

# DORA –

# die Bedeutung der wissenschaftlichen Publikation in der verantwortungsvollen Forschungsevaluation



**EMBO**press

Bernd Pulverer  
Head – EMBO Press  
EiC – *EMBO Reports*

THE  
**EMBO**  
JOURNAL

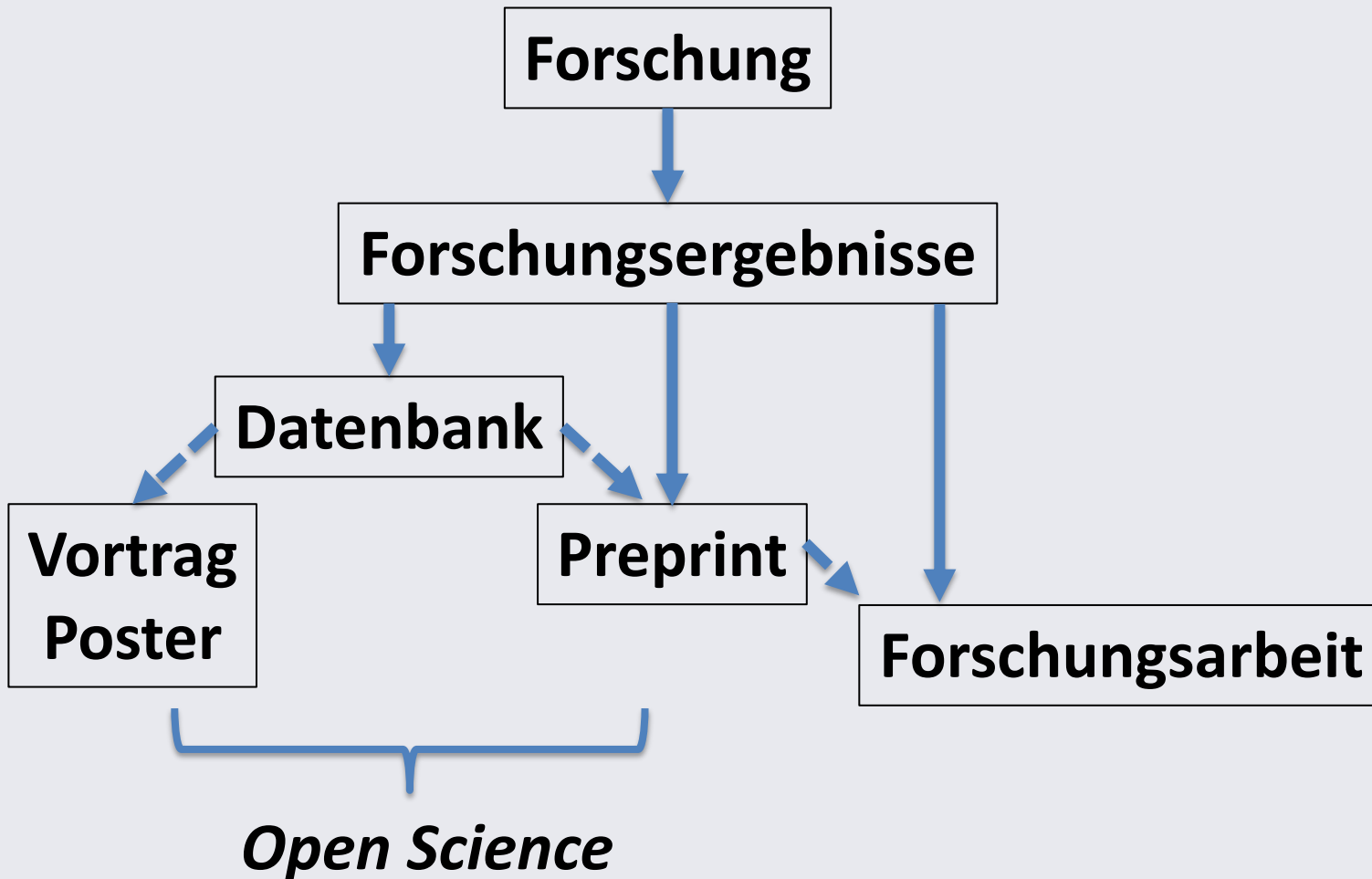
**EMBO**  
*reports*

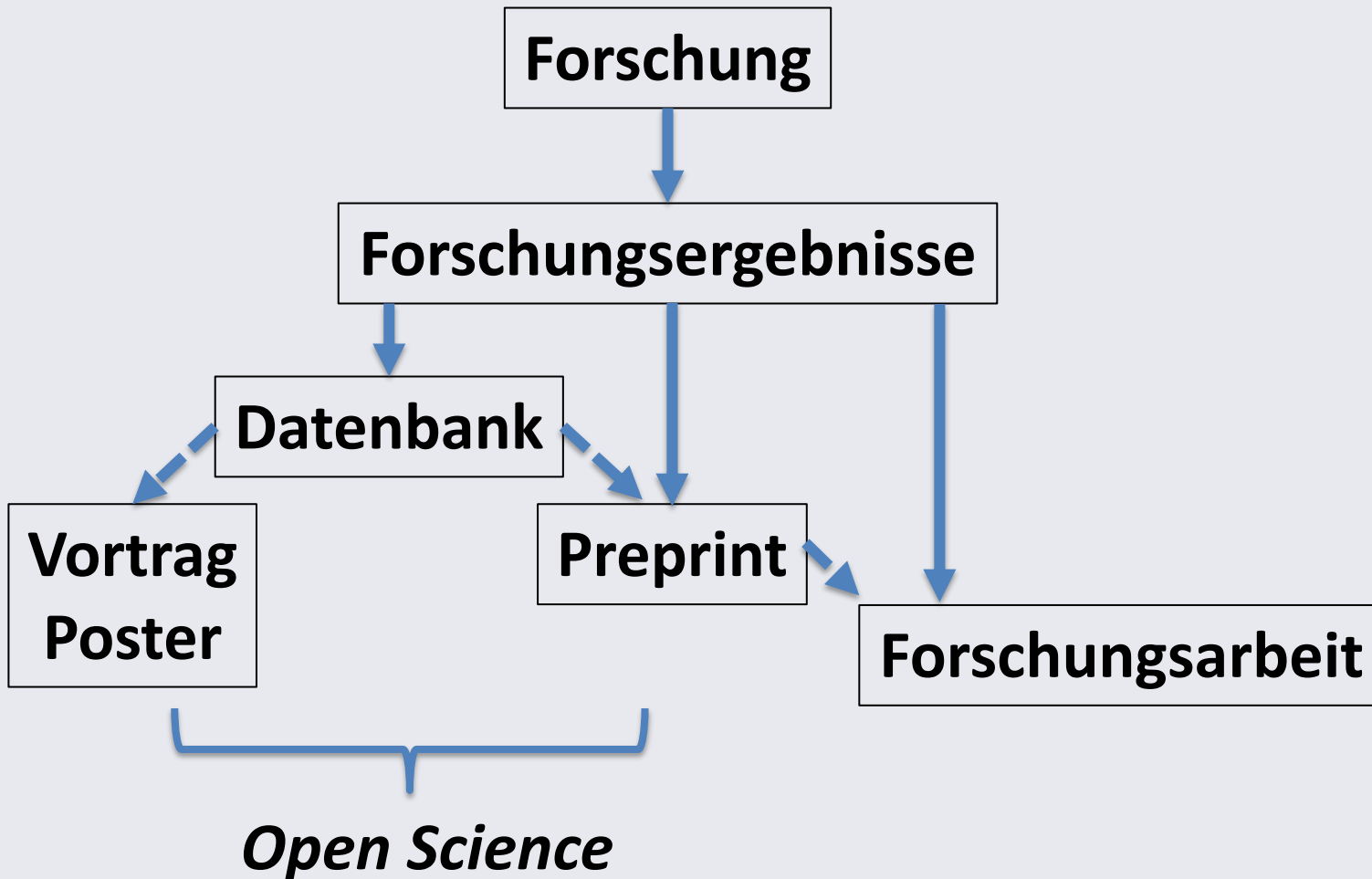
EMBO  
Molecular  
Medicine

molecular  
systems  
biology

  
