone you trust to help you consider all options.
- CONSULT YOUR RESEARCH INTEGRITY OFFICER (RIO)** RIOs can help you better understand the situation. You can speak in hypotheticals as you consider making an official allegation.

THINGS TO CONSIDER

REPORTING MISCONDUCT IS DIFFICULT... BUT IT CAN BE WORTH IT.

PEOPLE OFTEN WORRY ABOUT:

- The reputation and career of the accused
- How others in the lab will be affected
- Implications for their own career
- Possible retaliation

REPORTING MISCONDUCT HELPS:

- Prevent false and misleading information from entering the research record
- Correct the scientific literature
- Ensure funding is awarded to responsible research
- Protect the public's trust in science

REPORT

- BE SPECIFIC** Provide the RIO with specific examples of
- BE AVAILABLE** The RIO may require your help identifying explaining how the misconduct occurred or stating as a witness.
- Proceedings take time to complete.

<https://ori.hhs.gov/infographics>

RESEARCH TRAINEES

WHAT YOU NEED TO KNOW ABOUT RESEARCH MISCONDUCT

- Misconduct Is Not Limited to Published Research** Research misconduct (fabrication, falsification, or plagiarism) can occur in publications, presentations, posters, and grant applications - whether they are funded or unfunded.
- Research Misconduct Affects Everyone** Trusted research can have negative implications on individuals in the lab, the larger research community, and in the public's trust in science.
- There is a Professional You Can Contact** Most institutions refer to the person as the Research Integrity Officer (RIO). You can contact your RIO about questionable practices.
- Anyone Can Report Misconduct** Scientists are obligated to point out errors regardless of their position in the lab. The research community depends on you to report misconduct.
- Institutions Have Policies to Protect All Involved** Every institution has a requirement to take all reasonable and practical steps to protect the reputation of those who report research misconduct and anyone falsely accused.
- You Can Report Research Misconduct Anonymously** Approve can contact ORI anonymously by phone or email to address concerns. 248-453-8800 AAORI@hhs.gov

OF ORI's research misconduct cases?

- 12% were reported by research trainees
- 40% were committed by research trainees

Learn more about responsible research at: ori.hhs.gov

5 WAYS SUPERVISORS CAN PROMOTE RESEARCH INTEGRITY

Are you a principal investigator, research coordinator, academic advisor, or mentor? Roles such as these place you in a unique position to cultivate exceptional research practices among the next generation of researchers.

- BE AVAILABLE & APPROACHABLE** Your team wants to learn from YOU!
- REVIEW RAW DATA** You are responsible for the integrity of your team's data.
- COMMUNICATE EXPECTATIONS** Prevent misunderstandings by making sure everyone is on the same page.
- PROVIDE TRAINING and GUIDANCE** Avoid making assumptions about anyone's skills or knowledge.
- KNOW YOUR RESEARCH INTEGRITY OFFICER** Be prepared in case you ever suspect research misconduct.

MAKE AN INFORMED DECISION

If you want to talk anonymously or report misconduct contact ORI at 240-453-8800 or askORI@hhs.gov.

POSSIBLE RED FLAGS OF RESEARCH MISCONDUCT

- TIME**
 - Usable data are only generated when there is a pressing deadline
 - Experiments are completed faster than usual
- RESULTS**
 - Data are too good to be true
 - Findings can't be replicated by others in the lab
- LACK OF TRANSPARENCY**
 - Raw data can't be produced when requested
 - Research materials and protocols are kept hidden
 - Work is mostly done when no one else is around

If you suspect research misconduct



Rooting out scientific misconduct

Scientific misconduct is an issue rife with controversy, from its forms and definitions to the policies that guide how allegations are handled. A survey published nearly 15 years ago reported that 2% of researchers said they had fabricated or falsified data in their published work. This is not just an academic issue. Fake data promote ineffective or even dangerous treatments, for example, and thwart the discovery of real solutions for society. In the United States, the Office of Research Integrity (ORI) is tasked with rooting out misconduct in research funded by the National Institutes of Health (NIH). Last October, ORI proposed changes to how it functions. The agency's recommendations—the first since 2005—have evoked mixed reactions, but the real problem is that ORI is underfunded and lacks the resources and authority needed to make a difference. Unless its charter is revised by Congress, the ORI can sadly do little more than tinker at the edges of scientific fraud.

It is a wonder that the ORI accomplishes much at all. Its current budget is \$12 million per year to oversee work funded by NIH, a \$48 billion agency. Add to that the frequent internal strife over ORI's proper role and a directorship that has often been vacant, and one can see how its ability to be effective does not meet the expectations for upholding the integrity of research activities.

The regulations proposed by ORI's new director, Sheila Garrity, include fine-tuning of definitions and processes that is long overdue. For example, they clarify the term “reckless,” which was used more often recently by the ORI to prosecute fraud cases. The term emphasizes indifference to or disregard for the truth of the matter being asserted, according to a recent article. But what should happen if someone has supervised, but not performed, the research at issue, as in the case of former Stanford University president Marc Tessier-Lavigne, who failed to correct problems in work by his trainees? As the article asks, what is reasonable supervision and when is it so lacking that it becomes reckless?

The agency seems much more open to disclosing the results of university investigations, a transparency that has predictably been met with criticism from academic institutions that claim it might “violate privacy laws

or distort the actual findings.” Still, ORI has missed an opportunity to hold institutions accountable. Although the agency suggests that it is an institution's responsibility to foster an environment that promotes integrity, how should this be measured and judged? The revision still exclusively addresses misconduct by individuals. It would be best if an institution could be held responsible for a toxic, unsupportive research environment.

Even if its recommendations are further adjusted, ORI lacks the personnel and budget to address the potential scope of alleged misconduct. The office is largely limited to supervising university investigations instead of carrying them out itself, which would avoid the obvious institutional conflict of interest. ORI also lacks subpoena power to compel witness testimony.

This point may help explain why the National Science Foundation's Office of the Inspector General, which has subpoena power, tends to make far more findings of misconduct than ORI each year.

There is good news, though. Some publishers have become more willing to correct the scientific record. This led to more than 10,000 retractions in 2023—reflecting about 0.2% of the literature across all fields, as indicated in a recent analysis. According to the study, this is a 10-fold increase compared with two decades ago. Not all

of these were because of misconduct, but studies have consistently found that two-thirds of retractions are. However, it is not clear whether the incidence of misconduct has increased over time. There is no question that the work of today's sleuths, who often use software not available 20 years ago, has pushed these numbers higher. And the fraudulent activity of research paper mills that produce fake manuscripts is likely also a factor. On a larger scale, universities are starting to take a harder look at the suitability of perverse “publish or perish” incentives for faculty promotion and tenure.

Thirty years ago, ORI was created in response to a series of scandals at prominent institutions, some involving faked data, that caught the attention of Congress. Congress should strengthen what it set out to do—address misconduct in science by giving ORI the teeth it needs to sink into the problem.

—Ivan Oransky and Barbara Redman

“...ORI...lacks the resources and authority needed to make a difference.”

Ivan Oransky

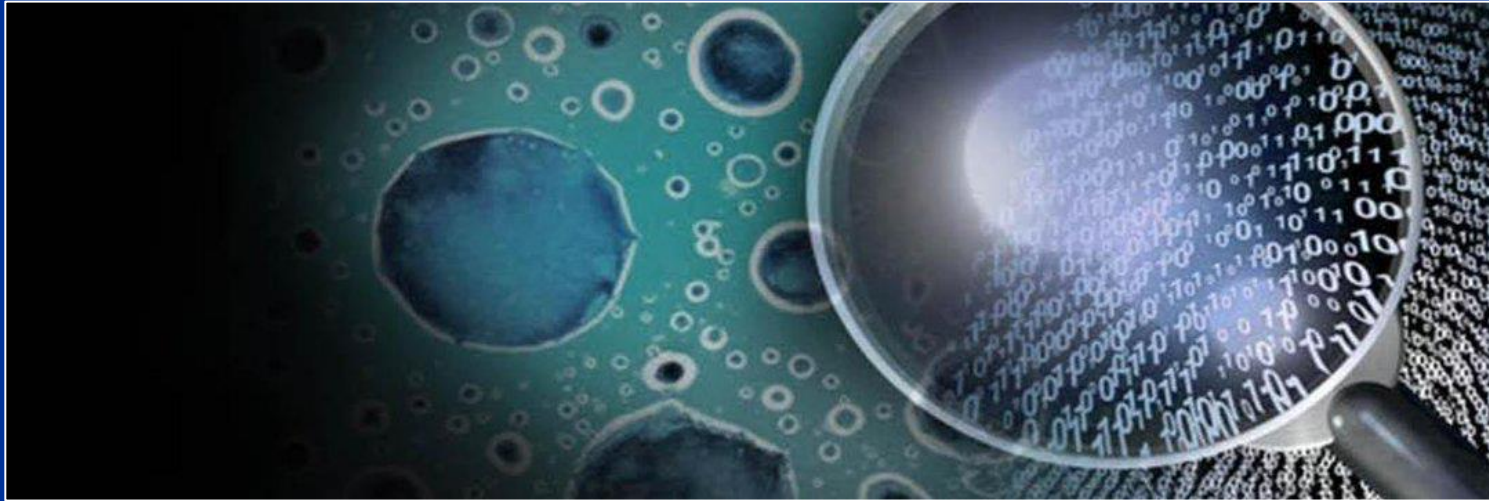
is a cofounder of Retraction Watch, New York, NY, USA; distinguished journalist in residence at New York University, New York, NY, USA; and editor-in-chief of *The Transmitter*, The Simons Foundation, New York, NY, USA. ivan@retractionwatch.com

Barbara Redman

is a courtesy adjunct professor at New York University's School of Nursing and an associate of New York University Langone's Division of Medical Ethics, New York, NY, USA. br68@nyu.edu

Downloaded from <https://www.science.org> on May 09, 2024

ORI Website



ORI has a blog, but have not posted a newsletter since 2018

PubPeer

The **PubPeer** Foundation is a California-registered public-benefit corporation with nonprofit status in the US. The overarching goal --- is to improve the quality of scientific research by enabling innovative approaches for community interaction---pubpeer.com is a service run for the benefit of its readers and commenters, who create its content. **Our current focus is maintaining and developing the PubPeer online platform for post-publication peer review.**

Gamma-tocotrienol promotes TRAIL-induced apoptosis through reactive oxygen species/extracellular signal-regulated kinase/p53-mediated upregulation of death receptors

Molecular Cancer Therapeutics (2010) - 12 Comments

pubmed: 20682650 doi: 10.1158/1535-7163.mct-10-0277 issn: 1538-8514 issn: 1535-7163

Ramaswamy Kannappan, Jayaraj Ravindran, Sahdeo Prasad, Bokyoung Sung, Vivek R. Yadav, Simone Reuter, Madan M. Chaturvedi, Bharat B. Aggarwal

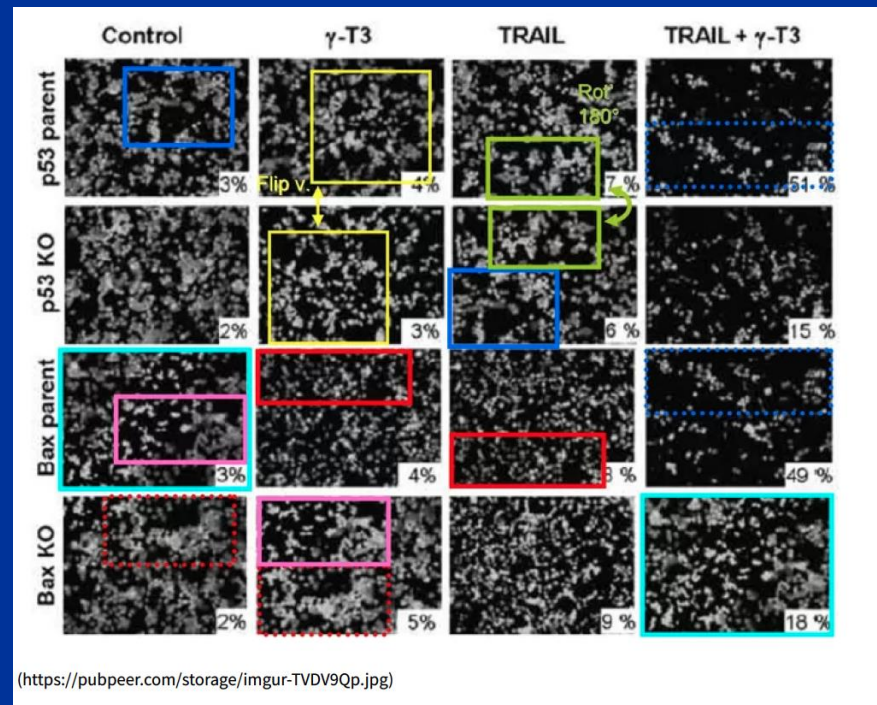
#1 Paul S Brookes commented 6 years ago

Seeing this beautiful example of "creative image management" highlighted on Twitter (actually had over 100 re-tweets at last count)....

