

Some publishers are for profit, for-profit should offer services like peer review.

- **Predatory Publishers** are for-profit publishers that charge a publishing fee but provide few quality checks on the quality of the publication that would be expected from scholarly publications, such as peer review or type-setting.
- If you are unsure if a publisher may be predatory, checking with your library staff is a good place to start.

Preprint

A version of a paper shared prior to the publication in a journal. This can be the author's version of the accepted manuscript after peer review or a version prior to submission to a journal.

Persistent Identifiers (Again, can get a DOI on Zenodo)

Long-lasting reference to a document, file, web page, or other digital object. It is usually used in the context of digital objects that are available over the internet. Most PIDs have a unique identifier which is linked to the current address of the metadata or content.

Results should be more than just the publication, but the entire process (Data, code, metadata, questions, discussions)

Publicly sharing and publishing don't have to be on the same timeframe. Useful information can have positive effects on the scientific community right away if shared during the process of doing or writing the publication paper

Wow!

[Matplotlib](#) was developed around 2002 by post-doc John Hunter to visualize some neurobiology data he was working on. He wasn't a software developer, he was a neurobiologist! He could have just published the paper in a peer-reviewed journal, and maybe shared his code to create the figures, but instead he started an open project on GitHub and thought: 'Well if this is useful to me, maybe it will be useful to others...!'

Matplotlib was used for data visualization during the 2008 landing of the Phoenix spacecraft on Mars and for the creation of the first image of a black hole.

[Leverage free platforms like LinkedIn!] Awareness through social media drastically increases the reach and audience of your work

The reproducibility crisis in science and research

- A 2016 *Nature* survey on reproducibility found that of 1,576 researchers, "More than 70% of researchers have tried and failed to reproduce another scientist's experiments, and more than half have failed to reproduce their own experiments." (Baker, 2016) The 'reproducibility crisis' in science is a growing concern over several reproducibility studies where previous positive results were not reproduced.

Causes of the reproducibility crisis:

1. Intermediate methods of research are often described informally or not at all. **(Just as important as the end results was the process to get there, and what choices were made to achieve the goal you set out for)**
2. Intermediate data are often omitted entirely. **(Learning data is left out, we skip to the 'notable' parts, without looking into significance)**
3. We often only think about results at the time of publication.

So where do you begin to look for open results?

- Peer reviewed papers or publications
- Pre Prints

Sites Provided by NASA OS to find these items:

- [Google Scholar](#) (external link)
- [ADS](#) (external link)
- [Scopus](#) (external link)
- [Web of Science](#) (external link) - Previously known as Web of Knowledge
- [Open knowledge map](#) (external link) - Facilitates exploration of interconnected topics
- [JSTOR](#) (external link) - A wide range of scholarly content
- [ResearchGate](#) (external link)
- [ScienceCast](#) (external link)

"Garbage in, garbage out" - your own research products are only as good as the data used in your investigation.

Audit the material, is it reproducible? Stable? A .org .gov site?

- Were any data or results excluded, and if so, were criteria provided?
- Does the host website provide contact information of the author and/or organization?
- Is the result part of an active conversation? Is the information still relevant and current?

If you have questions, ask them openly if possible! Join the conversation and the community

Provide an analysis that would make it possible to replicate results

It is not trivial to include in your work how you identify how your interests and experiences inform your decisions that impact your research conclusions. In an increasingly interdisciplinary world, your individual cross section has significant merit to the conclusions you draw and the connections you form. For example a biologist and a geologist may look at the same fossil with different eyes!

Blogs are long-form articles that aren't peer-reviewed. Blogs can be a great way to share your scientific process and findings before they are published, but they can also provide another presentation of the material even after they are published. For example, maybe you write a scientific article on your research that is highly technical, but then break it down in a more understandable language in a blog post. Many scientists use blog posts to develop and test ideas and approaches because they are more interactive.

Social media is also a good place to ask questions when you are starting on a research topic - ask questions to a broader audience

You must ensure that anyone who has contributed to the research project has their contributions recognized.

- Add *orcid*s

- Have club members generate research accounts, create writeups, get involved in authoring
- Keep communication centralized

LEVELS TO PAPERS

A contributor is anyone who has done any activity that made it possible for the research to happen and results to be created, published or shared.

An author ([definition link](#)) of an open result is a contributor who has given a substantial contribution to the conception or design of the work or the acquisition, analysis, or interpretation of the data for the published work.

An option is to draft your own contribution guideline so people know what constitutes as a contribution in each part

“a final step towards making open results could be to create a meta article and/or simple website/GitHub page that centralizes all your research outputs. Different parts of research (individual open results) can be accessed centrally with details, including open recognition for all contributors.”

(I use joshuakraus.com for these in the form of sub-pages. I should look into longer term free sites however with a non school associate email for longevity)

“Over the course of a 3-year study, the Journal of Medical Internet Research found that articles highly shared on X (formerly Twitter) were eleven times more likely to be highly cited than less tweeted articles. (Eysenbach, 2011)”

[keep in mind] Traditionally, authors pay an Article Processing Charge (APC) that can range from \$200-\$12,000 USD. Higher profile journals often charge higher fees to authors. Accessing articles has traditionally been restricted by pay-walls that require a subscription or charge per article. Journals have different options for making your published work accessible to various communities.

Look for “Diamond Open Access journals” which are cheap or free to publish to and to access”

Starting lines for an example OSDMP:

“This activity will result in the creation of computational notebooks, four conference abstracts and posters, two peer-reviewed manuscripts, and two online plain-language articles summarizing our results. Peer-reviewed publications will be published Green Open-Access and preprints will be archived in PubSpace or the journal's open-access preprint server. All other materials will be archived on Zenodo, assigned a DOI, and assigned a CC-BY license or permissive software license.”

AI tools can be used to discover different datasets that may be relevant to a scientific query and recommend relevant software libraries.

Congrats it's the end of my notes!