



# Open Science Myths and Misconceptions

Iryna Kuchma, May 2021, TWAS UNESCO webinar

# THE SCHOLCOMM CHRONICLES #1

RAMBLING ABOUT MISCONCEPTIONS OF OPEN ACCESS - BY CRISTOPHE DONY

I'VE BEEN WONDERING HOW TO RESPOND TO THIS MISLEADING NEWS\* TITLE LATELY.

10/05/21

## Open access 'excludes' developing world scientists



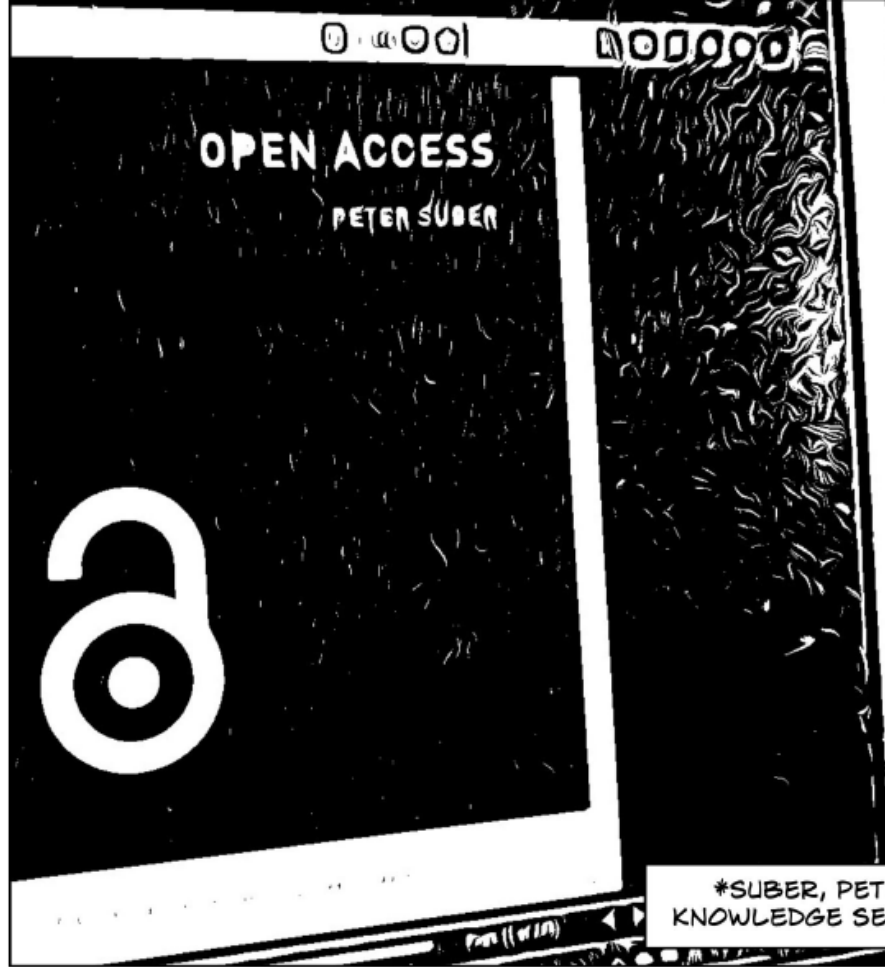
\*ORIGINAL ARTICLE CAN BE FOUND HERE:  
[HTTPS://WWW.SCIDEV.NET/GLOBAL/FEATURES/OPEN-ACCESS-EXCLUDES-DEVELOPING-WORLD-SCIENTISTS/](https://www.scidev.net/global/features/open-access-excludes-developing-world-scientists/)

IT SURE IS A HYPE TITLE. BUT IT IS BASED ON A MISCONCEPTION UNDERLYING ONE OF THE COMMON MYTHS\* ASSOCIATED WITH OPEN ACCESS, NAMELY THAT ALL OPEN ACCESS IS BASED ON A PAY-TO-PUBLISH MODEL.



