

# Panel 1: Teaching, Publishing, Advising – Issues of Quality...

Andrea Saltelli

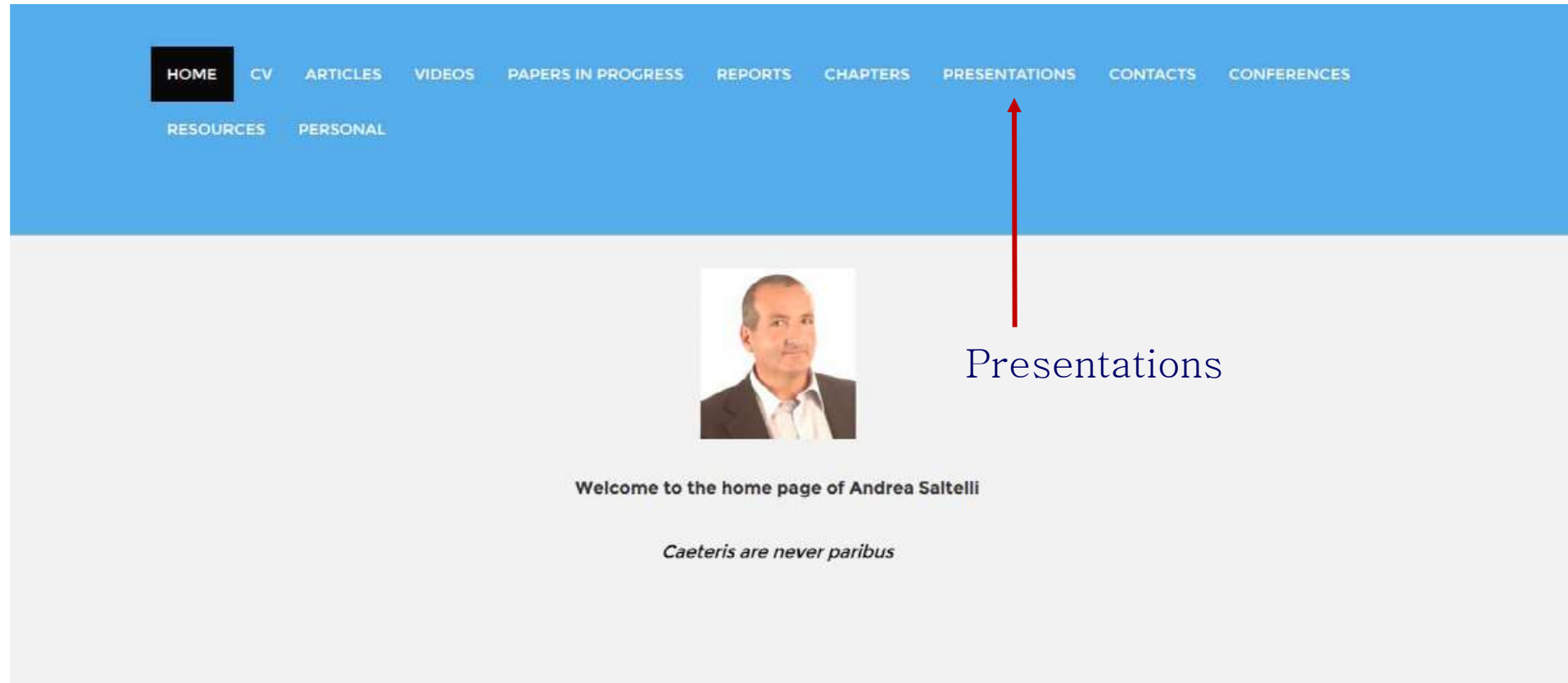
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Humanities (SVT) – University of Bergen (UIB)

&

Institut de Ciència i Tecnologia Ambientals (ICTA) –  
Universitat Autònoma de Barcelona (UAB)

New Currents in Science:  
The Challenges of Quality  
Joint Research Centre,  
Ispra, 3–4 March 2016

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Where to find this presentation

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sensitivity analysis,  
sensitivity auditing,  
science for policy,  
impact assessment, ...

The objective of this panel is to reflect on the issues of quality assurance of policy relevant science that originate in the realms and foundations in which science itself is grounded, such as **peer review**, educational systems

“Springer and Université Joseph Fourier release SciDetect to discover fake scientific papers”

“The open source software discovers text that has been generated with the SCIgen computer program and other fake-paper generators like Mathgen and Physgen [...]”

SciDetect [...] is a valuable building block for the future of academic publishing”

<https://www.springer.com/gp/about-springer/media/press-releases/corporate/springer-and-universit%C3%A9-joseph-fourier-release-scidetect-to-discover-fake-scientific-papers--/54166>





## A call to deal with the data deluge

Researchers debate whether an 'overflow' of data is straining biomedical science.

