TRANSPARENCY IN PUBLISHING AND WHY ALL SCIENTIFIC RESEARCH MATTERS

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#OAWeek17

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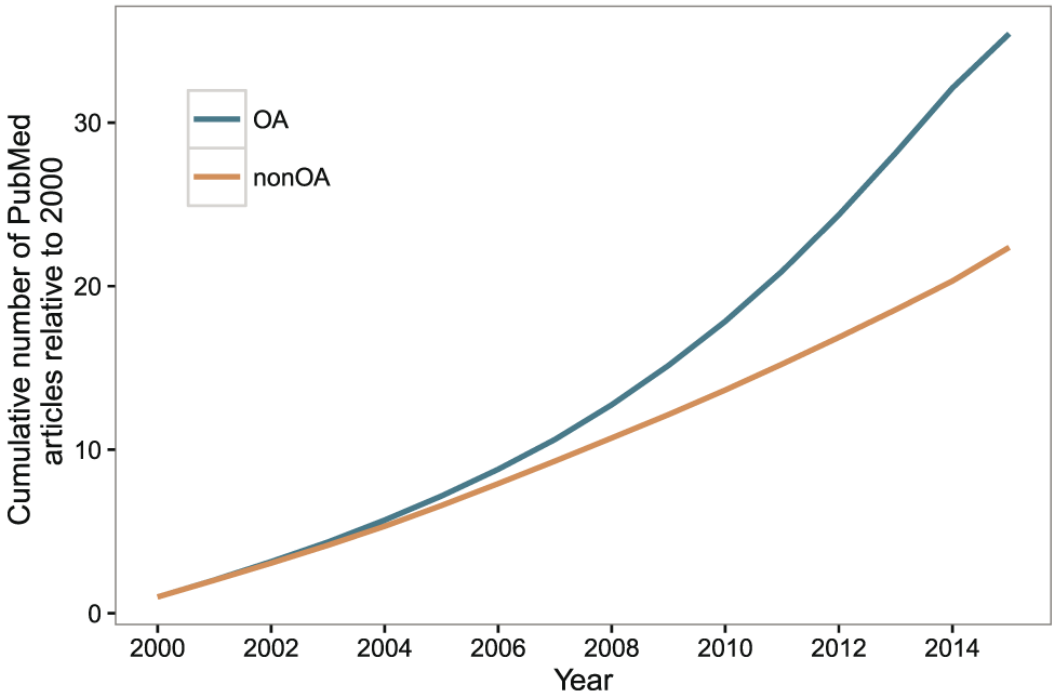
OVERVIEW

- Opening up the peer review process
- Removing editorial bias
- Data sharing and reducing research waste
- How funders and institutions are getting involved

Percentage increase in research articles in PubMed Central, relative to 2000



Tennant JP, Waldner F, Jacques DC et al. The academic, economic and societal impacts of Open Access: an evidence-based review [version 3]. F1000Research 2016, 5:632 (doi: 10.12688/f1000research.8460.3)

F1000Research

SOME MAJOR MILESTONES IN LIFE SCIENCES OA PUBLISHING

2000 – BioMed Central launches as first major OA publisher. PubMed Central also founded as the first OA digital repository

2001 – Public Library of Science (PLOS) launched. Creative Commons founded.

2002 – Release of Budapest Open Access Initiative (BOAI). Also start of Research4Life to provide developing countries with free/low cost access to peer-reviewed literature

2003 – Launch of Directory of Open Access Journals (DOAJ). Wellcome Trust announced endorsement of OA

2008 – NIH announces an OA mandate (green or gold OA)

2013 – F1000Research launched as first OA post-publication peer review publishing platform

2014 – Charity Open Access Fund established (administered by Wellcome).

