POST PUBLICATION OPEN, INVITED PEER REVIEW: WHAT, HOW AND WHY

May 2018

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OVERVIEW

- Code of conduct and publication ethics
- Choosing reputable open access journals
- Types of peer review
- Opening up the publishing and peer review process
- Data sharing and reducing research waste
- Versioning of articles
- How funders and institutions are getting involved

Publication ethics?

"A set of common rules among authors, editors, reviewers and publishers to protect integrity of the scientific record"

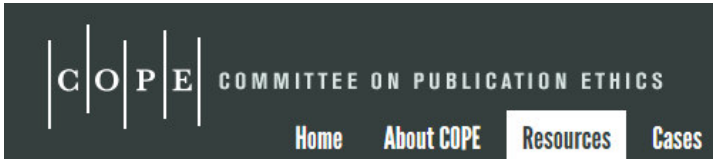
Charlotte Haug, previous Vice Chair COPE

- Based on consensus about standards and best practice
- Ensures the integrity of the scientific record
- Ensures that readers can trust what they read

Who guides publication ethics?

ICMJE INTERNATIONAL COMMITTEE of MEDICAL JOURNAL EDITORS

The **ICMJE recommendations** are followed by most journals. These are a set of guidelines produced by the ICMJE for standardizing the ethics, preparation and formatting of manuscripts.



COPE is a forum for editors and publishers of peer reviewed journals to discuss all aspects of publication ethics. It also advises editors on how to handle cases of research and publication misconduct.

Choosing an open access journal

http://thinkchecksubmit.org/

Are you submitting your research to a trusted journal?
Is it the right journal for your work?

Use our check list to assess the journal

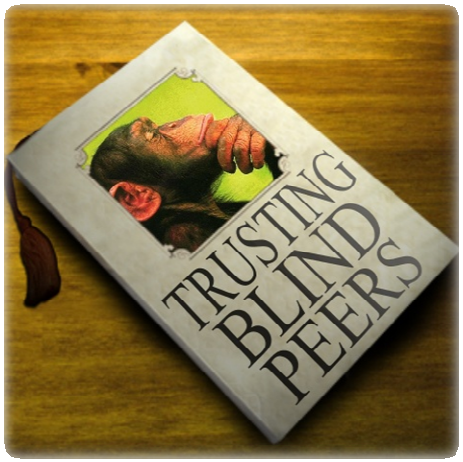
Only if you can answer 'yes' to the questions on our check list

Peer review is the evaluation of scientific research findings for ***validity***, ***significance*** and ***originality***, by qualified experts who research and submit work for publication in the same field (peers)

www.senseaboutscience.org/data/files/resources/17/**peerReview**.pdf

IS PEER REVIEW FIT FOR PURPOSE?

- Slow
- Inconsistent
- Unclear
- Transparency?
- Block innovative ideas?



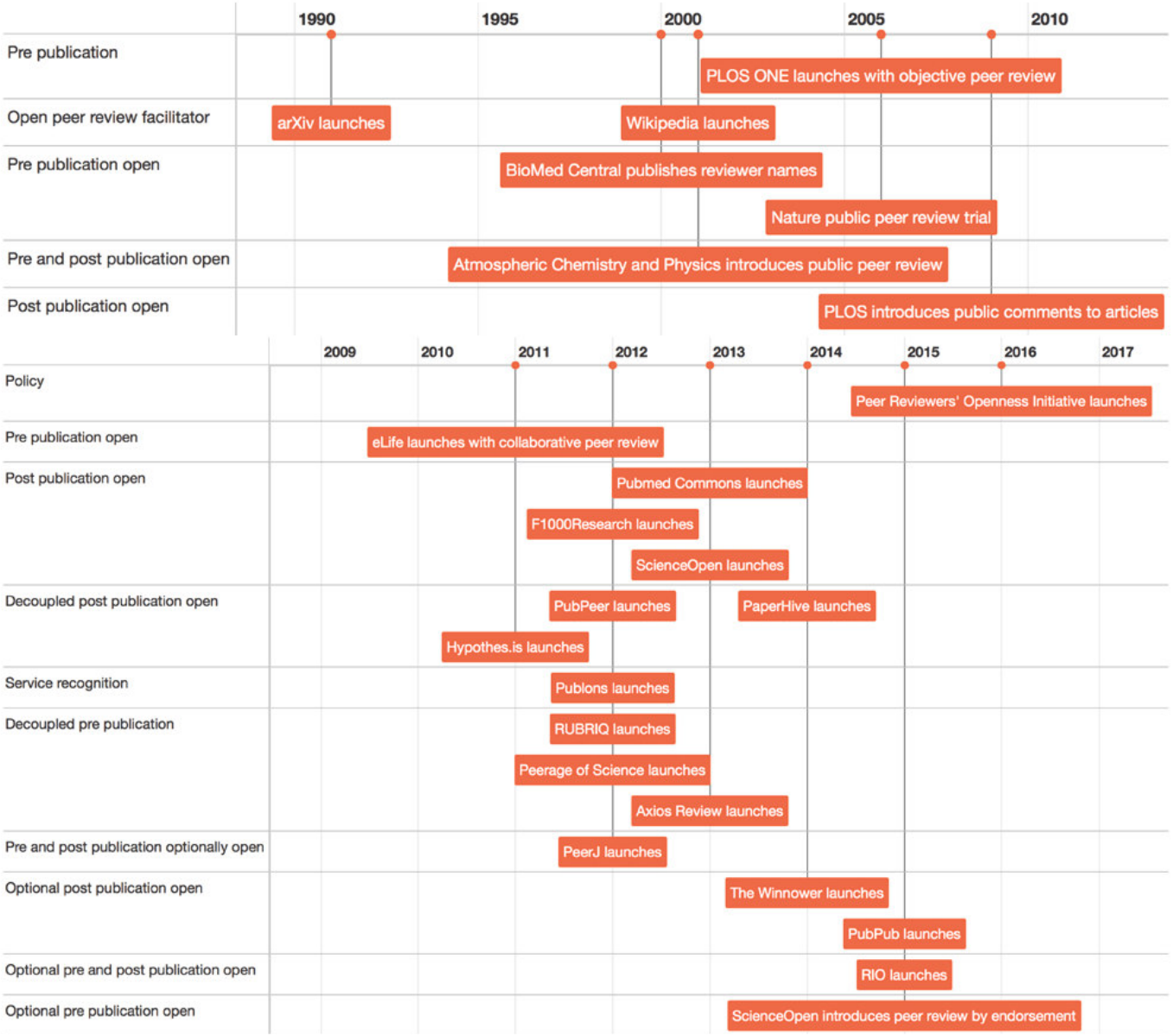
Flickr: Gideon Burton

A brief timeline of the evolution of peer review: The primordial times.

