

Reward, reproducibility and recognition in research - the case for going Open

Eleventh Annual Munin Conference on Scholarly Publishing <http://site.uit.no/muninconf/>

21 November 2016

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Slides - <http://www.slideshare.net/DannyKingsley/reward-reproducibility-and-recognition-in-research-the-case-for-going-open>

The problem

Researchers are in a rat race to stay ahead



Image by Danny Kingsley

Today's talk

- How research is measured
- The problems this causes
- A proposed solution
- Implementation challenges
- Caveat: This mainly refers to the STEM experience

The coin in the realm of academia

Image Flickr – Leo Reynolds



Steele, C., Butler, L. and Kingsley, D. “The Publishing Imperative: the pervasive influence of publication metrics” *Learned Publishing*, October 2006 Vol 19, Issue 4, pp. 277-290. [10.1087/095315106778690751/epdf](https://doi.org/10.1087/095315106778690751/epdf)

Journal Impact Factor

Impact Factor for 2015 is

- Number of citations in 2014 of articles published in 2012-2013 divided by:
 - Number of articles published in the journal in 2012-2013
- In 2016 *Nature* has a JIF of 41.456. This is supposed to mean that over the past 2 years, *Nature* articles have been cited, on average, about 41 times each

Issues with the JIF

- Only a selection of journals
- Some disciplines badly represented
- English language bias
- North American bias
- Timeline
- Measuring the vessel, not the contents!
- Uneven distribution.
 - Argument that we should be making non-citation levels available [10.1186/1471-2288-4-14](https://doi.org/10.1186/1471-2288-4-14)

Journals banned from the JIF list



Image Danny Kingsley

- Journals are removed because of:
 - Self-citation
 - Citation stacking – where journals cite each other
 - Requirements to cite from within the journal
- 2013 – 66 journals
- 2012 – 51 journals
- 2011 – 34 journals

<http://blogs.nature.com/news/2013/06/new-record-66-journals-banned-for-boosting-impact-factor-with-self-citations.html>

Backlash

Science Home News Journals Topics Careers

SHARE



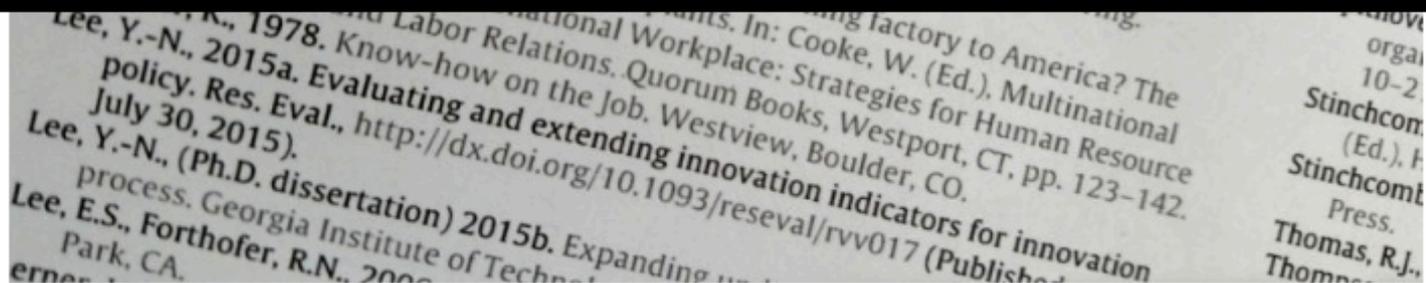
11K



8



397



Citation lists are key to calculating journal impact factors.

David Malakoff

Hate journal impact factors? New study gives you one more reason

By **John Bohannon** | Jul. 6, 2016 , 4:30 PM

Scientists have a love-hate relationship with the journal impact factor (JIF), the measurement used to rank technical journals by prestige. They have come to use it not only for deciding where to submit research papers, but for judging their peers, as well as influencing who wins

<http://www.sciencemag.org/news/2016/07/hate-journal-impact-factors-new-study-gives-you-one-more-reason>

SHARE



11K



8



Hate journal impact factors? New study gives you one more reason

ScienceMag | Jul. 6, 2016, 4:30 PM

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<http://www.sciencemag.org/news/2016/07/hate-journal-impact-factors-new-study-gives-you-one-more-reason>

Backlash

 OPEN ACCESS

EDITORIAL

The Impact Factor Game

The PLoS Medicine Editors

Published: June 6, 2006 • <http://dx.doi.org/10.1371/journal.pmed.0030291>

| | | | | |
|----------------|---------|---------|----------|-----------------|
| Article | Authors | Metrics | Comments | Related Content |
|----------------|---------|---------|----------|-----------------|

Reader Comments (7)

Media Coverage (1)

| | |
|-----------------|----------------|
| 108 Save | 16 Citation |
| 111,068 View | 90 Share |

Download PDF 

Print

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It is time to find a better way to assess the scientific literature

Citation: The PLoS Medicine Editors (2006) The Impact Factor Game. PLoS Med 3(6): e291. doi:10.1371/journal.pmed.0030291

Published: June 6, 2006

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Increased Responsibility and Transparency in an Era of Increased Visibility

Why Current Publication Practices May Distort Science

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EDITORIAL

The Impact Factor Game

The PLoS Medicine Editors

Published: June 6, 2006 • <http://dx.doi.org/10.1371/journal.pmed.0030291>

Article

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Why Current Publication Practices May Distort Science

Subject Areas



deciding which articles other than original research articles it deems as citable. We conclude that science is currently rated by a process that is itself unscientific, subjective, and secretive.

... time to find a better way to assess the scientific literature

Citation: The PLoS Medicine Editors (2006) The Impact Factor Game. PLoS Med 3(6): e291. doi:10.1371/journal.pmed.0030291

Published: June 6, 2006

Copyright: © 2006 The PLoS Medicine Editors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

We are stuck



The insistence on the need to publish novel results in high impact journals is creating a multitude of problems with the scientific endeavour

Problem 1: Data Excuse Bingo

| | | | |
|---|--|---|---------------------------------------|
| My data contains personal/sensitive information | My data is too complicated | People may misinterpret my data | My data is not very interesting |
| Commercial funder doesn't want to share it | We might want to use it in another paper | People will contact me to ask about stuff | Data Protection/ National Security |
| It's too big | People will see that my data is bad | I want to patent my discovery | It's not a priority and I'm busy |
| I don't know how | I'm not sure I own the data | Someone might steal/plagiarise it | My funder doesn't require it |

Incompatible!

| | | | |
|---|--|--|----------------------------------|
| My data contains personal/sensitive information | My data is too complicated | People might misinterpret it | It's not very interesting |
| Commercial funder doesn't want to share it | We might want to use it in another paper | People could use it to ask about stuff | National Security |
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| I don't know how | I'm not sure I own the data | Someone might steal/plagiarise it | My funder doesn't require it |

‘Someone might steal/plagiarise it’

‘A second concern held by some is that a new class of research person will emerge — **people who had nothing to do with the design and execution of the study but use another group’s data for their own ends**, possibly stealing from the research productivity planned by the data gatherers, or even use the data to try to disprove what the original investigators had posited. There is concern among some front-line researchers that the system will be taken over by what some researchers have characterized as “**research parasites.**”’

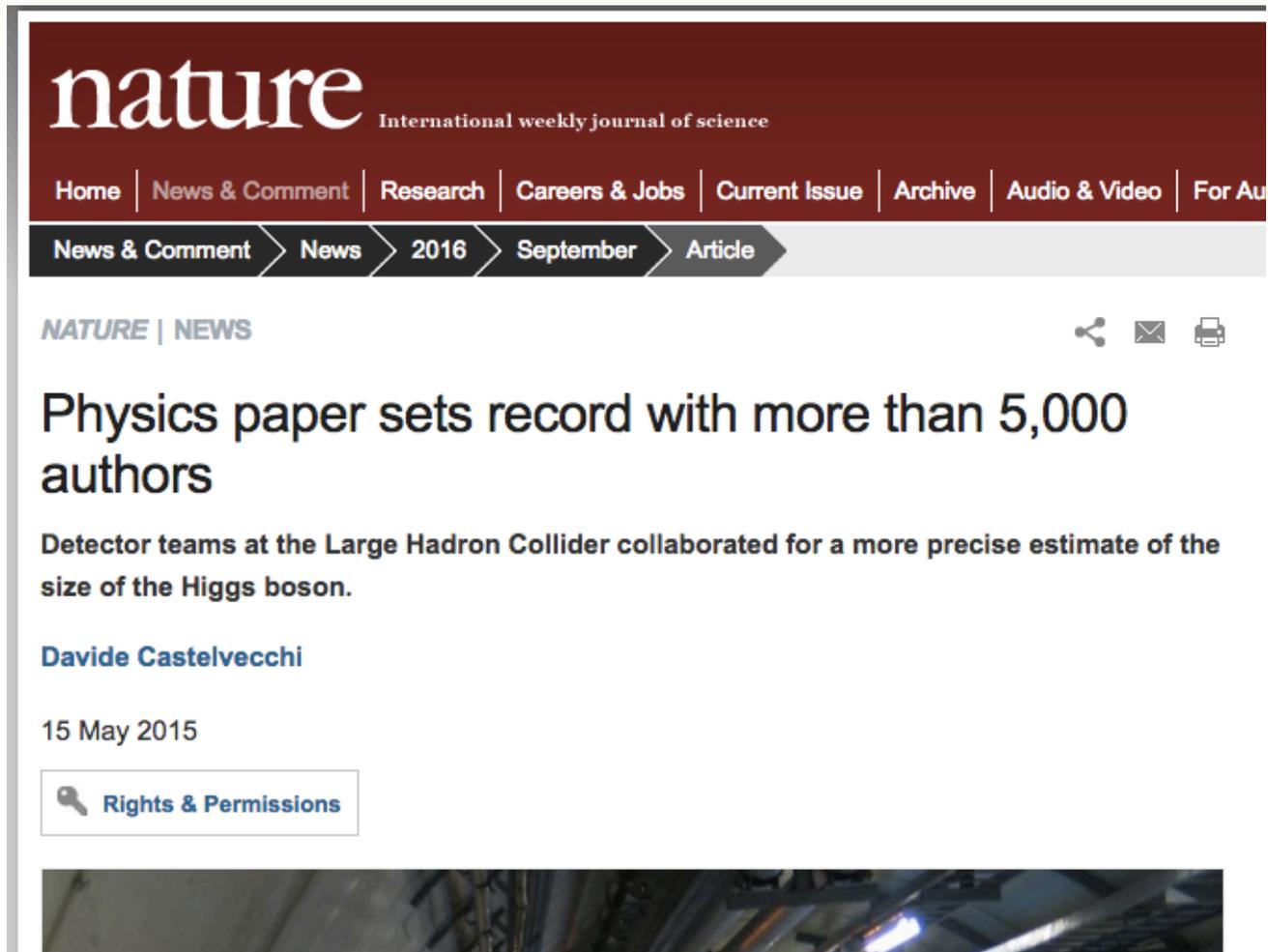
Problem 2: Hyperauthorship

24 of the 33 pages of this paper listed the over 5,000 authors (nine pages are the paper itself)