2015 – Bill & Melinda Gates Foundation mandates OA (gold since 2017)

2016 – Wellcome Open Research launched

2017 – Gates Open Research and MNI Open Research launched (and more to follow)

OPEN ACCESS

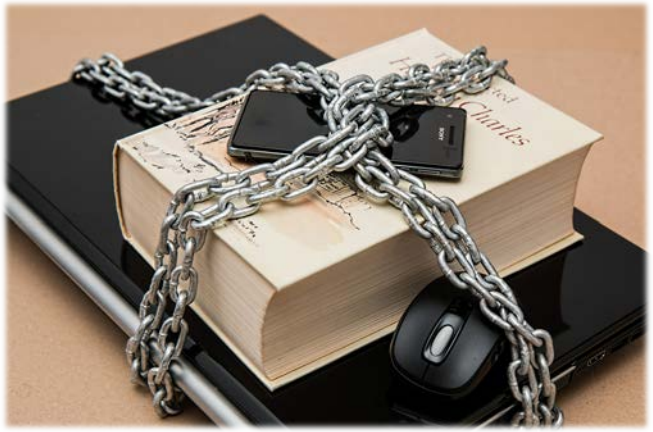
Issues around access have been improved….

… but problems in scientific publishing are bigger than just access

PROBLEMS WITH CURRENT SCIENTIFIC COMMUNICATION

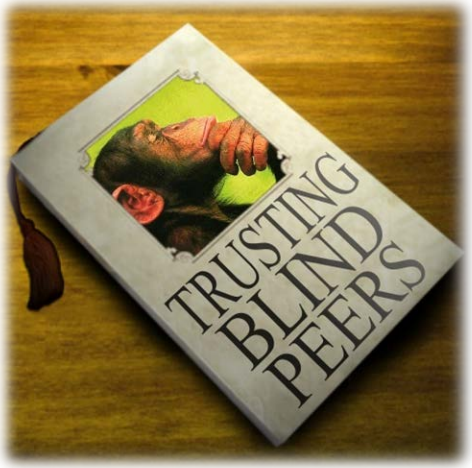
Many problems remain with the traditional publishing process:

- 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



IS PEER REVIEW FIT FOR PURPOSE?

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



Flickr: Gideon Burton

TYPES OF PEER REVIEW

- Single blind
- Double blind
- Collaborative
- Open peer review
- Post-publication

TRADITIONAL PUBLISHING – END OF THE ROAD?

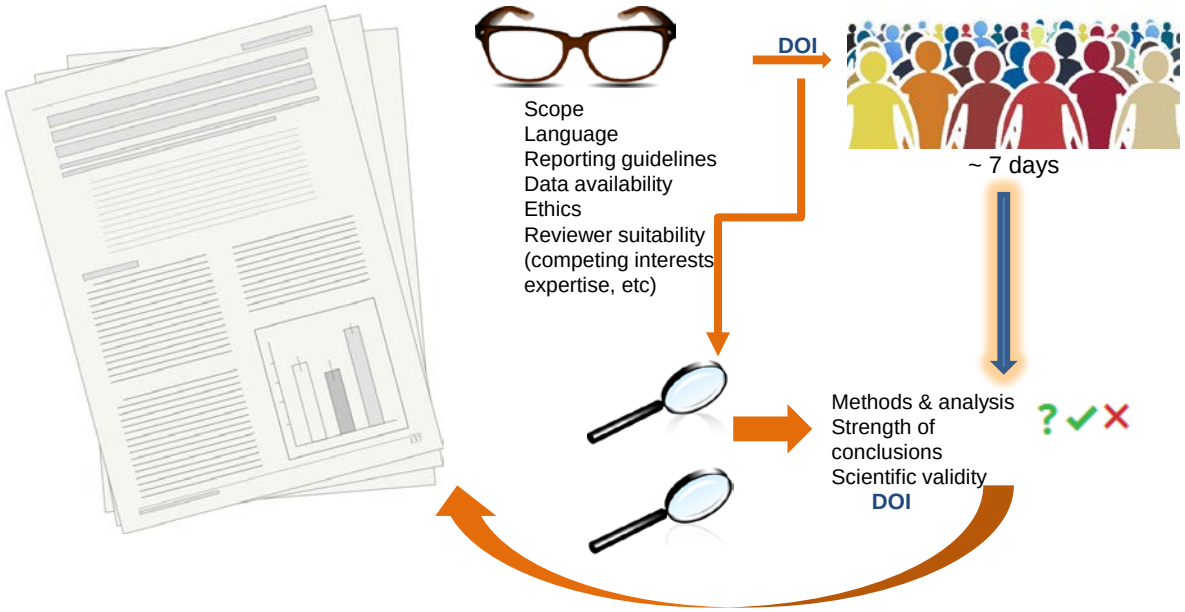
- Journal concept outdated?
- Demand for rapid access
- Demand to reduce research waste
- Demand to accelerate impact
- Increasing drive towards Open Science