Tennant JP, Dugan JM, Graziotin D et al. A multi-disciplinary perspective on emergent and future innovations in peer review [version 2]. F1000Research 2017, 6:1151 (doi: 10.12688/f1000research.12037.2)

F1000Research

A brief timeline of the evolution of peer review: The revolution.



F1000Research
(doi: 10.12688/f1000research.12037.2)

IS PEER REVIEW NEEDED?

VIEWPOINT

Stealth Research
Is Biomedical Innovation Happening Outside the Peer-Reviewed Literature?

John P. A. Ioannidis, MD, DSc
Stanford Prevention Research Center (SPRC) and Meta-Research Innovation Center at Stanford (METRICS), Stanford, California.

Information about Theranos, a privately held biotechnology company that has developed novel approaches for laboratory diagnostic testing, has appeared in *The Wall Street Journal*, *Business Insider*, *San Francisco Business Times*, *Fortune*, *Forbes*, *Medscape*, and *Silicon Valley Business Journal*—but not in the peer-reviewed biomedical literature. As of January 5, 2015, a search in PubMed using *Theranos* as a of venipuncture.[5] Several patents have been filed and approved. A search in the JUSTIA patent database using *Theranos* as a search term yielded 71 items retrieved as of January 5, 2015.[6] However, it is practically impossible to judge the validity of the science based only on patents with titles such as "Methods and Systems for Assessing Clinical Outcomes."

Theranos is just one example among many for which

"... even for successful, influential ideas, it is impossible to discern eventually whether the success of those ideas resulted from better science or simply better financial or advertising model"

John Ioannidis; JAMA February 17, 2015, Vol 313, No.7

TYPES OF PEER REVIEW

- Single blind
- Double blind
- Consultative
- Results free review
- Open peer review
- Post-publication

DOUBLE BLIND

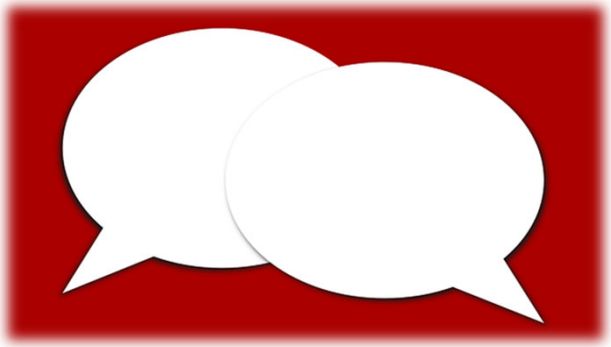
Peer review survey in 2009 : international and cross-disciplinary survey of more than 4,000 researchers — **76%** of respondents indicated that double blind was an effective and preferred peer-review system. **Mulligan, et al.; J. Am. Soc. Inf. Sci. Technol. 64, 132-161;2013**

Other recent surveys have drawn similar conclusions.

Nature, Nature Communications, and others offer authors to opt-in to double-blind peer review.

CONSULTATIVE

eLife and Frontiers journals enable reviewers to discuss the manuscript among themselves before communicating a unified decision to the authors.

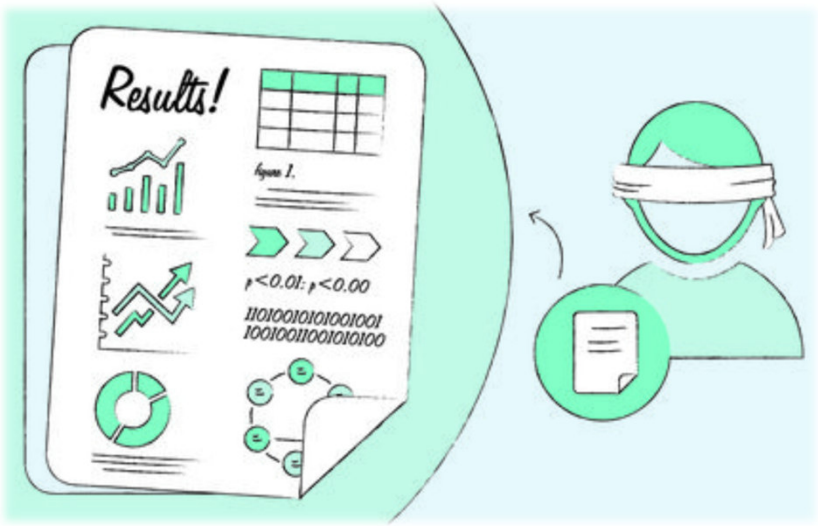


RESULTS FREE REVIEW

Implemented in BMC Psychology in 2016 (opt-in)

Stage 1: Review of manuscript, excluding results or any discussion of results

Stage 2: If accepted at Stage 1, reviewers are asked to assess if results and conclusions are in line with the research question and methodology



OPEN PEER REVIEW

- Ensures transparency
- Accountability
- Reviewer receives credit
- Some journals offer reviewers to opt-in

"When peer review is cloaked in secrecy, there are limited incentives for performing high-quality reviews," That allows bias, carelessness, conflict of interest, and other deficiencies to persist without a way to penalize those who generate inadequate reviews"

Jeffrey S Flier; It's time to overhaul the secretive peer review process. STAT Dec 2016 (accessed Nov 2017).

BENEFITS OF OPEN PEER REVIEW

- Asking reviewers to consent to the author being informed of their identity had no effect on quality of review or reviewers' recommendation (**van Rooyen et al. BMJ 1999; 318:23-7**)
- Telling reviewers their signed report may be available online did not affect review quality (**van Rooyen et al. BMJ 2010; 314:c5729**)
- A study comparing two similar journals, one operating single blind peer review (BMC Microbiology), and the other operating open peer review (BMC Infectious Diseases), found that the quality of reports was higher in the open peer review journal (**Kowalczuk et al. *BMJ Open* 2015;5:e008707. doi:10.1136/bmjopen-2015-008707**)

TYPES OF OPEN PEER REVIEW

- Where reviewer identity and reports are revealed to authors during the review process, **but this information is not made public.**
- Where reviewer identity and reports are revealed to authors during the review process, **and the reviewer report is published without the identity.**
- Where reviewer identity and reports are revealed to authors during the review process, **and the reviewer identity is revealed, but not the report.**
- Where reviewer identity and reports are revealed to authors during the review process, **and this information is all made available to the public** (in some cases this also includes the prepublication history).

