



Accounting for Impact? Researcher theories of bibliometric indicators and the challenge of 'responsible metrics'

Dr. Alexander Rushforth

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**Universiteit
Leiden**

Agenda

- International criticisms and calls to reform science (moving ‘beyond bean counting’). c.2012-2013
- Research on scientists’ uses of metrics in everyday decision-making
- Recent turns to ‘responsible metrics’



How do scientific and scholarly practices interact with evaluation and performance indicators?

Science 'gone wrong'



Peer review and scientific publishing

Nobel winner declares boycott of top science journals

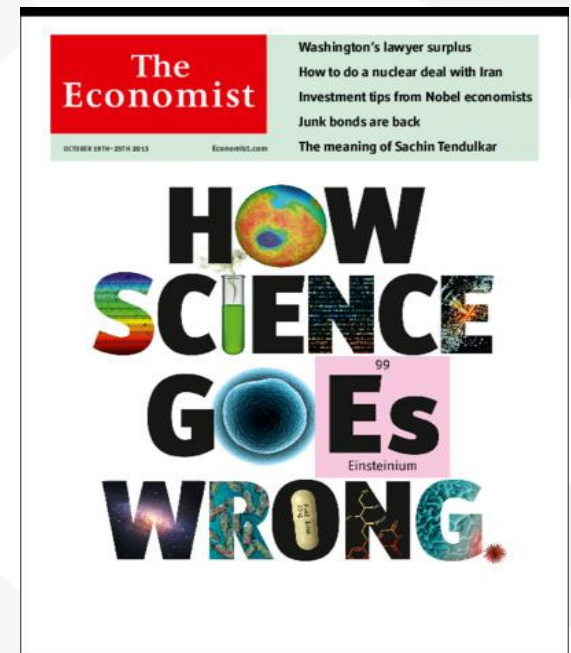
Randy Schekman says his lab will no longer send papers to Nature, Cell and Science as they distort scientific process



Rescuing US biomedical research from its systemic flaws

Bruce Alberts^a, Marc W. Kirschner^b, Shirley Tilghman^{c,1}, and Harold Varmus^d

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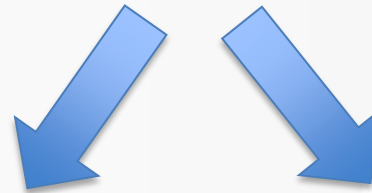
How do scientists' use metrics in their everyday decisions?

“If your IF is above 10, then you enter here. If it’s lower, well... ”





3 research groups
at each institute



Literature review
Document analysis

Interviews
Observations

JIF as predictor for visibility and cite-ability of outputs

“The thing is we published data in journals with 2 or 3 impact before, they may not be bad journals but you are lucky if it gets cited ten times over the years.

So what is the point in sending it there?”

(Fieldnote, conversation with PI, surg. onc.)

Eligibility for winning grants

It used to be different, because the bar was set at four publications as a requirement for the PhD. But then we noticed that the [surgical] PhD students were going for minor papers; "As soon as I have these four papers, I can get my PhD, and then I can go into training, or at least I can apply for a training position." And already, 10 years ago, when we started, we said, "Okay, we have to do this differently, because we're aiming for quality," because **if you're not producing quality, you're not going to get grant money. Nobody's going to give you a grant if you have four papers in an impact factor one journal, but you may get a grant based on a paper that you published in an impact factor 12 journal or higher, right?** And so at that time, we said, "We have to change the requirement for getting the PhD," and now, we set that bar at 15 impact points. So if you get a paper in an impact factor 15 journal, basically, you're done. And we've really noticed a change in that stimulating people for the quality, and go for that one nice paper.

(PI Interview, Surgical Oncology, Institute B)

Assessing work-in-progress manuscripts



Assessing work-in-progress manuscripts

Grading for novelty and quality

PDoc 1: “We have three models. *Journal A* should be possible with these data. But I think we should aim higher.”

Prof: “I don’t like it to go to too many journals.”

PDoc 3: *Journal B?*

Prof: “No, that is too high. If I’d review it I’d say this paper’s a 6.”

PDoc 1: “But they also have other papers on this topic.”

Prof: “But did you see the [amount of] comments [you get back from reviewers]?”

Pdoc 3: “But they are fast right?”

Pdoc 2: “And for a ‘*Journal B*’ paper we might want to do a bit more.”

Prof: “But if you wait too long others will publish on it and the bar will be even higher.”