The screenshot shows the APS Physics website interface. At the top left is the APS physics logo. Navigation links include 'Journals', 'Help/Feedback', and a search bar with the placeholder 'Journal, vol, page, DOI, etc.'. The main header is 'PHYSICAL REVIEW LETTERS' with sub-navigation for 'Highlights', 'Recent', 'Accepted', 'Collections', 'Authors', 'Referees', 'Search', 'Press', and 'About'. The article title is 'Combined Measurement of the Higgs Boson Mass in pp Collisions at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and CMS Experiments'. The authors are listed as 'G. Aad *et al.* (ATLAS Collaboration, CMS Collaboration)' and the publication details are 'Phys. Rev. Lett. **114**, 191803 – Published 14 May 2015'. A 'Physics' badge is present with the text 'See Viewpoint: A More Precise Higgs Boson Mass'. On the right, there is a circular badge with the number '579' and social media sharing icons for Twitter, Facebook, and a 'More' option. At the bottom, there are buttons for 'Article', 'References', 'Citing Articles (110)', 'PDF', 'HTML', and 'Export Citation'. The word 'ISSUE' is partially visible at the bottom right.

<http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.114.191803>

Storm of protest



The image shows a screenshot of a news article on the Nature website. The page has a dark red header with the 'nature' logo and the tagline 'International weekly journal of science'. Below the header is a navigation bar with links for Home, News & Comment, Research, Careers & Jobs, Current Issue, Archive, Audio & Video, and For Authors. A secondary navigation bar shows the breadcrumb trail: News & Comment > News > 2016 > September > Article. The main content area features the article title 'Physics paper sets record with more than 5,000 authors', a sub-headline 'Detector teams at the Large Hadron Collider collaborated for a more precise estimate of the size of the Higgs boson.', the author's name 'Davide Castelvecchi', and the date '15 May 2015'. There are icons for sharing, email, and printing. A 'Rights & Permissions' button is visible. At the bottom, there is a partial view of an image showing scientific equipment.

nature International weekly journal of science

Home | News & Comment | Research | Careers & Jobs | Current Issue | Archive | Audio & Video | For Authors

News & Comment > News > 2016 > September > Article

NATURE | NEWS   

Physics paper sets record with more than 5,000 authors

Detector teams at the Large Hadron Collider collaborated for a more precise estimate of the size of the Higgs boson.

Davide Castelvecchi

15 May 2015

 **Rights & Permissions**



<http://www.nature.com/news/physics-paper-sets-record-with-more-than-5-000-authors-1.17567>

Storm of protest

The image shows a tilted screenshot of a news article from the Independent newspaper. At the top, the newspaper's logo and navigation menu are visible, including categories like News, Voices, Culture, Lifestyle, Tech, Sport, Olympics, and Daily Edition. A red banner across the top contains the text 'Sometimes you need a change' and 'Try varifocal contact lenses free'. The main headline of the article is 'Long author-lists on research papers are threatening the academic work system'. Below the headline, a sub-headline reads 'Now that academic papers are written by thousands (yes, thousands) of contributors, it's getting hard to tell workers from shirkers. Ernesto Priego reports on 'hyperauthorship''. The author's name, 'Ernesto Priego', and the date, 'Wednesday 27 May 2015', are listed below the sub-headline. There are also icons for social media (Facebook, Twitter, Email) and a comment count of '0 comments'. The background of the article text is a dark, blurry image.

INDEPENDENT

News Voices Culture Lifestyle Tech Sport Olympics Daily Edition

Find out more

Sometimes you need a change
Try varifocal contact lenses free

News > Science

Long author-lists on research papers are threatening the academic work system

Now that academic papers are written by thousands (yes, thousands) of contributors, it's getting hard to tell workers from shirkers. Ernesto Priego reports on 'hyperauthorship'

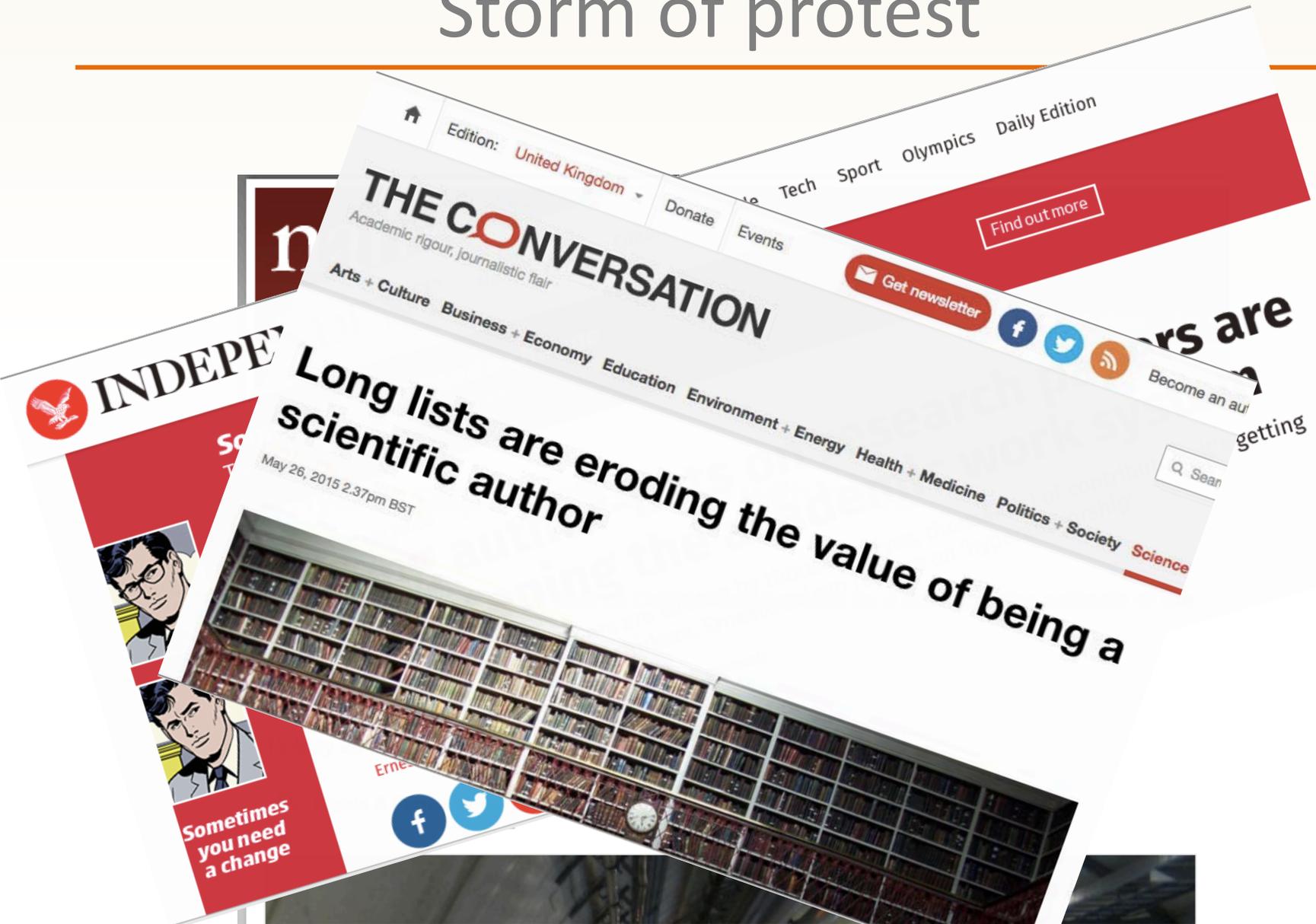
Ernesto Priego | Wednesday 27 May 2015 | 0 comments

f t e

Sometimes you need a change

<http://www.independent.co.uk/news/science/long-author-lists-on-research-papers-are-threatening-the-academic-work-system-10279748.html>

Storm of protest



<https://theconversation.com/long-lists-are-eroding-the-value-of-being-a-scientific-author-42094>

Storm of protest



<https://www.timeshighereducation.com/news/mass-authorship-destroying-credibility-papers>

Speaking of other ways of measuring...

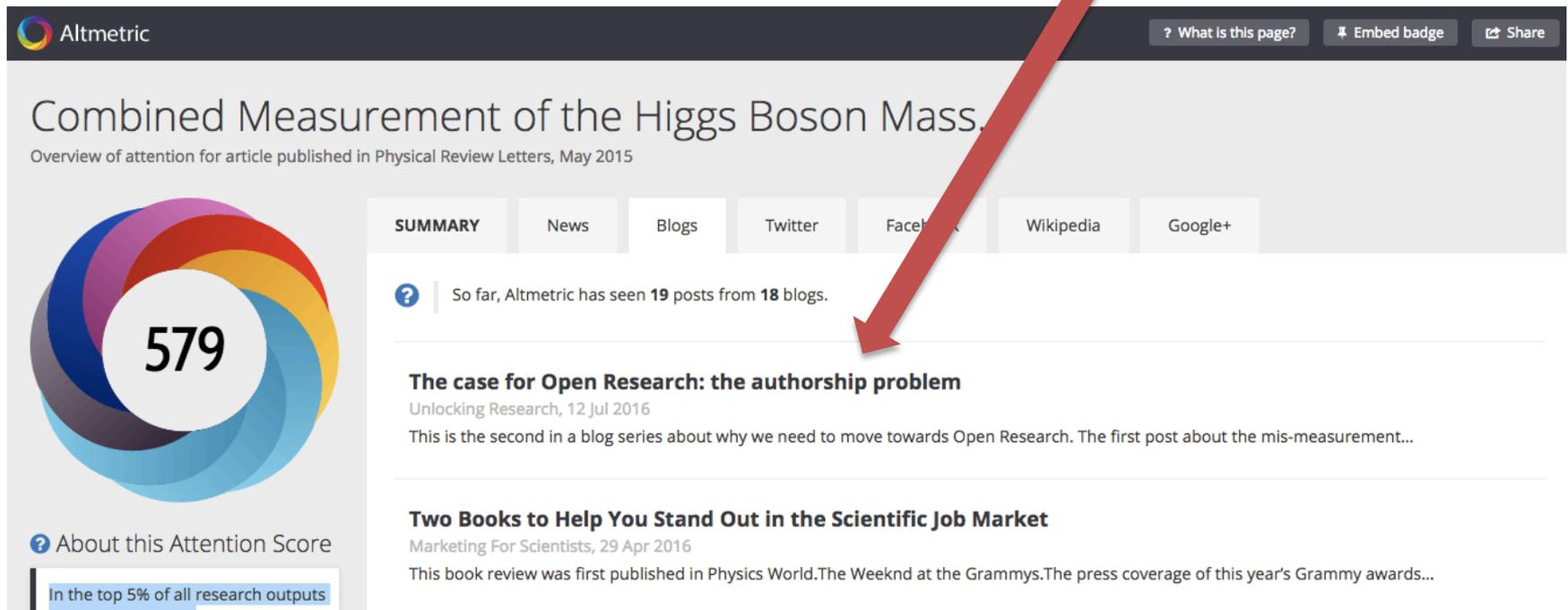
This Altmetrics score of 579 is “in the top 5% of all research outputs scored by Altmetric”