Life Science Alliance

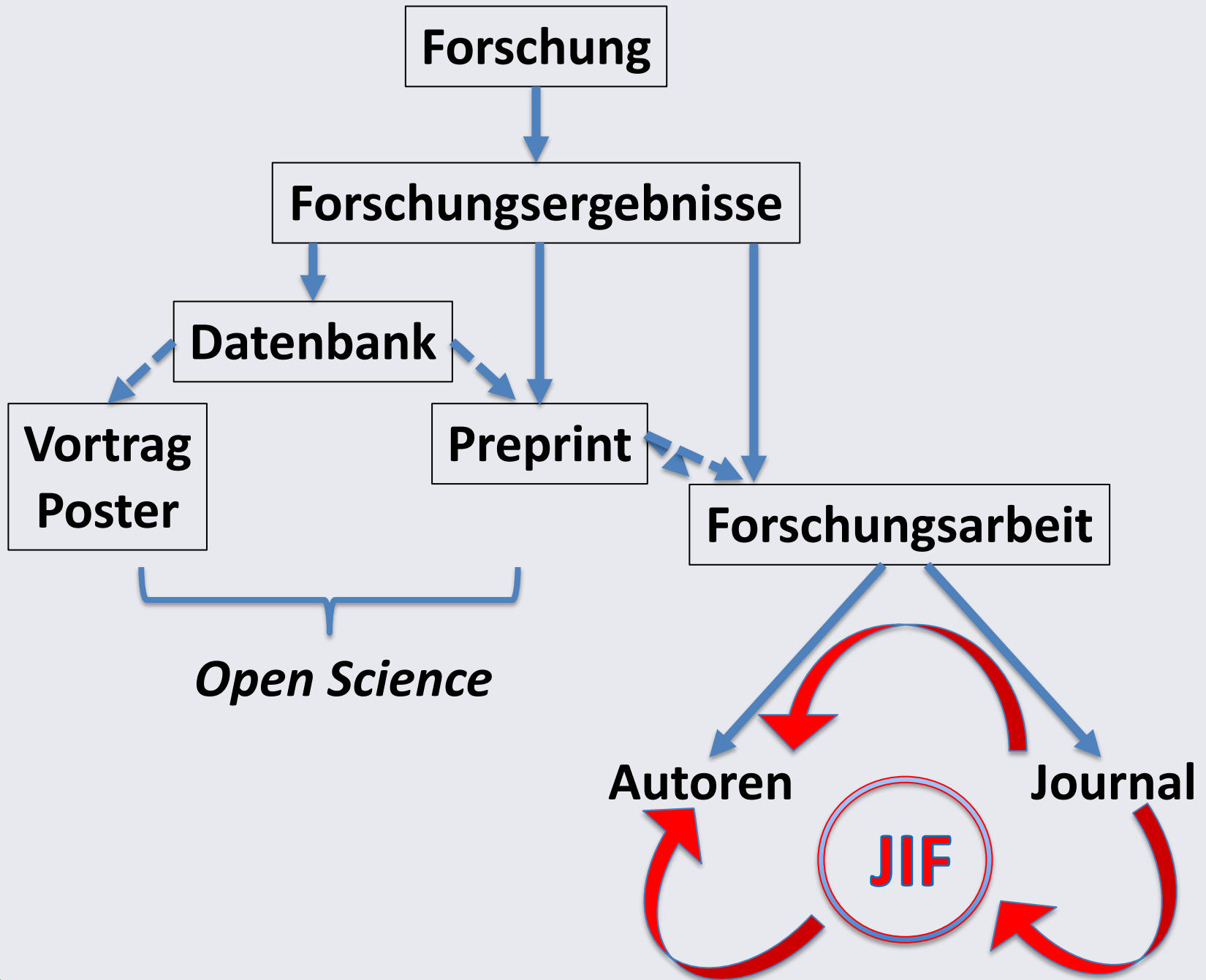
*Review*  
COMMONS





**X**

**Forschungsevaluation**



# Journal Name + JIF zählen

Journal 'Marke' als Proxy für *Impact*:

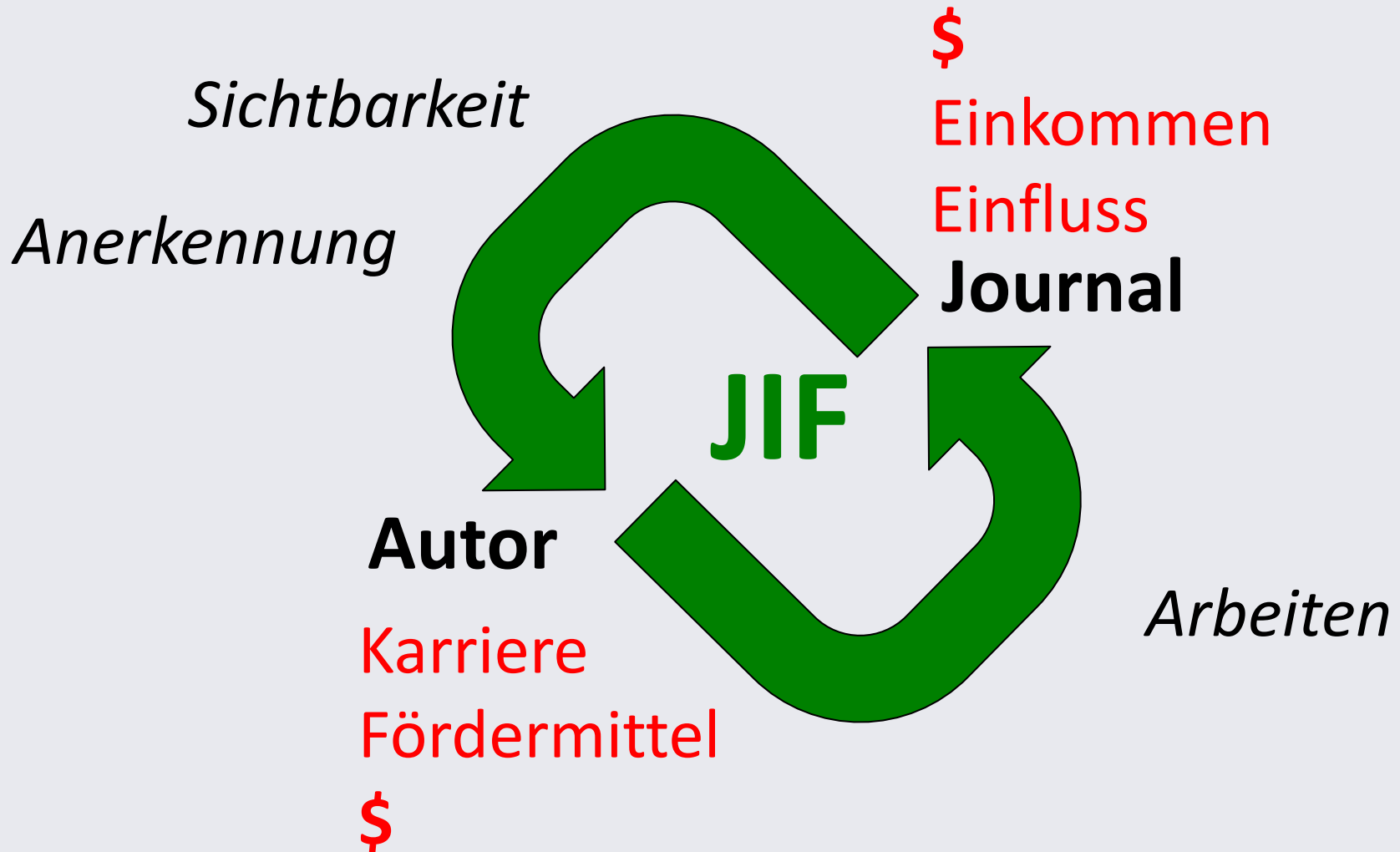
*Selektive Journale suchen Arbeiten, die ihre Leserschaft interessieren*

Forschungsevaluation sucht **prospektive, quantitative, universelle**

Metriken:

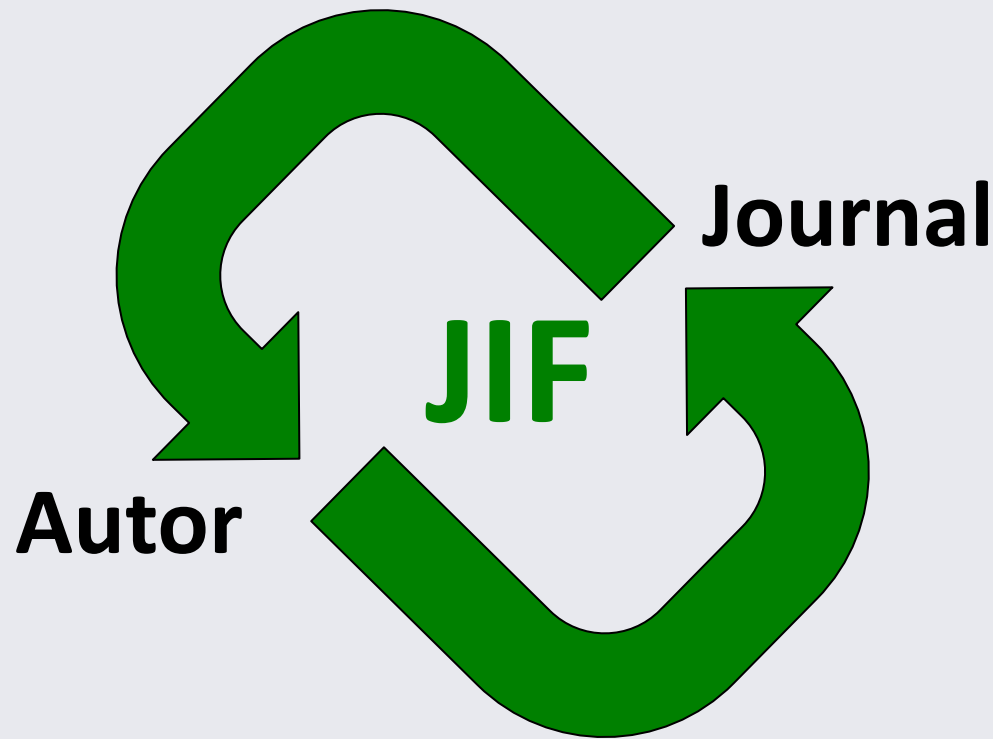
Journal Impact Factor (JIF)

# Die Macht des JIF



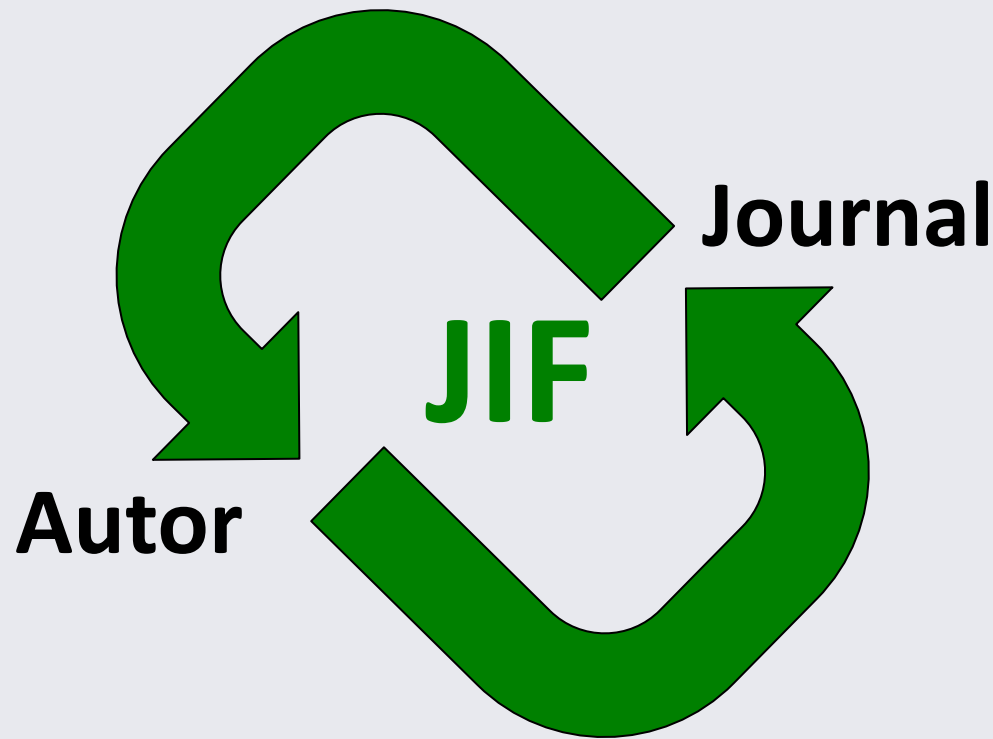
# Die Macht der Journale

Redakteure entscheiden über Forschung und Karriere



# Die Macht der Journale

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# Matthew Effekt

die gleiche Arbeit in einem 'top' Journal und/oder von einem bekannten Forscher wird mehr zitiert.

Der gleiche Effekt tritt bei Forschungsförderung ein

>> *berühmte Zeitschriften / Forscher profitieren*

>> der Zugang zu Prestige-Zeitschriften ist wichtig um citations zu maximieren.

Durch *Open Access* kann dieser Zugang für weniger bekannte Forscher deutlich verschlechtert werden, da zu hohe Kosten für weniger bekannte Autoren anfallen. Daher wenige Forschungsförderung etc. etc.

# Inflation

**Authorship:** more authors/paper  
more co-first and co-senior authors  
(up to 5!)

**Laboratory size:** only total lab output matters for PI's  
research assessment: the more postdocs the better.  
>> Divide papers / academic lab members

# *One number to rule them all*

*Citations* are a robust metric as the *use-threshold* is high

An unfounded assumption:

JIF is *predictive* of the *impact* (importance + quality)  
of a given paper

‘The JIF is used to estimate the expected count of individual papers,  
which is rather dubious considering the known skew-ness observed for most journals’

‘Granting agencies wish to bypass the work involved in obtaining citation counts  
for individual articles and authors.

**The use of journal impacts in evaluating individuals has its inherent dangers.’**

Garfield E. JAMA, 2006. Vol 295

# Publish or Perish

Es zählt wo man publiziert, nicht was man publiziert:

- Journalname und/oder JIF
- Primärliteratur vs. Sekundärliteratur >> Reviews for Impact!

**Autoren:** Inflation & Politik

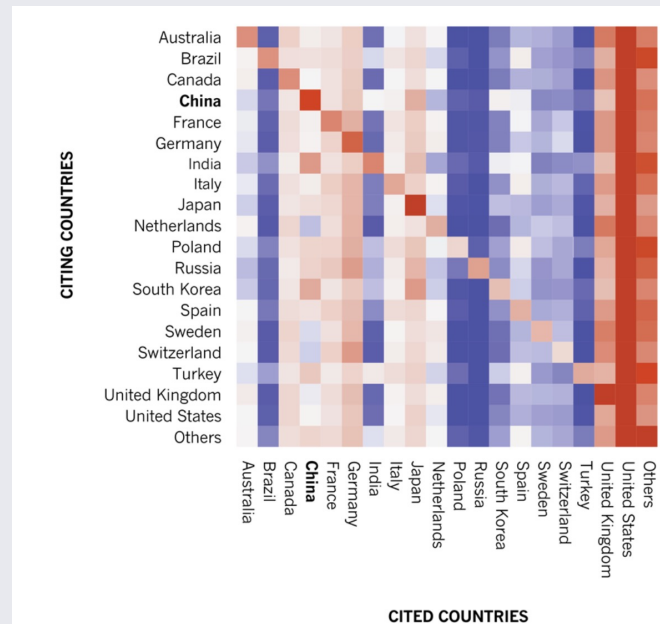
Erstautor1, Erstautor2, Erstautor(n).....

*nicht evaluationsrelevante* Autoren....

