



**ChemRxiv**<sup>®</sup>

**Speed and trust:**

**How can preprints safeguard against misinformation while remaining a rapid option for sharing research?**

**Ben Mudrak, PhD**

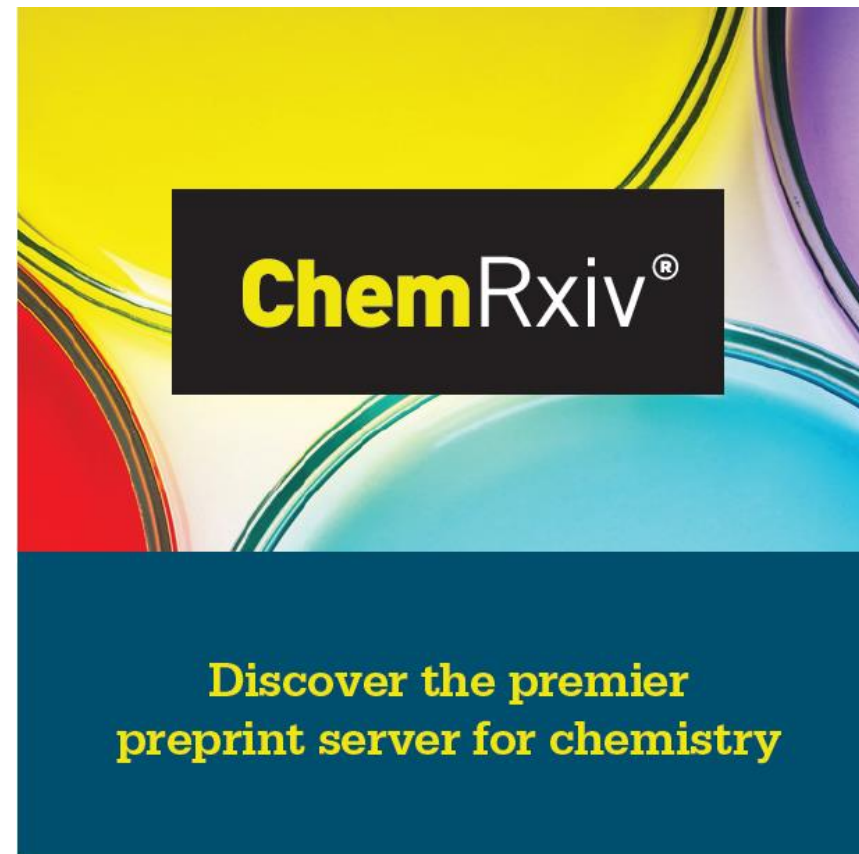
**Senior Product Manager, ChemRxiv**

**Division of Chemical Information Symposium, ACS Fall**

**August 19, 2024**

# Outline

- Overview of preprints and ChemRxiv
- Preprint authors' views
- Preprint screening
- Future directions
- Open discussion/Q&A



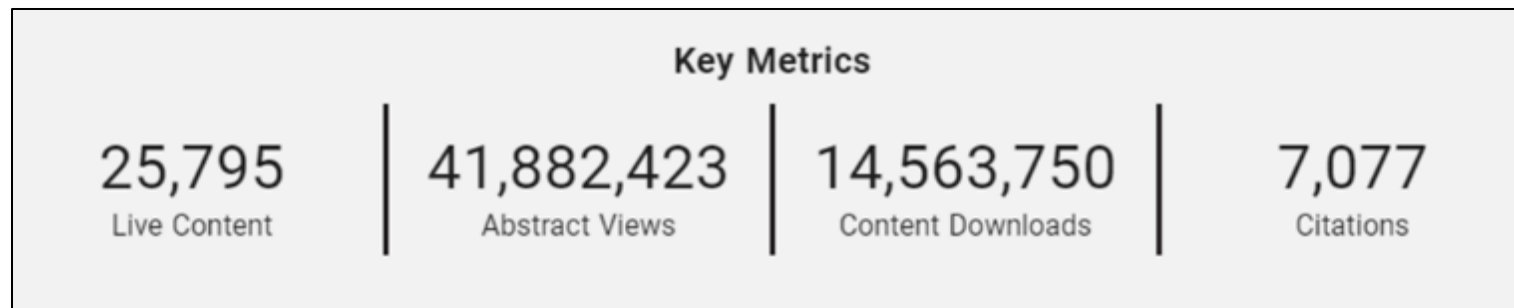
# What is a Preprint?

