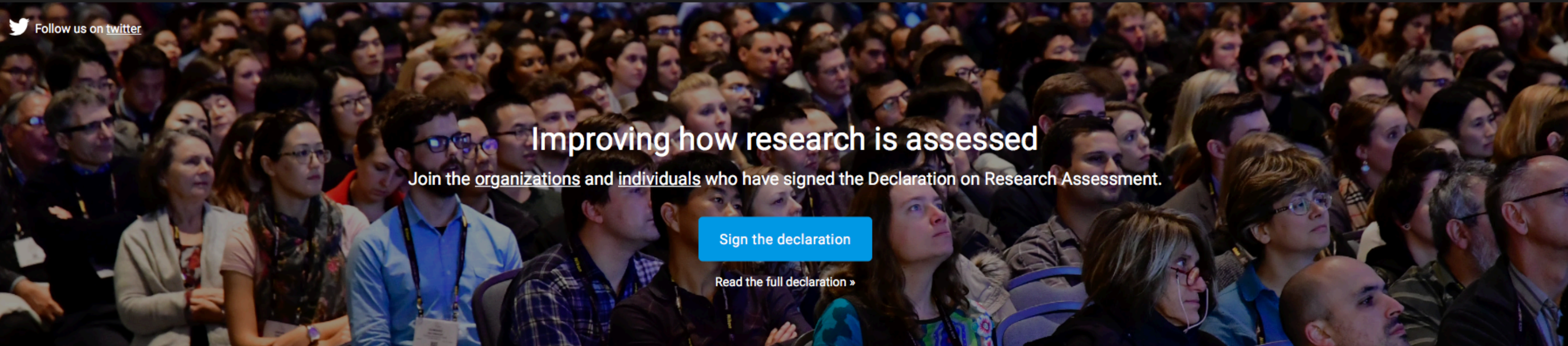


DORA past, present and future

(& what it means for Imperial)



[SIGN DORA](#) [READ THE DECLARATION](#) [SIGNERS](#) [BLOG](#) [GOOD PRACTICES](#) [CONTACT US](#)



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Improving how research is assessed

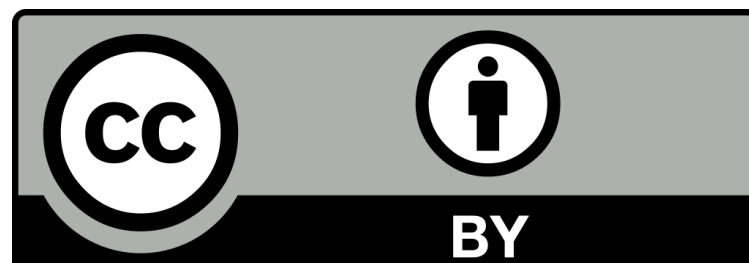
Join the [organizations](#) and [individuals](#) who have signed the Declaration on Research Assessment.

[Sign the declaration](#)

[Read the full declaration »](#)

Stephen Curry

Imperial College | 21 June 2018



What the San Francisco Declaration on Research Assessment (DORA) says:

Do not use journal-based metrics, such as Journal Impact Factors, as a **surrogate measure** of the quality of individual research articles, to assess an individual scientist's contributions, or in hiring, promotion, or funding decisions.



But there's more...

Big picture: why do we need research assessment?

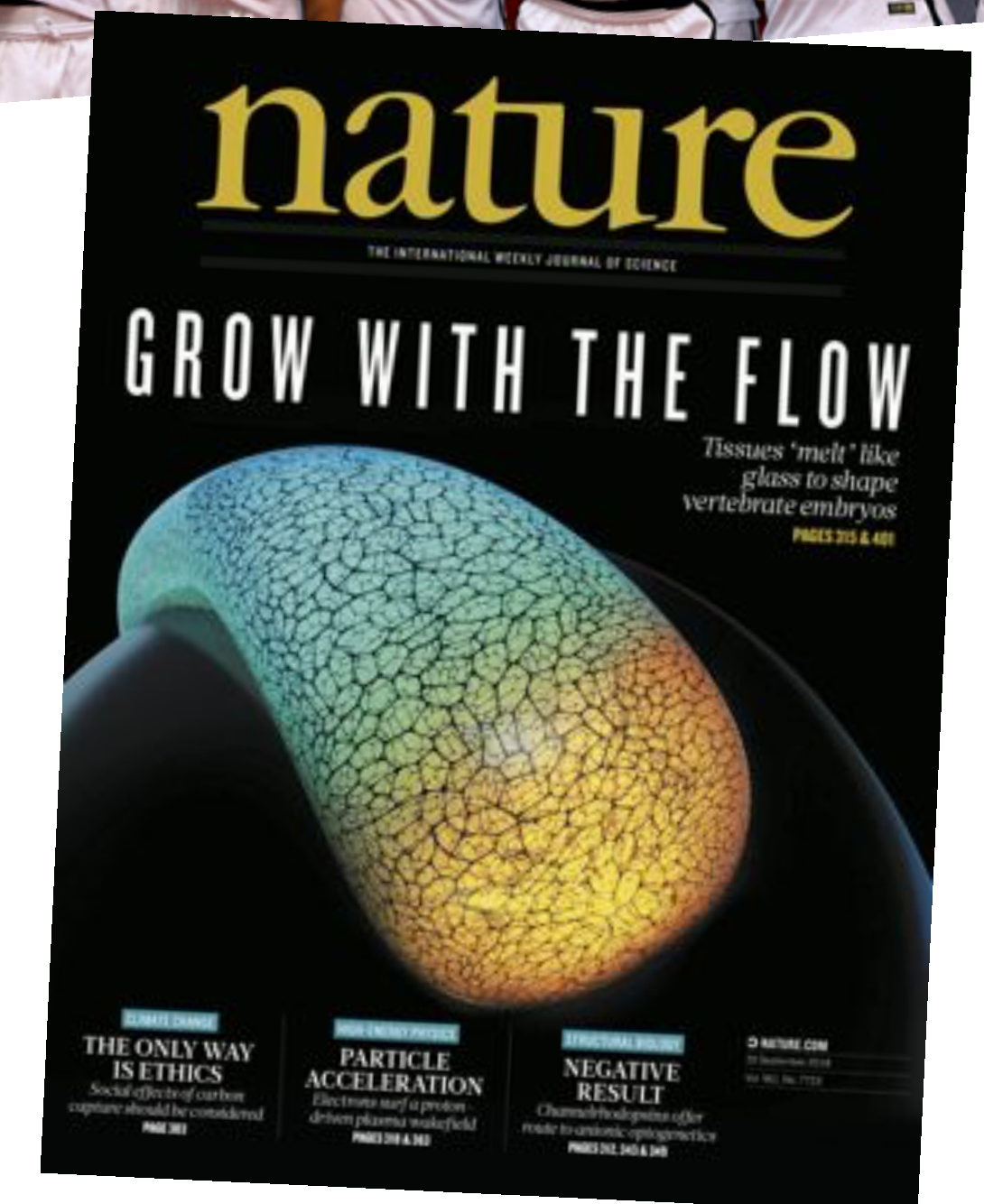
To invest finite resources wisely

To evaluate return on investment

To support the best science and the best scientists

But what do we mean by 'best'?

Too often we turn to simple metrics that don't measure quality and have perverse effects...



My Google Scholar h-index = 48



Stephen Curry

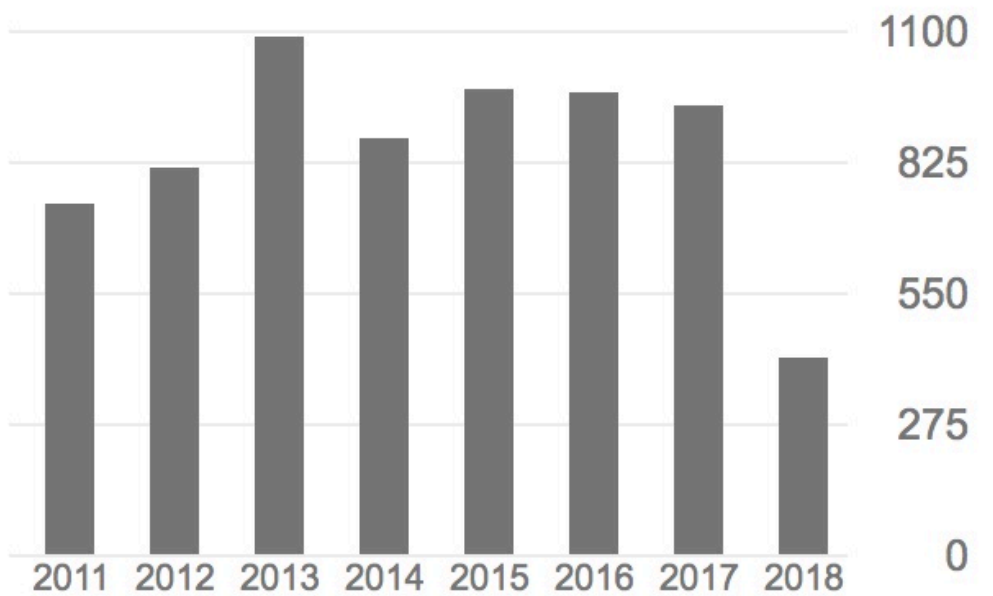
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Professor of Structural Biology, [Imperial College](#)
Verified email at imperial.ac.uk - [Homepage](#)
[protein structure](#) [virology](#) [human serum albumin](#) [fmdv](#) [splicing](#)

<input type="checkbox"/>	TITLE	CITED BY	YEAR
<input type="checkbox"/>	Crystal structure of human serum albumin complexed with fatty acid reveals an asymmetric distribution of binding sites S Curry, H Mandelkow, P Brick, N Franks Nature Structural and Molecular Biology 5 (9), 827	1153	1998
<input type="checkbox"/>	Structural basis of the drug-binding specificity of human serum albumin J Ghuman, PA Zunszain, I Petitpas, AA Bhattacharya, M Otagiri, S Curry Journal of molecular biology 353 (1), 38-52	1149	2005
<input type="checkbox"/>	Crystallographic analysis reveals common modes of binding of medium and long-chain fatty acids to human serum albumin1 AA Bhattacharya, T Grüne, S Curry Journal of molecular biology 303 (5), 721-732	678	2000
<input type="checkbox"/>	Crystal structure analysis of warfarin binding to human serum albumin anatomy of drug site I I Petitpas, AA Bhattacharya, S Twine, M East, S Curry Journal of Biological Chemistry 276 (25), 22804-22809	639	2001
<input type="checkbox"/>	The extraordinary ligand binding properties of human serum albumin M Fasano, S Curry, E Terreno, M Galliano, G Fanali, P Narciso, S Notari, ... IUBMB life 57 (12), 787-796	604	2005
<input type="checkbox"/>	Binding of the general anesthetics propofol and halothane to human serum albumin high resolution crystal structures AA Bhattacharya, S Curry, NP Franks Journal of Biological Chemistry 275 (49), 38731-38738	515	2000
<input type="checkbox"/>	Fatty acid binding to human serum albumin: new insights from crystallographic studies S Curry, P Brick, NP Franks Biochimica et Biophysica Acta (BBA)-Molecular and Cell Biology of Lipids ...	477	1999

