



DORA and reinventing research assessment

EIFL, Istanbul, November, 2013
Mark Patterson, Executive Director, eLife

Outline

- A few words about eLife
- Research assessment – old and new approaches
- DORA recommendations

Funders taking direct action

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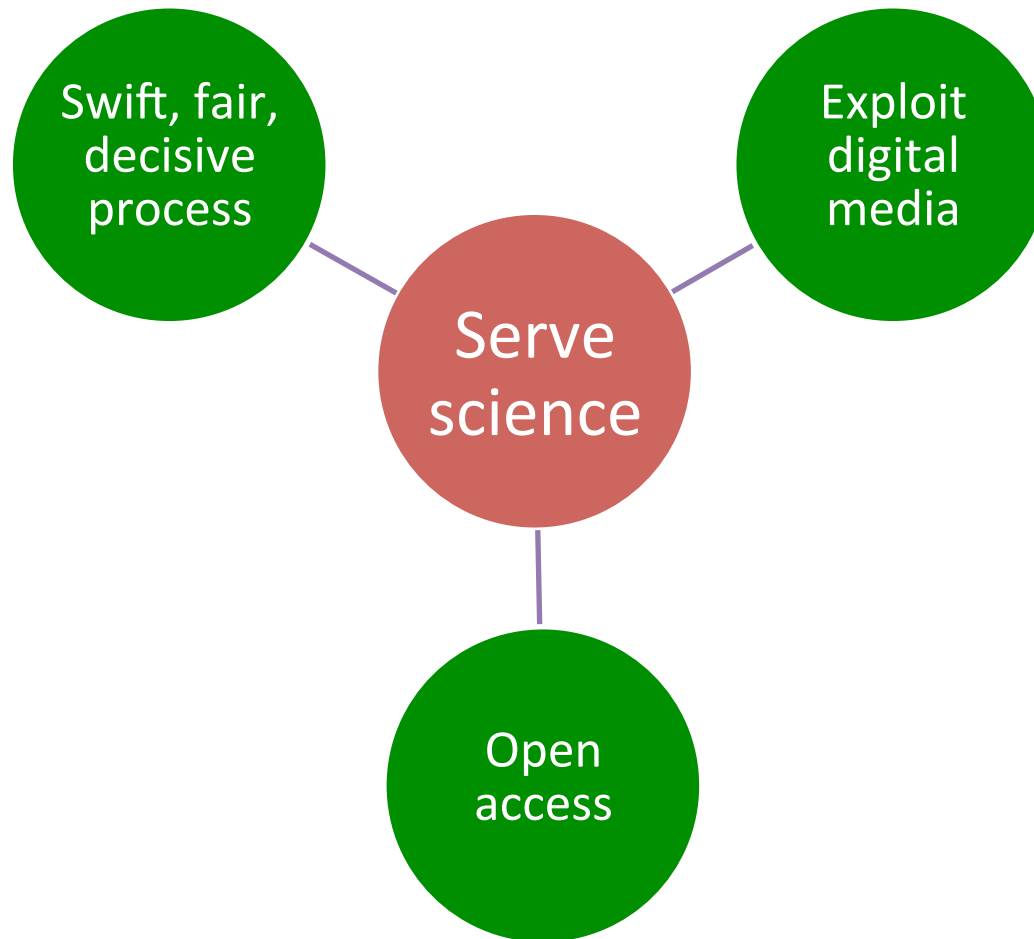
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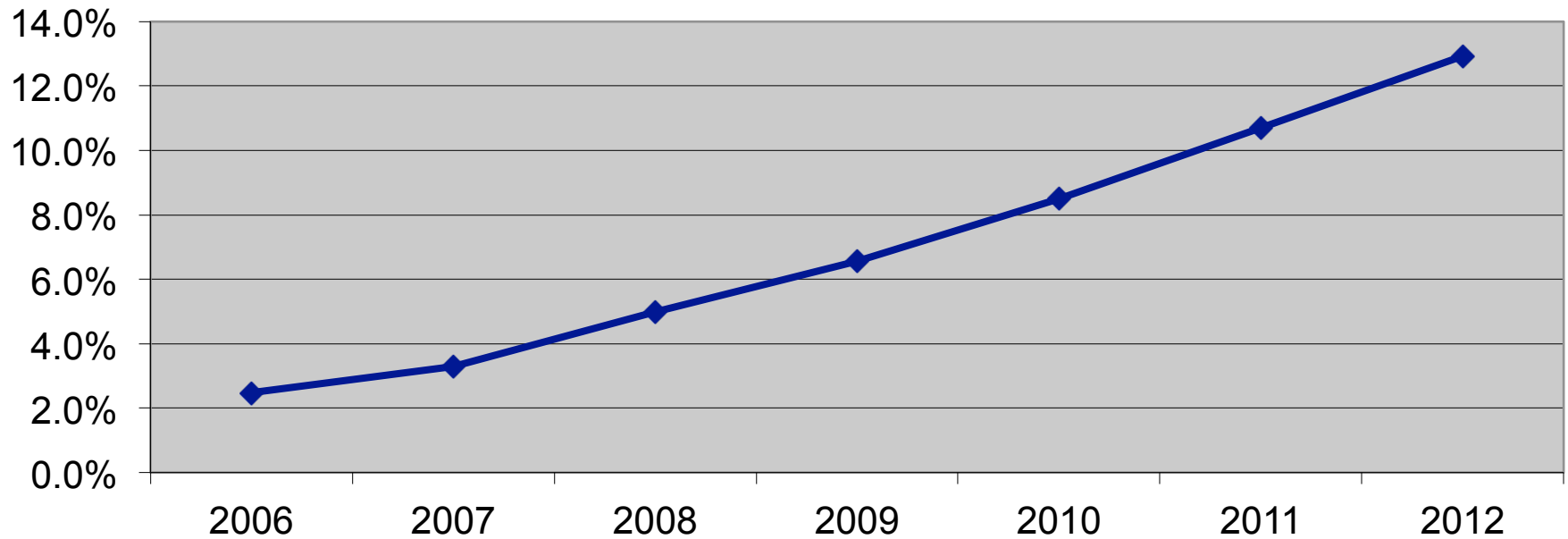
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eLife: motivations