<https://pubpeer.com/publications/B0EE98F42E52EE4F8B130E20059699>

(<https://pubpeer.com/publications/B0EE98F42E52EE4F8B130E20059699>)

... reminded me of this one that's been sitting in the archives for a few years. It's really one of my favorite examples of the art. Should be in all the textbooks.



Not everything on PubPeer is fraud. Mistakes can be made, and corrected.
Read the comments and decide for yourself.

Not Everyone on PubPeer is Evil

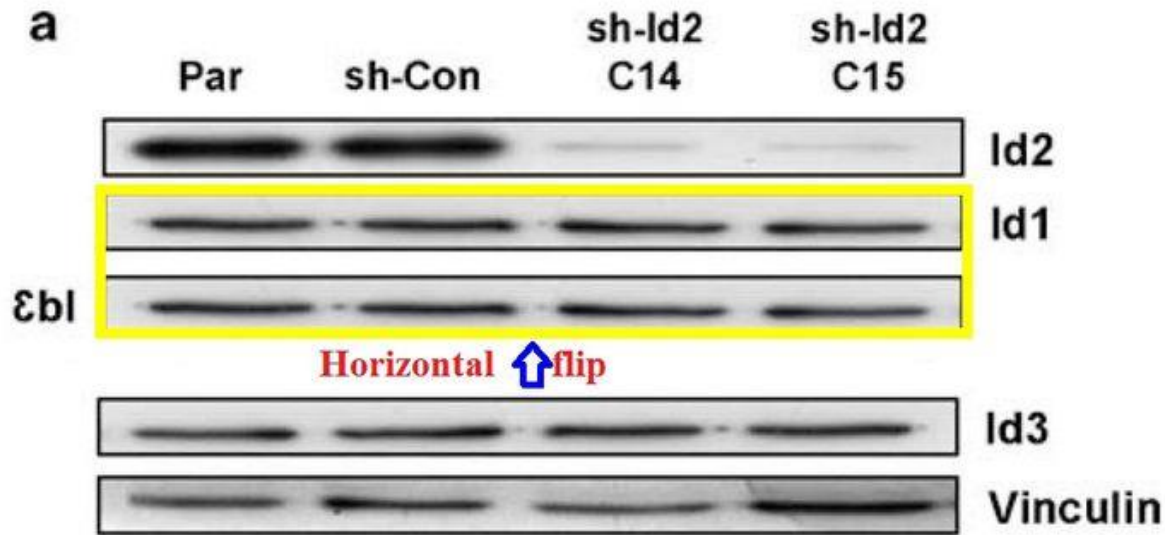


Figure 2a Oncogene. 2008 Dec 4;27(57):7192-200.

“Following the publication of this Article, it was brought to the attention of the Authors that a control for shRNA knock-down of Id2 in Fig. 2 was a duplicated and reversed set of bands from another control in the Figure. The row of bands on the western blot for Id3 is the same blot for Id1 knock-down, but “flipped” horizontally. This does not change the conclusions of the manuscript. The authors have submitted a revised Fig. 2, omitting this band, as they no longer have access to the reagents and cannot repeat this part of the experiment.”

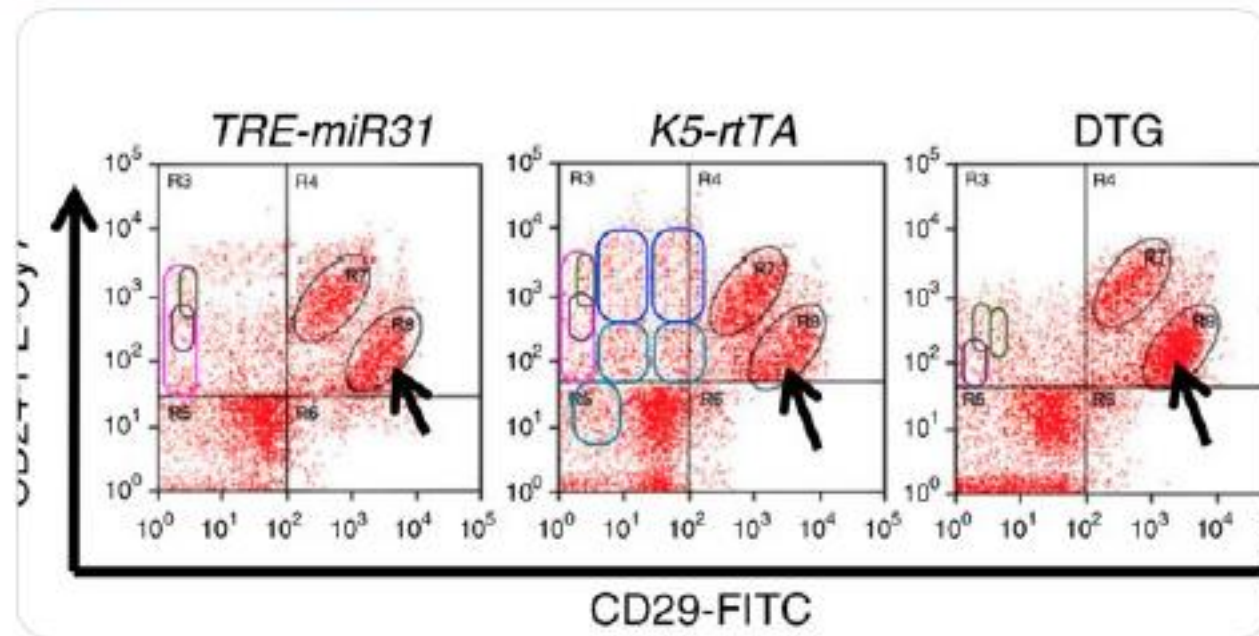
Gray.....Ellis



Elisabeth Bik 
@MicrobiomDigest



Oh dear. @NatureComms making #BadEditorialDecision here by issuing a correction. "The original version of this Article contained an error in Fig. 4. In the original Fig. 4a, different quadrants [...] contained similar unexplained groups of data points."
pubpeer.com/publications/3...



Do individual and institutional predictors of misconduct vary by country? Results of a matched-control analysis of problematic image duplications

Daniele Fanelli^{1*}, Matteo Schleicher¹, Ferric C. Fang², Arturo Casadevall³, Elisabeth M. Bik⁴

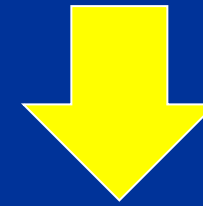
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PLOS 2022

Abstract

Pressures to publish, perverse incentives, financial interest and gender are amongst the most commonly discussed risk factors for scientific misconduct. However, evidence of their association with actual data fabrication and falsification is inconclusive. A recent case-controlled analysis of articles containing problematic image duplications suggested that country of affiliation of first and last authors is a significant predictor of scientific misconduct. The same analysis found null or negative associations with individual proxies of publication rate, impact and gender. The latter findings, in line with previous evidence, failed to support common hypotheses about the prevalence and causes of misconduct, but country-level effects may have confounded these results. Here we extend and complete previous results by comparing, via matched-controls analysis, articles from authors in the same country. We found that evidence for individual-level risk factors may be significant in some countries, and null or opposite in others. In particular, in countries where publications are rewarded with cash incentives, and especially China, the risk of problematic image duplication was higher for more productive, more frequently cited, earlier-career researchers working in lower-ranking institutions, in accordance with a “misaligned incentives” explanation for scientific misconduct. However, a null or opposite pattern was observed in all other countries, and especially the USA, UK and Canada, countries where concerns for misaligned incentives are commonly expressed. In line with previous results, we failed to observe a statistically significant association with industry funding and with gender. This is the first direct evidence of a link between publication performance and risk of misconduct and between university ranking and risk of misconduct. Commonly hypothesised individual risk factors for scientific misconduct, including career status and productivity, might be relevant in countries where cash-reward policies generate perverse incentives. In most scientifically active countries, however, where other incentives systems are in place, these patterns are not observed, and



Scientific misconduct is more common in countries that reward authors with cash incentives.

Peer Review History: PLOS recognizes the benefits of transparency in the peer review process; therefore, we enable the publication of all of the content of peer review and author responses alongside final, published articles. The editorial history of this article is available here: <https://doi.org/10.1371/journal.pone.0255334>

In Summary, Your Best, Most Concise, and Timely
Resources on Data Integrity and Interesting Stories are....
Retraction Watch and PubPeer

- Retraction Watch
 - Editors comment on retracted papers
- PubPeer
 - Peers comment on papers (sometimes names disclosed, sometime not)
 - Up to you to determine validity of “concerns”

Note: The US Office of Research Integrity has very focused (*brief summaries*) information limited to those found guilty of misconduct

Drug Development Failure Rates are Too High! (*duh*)

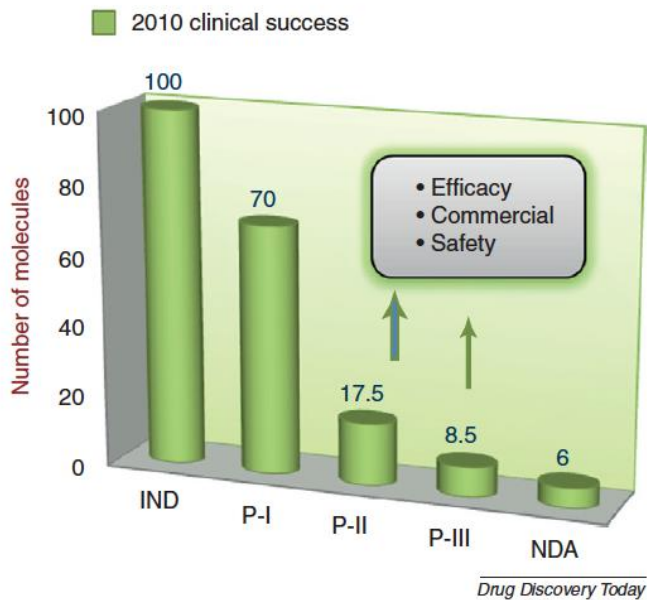
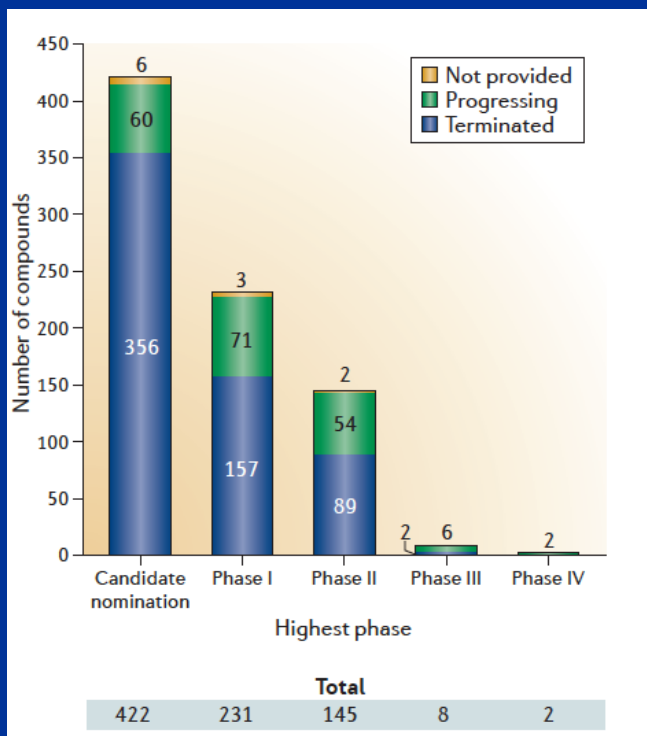


FIGURE 3
Productivity trend during 2009 and 2010. The clinical rate of success is depicted as percentage surviving at each clinical phase based on attrition observed during 2009 and 2010.