- ❑ A preprint is a **draft manuscript that has not yet been accepted for formal publication following peer review.**
- ❑ Preprints are **not** articles that have been peer reviewed and accepted for publication or final published articles.
- ❑ Preprints are intended to complement — not substitute for — properly validated, peer-reviewed journal articles

# An Overview of ChemRxiv

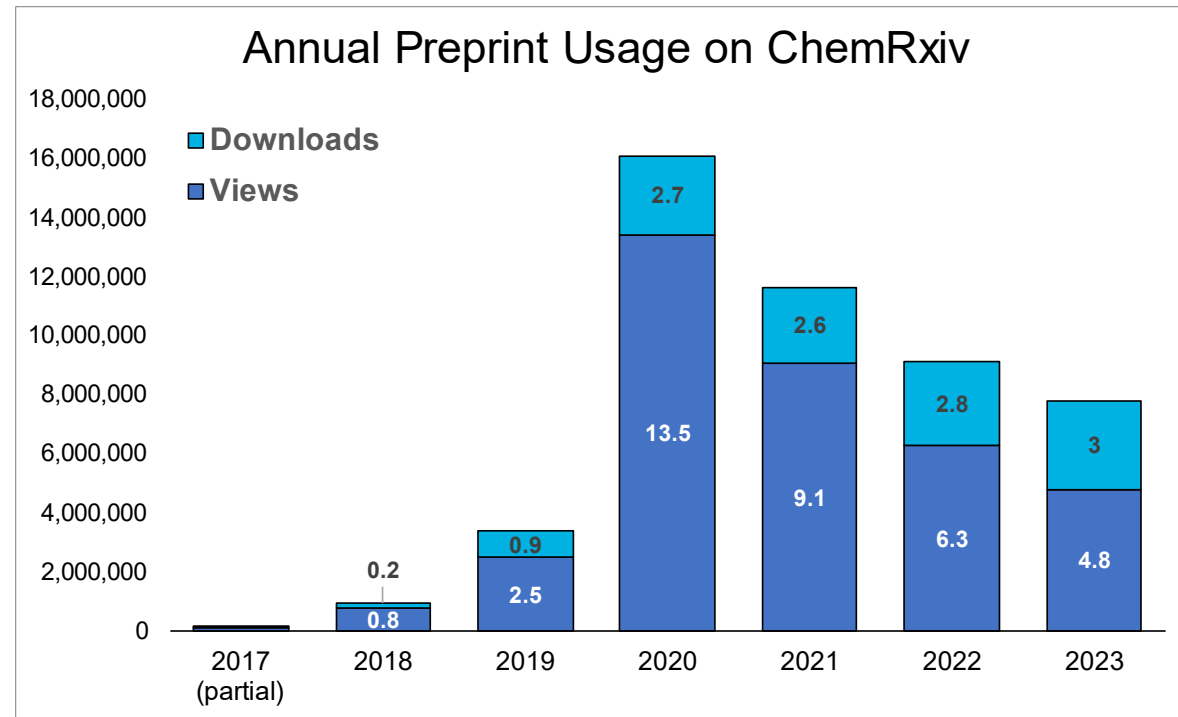
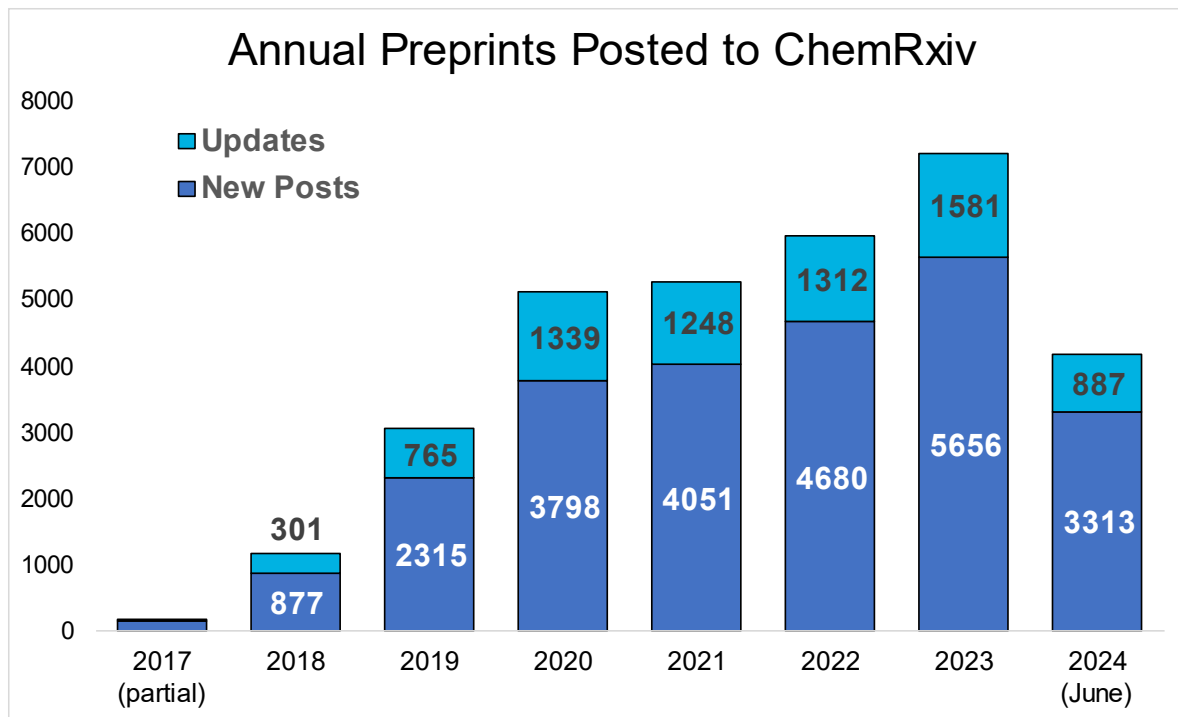