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**Researchers (authors
and readers)**



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Research assessment



Funders

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The public

Policy makers

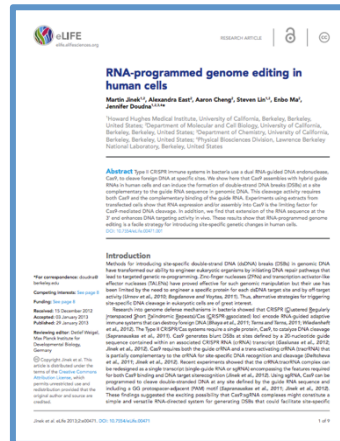


Publishers



Science

What journal?



What impact factor?

The impact factor is...

- a journal-based metric
- proprietary
- incomplete

Unreliable research

Trouble at the lab

Scientists like to think of science as self-correcting. To an alarming degree, it is not

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"I SEE a train wreck looming," warned Daniel Kahneman, an eminent psychologist, in an open letter last year. The premonition concerned research on a phenomenon known as "priming". Priming studies suggest that decisions can be influenced by apparently irrelevant actions or events that took place just before the cusp of choice. They have been a boom area in psychology over the past decade, and some of their insights have already made it out of the lab and into the toolkits of policy wonks keen on "nudging" the populace.

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| doi: 10.3389/fgene.2015.00000

The hidden factors in impact factors: a perspective from Brazilian science

Renata C. Ferreira, Fernando Antoneli and Marcelo R. S. Briones*

Laboratório de Genômica Evolutiva e Biocomplexidade, Departamento de Microbiologia, Imunologia e Parasitologia, Universidade Federal de São Paulo, São Paulo, Brazil

Contrary to all current international recommendations on evaluation of academic achievement the evaluation of graduate programs in Brazil relies heavily on journal impact factors (Garfield, 2006; San Francisco Declaration on Research Assessment, 2013). The governmental agency CAPES from the Education Ministry monopolize this evaluation and pressure programs by the distribution of funding resources and departmental fellowships conditioned to adherence to a journal classification system called “Qualis” which is a discretization of the continuous distribution of journals ranking by their impact factors (Greenwood, 2007). In several institutions the graduate committee authorizes professors to act as thesis advisors only if in a certain period (e.g., 4 years) they publish at least one paper in a journal classified as “Qualis A2.” This classification has seven categories with decreasing impact factor ranges (A1, A2, B1, B2, B3, B4, B5, and C).