\*SEE PETER SUBER'S ARTICLE FOR THE GUARDIAN HERE:  
[HTTPS://WWW.THEGUARDIAN.COM/HIGHER-EDUCATION-NETWORK/BLOG/2013/OCT/21/OPEN-ACCESS-MYTHS-PETER-SUBER-HARVARD](https://www.theguardian.com/higher-education-network/blog/2013/oct/21/open-access-myths-peter-suber-harvard)

Christophe Dony. (2021, May 16). The Scholcomm Chronicles #1. Rambling about Misconceptions of Open Access. Zenodo.  
<http://doi.org/10.5281/zenodo.4765798>



THIS MYTH HAS BEEN DEBUNKED COUNTLESS TIMES BUT IT MOST LIKELY RESURFACES EVERY NOW AND THEN BECAUSE OF THE AMBIGUITY OF THE LABEL "GOLD OPEN ACCESS".

DESPITE ITS BUSINESS OR FINANCIAL UNDERTONES, GOLD OPEN ACCESS IS JUST ONE ROUTE TO ACHIEVING OPEN ACCESS. BUT IT DOES NOT REFER TO AN ECONOMIC MODEL, LET ALONE A PAY-TO-PUBLISH ECONOMIC MODEL.

AS PHILOSOPHER AND OPEN ACCESS SPECIALIST PETER SUBER EXPLAINS IT: GOLD OPEN ACCESS REFERS TO "OA DELIVERED BY JOURNALS, REGARDLESS OF THE JOURNAL'S BUSINESS MODEL" (2012, 53)\*.

\*SUBER, PETER. OPEN ACCESS. MIT PRESS ESSENTIAL KNOWLEDGE SERIES. CAMBRIDGE, MASS.: MIT PRESS, 2012.



BY

DONY, CHRISTOPHE. "THE SCHOLCOMM CHRONICLES #1. RAMBLING ABOUT MISCONCEPTIONS OF OPEN ACCESS". [HTTPS://DOI.ORG/10.5281/ZENODO.4765798](https://doi.org/10.5281/zenodo.4765798)

PAY-TO-PUBLISH OPEN ACCESS IS PRACTICED BY FEE-BASED OR APC\*-LED JOURNALS - BUT THIS IS JUST ONE OF THE POSSIBLE MODELS THAT THE GOLD OPEN ACCESS ROUTE ENTAILS. SOME OF THE PRICES PRACTICED BY APC-LED JOURNALS SUCH AS THE ONES SHOWN BELOW\*\* CAN ABSOLUTELY EXCLUDE SOME SCHOLARS FROM PUBLISHING IN PARTICULAR VENUES. THERE'S NO DENYING THAT!

ELSEVIER

## Article Publishing Charge (APC) price list

All prices excluding taxes. Prices as of date: 23-Apr-2021

ISSN	Title	Business model	List price	
			USD	EUR
2666-6340	Med	Open access	8,900	7,600
2590-3322	One Earth	Open access	8,900	7,600
2666-3899	Patterns	Open access	8,900	7,600
2211-1247	Cell Reports	Open access	5,200	4,500
2666-3791	Cell Reports Medicine	Open access	5,200	4,500
	Cell Reports Methods	Open access	5,200	4,500
* APC = "ARTICLE PROCESSING CHARGE" OR "ARTICLE PUBLISHING CHARGE".				
2666-3864	Cell Reports	Open access	5,000	4,300
** PRICE LIST IS AVAILABLE AT: <a href="https://www.elsevier.com/about/policies/pricing">HTTPS://WWW.ELSEVIER.COM/ABOUT/POLICIES/PRICING</a>				
2590-7500	One Earth	Open access	8,900	7,600



BUT A QUICK LOOK AT THE DIRECTORY OF OPEN ACCESS JOURNALS' WEBSITE (DOAJ) ATTESTS THAT THIS MODEL IS NOT THE MOST COMMON ONE FOR GOLD OPEN ACCESS JOURNALS (A PLEONASM OF SORTS IF YOU'VE BEEN FOLLOWING). AS THE IMAGE BELOW SHOWS, MORE THAN 70% OF OPEN ACCESS JOURNALS DO NOT CHARGE APCs.

access e



https://www.doaj.org

DOAJ

SUPPORT

SEARCH

DOCUMENTATION

ABOUT

THE DIRECTORY OF OPEN ACCESS JOURNALS

Find open access journals & articles.