Khanna, Drug Disc Today, 2012

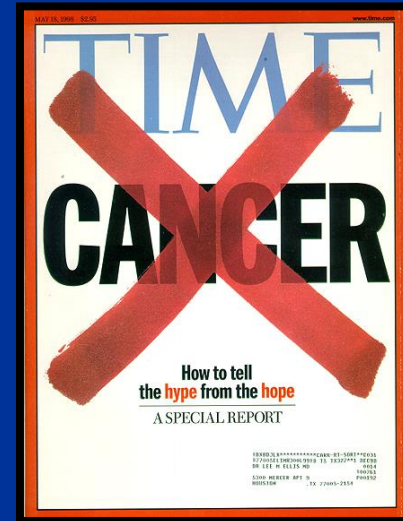
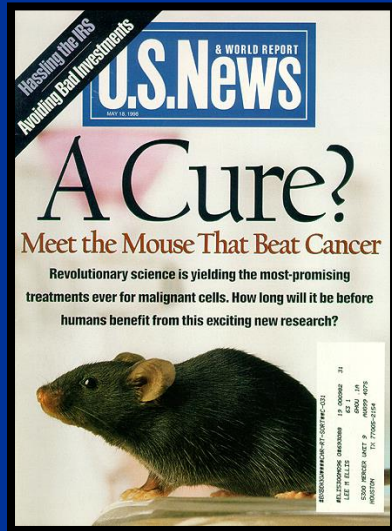


Waring, Nat Rev Drug Disc, 2015

-On average, it costs over a billion dollars to take a drug through Phase III, and the time to do this is 13-15 yrs.
 -To improve upon this dismal ~5% success rate, we must *have more confidence in data* from very early in the drug development process*

* A more recent publication listed this at ~3.5% for cancer

Why Haven't We Made Greater Strides in Treating Patients With Metastatic Disease?



- Perhaps the data leading to clinical trials are not as sound as they should be
 - What is the cause of this?

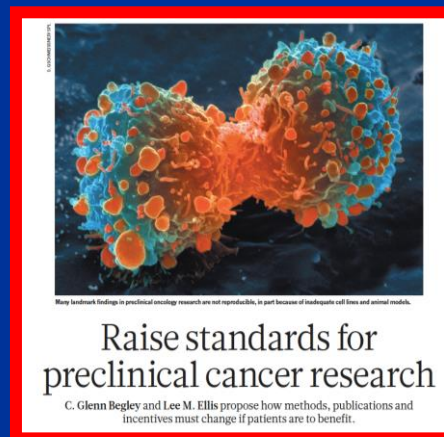


Bob Radinsky, PhD
MDACC (1989-2000) → Amgen (2000)

“Lee, do you realize that most of what’s published in academia cannot be reproduced?”

“Glenn Begley has been prospectively collecting this data from studies done at Amgen”

Glenn’s results: Only 6 of 53 (11%) studies could be reproduced



Reports on Issues With Data Reproducibility



Re-tested 70+ drugs from 221 independent studies¹

→ 0 reproduced

→ **Minocycline**: effective in four separate ALS mouse studies **worsened** symptoms in a clinical trial of more than 400 patients²



Sponsored replication of 12 spinal cord injury studies

→ 2/12 successfully reproduced³



Conducted in-house target validation studies

→ 14/67 reproduced⁴



Attempted to reproduce 53 "landmark" oncology publications

→ 6/53 reproduced⁵

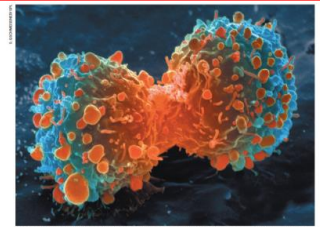
1. Scott et al. Amyotroph Lateral Scler. 9, 4-15 (2008).

2. Gordon et al. Lancet Neurol. 6, 1045-1053 (2007).

3. Stuart et al. Experimental Neurology 233, 597-605 (2012).

4. Prinz et al. Nat Rev Drug Discov. 10, 712 (2011).

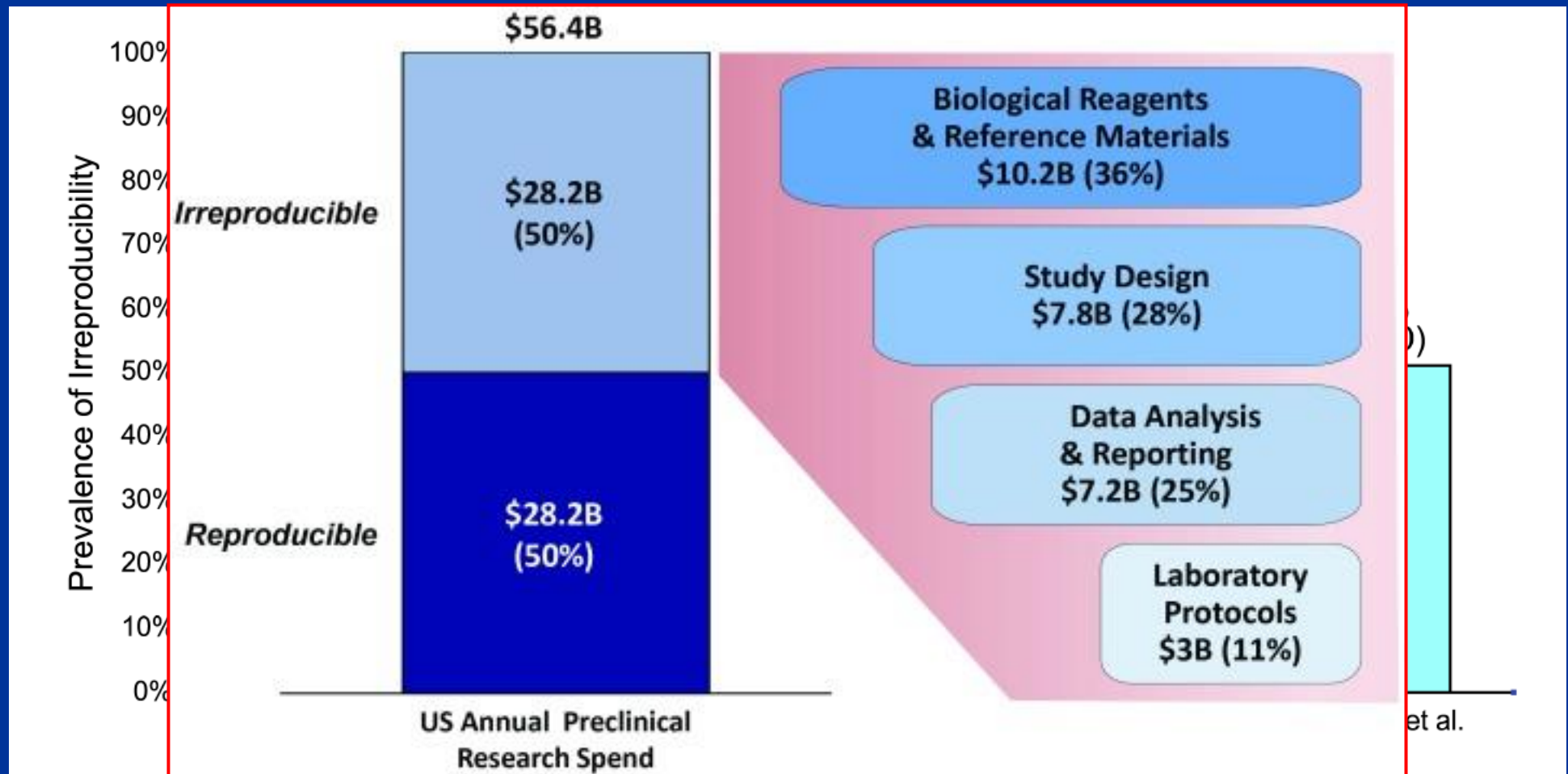
5. Begley and Ellis. Nature. 483, 531-3 (2012).



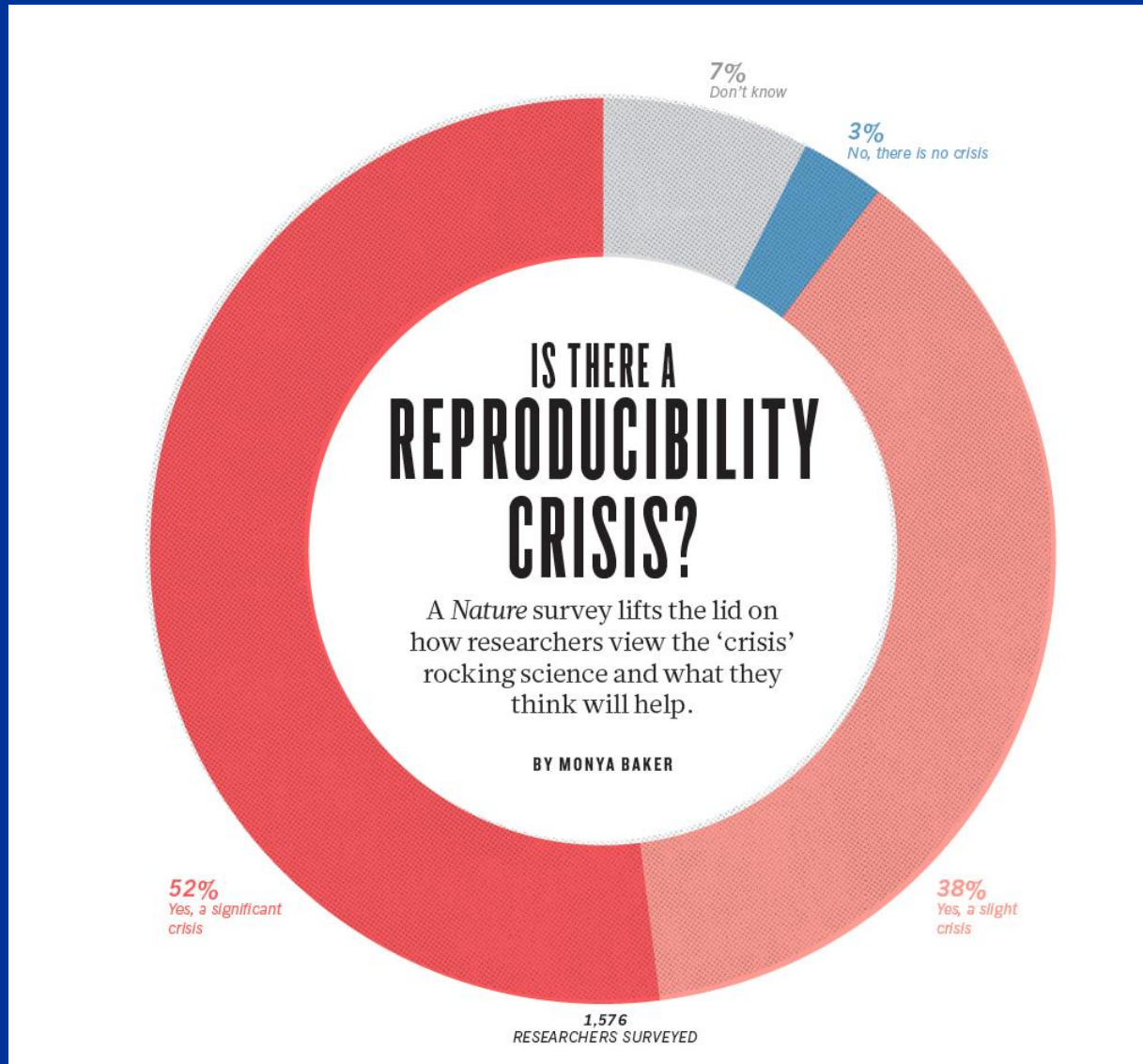
Raise standards for
preclinical cancer research