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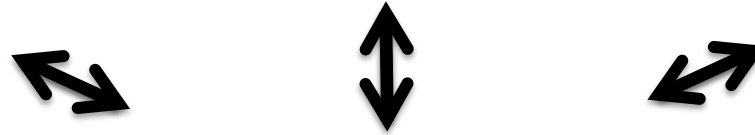
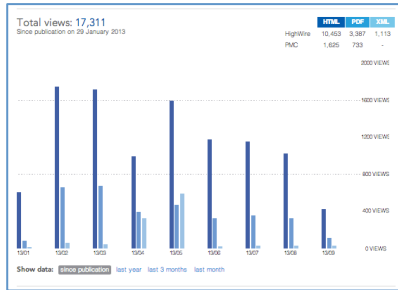


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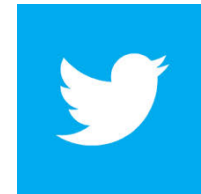
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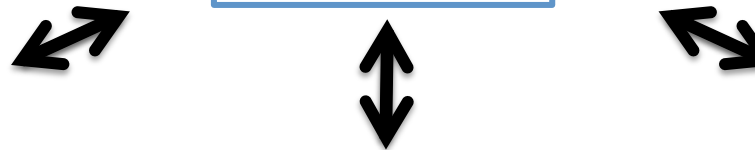
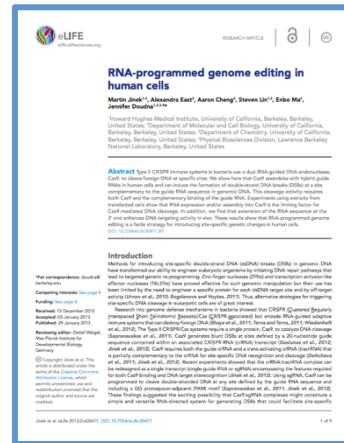
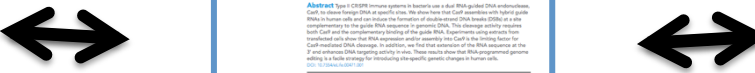
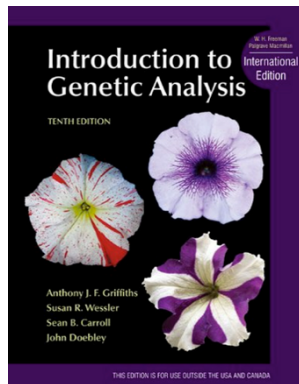
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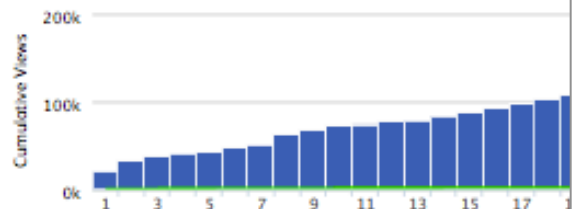
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PLOS	128,893	16,456
PMC	765	453
Totals	129,658	16,909

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BETA

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Organisms | Show reference set

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PKP is a multi-university initiative developing (free) open source software and conducting research to improve the quality and reach of scholarly publishing.

Public Knowledge Project > News > PKP launches Article Level Metrics for OJS journals

PKP launches Article Level Metrics for OJS journals

Published on October 9th, 2013 by Karen Meijer-Kline in News | 4 Comments

The Public Knowledge Project, developer of publishing software used by thousands of scholarly journals continues to be among those leading innovation in scholarly publishing with its introduction of article level metrics (ALMs).