Cited by [VIEW ALL](#)

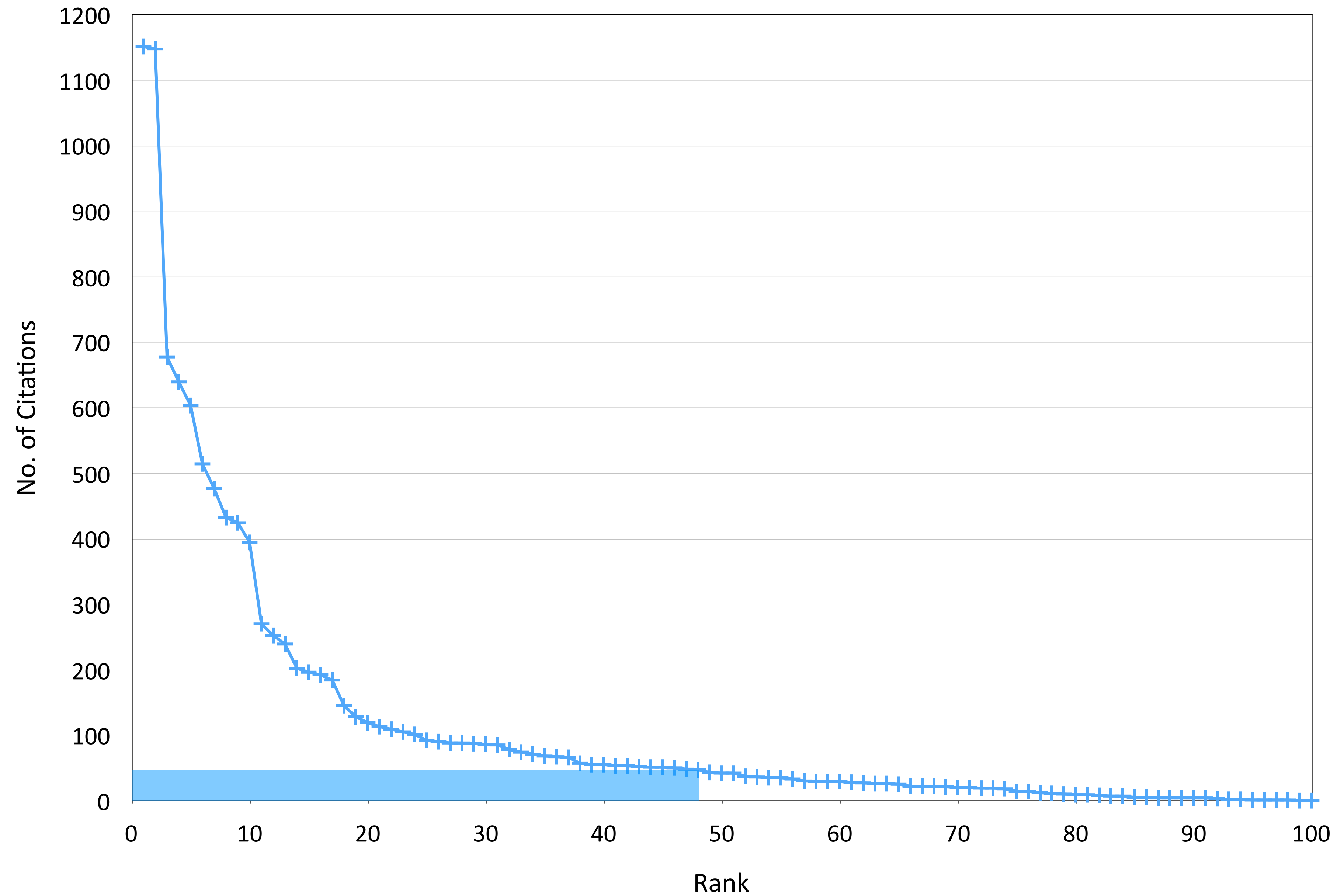
	All	Since 2013
Citations	11412	5289
h-index	48	33
i10-index	81	67



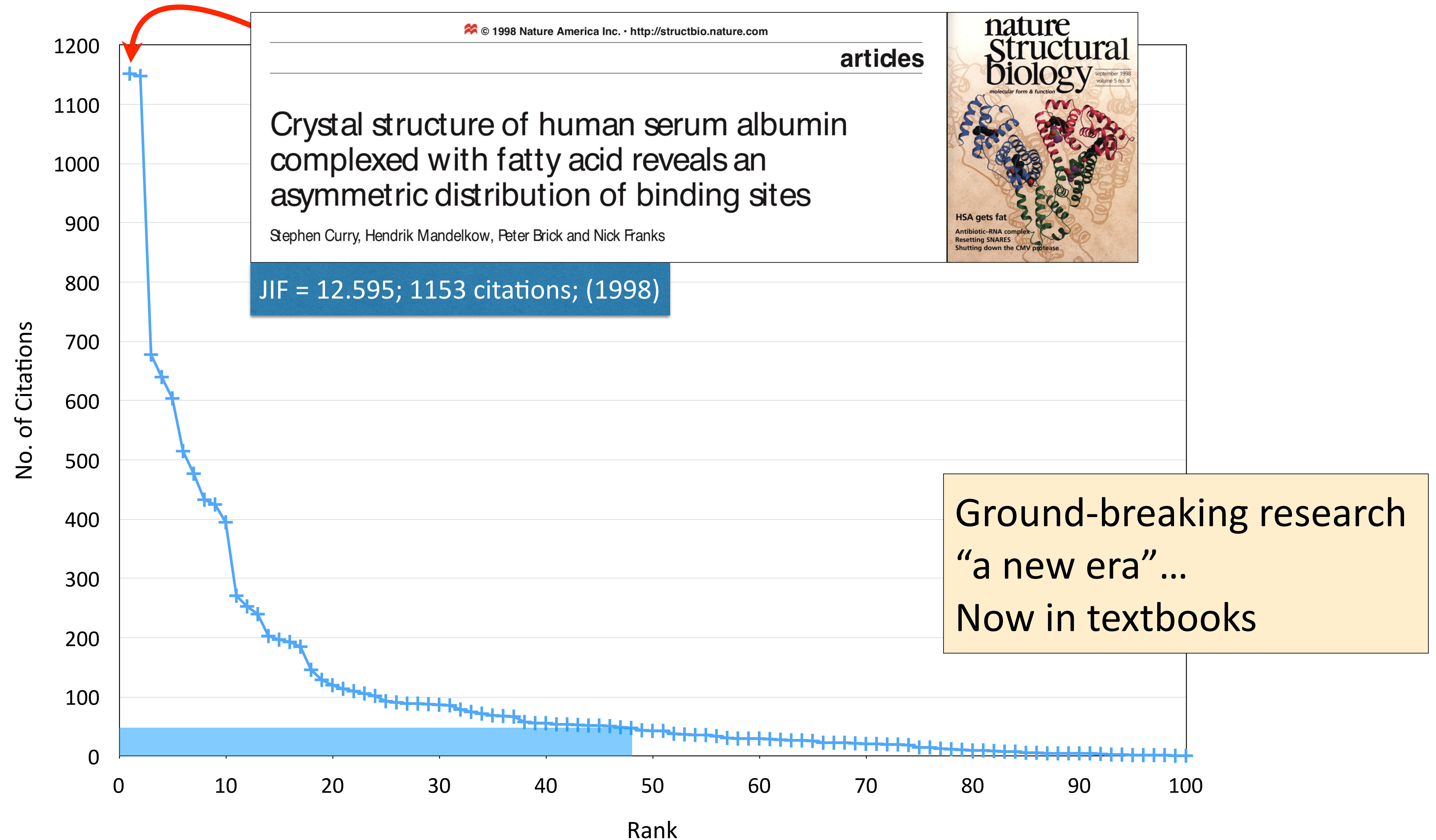
Co-authors [EDIT](#)

