

What are Preprints

[iBiology](#)

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Summary

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Preprints are a way in which a manuscript containing scientific results can be rapidly communicated from one scientist, or a group of scientists, to the entire scientific community. This video by ASAPbio (Accelerating Science and Publication in biology) explains what preprints are and their benefits, how they differ from journal publications, and how scientists can use both mechanisms to communicate their work.

Transcript

A scientist's job is to obtain knowledge about the natural world. Sharing that knowledge is critical for scientific progress, as new information produced by one scientist can be used by others to make new discoveries and further benefit society.

In 1665 the Royal Society of London created the first scientific journal called Philosophical Transactions to facilitate the transmission of new scientific findings. This publishing model has established the concept of peer review to ensure scientific quality and the defined date of publication to establish the priority of discovery.

These principles have laid the foundation for the nearly 30,000 scientific journals that exists today. Let's see how the process works.

First, scientists write a manuscript and send it to a journal for consideration. If the editors are interested in it is sent out to a group of anonymous scientists for their opinion of the quality of the work. The journal receives commentaries from the reviewers and decides whether to accept or reject the manuscript or commonly requests revision they require more experiments, resubmission and re-review before the journal makes a final decision. This process works but it takes time. It's not uncommon for the study to be published one year after initial submission. In addition, excellent work can be rejected on the basis of its perceived importance.

Are there better ways biologists can share information? Biology may learn a thing or two from the physicists.

In 1991 Paul Ginsparg revolutionized communication among physicists by producing a preprint server called arXiv that allows for rapid communication among scientists. arXiv now posts more than 100,000 papers each year.

Preprint servers in the life sciences exist, but they're not yet widely used. A preprint server is simple. A scientist uploads a manuscript to a server. The paper is screened to ensure its scientific nature. Within a few days, the manuscript is posted online and becomes visible to the entire scientific community before peer review.

Subsequently, the manuscript is usually submitted to a traditional journal for peer review and publication. Most but not all journals will accept work previously posted on a preprint server.

The immediate access to the preprint has many advantages. Preprint servers give the authors feedback from a larger group of people than the anonymous reviewers. Preprints can be an announcement of a discovery, which helps scientists establish priority of their work. With preprints, authors can share work in progress or recent accomplishments with funding agencies, promotion committees, or future employers. Preprints are open access; anyone in the world with an internet connection can view the manuscript for free. Preprints accelerate scientific progress by speeding up access to new findings.

The Internet is continuing to redefine how people access information and create social networks. Using the internet physicist Paul Ginsparg tried the first truly new experiments in scientific communication since the creation of the Philosophical Transactions three hundred and fifty years ago.

As our lives go digital, many new ideas and experiments in scientific communication will facilitate access to data, changing how scientific work is evaluated and discussed, and pushing scientific innovation at an ever-accelerating rate. Let's see what the next 10 years will bring!

This video was produced by [Youreka Science](#) and is brought to you by ASAPbio.