

The editor's bookshelf

Please write to annamaria.rossi@iss.it if you wish to send new items or become a member of the EASE journal blog (<http://ese-bookshelf.blogspot.com>) and see your postings published in the journal

ECONOMICS AND FUNDING

Freedman LP, Cockburn IM, Simcoe TS. **The economics of reproducibility in preclinical research.** *PLoS Biology* 2016;13(6):e1002165

Low reproducibility rates within life science research undermine cumulative knowledge production and contribute to both delays and costs of therapeutic drug development. An analysis of past studies indicates that the cumulative (total) prevalence of irreproducible preclinical research exceeds 50% in the United States alone. The authors outline a framework for solutions and a plan for long term improvements in reproducibility rates that will help to accelerate the discovery of life-saving therapies and cures.
doi:10.1371/journal.pbio.1002165

EDITORIAL PROCESS

Banks M. **Peer review under the spotlight.** *Physics World* 2016;29(2):12-13

The article discusses the increasing difficulties facing peer review and various possible solutions including double blind peer review, open peer review and payment of reviewers and other possible ways of creating incentives for reviewers.

Jubb M. **Peer review: the current landscape and future trends.** *Learned Publishing* 2016;29:13-21

This paper catalogues current initiatives and trends in the systems and processes surrounding peer review. It considers issues such as open and interactive reviews, post-publication comments and ratings, and the platforms provided by both publishers and other organisations to support such activity; third party

peer review platforms; and measures from publishers and others to provide more recognition and rewards for peer reviewers. Peer review remains fundamental to scholarly communication. Experiments and innovations, both pre-publication and post-publication, are in part a response to concerns about the effectiveness and fairness of current systems but have also been stimulated by new technologies and new entrants.
doi:10.1002/leap.1008

Powell K. **Does it take too long to publish research?** *Nature* 2016;530:148-151

Some researchers complain that publishing papers takes too long. But is the publication process actually becoming longer – and, if so, then why? To find out, *Nature* examined some recent analyses of time to publication and spoke to scientists and editors about their experiences. Journal editors counter that science itself has become more data-rich, and that they work to uphold high editorial and peer-review standards. Some data suggest that wait times have increased within certain subsets of journals, such as popular open access ones and some of the most sought after titles.

Siler K, Lee K, Bero L. **Measuring the effectiveness of scientific gatekeeping.** *Proceedings of the National Academy of Science* 2015;112(2):360-365

This article tracks the popularity of rejected and accepted manuscripts at three elite medical journals. The authors found that editors and reviewers generally made good decisions regarding which manuscripts to promote and reject. However, many highly cited articles were surprisingly rejected. The research suggests that evaluative strategies that increase the mean quality of published science may also increase the risk of rejecting unconventional or outstanding work. Systematic evidence regarding the effectiveness – or lack thereof

– of scientific gatekeeping is scant, largely because access to rejected manuscripts from journals is rarely available.
doi:10.1073/pnas.1418218112

ETHICAL ISSUES

Allison DB, Brown AW, George BJ, *et al.* **A tragedy of errors.** *Nature* 2016; 530:27-29

In this article the authors summarised their experience, the main barriers they encountered, and their thoughts on how to make published science more rigorous. They outlined the following problems: editors are often unable or reluctant to take speedy and appropriate action; where to send expressions of concern is unclear; journals that acknowledged invalidating errors are reluctant to issue retractions; journals charge authors to correct others' mistakes; and no standard mechanism exists to request raw data.

Chavalarias D, Wallach JD, Li AH, *et al.* **Evolution of reporting P values in the biomedical literature, 1990-2015.** *JAMA* 2016;315(11):1141-1148

Many research fields in biomedicine and other disciplines use statistical testing methods that report *P* values to convey inferences about study results. There is increasing concern that *P* values are often misused, misunderstood and miscommunicated, and there is mounting evidence that reporting biases tend to preferentially select the publication and highlighting of results that are statistically significant as opposed to “negative” results. In this analysis of *P* values reported in MEDLINE abstracts and in PMC articles from 1990 to 2015, more MEDLINE abstracts and articles reported *P* values over time, almost all abstracts and articles with *P* values reported statistically significant results and, in a subgroup analysis, few articles included confidence intervals, Bayes factors, or effect sizes.
doi:10.1001/jama.2016.1952

Hilton D. **Practical policies can combat gender inequality.** *Nature* 2015;523:7

How can science address the gender-inequality problem? According to the author, Director of the Walter and Eliza Hall Institute of Medical Research in Melbourne (Australia), the mechanisms helping researchers balance work and home lives have made a positive difference to the gender balance at his institute. For example, they demand that at least half of speakers at conferences organised by the institute are women, and they created a gender-equality committee to monitor implementation of policies.

