

Preprints: where are we now?

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2020-04-27
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#ReimagineReview



These slides: tinyurl.com/uksg-polka



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Disclosures

- PhD: UCSF, Biochemistry/Cell Biology
- Postdoc: Harvard Medical School, Synthetic biology
- ASAPbio Director: UCSF
- Executive Director: ASAPbio

Other affiliations:

- Current: cOAlition S Ambassador, Knowledge Futures Group (MIT), *Publications* (MDPI), ASCB Public Policy Committee, Rescuing Biomedical Research, PREreview advisory board
- Past: Whitehead Institute, Future of Research, NASEM NGRI

ASAPbio

a 501(c)(3) promoting transparency & innovation in life sciences publishing



THE LEONA M. AND HARRY B.
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hhmi



SIMONS FOUNDATION



Preprints make work available almost immediately

Preprint server



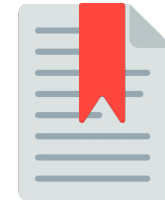
<48 hrs
screening
process

Public



Community feedback, ideas, discussion

Peer reviewed
paper



Months to
years

Private



Manuscript

Submit

Journal 1



Peer Review

Journal 2



Revise

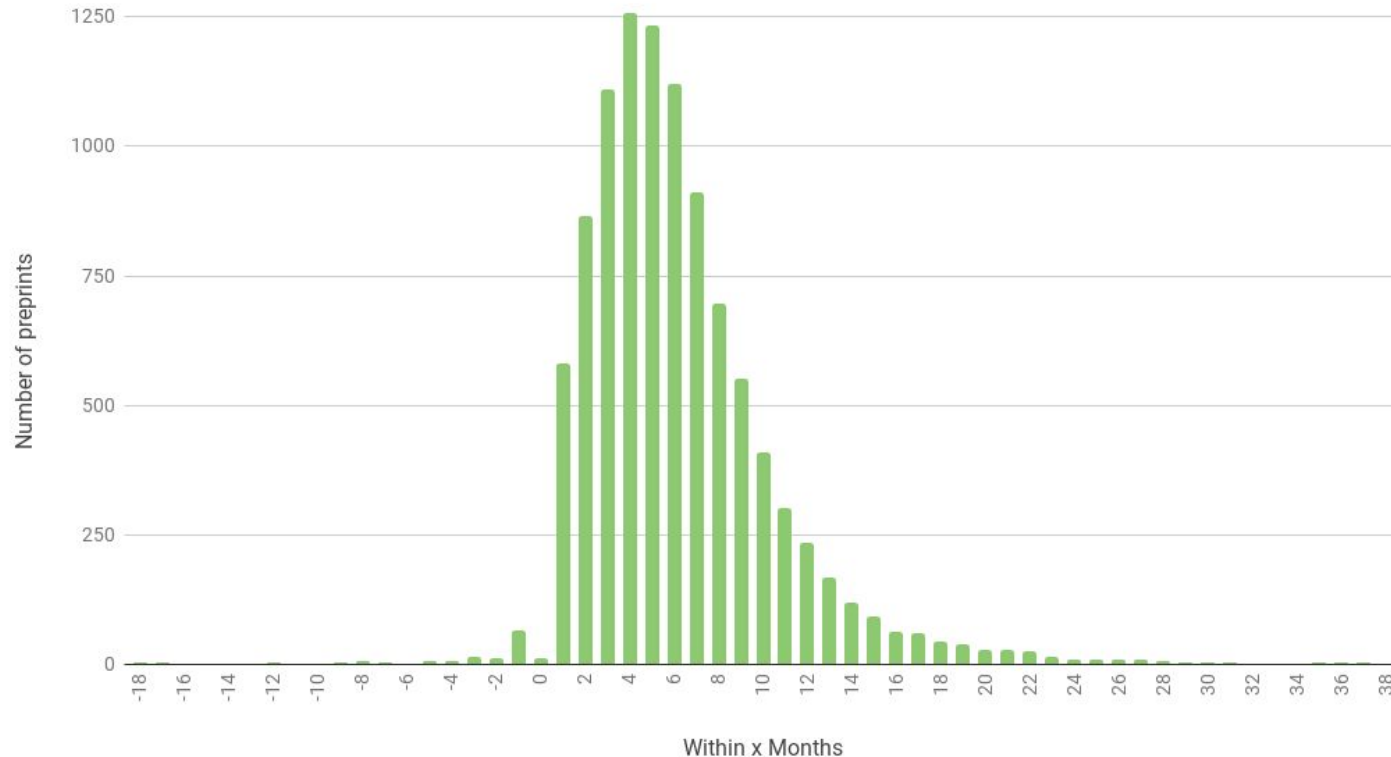
Journal 3



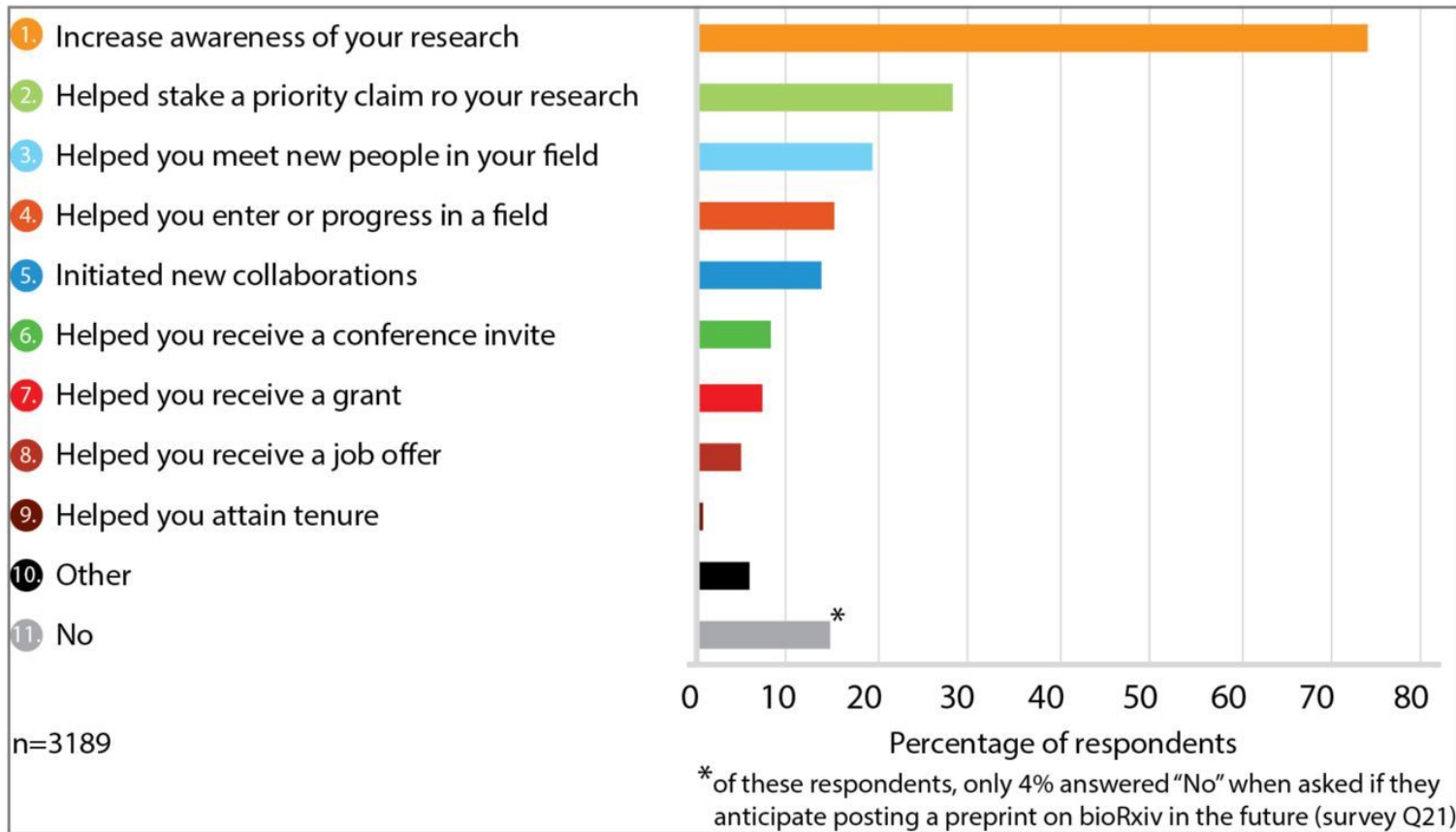
Revise

Median 4-5 months before journal publication

Time between posting preprint and first publication of final peer reviewed paper



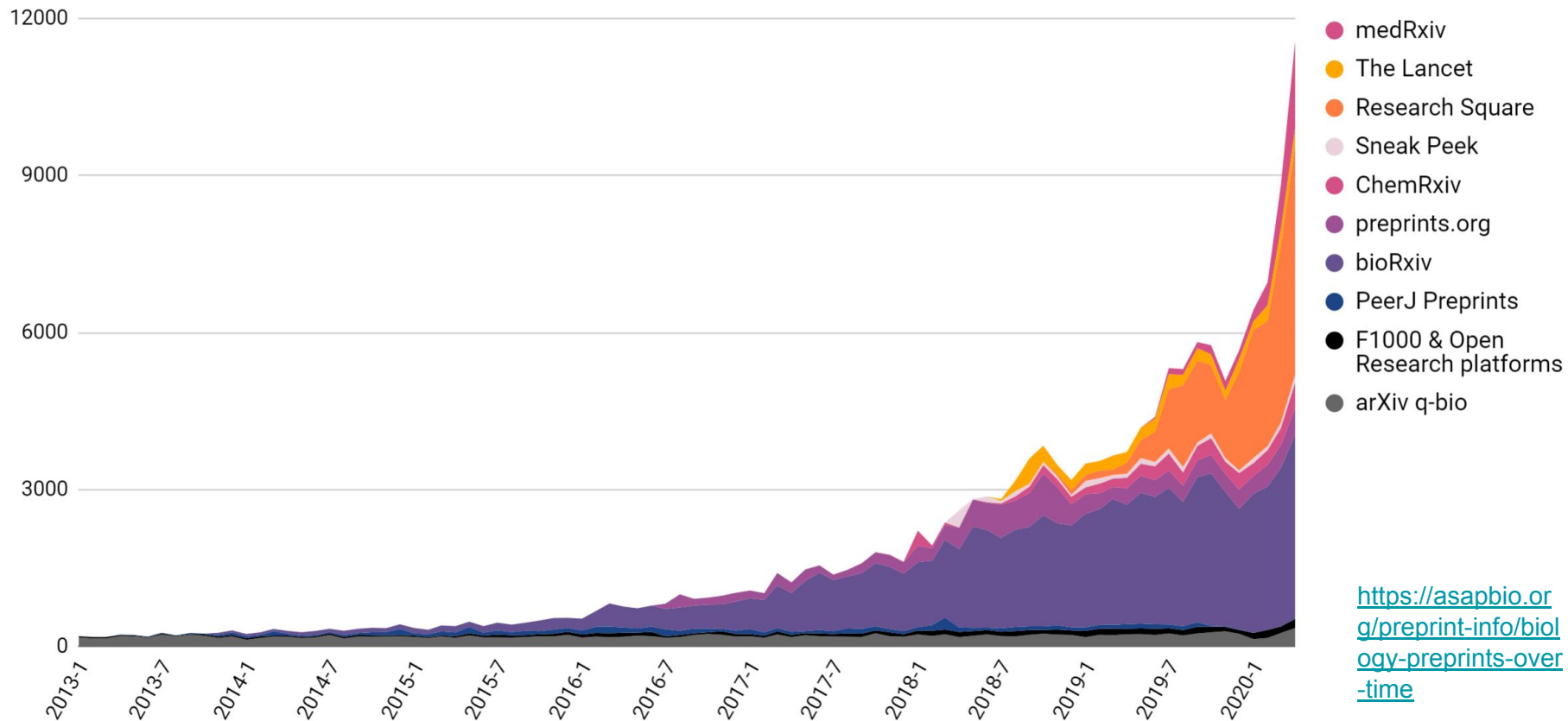
Benefits of preprints



Missing
from this
list -
feedback

Biomedical preprints per month through 2020-04

Sources: Jordan Anaya (PrePubMed), Naomi Penfold, EuropePMC, arXiv, Crossref, SSRN



<https://asapbio.org/preprint-info/biology-preprints-over-time>

Preprints are valid research outputs for REF2021

[Home](#) / [Preprints](#) / [Preprints are valid research outputs...](#)

In conversations about preprints in the UK, the question is often raised: ‘are preprints included in REF?’ In brief: yes. This is most likely to be applicable for any research manuscript that is prepared close to the REF2021 submission deadline, and is deemed to be amongst your best work in the current cycle, but which would otherwise not be eligible for REF2021 due to not having time to be published in a journal before the deadline.

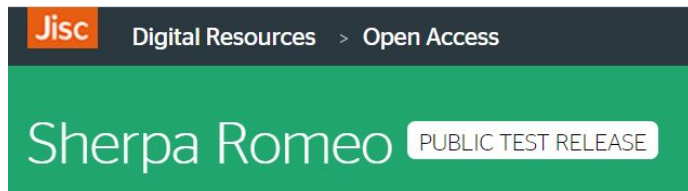
The Research Excellence Framework (or REF) is the exercise the UK higher education funding bodies undertake periodically to assess UK research institutions for excellence and impact of research outputs. The [REF scores determine allocation of approximately £2bn/year national funding for research](#), so REF is a major driver of UK institutional policy and researcher behaviour. Learn more about REF at the end of the post.

Below, we describe how preprints can be included in REF submissions, with extracts from the official REF guidance.

