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

Stephen Curry
Trinity College Dublin | 18 Sept 2019
Today’s business...

Research Impact & Evaluation in an Open Scholarship Era

“DORA, Funding Agencies & Research Culture”

WEDNESDAY, 18 SEPTEMBER 2019
09:00 – 14:00
Neill Lecture Theatre, Trinity Long Room Hub
Supported by the Wellcome Institutional Strategic Support Fund

Unboxing Open Scholarship

‘When a measure becomes a target it ceases to be a good measure’ – Goodhart’s Law

#TCDResearchImpact #UnboxingOpenScholarship
Today’s business...
Today’s business...

Key Questions

Why is openness linked to reform of research evaluation?

(Research Impact, Evaluation, Open Scholarship, DORA)
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Why is openness linked to reform of research evaluation?
(Research Impact, Evaluation, Open Scholarship, DORA)

Why is openness linked to moves to bring equality, diversity and inclusion to the core of our thinking?
(Funding Agencies, Research culture)
Aryanna with her mother Maria

Image: https://ro.wikipedia.org/wiki/Virusul_Zika#/media/Fișier:Bebê_com_microcefalia_02.jpg
Aryanna with her mother Maria

- widespread tissue and cell death
- brain shrinkage
- impaired cognition & motor functions, hyperactivity, seizures
- may need lifelong intensive care
We have allowed scholarly publishing to come into opposition to the public interest

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.
We have allowed scholarly publishing to come into opposition to the public interest.

“our research ecosystem provides no incentives for publishing reliably, rapidly or openly – all features that one might hope to see in a system that works effectively. Despite a decade or more of talk about open access, [...] we are still mired in technical and cultural debates that – to our shame – remain largely internal to the ivory tower.”
No-one meant for this to happen, but it is a problem we have to solve

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
  • devalues other important academic activities – and academics
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“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 re-imagine how we do research

Why we need to reimagine how we do research

Jeremy Farrar
Director
Wellcome

The emphasis on excellence in the research system is stifling diverse thinking and positive behaviours. As a community we can rethink our approach to research culture to achieve excellence in all we do.

The relentless drive for research excellence has created a culture in modern science that cares exclusively about what is achieved and not about how it is achieved.

People tell me about instances of destructive hyper-competition, toxic power dynamics and poor leadership behaviour – leading to a corresponding deterioration in researchers’ wellbeing. We need to cultivate, reward, and encourage the best while challenging what is wrong.

We know that Wellcome has helped to create this focus on excellence. Our aim has rightly been to support research with the potential to benefit society. But I believe that we now also have an important role to play in changing and improving the prevailing research culture. A culture in which, however unintentionally, it can be hard to be kind.

https://wellcome.ac.uk/news/why-we-need-reimagine-how-we-do-research

10 September 2019
We need to talk about how **open** science can be **better** science

**Preprints**: faster communication

Focus on the content, not the container (journal)

Encourages **open peer review**

**OA**: Worldwide audience (sharing + scrutiny = reliability)

**Data sharing**: re-use & scrutiny benefits (reliability)

Better for changing the world (impact; *e.g.* zika crisis)
Open science is not just about sharing papers and data…

Open access: the beast that no-one could – or should – control?

Stephen Curry

‘The main thing, it seems to me, is to remember that technology manufactures not gadgets, but social change,’ declared science historian and broadcaster James Burke in a lecture given in 1985 (Burke, 2005). This was several years before the rise of the personal computer and the internet. But history’s knack of repeating itself means that the words are no less true of the digital transformation of the world in the last two decades. The recasting of information into digital forms that can be replicated and transmitted instantly across the globe has changed our relationship with it in myriad ways. This poses commercial

How should the academy think about democratic accountability?
- freedom and responsibility

How open is the academy for public inquiry – and involvement
- e.g. patient groups, environmental action, citizen science
Openness as *inclusion*

The Curtin Open Knowledge Initiative (COKI)

Universities exist to support the creation and transfer of knowledge. Efforts by universities to enable open knowledge have the potential to broaden the impact of higher education and research institutions. Our team is exploring the mechanisms that will allow universities to work more effectively with local and global communities in the production of knowledge; as well as those that support its uptake and application both within and beyond academia.

Open access and open science raise issues surrounding:

- North vs South (global economic inequalities)
- Who gets in to the academy (equality, diversity and inclusion)?
- Who gets to decide what research questions to ask?

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https://www.opencon2018.org/whats_next_for_opencon
A brief history of research assessment reform...