The screenshot shows the APS physics website interface. At the top, there is a navigation bar with 'Journals' and 'Help/Feedback' on the left, a search box with the placeholder 'Journal, vol, page, DOI, etc.' in the center, and a 'Log in' link on the right. Below this is a dark green header with the text 'PHYSICAL REVIEW LETTERS' and a secondary navigation menu with items like 'Highlights', 'Recent', 'Accepted', 'Collections', 'Authors', 'Referees', 'Search', 'Press', and 'About'. The main content area features three tags: 'Featured in Physics', 'Editors' Suggestion', and 'Open Access'. The article title is 'Combined Measurement of the Higgs Boson Mass in pp Collisions at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and CMS Experiments'. Below the title, the authors are listed as 'G. Aad *et al.* (ATLAS Collaboration, CMS Collaboration)' and the journal information is 'Phys. Rev. Lett. **114**, 191803 – Published 14 May 2015'. A 'Physics' logo is followed by the text 'See Viewpoint: A More Precise Higgs Boson Mass'. At the bottom of the article, there are buttons for 'Article', 'References', 'Citing Articles (110)', 'PDF', 'HTML', and 'Export Citation'. On the right side of the article, there is an Altmetrics score of 579, represented by a colorful circular icon with the number 579 inside, and social media sharing icons for Twitter, Facebook, and a 'More' option. A large red arrow points from the text above to the Altmetrics score, which is also circled in red.

<http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.114.191803>

Blogged because of author list!



<https://aps.altmetric.com/details/3997327/blogs>

Problem 3: Reproducibility



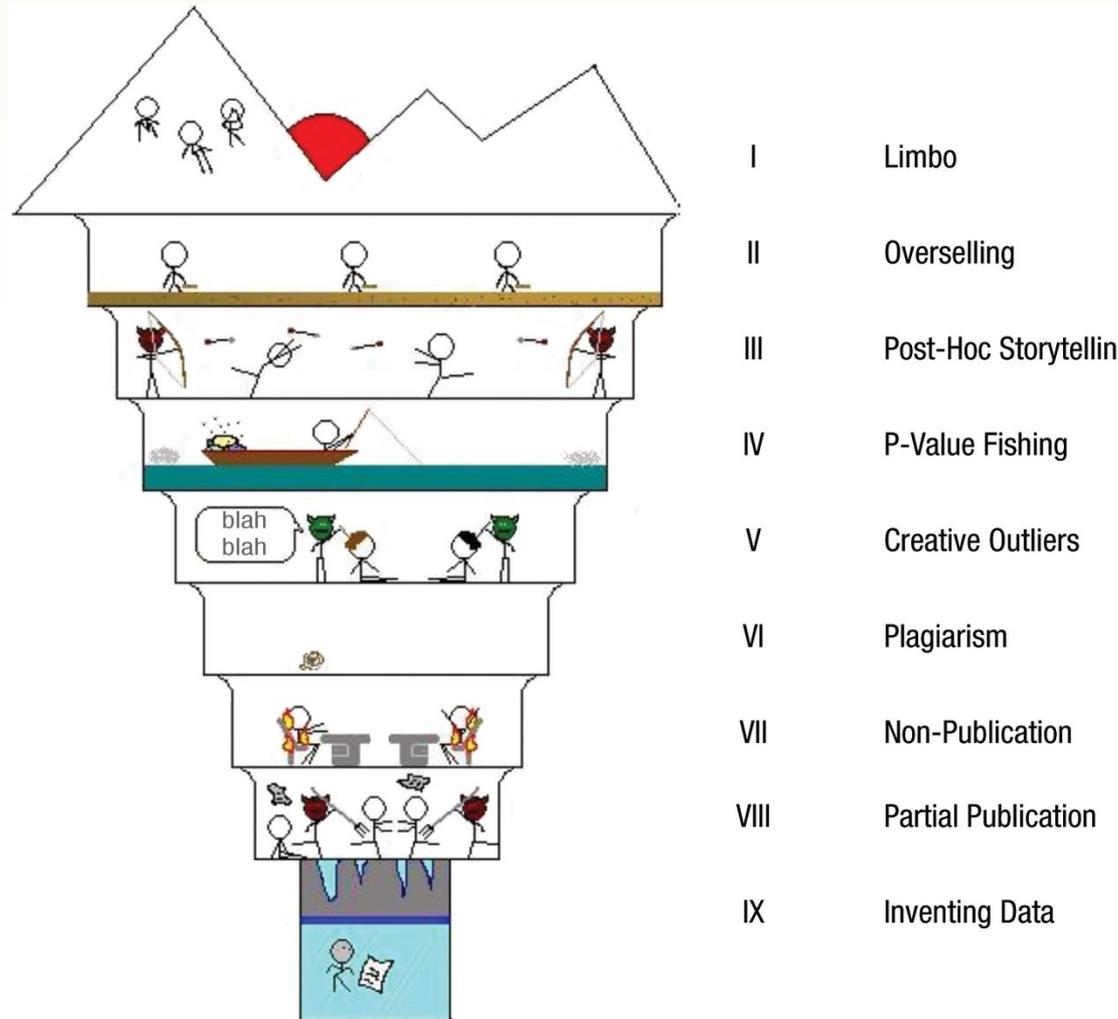
Scientists are very rarely rewarded for being right, they are rewarded for publishing in certain journals and for getting grants.



Image by Danny Kingsley

The nine circles of scientific hell

(with apologies to Dante and xkcd)



Neuroskeptic Perspectives on Psychological Science
2012;7:643-644

Perspectives on
Psychological
SCIENCE

Oh dear

The screenshot shows the PLOS Medicine website interface. At the top, there is a navigation bar with the PLOS logo, 'MEDICINE' text, and links for 'Browse', 'Publish', and 'About'. A search bar is also present. Below the navigation, the article title 'Why Most Published Research Findings Are False' is displayed, along with the author 'John P. A. Ioannidis' and the publication date 'August 30, 2005'. A statistics table on the right shows 64,355 saves, 2,253 citations, 1,764,159 views, and 9,644 shares. Below the article title, there are tabs for 'Article', 'Authors', 'Metrics', 'Comments', and 'Related Content'. The 'Abstract' tab is selected, showing the text 'Modeling the Framework for False Positive'. On the right side, there are buttons for 'Download PDF', 'Print', and 'Share', along with a CrossMark logo.

plos.org create account sign in

PLOS MEDICINE Browse Publish About Search advanced search

OPEN ACCESS

ESSAY

Why Most Published Research Findings Are False

John P. A. Ioannidis

Published: August 30, 2005 • <http://dx.doi.org/10.1371/journal.pmed.0020124>

| | |
|----------------|----------------|
| 64,355 Save | 2,253 Citation |
| 1,764,159 View | 9,644 Share |

Article Authors Metrics Comments Related Content

Abstract

Modeling the Framework for False Positive

Abstract

Download PDF Print Share

CrossMark

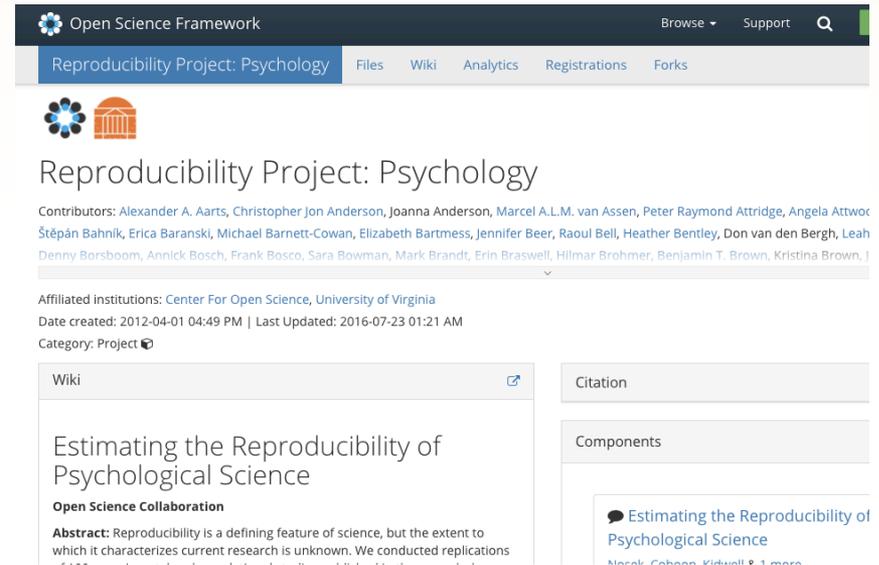
“Simulations show that for most study designs and settings, it is more likely for a research claim to be false than true.”

<http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0020124>

Reproducibility project

Conducted replications of 100 experimental and correlational studies published in three psychology journals using high-powered designs and original materials when available.

- Replication effects = half the magnitude of original effects (substantial decline)
- 97% of original studies had significant results
- 36% of replications had significant results



The screenshot shows the OSF project page for 'Reproducibility Project: Psychology'. The page header includes the OSF logo and navigation links for Files, Wiki, Analytics, Registrations, and Forks. The main content area features the project title, a list of contributors, and metadata such as the date created (2012-04-01) and last updated (2016-07-23). A 'Wiki' tab is active, displaying the title 'Estimating the Reproducibility of Psychological Science' and an abstract. The abstract states: 'Abstract: Reproducibility is a defining feature of science, but the extent to which it characterizes current research is unknown. We conducted replications...'. A 'Citation' section is also visible on the right side of the page.