<https://asapbio.org/preprints-valid-for-ref2021>

Finding journal policies about preprints

Journal websites: Instructions to authors



<https://v2.sherpa.ac.uk/romeo/>

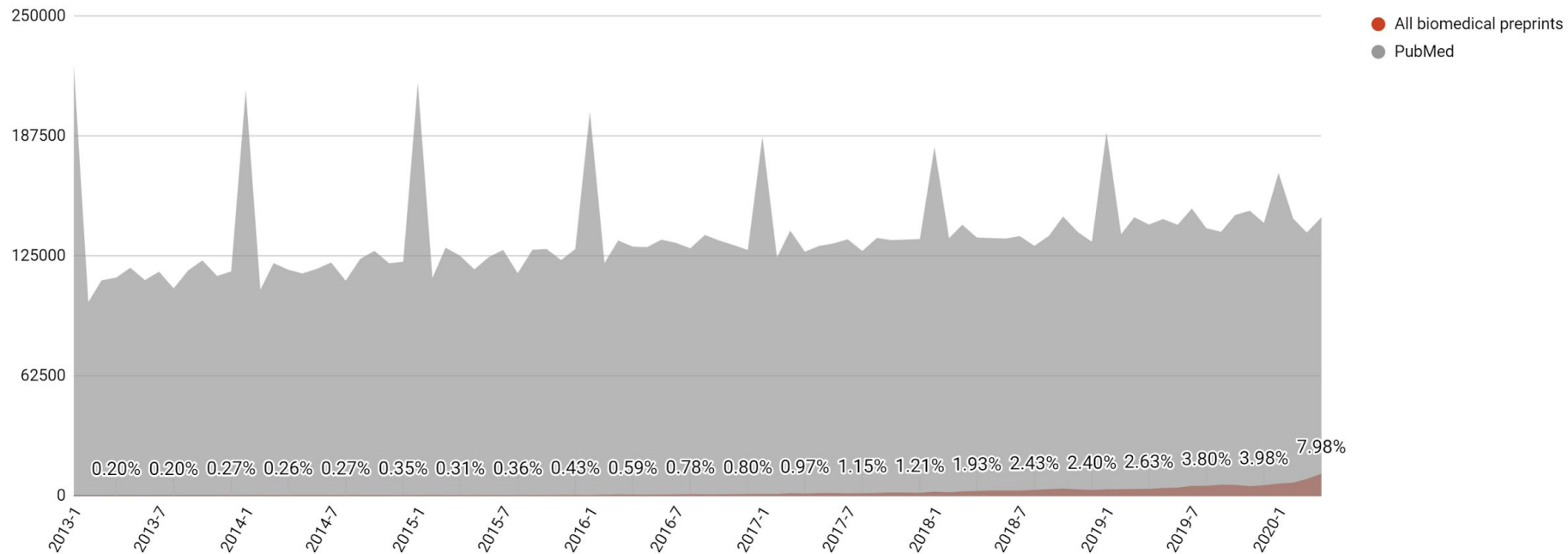


<https://transpose-publishing.github.io/>

Practices: asapbio.org/journal-policies

Preprints and total biomedical literature through 2020-04

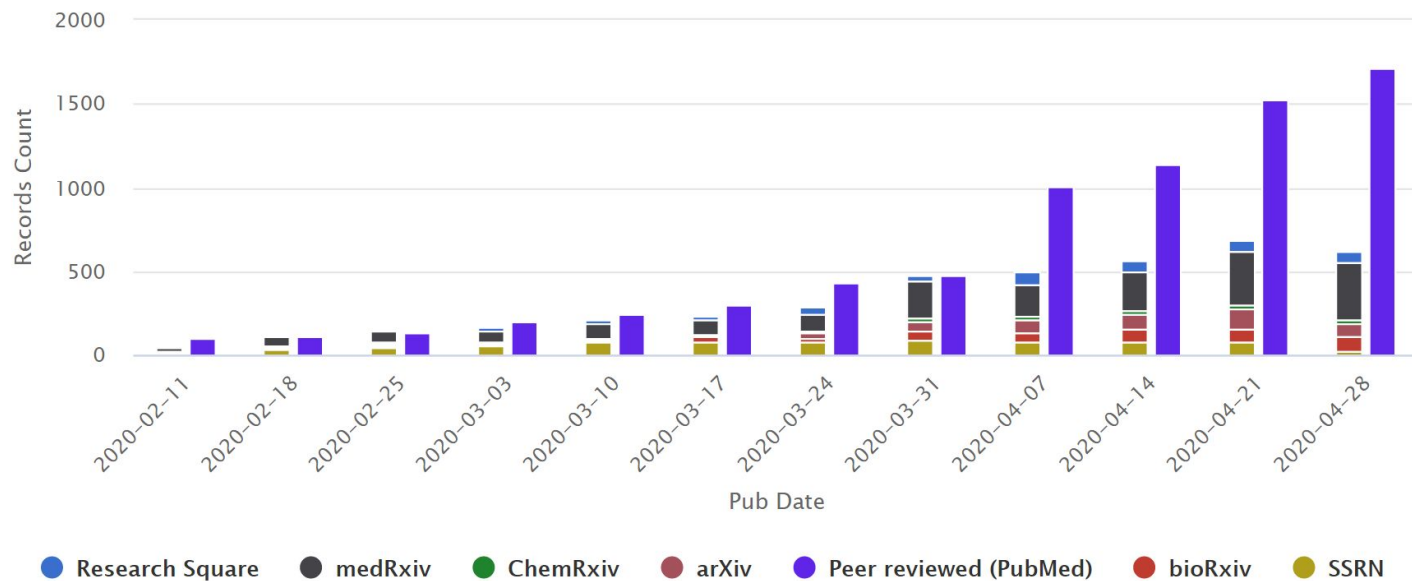
Labels reflect percentage of preprints/PubMed papers as a yearly averages



A significant fraction of COVID-19 research is currently in preprints

Count by Source

Click and drag to zoom



More on preprints and COVID:

- [Curated COVID preprints from CoB](#)
- [Liam Brierley overview article](#)
- [Majumder & Mandl article on \$R_0\$](#)
- [BMJ blog post](#)
- [Use of preprint in UK gov policy](#)

With
increasing
use,
renewed
concerns



bioRxiv is receiving many new papers on coronavirus SARS-CoV-2. A reminder: these are preliminary reports that have not been peer-reviewed, and should not be used to guide practice/health-related behavior, or be reported in news media as established information.

Withdrawn

[119 comments](#)

Uncanny similarity of unique inserts in the 2019-nCoV spike protein to HIV-1 gp120 and Gag

Prashant Pradhan, Ashutosh Kumar Pandey, Akhilesh Mishra, Parul Gupta, Praveen Kumar Tripathi, Manoj Balakrishnan Menon, James Gomes, Perumal Vivekanandan, Bishwajit Kundu

doi: <https://doi.org/10.1101/2020.01.30.927871>

This article is a preprint and has not been certified by peer review [what does this mean?].

Abstract

[Info/History](#)

[Metrics](#)

[Preview PDF](#)

Abstract

This paper has been withdrawn by its authors. They intend to revise it in response to comments received from the research community on their technical approach and their interpretation of the results. If you have any questions, please contact the corresponding author.