Journals Articles

In all fields

80  
LANGUAGES

126  
COUNTRIES  
REPRESENTED

11,747  
JOURNALS  
WITHOUT APCs

16,336  
JOURNALS

THIS MEANS THAT MOST OA JOURNALS FUNCTION WITH A DIFFERENT FUNDING MODEL THAN AUTHORS OR THEIR INSTITUTION PAYING FEES. THIS OTHER MODEL CAN BE CONSIDERED A FORM OF GOLD OA AND IS OFTEN REFERRED TO AS THE "DIAMOND MODEL". A RECENT REPORT HAS SHOWN THAT THIS DIAMOND MODEL IS USED BY A SIGNIFICANT NUMBER OF JOURNALS OUTSIDE THOSE INDEXED IN THE DOAJ!



THE DIRECTORY OF OPEN ACCESS JOURNALS

# Find open access journals & articles.

Journals  Articles

In all fields

80  
LANGUAGES

126  
COUNTRIES  
REPRESENTED

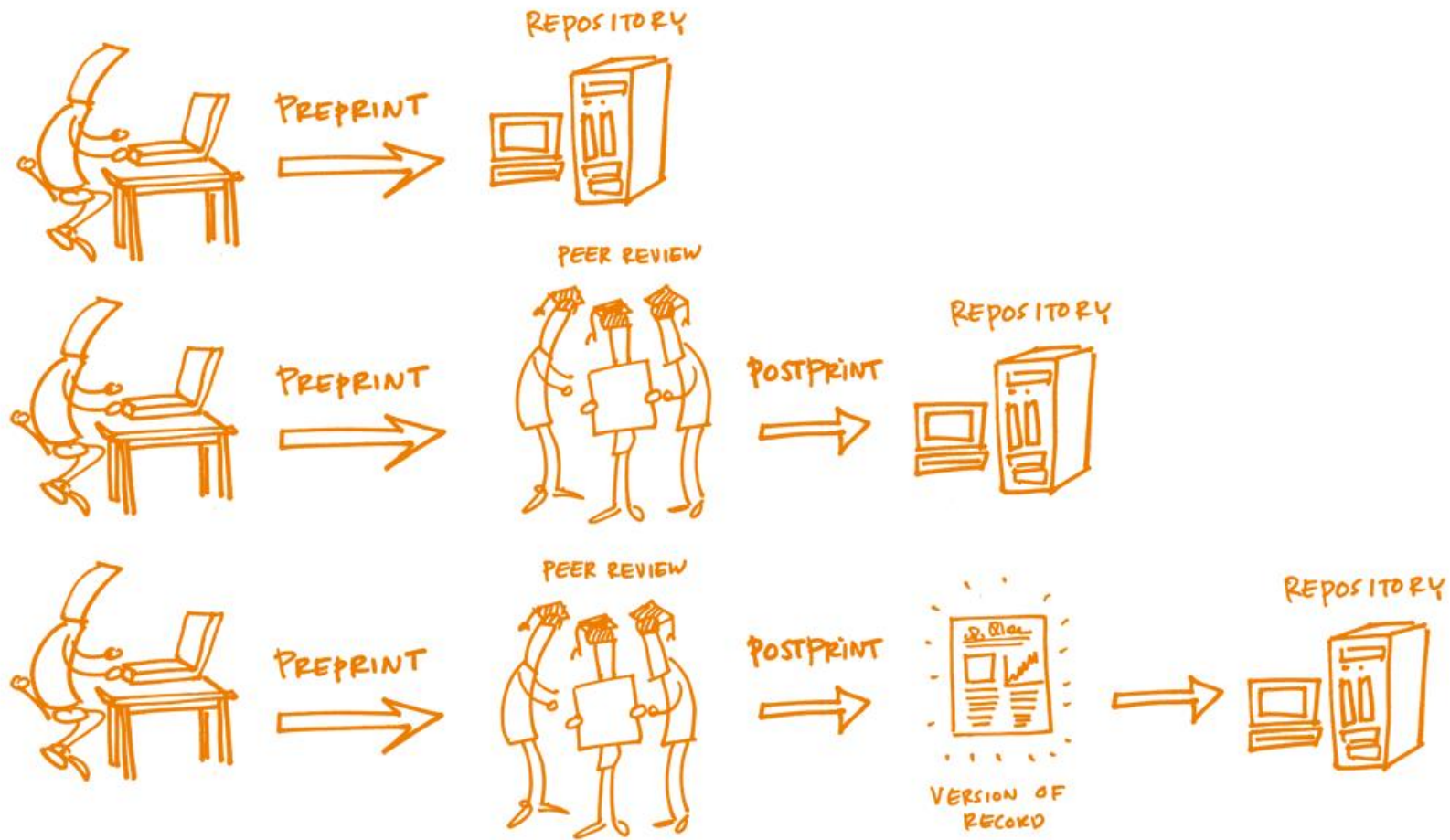
11,766  
JOURNALS  
WITHOUT APCs

16,373  
JOURNALS

6,100,863  
ARTICLE  
RECORDS

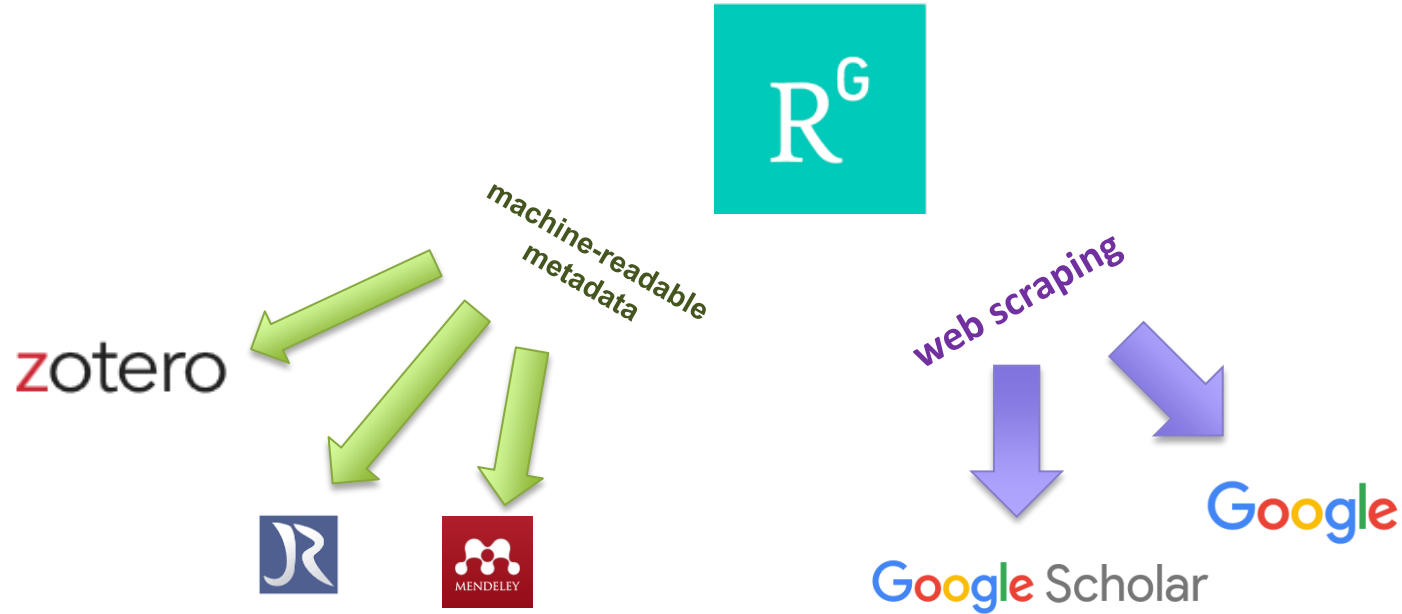