Korrespondenzautor 1, Korrespondenzautor 2, Korrespondenzautor (n)

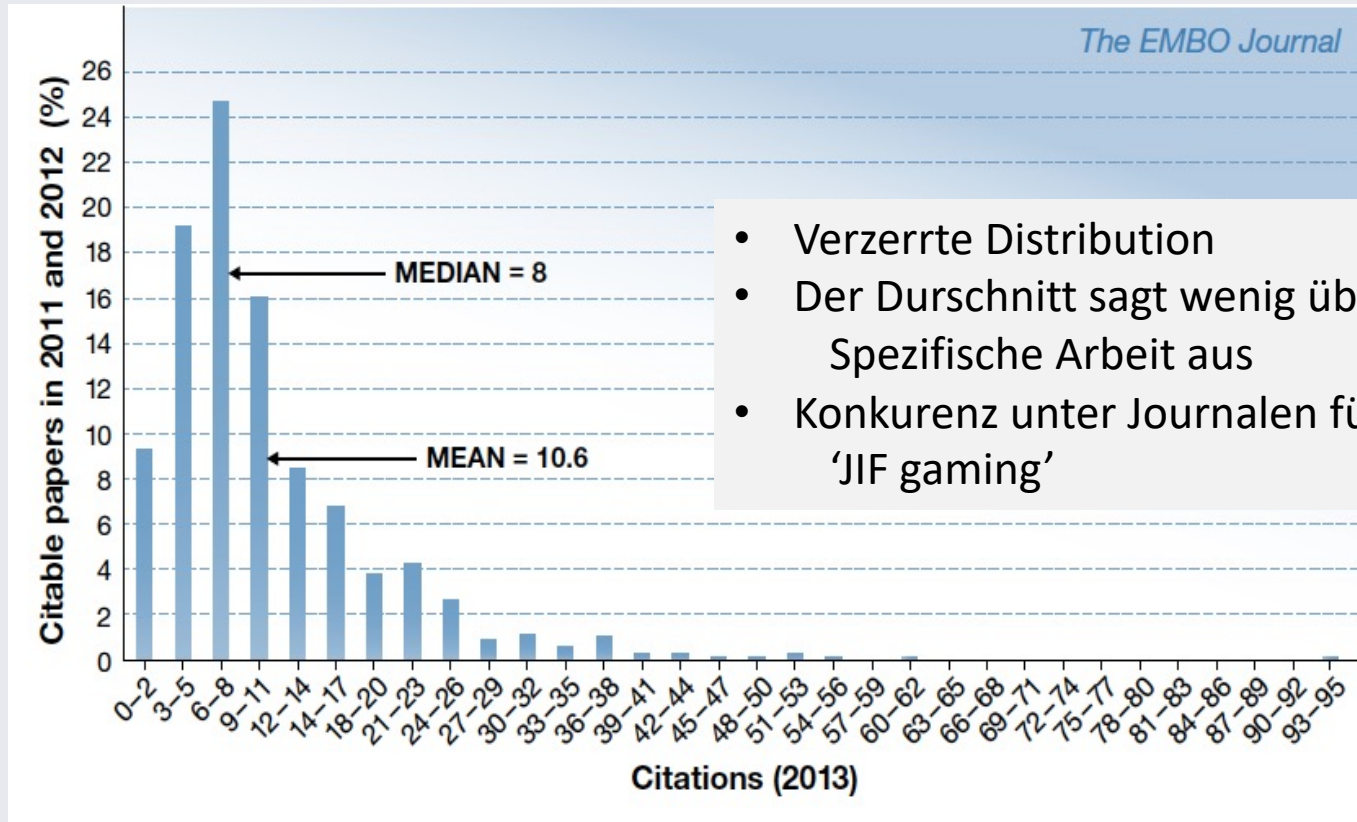
## Zitations-bubbles

- Individuen
- Thematik
- Länder



*Nature* 564,  
S70-S71 (2018)

# Das JIF Problem



- Verzerrte Distribution
- Der Durchschnitt sagt wenig über eine Spezifische Arbeit aus
- Konkurrenz unter Journalen führt zu 'JIF gaming'

DORA the brave



B. Pulverer *The EMBO Journal* (2015) 34, 1601-1602

...sogar Journale die es nicht  
nötig haben spielen das Spiel

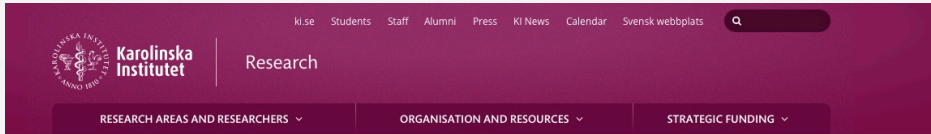
nature LATEST IMPACT FACTOR

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<i>Nature</i>	\$36 	£36 	£36 	€36 

# ...Institutionen geben JIF Ziele

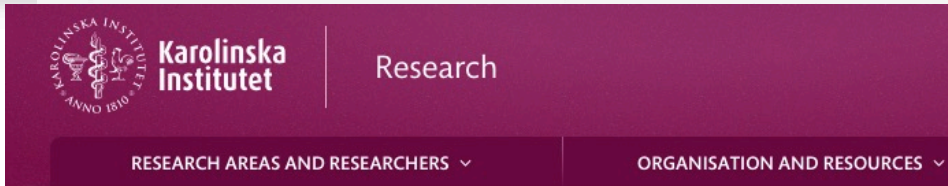


## Research at Karolinska Institutet

Research at Karolinska Institutet spans the entire medical field, from basic experimental research to patient-oriented and nursing research. Karolinska Institutet today stands for more than 40% of all academic medical research in Sweden.

## High impact publications

Recent publications from Karolinska Institutet in high impact journals.



Listen

## High impact publications

Denna sida på svenska

Recent publications with one or several authors from Karolinska Institutet in high impact journals (ISI impact factor > 15).

**141030**

Clinical follow-up compared with self-assessment of outcome after medical abortion: a multicentre, non-inferiority, randomized, controlled trial

Sunde Oppegaard K, Qvigstad E, **Fiala C**, Heikinheimo O, **Benson L**, **Gemzell-Danielsson K**.

Lancet (2014) Online 30 October.Article.

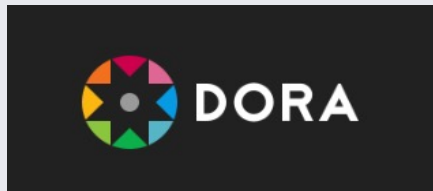
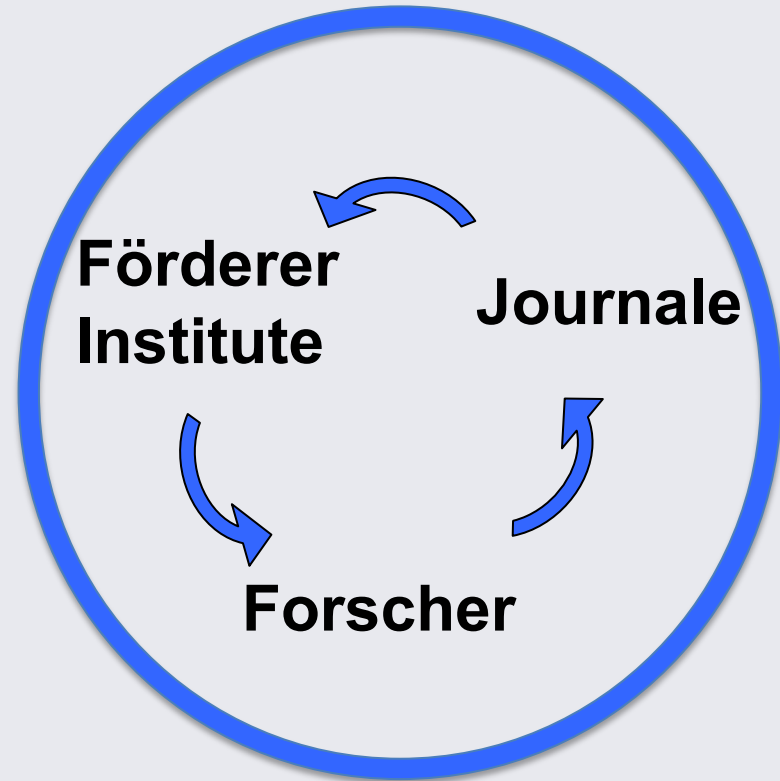
**141028**

# Beispiele.....aus der letzten Woche

- 1) 'the Polish ministry for science awards points for publication in journals - Anything with 'nature' in the title gets maximum points, even *Scientific Reports* gets the same score as highly selective journals like *EMBO Reports*'
- 2) 'my University in NL instructed me [tenured Professor] to publish only in the top quartile JIF journals, in line with University ranking in the top quartile as a LERU University. I appealed.'
- 3) Liverpool University (DORA signee ):  
Applied Field Weighted Citation Impact Indicator (Elsevier) to select 47 staff redundancies  
UCU Union: '*research metrics should not be used to sack people*'.  
Dean: '*revised criteria are in keeping with the principles of DORA*'.
- 4) 'Meine Universität in D zahlt mir Forschungszuschüsse basierend auf dem JIF meiner Arbeiten'



