The best of both worlds—preprints and journals

October 27 2016, by Sheryl P. Denker

For some time now PLOS has discussed new initiatives designed to accelerate research communication, from development of Aperta, our streamlined manuscript submission system that facilitates a faster time to first decision to our Content Management System that allows for rapid creation of curated PLOS Collections. These efforts span the range of ways we are accelerating access to discovery of not just the final publication but the entire research life cycle.

Stake a Claim

An additional strategy – early posting of articles before formal peer review through the use of preprints – can also advance science faster, more openly and with broader participation. In posting preprints, [authors](#) are able to make their findings immediately available to the scientific community and to [receive feedback on draft manuscripts](#) before they are submitted to journals. The benefit extends beyond making early work openly and freely available prior to or during consideration at a journal; in posting a [preprint](#), an author or author group stakes an intellectual claim to methods, results and ideas contained within that paper. This can be especially important for scientists looking to change the focus of their research and connect with engaged colleagues in new fields; for those on the job market needing to show the status of their current research, their collaborative nature and their ability to embrace change for a more open way of doing science; and for early career researchers who may find opportunity to interact with new contacts interested in their work.

PLOS supports authors who wish to share early versions of their research manuscripts to receive feedback before – or in parallel to – formal peer review, and [encourages researchers to share via preprint servers](#) either before or after submission to a *PLOS* journal. Preprints are an excellent way to:

- Establish intellectual precedence for ideas, methods, results
- Receive early feedback from engaged colleagues
- Obtain and document citations to a work before publication in a peer-reviewed journal
- Contribute to accelerating scientific discovery and increasing research efficiency

Sahl JW, Lemmer D, Travis J, Schupp J, Gillece J, Aziz M, et al. The Northern Arizona SNP Pipeline (NASP): accurate, flexible, and rapid identification of SNPs in WGS datasets. bioRxiv. 2016. http://dx.doi.org/10.1101/037267.
View Article • PubMed/NCBI • Google Scholar

PLOS has a long-standing policy of accepting manuscripts previously posted to preprint servers, however we recently collaborated with bioRxiv to ease the process as a reflection of the importance we assign to this rapid dissemination vehicle for authors that also brings transparency to the review process. Authors can now use bioRxiv's direct transfer to journal service drop-down menu to submit directly to *PLOS*. While authors posting to bioRxiv can choose the reuse options under which to make their article available (various CC BY options or no reuse), licensing terms of *PLOS* content has not changed. To inform authors and the public of the current and more seamless arrangement with bioRxiv we have updated our preprint policy on all journal ethical publishing practice and related manuscript sections as well as the Wikipedia page that describes the landscape of publisher's preprint policies.

Researchers First

With preprints, authors – not publishers – are in control of when they publicly timestamp their intellectual property as well as when they want it to go for review. They decide when their research paper is ready to post and when they're ready to submit their paper for formal peer review. In an open environment, the community can evaluate what any individual scientist's standards are for their work and their online interaction with colleagues. By posting work and commenting on the

posted work of others, authors are more in control of their own reputations. In essence, the use of preprints is analogous, in a very public and large-scale version, to the more intimate practice of sending a complete manuscript draft to a colleague to get their opinion with potential to improve the manuscript before submitting to a journal. Some have likened it to going public with a [conference abstract or presentation](#).

How it Works

In the same way that not all Open Access is created equal, not all preprint servers work the same way. Launched in 2013 by [Cold Spring Harbor Laboratory](#), bioRxiv is now in its third year with more than 5,000 preprints posted to the site and more than 1 million article views each month. At bioRxiv, all posted research papers receive a digital object identifier (DOI) that remains associated with the original preprint. When a manuscript is transferred to *PLOS* from bioRxiv, *PLOS* stores the preprint DOI; if that manuscript is accepted for publication it then receives a *PLOS* DOI and we deposit both the preprint and the final article DOI to CrossRef so the [two works can be associated with each other](#).

> **Accounting for experimental noise reveals that mRNA levels, amplified by post-transcriptional processes, largely determine steady-state protein levels in yeast**
>
> Gábor Csárdi, Alexander Franks, David S. Choi, Eduardo M. Airoldi, D. Allan Drummond
> **doi:** http://dx.doi.org/10.1101/009472
> Now published in *PLOS Genetics* doi: 10.1371/journal.pgen.1005206

Importantly, whether posting a preprint or submitting to a journal, authors can help themselves ensure full recognition for both the preprint and the final article by including their ORCID iD at all times.

At *PLOS*, preprints are acceptable resources for inclusion in the reference section of an article. Should anyone follow a link from an article citation to a preprint that has subsequently been peer reviewed and published, they would be directed from the preprint to the article on the PLOS journal website.

Value Perspective

Preprints do not diminish the need for reputable peer-reviewed journals. In fact, the combination provides scientists the best of both worlds; preprints accelerate making work public and provide an opportunity for early feedback for those willing to share their work whereas journals provide a mechanism for formal assessment, curation and dissemination. Journals reinforce standards for ethical and reporting guidelines, plagiarism checks, conflicts of interest and work with organizations such as CrossRef to ensure seamless and complete metadata transfer. Publishing in journals has the added benefits of validating the quality of work through rigorous peer review; placing work in context through perspectives, editorials and incorporation into collections; providing opportunities for online dialogue with authors through *PLOS* Science Wednesday AMAs and tracking article influence through Article-Level Metrics. Our current work with bioRxiv is one more example of how we are putting researchers at the center of science communication and placing authors in control of their manuscripts. In the future, expansion of Aperta to the full suite of *PLOS* journals and incorporating aspects of

community review to our processes will place *PLOS* in the space necessary to accelerate dissemination of research results and conversation surrounding a scholarly work.

Those wanting an objective look at the value of preprints might find Breaking Down Pros and Cons of Preprints in Biomedicine of interest; for a detailed discussion of preprints by one active participant listen to the PLOScast with James Fraser, Associate Professor at UCSF and a founding member of ASAPbio, an initiative of the biology community to encourage use of preprints. When you're ready, go ahead, post that paper, place your results and ideas in the mix and we'll advance science forward faster, together.

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