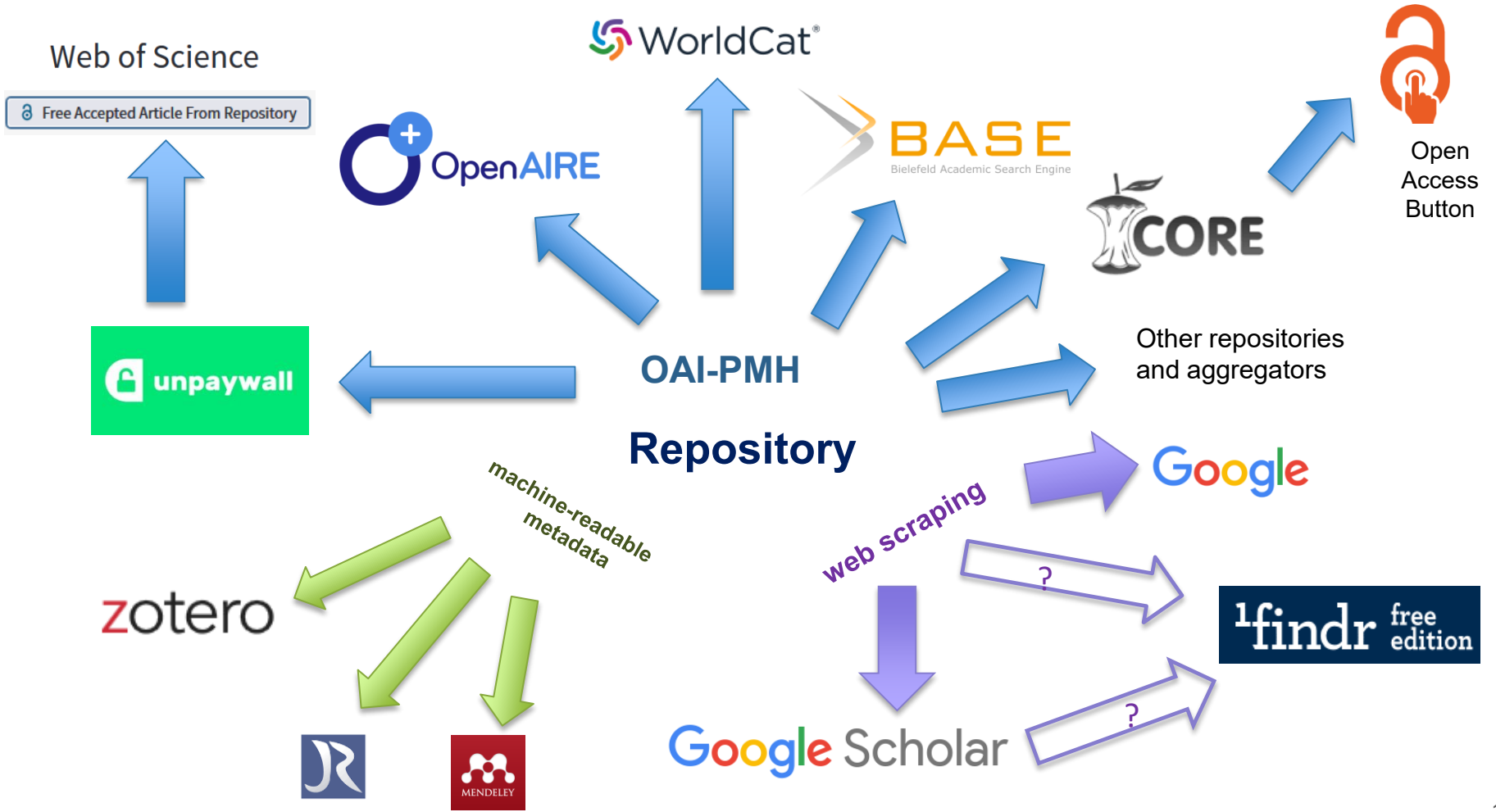
# MODES OF SELF-ARCHIVING

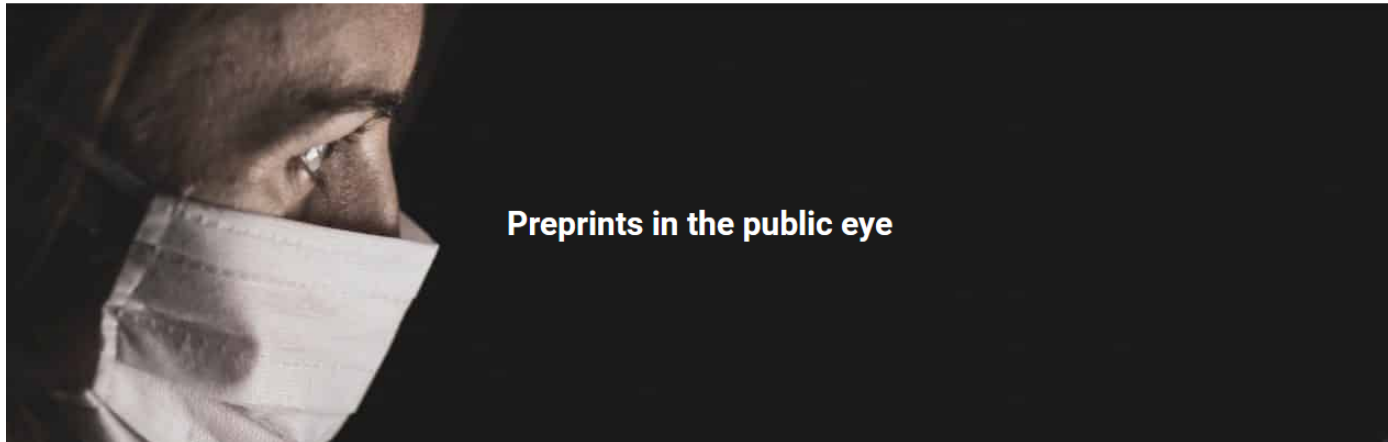




Misconception: Social networks for researchers increase visibility much better than repositories







## Preprints in the public eye

<https://asapbio.org/public>

### Project Overview

Amid the COVID-19 pandemic, preprints are being shared, reported on, and used to shape government policy, all at unprecedented rates and journalists are now regularly citing preprints in their pandemic coverage. As well as putting preprints squarely in the public eye as never before, presenting a unique opportunity to educate researchers and the public about their value, the rise in reporting of research posted as preprints has also brought into focus the question of how research is