# Das Forschungsevaluations Ecosystem



# Die neuen JIFs von gestern

Inflation durch Umstellung auf 'online dates' von 'issues dates' bei Clarivate:

- Überfällig, aber untergräbt Zeitserien
- EMBO Press Journale +17% bis +38%
- 90% Wiley Journale +27%
- Life Science Alliance +80%, weil letztes Jahr ein 'vorläufiger' JIF publiziert wurde

JCI – *field weighed factor*

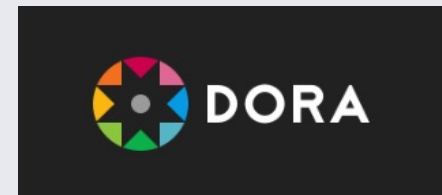
*'In the case of academic evaluation for tenure, it is inappropriate to use a journal-level metric as a proxy measure for individual researchers, institutions, or articles.'*

Clarivate, 2021

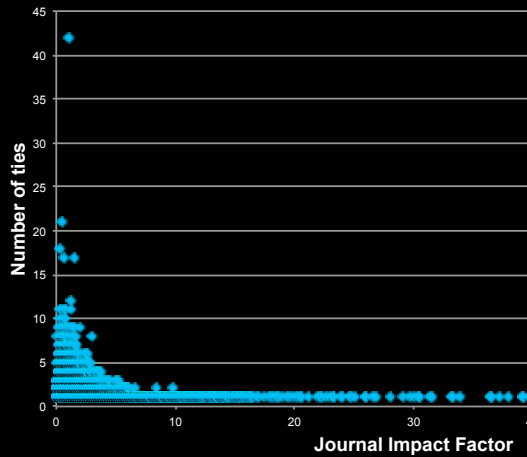
## Best practices when using the JIF

- Citation patterns, and therefore the range of JIF values, vary by discipline. The JIF is not normalized to account for those differences. It is best to compare journals within the same category.
- JIF is most useful when considered through the category percentile or quartile data which aid in comparison of relative citation impact across different fields.
- JIF is a journal-level metric. It does not measure the contribution of individual papers or authors.

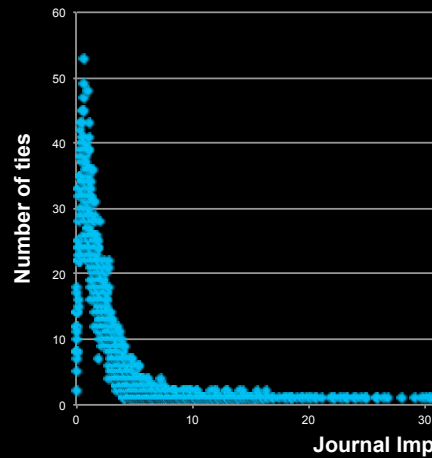
# Clarivate verkauft Rankings



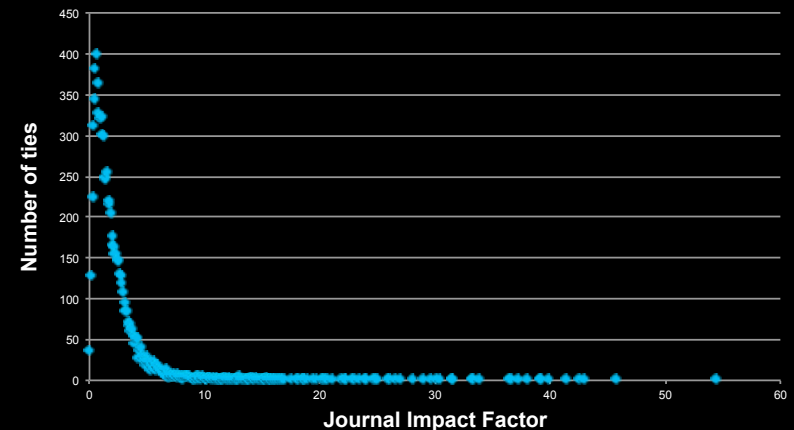
Three Decimal JIF  
( Range 0-60)



Two Decimal JIF  
( Range 0-60)

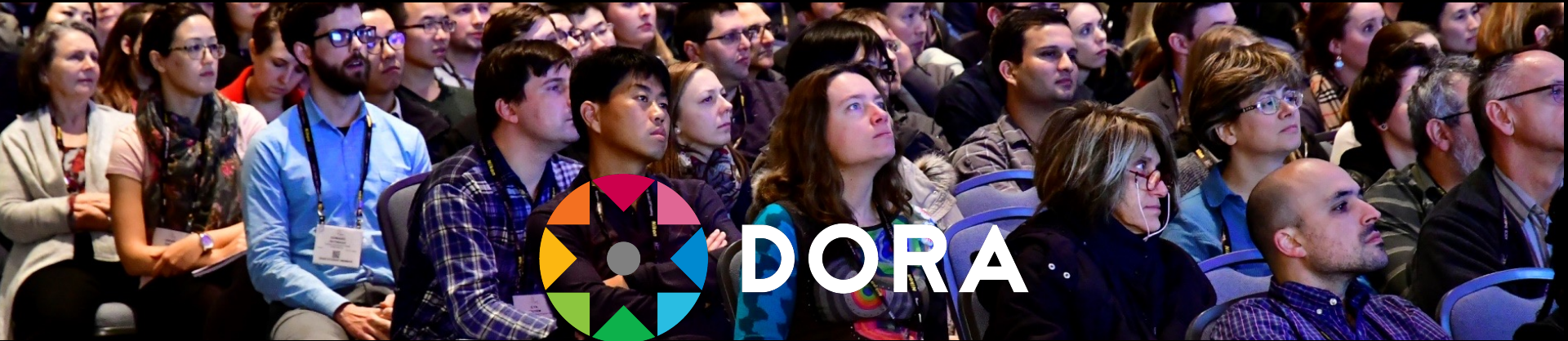


One Decimal JIF  
( Range 0-60)



**statistically significant numbers  
or using median instead of mean  
would collapse journal rankings**

S. Betuzzi, ASCB blog, 2015  
"A False Sense of Precision"



# Declaration On Research Assessment

[sfdora.org](http://sfdora.org)

 [@DORAssessment](https://twitter.com/DORAssessment)

Signed by >1,975 organizations and >16,000 individuals

Supporting organizations



# DORA's vision

Advance practical and robust approaches to improve how research globally and across all scholarly disciplines

The declaration provides recommendations to stimulate positive action by:

- Funders
- Research institutions
- Publishers
- Metrics providers
- Researchers



# Counting other outputs & other publishing attributes

- Open Science: data depositon/preprints
- Mentoring
- Teaching
- Peer Review (!)
- Collaborative science/core facilities
- Reproducibility/methods/reagents/software

# DORA Resources

- Case studies
- Tools
- Reports

The screenshot shows the DORA website interface. At the top left is the DORA logo, a colorful starburst. To its right are navigation links: 'About DORA', 'Meetings', and 'Contact'. Below these are 'The Declaration', 'Signers', 'Case Studies' (underlined), 'Resources', 'Blog', and a Twitter icon. On the far right of the top navigation is a search bar with a magnifying glass icon and a 'Sign DORA' button. The main content area features a large white headline: 'Reimagining academic assessment: stories of innovation and change'. Below the headline is a short paragraph: 'Case studies of universities and national consortia highlight key elements of institutional change to improve academic career assessment.' To the right of the headline, it says 'Produced in collaboration with:' followed by the logos for 'eua EUROPEAN UNIVERSITY ASSOCIATION' and 'SPARC\* Europe'. The bottom of the page features a dark blue world map with several glowing green circular icons containing white text, representing global case studies.

# DORA Resources

- Case studies
- Tools
- Reports

Leiden University 2021 position paper [“Academia in Motion: Recognition & Rewards at Leiden University”](#). In 2020, Leiden University’s Executive Board established a Recognition & Rewards steering committee made up of staff from a variety of positions and roles.

The goals of the committee are to:

- Redefine rewards for research, education, societal relevance and ‘service to the organisation’
- Place less emphasis on individual performance and more on team performance
- Find a new way to use metrics & rankings in decision-making about the careers of academics
- Strengthen academic leadership
- Formulate a plan to implement Recognition & Rewards reform at Leiden University.



# Forschungsförderer

## How we judge research outputs when making funding decisions



Published: 8 August 2018

Open access

Robert Kiley, Head of Open Research, and Jim Smith, Director of Science, discuss the steps Wellcome is taking to fulfil the principles of the San Francisco Declaration on Research Assessment (DORA).