POST PUBLICATION

Informal: Usually in addition to usual peer review process, after publication

- Comments
- Social media

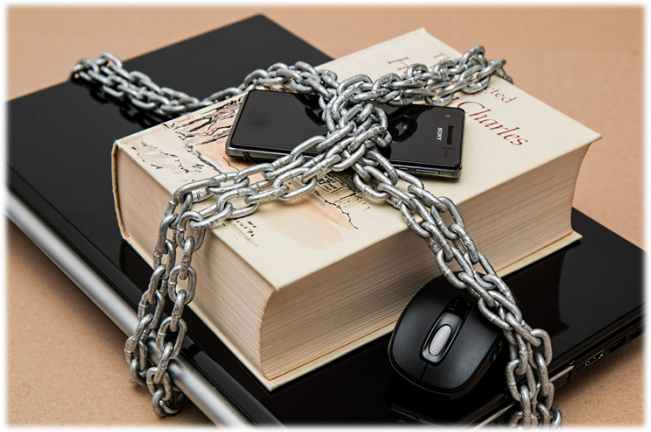
Formal: F1000 Research (2013), Wellcome Open Research (2016), Gates Open Research (2017), HRB Ireland (2018), African Academy of Sciences (2018)

- Only conducts post-publication **invited** open peer review
- Article status summary highlights progress
- Article is indexed once it passes peer review

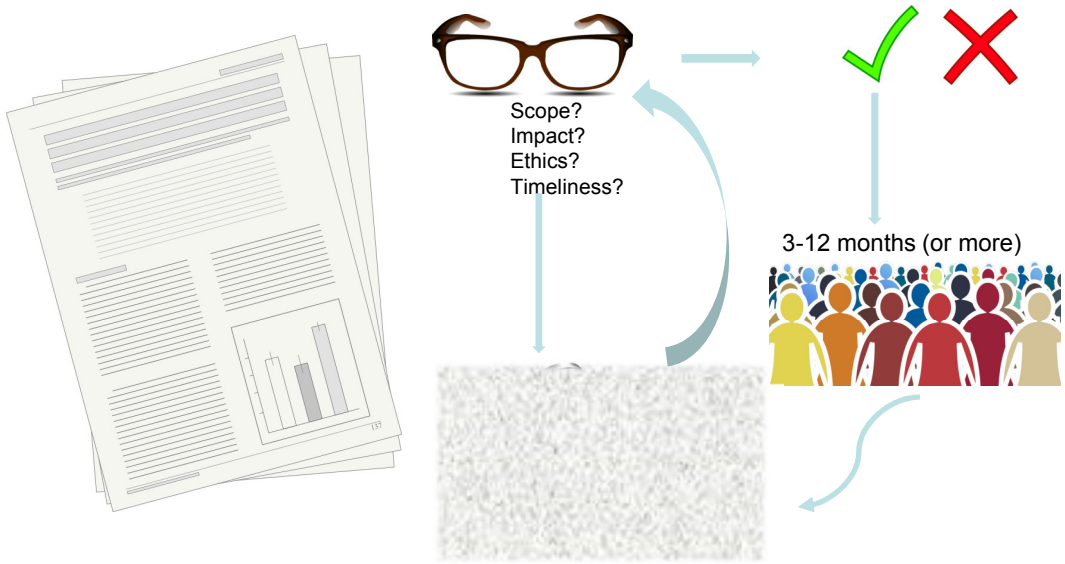
PROBLEMS WITH CURRENT SCIENTIFIC COMMUNICATION

Many problems remain with the traditional publishing process:

- introduces delays
- limited access to data
- introduces bias
  - lack of transparency in publication decisions
  - bias in our understanding of science
- causes research waste
- lack of credit for key contributors: reviewers



THE TRADITIONAL SCIENTIFIC PUBLISHING PROCESS



Andrew Wakefield

Lancet retracts 'utterly false' MMR paper

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Inappropriate manipulation of peer re

Retraction Watch

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Retraction Watch

Diederik Stapel retraction count hits 50

with 7 comments

2 July 2014 Last updated at 12:45

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"- Data collecti
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Japanese stem-cell 'breakthrough' findings retracted

By James Gallagher
Health editor, BBC News website

How common is misconduct?

- *Fanelli D: How many scientists fabricate and falsify research? A systematic review and meta-analysis of survey data. PLOS ONE.* 29 May 2009

- Just **2%** admitted to fabrication, falsification or manipulation of results
- But **14%** reported witnessing this behaviour in a colleague

- **34%** admitted other questionable research practices
- **72%** reported witnessing these in a colleague

OPEN RESEARCH PUBLISHING PLATFORMS

- Author focused
- Immediate publication
- Transparent refereeing
- Recognition for reviewers (including citable reports)
- No editorial bias
- Transparent reporting and data sharing
- Articles can be ‘living’
- Indexed in PubMed, Scopus, etc
- Gold Open Access (Article charges $150–$1000)

“Journal” vs “Platform”

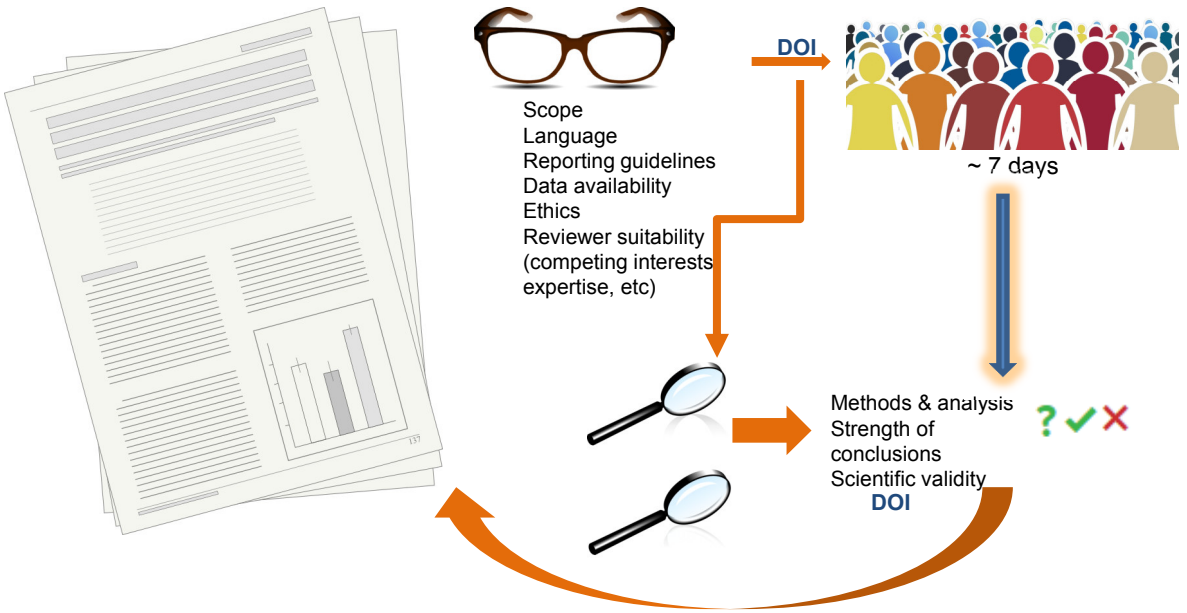
- Editorial checks
- Peer reviewed
- Published
- Indexed