PUTTING THE RESEARCHERS BACK IN CONTROL

Open Science Publishing Platform

- Author led
- Immediate publication
- Transparent refereeing
- Recognition for reviewers (including citable reports)
- No editorial bias
- Data included
- Indexed in PubMed, Scopus, etc
- Gold Open Access (Article charges $150–$1000)

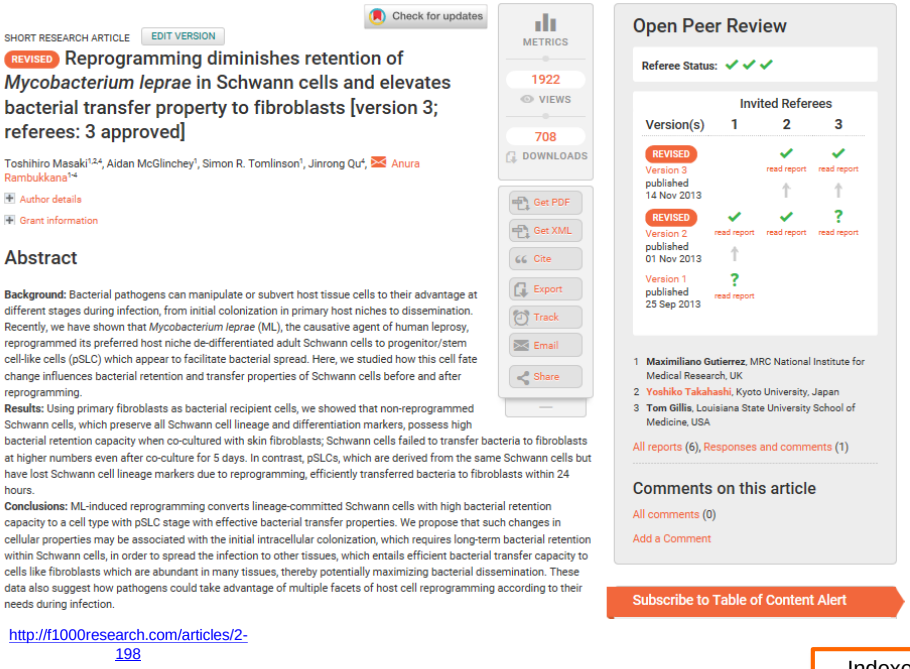
THE F1000RESEARCH PUBLISHING AND PEER REVIEW PROCESS



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.

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

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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)