- Launched in **August 2017**
- **25,700+** preprints posted from authors in **over 100** countries
- Accepts research manuscripts and reviews in **17 categories** covering **chemistry and related fields**



[chemrxiv.org](https://chemrxiv.org)

# Growth of ChemRxiv



# Goals of ChemRxiv

Serve as a free submission, distribution, and archive service for unpublished preprints in chemistry and related areas.

ChemRxiv provides researchers the opportunity to

- Rapidly disseminate their work
- Establish priority and precedence for their discoveries
- Document research results in advance of formal publication
- Gather feedback from fellow scientists
- Submit directly to select scientific journals (over 150 and growing)
- Stay on top of the latest research in their fields

# Perceived benefits of preprints

Rank	ALL	Posted preprints	No preprints	% ranked highly
1	Staking first claim	Staking first claim	Staking first claim	74%
2	Rapid sharing	Rapid sharing	Rapid sharing	71%
3	Public record	Public record	Feedback	59%
4	Feedback	Feedback	Public record	54%
5	Transparency	Transparency	Transparency	49%

Speed of sharing new results seems to be the most popular feature for ChemRxiv authors.

Results from 2023 ChemRxiv Community Survey (n=974).

# Concerns about preprints

Rank	ALL	Posted preprints	No preprints	% ranked highly
1	Spread misinformation	Spread misinformation	Jeopardize publication	37%
2	Create confusion	Don't receive citations	Spread misinformation	33%
3	Jeopardize publication	Create confusion	Create confusion	32%
4	Don't receive citations	Can be misinterpreted	Can be misinterpreted	30%
5	Can be misinterpreted	Jeopardize publication	Don't receive citations	29%

Results from 2023 ChemRxiv Community Survey (n=974).

Respondents who had NOT posted preprints rated everything more concerning (average 41% vs. 26% for group that posted preprints).



# Speed and trust

Rapid  
dissemination of  
research



Careful screening  
for errors and  
misinformation

# COVID and Preprints

Biological and Medicinal Chemistry Search

## COVID-19: Attacks the 1-Beta Chain of Hemoglobin to Disrupt Respiratory Function and Escape Immunity by Capsid-Like System

26 January 2023, Version 12


Working Paper

wenzhong.liu , hualan.li Show author details

Version History

- Jan 26, 2023 Version 12
- Jan 24, 2022 Version 11
- Sep 16, 2021 Version 10
- Jul 13, 2020 Version 9
- Apr 27, 2020 Version 8
- Apr 13, 2020 Version 7
- Apr 09, 2020 Version 6
- Mar 30, 2020 Version 5
- Mar 23, 2020 Version 4
- Mar 19, 2020 Version 3
- Mar 10, 2020 Version 2
- Mar 08, 2020 Version 1

### Metrics



2,071,763 Views

174,260 Downloads

3 Citations



Preprints are preliminary reports that have not undergone peer review.  
They should not be considered conclusive, used to inform clinical practice,  
or referenced by the media as validated information.



