Shaping the Future of Scholarly Communication: The Role of Preprint Peer Review

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Despite technological advances, journal publication is taking longer than ever

$6$ billion, globally per year on peer review alone

See also

**Life Science's Average Publishable Unit (APU) Has Increased over the Past Two Decades**
Cordero RJB et al 2016

**Scientific sinkhole: estimating the cost of peer review based on survey data with snowball sampling**
LeBlanc et al, 2023

*Accelerating scientific publication in biology, Ronald D. Vale*
Proceedings of the National Academy of Sciences Nov 2015, 112 (44) 13439-13446; DOI: 10.1073/pnas.1511912112
Preprints enable rapid, low cost, dissemination

- Preprint server
  - <48 hrs screening process
  - Public
  - Community feedback, ideas, discussion
  - Months to years

- Manuscript
  - Submit
  - Journal 1
  - Peer Review
  - Peer reviewed paper
  - <48 hrs screening process
  - Public
  - Community feedback, ideas, discussion
  - Months to years

- Journal 2
  - Revise
  - Private

- Journal 3
  - Revise
  - Private

Preprints enable rapid, low cost, dissemination
Preprints are...

- Not peer reviewed by the server before posting
  - Posted rapidly
- Versioned
  - Easily updated or corrected
- Compatible with journals
  - Check SHERPA/ROMEO & journal website
- Citable
  - Receive a DOI
  - Some search tools pool citations to preprints & its journal article (eg Google Scholar)
  - Many funders consider preprints evidence of productivity in grant apps & reports
Nearly 600,000 life sciences preprints
+ millions more in other disciplines & other repositories

March 2021: 10.7% of monthly PubMed volume
Preprints provide flexibility for experimentation

Fixed, rigid
- Traditional publisher
- Journal article

Flexible, adaptable
- Preprint server
- Most preprints
- The future?
Authors want feedback

Increase awareness
Stake priority
Benefit science
Receive feedback
Speed up sharing

Benefits of preprinting

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0274441
https://dapp.orvium.io/deposits/6442f782b2b5580ba561406b/view
Peer reviewers can act as gatekeepers…

Most scientists regarded the new streamlined peer-review process as ‘quite an improvement.’
…Or collaborators

Review Commons provides high-quality peer review of preprints before journal submission.

Compare your Review Commons experience to your experience as an author at traditional journals over the last year. (n = 95)

- Reviews improved the paper.
- Reviews were collegial.
- Reviews proposed reasonable and achievable experiments and edits.
- The reviewers had appropriate expertise.
- The reviewers were unbiased.
- The entire publishing process was fast.
- The entire publishing process was efficient (e.g., reduced cycles of reviews with new referees).
- The entire publishing process was transparent.

https://asapbio.org/review-commons-9-months
Growth of preprint review over time

Preprints reviewed per month on Sciety, excluding reviews conducted by automated tools (ScreenIT) and reviews by journals posted after publication of the journal version. (Source: 10.31219/osf.io/cht8p)
The preprint feedback ecosystem

- **Linking and discovery**
  - Search tools: sciety, Europe PMC
  - DOI registries: Crossref, DataCite
  - Protocols & frameworks: notify, DocMaps

- **Preprint feedback initiatives**
  - Social media posts: plaudit, PEERIODICALS
  - Comments on preprint servers: MBoc Preprint Highlights, preLights, RR INFECTION DISEASES, SCI RATE
  - Minimalist or freeform: PUBPEER, The online journal club
  - Journal-like: sciclo, eLife

- **Preprints**
  - bioRxiv, medRxiv, COm, Research Square, SciFLO, arXiv
Formal recognition for preprint peer review

18 doctoral schools have stated that preprints recommended by a PCI are considered the same value as articles of good quality published in journals via Thomas Guillemaud & Denis Bourguet

**FEATURES**

Refereed preprints recognized as eligibility criterion for EMBO Postdoctoral Fellowships

EMBO will accept first author refereed preprints in applications for postdoctoral fellowships in a four-month trial

Read more ▶

Papers subjects to a ‘journal-independent standard peer review process [...] are considered by most cOAlition S organisations to be of equivalent merit and status as peer-reviewed publications that are published in a recognised journal or on a platform.”

Statement on July 6, 2022
In its conclusions, the Council calls on the Commission and the member states to support policies towards a scholarly publishing model that is not-for-profit, open access and multi-format, with no costs for authors or readers.

A publish-review-curate system based on preprints and directly supported by institutions & funders, can achieve this
Preprint peer review

Sara Monaco, EMBO
Managing Editor

Supported by hhmi Howard Hughes Medical Institute
Why?