C. Glenn Begley and Lee M. Ellis propose how methods, publications and incentives must change if patients are to benefit.

The Prevalence of the Lack of Reproducibility in “Recently” Published Studies



Nature Survey, May 2016



Is Amgen's Data on Data Reproducibility, Reproducible?

Errington et al. eLife 2021;

REPRODUCIBILITY IN CANCER BIOLOGY

Challenges for assessing replicability in preclinical cancer biology

50/193 = 26%
reproducibility rate

Abstract We conducted the [Reproducibility Project: Cancer Biology](#) to investigate the replicability of preclinical research in cancer biology. The initial aim of the project was to repeat 193 experiments from 53 high-impact papers, using an approach in which the experimental protocols and plans for data analysis had to be peer reviewed and accepted for publication before experimental work could begin. However, the various barriers and challenges we encountered while designing and conducting the experiments meant that we were only able to repeat 50 experiments from 23 papers. Here we report these barriers and challenges. First, many original papers failed to report key descriptive and inferential statistics: the data needed to compute effect sizes and conduct power analyses was publicly accessible for just 4 of 193 experiments. Moreover, despite contacting the authors of the original papers, we were unable to obtain these data for 68% of the experiments. Second, none of the 193 experiments were described in sufficient detail in the original paper to enable us to design protocols to repeat the experiments, so we had to seek clarifications from the original authors. While authors were *extremely or very helpful* for 41% of experiments, they were *minimally helpful* for 9% of experiments, and *not at all helpful* (or did not respond to us) for 32% of experiments. Third, once experimental work started, 67% of the peer-reviewed protocols required modifications to complete the research and just 41% of those modifications could be implemented. Cumulatively, these three factors limited the number of experiments that could be repeated. This experience draws attention to a basic and fundamental concern about replication – it is hard to assess whether reported findings are credible.

TIMOTHY M ERRINGTON*, **ALEXANDRIA DENIS[†]**, **NICOLE PERFITO[‡]**,
ELIZABETH IORNS AND **BRIAN A NOSEK**

The Spectrum of Reporting Preclinical and Clinical Data

Not all non-reproducible events are due to evil people

Honest Sloppy Selective Reporting Falsification Fabrication



What are the consequences?

- Clinical trials that are bound to fail
- Wasted time and effort of investigators and trainees
- A waste of money to try build on studies that are not sound
- Loss of confidence from our community

The Spectrum of Reporting Preclinical and Clinical Data

Honest Sloppy Selective Reporting Falsification Fabrication



- Inappropriate Stats
- Cell line contamination/drift
- Journals don't like negative data
 - Therefore, PIs don't like negative data

Selective Reporting of Laboratory Studies

- Journals prioritize “positive” results
 - If a drug works in 2 cell lines, and does not in 8, we only see the results on the 2 cell lines
- Students, post-docs, and faculty need publications for advancement
 - “*Publish or perish*”
 - In many labs, 2 trainees work on the same project competing with each other...*guess who wins?*
- Therefore, we tend to report only the “positive” data and ignore the negative data

Highlight negative results to improve science

Publishers, reviewers and other members of the scientific community must fight science's preference for positive results – for the benefit of all, says Devang Mehta.

The pressure to publish a positive story can also lead scientists to spin their results in a better light, and, in extreme instances, to commit fraud and manipulate data. In fields such as biotechnology and genomics, social scientists have already pointed out that hyping up the science could foster unrealistic expectations in an already sceptical public, counter-intuitively leading to greater distrust when real-world advances come at a slower pace.

We need reviewers and publishers to commit to publishing negative results in their journals. We need academic conferences to embrace honest discussions of failed experiments. We need funding agencies to support scientists who produce/report *negative results*. And, as scientists, we must acknowledge that all reliable studies should be reported (and accessible), irrespective of its outcome.

The Spectrum of Reporting Preclinical and Clinical Data

The more difficult issue to address

Honest Sloppy Selective Reporting Falsification Fabrication



Let's Talk About
"Misconduct"

*Do Investigators Intentionally Falsify
or Fabricate Data?*

To: Ellis, Lee M

Dear Sir,

I read your article titled "Raise standards for preclinical cancer research" published in Nature. I felt so happy to learn that the scientific community has been realizing a fact that people in cancer research field have been publishing fraud/non-reproducible data.

I lost my father, 2 of my uncles, aunt and two sister-in-laws because of cancer. Above bitter experiences made me to dedicate my life in finding solution to cancer. With a well-defined career goal of finding treatment to cancer, I entered into cancer research. After completion of Ph.D. from a Nobel Laureate group in Germany, I went to US to work on cancer. As a postdoc in the US, I had to change 7 research labs in 7 years due to the following reason:

PI's wanted me to produce falsified data and I refused to do so. Many PIs fired me as soon as they realized that I don't do wrong things. To cover them up, they sabotaged my professional life as well personal character.

Situation in cancer research field is so bad that nearly 90% of scientists in cancer research field, especially in the US, have been publishing fraud data. [REDACTED]

- 1) Publish fraud data
- 2) Meet all legal requirements to get grants from funding agencies
- 3) Lobby with the members of funding agency study sections by offering donations, effortless favor and get grants
- 4) Bargain high salaries with institutions where they are working using funding as bait

Does Misconduct Occur in the Clinic?

Dr. Baggerly will “wow” you with his talk on this!!

The Anil Potti retraction record so far

Tracking retractions as

with 16 comments

A [60 Minutes segment Sunday on Anil Potti](#) has drawn national attention to the case, so we thought this would be a good time to compile all of the retractions and corrections in one place.

Duke has [said](#) that about a third of Potti's 40-some-odd papers would be retracted, and another third would have “a portion retracted with other components remaining intact,” so this list will continue to grow. We'll update it as we hear about new changes.

Retractions:

1. [“Gene-expression patterns predict phenotypes of immune-mediated thrombosis,”](#) in *Blood*
2. [“Upregulated Oncogenic Pathways in Patients Exposed to Tobacco Smoke May Provide a Novel Approach to Lung Cancer Chemoprevention,”](#) in *CHEST*
3. [“Characterizing the Clinical Relevance of an Embryonic Stem Cell Phenotype in Lung Adenocarcinoma,”](#) in *Clinical Cancer Research*
4. [“An Integrated Genomic-Based Approach to Individualized Treatment of Patients With Advanced-Stage Ovarian Cancer”](#) in the *Journal of Clinical Oncology (JCO)*
5. [“Pharmacogenomic Strategies Provide a Rational Approach to the Treatment of Cisplatin-Resistant Patients With Advanced Cancer”](#) also in the *JCO*
6. [“Gene Expression Signatures, Clinicopathological Features, and Individualized Therapy in Breast Cancer”](#) in the *Journal of the American Medical Association (JAMA)*
7. [“Validation of gene signatures that predict the response of breast cancer to neoadjuvant chemotherapy: a substudy of the EORTC 10994/BIG 00-01 clinical trial,”](#) in *The Lancet Oncology*
8. [“Genomic signatures to guide the use of chemotherapeutics,”](#) in *Nature Medicine*
9. [“A Genomic Strategy to Refine Prognosis in Early-Stage Non-Small-Cell Lung Cancer,”](#) in the *New England Journal of Medicine (NEJM)*
10. [“An Integrated Approach to the Prediction of Chemotherapeutic Response in Patients with Breast Cancer”](#) in *PLoS ONE*
11. [“A genomic approach to colon cancer risk stratification yields biologic insights into therapeutic opportunities”](#) in the *Proceedings of the National Academy of Sciences (PNAS)*



Dr. Anil Potti is an oncologist in Grand Forks, North Dakota.

He is a Board Certified Medical Oncologist and Clinician and takes special interest in serving patients with blood and cancer problems. An alumnus of the University of North Dakota, he has received numerous awards like the Alpha Omega Alpha (AOA) Award, Resident of the Year Award and several Outstanding Teacher of the Year Awards. Presently, Dr. Potti looks forward to dedicating his efforts to helping cancer patients and their families in this region. As he says, “sure, the weather may be cold, but the people sure are warm.”

Ivan Oransky
RetractionWatch.com

Famous Fraudulent Papers The Impacted Patient's Lives!

- Breast cancer and bone marrow transplants
 - Bezwoda et al. 1999 ASCO Annual Meeting
- Autism and vaccines
 - Wakefield et al. 1998 The Lancet
- Stem cells and tracheal transplants
 - Macchiarini et al. Karolinska, The Lancet

Wikipedia provides great summaries

Vaccines and Autism

Wakefield, et al. Lancet 1998

- Wakefield did not conduct the study according to ethical standards for research.
- Wakefield lied in the *Lancet* paper when he wrote that the participating children were referred independently after being diagnosed with IBD or other major GI issues. In fact, many of the children were chosen specifically by Wakefield, and others were recruited with the help of the same lawyer who was paying him to conduct the study.
- Wakefield subjected vulnerable autistic and other developmentally challenged children to a variety of difficult GI tests, including colonoscopy and lumbar puncture (i.e., spinal tap), without any medical indication to benefit the children.
- Even before publication of the study, Wakefield was working on patenting his own version of a measles vaccine, which he would sell at a great profit as a supposedly “safe” alternative to the MMR vaccine. The father of one of the children in Wakefield’s study was a cofounder of the planned business that would market this product.
- Unrelated to the particular paper in question, the GMC panel also found that Wakefield had paid children at his own son’s birthday party £5 each so he could draw their blood for use in his research. He later joked about this during a lecture.
- And more including financial conflict of interest