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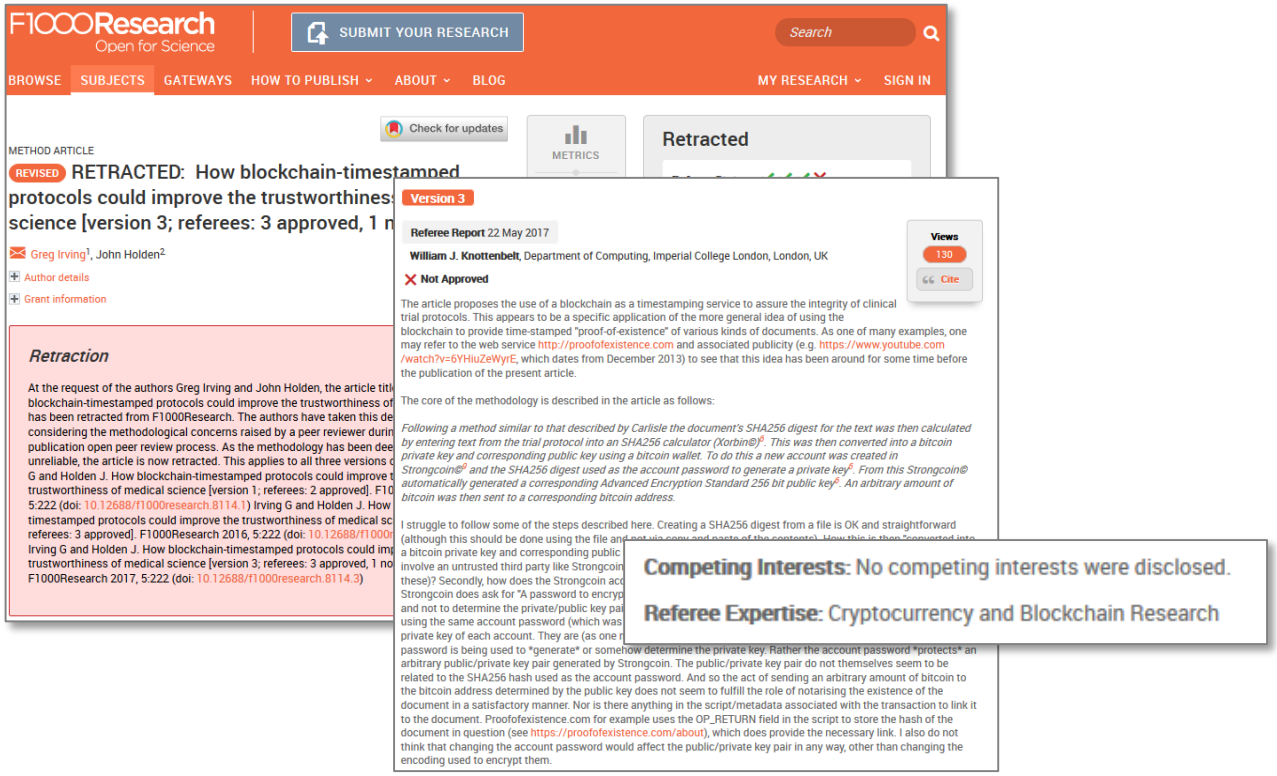
Indexed once it passes peer review: ✓ ✓ or ? ? ✓