## WITHDRAWN: Efficacy and Safety of Ivermectin for Treatment and prophylaxis of COVID-19 Pandemic

Article

Keywords:

Posted Date: July 14th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-100956/v4>

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[Read Full License](#)

**Additional Declarations:** There is **NO** Competing Interest.

### EDITORIAL NOTE:

Research Square withdrew this preprint on 14 July 2021 due to verifiable concerns communicated directly to our staff. These concerns are now under formal investigation by the Egyptian Ministry of Higher Education. Detailed information on the reasons for this withdrawal can be found [here](#). (note updated 12 March, 2022)

# Disclaimers

**i** These are preliminary reports which have not been peer-reviewed. They should not be regarded as conclusive, guide clinical practice/health related behaviour, or be reported in news media as established information.



This content is a preprint and has not undergone peer review at the time of posting.

<https://doi.org/10.26434/chemrxiv-2024-gnsfm> ORCID: <https://orcid.org/0000-0002-7994-0470> Content not peer-reviewed by ChemRxiv. License: CC BY-NC-ND



This is a Preprint and has not been peer reviewed. This is version 1 of this Preprint.



Preprints are preliminary reports that have not undergone peer review.  
They should not be considered conclusive, used to inform clinical practice,  
or referenced by the media as validated information.

# medRxiv

THE PREPRINT SERVER FOR HEALTH SCIENCES

Advanced Search

Caution: Preprints are preliminary reports of work that have not been certified by peer review. They should not be relied on to guide clinical practice or health-related behavior and should not be reported in news media as established information.

# Typical types of screening

1. Metadata / administrative checks
2. Content assessment (general)
3. Scope / fit for specific site

# 1. Metadata checks

- Author names, titles, other details in preprint file match metadata provided at submission
- Author names, institutions, and emails do not appear fake, suspicious, or inappropriate (e.g., “Barack Obama”)
- Primary file is uploaded and opens
- Secondary files appear connected to the primary work
- Every required answer/selection/information is present
- Keywords or categories selected fit the submission

## 2. Content assessment

- Is content legitimate scholarship, not pseudoscience or gibberish?
- Do any results/conclusions presented pose a potential risk for readers?
- Are the conclusions/title supported by the results and not exaggerated?
- Are any data sensitive (e.g., unmasked clinical data)?
- Are any highly controversial topics (e.g., flat Earth) included?
- Does content potentially present a copyright violation or ethics concern (plagiarized or copyrighted by another party)?

# 3. Scope fit for specific site

- Does the content relate topically?
- Is the content type allowed (e.g., is it a type of manuscript, presentation, file that is typically posted)?
- Is the content already posted elsewhere?
- Should the content be a revision of a previously posted work rather than a new preprint?