Ian Goodfellow
University of Cambridge

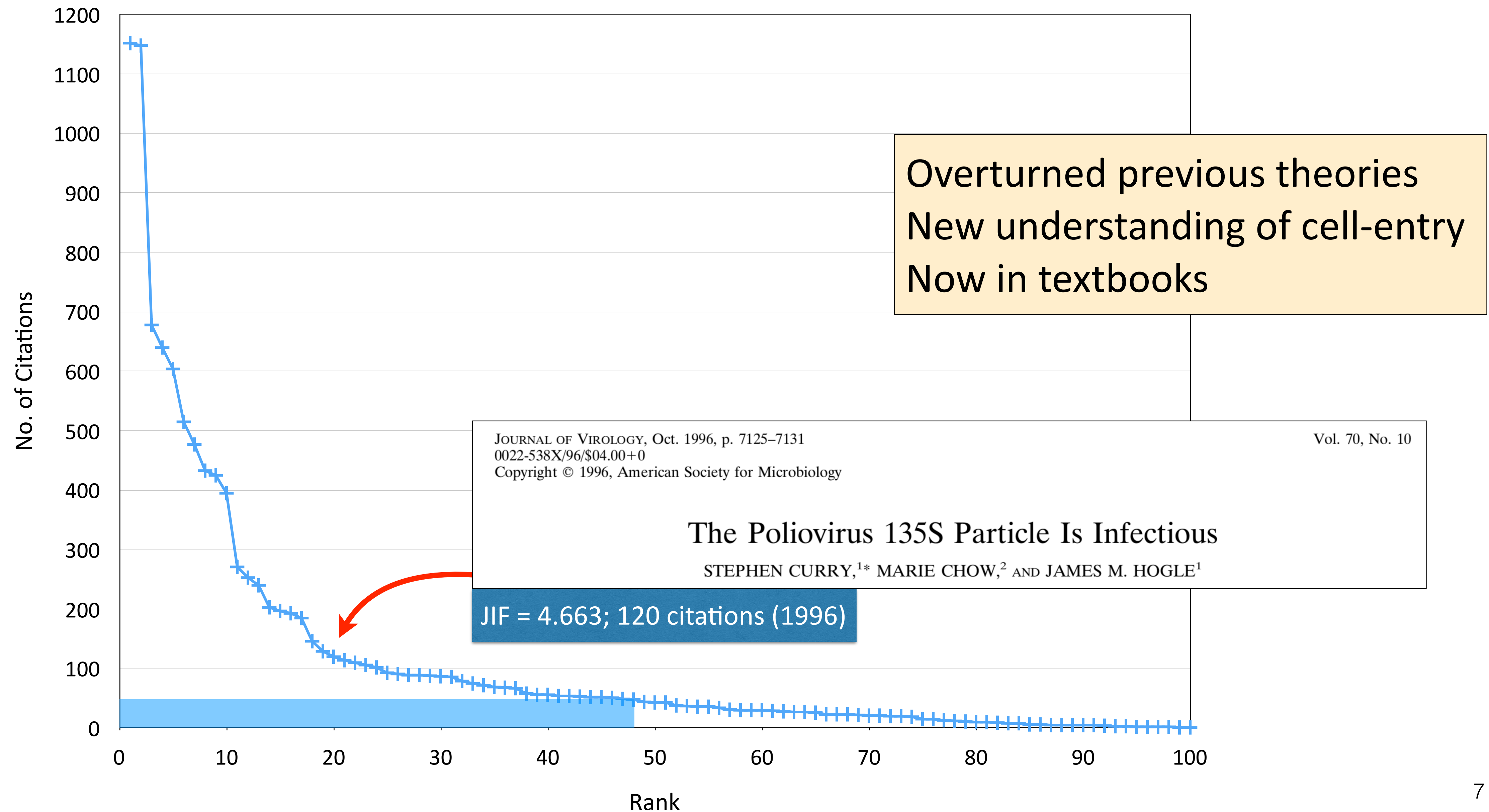
My Google Scholar h-index = 48



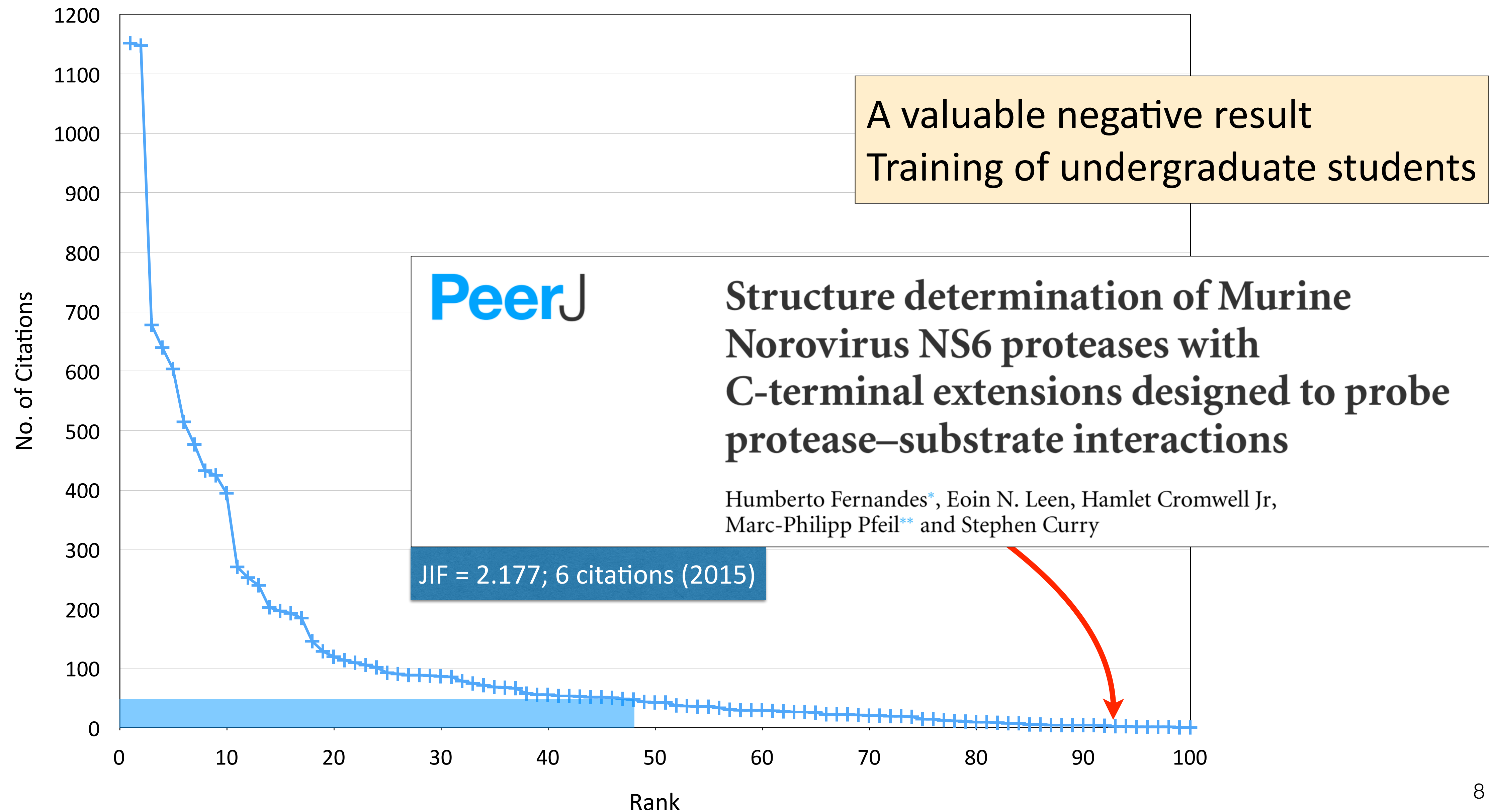
My Google Scholar h-index = 48



My Google Scholar h-index = 48

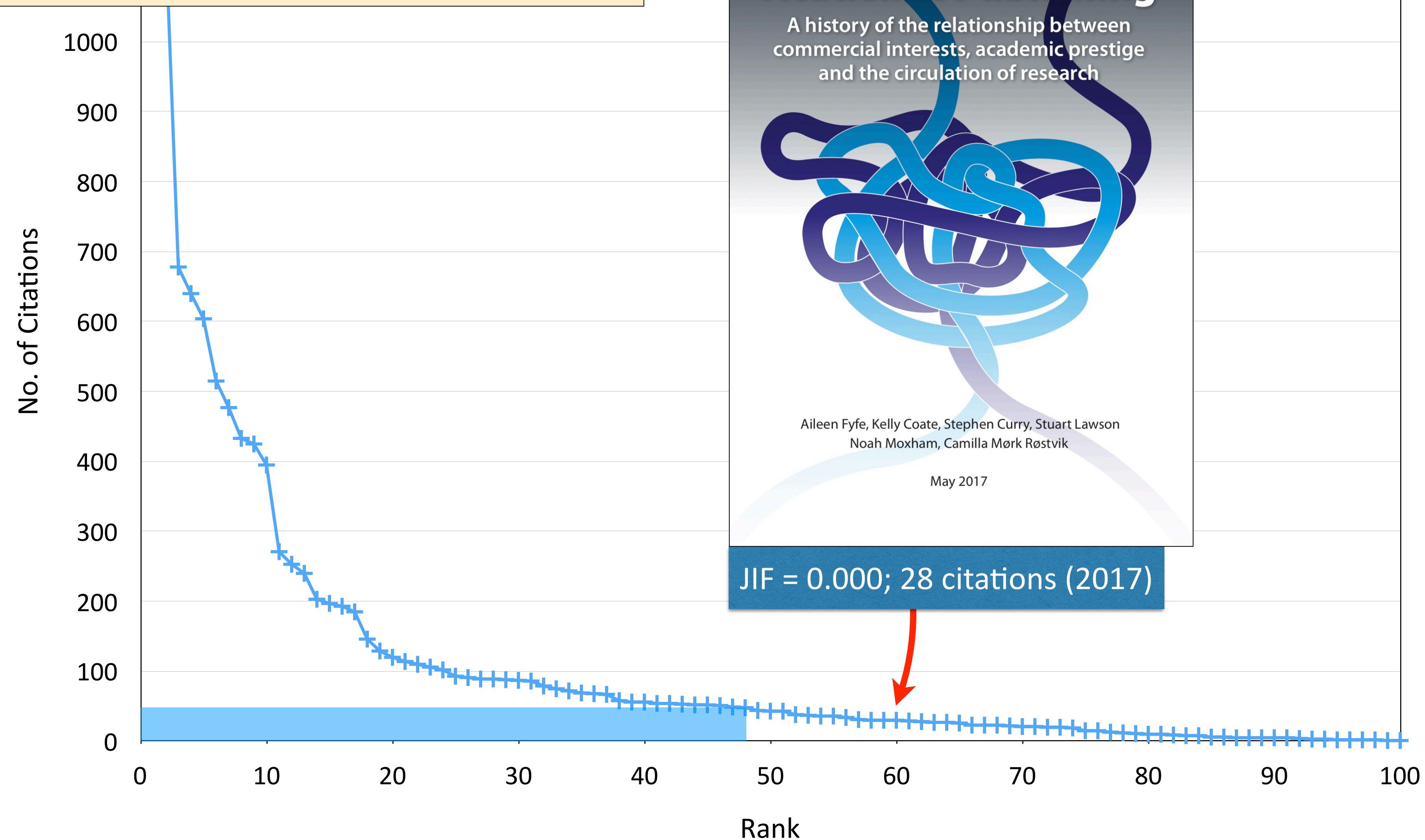


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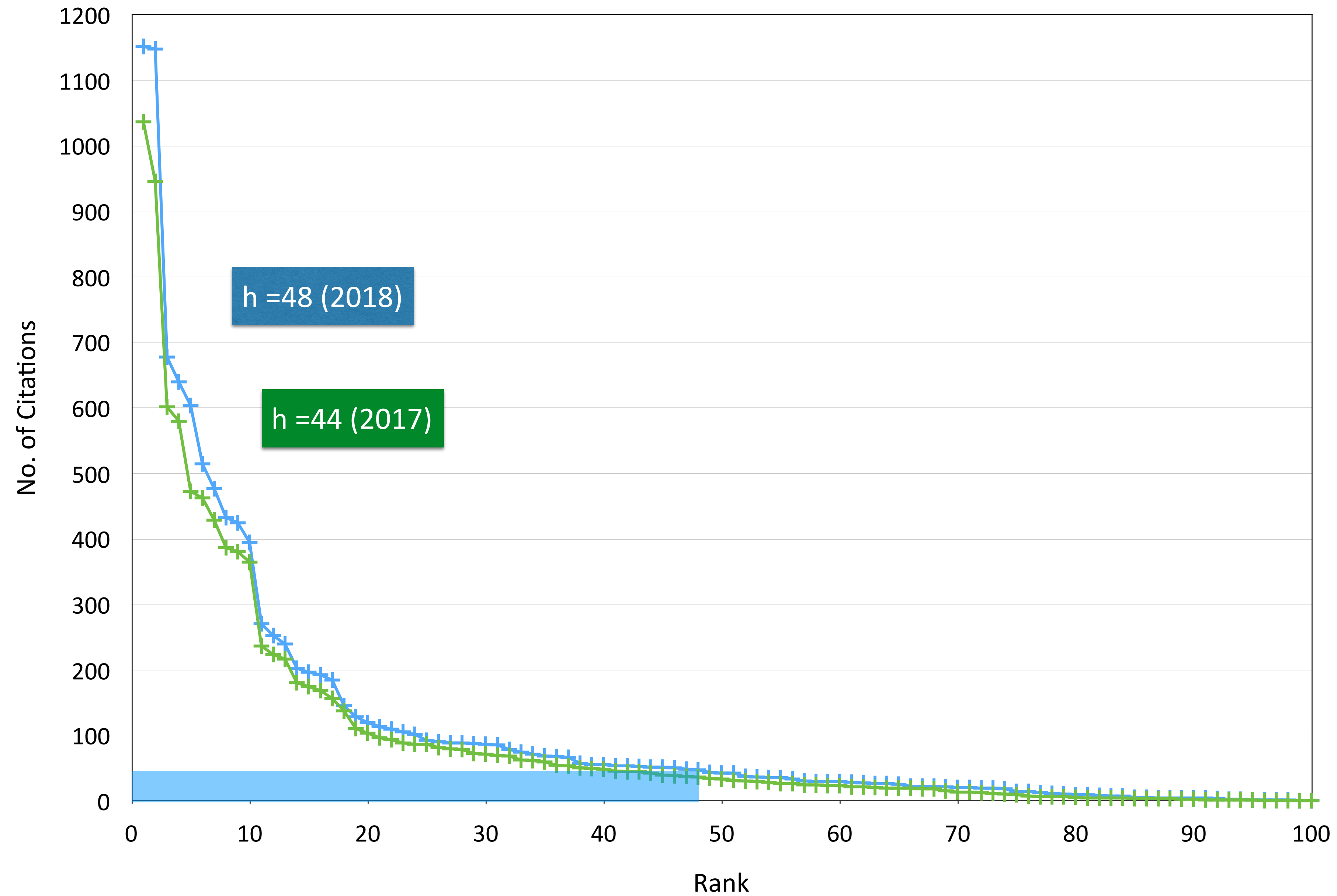