Funder, publishers calls for preprint review



NIGMS  @NIGMS · Apr 2

While so many of us are working from home, #NIGMS reminds the community they could spend time reading and providing comments on #Preprints. The more constructive feedback preprints receive, the more useful they will be. #ScienceTwitter @ASAPbio_



2



34



52



<https://twitter.com/NIGMS/status/1245720201741709312>

Scholarly publishers are working together to maximize efficiency during COVID-19 pandemic

April 27, 2020 by [Claire Redhead](#)

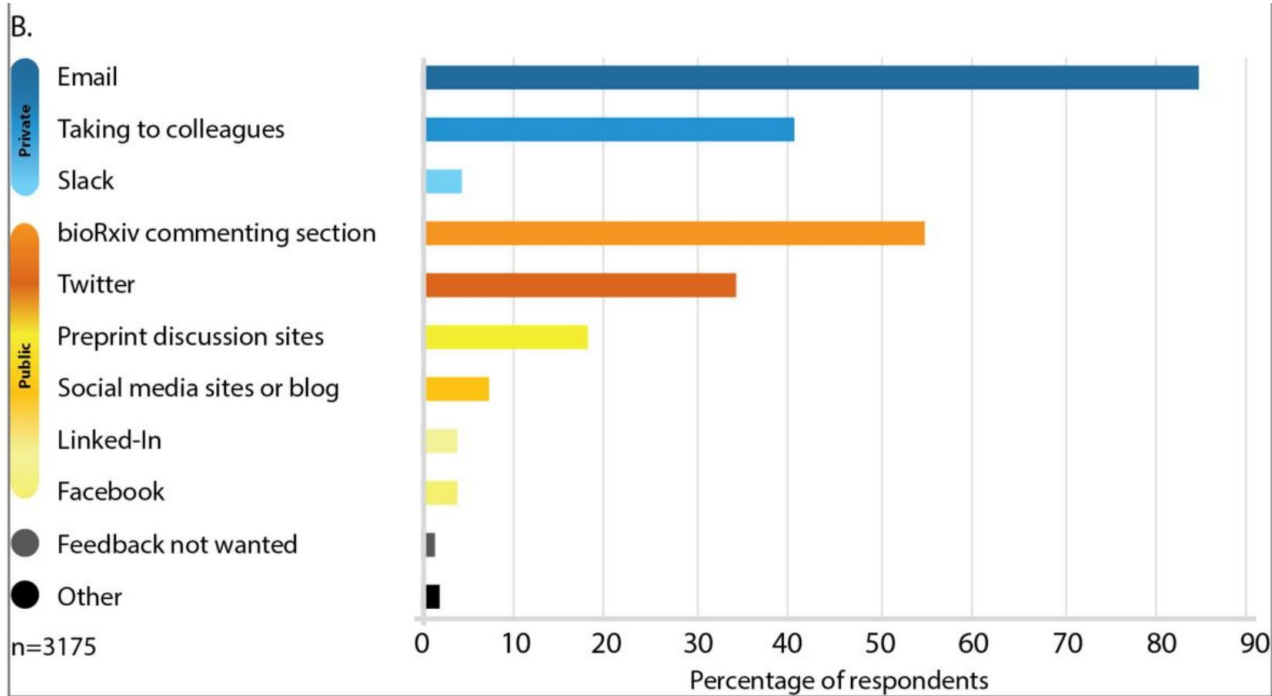


<https://oaspa.org/scholarly-publishers-working-together-during-covid-19-pandemic/>

- Review in <5 days
- Transfer reviewer identities between journals

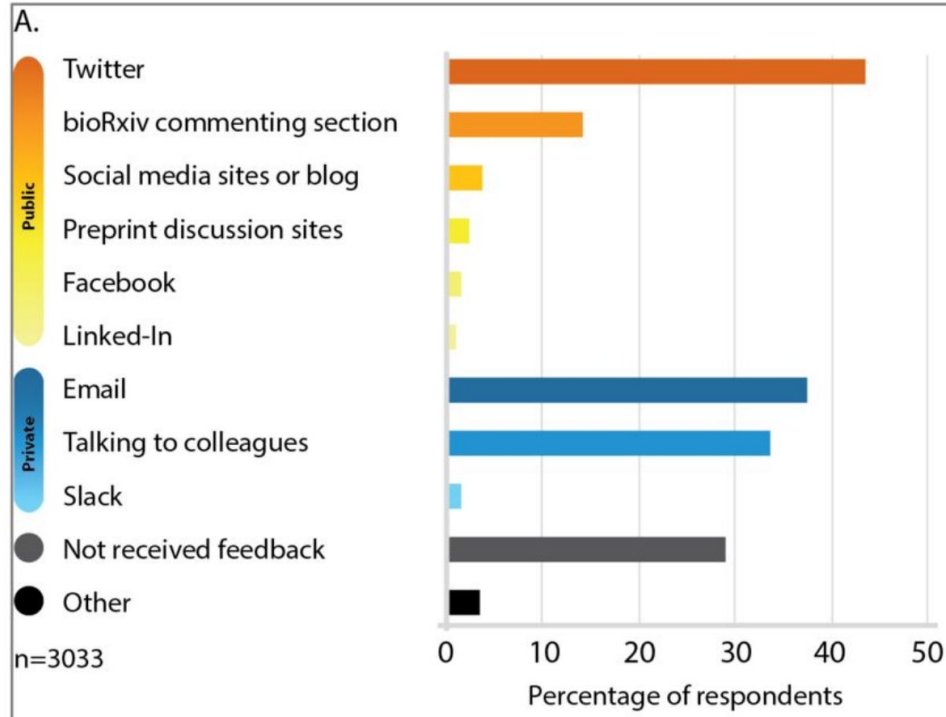
“Additionally, the group is asking all potential reviewers, whether they sign up to the rapid reviewer list or not, to help identify and highlight important and crucial COVID-19 preprints as early as possible, to optimize the limited time of expert reviewers who are subsequently invited to review the most important and promising research by a journal/platform. The more rigorous and helpful review of preprints that can occur during this time, the better for all reviewers, authors, and editors.”