scrutinized and validated. Traditional journal peer review has its shortcomings and the number of ways research can be evaluated is expanding. This can be a problem for journalists and non-specialist readers who sometimes don't fully understand the difference between preprints, peer-reviewed articles, and different forms of peer review. Media coverage can result in the sharing of information which may later not stand up to scientific scrutiny, leading to misunderstanding, misinformation and the risk of damaging the public perception of preprints and the scientific process.

### Tweets by @ASAPbio\_

ASAPbio Retweeted



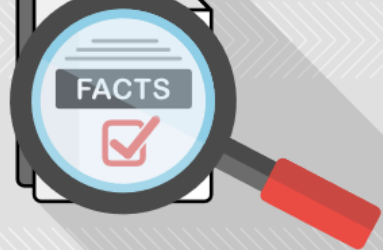
Register for #FeedbackASAP, a virtual event hosted by @ASAPbio\_ on creating a culture of open feedback for #preprint review  
[https://twitter.com/ASAPbio\\_status/1397551991937769476](https://twitter.com/ASAPbio_status/1397551991937769476)



5h



# ➤ Preprint fact checking



## Scoop protection

Preprints allow you to establish priority for your discoveries. 99.3% of preprint authors reported no scoop problems.<sup>1</sup>



## Preprints are journal compatible

Over 1,200 journals operate policies compatible with preprints.<sup>2</sup>



## Preprints are good quality

Two thirds of bioRxiv preprints appear in a journal within two years.<sup>3</sup>  
Quality of reporting is within a similar range as that of peer-reviewed articles.<sup>4</sup>



## Smoother path to publication

Many journals allow preprint transfers directly from servers.<sup>1</sup> Some editors scout preprints and invite submissions to their journal.