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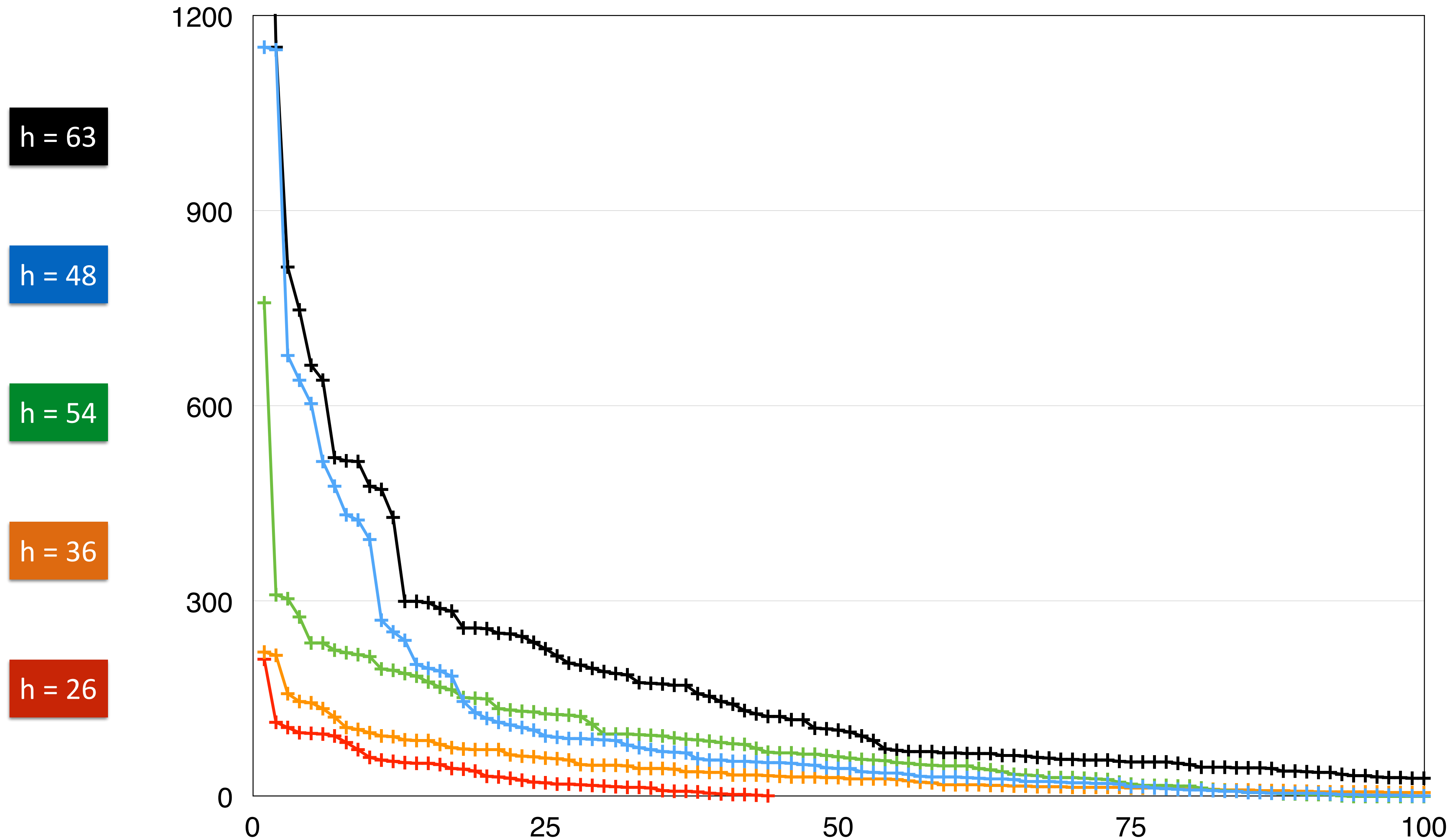
Much-discussed historical analysis
Influenced thinking on Plan S?



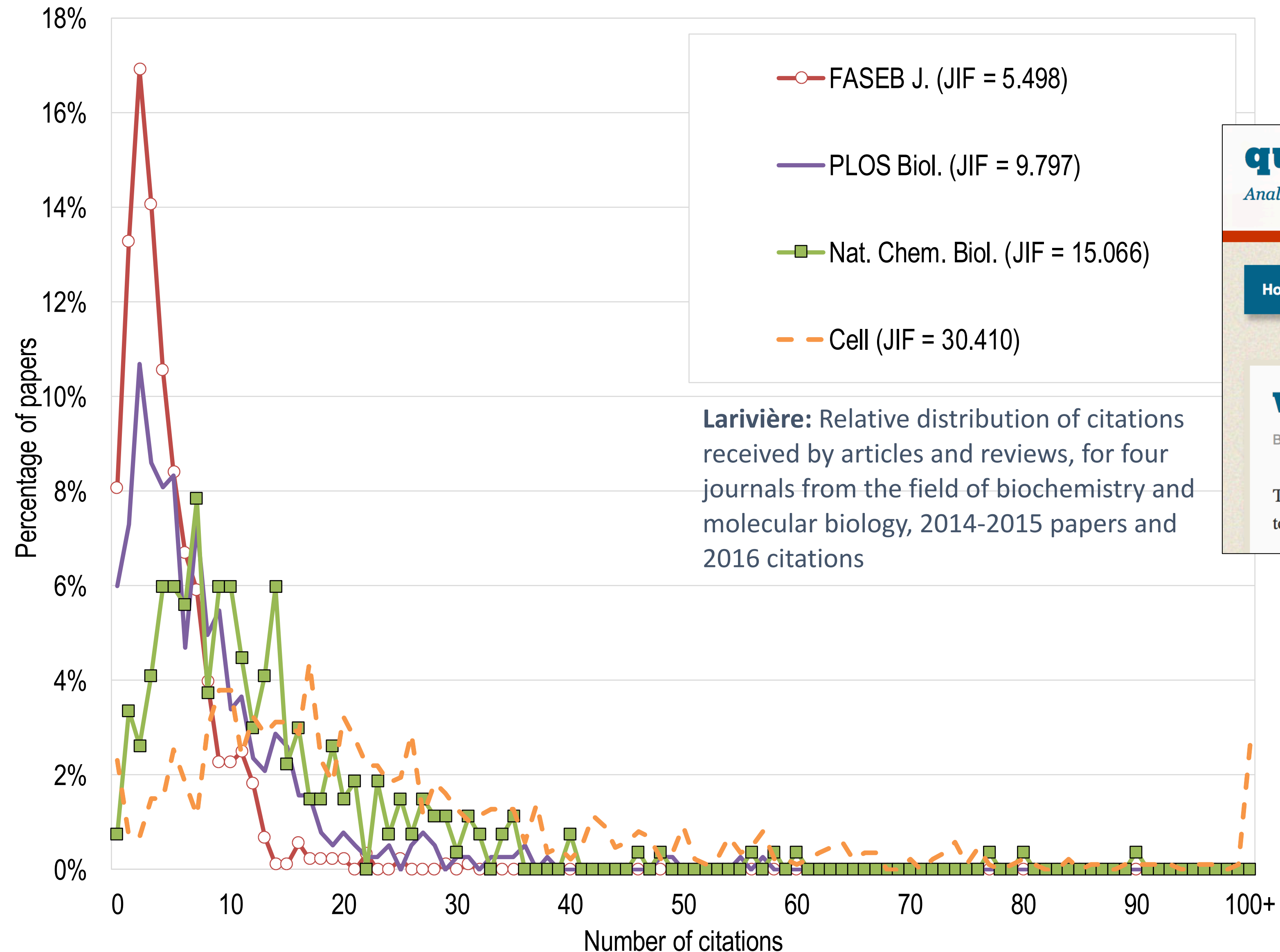
My h-index: 2017 vs 2018



My h-index – compared to some colleagues



Citation Distributions: challenging the journal impact factor (JIF)