May 2013
San Francisco
DORA
Declaration on Research Assessment
https://sfdora.org

Mar 2015
The Leiden Manifesto for research metrics
http://www.leidenmanifesto.org

Jul 2015
The Metric Tide
UK Forum for Responsible Research Metrics
https://zenodo.org/record/546100#.XKESdy2ZPOQ

May 2017
Untangling Academic Publishing
A history of the relationship between commercial interests, academic prestige and the circulation of research
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

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; >14,500 individuals and >1500 organisations have 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
How did Imperial come to sign DORA?

Impact factors declared unfit for duty
Posted on May 16, 2019 by Stephen

Regulars at this blog will be familiar with the dim view that I have of impact factors, in particular their mis-appropriation for the evaluation of individual researchers and their work. I have argued for their elimination, in part because they act as a brake on the roll-out of open access publishing but mostly because of the corrosive effect they have on science and scientists.

James Stirling
Provost

Chris Banks
Director of Library Services

Nick Jennings
Vice Provost (Research)

Chris Jackson
Professor, Earth Sciences & Engineering
How did Imperial come to sign DORA?

Imperial College professor Stefan Grimm ‘was given grant income target’

Emails with manager reveal details of review placed on academic found dead in September

December 3, 2014
By Chris Parr
Twitter: @ChrisParr

A researcher at Imperial College London who was found dead in September had been told he was “struggling to fulfil the metrics” of a professorial post at the March to Stefan Grimm, a sociologist in the Faculty of Science, who died on 25 May 2014, has revealed details of his work process, which included an “attributable share” of £200,000 per year in research funding and being a programme grant as principal investigator in the following 12 months.
How did Imperial come to sign DORA?

Imperial College professor Stefan Grimm ‘was given grant income target’

Emails with manager reveal details of review placed on academic found dead in September

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university, who died on 25 March last year, of a line in the details of his death: “struggling to fulfil the metrics” of a professorial post at the
research income of £200,000 per year in research funding and begin one programme grant as principal investigator in the following 12

Application and Consistency of Approach in the Use of Performance Metrics
A report by the Associate Provost [Institutional Affairs]

December 2015

1. Introduction

1.1 In their review of performance management policies at the College, which was presented at Provost’s Board in February 2015, the Director of HR and the (then) Senior Consul noted that: “... a number of concerns were raised ... about the application and consistency of approach in the use of performance metrics in academia and in the College.”

As a result, the Provost asked the Associate Provost [Institutional Affairs] to convene a small team to undertake a review of the application of performance metrics for academic staff at Imperial College, the recommendations to be submitted for consideration by Provost’s Board. It was subsequently agreed by the Provost to restrict this review to academic staff (Lecturers, Senior Lecturers, Assistant Professors, Associate Professors, Readers and Professors) and to consider other academic researchers (PDRAs, Research Fellows and perhaps others), who are of major importance to the College but who nevertheless have their own (and different) concerns, at a later date.
Imperial signed DORA in 2017: then what?

- College signed DORA in Jan 2017
- DORA implementation working group convened
- Report approved in Dec 2017
  - Changed language in adverts, job descriptions, and guidance on hiring, promotion & funding procedures
  - Communication: workshop

“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.”

Imperial signed DORA in 2017: then what?

https://youtu.be/lpKyN-cXHL4

One-day workshop: Mapping the Future of Research Assessment at Imperial (Sept 2019)
We are not alone...

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”.

Researcher assessment at UMC Utrecht - the biosketch

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

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.
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 impacts research assessment.

DORA: building and promoting new tools and processes for evaluation

DORA session at ASCB|EMBO (Dec 2018)

DORA session at AAAS (Feb 2019)

More info & ideas at: https://sfdora.org/
The view from Europe


Evaluation of Research Careers fully acknowledging Open Science Practices

Rewards, incentives and/or recognition for researchers practicing Open Science

The conclusion is actually simple: the evaluation of research is the keystone, and it has already been identified by scholars around the world, and by various expert groups within the European Commission, as structuring a global research architecture characterised by an unlimited quest for rankings. The ranking imperative affects all levels of the research structure, and it tends to constrain change for nearly all actors. This is true of individual researchers, of research groups, of whole research institutions, and even of whole countries. Symmetrically, publishers design their marketing strategies around journal rankings. But they too have become prisoners of this strategy, even though they benefit from it, and they have difficulties seeing beyond it.

Funding agencies also use rankings, sometimes abundantly. However, unlike the other actors, private funding charities are not ranked, and public, national, funders are ranked only indirectly, through their own country. As a result, funders in general enjoy more latitude than the other actors in scholarly communication and publishing. The European
Plan S and research evaluation

“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/

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

_Rutger Bregman_
How do we get there?