- Editorial checks
- Published (version 1)
- Peer reviewed
- Revised or updated (versions)
- Peer reviewed (if needed)
- Indexed if it passes peer review

ROLE OF THE EDITORIAL TEAM

- All staff editors are trained to check for adherence to publication and research ethics, data sharing policies and reporting guidelines (eg. CONSORT, CARE, PRISMA and STROBE)
- Editorial team checks every submission, and takes into account reporting guidelines for particular study designs
- Handling editor liases with authors until the manuscript can be published (especially important as we publish before peer review)
- Handling editor checks referee suggestions and oversees the peer review process

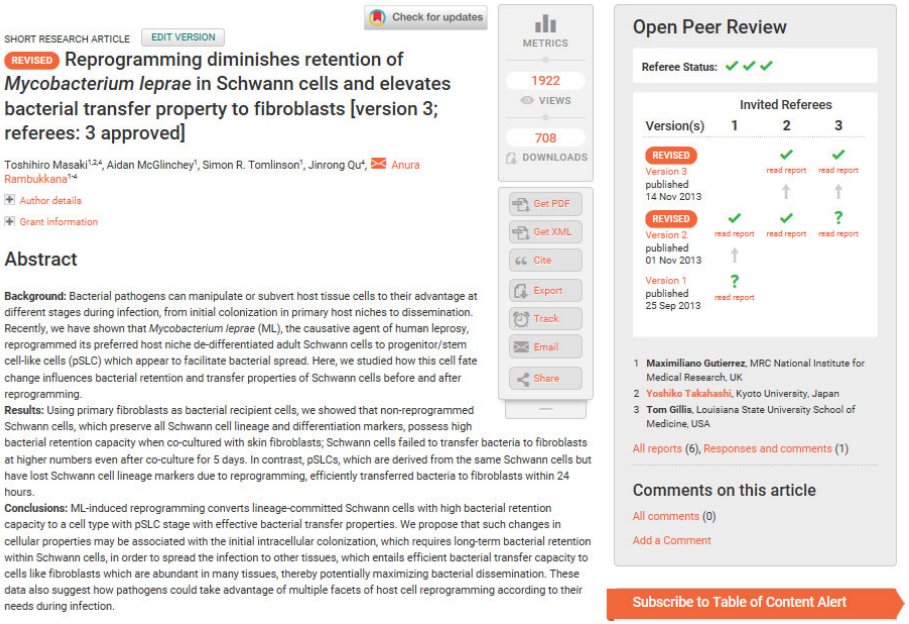
THE F1000RESEARCH PUBLISHING AND PEER REVIEW PROCESS



POST-PUBLICATION INVITED OPEN PEER REVIEW

- Author suggests reviewers
- F1000Research team checks suitability
  - not close collaborators
  - competing interests
  - suitable subject expertise
- F1000Research team invites reviewers on behalf of authors
- Article published online and peer review takes place in full view of authors and readers
- Reviewers (and readers) have access to source data (unless there are ethical/legal restrictions)
- Article status summary highlights progress

TRANSPARENT REFEREEING AND REVIEW STATUS



Check for updates

SHORT RESEARCH ARTICLE EDIT VERSION

REVISED **Reprogramming diminishes retention of *Mycobacterium leprae* in Schwann cells and elevates bacterial transfer property to fibroblasts [version 3; referees: 3 approved]**

Toshihiro Masaki[1,2,4], Aidan McGlinchey[1], Simon R. Tomlinson[1], Jinrong Qu[4], Anura Rambukkana[1-4]

Author details

Grant information

Abstract

Background: Bacterial pathogens can manipulate or subvert host tissue cells to their advantage at different stages during infection, from initial colonization in primary host niches to dissemination. Recently, we have shown that *Mycobacterium leprae* (ML), the causative agent of human leprosy, reprogrammed its preferred host niche de-differentiated adult Schwann cells to progenitor/stem cell-like cells (pSLC) which appear to facilitate bacterial spread. Here, we studied how this cell fate change influences bacterial retention and transfer properties of Schwann cells before and after reprogramming.

Results: Using primary fibroblasts as bacterial recipient cells, we showed that non-reprogrammed Schwann cells, which preserve all Schwann cell lineage and differentiation markers, possess high bacterial retention capacity when co-cultured with skin fibroblasts; Schwann cells failed to transfer bacteria to fibroblasts at higher numbers even after co-culture for 5 days. In contrast, pSLCs, which are derived from the same Schwann cells but have lost Schwann cell lineage markers due to reprogramming, efficiently transferred bacteria to fibroblasts within 24 hours.

Conclusions: ML-induced reprogramming converts lineage-committed Schwann cells with high bacterial retention capacity to a cell type with pSLC stage with effective bacterial transfer properties. We propose that such changes in cellular properties may be associated with the initial intracellular colonization, which requires long-term bacterial retention within Schwann cells, in order to spread the infection to other tissues, which entails efficient bacterial transfer capacity to cells like fibroblasts which are abundant in many tissues, thereby potentially maximizing bacterial dissemination. These data also suggest how pathogens could take advantage of multiple facets of host cell reprogramming according to their needs during infection.

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Open Peer Review

Referee Status: ✓ ✓ ✓

Version(s)	Invited Referees 1	2	3
REVISED Version 3 published 14 Nov 2013		✓ read report	✓ read report
REVISED Version 2 published 01 Nov 2013	✓ read report	✓ read report	? read report
Version 1 published 25 Sep 2013	? read report		

1 **Maximiliano Gutierrez**, MRC National Institute for Medical Research, UK
2 **Yoshiko Takahashi**, Kyoto University, Japan
3 **Tom Gillis**, Louisiana State University School of Medicine, USA

All reports (6), Responses and comments (1)

Comments on this article

All comments (0)