<https://quantixed.wordpress.com/2015/05/05/wrong-number-a-closer-look-at-impact-factors/>

quantixed

Analysis, more words, extra content

Home

mechanochemistry.org

github

Royle Lab

About

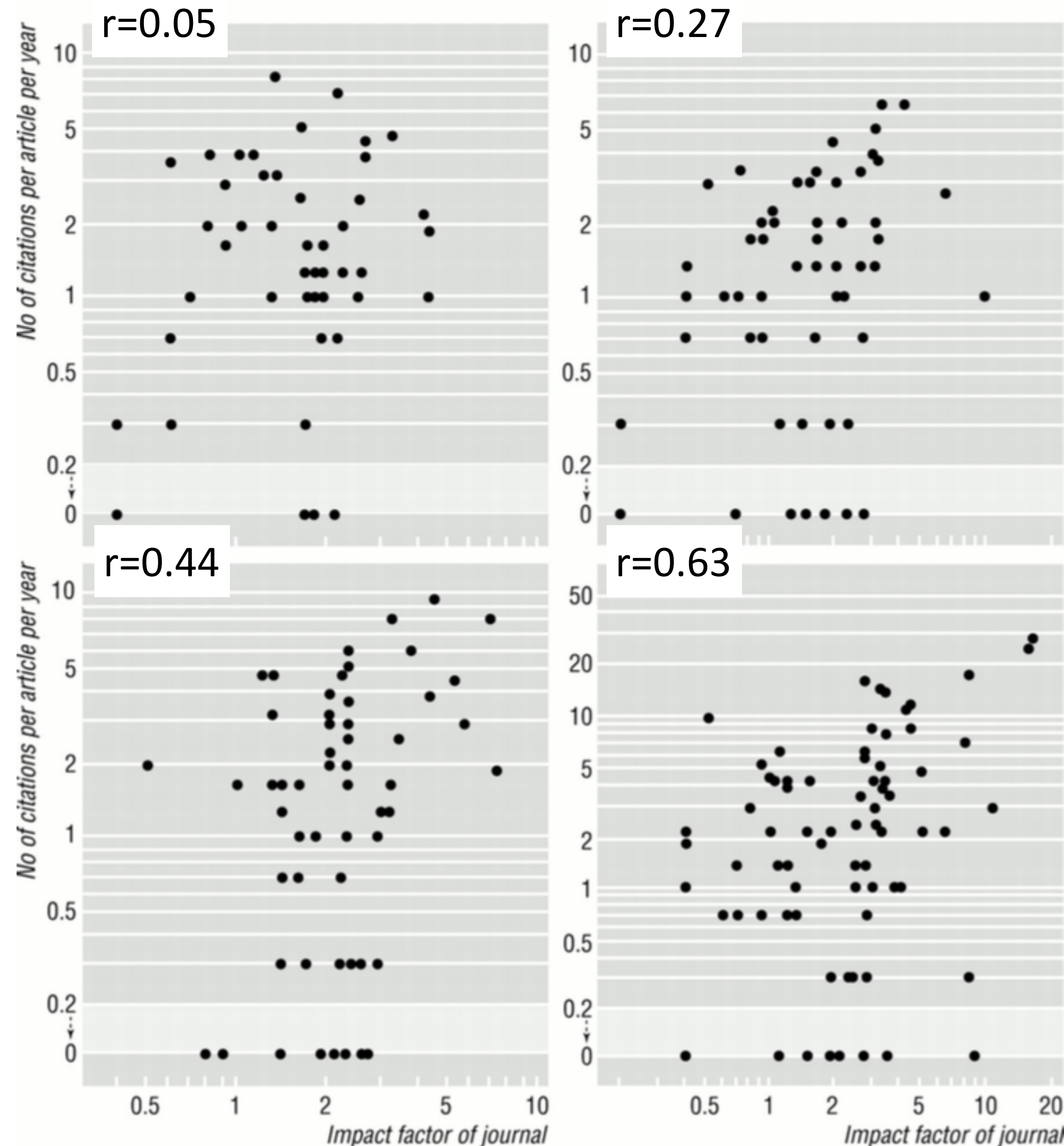
Wrong Number: A closer look at Impact Factors

By [quantixed](#) on May 5, 2015

This is a long post about Journal Impact Factors. Thanks to Stephen Curry for encouraging me to post this.

- JIF is a poor indicator of the number of citations of a random paper selected from the journal
- Reporting JIF to 3 d.p. is ridiculous
- Only differences of 5 or 10 in JIF are 'meaningful'

Correlation between JIF and citation rate of articles from individual scientists is often poor



4 different
researchers

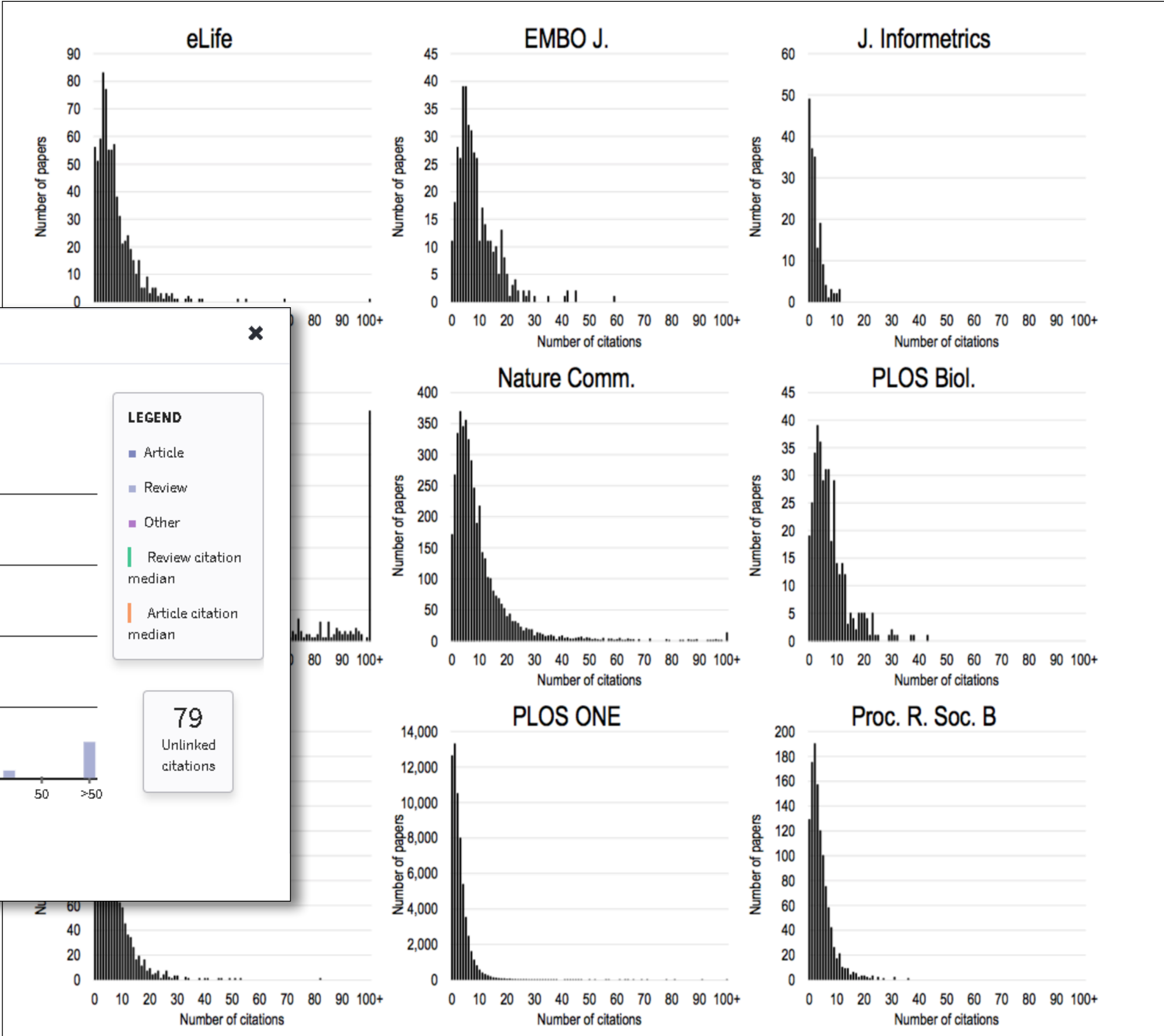
“...authors do not necessarily publish their most citable work in journals of the highest impact, nor do their articles necessarily match the impact of the journals they appear in.”

Seglen, P. O. (1997). Why the impact factor of journals should not be used for evaluating research. *BMJ*, **314**, 498–502.

Journal impact factors and citation distributions

A simple proposal for the publication of journal citation distributions

Vincent Larivière¹, Véronique Kiermer², Catriona J. MacCallum³, Marcia McNutt^{4†}, Mark Patterson⁵, Bernd Pulverer⁶, Sowmya Swaminathan⁷, Stuart Taylor⁸, Stephen Curry^{9*}



<https://clarivate.com/blog/news/clarivate-analytics-releases-JCR-2018>

Even with distributions, we need to ask: what do citations mean?

