The changing landscape of research metrics

Professor Stephen Curry
Imperial College London
Measurement (and metrics) have their uses...
...but where are the limits?

The *Times Higher Education* World University Rankings

World University Rankings 2013-2014

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<th>Rank</th>
<th>University</th>
<th>Country</th>
<th>Score</th>
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<td>1</td>
<td>California Institute of Technology (Caltech)</td>
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Metrics and the academy

San Francisco
DORA
Declaration on Research Assessment

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

ELLEN HAZELKORN
Rankings and the Reshaping of Higher Education
The Battle for World-Class Excellence
2ND EDITION

Sick of Impact Factors
Posted on August 13, 2012 by Scully

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.

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

My Word

The mismeasurement of science
Peter A. Lawrence

Answer from the hero in Leo

San Francisco
DORA
Declaration on Research Assessment

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


The Metric Tide

Report of the Independent Review of the Role of Metrics in Research Assessment and Management

July 2015

UK HEFCE Metrics Review 2014-15

Chair: James Wilsdon, University of Sussex.

Funders
Dr Liz Allen (Head of Evaluation, Wellcome Trust)
Dr Ian Viney (Head of Evaluation, MRC) – representing RCUK
Dr Simon Kerridge (Director of Research Services, University of Kent)
Dr Steven Hill (Head of Research Policy, HEFCE)

Learned Societies
Professor Richard Jones FRS – representing the Royal Society
Professor Roger Kain FBA – representing the British Academy

Publishers
Sir Philip Campbell (Editor-in-Chief, Nature)

Academics
Dr Eleonora Belfiore (University of Warwick)
Professor Stephen Curry (Imperial College London)
Jane Tinkler (LSE; Parliamentary Office of Science & Technology)

Bibliometricians
Professor Mike Thelwall (University of Wolverhampton)
Professor Paul Wouters (Uni of Leiden)
An open and robust process

- Broad terms of reference
- Open call for evidence, meetings & workshops
- Transparent: inputs & outputs published in real time
- In-depth review of the bibliometrics literature
- Quantitative correlation exercise relating REF outcomes to indicators of research
Main findings

- The description, production and consumption of ‘metrics’ remains contested and open to misunderstanding.

- Peer review, despite its flaws and limitations, continues to command widespread support across disciplines. Metrics should support, not supplant expert judgement.

- Inappropriate indicators create perverse incentives, can be gamed, and may lead to unintended consequences.

- Metrics should be used responsibly: based on open data and used in a context-sensitive manner (e.g. with respect to disciplinary and researcher diversity)
The research community should develop a more sophisticated approach to the contribution and limitations of quantitative indicators. 

_Indicators, not metrics?_
Recommendations: Principles

HE leaders and research funders should develop a clear statement of principles on their approach to research management and assessment, including the role of indicators.
Research managers, administrators, recruiters, promotion panels and researchers should all be mindful of the limitations of metrics/indicators.
Recommendations: Transparency

Data providers, producers of university rankings and publishers should strive for greater transparency – acknowledge limitations and uncertainties, and provide access to the data.

Research information should be open and trustworthy.
Gender issues

...any system of assessment based on total citation numbers (such as an h-index) was likely to **favour more established researchers**

...need to **humanise** the metrics debate (context is paramount)

Consideration should be paid to the **potential to change** systemic and researcher behaviours...

For early-career researchers, **metrics can shape** the character of academic practice.
Finally... some thoughts

 Trouble with good intentions: “Pretty curious” (EDF); “Science: it’s a girl thing!” (EU)

 Trouble with girls – and social media: “It was an unbelievably stupid thing to say. You can see why it could be taken as offensive if you didn’t know Tim…”

 Trouble with perception: In 1990, 14% of crystallographers were female; some reckoned field to be “saturated with women”.

 Trouble with majorities: Men have to be involved in this issue, but dominant group lacks awareness of the perspective of women’s experiences
Thank you

http://www.hefce.ac.uk/pubs/rereports/Year/2015/metrichtide/Title,104463,en.html