The purpose of ALMs is to provide a more accurate means for measuring the impact of research at the article level rather than the journal level, as is tradition, said Juan Pablo Alperin of PKP. "ALMs have the potential to be a truly valuable tool for both publishers and readers. We urge all journals using our Open Journal Systems (OJS) to [sign-up for the service](#)." PKP's ALM offering is built on an [open source application](#) developed by the Public Library of Science (PLOS) and has been implemented with the guidance and support from PLOS. (See [PLOS blog](#) for their announcement)



[Co-Action Publishing](#), a close partner of PKP and one of its first hosted clients in 2007, is the first publisher to implement the service. "Co-Action's wishes, requirements and feedback have been instrumental in the development and evolution of our publishing platform, and most recently our implementation of ALMs," Alperin said.

Co-Action Publishing Co-founder Caroline Sutton, who has been a leading voice in the OA community for many years, is gratified by the role Co-Action is playing in making a new generation of publishing tools available to OA publishers everywhere. "Together, we're working to develop many tools that can be used and leveraged across the thousands of journals that use OJS. We're excited about what's in the pipeline, and how these new developments will help further academic publishing."

PKP's ALM service is being rolled out on a limited basis. Interested journals can [sign up](#) to be considered for the trial. Journals running the latest

New metrics and indicators of scholarship

- From one measure to many
- From journal to article
- From one output to many

San Francisco

DORA

Declaration on Research Assessment

- **Recommendations for publishers, funders, institutions, metrics suppliers, and researchers**
- **>9000 signatories**

Three themes

- eliminate the use of impact factors in decisions about funding and careers
- opportunities provided by online publication (such as new indicators of significance and impact)
- assess research on its own merits

Funding agencies and institutions

- be transparent about processes
- base judgement on outputs rather than journal names and metrics
- consider multiple outputs/outcomes
- consider multiple metrics and indicators

Taking steps to improve assessment (1)

National Cancer Institute
at the National Institutes of Health

“Varmus wants to replace a section that now lists major publications with a narrative describing the investigator's five major accomplishments.”

Science, 25 October 2013

Taking steps to improve assessment (2)

Sandra L. Schmid, chair of the Department of Cell Biology at the University of Texas Southwestern Medical Center.

“We believe we can recognize excellence that has been missed by journal editors.”

Applicants for faculty positions provide a cover letter describing:

- (1) most significant scientific accomplishment as a graduate student
- (2) most significant scientific accomplishment as a postdoc
- (3) overall goals/vision for their research program
- (4) experience and qualifications that make them able to achieve those goals

Taking steps to improve assessment (3)

No sub-panel will make any use of journal impact factors, rankings, lists or the perceived standing of publishers in assessing the quality of research outputs.

An underpinning principle of the REF is that all types of research and all forms of research outputs across all disciplines shall be assessed on a fair and equal basis.



Publishers

- don't promote the impact factor (ideally)
- provide new metrics and indicators
- make reference lists available as open data
- promote responsible authorship and author contributions

Article

Figures & data

Metrics

Article & author info

Evolutionary principles of modular gene regulation in yeasts

Dawn A Thompson , Sushmita Roy, Michelle Chan, Mark P Styczynsky, Jenna Pfiffner, Courtney French, Amanda Socha, Anne Thielke, Sara Napolitano, Paul Muller, Manolis Kellis, Jay H Konieczka, Ilan Wapinski, Aviv Regev 

Broad Institute of MIT and Harvard, United States; Massachusetts Institute of Technology, United States; Howard Hughes Medical Institute, Massachusetts Institute of Technology, United States

DOI: <http://dx.doi.org/10.7554/eLife.00603>

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[-] Abstract

Divergence in gene regulation can play a major role in evolution. Here, we used a phylogenetic framework to measure mRNA profiles in 15 yeast species from the phylum *Ascomycota* and reconstruct the evolution of their modular regulatory programs along a time course of growth on glucose over 300 million years. We found that modules have diverged proportionally to phylogenetic distance, with prominent changes in gene regulation accompanying changes in lifestyle and ploidy, especially in carbon metabolism. Paralogs have significantly contributed to regulatory divergence, typically within a very short window from their duplication. Paralogs from a whole genome duplication (WGD) event have a uniquely substantial contribution that extends over a longer span. Similar patterns occur when considering the evolution of the heat shock regulatory program measured in eight of the species, suggesting that these are general evolutionary principles.