<https://osf.io/ezcuuj/>

Breaking news – 1 November 2016

SAGE journals

JOURNAL OF HEALTH PSYCHOLOGY

Home Abstract PDF Current Issue All Issues OnlineFirst

'PACE-Gate': When clinical trial evidence meets open data

Authors

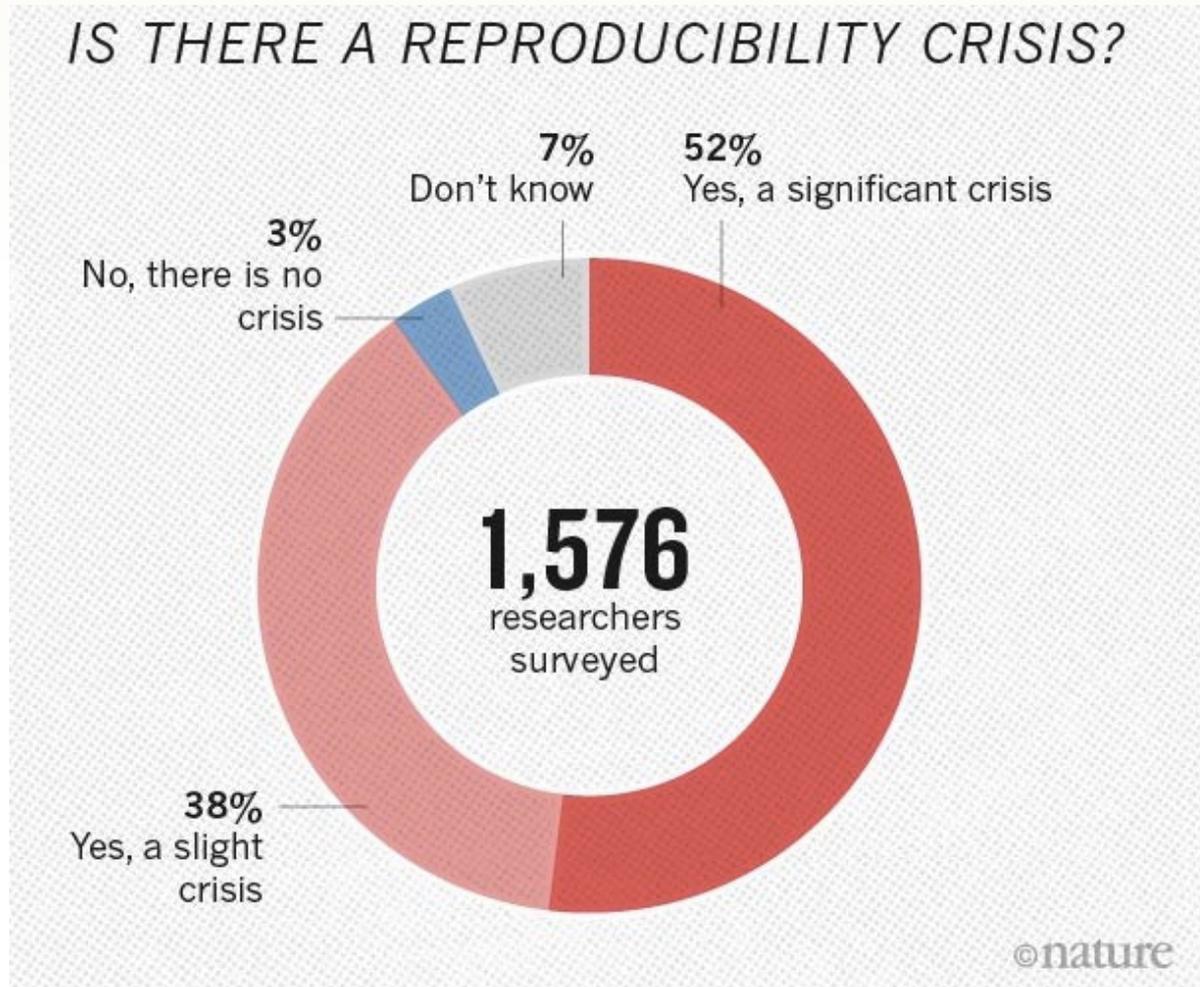
Abstract

Science is not always plain and simple. It is often a storm of controversy and debate. Determining the effectiveness of a treatment is no exception. The PACE trial is a landmark study in the field of chronic fatigue syndrome (CFS). It compared cognitive behavioural therapy (CBT) and graded exercise therapy (GET) to standard medical care (SMC) and adaptive pacing therapy (APT). The trial was designed to test the effectiveness of CBT and GET, but it was also designed to test the effectiveness of SMC and APT. The trial was designed to test the effectiveness of CBT and GET, but it was also designed to test the effectiveness of SMC and APT. The trial was designed to test the effectiveness of CBT and GET, but it was also designed to test the effectiveness of SMC and APT.

In this extraordinary case, patients discovered that the treatments tested had much lower efficacy after an information tribunal ordered the release of data from the PACE trial to a patient who has requested access using a freedom of information request.

...release of data from the largest clinical trial of psychotherapy to professional defensiveness. The data were only released after a protracted release their data. Upon release, re-analysis showed that the levels of impairment (White et al., 2011a) and other related publications. The released data compared to standard medical care (SMC) and adaptive pacing therapy (APT). Patient groups and independent experts have remarked that without data as evidence that CBT and GET are effective treatments for CFS. Instead, patients have benefited from CBT and GET. This editorial considers the ramifications of these therapies.

Crisis?

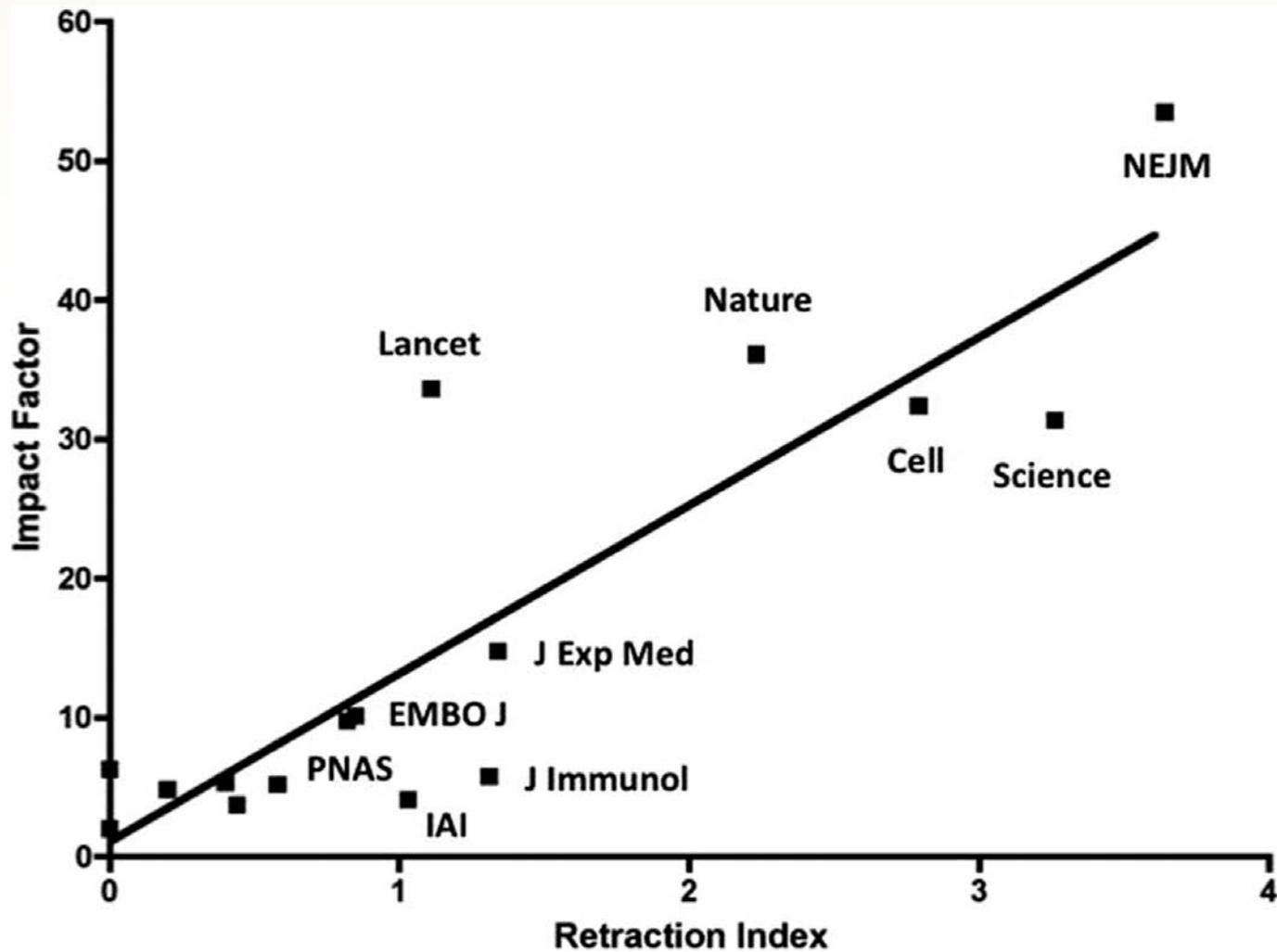


Nature, **533**, 452–454 (26 May 2016) doi:10.1038/533452a
<http://www.nature.com/news/1-500-scientists-lift-the-lid-on-reproducibility-1.19970>

Problem 4: Retraction

- According to Retraction Watch there are 500-600 retractions a year
 - <http://retractionwatch.com/>
- In 2014 a 14-month investigation by the publisher SAGE uncovered a fake peer-review scam involving hundreds of fraudulent and assumed identities. **A total of 60 research articles published over the past 4 years in the *Journal of Vibration and Control (JVC)* were retracted.**
 - <http://www.sciencemag.org/news/2014/07/updated-lax-reviewing-practice-prompts-60-retractions-sage-journal>
- Only 5% of publicly available versions (non-publisher websites) of retracted works have a retraction statement attached
 - <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3411255/>

Correlation between impact factor and retraction index.



Ferric C. Fang, and Arturo Casadevall *Infect. Immun.*
2011;79:3855-3859

Infection and Immunity

Problem 5: Poor science

Downloaded from <http://rsos.royalsocietypublishing.org/> on November 7, 2016

ROYAL SOCIETY
OPEN SCIENCE

rsos.royalsocietypublishing.org

Research



Cite this article: Smaldino PE, McElreath R.