RESEARCH ARTICLE

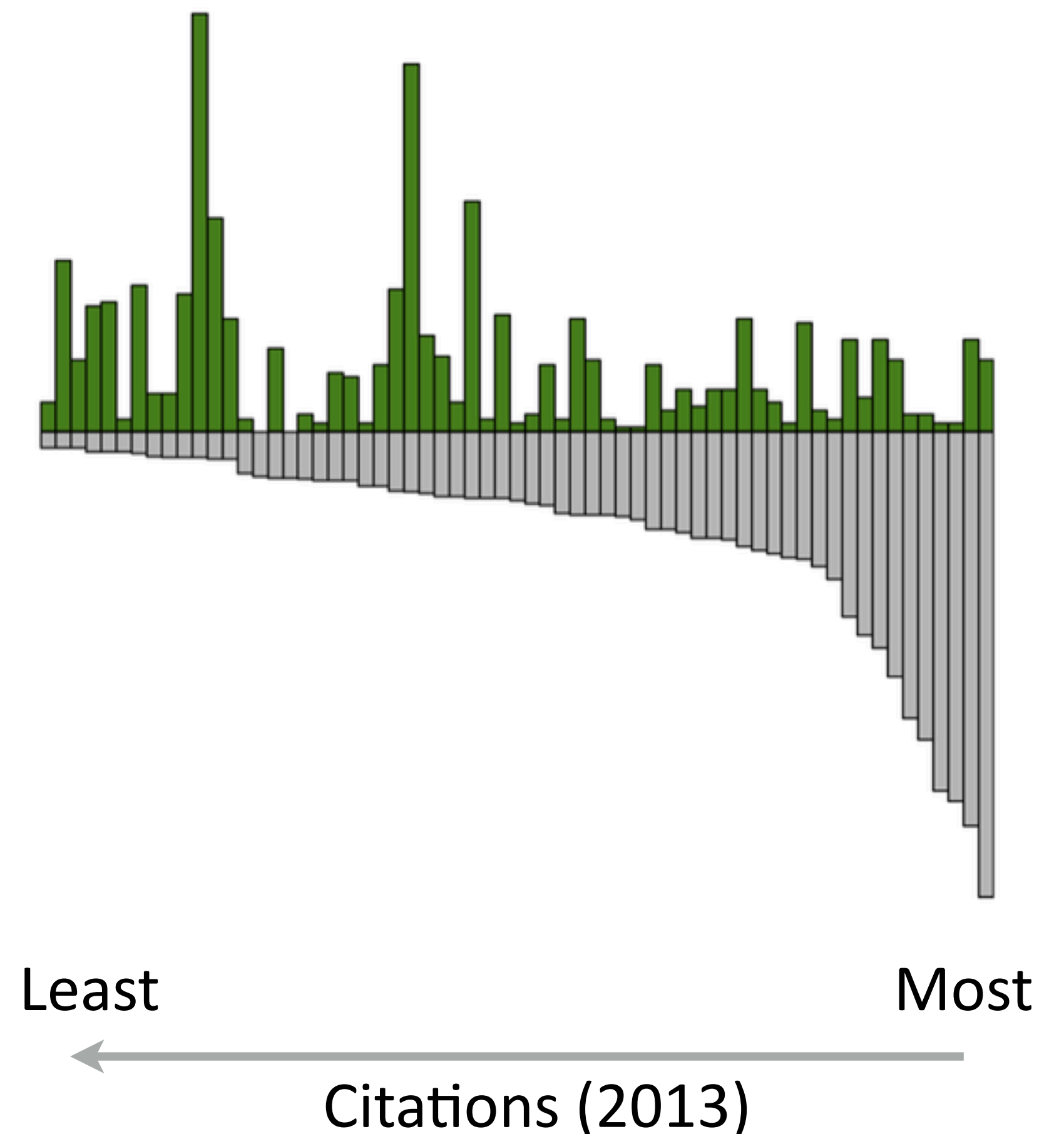
Perception of the importance of chemistry research papers and comparison to citation rates

Rachel Borchardt^{1*}, Cullen Moran¹, Stuart Cantrill², Chemjobber³, See Arr Oh⁴, Matthew R. Hartings^{1*}

¹ American University, NW, Washington, DC, United States of America, ² Nature Chemistry, SpringerNature, London, United Kingdom, ³ Chemjobber, Shell, WV, United States of America, ⁴ Just Like Cooking, Krypton, KY, United States of America

“Respondents view both cited papers and significant papers *differently* than papers that should be shared with chemists. We conclude from our results that peer judgements of importance and significance *differ* from metrics-based measurements...”

Times Chosen in Survey (Most Significant)



Perverse effects of over-reliance on crude metrics

Sick of Impact Factors

Posted on August 13, 2012 by Stephen

I am sick of impact factors and so is science.

The impact factor might have started out as a good idea, but its time has come and gone. [Conceived by Eugene Garfield](#) in the 1970s as a useful tool for research libraries to judge the relative merits of journals when allocating their subscription budgets, the impact factor is [calculated](#) annually as the mean number of citations to articles published in any given journal in the two preceding years.



<http://occamstypewriter.org/scurry/2012/08/13/sick-of-impact-factors/>

OPEN ACCESS Freely available online

PLOS MEDICINE

Essay

How to Make More Published Research True

John P. A. Ioannidis^{1,2,3,4*}

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

THE CULTURE OF SCIENTIFIC RESEARCH IN THE UK

- In some cases the culture of scientific research does not support or encourage scientists' goals and the activities that they believe to be important for the production of high quality science.
- There seem to be widespread misperceptions or mistrust among scientists about the policies of those responsible for the assessment of research.

<http://nuffieldbioethics.org/project/research-culture/>

- slows publication and reduces productivity
- questions of reliability
- loss of public trust
- stress
- bias
- devaluation of other important activities

Common job application comment:

"I have published X manuscripts since 20XX, as first or joint-first author in high impact journals."

What can we do about this?

My Word

The mismeasurement of science

Peter A. Lawrence

Answer from the hero in Leo Szilard's 1948 story "The Mark Gable Foundation" when asked by a wealthy entrepreneur who believes that science has progressed too quickly, what he should do to retard this progress: "You could set up a foundation

release. The song writers would soon find that producing junky Christmas tunes and cosying up to DJs from top radio stations advanced their careers more than composing proper music. It is not so funny that, in the real world of science, dodgy evaluation criteria such as impact factors and citations are dominating minds, distorting behaviour and determining careers.

Modern science, particularly biomedicine, is being damaged by attempts to measure the quantity and quality of research. Scientists are ranked according to these measures, a ranking that impacts on funding of grants, competition for posts and

<http://dx.doi.org/10.1016/j.cub.2007.06.014> (2007)

Evaluating how we evaluate

Ronald D. Vale

Department of Cellular and Molecular Pharmacology and the Howard Hughes Medical Institute, University of California, San Francisco, San Francisco, CA 94158

ABSTRACT Evaluation of scientific work underlies the process of career advancement in academic science, with publications being a fundamental metric. Many aspects of the evaluation

Vale, R. D. (2012) Mol Biol Cell 23, 3285–3289.

A brief history of research assessment reform...