Add a Comment

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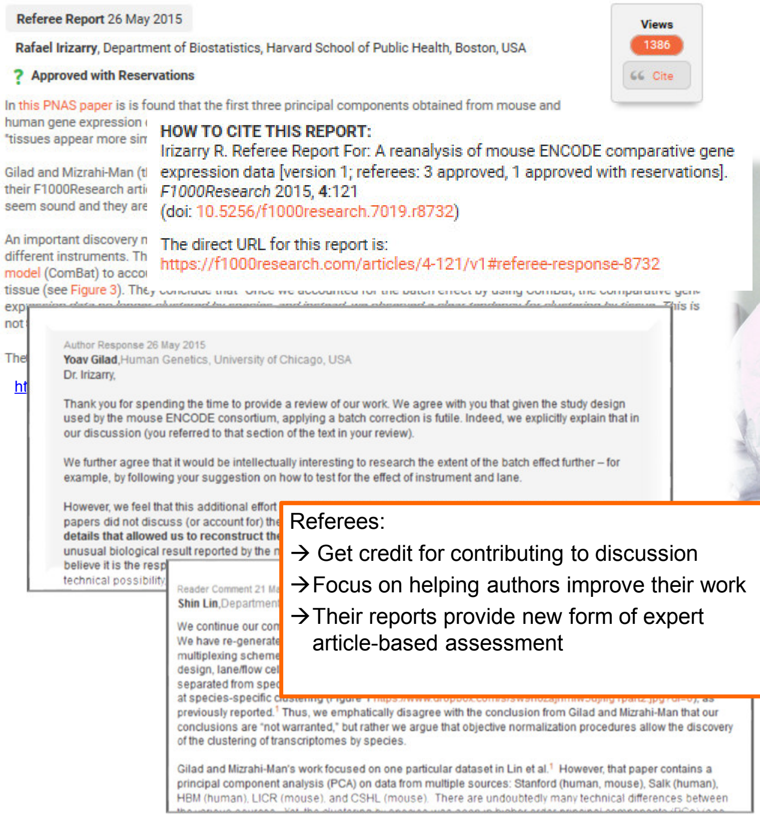
http://f1000research.com/articles/2-198

Indexed once it passes peer review: ✓ ✓ or ? ? ✓

TRANSPARENT REFEREEING AND DISCUSSION


Referee Report 26 May 2015

Rafael Irizarry, Department of Biostatistics, Harvard School of Public Health, Boston, USA

? Approved with Reservations

Views 1386

Cite

In this PNAS paper is is found that the first three principal components obtained from mouse and human gene expression ...

HOW TO CITE THIS REPORT:
Irizarry R. Referee Report For: A reanalysis of mouse ENCODE comparative gene expression data [version 1; referees: 3 approved, 1 approved with reservations]. *F1000Research* 2015, 4:121
(doi: 10.5256/f1000research.7019.r8732)

The direct URL for this report is:
https://f1000research.com/articles/4-121/v1#referee-response-8732

Author Response 26 May 2015
Yoav Gilad, Human Genetics, University of Chicago, USA
Dr. Irizarry,

Thank you for spending the time to provide a review of our work. We agree with you that given the study design used by the mouse ENCODE consortium, applying a batch correction is futile. Indeed, we explicitly explain that in our discussion (you referred to that section of the text in your review).

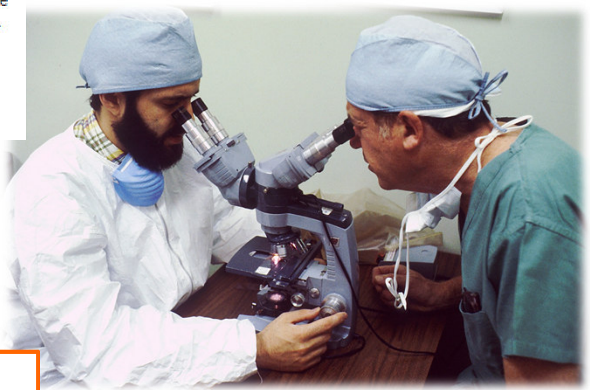
We further agree that it would be intellectually interesting to research the extent of the batch effect further – for example, by following your suggestion on how to test for the effect of instrument and lane.

Reader Comment 21 Ma...
Shin Lin, Department...

... previously reported. Thus, we emphatically disagree with the conclusion from Gilad and Mizrahi-Man that our conclusions are "not warranted," but rather we argue that objective normalization procedures allow the discovery of the clustering of transcriptomes by species.

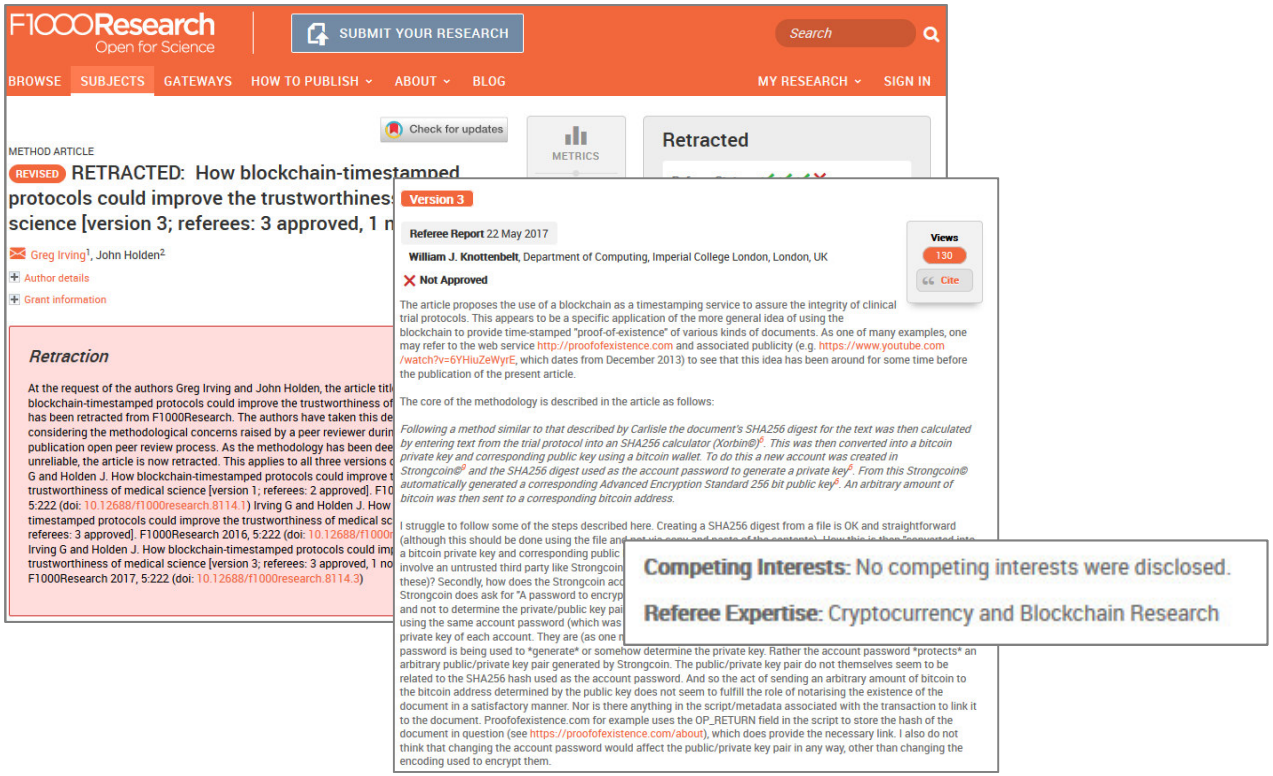
Gilad and Mizrahi-Man's work focused on one particular dataset in Lin et al.[1] However, that paper contains a principal component analysis (PCA) on data from multiple sources: Stanford (human, mouse), Salk (human), HBM (human), LICR (mouse), and CSHL (mouse). There are undoubtedly many technical differences between ...