2016 The natural selection of bad science.

R. Soc. open sci. **3**: 160384.

<http://dx.doi.org/10.1098/rsos.160384>

Received: 1 June 2016

Accepted: 17 August 2016

Subject Category:

Psychology and cognitive neuroscience

Subject Areas:

theoretical biology/computer modelling
and simulation/statistics

The natural selection of bad science

Paul E. Smaldino¹ and Richard McElreath²

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PES, 0000-0002-7133-5620; RME, 0000-0002-0387-5377

Poor research design and data analysis encourage false-positive findings. Such poor methods persist despite perennial calls for improvement, suggesting that they result from something more than just misunderstanding. The persistence of poor methods results partly from incentives that favour them, leading to the natural selection of bad science. This dynamic requires no conscious strategizing—no deliberate cheating nor loafing—by scientists, only that publication is a principal factor for career advancement. Some normative methods of analysis have almost certainly been selected to further publication instead of discovery. In order to improve the culture of science, a shift must be made away from correcting misunderstandings and towards rewarding understanding. We support this argument with empirical evidence and computational modelling. We first present a 60-year meta-analysis of statistical power in the behavioural sciences and show that power has not improved despite repeated demonstrations of the necessity of increasing power. To demonstrate the logical consequences of structural

Problem 6: Attrition crisis?

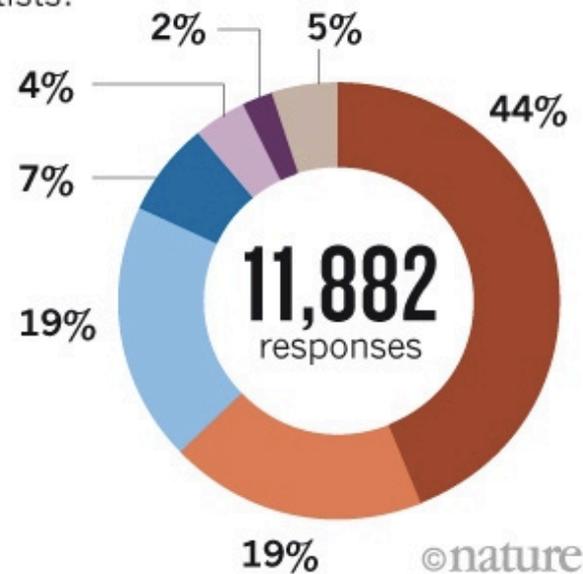
FIGHT FOR FUNDING

The biggest challenge facing early-career scientists is the struggle to get grants, *Nature's* readers say.

Poll question:

What do you think is the biggest challenge facing early-career scientists?

- The fight for funding
- Lack of work–life balance
- Progression judged too heavily on publication record
- Admin and bureaucracy
- Lack of clear targets
- Discrimination
- Other



Hard work, little reward: Nature readers reveal working hours and research challenges, Nature News, 4 November 2016, <http://www.nature.com/news/hard-work-little-reward-nature-readers-reveal-working-hours-and-research-challenges-1.20933>

To recap

- Problem 1: Reluctance to share data
 - (all disciplines)
- Problem 2: Hyperauthorship
 - (Physics)
- Problem 3: Reproducibility
 - (Psychology, Neuroscience, Pharmacology)
- Problem 4: Retraction
 - (Biological and Medical Sciences)
- Problem 5: Poor Science
 - (Sociology, economics, climate science also vulnerable)
- Problem 6: Attrition
 - (all disciplines)
- This all comes down to the reliance on publication of novel results in high impact journals

Time for a change



Image by Danny Kingsley

The whole outdated enterprise is kept alive for one main reason: the fact that employers and funders of researchers assess researchers primarily by where they publish. It's extraordinary to me and many others that the employers, mainly universities, outsource such an important function to an arbitrary and corrupt system.

[‘Richard Smith: Another step towards the post-journal world’](#) BMJ blog, 12 Jul, 16

Solution

Photo from Flickr – by Andy



We distribute dissemination across the research lifecycle and reward it

- *The Case for Open Research* - series of blogs July & August 2016

https://unlockingresearch.blog.lib.cam.ac.uk/?page_id=2#OpenResearch

Governments

The image shows a screenshot of the European Commission's Open Science Policy Platform website. At the top, there is a blue header with the European Commission logo and the text "RESEARCH & INNOVATION" and "Open Science". Below the header, there is a navigation menu with links for "Home", "Open Access", "European Open Science Cloud", and "Open Science Policy Platform". The main content area features a large heading "European Open Science Policy Platform" and a sub-heading "Open Science Policy Platform 1st Meeting, 19 September 2016". Below this, there is a paragraph of text: "The Open Science Policy Platform met for the first time on 19 September 2016. The Open Science Policy Platform represents a new way of making policy: co-design and co-".

European Commission

RESEARCH & INNOVATION

Open Science

European Commission > Research & Innovation > Open Science > Open Science Policy Platform

Home

Open Access

European Open Science Cloud

Open Science Policy Platform

European Open Science Policy Platform

Open Science Policy Platform

1st Meeting, 19 September 2016

The Open Science Policy Platform met for the first time on 19 September 2016. The Open Science Policy Platform represents a new way of making policy: co-design and co-

Governments



Governments



Nation
Infra



HOME ABOUT WHAT WE OFFER NEWS CONTACT US



UCT and NWU sign MOU on ARC

The University of Cape Town and North West University have signed a Memorandum of Understanding for collaboration on the building and maintaining of the Africa Research Cloud (ARC). This is the first step of the ARC which is to be rolled out to all...

The
Open Sci

University of Cape Town

UCT eReserch

To rise to the challenges of the new big data era, the research community must develop new infrastructure, tools and approaches that enable collaborative research among distributed teams around an ecosystem of big data. The ARC will be the solution for a network of South African, African and very likely non-African

19 September 2016. The
way of making policy: co-design and co-

<http://www.arc.ac.za/>

Governments



Nation
Infra



Promoting Open Science in Japan Opening up a new era for the advancement of science **Executive Summary** Report by the Expert Panel on Open Science, based on Global Perspectives Cabinet Office, Government of Japan March 30, 2015

It is vital for Japan to participate in international discussions and to demonstrate a proactive approach to the promotion of open science. The Expert Panel on Open Science based on Global Perspectives has discussed various relevant issues of immediate importance for Japan. Based on these discussions, the Panel presented the following guiding principles for promotion of open science in Japan.

I. The Importance of Open Science

"Open science" refers to a new approach to promoting innovation through knowledge creation in science and technology. This will be realized by facilitating access to and use of publicly funded research results such as scientific papers and their underlying data by the scientific community, industry and the general public. The concept of open science is spreading rapidly. At the G8 Summit held in June 2013, G8 Science Ministers issued a joint statement that endorsed the need for increasing access to publicly funded research, including peer-reviewed published research and research data.

Research community, and to the decline of Japan's international competitiveness. Japan should keep pace with the global advancement of open science in a collaborative yet also strategic manner, so that the value of Japan's latest research and development activities can lead to business activities at the next stage.

II. The Need to Promote Open Science

Open science may change scientific research. It will not replace traditional research methods, but will add new results widely available in digital formats to all users including the scientific community, industry and the general public. This will enable additional value to be extracted from science and technology information, which will not only improve our knowledge, but will also reform innovation strategies. For the scientific community, the acceleration of data-driven activities is expected to lead to new collaborations and to the prevalence of new research methods among researchers within the same research disciplines.

Funders

Concordat on Open Research Data

The Concordat on Open Research Data has been developed by a UK multi-stakeholder group. This concordat will help to ensure that the research data gathered and generated by members of the UK research community is made openly available for use by others wherever possible in a manner consistent with relevant legal, ethical, disciplinary and regulatory frameworks and norms, and with due regard to the costs involved.



Funders

The image shows a screenshot of the Research Data Management website. The main heading is "Research Data Management" with a sub-heading "Call for participants in the Open Research Pilot Project". The navigation menu includes Home, Data Management Guide, Support, Data Repository, Research Data Policies, FAQ, News, Events, and Contact Us. A sidebar on the left lists various sections: News, Data Management Guide, Support, Data Repository, Research Data Policies, FAQ, Events, and Contact Us. The main content area features a large image of hot air balloons and a call to action: "Open Research Pilot Project - call for participants - applications close on Sunday 11 December". Below this, there is a text block asking for input on research transparency and reproducibility. The footer includes the Universities UK logo and a URL: <http://www.data.cam.ac.uk/datanews/call-participants-open-research-pilot-project>.

<http://www.data.cam.ac.uk/datanews/call-participants-open-research-pilot-project>

Funders

Research Data Management

Home Data Management Guide

Research Data Management

News

Participate in a project

W
wellcome

Wellcome Open Research

A new way for Wellcome-funded researchers to rapidly publish any results they think are worth sharing.

LEARN MORE

SUBMIT YOUR RESEARCH

Communications

concerned about research credit for all outputs of your research and make it more available to

we would like to invite you to participate

Events

11
NOV Journals: Publishing your Research Effectively for PhD Students in Humanities, Arts and Social Sciences

11
NOV Research Data Management Workshop for GSLs PhD students

14
NOV Post-Publication Sharing: Publishing your Research Effectively for STEM PhD

Can publish data sets, case reports, protocols, null & negative results.

wellcomeopenresearch.org/

Disciplines

| | |
|--|--|
| | |
| Biomedical researchers | actively practice open research |
| Clinical researchers | practising open research |
| Population and public health researchers | experience challenges in data sharing that need addressing |
| Humanities researchers | have very little experience of data sharing and seemingly not much could motivate them to share their data |
| Social science researchers | little experience of data sharing and reuse and perceive minimal benefits from data sharing |

Van den Eynden, Veerle et al. (2016) *Towards Open Research: practices, experiences, barriers and opportunities*. Wellcome Trust.