TRANSPARENT REFEREEING AND DISCUSSION

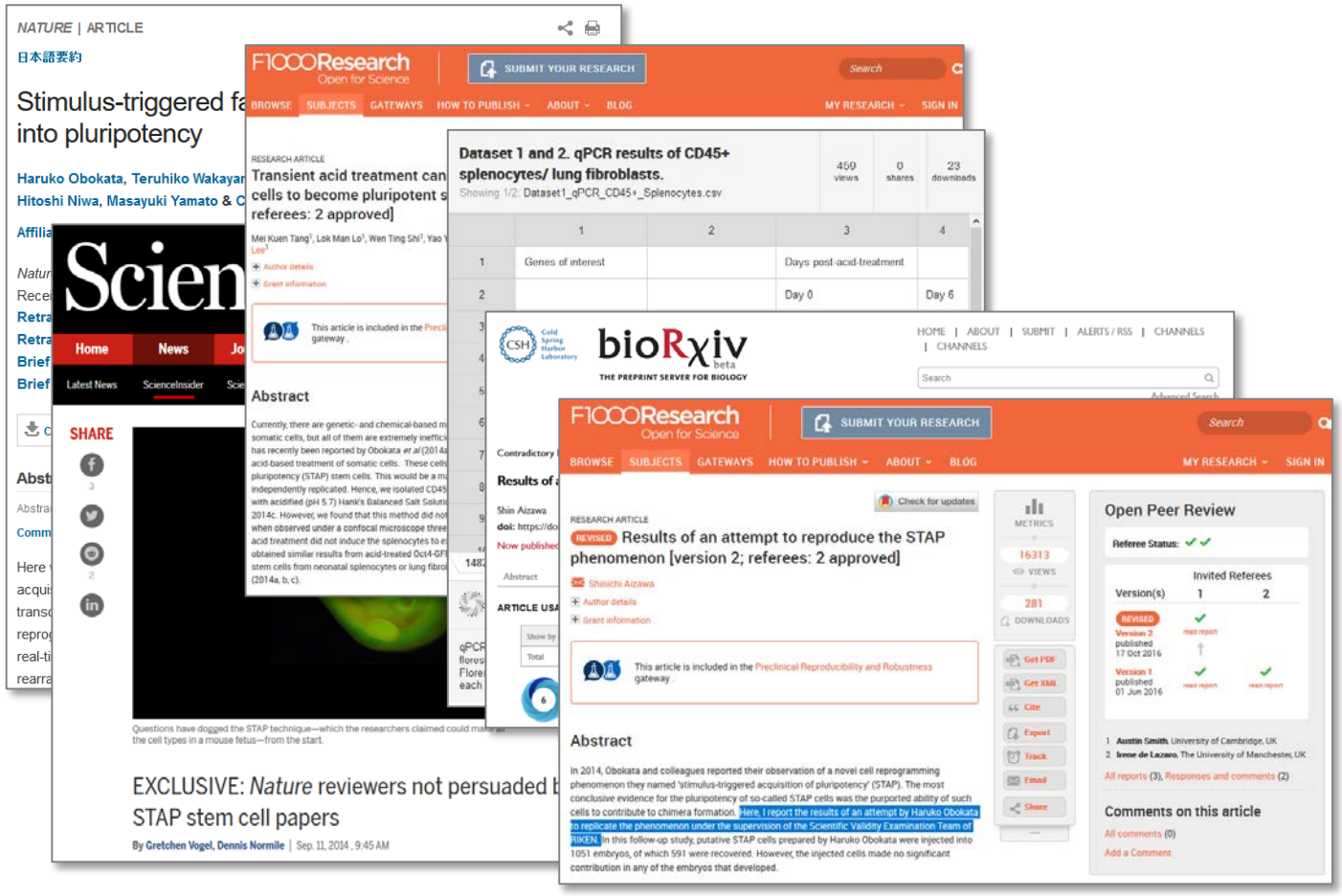
METHODS AVAILABILITY – COMMUNITY REVIEW

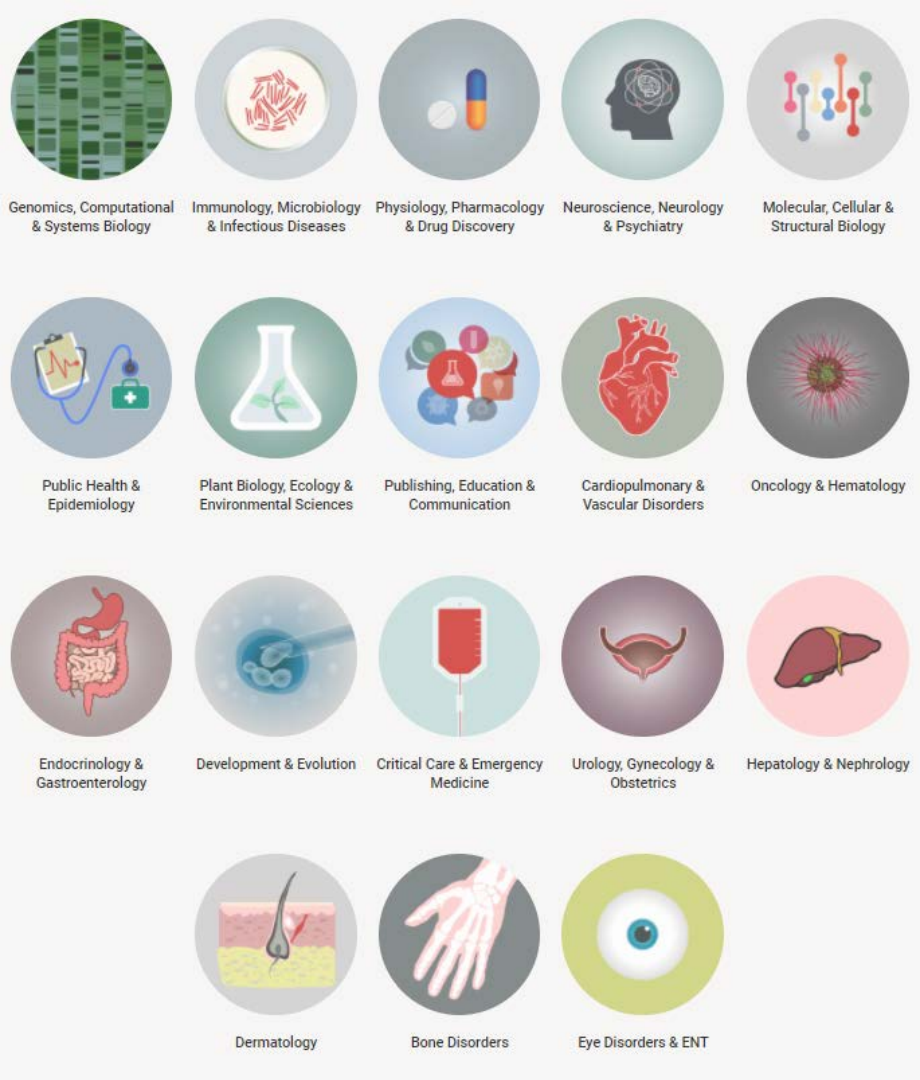
- Others can try to replicate the study (referees often don't have time)
- Can then invite specific referees for those issues; the entire history is available to all