Chris Woolston

18 September 2015

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As the number of biomedical research papers continues its relentless growth, the quality and credibility of science is buckling under the weight of all the data. That is the conclusion of an [article](#) in the journal *eLife*<sup>1</sup> that triggered discussion online this week. The piece, which is based on interviews with 20 anonymous US senior scientists, suggests a radical rethinking of the peer-review system to deal with the 'overflow' of data. Erik Müllers, a cell biologist at the Karolinska Institute in Stockholm, summed up the issue on Twitter:



Erik Müllers

@AerikM

Follow

Too many journals, too many researchers,  
too low quality: Overflow in [#science](#) and  
its implications for trust [shar.es/17bNjo](https://www.shar.es/17bNjo)  
[@elife](#)



Derek J. de Solla Price's  
prophecy ...

Siebert, S., Machesky, L. M., and Insall, R. H. (2015) Overflow in science and its implications for trust. *eLife*, 4, e10825. (doi:10.7554/eLife.10825)

## Abstract

To explore increasing concerns about scientific misconduct and data irreproducibility in some areas of science, we interviewed a number of senior biomedical researchers. These interviews revealed a perceived decline in trust in the scientific enterprise, in large part because the quantity of new data exceeds the field's ability to process it appropriately. This phenomenon—which is termed ‘overflow’ in social science—has important implications for the integrity of modern biomedical science.

Siebert, S., Machesky, L. M., and Insall, R. H. (2015) Overflow in science and its implications for trust. *eLife*, 4, e10825. (doi:10.7554/eLife.10825)

# How peer reviewers might hold the key to making science more transparent

**theguardian**

## Pete Etchells

Pete Etchells is the Guardian's science blog network coordinator. You can find him on Twitter: @PeteEtchells

Friday 15 January 2016 12.30 GMT

A new initiative published this week outlines how scientists can make a change to open science practices at an individual level



<https://www.theguardian.com/science/head-quarters/2016/jan/15/pro-initiative-peer-reviewers-might-hold-the-key-to-making-science-more-transparent>

# The Peer Reviewers' Openness Initiative: incentivizing open research practices through peer review

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Richard D. Morey<sup>1</sup>, Christopher D. Chambers<sup>1</sup>, Peter J. Etchells<sup>2</sup>, Christine R. Harris<sup>3</sup>, Rink Hoekstra<sup>4</sup>, Daniël Lakens<sup>5</sup>, Stephan Lewandowsky<sup>6,7</sup>, Candice Coker Morey<sup>8</sup>, Daniel P. Newman<sup>9</sup>, Felix D. Schönbrodt<sup>10</sup>, Wolf Vanpaemel<sup>11</sup>, Eric-Jan Wagenmakers<sup>12</sup> and Rolf A. Zwaan<sup>13</sup>

How peer reviewers might hold the key to making science more transparent

A new initiative published this week outlines how scientists can make a change to open science practices at an individual level





The Peer Reviewers' Openness (PRO) Initiative is, at its core, a simple pledge: scientists who sign up to the initiative agree that, from January 1 2017, **will not offer to comprehensively review, or recommend the publication of, any scientific research papers for which the data, materials and analysis code are not publicly available**, or for which there is no clear reason as to why these things are not available. To date, over 200 scientists have signed the pledge.

## How peer reviewers might hold the key to making science more transparent

A new initiative published this week outlines how scientists can make a change to open science practices at an individual level



Brave efforts from individual researchers:

Jeffrey Beall, librarian, University of Colorado, Denver. Monitors predatory open access publishers.



<http://scholarlyoa.com/2015/01/02/bealls-list-of-predatory-publishers-2015/#more-4719>.

“**Misleading metrics** list includes companies that “calculate” and publish counterfeit impact factors [...] The **Hijacked journals** list includes journals for which someone has created a counterfeit website, stealing the journal’s identity and soliciting articles submissions using the author-pays model (gold open-access)”

Brave efforts from within:

Timothy Gowers, mathematician, Fields medalist, boycott of Elsevier, slogans: 'Academic Spring', 'Occupy Elsevier'.



Whitfield, J., 2012, Elsevier boycott gathers pace: Rebel academics ponder how to break free of commercial publishers, Nature, doi:10.1038/nature.2012.10010

Larivière V, Haustein S, Mongeon P (2015) The Oligopoly of Academic Publishers in the Digital Era. PLoS ONE 10(6): e0127502, <http://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0127502>



# Berkeley Initiative for Transparency in the Social Sciences

## Science is “show me,” not “trust me”

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December 31, 2015

Guest post by [Philip B. Stark](#), Associate Dean of the Division of Mathematical and Physical Sciences, UC Berkeley Professor of Statistics, and winner of one of BITSS' [Leamer-Rosenthal Prizes for Open Social Science](#).