An IRB Approved Survey Conducted at The MD Anderson Cancer Center

OPEN ACCESS Freely available online



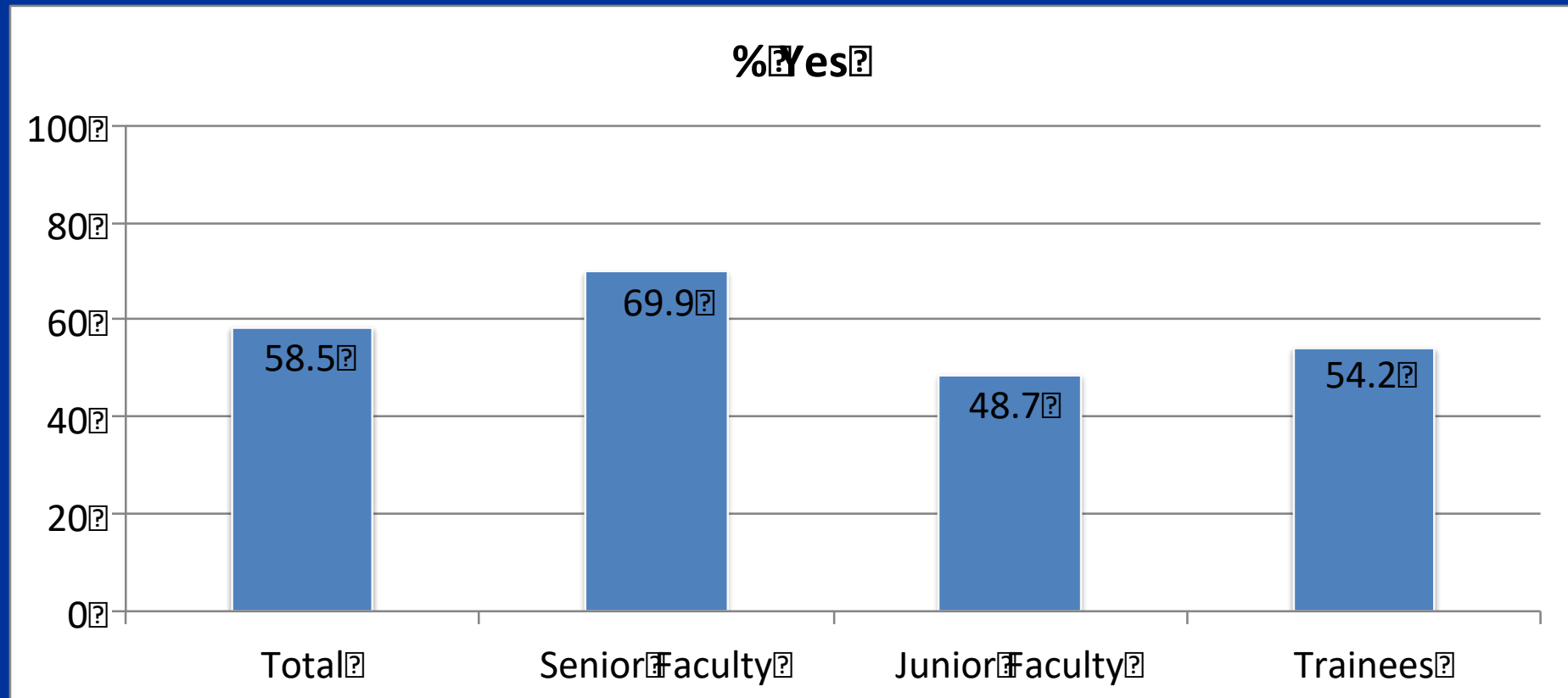
A Survey on Data Reproducibility in Cancer Research Provides Insights into Our Limited Ability to Translate Findings from the Laboratory to the Clinic

Aaron Mobley¹, Suzanne K. Linder², Russell Braeuer¹, Lee M. Ellis^{1,3*}, Leonard Zwelling^{4*}

240 responses in 6 hrs
311 responses after 3 days

IRB Approved Protocol
PI: Len Zwelling, MD
Co-PI: Lee Ellis

Have You Ever Tried To Reproduce A Finding From A Published Paper And Not Been Able To Do So?



Driving Forces for Irreproducible Data

(>90 respondents-Trainees Only)

- Were you ever **pressured to publish findings** of which you had doubt?
 - 22%
- Have you noted **pressure from a mentor** to prove that his/her hypothesis was correct, even though the data you generated may not support the hypothesis?
 - 31%
- Are you aware of mentors who require a **high impact publication** before a trainee can leave the lab?
 - 49%

Selected Comments From the Survey

- crumbling of integrity and value - bean counters judging science by journal names - institutional failure on dealing with alleged fraud.
- Everything here in US is screwed up. There is nothing to do other than move out. Who publishes more deserve respect, while others who are honest and cast doubt about their own results (or third party results) as condemned. There is no way out. It is either join the "bright team" or be labeled as incompetent.
- ... my previous mentor and also our current neighbor lab PI push too much to produce best data all the time. .. sometimes it make trainee consider manipulates data only to escape from stress. Especially, many international trainees (postdoc) also have VISA issue. Thus, PI starts push them with visa issue trainees feel a lot of stress and eventually it make them can do whatever PI WANT.
- From my experience, no one will help you if you stand up for what is right.The system is unfortunately broken
- Pressure isfrom the job market and funding dynamics. The impact factor insanity is destroying science. A small group of powerful editors and friends control everything.

A Survey on Data Reproducibility and the Effect of Publication Process on the Ethical Reporting of Laboratory Research

Delphine R. Boulbes¹, Tracy Costello², Keith Baggerly³, Fan Fan¹, Rui Wang¹,
Rajat Bhattacharya¹, Xiangcang Ye¹, and Lee M. Ellis^{1,4} Clin Cancer Res; 2018

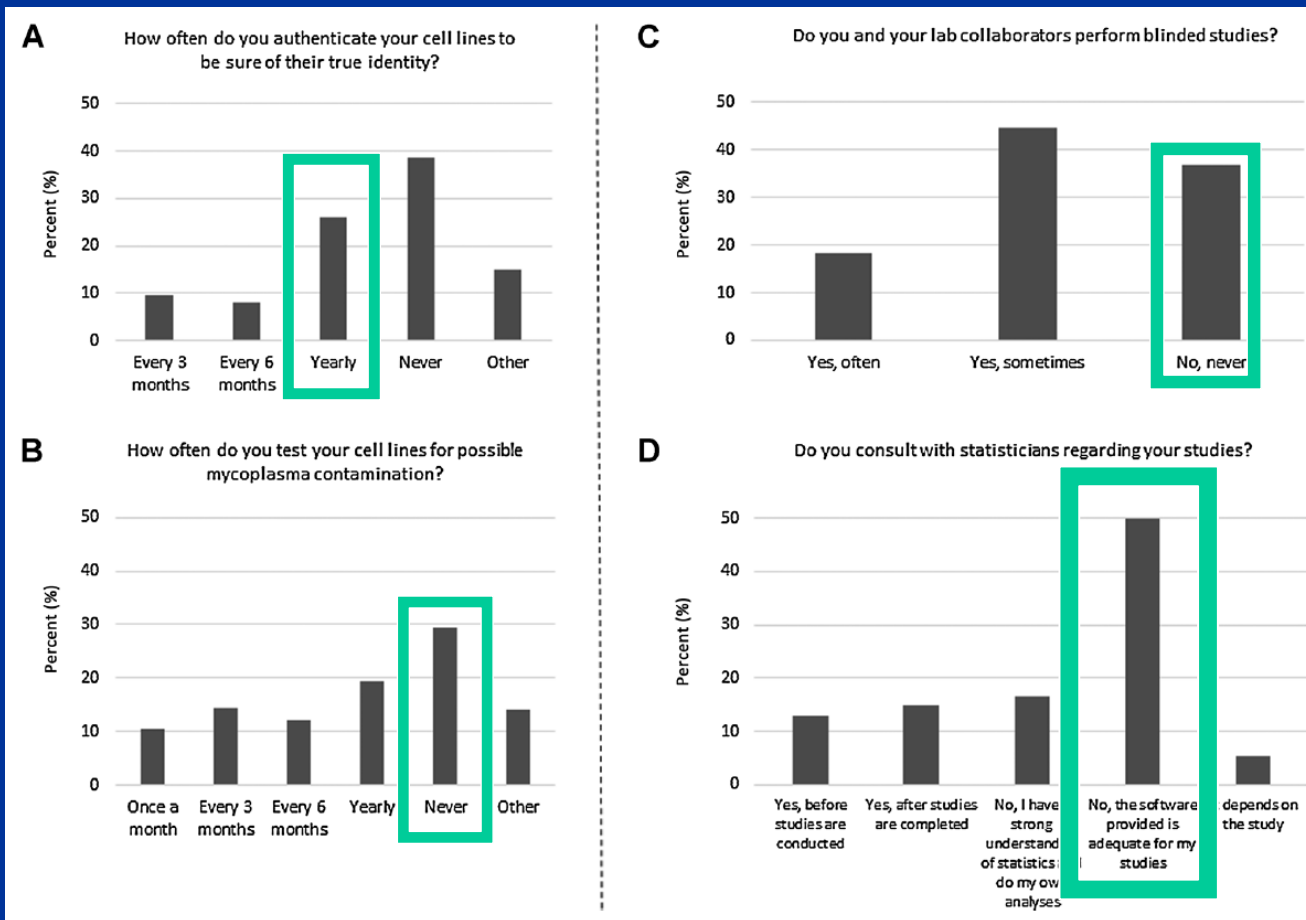
Population Characteristics (n=467)

Students 10.7%

Postdocs 89.3%

Cancer Biology 60.6%

Best Research Practices



Take home points

- < 50% of investigators verify cell lines at least every year
- Just over half test for mycoplasma yearly
- < 20% of investigators perform blinded studies as a routine
- < 50% consult with a statistician

Research Integrity and Reporting Transparency

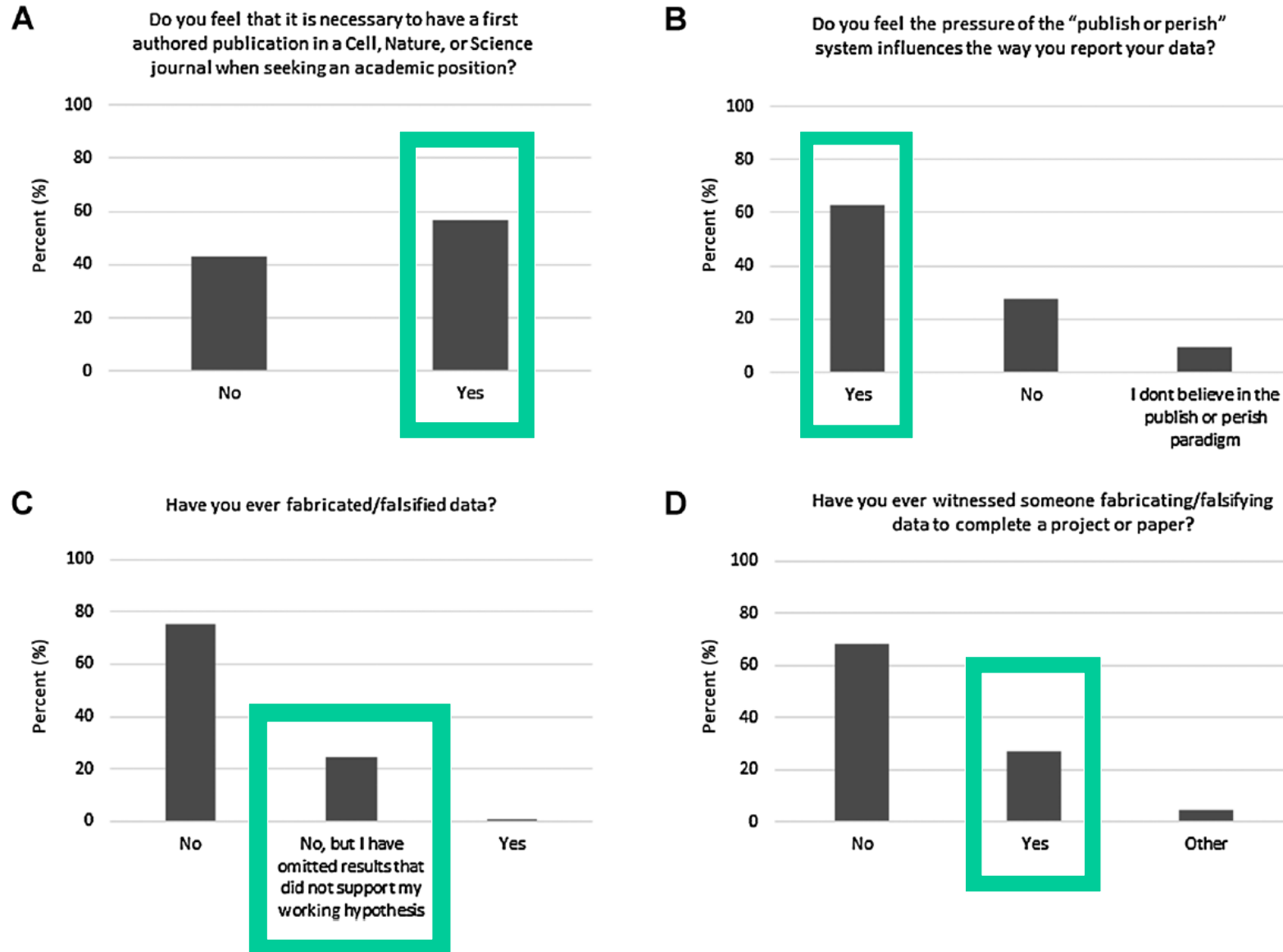


Figure 3.