DATA AVAILABILITY – ENABLES PEER REVIEW

OPEN REVIEW, DATA ACCESS, AND NO EDITORIAL BIAS



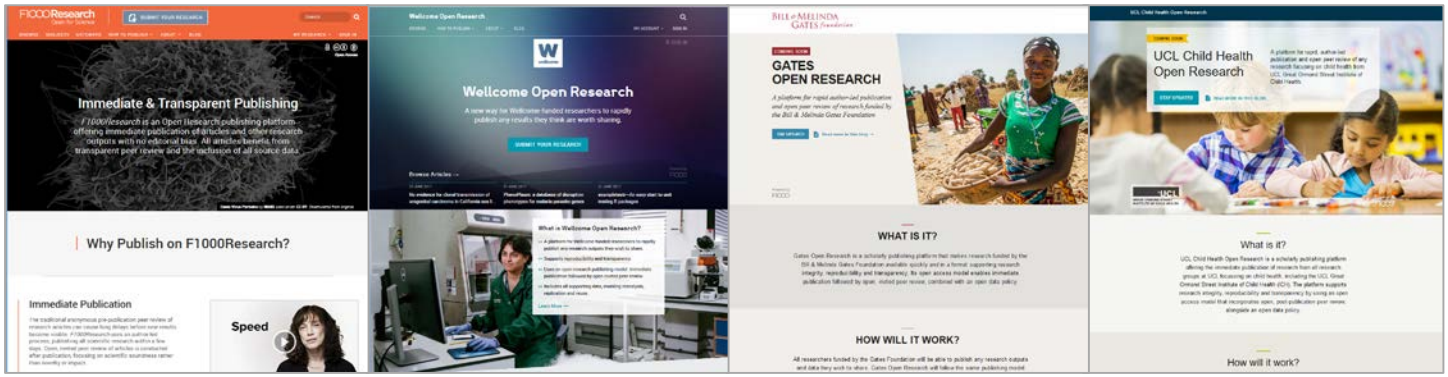


F1000Research
Open for Science

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

OPEN RESEARCH PUBLISHING PLATFORMS



- F1000's own platform
- Launched 2013

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

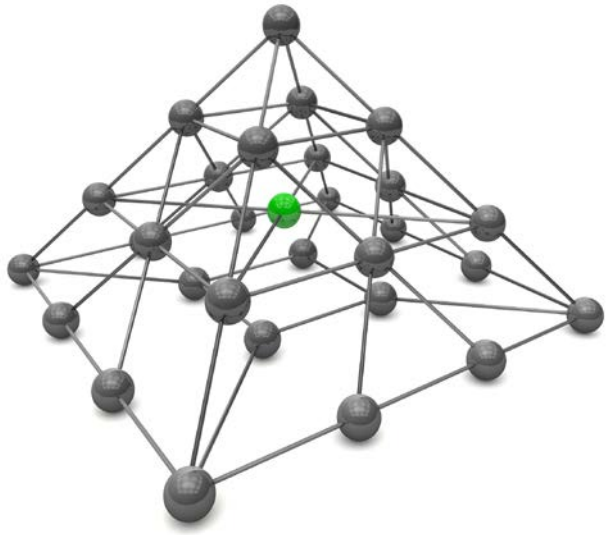
- Controlled by Bill & Melinda Gates Foundation, operated by F1000
- Due to launch Nov 2017

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

Benefits of funder-model:
- Authors decide what they want to share – take more responsibility for their work
- Authors publish what they find – reduces selective reporting

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



QUESTIONS?

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