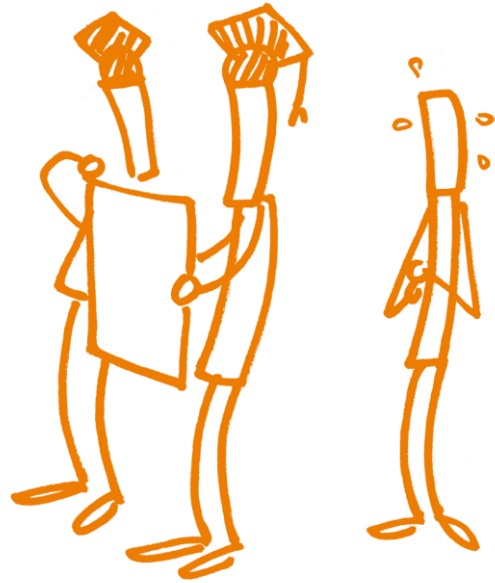
<https://asapbio.org/wp-content/uploads/2021/01/ASAPbio-fact-check-preprints-english-v2.pdf>

When communicating about their work in social media, blogs or with journalists, researchers should be mindful of the potential for misinterpretation of their findings and:

- 1 Label the research as a preprint (where that is the case).
- 2 Prominently state whether or not it has undergone peer review.
- 3 Prominently highlight the limitations of the work.
- 4 Provide narrow interpretations that are unlikely to be exaggerated or misconstrued when communicating research findings to a lay audience.
- 5 Make every effort to ensure that the research is presented so that non-experts can understand it with minimal room for misinterpretation.
- 6 Make every effort to anticipate the potential for their research to be propagated in ways that are far from the original intent.
- 7 Avoid overhyping the significance of the research findings.
- 8 Consider using a structured format, similar to that recommended by the [UK Academy of Medical Sciences](#) for press releases. For example, in biomedical fields, structured information to be included in social media post(s) might include the following.
  - a) Brief lay summary
  - b) Type of research: [Observational/interventional etc]
  - c) Model system: [Humans/mice/in vitro biochemistry]
  - d) Sample size: [Number of patients, etc]
  - e) Peer review status [Preprint/(open) peer review etc]
  - f) Other caveats/limitations
- 9 Be familiar with any guidelines provided by their institution on the responsible use of social media. Guiding principles for institutions to aid the responsible media reporting of research can be found at [asapbio.org/public](https://asapbio.org/public).
- 10 Work in collaboration with their institutional press office if approached by the media to comment on research they have carried out at the institution, regardless of whether or not the research is actively promoted by the institution.



Misconception: If I share my data early,  
I'll be scooped!





# Future-proof your research. Preregister your next study.

## What is Preregistration?

When you preregister your research, you're simply specifying your research plan in advance of your study and submitting it to a registry.

Preregistration separates *hypothesis-generating* (exploratory) from *hypothesis-testing* (confirmatory) research. Both are important. But the same data cannot be used to generate *and* test a hypothesis, which can happen unintentionally and reduce the credibility of your results. Addressing this problem through planning improves the quality and transparency of your research. This helps you clearly report your study and helps others who may wish to build on it. For instructions on how to submit a preregistration on OSF, please visit our [help guides](#).