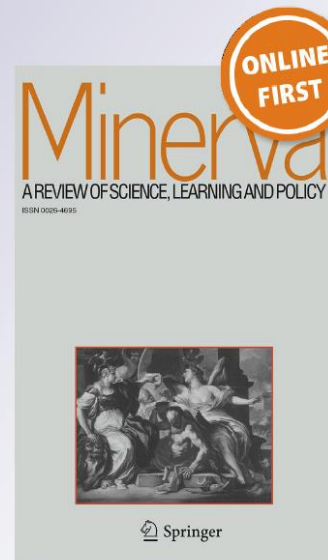
Accounting for Impact? The Journal Impact Factor and the Making of Biomedical Research in the Netherlands

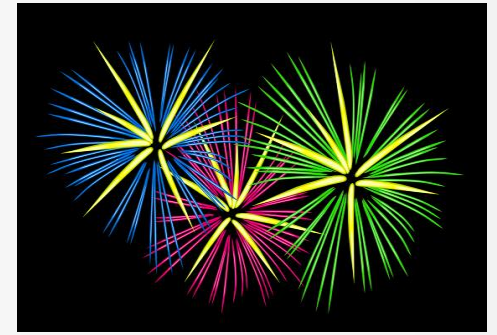
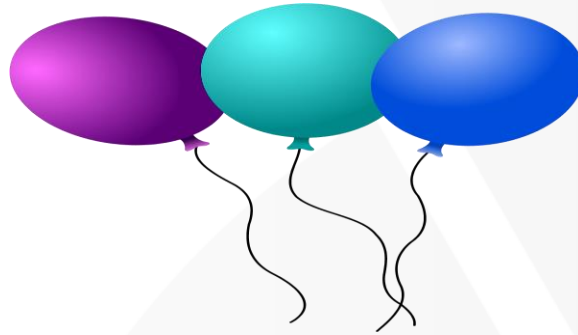
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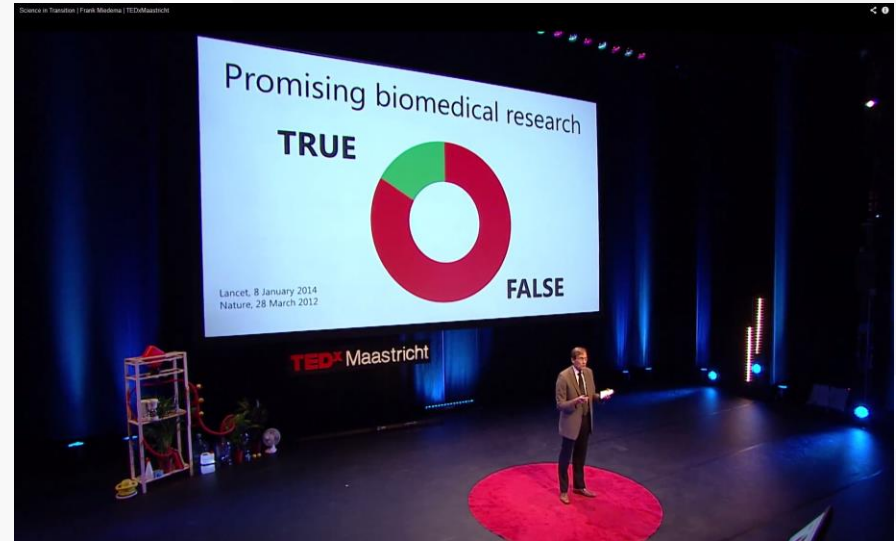




Dear Alex Rushforth,
As you have recently published in Minerva we would like to share the good news with you: The 2015 Impact Factor has just been released (Thomson Reuters Journal Citation Reports® 2016) and the journal has received its **increased Impact Factor of 1.050**. The 2014 Impact Factor was: **0.891**.

We would like to thank you and your colleagues for contributing to this positive development as authors and peer reviewers. Please feel free to share this information with your fellow researchers.

Responses towards metric 'abuses'



Executive summary

Health Council of the Netherlands. Research that makes you better.
A new orientation for umc research. The Hague: Health Council of the
Netherlands, 2016; publication no. 2016/14.

“Research funding is increasingly distributed within UMCs on the basis of performance-related financing. This involves assessments of the functioning of departments and individual researchers largely on the basis of bibliometric data such as citation scores, despite increased criticism of this in recent years. Such scores are also used to set up tenure tracks or to appoint principal investigators, senior university lecturers and professors. This can result in an underappreciation of specialist fields in which publications in journals with a high impact factor are less usual or realistic. It has turned out to be difficult to include the ‘relevance’ of research as a factor in performance-related financing because that aspect cannot easily be expressed numerically.” (page 19)

Programme: **Fostering Responsible Research Practices**

Programme

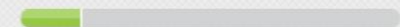
ZonMw has launched a new programme, Fostering Responsible Research Practices (FRRP), to encourage quality, integrity, efficiency and positive social impact in scientific and academic research. We are convinced that sound practices add value to science and to society.

Objectives

FRRP aims to build bridges between science, professional practice and policy by promoting research which is relevant, robust and transparent. It will develop and disseminate useful know-how to improve research-related practices – not just for front-line scientists and institutions, but also for policymakers, financiers and evaluators.

Programme information

Budget: € 2.825.000
Status: In progress
Duration: 2016 2020



Contact information

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The Leiden Manifesto for research metrics



Use these ten principles to guide research evaluation, urge **Diana Hicks, Paul Wouters** and colleagues.

RESPONSIBLE METRICS



5 Principles:

- **Robustness**
- **Humility**
- **Transparency**
- **Diversity**
- **Reflexivity**

Where next?

RESPONSIBLE METRICS

About

The Metric Tide

Bad Metrics

Resources

Contact Us



This site aims to provide a forum for debating responsible uses of metrics in higher education & research.



European Commission

Next-generation altmetrics:
responsible metrics and evaluation for open science

Call for evidence

Thank you

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