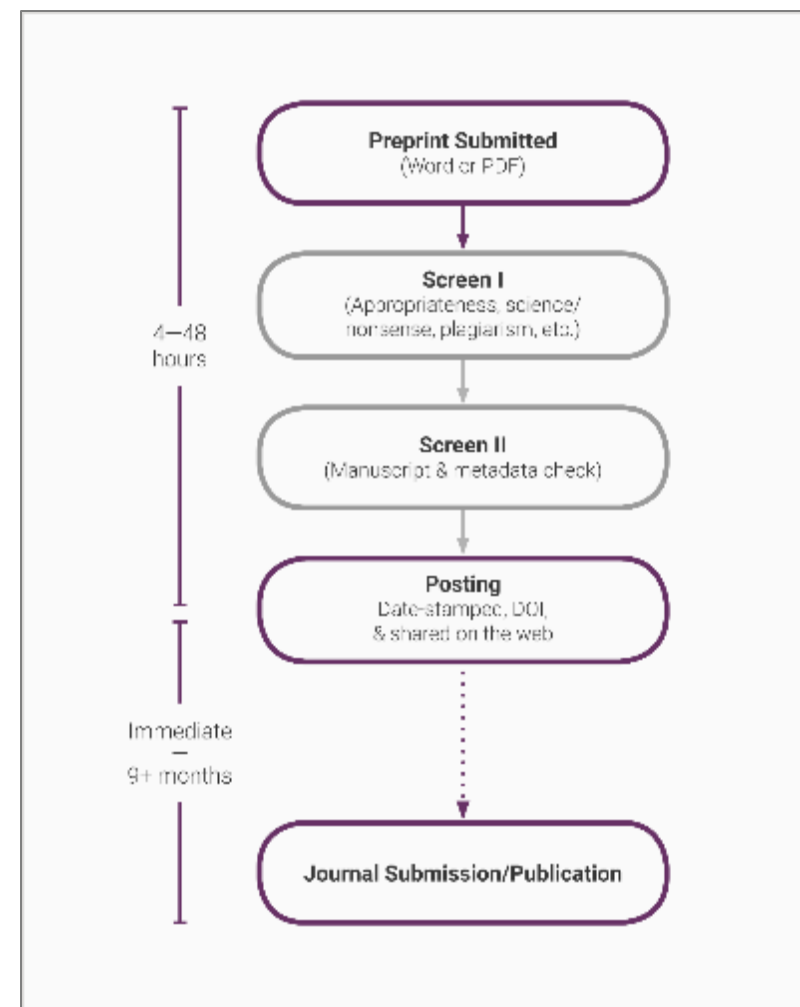
# Screening vs. peer review

- Rapid – goal of keeping posting times short
  - Focused on obvious issues
  - Done by experienced staff, but not an expert in a specific preprint's topic
  - One reviewer, with possibilities to escalate
  - Little written feedback
- Lasts several weeks or months
  - Thorough and broad in scope
  - Done by peer researchers with applicable expertise
  - Typically several reviewers with final decision by a handling editor
  - Extensive written feedback from each participant