When we published our [open access policy](#) over a decade ago, we made it clear that what counts when we make funding decisions is the intrinsic merit of the work and not the journal or publisher.



Credit: Science Photo Library

A researcher's skills, qualities and attitudes can never be expressed in a single metric.

Wellcome  
London, United Kingdom

Application includes:

- List of research outputs
- Contributions to mentorship
- Output sharing plan to advance potential health benefits
- Plans for public engagement

Guidance provided to advisory panel members

The screenshot shows the Cancer Research UK website header with the logo and tagline 'Together we will beat cancer'. A navigation menu includes 'HOME', 'ABOUT CANCER', 'SUPPORT US', 'OUR RESEARCH', 'FUNDING FOR RESEARCHERS', 'SHOP', and 'ABOUT US'. Below the menu, a breadcrumb trail reads 'Home > Funding for researchers > Research features > Improving how we evaluate research: how we're implementing DORA'. The main article title is 'Improving how we evaluate research: how we're implementing DORA'. At the bottom of the article preview, it says 'Category: Research Feature', '20 February 2018', and 'Cancer Research UK'. A 'Donate' button is visible in the top right corner.

Cancer Research UK  
London, UK

Application includes:

- List of research outputs
- Summary of 3-5 achievements
- Space to describe other measures of impact

Reminds peer reviewers and committee members of DORA principles throughout funding process



# Akademische Einrichtungen

## How to Strengthen Hiring Practices at Academic Institutions: an Interview with Dr. Sandra Schmid

May 15, 2018



Join us as we discuss hiring decisions at research institutions

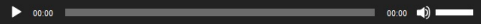
Live Monday, May 14 – 10:00 to 10:30 EDT #sfDORA



Sandra Schmid, PhD  
Carl H. Green Distinguished  
Professor in Cellular and Molecular  
Biology, Chair, Cell Biology  
Department, UT Southwestern  
Medical Center



Anna Hatch, PhD  
DORA Community Manager



UT Southwestern Medical Center  
Dallas, Texas

Candidates receive questions before Skype interviews, so they have time to reflect. The goal is to identify thoughtful individuals, in addition to candidates who process information quickly.

A screenshot of a structured narrative form for a job application. The form is titled "Topics" and contains several sections with text input fields and character counts. The sections are: 1. "Main Focus: Science" with a sub-field "P.I. Discipline" and a text area "Please describe in short what you believe is your scientific contribution in your scientific field (scientific contribution)". 2. "Main Focus: Clinic" with a sub-field "P.I. Clinical Psychotherapy" and a text area "What do you consider to be the 3 most important papers you have published? Please briefly justify this selection and explain your rationale (importance, how well the work advanced in the scientific field, what impact did they have on the advancement of knowledge or the clinical practice (therapies, guidelines)?". 3. "Publications (OR DOI)" with a sub-field "Description of first publication" and a sub-field "Own share of the first publication". 4. "The Charité 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, PRIS, etc.), the pre-registration 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?". 5. "Charité is interested in team science and collaborations. Please describe in short most important collaboration projects within recent five years." with a sub-field "P.I. Collaborative role (Principal Investigator)". 6. "Please describe in short your interactions with relevant actors in biomedical, e.g. industry, patient care, policy panel, etc.". 7. "Relevant patients" with a sub-field "Relevant patients" and a sub-field "Description". Each text area has a "Remaining characters" indicator.

Ulrich Dirnagl  
@dirnagl



If you are applying for a professorship at the Charité you now need to tell us about your contributions to your scientific field, open science, team science, interactions with stakeholders. Past and future plans. As a structured narrative.

5:21 AM - Mar 4, 2018

70 47 people are talking about this

Charité University Hospital  
Berlin, Germany

Application includes:

- Contribution to research field
- Open Science
- Team Science
- Interactions with stakeholders

Staff member sits on hiring deliberation meetings as a neutral party to promote balanced discussions



DORA

**EU Referendum** On Thursday 23 June there will be a vote on the UK's membership of the European Union. [More information](#)

Independent report

## Open access to research: independent advice

From: [Department for Business, Innovation & Skills](#)  
First published: 11 February 2016

Recommendation: universities should be encouraged to sign-up to the San Francisco Declaration on Research Assessment. This requires that metrics are used appropriately in the evaluation of individual researchers in order to remove distortion in the market by privileging certain publication routes.

<https://www.gov.uk/government/publications/open-access-to-research-independent-advice>

# Journale



**PLOS** About For Authors For Reviewers Blog Publications

## PLOS and DORA

The San Francisco Declaration on Research Assessment (DORA) recognizes the need to improve the ways in which the outputs of scientific research are evaluated.

PLOS is a signatory of DORA and pledges to follow the five DORA guidelines for publishers:

PLOS  
San Francisco, California

Dedicated page on website describing how its journals comply with DORA recommendations



**Development**  
For advances in developmental biology and stem cells

Journal metrics  
Signatory of  
  
**DORA**

The Company of Biologists  
Cambridge, UK  
“Development uses a number of metrics that together provide a rich view of the journal’s performance”



**EMBOpress**

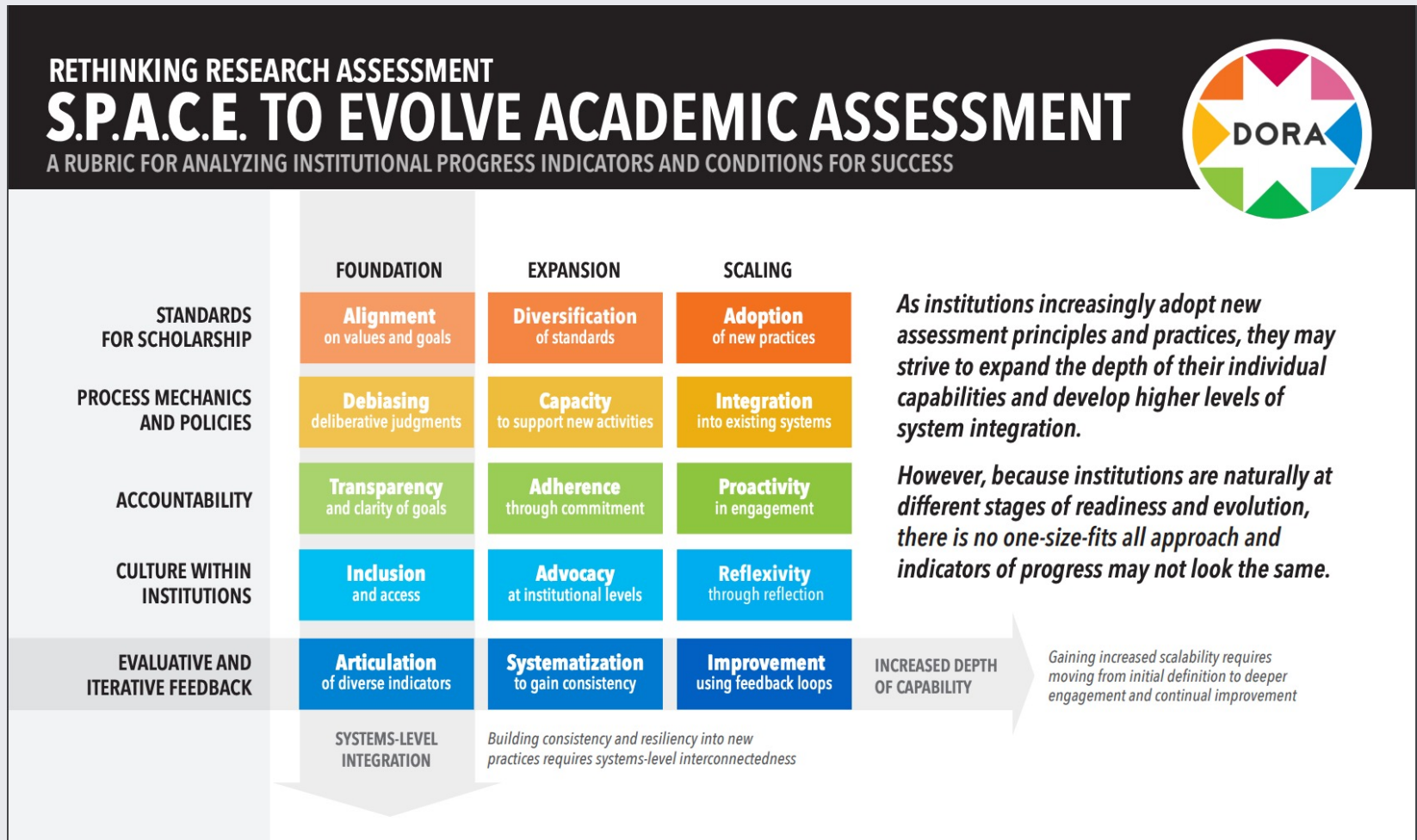
**Impact Factor (2017): 10.6 (Thomson Reuters)**  
**5-year Impact Factor (2016): 9.9 (Thomson Reuters)**  
**Immediacy Index (2016): 2.9 (Thomson Reuters)**  
**Eigenfactor (2017): 0.08 (eigenfactor.org)**  
**Article Influence (2016): 5.2 (eigenfactor.org)**  
**SJR (2016): 6.6 (JournalM3trics)**  
**SNIP (2016): 1.5 (JournalM3trics)**  
**h5 (2012-2016): 95 (Google Scholar)**