Authors *want* feedback



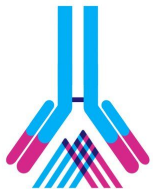
Authors were asked how they would like to receive feedback on papers (see main text and Supplementary Data).

Most feedback not in comments



In a survey of bioRxiv users, scientists were asked the mechanisms by which they have received feedback on papers posted on bioRxiv.

<https://www.biorxiv.org/content/10.1101/833400v1.full>



Sinai Immunology Review Project

“Our workflow ranks each [...] according to its immunological relevance. The most relevant papers are then reviewed in detail by trainees and validated by a faculty member.”

<https://www.nature.com/articles/s41577-020-0319-0>

**Including 2359 preprints to date with
1450 short summaries and 128 reviews.**



Welcome. This is [live code!](#) Click the left margin to view or edit.

Search for papers containing search term in title or abstract.

REL_TITLE	REL_DOI	REL_DATE	REL_SITE	REVIEWED	SUMMARY	GRADE	ALTMETRIC
Rapid development of an inactivated vaccine for SARS-CoV-2	10.1101/2020.04.17.046375	2020-04-19	biorxiv	yes	no	1	3346.74
Comparison of SARS-CoV-2 infections among 3 species of non-human primates	10.1101/2020.04.08.031807	2020-04-12	biorxiv	yes	no	1	136.58
Type 2 and interferon inflammation strongly regulate SARS-CoV-2 related gene expression in the airway epithelium	10.1101/2020.04.09.034454	2020-04-10	biorxiv	yes	yes	1	10.35
On the interactions of the receptor-binding domain of SARS-CoV-1 and SARS-CoV-2 spike proteins with monoclonal antibodies and the receptor ACE2	10.1101/2020.04.05.026377	2020-04-10	biorxiv	yes	no	1	7.9
The Role of Vitamin D in Suppressing Cytokine Storm in COVID-19 Patients and Associated Mortality	10.1101/2020.04.08.20058578	2020-04-10	medrxiv	yes	no	1	156.55
Structural and functional analysis of a potent sarbecovirus neutralizing antibody	10.1101/2020.04.07.023903	2020-04-09	biorxiv	yes	yes	2	363.2
Tocilizumab treatment in severe COVID-19 patients attenuates the inflammatory storm incited by monocyte centric immune interactions revealed by single-cell analysis	10.1101/2020.04.08.029769	2020-04-09	biorxiv	yes	no	1	87.95
Reduction of lymphocyte at early stage elevates severity and death risk of COVID-19 patients: a hospital-based case-cohort study	10.1101/2020.04.02.20050955	2020-04-06	medrxiv	yes	no	1	3.25
Neutralizing antibody responses to SARS-CoV-2 in a COVID-19 recovered patient cohort and their implications	10.1101/2020.03.30.20047365	2020-04-06	medrxiv	yes	no	1	3567.47
Association of BCG vaccination policy with prevalence and mortality of COVID-19	10.1101/2020.03.30.20048165	2020-04-06	medrxiv	yes	no	1	2707.05
Prediction and Evolution of B Cell Epitopes of Surface Protein in SARS-CoV-2	10.1101/2020.04.03.022723	2020-04-05	biorxiv	yes	yes	1	5.6
Atazanavir inhibits SARS-CoV-2 replication and pro-inflammatory cytokine production	10.1101/2020.04.04.020925	2020-04-05	biorxiv	yes	no	1	281.63
Structural basis to design multi-epitope vaccines against Novel Coronavirus 19 (COVID19) infection, the ongoing pandemic emergency: an in silico approach	10.1101/2020.04.01.019299	2020-04-03	biorxiv	yes	yes	1	5.25
Virus-host interactome and proteomic survey of PMBCs from COVID-19 patients reveal potential virulence factors influencing SARS-CoV-2 pathogenesis	10.1101/2020.03.31.019216	2020-04-02	biorxiv	yes	no	1	74.25
Clinical observations of low molecular weight heparin in relieving inflammation in COVID-19 patients: A retrospective cohort study	10.1101/2020.03.28.20046144	2020-04-01	medrxiv	yes	yes	1/2	52.98

Search preprints with reviews or requests for reviews by DOI, arXiv ID or title



NUMBER OF REVIEWS



NUMBER OF REQUESTS



CONTENTS

- With Reported Data 4
- With Reported Code 0

DISEASES

- Chikungunya 0
- Cholera 0
- CCHF 0
- Dengue 0
- Ebola 0
- Hendra 0
- HIV 0
- Influenza 0
- Lassa 0
- Leishmaniasis 0
- Malaria 0
-

Preprints with reviews or requests for reviews



 [Add Review](#) [Request Review](#)

TRENDING ↑ RECENTLY REVIEWED RECENTLY REQUESTED DATE PUBLISHED

Possibility of Disinfection of SARS-CoV-2 (COVID-19) in Human Respiratory Tract by Controlled Ethanol Vapor Inhalation Mar. 15, 2020

arXiv > 2003.12444





  6 Reviews | 7 Requests

Last reviewed 2 days ago ↓

A SARS-CoV-2-Human Protein-Protein Interaction Map Reveals Drug Targets and Potential Drug-Repurposing Mar. 27, 2020

bioRxiv > 10.1101/2020.03.22.002386



  5 Reviews | 5 Requests

Last reviewed 8 days ago ↑

SHOWING RESULTS OF 5 REVIEWS

YES UNSURE N/A NO



Are the findings novel?



Are the principal conclusions supported by the data and analysis?



Are the results likely to lead to future research?



