Open Science, research assessment and DORA: Re-engineering the measures of success

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OAI11 - Innovations in Scholarly Communication | Geneva | June 2019
Take-home message

It will be impossible to implement Open Science harmoniously without a large, significant and determined consensus on new ways to evaluate research and researchers.
• widespread tissue and cell death
• brain shrinkage
• impaired cognition & motor functions, hyperactivity, seizures
• retinal lesions in one third of cases
• may need lifelong intensive care
Science is too late to help Aryanna, but...

News | 10 February 2016

Sharing data during Zika and other global health emergencies

We're joining over 30 global health bodies in calling for all research data gathered during the Zika virus outbreak, and future public health emergencies, to be made available as rapidly and openly as possible.
Why the Wellcome initiative is necessary: research assessment works *against* the public interest

Advert for a postdoctoral position, June 2019

dissemination of research results in papers and presentations. It is also essential that you can work in a team, as well as independently. A specific requirement for this position is to have published as main author or co-author (at least one journal article) in a high-impact journal (impact factor above ten, e.g., Nature, Science, Nature Communications, PNAS, Sustainability, Nature Climate Change, PNAS, Environmental Science, etc.). Applications not meeting this requirement will get a rejection.
We need to assess research but how to define success?

“Don’t aim at success [...] for success, like happiness, cannot be pursued; it must ensue, and it only does so as the unintended side-effect of one’s dedication to a cause greater than oneself...”

Viktor Frankl
“I wish I’d had the courage to live a life true to myself, not the life others expected of me.”

From ‘The top five regrets of the dying’ by Bronnie Ware
What others expect of academia

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The Times Higher Education World University Rankings

**World University Rankings 2013-2014**

1. California Institute of Technology (Caltech) - United States - 94.9
2. Harvard University - United States - 93.9
3. University of Oxford - United Kingdom - 93.9
4. Stanford University - United States - 93.8
5. Massachusetts Institute of Technology (MIT) - United States - 93.0
6. Princeton University - United States - 92.7
7. University of Cambridge - United Kingdom - 92.3
8. University of California, Berkeley - United States - 92.3
9. University of Chicago - United States - 87.8
10. Imperial College London - United Kingdom - 87.5
11. Yale University - United States - 87.4
12. University of California, Los Angeles (UCLA) - United States - 86.3
It’s easy to criticise metrics but important to get the message across...

Evaluation based on journal metrics reduces productivity
  • JIF chase slows publication
  • Positive bias in the literature (no place for sharing negative results)

Metric-driven hyper-competition in which only the *result* matters:
  • incentivises fraud
  • undermines reliability & public trust

Focus on research outputs devalues other important academic activities

Painful consequences for researchers:
  • stress, anger, envy

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Sick of Impact Factors

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.

...but the move to openness worries researchers

“I’m all in favour of open access/science but…”
- what about my career?
- what about the learned societies?
- what about the cost?
- what about predatory journals?

System vs Greater Cause

“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 need to talk about how open science can be better science

Preprints:
- faster communication
- focus on the content, not the container
  (= valuable groundwork for journal-independent evaluation)
- largest possible audience: sharing + scrutiny = reliability
  (same applies to OA papers)

Encourages open peer review

Data sharing is a natural off-shoot (more scrutiny & reliability benefits)

Better for changing the world (utility & impact; e.g. Zika crisis)

Adoption need to be incentivised…
DORA: the declaration

One general recommendation:

**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.

17 positive recommendations for different stakeholders:

- funders
- institutions
- publishers
- data providers
- researchers

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**For institutions:**

4. **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.

5. 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.

https://sfdora.org/read/
DORA: the campaign

San Francisco Declaration on Research Assessment

- sfdora.org
- 6 years old; >14,000 individuals and >1400 organisations signed
- International steering group; a global advisory board
- Roadmap for action:
  - 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

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

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, argue Stephen Curry.

Declarations such as DORA are important; credible alternatives to journal impact factors were never meant to be a metric of quality even at some institutions that have signed DORA. Stories percolate 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 address local issues.

There have been many calls for something better, including the Leiden Manifesto and the UK report ‘The Metric Tide’ , both released within the JIF-dependent managerialism of modern science.

Stories percolate 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 address local issues.

Thousands of individuals and hundreds of research organizations now disagree and have signed up. Momentum is building. The number of university signatories has trebled in five years, and more are expected.

Now is a crucial time to study the current state of research assessment procedures, rather than the size of their impact factors. The status quo are more so. True success will mean every institution, research council announced their support. This week, for example, DORA is participating in a workshop at which the Forum for Responsible Research Practices announced its declaration: a call to action for now and the future.

IT'S WORTH EVALUATING, BUT IS IT WORTH IT?

It is time to shift from making declarations to finding solutions. We have to get beyond complaining, to find ways to forestall problems. We need to be mindful of the damage wrought by the current system.

This is hard stuff: we need frank discussions that grind through details, with researchers themselves, to find out what works and to address local issues.

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 at scientific meetings; we will also make regular reports and blog posts. The Declaration on Research Assessment is a rallying point for a movement that needs to gather momentum. DORA is not the end point of anything, but a beginning.

DORA

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 ➔
Practical new tools and processes for evaluation

Evaluating research and researchers is hard

Structured narratives can help:
- Concise (time-efficient)
- Broaden the criteria of evaluation
- Create space for qualitative information to capture context and complexity

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

Charité University Hospital, Berlin
- Scientific contribution to your field
- Your 5 most important papers
- Contribution to open science
- Your most important collaborations
Practical new tools and processes for evaluation

DORA session at AAAS (Feb 2019)

DORA session at ASCB | EMBO (Dec 2018)

Research Assessment: Reducing bias in the evaluation of researchers

A workshop run by DORA identified a number of ways to reduce bias in hiring and funding decisions.

By Anna Hatch (DORA), Veronique Kiermer (PLOS), Bernd Pulverer (EMBO), Erika Shugart (American Society for Cell Biology), and Stephen Curry (Imperial College London)

Introduction

Hiring and funding decisions influence academic research agendas. They also shape priorities of the scientific workforce, which in turn influence the direction of research overall.
We need to assess research but how should we define success?

Reliable, rapidly communicated, accessible, high-quality research that transforms our understanding of the world and can change it for the better.

Researchers who collaborate, who feel a duty of care to group members & colleagues, and a responsibility to the societies of which they are an integral part.

A research system that values the people within it, that cares about their quality of life, and that seeks out the creative vigour of diversity.

https://en.wikipedia.org/wiki/File:Dr_Sadhna_Joshi_and_Research_Group.jpg
How do we get there?

“Governing by numbers is the last resort of a country that no longer knows what it wants, a country with no vision of utopia.

“If we want to change the world, we need to be unrealistic, unreasonable, and impossible.”
“We yearn for frictionless, technological solutions. But people talking to people is still how the world’s standards change.”

Atul Gawande
Thank you