For additional insight and context, you can read [The Preregistration Revolution](#). (preprint)

<https://www.cos.io/initiatives/prereg>

Get started now



Pre-  
registration  
timestamps  
your work

## Why should I care?



### Priority claim

By posting a preprint researchers can disclose their completed study immediately and without access barriers.<sup>1</sup>



### Increase citations

Articles get 36% more citations if they have a prior associated preprint.<sup>2</sup>



### Receive feedback

Improve your manuscript by getting valuable comments on your research prior to publication.<sup>3</sup>



### Proof of productivity

A preprint provides funders and hiring committees with public evidence of your work.<sup>4</sup>

# Share preprints too

Infographics by ASAPbio Fellows:

Ana Dorrego-Rivas (@adorrego\_r), Carrie Iwema  
and Mafalda Pimentel (@Maf\_Pimentel)



Misconception: I  
have to keep and  
share everything



["Balanced on Water"](#) by [aeu04117](#) is licensed under [CC BY 2.0](#)

# Deciding which data need to be kept after the project ends

Five steps to follow

- ① Could this data be re-used
- ② Must it be kept as evidence or for legal reasons
- ③ Should it be kept for its potential value
- ④ Consider costs – do benefits outweigh cost?
- ⑤ Evaluate criteria to decide what to keep

5 steps to decide what data to keep

[www.dcc.ac.uk/resources/how-guides/five-steps-decide-what-data-keep](http://www.dcc.ac.uk/resources/how-guides/five-steps-decide-what-data-keep)

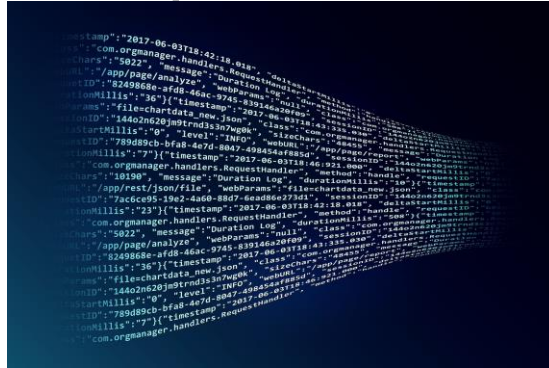
# Link data to other outputs for context (reuse)

## Open Data



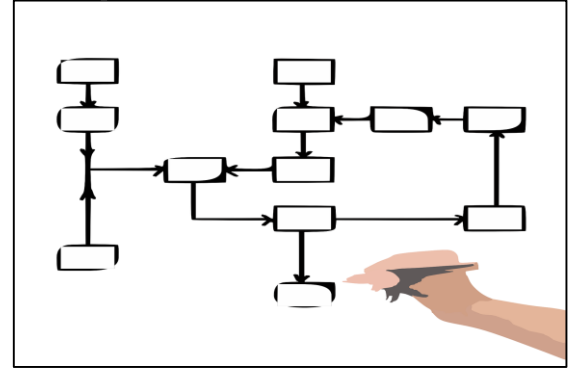
To support  
validation and  
facilitate reuse

## Open Code



Software created to  
analyse and/or  
visualise the data

## Open Workflows



What steps were  
taken and in what  
order?

# Consider who else has a say about sharing data

Collaborators

Research participants

Commercial partners

Data repository

Publishers

Institutions, funders



# Misconception: Open Science is mainly pain with little gain

There's no denying that getting acquainted with new ways of working costs time. But at the end of the day, it will also save you time. For instance, preregistration forces you to consider issues that could otherwise have bitten you in the ass afterwards (e.g., a lack of statistical power). Moreover, a detailed plan allows for a swift analysis once the data comes in. There is an increasing number of open-source tools available that will help you make your workflow more reproducible and efficient at the same time. And there's another gain for those interested in an academic career: more and more universities and funders are seeking candidates who implement Open Science practices in their work.

<https://openscience-groningen.nl/10-open-science-myths>

# Misconception: Open Science is an unclimbable mountain

Let's hear from researchers practicing open science!

# *With thanks to*

Joy Davidson, DCC

Milica Ševkušić, Institute of Technical Sciences of  
Serbian Academy of Science and Arts, EIFL Open Access Country  
Coordinator in Serbia