ReimagineReview

A registry of innovative peer review experiments: search by discipline, function (curation, feedback, validation), problems addressed (eg speed, bias etc), features (annotation, scores, etc)



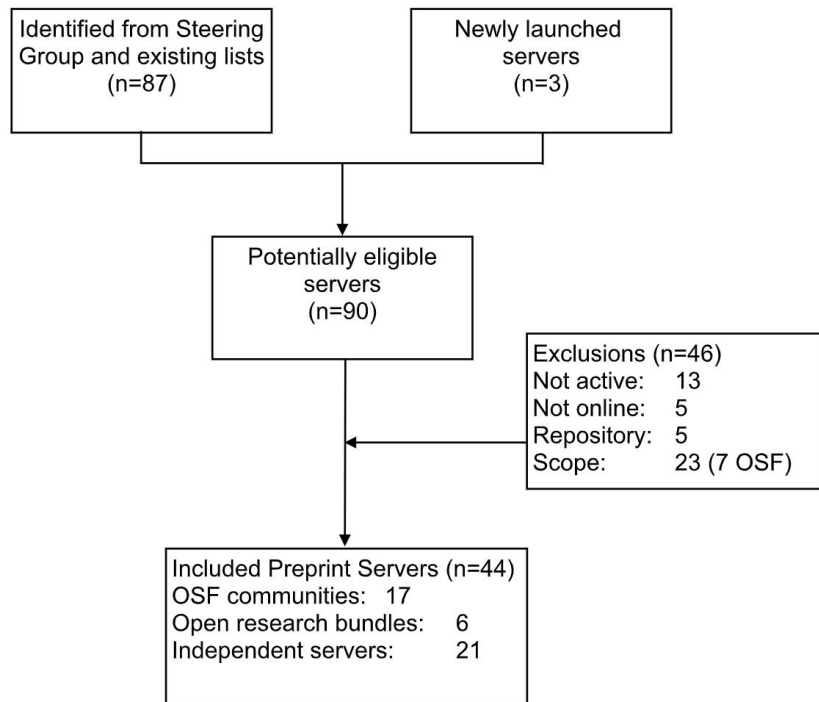
Victoria Yan
Peer Review Registry
Coordinator (Intern)

reimaginereview.asapbio.org

The screenshot shows the ReimagineReview website interface. At the top left is a hamburger menu icon and the text "ReimagineReview". At the top right is a user profile icon with the text "Sign in or Register" and a search icon. The main content area features a header "Peer review experiments by areas of innovation" above a grid of seven white cards, each with a blue icon and a label: "Bias in review" (scales icon), "Incentives and recognition for reviewing" (trophy icon), "Quality of review" (checkmark icon), "Speed" (play button icon), "Transparency" (eye icon), "Costs" (dollar sign icon), and "Reviewer training" (graduation cap icon). A blue button labeled "View all listings" is positioned at the bottom right of the grid. The background of the website is a blurred image of laboratory glassware.

What does the landscape of preprint servers look like?

44 platforms surveyed



2. Platform's description of the screening check

Quote policy and include URL, where possible; if none, state "none", or enter "unknown - information not found online" or "unknown - question not considered"

3. Who screens submissions?

Enter details found online about who is involved in the screening process, including URL(s) where appropriate; or enter "unknown - information not found online" or "unknown - question not considered"

4. Are researchers involved in screening process?

Mark only one oval.

- Yes
 No
 Unknown - information not found online
 Unknown - question not considered

5. Screening checks - overview

Are the following checked for during screening. More detailed information in following questions.

Check all that apply.

- Competing interests declared
 Plagiarism (e.g. run through software)
 Misconduct or integrity checks
 Authors are genuine
 All authors provide permission to post
 Compliance with ethical and legal requirements
 Funders acknowledged
 Clinical trial registration
 Other: _____

28. Metadata availability

How is metadata made available to third parties; if unknown, enter "unknown - information not found online" or "unknown - question not considered"

Mark only one oval.

- Openly available direct from the platform via API
 Openly available via Crossref
 Available for free upon request
 Available with charge upon request
 Not available
 Unknown - information not found online
 Unknown - question not considered
 Other: _____

29. What does metadata contain?

Select any options where the server indicates they share it in the metadata (even if the data field is not always complete or accurate).

Check all that apply.

- Title
 Identifier (e.g. DOI)
 Publication/deposition date
 Author name(s)
 Abstract
 Relational link to final journal publication (e.g. in crossref metadata)
 Author affiliation(s)
 Funder acknowledgements
 License type(s)
 Subject category
 Full-text content
 References
 Unknown - information not found online
 Unknown - question not considered
 Other: _____

30. Is Crossref metadata record updated when preprint is linked to publication (when known)?

This affects how EuropePMC and other Crossref metadata users can index preprints and provide third-party services.

Mark only one oval.