DOI: <http://dx.doi.org/10.7554/eLife.00603.001>

[+] eLife digest

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Introduction

Divergence in the regulation of gene expression has been repeatedly postulated to play a major

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Correction: Evolutionary principles of modular gene regulation in yeasts

DA Thompson, S Roy, M Chan, MP Styczynski, J Pfiffner, C French, A Socha, A Thielke, S Napolitano, P Muller, M Kellis, JH Konieczka, I Wapinski, A Regev

Correction — *Genomics and evolutionary biology*

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- Discussion
- Materials and methods
- References
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Evolutionary principles of modular gene regulation in yeasts

Dawn A Thompson , Sushmita Roy, Michelle Chan, Mark P Styczynsky, Jenna Pffnner, Courtney French, Amand Socha, Anne Thielke, Sara Napolitano, Paul Muller, Manolis

Sushmita Roy

Broad Institute of MIT and Harvard, Cambridge, United States; Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, United States

Present address: Biostatistics Center, Mathematics, University of Wisconsin-Madison, United States

Contribution: Conception and design, Analysis and interpretation of data

No competing interests declared

Contributed equally with: Dawn A Thompson

Massachusetts Institute of Technology, United States; Howard

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Metrics service providers

- be transparent about methods
- make data open
- consider how to respond to gaming

Metrics service providers



Researchers

- challenge use impact factor in research assessment
- promote assessment on the basis of research content
- use new metrics/indicator to support your own career

Dr Stephen Robert Pettifer

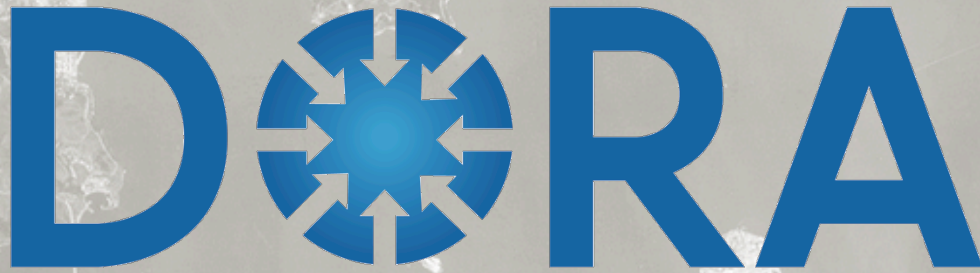
Journal Articles

- J1. A. J. Williams, L. Harland, P. Groth, S. Pettifer, C. Chichester, E. L. Willighagen, C. T. Evelo, N. Blomberg, G. Ecker, C. Goble, and B. Mons. Open PHACTS: Semantic interoperability for drug discovery. *Drug Discovery Today*, 2012. [CS:13,] [Highly Viewed](#) [Highly Discussed](#)
- J2. A. J. S. Gray, P. Groth, A. Loizou, S. Askjaer, C. Brenninkmeijer, K. Burger, C. Chichester, C. T. Evelo, C. Goble, L. Harland, S. Pettifer, M. Thompson, A. Waagmeester, and A. J. Williams. Applying linked data approaches to pharmacology: Architectural decisions and implementation. *Semantic Web Journal*, 2012. [0 citations]
- J3. B. Vroling, D. Thorne, P. McDermott, T. K. Attwood, G. Vriend, and S. Pettifer. Integrating GPCR-specific information with full text articles. *BMC Bioinformatics*, 12(362), Sep 2011. [GS:4] [Highly Saved](#) [Highly Cited](#) [Highly Cited](#) [Highly Discussed](#) ❖
- J4. B. Vroling, D. Thorne, P. McDermott, HJ. Joosten, T. K. Attwood, S. Pettifer, and G. Vriend. Nucleardb: information system for nuclear receptors. *Nucleic Acids Research*, Nov 2011. [GS:2] ❖
- J5. A. Brown, R. Stevens, and S. Pettifer. Making graph-based diagrams work in sound: the role of annotation. *Human Computer Interaction*, 2011. [GS:35]

Summary

- Current methods are poor
- New approaches are possible
- And steadily, improvements are being made

San Francisco



Declaration on Research Assessment

- **Signing DORA is a start, but what happens next?**
- **Further discussion amongst key stakeholders**
- **Identify specific actions**
- **Monitor and report progress**

Thank you

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