Dec 2012/May 2013



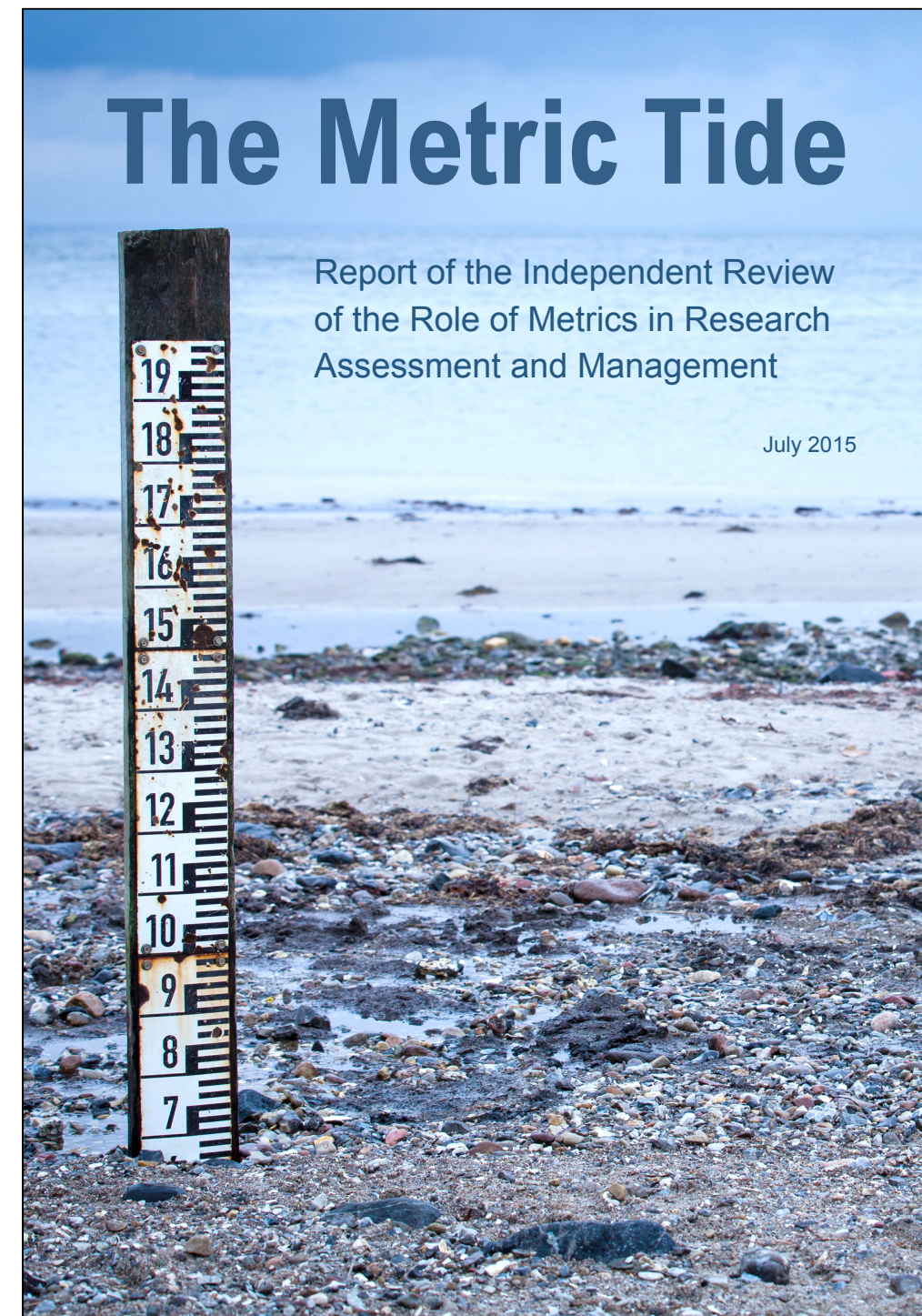
<http://www.ascb.org/dora/>

Mar 2015



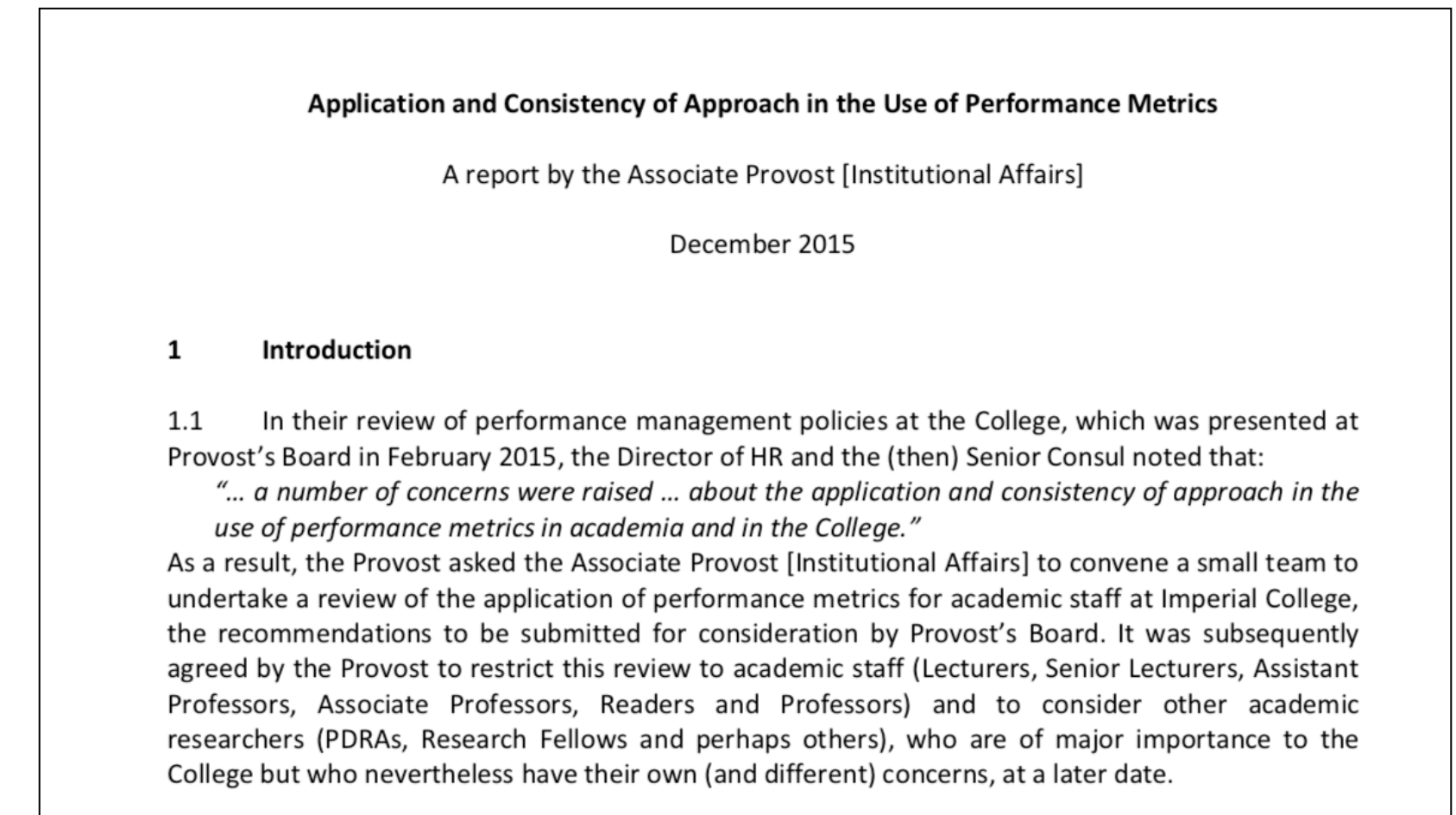
<http://www.leidenmanifesto.org>

Jul 2015

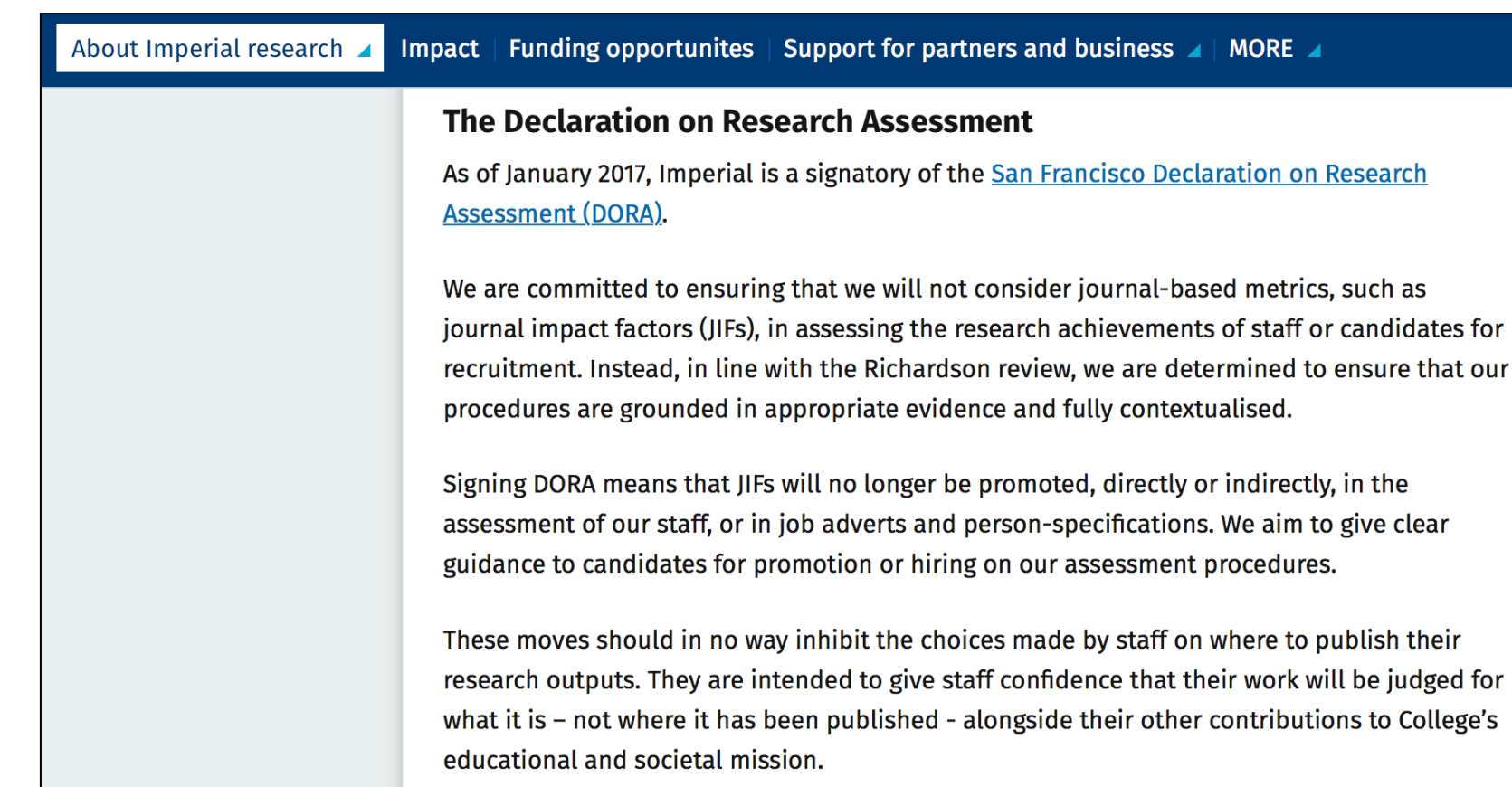


UK Forum for Responsible Research Metrics

Dec 2015



Jan 2017



<http://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/>

What does DORA say?

Targeted at: funders, institutions, publishers, metrics providers, researchers

Can be signed by individuals and organisations

For institutions:

Be explicit about the criteria used to reach hiring, tenure, and promotion decisions, **clearly highlighting**, especially for early-stage investigators, that the **scientific content of a paper is much more important than publication metrics** or the identity of the journal in which it was published.

For the purposes of research assessment, **consider** the value and impact of **all research outputs** (including datasets and software) in addition to research publications, and **consider a broad range of impact measures** including qualitative indicators of research impact, such as influence on policy and practice.



What does DORA say?

For researchers:

When involved in committees making decisions about funding, hiring, tenure, or promotion, **make assessments based on scientific content** rather than **publication metrics**.

Wherever appropriate, **cite primary literature** in which observations are first reported rather than reviews in order to give credit where credit is due.

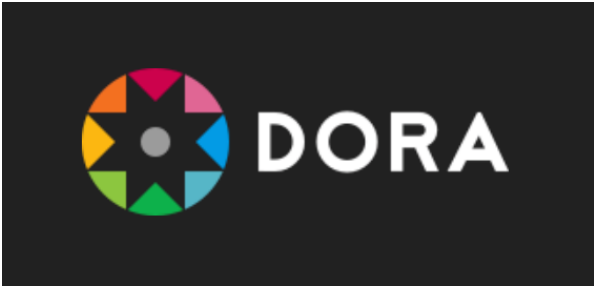
Use a range of article metrics and indicators on personal/supporting statements, as evidence of the impact of individual published articles and other research outputs

Challenge research assessment practices that rely inappropriately on Journal Impact Factors and **promote and teach best practice** that focuses on the **value and influence of specific research outputs**.



DORA: the next steps

- 5 years old; >12,000 individuals & >500 organisations signed
- Revamped with new funding in 2017...
- New URL (sfdora.org) and new logo
- New steering group and chair (me!)
- New full-time community manager, Dr Anna Hatch - ahatch@sfdora.org
- New roadmap:
 - Increase awareness of the need to develop alternatives to the JIF
 - Research and promote best practice in research assessment.
 - Extend the global and disciplinary impact of DORA
- New international advisory board (coming soon...)



Anna Hatch

<https://www.nature.com/articles/d41586-018-01642-w>

WORLD VIEW A personal take on events



Words were a good start — now it is time for action

Five years ago, the Declaration on Research Assessment was a rallying point. It must now become a tool for fair evaluation, urges **Stephen Curry**.

Declarations are bound to fall short. The 240-year-old United States Declaration of Independence holds it self-evident that “all men [sic] are created equal”, but equality remains a far-off dream for many Americans.

The San Francisco Declaration on Research Assessment (DORA; <https://sfdora.org>) is much younger, but similarly idealistic. Conceived by a group of journal editors and publishers at a meeting of the American Society for Cell Biology (ASCB) in December 2012, it proclaims a pressing need to improve how scientific research is evaluated, and asks scientists, funders, institutions and publishers to forswear using journal impact factors (JIFs) to judge individual researchers.

DORA’s aim is a world in which the content of a research paper matters more than the impact factor of the journal in which it appears. Thousands of individuals and hundreds of research organizations now agree and have signed up. Momentum is building, particularly in the United Kingdom, where the number of university signatories has trebled in the past two years. This week, all seven UK research councils announced their support.

Impact factors were never meant to be a metric for individual papers, let alone individual people. They’re an average of the skewed distribution of citations accumulated by papers in a given journal over two years. Not only do these averages hide huge variations between papers in the same journal, but citations are imperfect measures of quality and influence. High-impact-factor journals may publish a lot of top-notch science, but we should not outsource evaluation of individual researchers and their outputs to seductive journal metrics.

Most agree that yoking career rewards to JIFs is distorting science. Yet the practice seems impossible to root out. In China, for example, many universities pay impact-factor-related bonuses, inspired by unwritten norms of the West. Scientists in parts of Eastern Europe cling to impact factors as a crude bulwark against cronyism. More worryingly, processes for JIF-free assessment have yet to gain credibility even at some institutions that have signed DORA. Stories percolate of research managers demanding high impact factors. Job and grant applicants feel that they can’t compete unless they publish in prominent journals. All are fearful of shunning off the familiar harness.