<https://dx.doi.org/10.6084/m9.figshare.4055448>

Community



Home Con

**The 21st International
Conference on Electronic
Publishing**

Expanding Perspectives on Open Science:
Communities, Cultures and Diversity in Concepts and
Practices

6 - 8 June, 2017
Curium Palace Hotel
Limassol, Cyprus

Community



Home Con

FORCE11

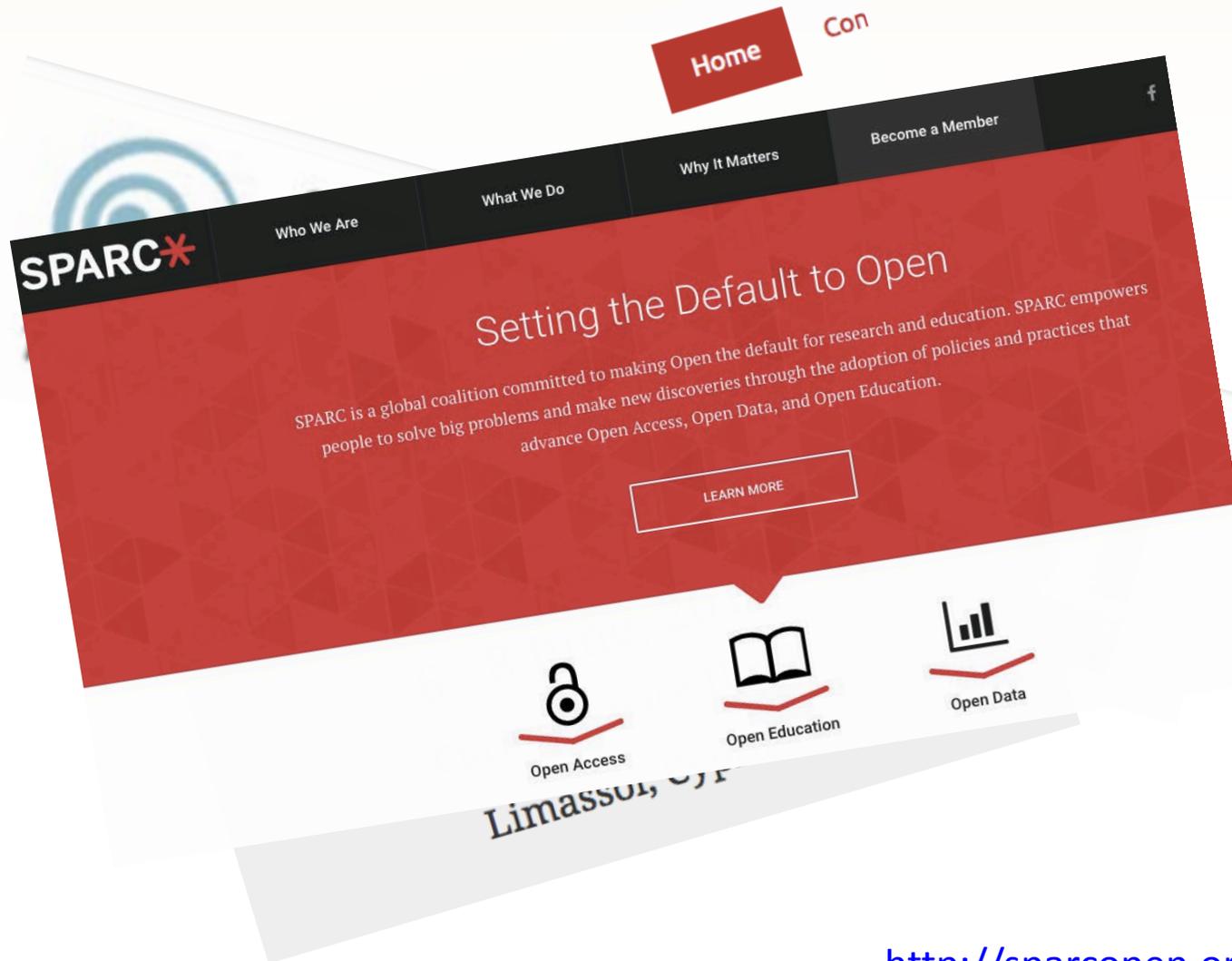
The Future of Research Communications and e-Scholarship

Expanding Pe
Communities, Cultures & Practic

6 - 8 June, 2011
Curium Palace Hotel
Limassol, Cyprus

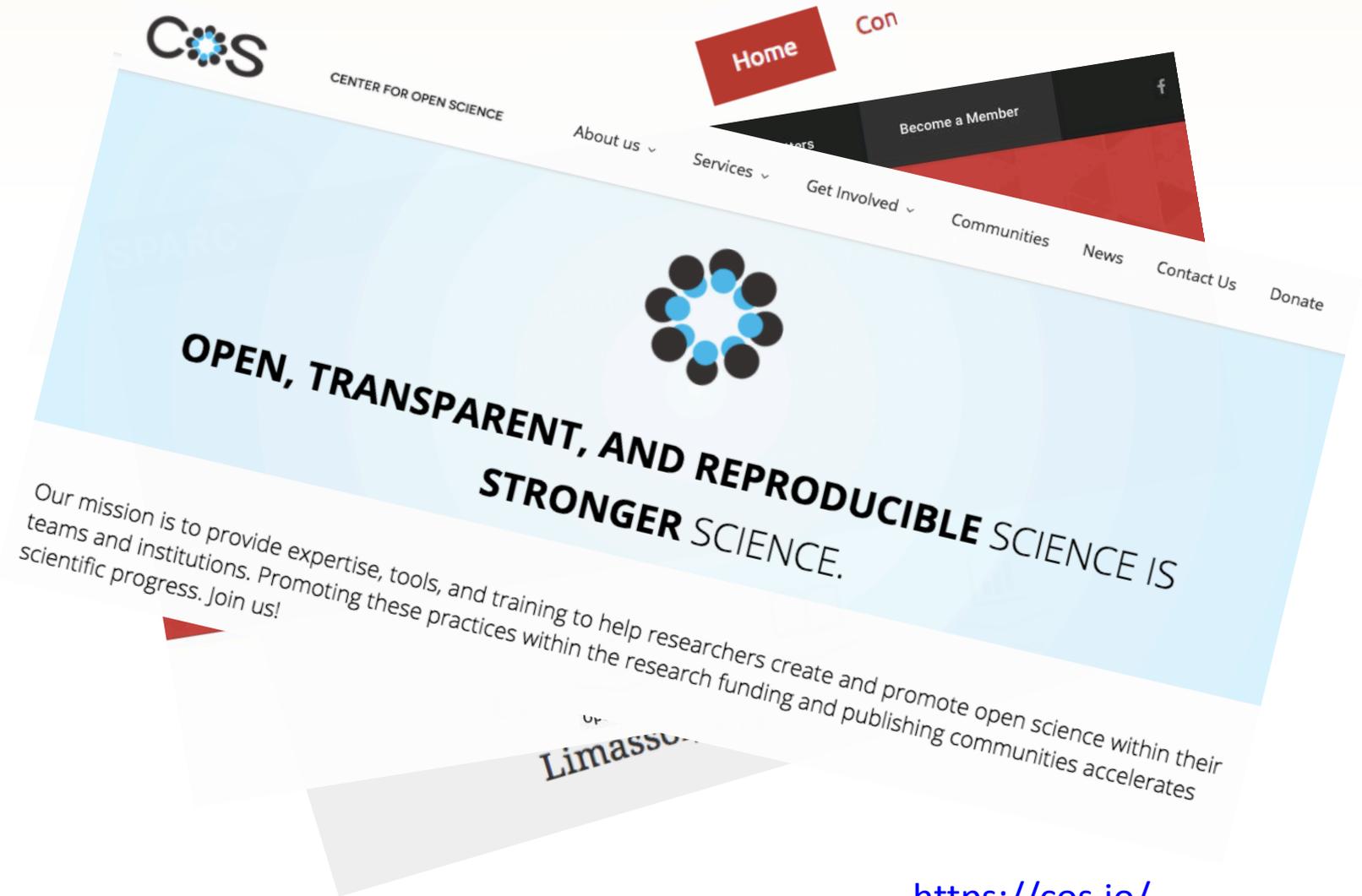
<https://www.force11.org/about>

Community



<http://sparcopen.org/>

Community



<https://cos.io/>

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Open Access, Open Education and Open Data
12-14 November 2016

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CE IS

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science within their
communities accelerates

<http://www.opencon2016.org/>

Individuals

The image shows a tilted screenshot of the Open Source Malaria website. At the top left is the logo, which consists of a red square divided into four quadrants containing the letters 'O', 'S', 'M', and a mosquito icon. To the right of the logo, the text 'OPEN SOURCE MALARIA' is written in large, bold, red letters, with 'Looking for New Medicines' in smaller blue letters below it. Underneath the main title is a paragraph: 'The Open Source Malaria project is trying a different approach to curing malaria. Guided by open source principles, everything is open and anyone can contribute.' Below this paragraph is a blue 'Read More' link. On the left side, under the heading 'Also Check Out', there are three links: 'Lab Notebook' with a red notebook icon, 'Project Wiki' with a globe icon, and 'Molecule Database Chrome Only' with a chemical structure icon. At the bottom, there are three buttons: 'Activity' with a GitHub icon, 'Join the Team' with a plus sign icon, and 'Meet Us' with a hand icon. A 'See More' link is positioned to the left of the 'Activity' button.

Matt Todd - <http://opensourcemalaria.org/>

Individuals

The screenshot displays a webpage titled "The Cost of Knowledge". At the top, there are logos for OS (OpenStax), M (Mok Chrome), and OPA. Below the logos, the text reads "Also C". The main heading is "16370 Researchers Taking a Stand. [See the list](#)".

Academics have protested against Elsevier's business practices for years with little effect. These are some of their objections:

1. They charge exorbitantly high prices for subscriptions to individual journals.
2. In the light of these high prices, the only realistic option for many libraries is to agree to buy very large "bundles", which will include many journals that those libraries do not actually want. Elsevier thus makes huge profits by exploiting the fact that some of their journals are essential.
3. They support measures such as SOPA, PIPA and the Research Works Act, that aim to restrict the free exchange of information.

The key to all these issues is the right of authors to achieve easily-accessible distribution of their work. If you would like to declare publicly that you will not support any Elsevier journal unless they radically change how they operate, then you can do so by filling in your details on this page.

More information:

At the bottom of the page, there is a "Meet Us" button with a hand icon.

On the right side, there is a green sign-up form titled "Add your name to the list." with the following fields:

- First and Last Name:
- Affiliation:
- Email: only used once to verify your identity; never displayed, never shared
- Subject:
- Comments (optional):
- Link (optional): such as a link to a blog post of yours explaining your position

At the bottom of the form, there is a section "I plan to refrain from:" with three radio buttons: publishing, refereeing, and editorial work. The word "source" is partially visible to the right.