Newson AJ, Lipworth W. **Why should ethics approval be required prior to publication of health promotion research?** *Health Promotion Journal of Australia* 9 November 2015 (Epub)

Most academic journals that publish studies involving human participants require evidence that the research has been approved by a human research ethics committee (HREC). Yet journals continue to receive submissions from authors who have failed to obtain such approval. In this paper, the authors provide a systematic and comprehensive assessment of why research ethics approval should generally be obtained before publishing in the health promotion context.
doi:10.1071/HE15034

PUBLISHING

Galipeau J, Barbour V, Baskin P, *et al.* **A scoping review of competencies for scientific editors of biomedical journals.** *BMC Medicine* 2016;14:16

This scoping review is the first attempt to systematically identify possible competencies of scientific editors of biomedical journals. It informs readers on the extent and nature of existing literature in this area, as well as the breadth of skills, abilities, tasks, knowledge, and training that may be necessary to fulfill the position of scientific editor. More importantly, the review is part of a larger programme to develop a

minimum set of core competencies for scientific editors of biomedical journals, which will be followed by a training needs assessment, a Delphi exercise, and a consensus meeting.
doi:10.1186/s12916-016-0561-2

Murphy F. **An update on peer review and research data.** *Learned Publishing* 2016;29(1):51-53

Technological advances in the amounts of data that researchers generate and use are causing problems for the scholarly communication system. How, when and by whom should quality checks and assurance be integrated into this – already overloaded – ecosystem? This paper outlines the challenges, illustrates some current initiatives and posits possible directions for the future.
doi:10.1002/leap.1005

Redberg RF. **Overpowering images.** *JAMA Internal Medicine* 2016;176(1):17

While there has been an exponential increase in medical imaging, there are few data demonstrating improvements in outcome, and imaging that requires ionizing radiation is known to be harmful. The “slippery slope” story of Dr Michael Barry *et al* illustrates one of the unintended harms of graphic imaging: dramatic pictures make clinicians (and patients) more likely to want to “do something” instead of considering a more conservative therapy. This story underlines the importance of treating the patient and not the laboratory test or the image.
doi: 10.1001/jamainternmed.2015.6933

SCIENCE

Dove ES, Thompson B, Knoppers BM. **A step forward for data protection and biomedical research.** *The Lancet* 2016;387(10026):1374-1375

A European General Data Protection Regulation that is favourable for research was agreed by Member States and Parliament in December 2015. The regulation deems health-related data and genetic data to be so-called special categories of sensitive data, subject to increased restrictions.

However, researchers can use these data without consent as long as it is permitted under EU or Member State law and appropriate safeguards are in place. The regulation facilitates the reuse of data for research, even where the data were collected for another purpose.

Van Noorden R. **Interdisciplinary research by the numbers.** *Nature* 2015;525(7569):306-307

Interdisciplinary work is considered crucial by scientists, policy-makers and funders. This study reveals the extent and impact of research that bridges disciplines. The fraction of paper references that point to work in other disciplines is increasing in both the natural and social sciences. And although papers that combine very disparate fields tend to have fewer citations, interdisciplinary work can have broad societal and economic impacts that are not captured by citations.
doi:10.1038/525306a

SCIENCE COMMUNICATION

Morello L. **Science and sexism: in the eye of the Twitterstorm.** *Nature* 2015;527(7577):148-151

Social media has enabled an increasingly public discussion about the persistent problem of sexism in science. Although it is not yet clear whether the social media conversation about sexism in science will help to create lasting change, some scientists think that it may provide a sense of solidarity for women across disciplines. Twitter is an important outlet for younger scientists, who often don't know how to respond to instances of sexism or sexual harassment, and it can also help to build a sense of community among scientists in different disciplines.

Thanks to John Glen

Anna Maria Rossi
Publishing Unit
Istituto Superiore di Sanità, Rome
annamaria.rossi@iss.it