Referees:
→ Get credit for contributing to discussion
→ Focus on helping authors improve their work
→ Their reports provide new form of expert article-based assessment



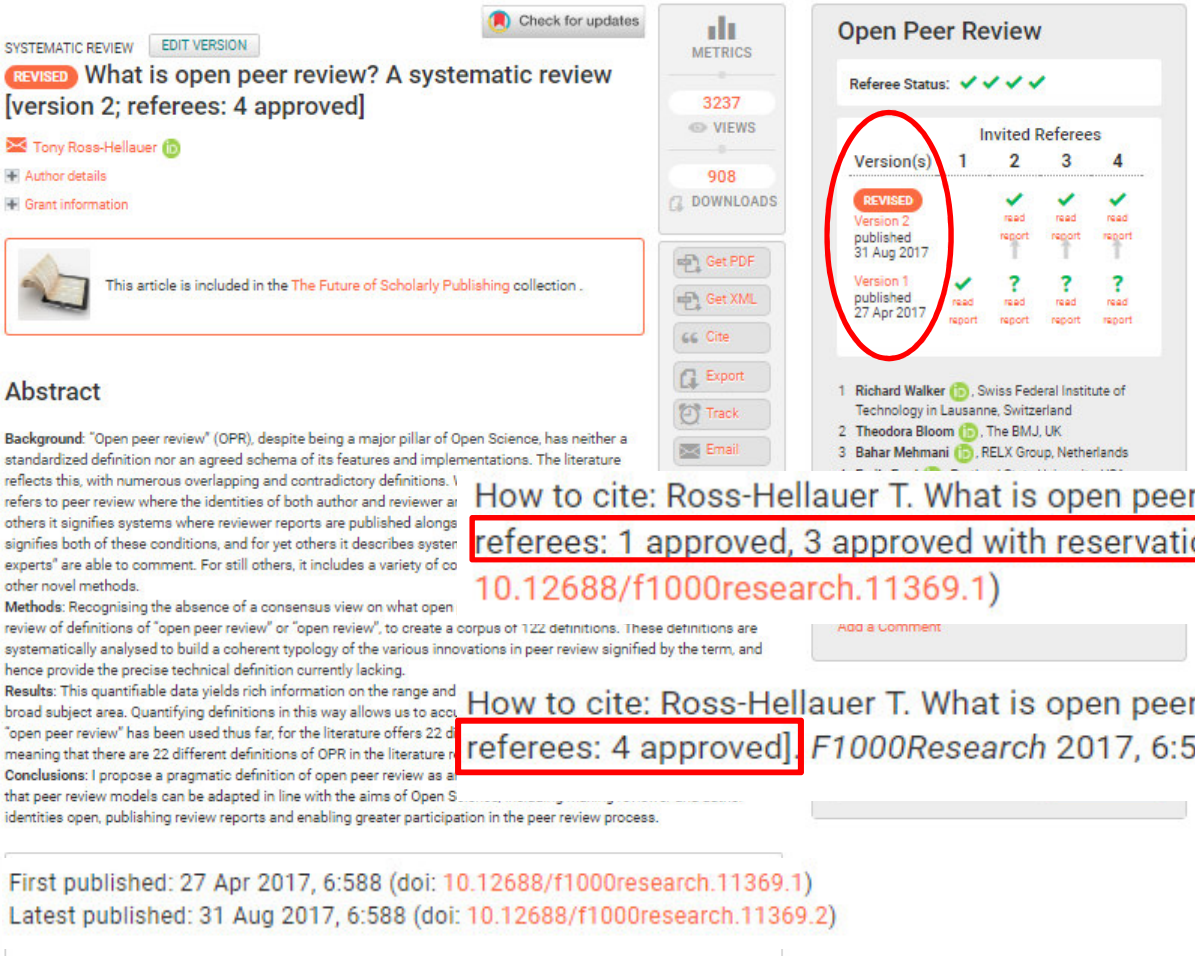
METHODS AVAILABILITY – COMMUNITY REVIEW

- Others can try to replicate the study (referees often don't have time)
- Can then invite specific referees for those issues; the entire history is available to all



OPEN REVIEW, DATA ACCESS, AND NULL/CONFIRMATORY RESULTS

VERSIONING OF ARTICLES



LIVING ARTICLES – REVISING AND REVIEWING ARTICLES AFTER INDEXING

Version 1. F1000Res. 2017 Oct 20;6:1863. doi: 10.12688/f1000research.12817.1. eCollection 2017.

Evaluation of predicted Medfly (*Ceratitis capitata*) quarantine length in the United States utilizing degree-day and agent-based models.

Collier T[1], Manoukis N[1].

Author information

Abstract

Invasions by pest insects pose a significant threat to agriculture worldwide. In the case of *Ceratitis capitata* incursions on the US mainland, where it is not officially establish
However, it is difficult to accurate
extend quarantine lengths past t
unit accumulation development n
population demographics and eli
both approaches. Results indicat
with the first; this pattern is more
latitude, though this was less pro
larger for degree day than ABS,
Analysis of 34 *C. capitata* quarar
of the year, when degree day qu
these historical quarantines, the
lengths were more consistent tha
cold snaps.

KEYWORDS: Mediterranean fruit fly;

PMID: 29399322 PMCID: PMC577392

Open Peer Review

Referee Status: ✓ ✓ ✓

Invited Referees

Version 2. F1000Res. 2017 Oct 20 [revised 2018 Mar 6];6:1863. doi: 10.12688/f1000research.12817.2. eCollection 2017.

Evaluation of predicted Medfly (*Ceratitis capitata*) quarantine length in the United States utilizing degree-day and agent-based models.

Collier T[1], Manoukis N[1].