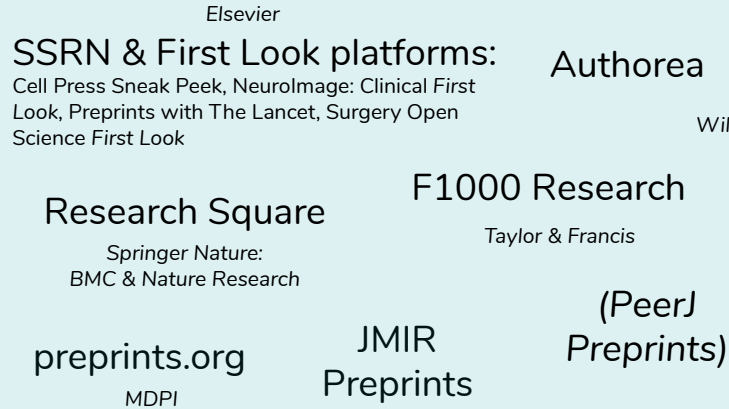
- Yes
 No
 Other: _____

110 survey questions or fields completed through online research where available, verified and updated in consultation with platform representative, where possible; original data simplified and verified

Landscape of platforms

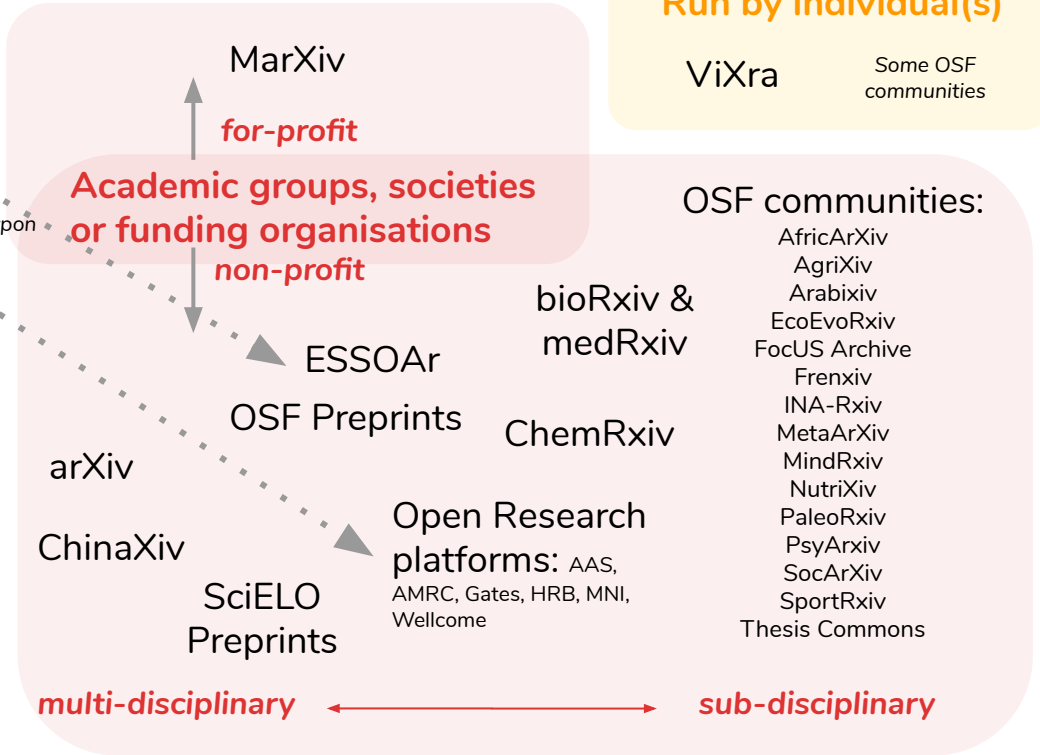
- Access to money, staff, time, publishing know-how
- Philosophy on amount of gatekeeping versus speed & transparency
- Motivations: from publisher-driven preprints to publishing-disruptive preprints

Multi-disciplinary platforms owned by or affiliated with for-profit publishers



MitoFit Preprint Archives
 Therapoid

Subject-specific platforms run by for-profit (med-tech & other) companies



Preprint servers differ in screening, withdrawal, commenting policies

A systematic examination of preprint platforms for use in the medical and biomedical sciences setting. Jamie J Kirkham, Naomi Penfold, Fiona Murphy, Isabelle Boutron, John PA Ioannidis, Jessica K Polka, David Moher. bioRxiv 2020.04.27.063578; doi: <https://doi.org/10.1101/2020.04.27.063578>

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Preprint server directory

Show 10 entries

Preprint server	Disciplinary scope	Ownership type	External content indexing	Peer-reviewed
AAS Open Research	Multiple scientific fields, including health and wellbeing*	Funding organisation (funder)	Google Scholar, Prepubmed, Europe PMC, SciLit	Peer-reviewed
AfricArxiv	All scientific fields	Academic community group; charity	Google Scholar, SHARE, Microsoft Academic, Unpaywall	Peer-reviewed

Platform description: "...is a free, open source and community-led digital archive for African research"

Ownership: Small group of enthusiasts

For-profit or not-for-profit: Non-profit or not-for-profit

Sustainability of the service: COS receive external financial support (e.g. grant, individual); operated by volunteers

Platform technology, openness of source code: Open Science Framework, open source

Advisory board (and researcher representation): Yes (includes researchers)

Content language(s) accepted: Afrikaans, Akan, English, French, Igbo, Swahili, Zulu, other unspecified

Columns Print Excel CSV Copy

- Preprint server
- Platform description
- Disciplinary scope
- Ownership
- Ownership type
- For-profit or not-for-profit
- Sustainability of the service
- Platform technology, openness of source code
- Advisory board (and researcher representation)
- Content language(s) accepted
- Content types accepted
- Permitted submission formats
- Machine-readable full-text content
- Unique identifier type and versioning approach
- Versioning policy
- Commitment to FAIR principles
- Data availability statement
- Clear statement that content is not peer-reviewed on article page
- Clear statement that content is not peer-reviewed on general

<https://asapbio.org/preprint-servers>

Closing May 15: asapbio.org/fellows



Iratxe Puebla
Associate Director



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ASAPbio Fellows
program

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Thank you

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