Tim Gowers - <http://www.thecostofknowledge.com/>

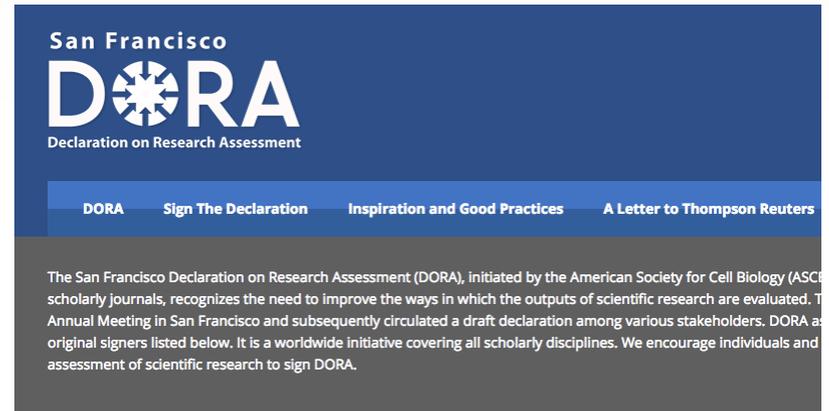
Individuals

The image shows a screenshot of the Open Library of Humanities website. At the top, there is a navigation bar with the logo 'OLH' and the text 'Open Library of Humanities'. To the right of the logo is a blue button that says 'Publish with us'. Below the navigation bar is a large banner image featuring a traditional Chinese painting of a classroom or study hall. Overlaid on the bottom left of the banner is the text 'JULY 2016', 'New ASIANetwork Exchange Issue', and 'Volume 23, Issue 2'. Below the banner are two buttons: 'Featured Journals' and 'All Journals'. On the left side of the page, there are several icons and text elements, including a globe, a book, and the text 'Mok Chrome'.

Martin Paul Eve <https://www.openlibhums.org/>

Community action

- Themes
 - **Eliminate the use of journal-based metrics**, such as Journal Impact Factors, in funding, appointment, and promotion considerations;
 - The need to **assess research on its own merits** rather than on the basis of the journal in which the research is published; and
 - The need to **capitalize on the opportunities provided by online publishing**
 - >12,500 individuals & >900 organisations



Download the Declaration (PDF)

Download the DORA Logo (PDF)

Download the DORA Poster (PDF)

San Francisco Declaration on Research Assessment

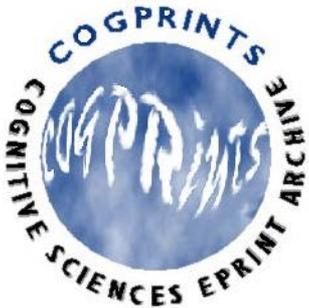
<http://www.ascb.org/dora/>

All the rage

arXiv.org

PeerJ Preprints -
rapid communication
& early findings

SOCARXIV
open archive of the social sciences



bioRxiv
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THE PREPRINT SERVER FOR BIOLOGY

ACS Nano, 2016 Oct 25;10(10):9053-9054.

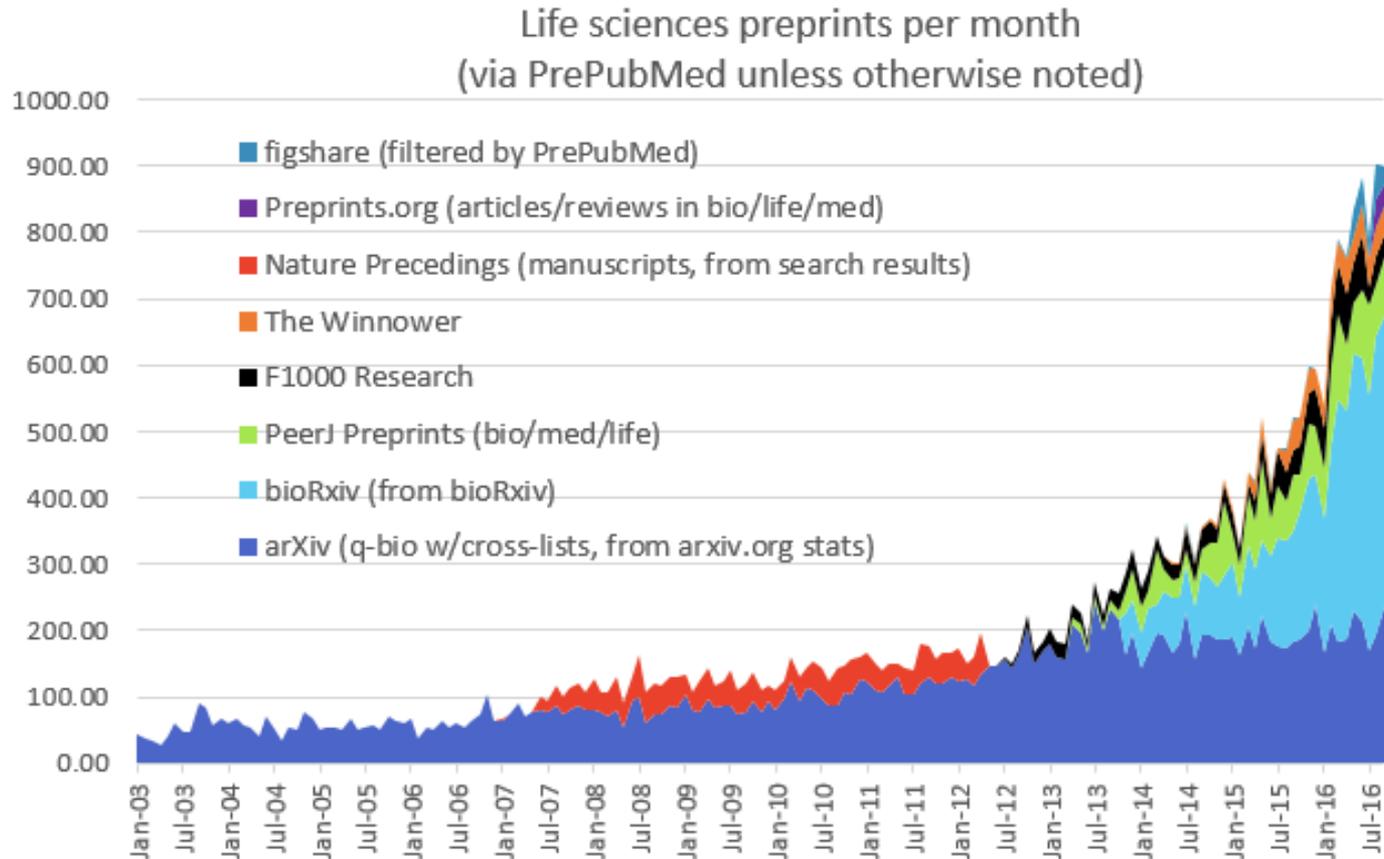
ChemRXiv: A Chemistry Preprint Server.

Kiessling LL, Fernandez LE, Alivisatos AP, Weiss PS.

PMID: 27776406 DOI: [10.1021/acsnano.6b07008](https://doi.org/10.1021/acsnano.6b07008)