Accelerate access to peer reviewed research

 reviewed preprint

Eliminate redundant peer review at journals

 published paper
How does it work?

preprints → Journal agnostic peer-review → manuscript & reviews → journal submission → revision → published paper

+ response

bioRxiv medRxiv

reviewed preprint

Journal-agnostic

Journal-compatible
Creating synergies between open science and journal publishing

Fast dissemination of scientific findings  |  Efficient publishing
Peer Community In

Communities of researchers handling the evaluation of (through peer review) and recommending preprints in their scientific field

bioRxiv
arXiv.org
OSF PREPRINTS

PCI Ecology
PCI Evolutionary Biology
PCI Genomics
PCI Microbiology

etc...

PCI
peercommunityin.org

Recommendation of preprints and open-access publication for free

https://peercommunityin.org
contact@peercommunityin.org
How does it work?

1. Authors deposit their preprint.
2. Authors submit their preprint to PCI.
3. Peer Review.
   - Not considered
   - Rejected

PCI website

PREPRINT server + data + script + code

Not considered

Recommended final, valid, citable article, for free

Recommended text & Reviews

https://peercommunityin.org

contact@peercommunityin.org
Fate of PCI recommended preprints

PCI-recommended article

Final, citable article hosted by preprint server

Author’s choice to submit to

Peer Community Journal
Direct publication in diamond open access

PCI-friendly journals
- 42 accept with no further peer review
OR
- 38 give fast response (≤ 5-7 days) to presubmission enquiry

Other journals

Recommendation of preprints and open-access publication for free

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Unique features

- Submissions by authors
- Data, script & codes must be shared
- Editorial decisions (CC BY 4.0)
- Recommendation text (CC BY 4.0)
- A recommended preprint is a final and usable article
  ... but publication in a journal is possible if necessary
- Evaluations are transferable to any journals (including 80 PCI-friendly journals)
- PCI-recommended preprints can be directly published in Peer Community Journal (Diamond OA)
- PCI is supported by many research institutions (more than 100 univ, libraries, national research institutes) ⇒ a secure budget for the next 10 years

https://peercommunityin.org  contact@peercommunityin.org
PREreview imagines more equitable and broader participation in peer review

We envision a world in which feedback to scholarly outputs is done openly, rapidly, constructively, and by a diverse global community of peers.

We want to extend the pool of peer reviewers to traditionally marginalized groups of researchers whose expertise is measured by constructive contributions and community engagement and not by seniority and prestige.
PREreview is a community and platform for open preprint review

Peer review mentoring and training programs to train researchers on constructive peer review practices

Open review platform where any researcher with an ORCID account can request or give constructive feedback to preprints

Live-streamed preprint journal clubs to engage researchers across the world in constructive and timely discussions around preprints
Open preprint reviews. For all researchers.

Provide and receive constructive feedback on preprints from an international community of your peers.

Review a preprint

For underserved researchers
We support and empower diverse and historically excluded communities of researchers (particularly those at early stages of their career) to find a voice, train, and engage in peer review.

A better way
Making science and scholarship more equitable, transparent, and collaborative.

Our mission
PREreview of “Behavioral plasticity allows ungulates to balance risk and reward following megafire”

by Gary S McDowell

Published July 14, 2023  DOI 10.5281/zenodo.8148504  License CC BY 4.0

Overall summary:

This work seeks to study the movement behavior of black-tailed deer immediately following a megafire, to understand whether ungulate species are able to adjust to the immediate effects of megafires - specifically how deer alter habitat selection and behavioral decisions adjusting to a novel landscape. The authors use hourly GPS tracking data from doe over the period of a year and fit data from specific time periods to Resource Selection Functions and Hidden Markov Movement models. The authors claim that this work shows evidence of adaptive capacity, with deer initially avoiding severely burned areas but later selecting these areas for enhanced foraging. The authors suggest that this species, and by extension other ungulates, can navigate altered can navigate altered environments, with implications for understanding broader resilience.
Connecting **Authors, Editors, and Community Reviewers**

1. **Author-driven request** of community reviews at the time of preprint submission.

2. **Journal-driven request** of community reviews on a manuscript/preprint submitted to the journal for review and publication.

THANK YOU!

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Join our Slack Community

I’m happy to answer any questions you have!

You can reach me at daniela@prereview.org
Science Colab

A community-driven open science publishing initiative

Lesley Anson
lesley@sciencecolab.org
www.sciencecolab.org
Introducing Biophysics Colab

- The first community endeavour of Science Colab
- Providing a peer review service for biophysical preprints
- Soon to expand to a full ‘publish, review, curate’ service
Features of our service

- Puts authors in control:
  authors choose when, how & where to publish studies
- Delivers the best possible author service:
  high-quality, non-judgemental, constructive feedback
- Provides a better foundation for research assessment:
  equitable, inclusive, transparent
What next?

- We will continue to innovate
- We will create new collaborations with other communities
- We will work to create a regenerative business model

We envisage an ecosystem in which the significance of research findings are recognised independently of publication venue.