“How do we get there?”

“We yearn for frictionless, technological solutions. But people talking to people is still how the world’s standards change.”

Atul Gawande

http://www.newyorker.com/magazine/2013/07/29/slow-ideas

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

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Rutger Bregman
Tim Berners Lee at the London Olympics Opening Ceremony (2102)
Thank you

s.curry@imperial.ac.uk
@Stephen_Curry
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...
We need to assess research and researchers 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

https://commons.wikimedia.org/wiki/File:Viktor_Frankl2.jpg
Lessons from Brexit: We have to go public. We have to be open.

“People in this country have had enough of experts.”
Michael Gove, MP

“One reason there is not enough truth in the public square is that we have taken academia's contribution in scholarly journals and locked it up behind paywalls where the rest of the world cannot see it. That simply has to end, not because of a moral crusade but because we need that truth, out in the open, fighting for us.”

William Cullerne-Bown
https://research.unity.ac/content/rr/S1gKZQaAI
We have to go public. We have to be open.

“Take a look at the March for Science... When I looked through the hand-made banners on display, I could find not one with the capacity to reach out to the people who voted for Brexit and Trump and change how they think. Steve Bannon will have looked out of his window in the White House and laughed. This is a movement that doesn't yet understand where it fits in and how to effect change, and the single biggest thing in its way is science's own view of itself as disconnected from the wider spirit of inquiry that pervades the West.

William Cullerne-Bown

https://research.unity.ac/content/rr/S1gKZQaAl
A new politics of hope

“We need to begin to tell stories that frame politics around genuine appreciation and social recognition for contributions to the common life and to collective well-being that go beyond how the market rewards you and how the market defines the value of your contribution.”

Michael Sandel
Dec 2018

https://www.youtube.com/watch?v=LCZhA-_1n4E
We need to assess research but how should we define success? (Real world...)

“much of the problem can be traced back to a **bald-faced but beautiful lie** upon which rests the political and cultural power of science. [...] It goes like this:

*Scientific progress on a broad front results from the **free play of free intellects**, working on **subjects of their own choice**, in the manner dictated by their **curiosity** for exploration of the unknown.*

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**Saving Science**

Science isn’t self-correcting, it’s self-destructing. To save the enterprise, scientists must come out of the lab and into the real world.

*Daniel Sarewitz*

*Sarewitz’s article and responses –* [https://www.thenewatlantis.com/publications/must-science-be-useful](https://www.thenewatlantis.com/publications/must-science-be-useful)
Or a focus on better training of research leaders...?

Myth-busting the military: what academia could learn

Nadia Soliman

Disclaimer: the opinions within this presentation are my own and are in no way a value judgment on Imperial College London, any other academic institution or the British Army and the Ministry of Defence

https://www.youtube.com/watch?v=b2sgp7Kjjy8

See also: https://www.imperial.ac.uk/news/190447/from-british-army-imperial-phd Student/
Vision, Mission and Values

Human civilisations have been shaped by their ability to generate and use knowledge. Knowledge is a cultural good and applying it wisely is vital to our health, wealth, wellbeing and resilience.
OKI - aligned with UKRI

Foundations for excellent research and innovation

To achieve our vision, we need to get the foundations right.

We will focus on four key areas:

- **Leading talent**: Nurturing the pipeline of current and future talent
- **A trusted and diverse system**: Driving a culture of equality, diversity and inclusivity providing the best opportunities for individuals and teams of people from all backgrounds to thrive
- **Openness and transparency**: Supporting the development of a research and innovation system that is accessible, transparent and cooperative
- **Research culture**: Promoting the highest standards of research, collaboration and integrity

- Nurture people
- Include everyone
- Open to collaboration
- A culture of integrity and quality
OKI - our public contract...

Wellcome updates open access policy to align with cOAlition S

Following a large consultation, we have updated our open access (OA) policy so it now aligns with Plan S. The changes will apply from 1 January 2021.
There will be conflict - we have to try to be constructive

“What does [...] constructive conflict require? Well, first of all, it requires that we find people who are very different from ourselves. [...] We have to seek out people with different backgrounds, different disciplines, different ways of thinking and different experience, and find ways to engage with them. That requires a lot of patience and a lot of energy.

And the more I’ve thought about this, the more I think, really, that that’s a kind of love. Because you simply won’t commit that kind of energy and time if you don’t really care.”

Margaret Heffernan
Aug 2012

https://www.youtube.com/watch?v=PY_kd46RfVE