<http://www.bitss.org/2015/12/31/science-is-show-me-not-trust-me/>

“**Pledge:** reproducibility and open science would make huge strides if everyone pledged:

A. I will not referee any article that does not contain enough information to tell whether it is correct.

If you are committed, add:

B. Nor will I submit any such article for publication.

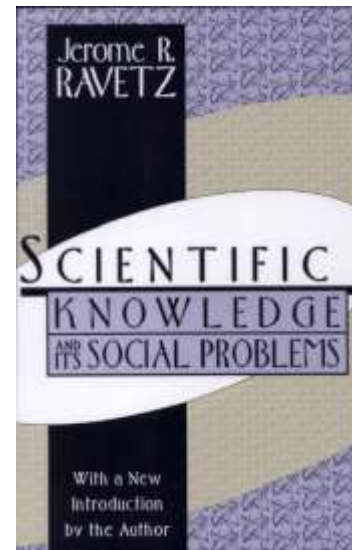
And if you are brave, add:

C. Nor will I cite any such article published after 1/1/2017.



p. 22-23: “Two separate factors are necessary for the achievement of worthwhile scientific results: a community of scholars with a shared knowledge of the standards of quality appropriate for their work and a shared commitment to enforce those standards by the informal sanctions the community possesses; and individuals whose personal integrity sets standards at least as high as those required by their community...”

Ravetz, J., 1971, *Scientific Knowledge and its Social Problems*, Oxford University Press, p.22.





Jerome R. Ravetz

END

# Gaming Metrics: Innovation & Surveillance in Academic Misconduct

## ICIS/CSIS Event

When	Feb 04, 2016 09:00 AM to Feb 05, 2016 03:30 PM
Where	Vanderhoef Studio Theatre / Kalmanovitz Appellate Courtroom
Contact Name	<a href="#">Alexandra Lippman</a>
Add event to calendar	 <a href="#">vCal</a>  <a href="#">iCal</a>

A recent conference:



GAMING METRICS: INNOVATION & SURVEILLANCE IN ACADEMIC MISCONDUCT

UC Davis, February 4-5, 2016

Organized by the Innovating Communication in Scholarship Project (ICIS) with support from the Center for Science and Innovation Studies (CSIS)



Misconduct has traditionally been tied to the pressures of “publish or perish” [⋯ ] Have we moved from "publish or perish" to "impact or perish"? If so, are metrics of evaluation now creating new incentives for misconduct? And can we still reliably draw a clear separation between gaming the metrics game and engaging in misconduct? [⋯] In sum, are new metrics-based forms of misconduct asking us to **rethink and redefine misconduct?**



# WORLD VIEW

*A personal take on events*

JAMES WILSDON



## We need a measured approach to metrics

*Quantitative indicators of research output can inform decisions but must be supported by robust analysis, argues James Wilsdon.*

Metrics:

“[...] only a minority of the scientists we consulted supported the increased use of metrics. [...] the description, production and consumption of metrics remains contested and open to misunderstanding.

[...] but there is legitimate concern that some quantitative indicators can be gamed, or lead to unintended consequences.”

Metrics:

“Borrowing from the Literary Review’s ‘Bad Sex in Fiction’ award, every year we will award a ‘Bad Metric’ prize to the most egregious example of an inappropriate use of quantitative indicators in research management.”

See <https://responsiblemetrics.org/the-metric-tide-report-now-published/>

# The Metric Tide



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

July 2015

[http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/The,Metric,Tide/2015\\_metric\\_tide.pdf](http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/The,Metric,Tide/2015_metric_tide.pdf)

Note: this is part of Research Excellence Framework (REF)

# Against Excellence

theguardian

Jack Stilgoe

Universities are currently agonising about the Research Excellence Framework. **Jack Stilgoe** doesn't have a problem with research assessment. He thinks that the real trouble lies with the word 'excellence'.

Friday 19 December 2014 10:38 GMT

Responsible Research and Innovation (Rome declaration).

Science should be “in the service of big social problems global health, environmental sustainability, and securing food, energy and water supplies.”

“In 1977, economist Richard Nelson posed a question [...]: how is a rich country like America able to put a man on the moon, but is unable to solve the problems of its own ghettos?”

“Excellence is judged by peers and backed up by numbers such as **h-indexes and journal impact factors**, all of which **reinforces disciplinary boundaries** and focuses scientists’ attention inwards rather than on the problems of the outside world. [...] **journal rankings discourage interdisciplinarity** by systematically evaluating disciplinary research more highly.”

<https://www.theguardian.com/science/political-science/2014/dec/19/against-excellence>



Jack Stilgoe

## Solutions from within:

San Francisco declaration, (2012), as of June 2015 signed by 12,000 individuals, and 570 organizations.

“Do not use journal-based metrics, such as Journal Impact Factor, 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.”

Declaration: <http://am.ascb.org/dora/> , drafted by publishers, with separate recommendations for institutions, publishers, organizations that supply metrics and researchers.

Lancet, Editorial, 2015, Rewarding true inquiry and diligence in research, 385, p. 2121.

Wilsdon, J., 2015, We need a measured approach to metrics, Nature, 523, 129.

Ioannidis, J. P. (2014). How to Make More Published Research True. PLoS medicine, 11(10), e1001747.