Responses to questions about research integrity and transparency. Responses were provided by all 467 respondents to questions 5 (A), 27 (B), 10 (C), and 11 (D).

The Publication Process

- For 35% of participants, the revision process was >12 months for a high impact journal
- The cost of revision was >25K (40%) and >100K in 10%
- In 25% of those surveyed, the manuscript did *not improve significantly after revision*
(in their opinion)

Comment in Pubpeer

The findings of this paper are not particularly surprising. But I thought the conclusions and discussion was solidly grounded in the evidence they found. Your supervisor can tell you all they like that your career advancement doesn't depend on your results as long as you do good work, but then you see the big weightings on publication record in your fellowship application and you know what the real deal is. Unfortunately as sensible as the conclusions are, I see the likelihood of their implementation any time soon as likely as my negative results getting into Nature.

The Erosion of Research Integrity: *The Need For a Culture Change*

- Integrity of laboratory research and how this impacts clinical outcomes
 - The issue at hand
 - The spectrum
 - Why does this occur?
 - What can we do to fix this?

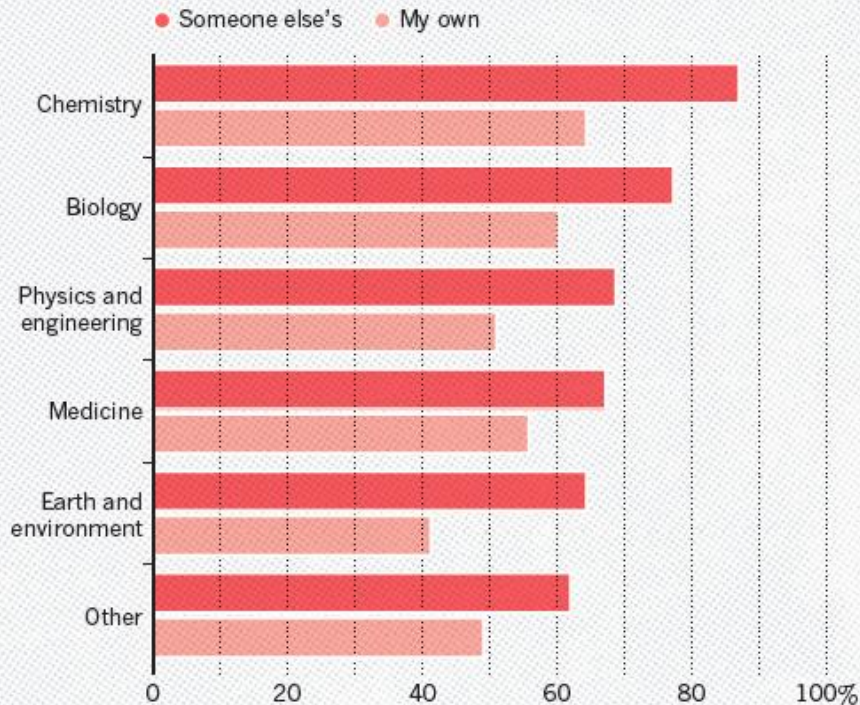
Causes of “Massaging” of Data

Trainees	Faculty
<p>Occurs when trainees have a strong mentor - trainees do not want to challenge the hypothesis of the mentor - sometimes this is cultural - it is hard to challenge a mentor in the US when English is a 2nd language</p>	<p>“Publish or Perish” has morphed into only getting recognition for pubs in CNS (Cell, Nature, Science) – -Promotion and tenure for young faculty -Endowed Chairs for established investigators</p>
<p>Need high impact publications to obtain a job (or many pubs)</p>	<p>Grants: Preliminary data (Biosketch) for subsequent grants – some institutes require faculty to bring in 90-100% of salary off of grants</p>
<p>Cannot leave that lab as a post-doc, or cannot complete thesis as a student, unless you have a high impact publication</p>	<p>Stature and gratification (human nature)</p>
	<p>Financial gain: Patents and sublicensing</p>

Nature Survey, May 2016

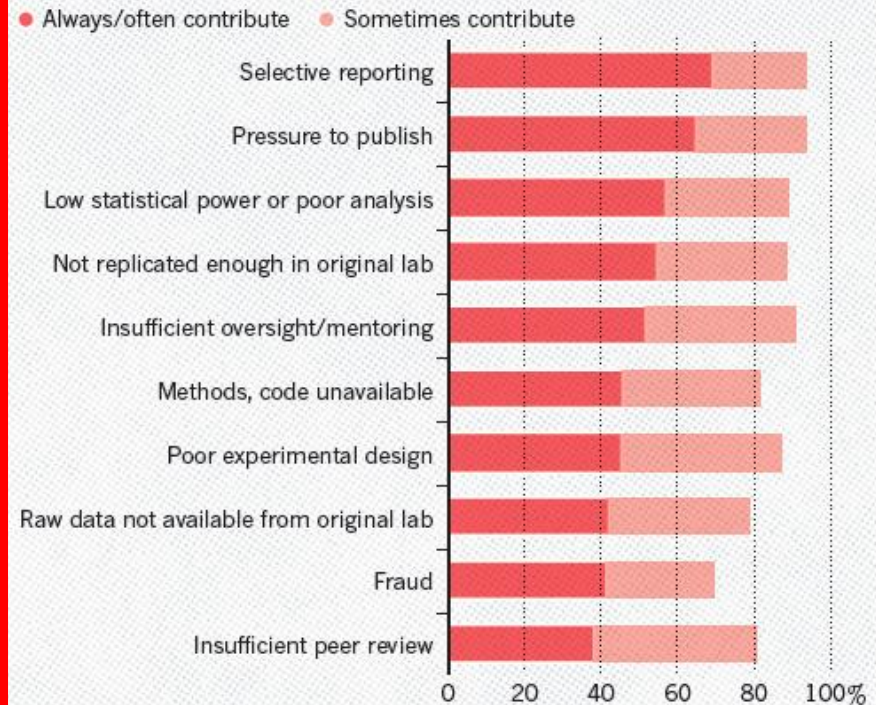
HAVE YOU FAILED TO REPRODUCE AN EXPERIMENT?

Most scientists have experienced failure to reproduce results.



WHAT FACTORS CONTRIBUTE TO IRREPRODUCIBLE RESEARCH?

Many top-rated factors relate to intense competition and time pressure.



Let's Talk About
High Impact Publications
and "*Impact Factor Mania*"

And what this does to our culture!

Quote to a Post-Doc From a Successful Physician Scientist

*“You are nothing unless you
publish in CNS!”*

Causes for the Persistence of Impact Factor Mania

mBio 2014

Arturo Casadevall,^a Ferric C. Fang^b

Departments of Microbiology & Immunology and Medicine, Albert Einstein College of Medicine, Bronx, New York, USA^a; Departments of Laboratory Medicine and Microbiology, University of Washington School of Medicine, Seattle, Washington, USA^b

“...associating the value of research with the journal where the work was published rather than the content of the work itself. The mania is causing profound distortions in the way science is done that are deleterious to the overall scientific enterprise.”

distortions in the way science is done that are deleterious to the overall scientific enterprise. In this essay, we consider the forces responsible for the persistence of the mania and conclude that it is maintained because it disproportionately benefits elements of the scientific enterprise, including certain well-established scientists, journals, and administrative interests. Our essay suggests steps that can be taken to deal with this debilitating and destructive epidemic.

Should we eliminate the Impact Factor?

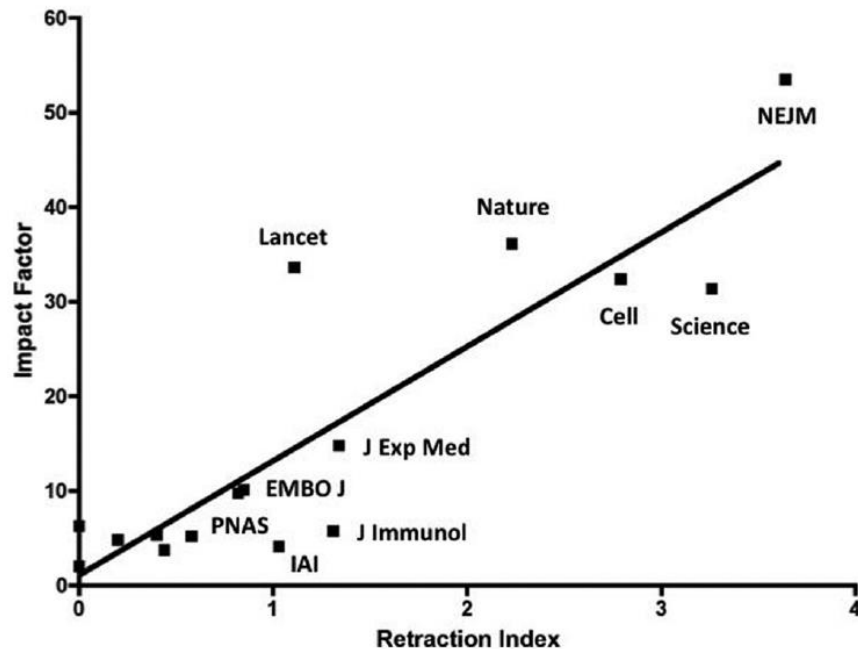
Nathan S. Blow, Ph.D., Editor-in-Chief, *BioTechniques*

EDITORIAL

Fang and Casadevall
Infection and Immunity, 2011

Retracted Science and the Retraction Index[▽]

Articles may be retracted when their findings are no longer considered trustworthy due to scientific misconduct or error, they plagiarize previously published work, or they are found to violate ethical guidelines. Using a novel measure that we call the “retraction index,” we found that the frequency of retraction varies among journals and shows a strong correlation with the journal impact factor. Although retractions are relatively rare, the retraction process is essential for correcting the literature and maintaining trust in the scientific process.