So, DORA’s job now is to accelerate the change it called for. I feel the need for change whenever I meet postdocs. Their curiosity about the world and determination to improve it burns bright. But their desires to pursue the most fascinating and most impactful questions are subverted by our systems of evaluation. As they apply for their first permanent positions, they are already calculating how to manoeuvre within the JIF-dependent managerialism of modern science.

There have been many calls for something better, including the Leiden Manifesto and the UK report ‘The Metric Tide’, both released in 2015. Like DORA, these have changed the tenor of discussions around researcher assessment and paved the way for change.

It is time to shift from making declarations to finding solutions. With the support of the ASCB, Cancer Research UK, the European Molecular Biology Organization, the biomedical funder the Wellcome Trust and the publishers the Company of Biologists, *eLife*, *10000*, Hindawi and PLOS, DORA has hired a full-time community manager and revamped its steering committee, which I head. We are committed to getting on with the job.

Our goal is to discover and disseminate examples of good practice, and to boost the profile of assessment reform. We will do that at conferences and in online discussions; we will also establish regional nodes across the world, run by volunteers who will work to identify and address local issues.

This week, for example, DORA is participating in a workshop at which the Forum for Responsible Metrics — an expert group established following the release of ‘The Metric Tide’ — will present results of the first UK-wide survey of research assessment. This will bring broader exposure to what universities are thinking and doing, and put the spotlight on instances of good and bad practice.


We have to get beyond complaining, to find robust, efficient and bias-free assessment methods. Right now, there are few compelling options. I favour concise one- or two-page ‘bio-sketches’, similar to those rolled out in 2016 by the University Medical Centre Utrecht in the Netherlands. These let researchers summarize their most important research contributions, plus mentoring, societal engagement and other valuable activities. This approach could have flaws. Perhaps it gives too much leeway for ‘spin’. But, as scientists, surely we can agree that it’s worth doing the experiment to properly evaluate evaluation.

This is hard stuff: we need frank discussions that grind through details, with researchers themselves, to find out what works and to forestall problems. We need to be mindful of the damage wrought to the careers of women and minorities by bias in peer review and in subjective evaluations. And we need to join in with parallel moves towards open research, data and code sharing, and the proper recognition of scientific reproducibility.


Declarations such as DORA are important; credible alternatives to the status quo are more so. True success will mean every institution, everywhere in the world, bragging about the quality of their research-assessment procedures, rather than the size of their impact factors. ■

Stephen Curry is a professor of structural biology and assistant provost for equality, diversity and inclusion at Imperial College London. He is also chair of the DORA steering group.
e-mail: s.curry@imperial.ac.uk

IT’S WORTH
DOING THE
EXPERIMENT
TO PROPERLY
EVALUATE
EVALUATION.



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Improving how research is assessed


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Imperial has signed DORA: what does that mean for us?

- DORA implementation working group
- Report approved in Dec 2017
 - Changed language in adverts, job descriptions, and guidance on hiring, promotion & funding procedures
 - Consultation...
 - This workshop...
 - But work still to do...

“We recognise that establishing a transparent, evidence-based processes of staff evaluation as part of a culture that aims to be fully inclusive will take time.

Signing the declaration is intended to empower staff to challenge any instances of practice that deviate from the goal of ensuring that research assessment practices are as rigorous as possible.”

The image shows a screenshot of the Imperial College London website. The top navigation bar includes links for Study, Research & Innovation, Be Inspired, and About. Below this, a blue banner reads 'Research and Innovation' with sub-links for About Imperial research, Impact, Funding opportunities, Support for partners and business, Support for staff, and MORE. The left sidebar contains a menu for 'About Imperial research' with items like Research strategy, Research integrity, Research evaluation (highlighted), Research Excellence Framework (REF), Global institutes, Multi-faculty centres and networks, Vice-Provost (Research), and Intellectual property and research commercialisation governance. The main content area is titled 'Research evaluation' and contains text about Imperial College's commitment to high levels of teaching and research, and a section titled 'The Richardson review' which mentions the 2015 review on the 'Application of Performance Metrics (pdf)'. Below this is a section titled 'The Declaration on Research Assessment' stating that as of January 2017, Imperial is a signatory of the 'Assessment (DORA)'. To the right of the website screenshot is a summary of the 'Report of the DORA Working Group' dated 17 October 2017. It includes a 'Contents' list with 11 items, and a detailed list for '1. Membership of Working Group' including Professor Des Johnston (Chairman), Professor Lesley Cohen (Department of Physics), Professor Stephen Curry (Department of Life Sciences), Anna Demetriades (Human Resources), Professor Jonathan Haskel (Business School), Professor Chris Jackson (Department of Earth Science & Engineering), Dr Cecilia Johansson (NHLL), Jane Williams (Faculty of Engineering/Research Office), and Professor Yun Xu (Department of Chemical Engineering).

Imperial College London

Report of the DORA Working Group

17 October 2017

Contents

1. Membership of Working Group
2. Terms of reference
3. Introduction
4. Summary of recommendations
5. Appointments and promotion procedures
6. Annual review and PRDP
7. Implications of DORA for internal assessment of research proposals
8. Research Excellence Framework (REF)
9. Communications and engagement with academic staff
10. Concluding remarks
11. Appendices

1. Membership of Working Group

Professor Des Johnston (Chairman)
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Professor Stephen Curry (Department of Life Sciences)
Anna Demetriades (Human Resources)
Professor Jonathan Haskel (Business School)
Professor Chris Jackson (Department of Earth Science & Engineering)
Dr Cecilia Johansson (NHLL)
Jane Williams (Faculty of Engineering/Research Office)
Professor Yun Xu (Department of Chemical Engineering)

We are not alone...

Loughborough – up next...

UCL Academic Careers Framework

Research activity is described with reference to qualitative and quantitative evidence of achievement, including appreciation by peers, impact, scale, originality, rigour and significance of research outputs. UCL is a signatory of the San Francisco Declaration on Research Assessment and **we reject the use of certain quantitative indicators, in particular those that apply at the level of Journal or similar, rather than directly to the piece of research in question.** UCL's research strategy also establishes that "advancement and profile within UCL does not depend overly on easy metrics such as grant income or citation numbers that might penalise those who are advancing fields not yet fully appreciated by the wider research community, but instead suitably recognises and rewards creative and distinctive intellectual achievement".

<http://www.nature.com/news/fewer-numbers-better-science-1.20858>



Fewer numbers, better science

Scientific quality is hard to define, and numbers are easy to look at. But bibliometrics are warping science — encouraging quantity over quality. Leaders at two research institutions describe how they do things differently.

Researcher assessment at UMC Utrecht

1. Research, publications, grants
2. Managerial & academic duties
3. Mentoring & teaching
4. Clinical work (if applicable)
5. Entrepreneurship & community outreach

“Despite personal ideals and good intentions, in this incentive and reward system researchers find themselves pursuing not the work that benefits public or preventive health or patient care the most, but work that gives most academic credit and is better for career advancement.”

Frank Miedema

<https://blogs.bmj.com/openscience/2018/01/24/setting-the-agenda-who-are-we-answering-to/>

We are not alone...

Charité University Hospital, Berlin

- Your scientific contribution to your field
- Your 5 most important papers
 - say why they are important
- Your contribution to open science
- Your most important collaborations

More at: <https://sfdora.org/good-practices/>

Topics

Main Focus: Science *

e.g. Apoptosis - +

Main Focus: Clinic

e.g. Clinical Psychotherapy - +

Please describe in short what you believe is your scientific contribution in your scientific field.

[scientific contribution]

Remaining characters: 1000

What do you consider to be the 5 most important papers you have published? Please briefly justify this selection and mention your respective contribution. How were the work accepted in the scientific field, what impact did they have on the advancement of knowledge or the clinical practice (therapies, guidelines)? *

[PubMed-ID] OR [DOI]

[Description of first publication] [Own share of the first publication] - +

The Charite attaches great importance to transparent, replicable research and supports the objectives of Open Science (Open Access, Open Data). This includes the registration of studies in registries (clinicaltrials.gov, DRKS, etc.), the preregistration of studies, and the publication of negative and zero results. **How have you been pursuing these goals so far and what are your plans for the future?**

...

Remaining characters: 1000

Charité is interested in team science and collaborations. Please describe in short most important collaboration projects within recent five years. *

e.g. Karolinska Inst.

[Description] - +

Please describe in short your interactions with relevant actors in biomedicine, e.g. industry, patient care, policy panel, etc.

...

Remaining characters: 1000


relevant patents

[patent number]

[Description] - +

<https://sfdora.org/2018/07/06/simple-questions-big-insights-charite-uses-bio-sketch-questions-to-recruit-faculty/>

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Research


NEWS • 04 SEPTEMBER 2018

Radical open-access plan could spell end to journal subscriptions

Eleven research funders in Europe announce 'Plan S' to make all scientific works free to read as soon as they are published.

Holly Else





PDF version

LATEST NEWS ARTICLES

Ice-tracking satellite launches after 10 years in the works

Stand back, Aquaman: Harpoon-throwing satellite takes aim at space junk

Robert-Jan Smits, the European Commission's special envoy on open access, spearheaded the Plan S initiative. Credit: Nikolay Doychinov/EU2018BG

Research funders from France, the United Kingdom, the Netherlands and eight other European nations have Display a menu dical open-access initiative that could

AI helps unlock 'dark matter' of bizarre superconductors

<https://www.nature.com/articles/d41586-018-06178-7>

“We also understand that researchers may be driven to do so by a misdirected reward system which puts emphasis on the wrong indicators (e.g. journal impact factor). **We therefore commit to fundamentally revise the incentive and reward system of science**, using the San Francisco Declaration on Research Assessment (DORA) as a starting point.

<https://www.scienceeurope.org/coalition-s/>

THE ROYAL SOCIETY

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Research culture: Changing expectations

Conference

Starts:October 29 2018 10:00 [Add to calendar](#)

Ends:October 30 2018 17:00 [Add to calendar](#)

Location

The Royal Society, London, 6-9 Carlton House Terrace, London, SW1Y 5AG

 [View map](#) | [Venue information](#)

Overview

Research culture: Changing expectations will bring together intertwined debates around research assessment, career progression, researcher development, research dissemination and research integrity. This conference will showcase initiatives and work across the research landscape to continue to create and improve the cultural conditions and environments in which excellent research and researchers can flourish.

<https://royalsociety.org/science-events-and-lectures/2018/10/research-culture-conference/>

We need to act *together*

Research and researchers are international

Change cannot be limited to one institution or one country

This is a hard problem: we need credible change in the culture of research assessment...