EMBO Press  
Heidelberg, Germany

- Acknowledges DORA signature
- Shows citation distributions for its journals
- Presents all available metrics side-by-side and rounded to single digits



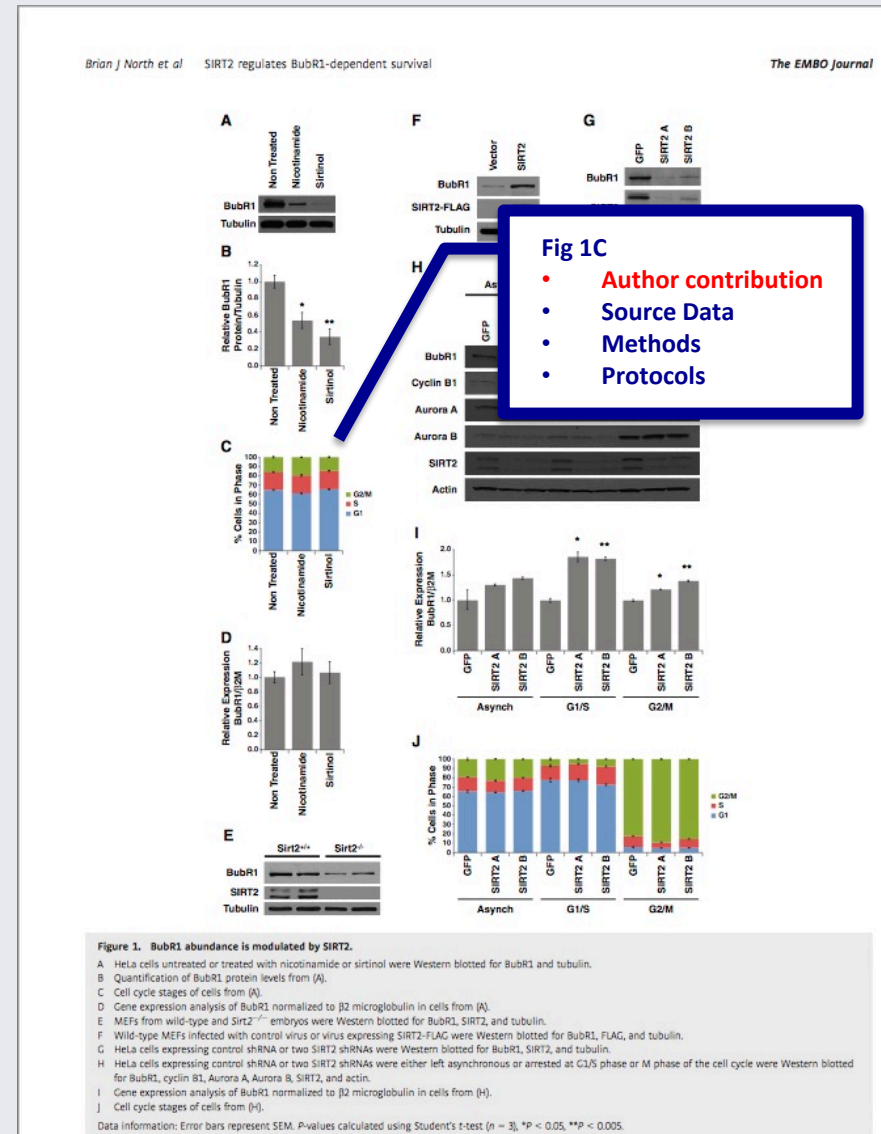
# SPACE: A rubric for institutional conditions & progress indicators



# Authorship

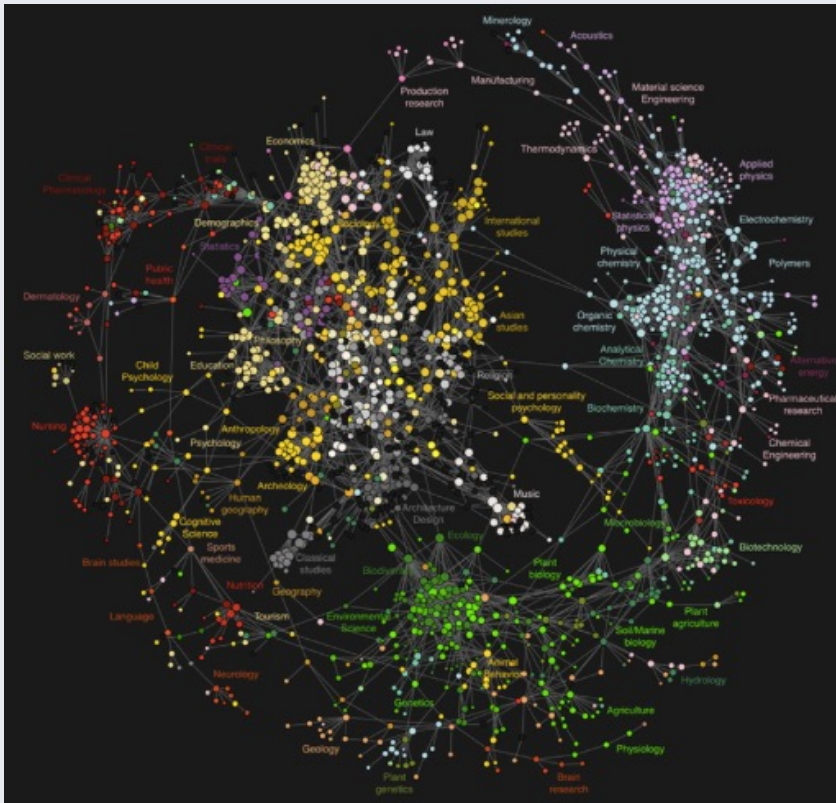
‘credit where credit is due’

- Authorship taxonomy
- Microattribution  
(figure level authorship)
- Digital identifiers
- Balanced co-first authorship



# Alternative Metrics


- Webstats
- Social media
- Reference sharing



# Article level metrics

- Balance journal metrics
- 'Real time'
- Risk developing additional flawed metrics

Article level metrics [Return to article](#)



This page shows you the mentions made of a scholarly article online, who made them and why. Click on the different tabs to see information on mentions in different places, or the "track this article" link in the left hand sidebar to get email updates. Want to learn more? [Read our FAQ](#)

News Blogs Twitter Score Demographics Help

So far Altmetric has seen **10** stories from **8** outlets.

SCIENCE WORLD REPORT [Scientists Discover Phosphate-Rich Foods May Cause High Blood Pressure and Heart Disease](#)

Score in context



# A more meaningful JIF

- Eliminating three decimal places
- Assigning the same rank to journals with the same value
- Displaying a distribution of citations for each journal
- Median values
- Separate metrics for research articles and reviews
- Transparency
- Subject based binning of journals.



The screenshot shows the top portion of a news article on the Nature website. The header features the 'nature' logo in white on a dark red background, with the tagline 'International weekly journal of science' below it. A navigation bar contains links for Home, News & Comment, Research, Careers & Jobs, Current Issue, Archive, and Audio & Video. Below this is a breadcrumb trail: News & Comment > News > 2015 > February > Article. The article title is 'Transparency promised for vilified impact factor' in large black font. The sub-headline reads: 'Thomson Reuters vows to be clearer about how science's most misused metric is calculated.' The author's name, 'Richard Van Noorden', is listed below. The date '29 July 2014' is at the bottom left of the article content area.