The higher the impact factor, the higher the retraction index (also in the New York Times)

“A man who has committed a mistake, and doesn’t correct it, is committing another mistake.”
—attributed to Confucius

Misconduct accounts for the majority of retracted scientific publications

PNAS, 2012

Ferric C. Fang^{a,b,1}, R. Grant Steen^{c,1}, and Arturo Casadevall^{d,1,2}

Departments of ^aLaboratory Medicine and ^bMicrobiology, University of Washington School of Medicine, Seattle, WA 98195; ^cMediCC! Medical Communications Consultants, Chapel Hill, NC 27517; and ^dDepartment of Microbiology and Immunology, Albert Einstein College of Medicine, Bronx, NY 10461

Edited by Thomas Shenk, Princeton University, Princeton, NJ, and approved September 6, 2012 (received for review July 18, 2012)

Nobel winner declares boycott of top science journals

Randy Schekman says his lab will no longer send papers to Nature, Cell and Science as they distort scientific process

How journals like Nature, Cell and Science are damaging science

Monday 9 December 2013 14.42 EST

Leading academic journals are distorting the scientific process and represent a "tyranny" that must be broken, according to a Nobel prize winner who has declared a boycott on the publications.

Schekman criticises Nature, Cell and Science for artificially restricting the number of papers they accept, a policy he says stokes demand "like fashion designers who create limited-edition handbags." He also attacks a widespread metric called an "impact factor", used by many top-tier journals in their marketing.

Final, Final Comment on Impact
Factor Mania

Strive for Nature

But Don't Lie or Die for Nature

(or compromise your ethics)

The Erosion of Research Integrity: *The Need For a Culture Change*

- Integrity of laboratory research and how this impacts clinical outcomes
 - The issue at hand
 - The spectrum
 - Why does this occur?
 - What can we do to fix this?

Overall, We Need to Be Kinder as Reviewers, Mentors, and Editors

- Research can be challenging when we are seeking significant gains in knowledge!
 - And sometimes, the unexpected findings may be the most interesting findings!
- We should not torture our trainees to the point where they “*massage*” data in order to satisfy the PI, have a paper published in a high impact journal, or both!
- PIs need to implement *best research practices* and not just expect a *CNS* paper to land on your desk
 - PIs should have updates and input from start to finish.

2014

- Case Summary: Ahvazi, Bijan
- Case Summary: Chen, Li
- Case Summary: Cokonis, Melanie
- Case Summary: Deb, Kaushik
- Case Summary: Dzhura, Igor
- Case Summary: Freeman, Helen C.
- Case Summary: Fu, Jun
- Case Summary: Patel, Parag
- Case Summary: Suzuki, Makoto
- Case Summary: Takahashi, Takao
- Case Summary: Warne, James P.
- Case Summary: Xing, H. Rosie
- Case Summary: Zou, Zhihua



May, 2024

<https://ori.hhs.gov/frequently-asked-questions>

2016

Case Summary: Cullinane, Andrew B.

2018

Case Summary: Baughman, Brandi M.

2020

- Case Summary: Downs, Charles A.
- Case Summary: Fulford, Logan
- Case Summary: Jaiswal, Anil Kumar
- Case Summary: Jayant, Rahul Dev
- Case Summary: Kim, Shin-Hee
- Case Summary: Nemani, Prasadarao
- Case Summary: Panka, David
- Case Summary: Tataroglu, Ozgur
- Case Summary: Wan, Yihong
- Case Summary: Wang, Zhiwei

2015

- Case Summary: Anderson, David
- Case Summary: Asherin, Ryan
- Case Summary: Bitzegeio, Julia
- Case Summary: Blaylock, Brandi Lyn
- Case Summary: Briones, Teresita L.
- Case Summary: Dasmahapatra, Girija
- Case Summary: Fujita, Ryousuke
- Case Summary: Geraedts, Maria C.P.
- Case Summary: Kang, Bin
- Case Summary: Littlefield, Peter
- Case Summary: Massè, Julie
- Case Summary: Potti, Anil
- Case Summary: Reddy, Venkata J.
- Case Summary: Xiao, Dong

And, in 2021, there was a case of misconduct in the TMC!

Case Summary: Santhanam, Srikanth

ORI found that Respondent engaged in research misconduct by recklessly reporting falsified and/or fabricated data in the following twelve (12) published papers:

2021

-3 to 2 cases

2022

-11 to 8 cases

2023

-10 cases

2024

-1 case so far

Are We Doing Enough to Punish Those Who Violate Our Trust?
What are the consequences of being found guilty of misconduct?

What You Saw on the Previous Slide Does Not Show the Full History

Case Summaries

This page contains cases in which administrative actions were imposed due to findings of research misconduct. **The list only includes those who CURRENTLY have an imposed administrative actions against them. It does NOT include the names of individuals whose administrative actions periods have expired.** Each case is categorized according to the year in which ORI closed the case.

Thus, what you saw on the last slide is only a subset of those found guilty of fraud over time!

Most Common ORI Actions

- Retract paper(s)
- Have research supervised for 3 yrs
- No service on committees for 2-3 yrs
- Most can still receive NIH funding

- For those found guilty of fraud, we must have a punishment that fits the crime.
- What is the deterrent for such behavior?
- Indeed, the entire system needs an overhaul, but let's start with making outright fraud something that can be deterred by tough punishment and prohibits this person from ever having the chance to do this again.
 - This is, of course, even more important for clinical fraud

The Primary Inquiry Rests With Your NIH Funded Institution

What the Office of Research Integrity Does

- Implements PHS regulations requiring institutions to respond to allegations of research misconduct
- Assures institutions requesting PHS funding have mechanisms in place to deal with allegations of research misconduct
- Provides assistance and guidance to institutions
- Can perform own investigation
- Leaves primary responsibility with the individual institutions
- Institutional Research Integrity Officer

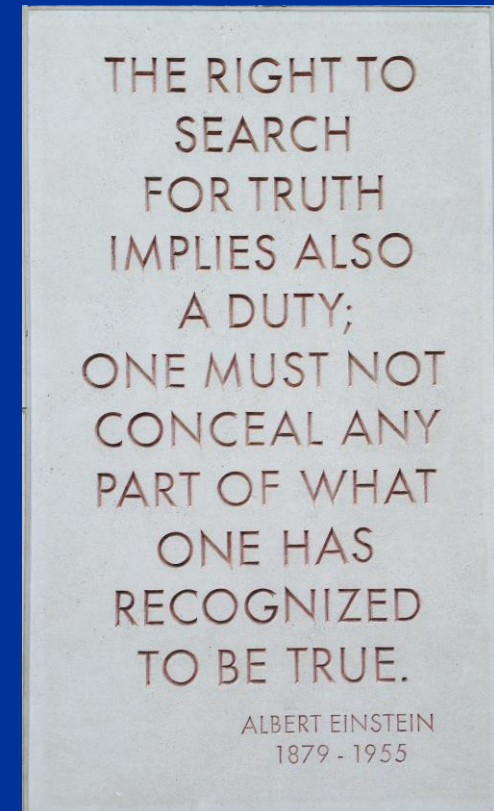
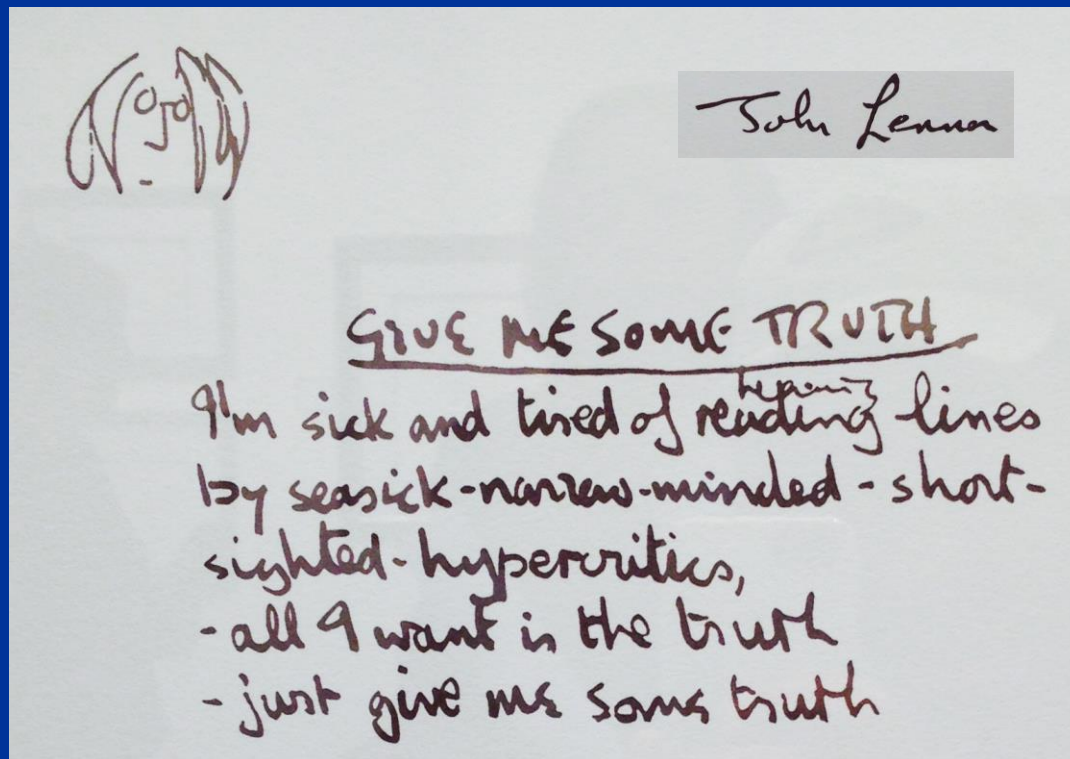
INHERENT CONFLICT OF INTEREST

Mechanism for Addressing Misconduct Is Institutional Dependent

- Allegations may be brought to Department Head, Division Head, or to the Provost and Executive Vice President (EVP)
- Provost & EVP and Res Integrity Officer (RIO) will assess the allegations
- Information-gathering and initial fact finding.
 - Conduct an Inquiry Panel of at least 3 faculty chosen by Provost & EVP and the Res Integrity Officer.

INHERENT CONFLICT OF INTEREST

“....you’ve uncovered a thorny problem in academia—selfishness. In moments of weakness or at the extremes, this creates an undertow away from integrity in science and public health. This is the single biggest limitation in our field,.....”



<https://www.dailymail.co.uk/news/article-12993089/dana-farber-cancer-institute-harvard-medical-data-manipulation.html>

Journal/Editor Responsibilities

Is the Lancet complicit in research fraud?

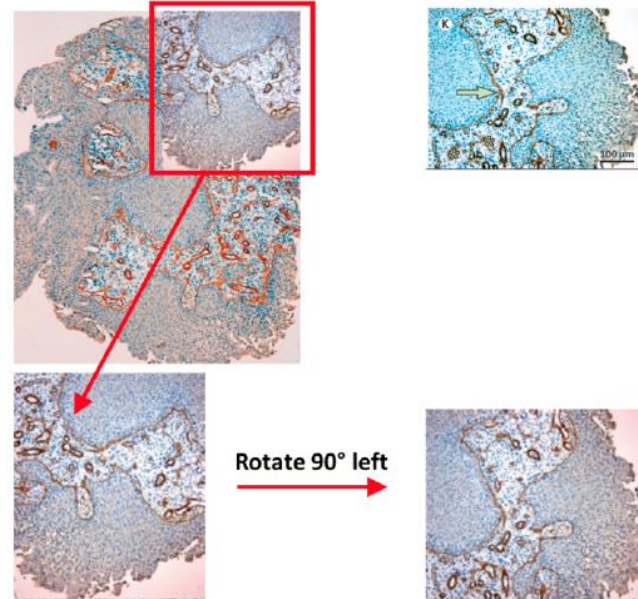
This blog was written jointly by Patricia Murray, Professor of Stem Cell Biology and Regenerative Medicine, University of Liverpool, UK and Peter Wilmshurst.