preprints

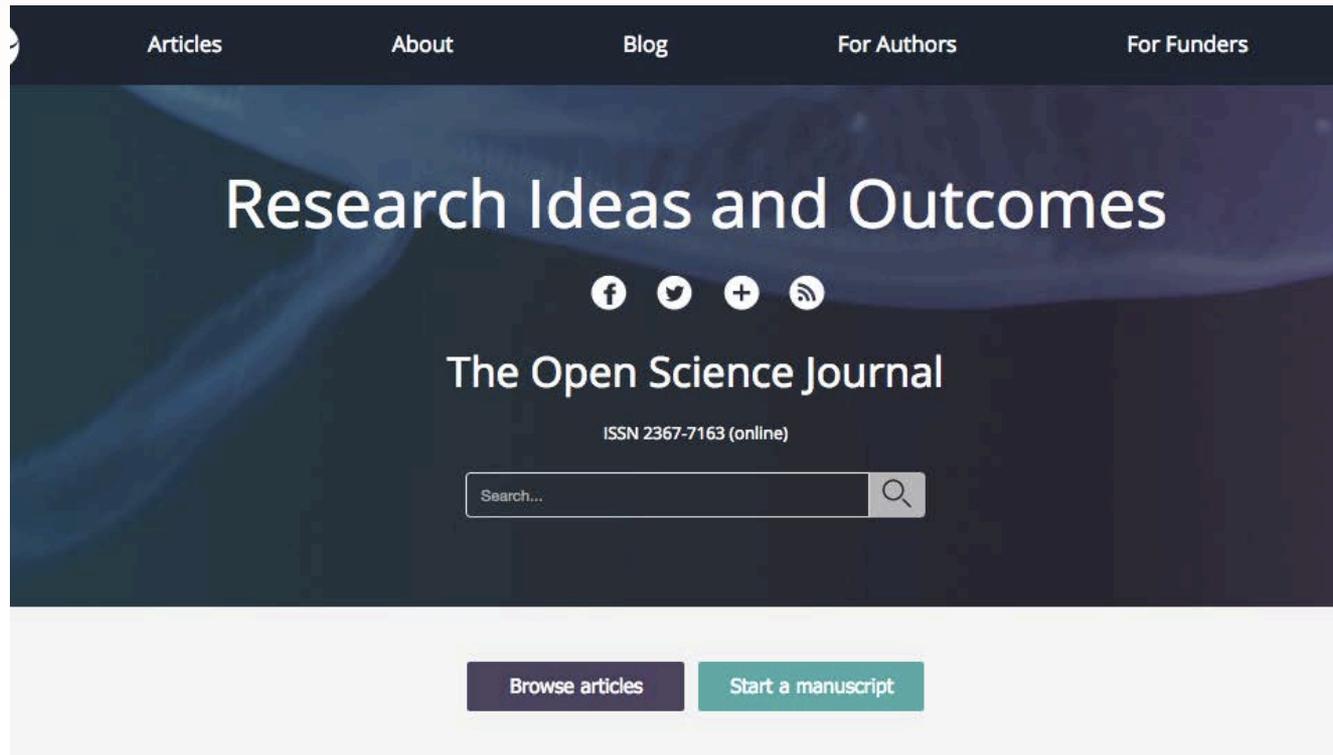
Dramatic growth



Version 1 | asapbio.org

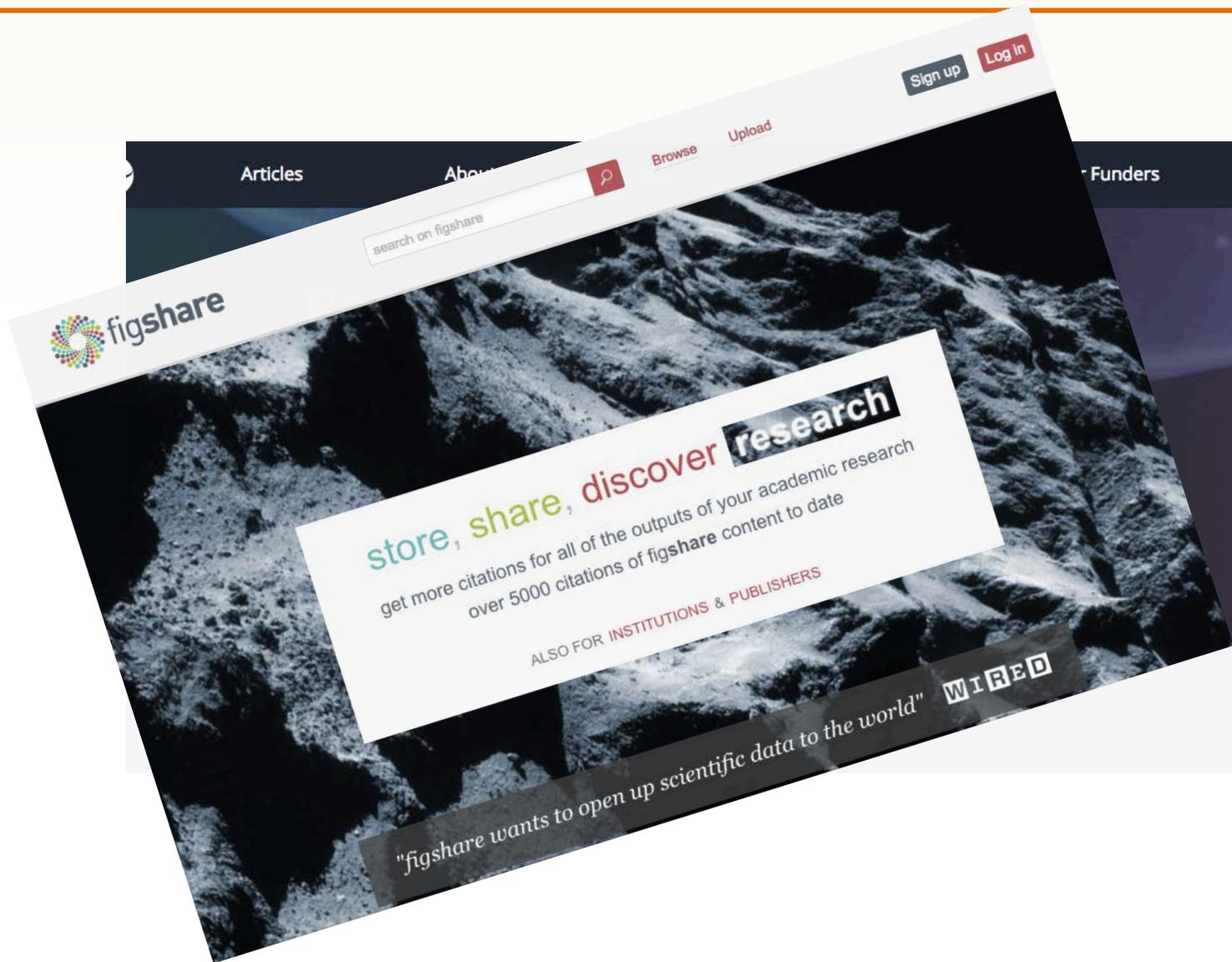
<http://asapbio.org/preprint-info/biology-preprints-over-time>

Publishing options



RIO Journal - <http://riojournal.com/>

Publishing options



Figshare - <https://figshare.com/>

Publishing options



Matters - <https://www.sciencematters.io/>

Publishing options

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F1000 - <https://f1000research.com/>

Publishing options



Missing Pieces <http://blogs.plos.org/everyone/2015/02/25/positively-negative-new-plos-one-collection-focusing-negative-null-inconclusive-results/>

Publishing options

Understanding Registered Reports

In 2013, the journal *Cortex* took a step forward in reforming the culture of scientific publishing. With the support of Chief Editor Sergio Della Sala, we became one of the first journals to offer Registered Reports – an empirical article designed to eliminate publication bias and incentivize best scientific practice. In contrast to conventional publishing, we provisionally accept for publication study protocols that are considered methodologically sound and address an important scientific question. Armed with this provisional acceptance of their work, authors can perform the research safe in the knowledge that the results themselves will not determine the article's publication. At the same time, readers of the final paper can feel more confident that the work is reproducible because the initial study predictions and analysis plans were independently reviewed.

The current issue of *Cortex* sees the first fruits of this labour: a [Registered Report](#) by Jona Sassenhagen and Ina Bornkessel-Schlesewsky from the [University of Marburg](#) and the [University of South Australia](#). an electrophysiological waveform associated with language processing, is in fact an instance of the P3, a waveform associated with attention. Their results are consistent with this hypothesis – these waveforms, considered distinct by some previous studies, may, in fact, reflect the same underlying neural process.

as valuable

Registered Reports - <https://www.elsevier.com/editors-update/story/peer-review/cortexs-registered-reports>

Publishing options



GitHub- <http://www.nature.com/news/democratic-databases-science-on-github-1.20719>

Publishing options

Author Contributions

The contributions of all authors must be described. PLOS has adopted the CRediT Taxonomy of author contributions. As the submitting author will be responsible for completing this information at submission, it is expected that all authors will have reviewed, discussed, and agreed to their individual contributions ahead of this time. Contributions will be published with the final article, and they should accurately reflect contributions to the work.

| Contributor Role | Role Definition |
|------------------------|--|
| Conceptualization | Ideas; formulation or evolution of overarching research goals and aims. |
| Data Curation | Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse. |
| Formal Analysis | Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data. |
| Funding Acquisition | Acquisition of the financial support for the project leading to this publication. |
| Investigation | Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection. |
| Methodology | Development or design of methodology; creation of models. |
| Project Administration | Management and coordination responsibility for the research activity planning and execution. |
| Resources | Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools. |

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Group Authorship

Author Contributions

Acknowledgements

Corresponding Author Responsibilities

Professional Medical Writers

Authorship Changes

Author Identification

Editor and Reviewer Requirements

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PLOS Taxonomy of author contributions

http://journals.plos.org/plosone/s/authorship/?utm_source=plos&utm_medium=blog&utm_campaign=plos-1607-credit#loc-author-contributions

Recap

- There are many initiatives to open up aspects of research by:
 - Governments
 - Funders
 - Community organisations
 - Publishers
 - Individuals
- What about Institutions?

Institutions?

- “Improving the quality of research requires change at the institutional level”
 - Smaldino PE, McElreath R. 2016 The natural selection of bad science. R. Soc. open sci.3: 160384.
<http://dx.doi.org/10.1098/rsos.160384>
- “Universities and research institutes should play a major role in supporting an open data culture”
 - Science as an open enterprise The Royal Society Science Policy Centre report 02/12 Issued: June 2012
DES24782<https://royalsociety.org/~media/policy/projects/sape/2012-06-20-saoe.pdf>

Cautious

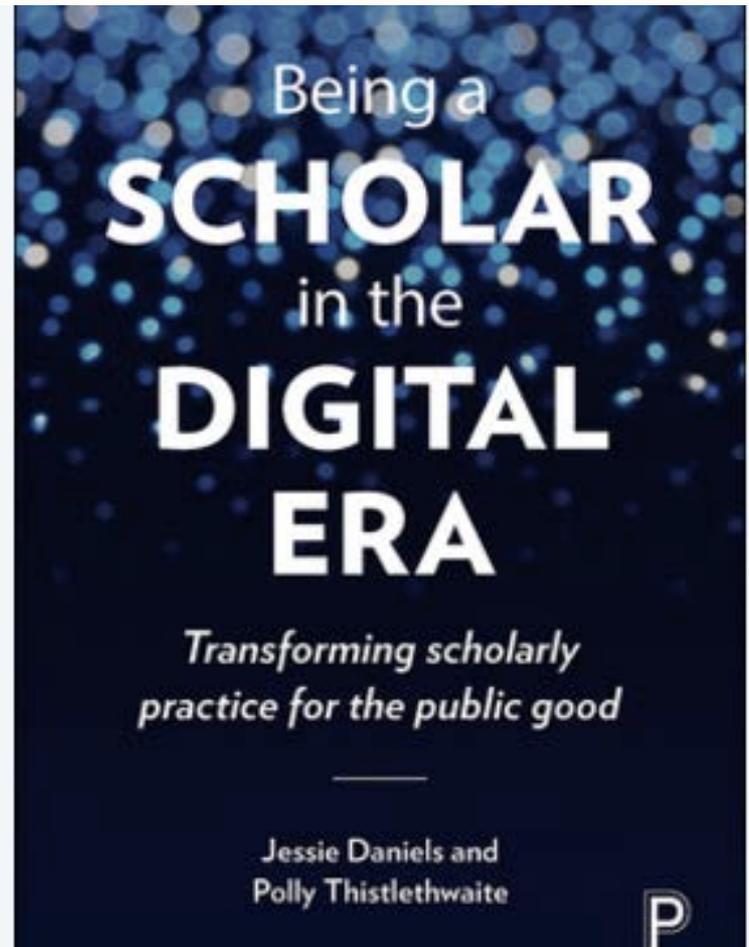


Resistance

- Generally institutions are reluctant to step up, partly because of the governance structure.
- **The nature of research itself is changing profoundly.** This includes extraordinary dependence on data, and complexity requiring intermediate steps of data visualisation. **These eResearch techniques have been growing rapidly, and in a way that may not be understood or well led by senior administrators.**
 - “Openness, integrity & supporting researchers” Emeritus Professor Tom Cochrane
<https://unlockingresearch.blog.lib.cam.ac.uk/?p=307>

This is not easy

- “Academic administrators that I’ve talked to are genuinely confused about how to update legacy tenure and promotion systems for the digital era. This book is an attempt to help make sense of all this.”
 - <https://www.insidehighered.com/news/2016/10/06/qa-authors-book-scholarship-digital-era>



Outliers

- Indiana University-Purdue University Indianapolis (IUPUI) –
 - Have included open access as a value in promotion and tenure guidelines
(2016)<http://crln.acrl.org/content/77/7/322.full>
- University of Liege
 - “[The university] linked internal assessment to the scientific output stored in {repository} ORBi. Those applying for promotion have no choice but to file all their publications in full text.” (2011)
<http://openaccess.eprints.org/index.php?/archives/853-The-Liege-ORBi-model-Mandatory-policy-without-rights-retention-but-linked-to-assessment-procedures.html>

Research underway

- OOO Canada Research Network “Motivating Open Practices Through Faculty Review and Promotion - 25 October 2016
 - http://www.oocanada.ca/motivating_open_practices_rpt
- NIH “Including Preprints and Interim Research Products in NIH Applications and Reports” – 6 October 2016
 - <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-17-006.html>

Lots of work to be done



Questions/Discussion

Thanks!

Dr Danny Kingsley

Head of Scholarly Communication

University of Cambridge

@dannykay68