**nature** International weekly journal of science

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

News & Comment > News > 2015 > February > Article

NATURE | NEWS

## Transparency promised for vilified impact factor

Thomson Reuters vows to be clearer about how science's most misused metric is calculated.

**Richard Van Noorden**

29 July 2014

# Four things that can change now

## Citation culture

- cite primary literature where appropriate
- unlimited, OA reference lists

## Report diverse metrics, Improve JIF

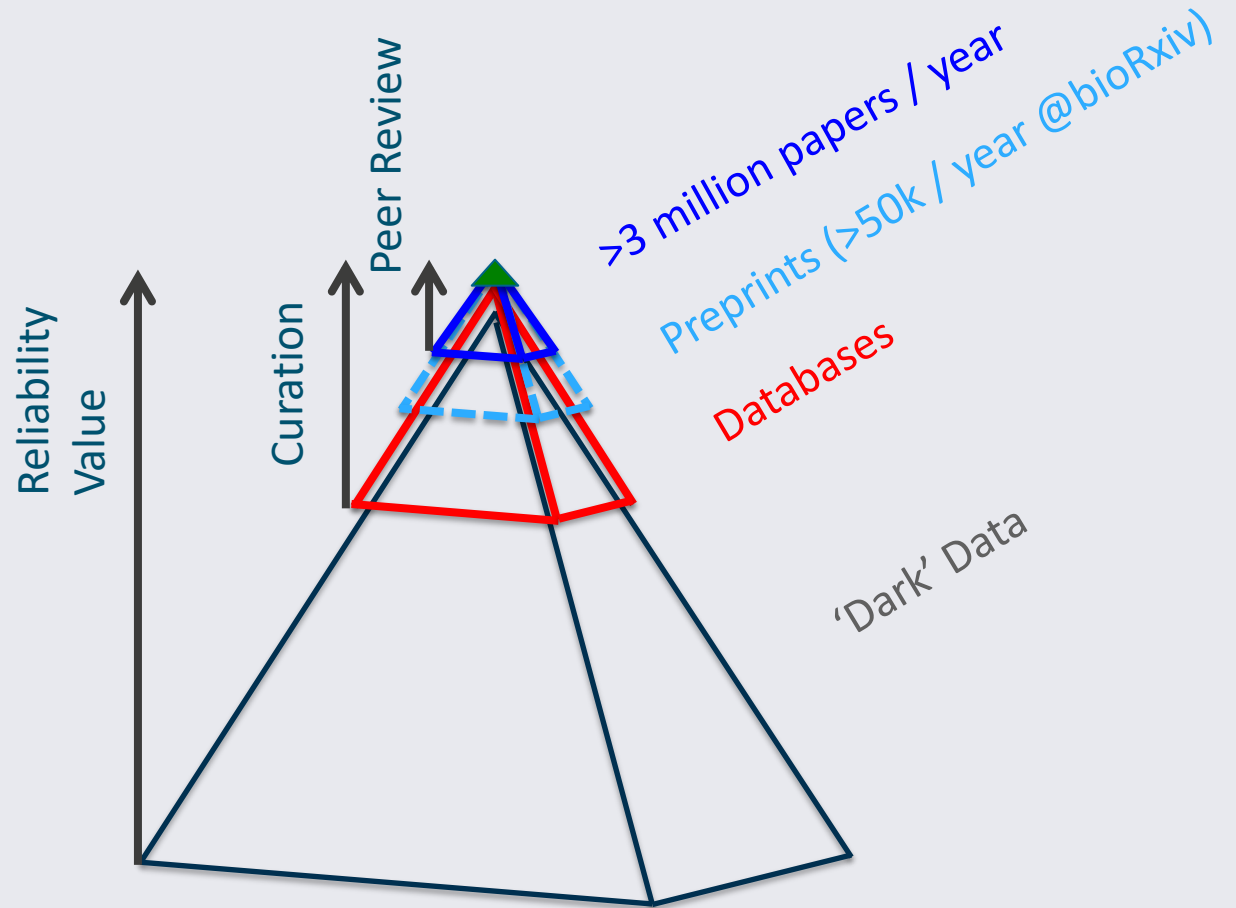
## Assess research output irrespective of journal name or JIF

- scientists nominate their 5 most significant papers
- scientists describe their contributions

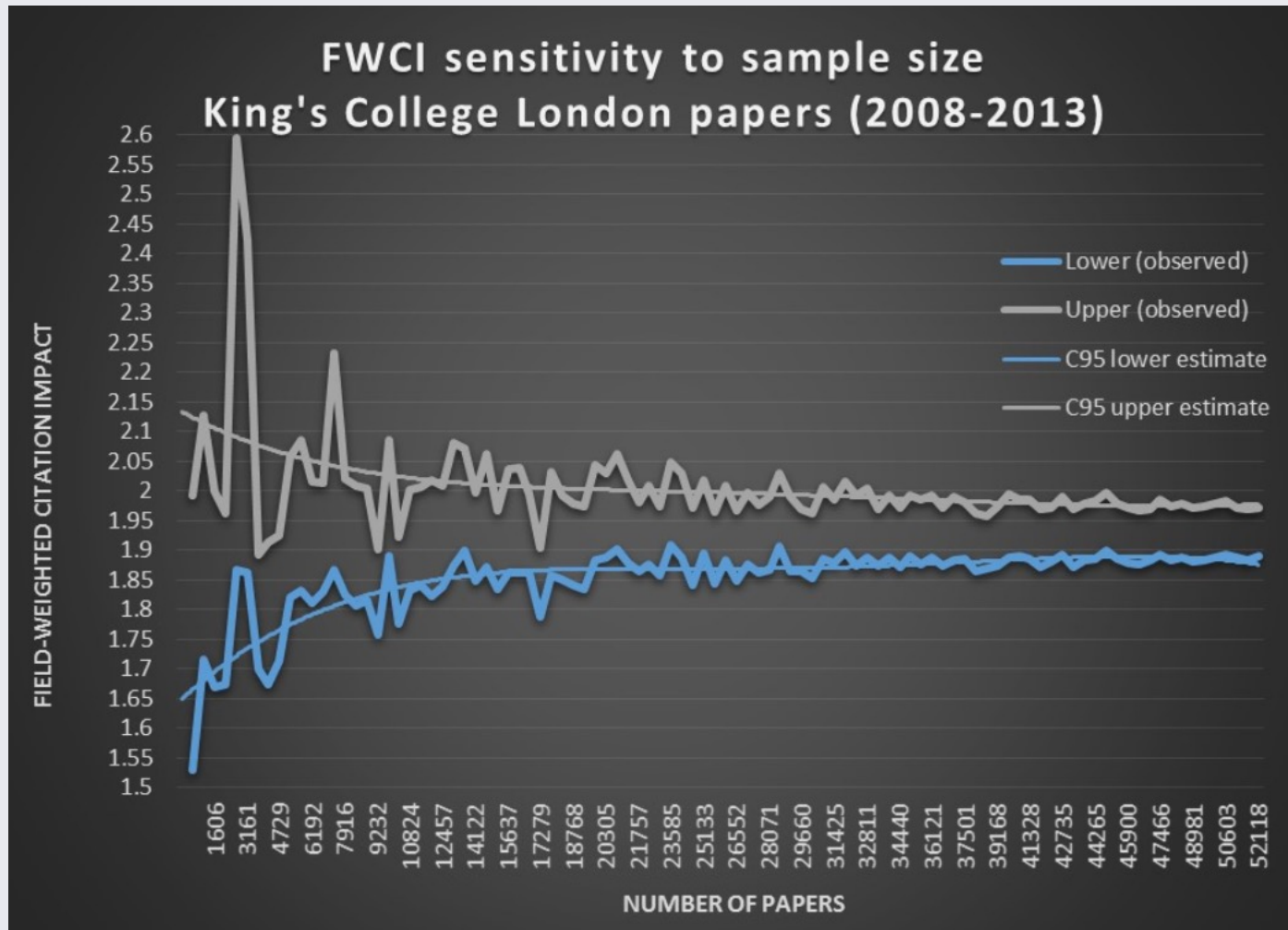
## Incentivize peer review

- reduce reviewing load > portable peer review
- 'academic credit'
- funders mandate review

# Sustainable Open Science







<https://thebibliomagician.wordpress.com/2017/05/11/scivals-field-weighted-citation-impact-sample-size-matters-2/>