The editor of a medical journal that charges readers for access to articles whilst knowingly keeping fraudulent articles on its website is as guilty of financial fraud as an art dealer who knowingly sells forged artworks, but there is no moral equivalence. The complicity in fraud by the editor of the medical journal may also cause death and harm to patients.

Identical samples in Fig.4 of Gonfiotti et al (2014) and Fig 3K of Badylak et al (2012)

Fig. 4 in Gonfiotti et al (2014). Immunohistochemical staining at 4 years after transplantation. Immunostaining of implanted airway showing strong immunoreactivity against anti-laminin.

Fig. 3K in Badylak et al (2012). Laminin staining at 1 year after transplantation.



If the inset in Fig. 4 of Gonfiotti et al (2014) (outlined in red) is rotated 90° to the left, it is clear that it is identical to Fig. 3K in Badylak et al (2012). It appears that the colour has been modified in the 2014 paper to increase the levels of red/cyan, but the sample itself is identical.

I am a Deputy Editor of JAMA Oncology

OPINION

Science Has a Nasty Photoshopping Problem

By Elisabeth Bik

Dr. Bik is a microbiologist who has worked at Stanford University and for the Dutch National Institute for Health.

One evening in January 2014, I sat at my computer at home, sifting through scientific papers. Being a microbiologist, this wasn't unusual, although I certainly didn't expect to find what I did that night.

These particular papers were write-ups of medical research, with many including photographs of biological samples, like tissue. One picture caught my eye. Was there something familiar about it? Curious, I quickly scrolled back through other papers by the same authors, checking their images against each other.

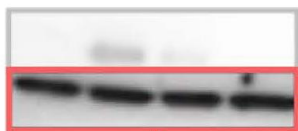
There it was. A section of the same photo being used in two different papers to represent results from three entirely different experiments.

What's more, the authors seemed to be deliberately covering their tracks. Although the photos were of the same sample, one appeared to have been flipped back-to-front, while the other appeared to have been stretched and cropped differently.

Two papers, three experiments, one image

These figures show western blots, which are used to detect the presence of a specific protein in tissues or bodily fluids.

First paper



→ Stretched →

Second paper, first repetition



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ORI THE OFFICE OF RESEARCH INTEGRITY ori.hhs.gov

September 27, 2023

ORI has a New YouTube Channel!

ORI is pleased to announce the launch of its new YouTube channel! ORI's channel will include a variety of research integrity video resources all in one place. Visit ORI's new channel [here](#) and subscribe to receive updates about new content!

THE ECONOMIST

There is a worrying amount of fraud
in medical research
And a worrying unwillingness to do anything
about it



Adding robustness to rigor and reproducibility for the three Rs of improving translational medical research

Michael P. McGill, David W. Threadgill

J Clin Invest. 2023;133(18):e173750.
<https://doi.org/10.1172/JCI173750>.

Viewpoint

Introduction To improve advances in scientific research, the National Institutes of Health has emphasized rigor and reproducibility, where rigor ensures “robust and unbiased experimental design, methodology, analysis, interpretation, and reporting of results,” while reproducibility is evident when data can be “reproduced by multiple scientists” (1). However, even in rigorous and reproducible research, there is increasing evidence that results using genetically homogeneous preclinical models for disease can fail to translate to a genetically diverse human patient population. The relative ease with which results can be gathered using a single model often leads researchers to discount the possibility that the results may not be representative of more diverse genetic backgrounds, reducing the translational potential for humans. To improve translation, we propose as one solution that a robustness test should be considered to confirm that results are “robust across heterogeneous genetic contexts,” thereby improving prediction of likely responses in heterogeneous patient populations. Furthermore, robustness approaches could be leveraged to identify biomarkers that prognosticate likely responders, heightening public health outcomes and alleviating financial burden. This general concept pertains to all genetically homogeneous preclinical models as well as large, genetically ill-defined outbred animals used in small numbers for safety testing, but mice will be used as the exemplar given their extensive use in modeling therapeutic efficacy in human diseases. Origin of translational failures
Therapeutic candidates tested [...]

Happy Birthday to _____ ?



**We can't help
everyone, but
everyone can
help someone.**



John Lennon
www.geckoandfly.com



Harvard Business School Prof. Sued Researchers for Alleging Data Manipulation. Experts Worry It Silences Critics.

Updated March 29, 2024.

- Harvard Business School professor Francesca Gino sued Data Colada following their public allegations of research misconduct against her — a move data manipulation researchers said has had a chilling effect on the field.
- Data Colada — run by business school professors Uri Simonsohn, Leif D. Nelson, and Joseph P. Simmons — penned a series of data manipulation accusations against Gino in 2023, two years after privately notifying the University of their concerns. In August, Gino sued Harvard and Data Colada for \$25 million, accusing the University of gender discrimination and claiming that the two conspired to damage her reputation with false accusations.
- But regardless of the lawsuit's outcome, several academic misconduct researchers said the case has already had a dampening effect on research integrity efforts.

Former Stanford president retracts 1999 Cell paper

Marc Tessier-Lavigne, the former president of Stanford University who resigned following scrutiny of his published papers and an institutional research misconduct investigation, has retracted a third paper, this one from *Cell*.



Marc Tessier-Lavigne

Last week, Tessier-Lavigne retracted two articles from *Science* that had been published in 2001.

The *Cell* paper, *A Ligand-Gated Association between Cytoplasmic Domains of UNC5 and DCC Family Receptors Converts Netrin-Induced Growth Cone Attraction to Repulsion*, was published in 1999. It has been cited 577 times, according to Clarivate's Web of Science.

The retraction notice was posted Monday. It states:

This article has been retracted at the request of the authors.

In 2015, we, the authors, consulted with Cell editors about issues that had been brought to our attention about this paper, specifically image splicing in Figures 3C, 5A, 5B, and 7B–7D and duplication of blank blots in Figure 7C. Cell declined to publish a Correction at that time because in 1999, when the paper was published, the journal did not have policies prohibiting unmarked image splicing and because, for the duplication, there was insufficient information to determine intent, and the impact of the duplication on the paper's conclusions was limited. In 2022, when new concerns were raised, Cell posted an Editorial Expression of Concern (Cell 186, 230 [2023], <https://doi.org/10.1016/j.cell.2022.12.019>) while an institutional investigation was conducted. The investigation is complete and has revealed further issues including manipulation of data-containing portions of Western blot images in Figures 3A–3C, 7A, 7B, and 7D, undermining confidence in the paper's conclusions (<https://boardoftrustees.stanford.edu/wp-content/uploads/sites/5/2023/07/Scientific-Panel-Final-Report.pdf>). As a result, we are retracting the paper. We regret the impact of these issues on the scientific community.

Make Your Voice Heard on NIH's Draft Scientific Integrity Policy

Posted on September 22, 2023

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There is an old story about a king who holds a contest to determine his successor. The contest involves each child in the court getting a seed, and whoever grows the tallest plant from that seed would be the winner. When the day came to show the plants, a lone girl is embarrassed to see all the other children have colorful and tall plants, while hers is still a simple seed. The girl is shocked when the king declares her to be the winner since all the seeds were boiled and none of them could grow into a plant.

While an old story, the lessons about honesty haven't changed. When it comes to scientific integrity, NIH has long-standing policies and processes in place to ensure the science we fund and conduct is managed, communicated, and used in ways that preserve its accuracy and objectivity. Importantly, these policies also help protect research results from suppression, manipulation, and inappropriate influence.

In 2022, we revised the compendium document [NIH Policies and Procedures for Promoting Scientific Integrity](#) to meet the expectations set forth in President Biden's [Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking](#). The updated compendium considers emerging and cross-cutting themes that have arisen since the document's original publication in 2012.

In addition to updating the compendium, NIH has also developed the [Draft Scientific Integrity Policy of the National Institutes of Health](#) (Draft NIH Scientific Integrity Policy) to not only satisfy the expectations of the President's memo, but also to incorporate the recommendations contained in the National Science and Technology Council's [Protecting the Integrity of Government Science](#) report. The Draft NIH Scientific Integrity Policy unambiguously reiterates NIH's commitment to scientific integrity and also aligns with the recently released [Draft Scientific Integrity Policy of the U.S. Department of Health and Human Services](#) (more info at the [HHS Scientific Integrity](#) website).

Some of the highlights of the new Draft NIH Scientific Integrity Policy include:

- Articulating a definition of scientific integrity that is shared across the United States Government;
- Establishing the new positions of NIH Chief Scientist and NIH Scientific Integrity Official and defining the roles and responsibilities of these positions; and
- Protecting against inappropriate political interference.

The Retraction Watch Leaderboard

Who has the most retractions? Here's our unofficial list (see notes on methodology), which we'll update as more information comes to light:

1. [Yoshitaka Fujii](#) (total retractions: 183) See also: [Final report of investigating committee](#), [our reporting](#), [additional coverage](#)
2. [Joachim Boldt](#) (175) See also: [Editors-in-chief statement](#), [our coverage](#)
3. [Hironobu Ueshima](#) (123) See also: [our coverage](#)
4. [Yoshihiro Sato](#) (113) See also: [our coverage](#)
5. [Ali Nazari](#) (96) See also: [our coverage](#)
6. [Jun Iwamoto](#) (88) See also: [our coverage](#)
7. [Diederik Stapel](#) (58) See also: [our coverage](#)
8. [Yuhji Saitoh](#) (56) See also: [our coverage](#)
9. [Adrian Maxim](#) (48) See also: [our coverage](#)
10. [Chen-Yuan \(Peter\) Chen](#) (43) See also: [SAGE](#), [our coverage](#)
11. [Shahaboddin Shamshirband](#) (42) See also: [our coverage](#)
12. [Fazlul Sarkar](#) (41) See also: [our coverage](#)
13. [Hua Zhong](#) (41) See also: [journal notice](#)
14. [Shigeaki Kato](#) (40) See also: [our coverage](#)
15. [James Hunton](#) (37) See also: [our coverage](#)
16. [Hyung-In Moon](#) (35) See also: [our coverage](#)
17. [Dong Mei Wu](#) (35) See also: [National Natural Science Foundation of China finding](#)
18. [Antonio Orlandi](#) (34) See also: [our coverage](#)
19. [Dimitris Liakopoulos](#) (33) (NB: We're counting a book he co-authored as a single retraction. The book has 13 retracted chapters with DOIs that are not included in this figure.) See also: [our coverage](#)
20. [Amelec Vilorio aka Jesus Silva](#) (33) See also: [our coverage](#)
21. [Jose L Calvo-Guirado](#) (32) See also: [our coverage](#)
22. [Jan Hendrik Schön](#) (32) See also: [our coverage](#)
23. [Naoki Mori](#) (31) See also: [our coverage](#)
24. [Bharat Aggarwal](#) (30) See also: [our coverage](#)
25. [Soon-Gi Shin](#) (30) See also: [our coverage](#)
26. [Victor Grech](#) (29) See also: [our coverage](#)
27. [Tao Liu](#) (29) See also: [our coverage](#)
28. [Jun Ren](#) (29) See also: [our coverage](#)
29. [Cheng-Wu Chen](#) (28) See also: [our coverage](#)
30. [A Salar Elahi](#) (27) See also: [our coverage](#)
31. [Prashant K Sharma](#) (27) See also: [our coverage](#)

We note that all of the top 31 are men, which agrees with the general findings of a [2013 paper suggesting that men are more likely to have papers retracted for fraud](#).

5/15/23