Author information

Abstract

Invasions by pest insects pose a significant threat to agriculture worldwide. In the case of *Ceratitis capitata* incursions on the US mainland, where it is not officially established, repeated detections are followed by quarantines and treatments to eliminate the invading population. However, it is difficult to accurately set quarantine duration because non-detection may not mean the pest is eliminated. Most programs extend quarantine lengths past the last fly detection by calculating the amount of time required for 3 generations to elapse under a thermal unit accumulation development model ("degree day"). A newer approach is to use an Agent-Based Simulation (ABS) to explicitly simulate population demographics and elimination. Here, predicted quarantine lengths for 11 sites in the continental United States are evaluated using both approaches. Results indicate a strong seasonality in quarantine length, with longer predictions in the second half of the year compared with the first; this pattern is more extreme in degree day predictions compared with ABS. Geographically, quarantine lengths increased with latitude, though this was less pronounced under the ABS. Variation in quarantine lengths for particular times and places was dramatically larger for degree day than ABS, generally spiking in the middle of the year for degree day and peaking in second half of the year for ABS. Analysis of 34 *C. capitata* quarantines from 1975 to 2017 in California shows that, for all but two, quarantines were started in the second half of the year, when degree day quarantine lengths are longest and have the highest uncertainty. For a set of hypothetical outbreaks based on these historical quarantines, the ABS produced significantly shorter quarantines than degree day calculations. Overall, ABS quarantine lengths were more consistent than degree day predictions, avoided unrealistically long values, and captured effects of rare events such as cold snaps.

KEYWORDS: Mediterranean fruit fly; agriculture; biosecurity; eradication; invasive pest

PMID: 29399322 PMCID: PMC5773928.2 DOI: 10.12688/f1000research.12817.2 Other versions

Check for updates

SYSTEMATIC REVIEW EDIT VERSION

Zika virus infection as a cause of congenital brain abnormalities and Guillain-Barré syndrome: From systematic review to living systematic review [version 1; referees: 1 approved with reservations]

Michel Jacques Counotte [1], Dianne Egli-Gany [1], Maurane Riesen[1], Million Abraha [1], Teegwendé Valérie Porgo [2], Jingying Wang[1], Nicola Low [1]

Author details

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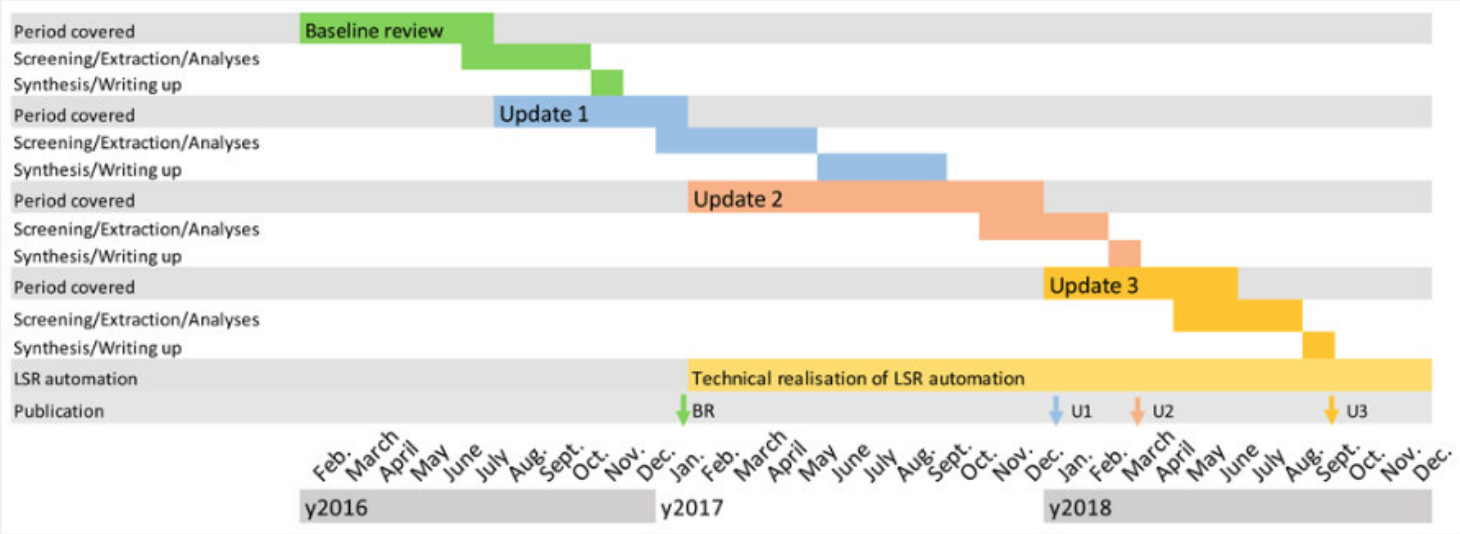


Figure 2. Timeline of review conduct, publication and transition to a living systematic review.

The baseline review (BR,[7]) and Update 1 (U1) this version classic, manual systematic review. During 2017 automation of the workflow was conducted resulting in a projected Update 2 (U2) and 3 (U3) with more rapid throughput. LSR, living systematic review.

Open Peer Review

Referee Status: ✔ ✔ ?

REVISED **Amendments from Version 3**

Based on the reviewer's comment for our paper, we have been requested to update figures 1-3 according to the changes that were made in our previous version 3. Figures 1-3 have been updated to reflect the customized output formatting.

Version(s)

REVISED Version 4 published 15 Feb 2018

UPDATE Version 3 published 02 Jan 2018

UPDATE Version 2 published 26 Sep 2017

Version 1 published 03 Jul 2017

GAC: Gene Associations with Clinical, a web based application

Xinyan Zhang, Software, Writing – Original Draft Preparation, Writing – Review & Editing,[1] Manali Rupji, Software, Writing – Original Draft Preparation, Writing – Review & Editing,[1] and Jeanne Kowalski, Conceptualization, Resources, Supervision, Writing – Review & Editing[a,1,2]

Author information ▶ Article notes ▶ Copyright and License information ▶ Disclaimer

Version Changes

Go to:

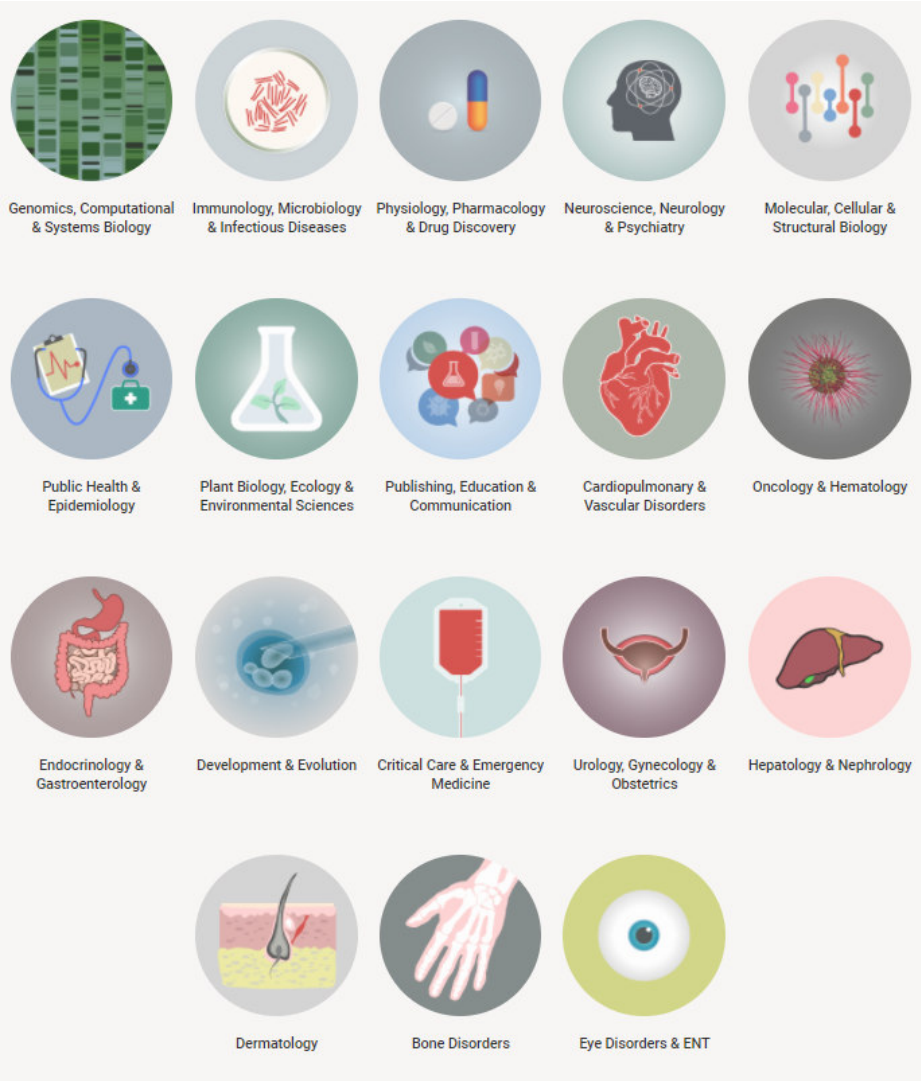
Revised. Amendments from Version 3

Based on the reviewer's comment for our paper, we have been requested to update figures 1-3 according to the changes that were made in our previous version 3. Figures 1-3 have been updated to reflect the customized output formatting.

Peer Review Summary

Go to:

Review date	Reviewer name(s)	Version reviewed	Review status
2018 Jan 8	Matthew N. McCall	Version 3	Approved
2017 Oct 26	Cedric Simillion	Version 2	Approved with Reservations
2017 Oct 23	Matthew N. McCall	Version 2	Approved with Reservations
2017 Sep 27	Shengjie Yang	Version 2	Approved
2017 Sep 18	Shengjie Yang	Version 1	Approved with Reservations



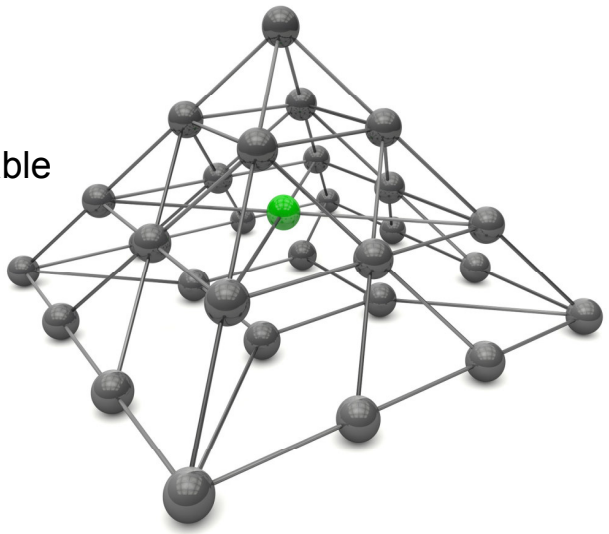
F1000Research
Open for Science

Types of articles:

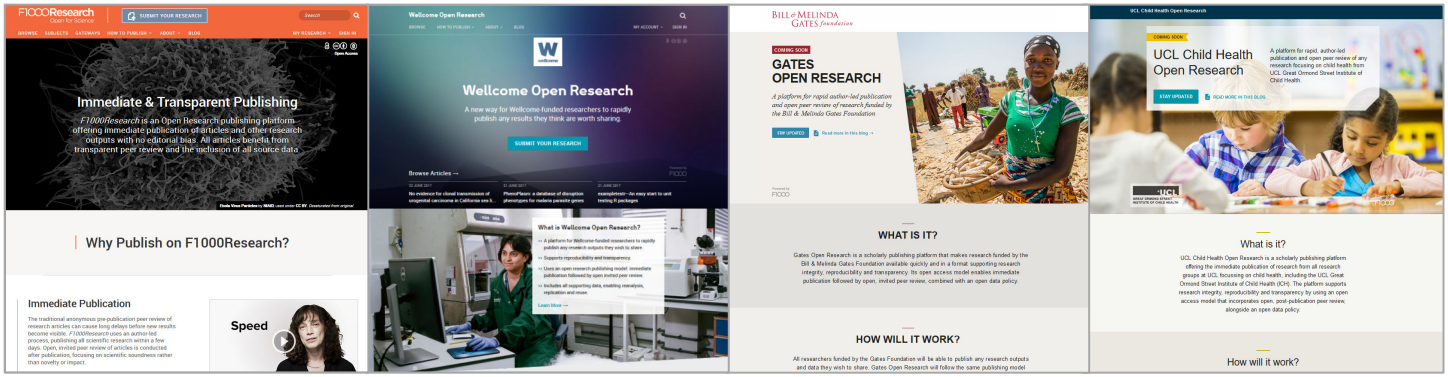
- Research
- Research Note
- Systematic Review
- Review
- Opinion
- Methods
- Study Protocol
- Case Study
- Clinical Practice Article
- Antibody Validation
- Correspondence
- Data Note
- Software Tool

WHY WE NEEDED TO CHANGE THE SYSTEM

- Transparency in peer review processes
- Transfer control from publisher to researchers
- Give reviewers credit for their work, and make reports citable
- Reduce bias in published scientific literature
- Facilitate data sharing and reproducibility of research
- Give space to null findings, replication studies, etc
- Speed up how scientific findings can be communicated



OPEN RESEARCH PUBLISHING PLATFORMS



- F1000's own platform
- Launched 2013

- Controlled by Wellcome; operated by F1000
- Launched Nov 2016

- Controlled by Bill & Melinda Gates Foundation, operated by F1000
- Launched Nov 2017

- Controlled by UCL Great Ormond Street Institute of Child Health, operated by F1000
- Due to launch in 2018

Benefits of model:

- Authors decide what they want to share – take more responsibility for their work
- Authors publish what they find – reduces selective reporting
- Transparent publishing and peer review process on many different types of research outputs

QUESTIONS?

f1000research.com | wellcomeopenresearch.org | gatesopenresearch.org| f1000.com/work

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