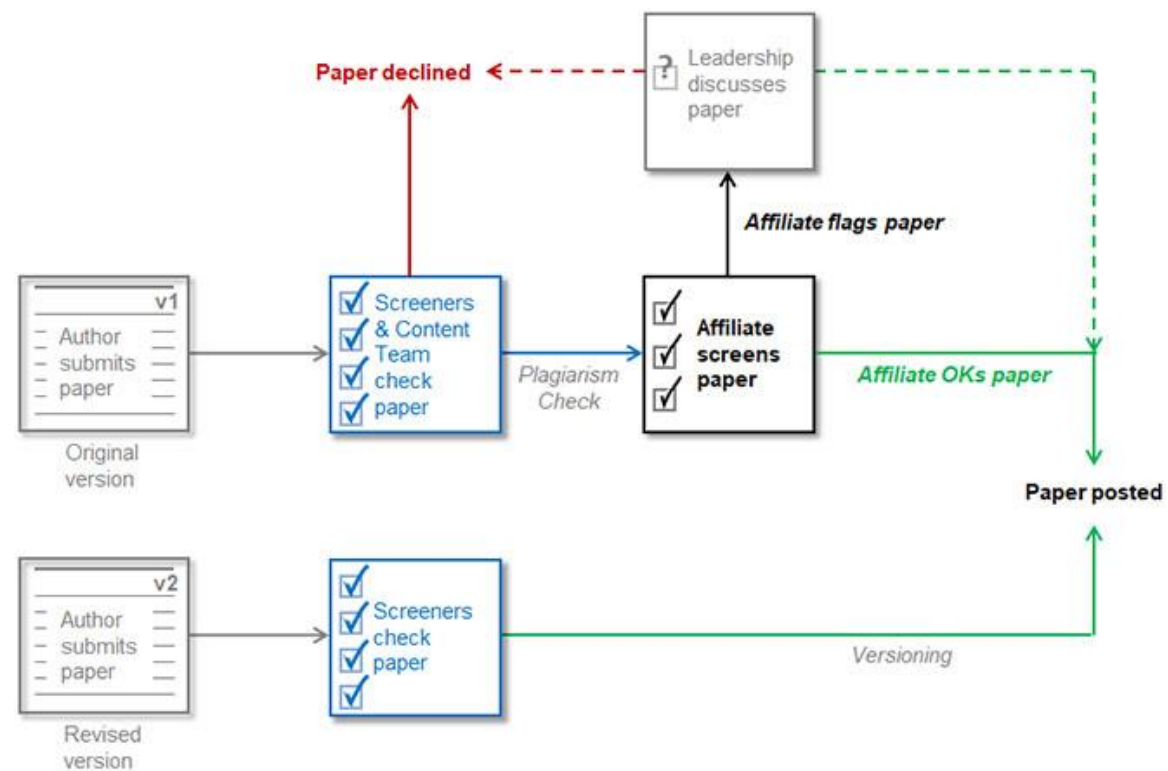
# Content screening - ChemRxiv

- Content assessment
  - Subject area fit
  - Manuscript type fit
  - Scientific nature
- Metadata / administrative checks
  - Completeness
  - Plagiarism
  - Prior publication



# Content screening - MedRxiv

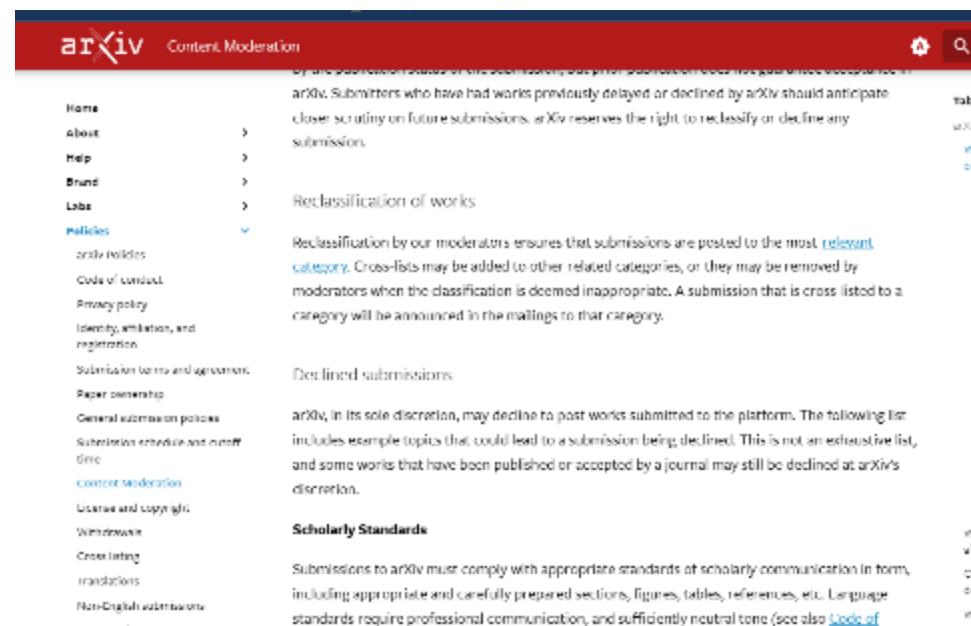
- In-house screening
  - Completeness
  - Unmasked patient data
  - Trial ID/ethics statements
  - Plagiarism/past publication
- Affiliate screening
  - Scope
  - Methods/data
  - Potential for public harm



[https://connect.medrxiv.org/news/2022/06/13/screening\\_procedures](https://connect.medrxiv.org/news/2022/06/13/screening_procedures)

# Content screening - arXiv

- Content assessment
  - Meet basic scholarly standards (e.g., professional tone)
  - Of interest to the arXiv community
- Metadata / administrative checks
  - Fits content types allowed
  - Fits basic format requirements
  - Prior publication/duplication



<https://info.arxiv.org/help/moderation/index.html>

The arXiv endorsement system

# Preprint peer review

ReimagineReview

Search projects

A project of ASAPbio About Add listing Glossary Blog Sign in or Register

Explore

Find review projects by research output reviewed



Preprints



Journal accepted manuscripts



Privately shared manuscripts



Other scholarly outputs

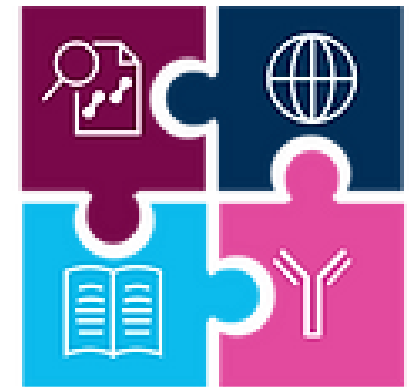
View all registered projects

Discover peer review projects

Projects

Search

Search



Preprint Club

# Gates Foundation announcement

## 2025 Open Access Policy

### Purpose

In January 2015, we introduced our Open Access policy to enable and reuse of all peer-reviewed published research funded, in whole or in part, by the foundation.

In January 2021, this policy was updated to be consistent with Plan S. As a member of cOAlition S, the foundation is committed to a partnership with other funders to make all research articles open access.

Effective January 1, 2025, this policy has been expanded to include all research funded, in whole or in part, by the foundation ("Funded Research"). This new Open Access policy also applies to any data underlying the Funded Research.

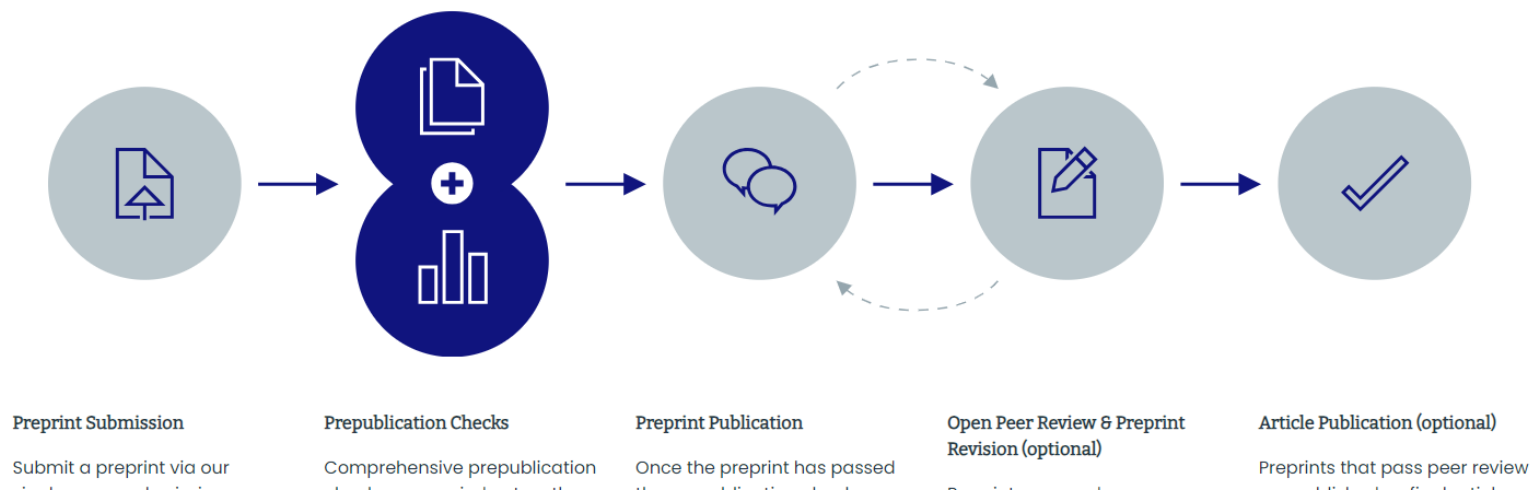
- Funded manuscripts will be available **[as preprints]**
- Dissemination of funded manuscripts will be on "open access" terms (CC-BY)
- Gates grantees will retain copyright
- Underlying data will be accessible immediately
- **The Foundation will not pay APCs**
- Compliance is a requirement of funding



Launched by F1000Research with support from Gates Foundation

Extensive prepublication checks, including ethics/integrity and data availability

Our Publishing Process



# The future of preprints

- Use of preprints will be more heavily encouraged, facilitated by publishers, or mandated by funders
- There is a trend toward more programs to capture peer feedback and connect it to preprints
- It will remain crucial to educate readers about the preliminary nature of preprints
- Preprint screening will become increasingly critical as the posting of preprints gains value for authors and links more tightly to journal submission



**ChemRxiv**<sup>®</sup>

**Thank you!**

@chemRxiv on Twitter (X)

chemrxiv.org

curator@chemrxiv.org