Request for Information on Maximizing Research Funds by Limiting Allowable Publishing Costs

Notice Number: NOT-OD-25-138

NIH should provide public access by mandating preprints

The US government rightly wishes to ensure that articles reporting results of research funded by US taxpayers are made freely accessible immediately (notices NOT-OD-25-047 and NOT-OD-25-101). The purpose of notice NOT-OD-25-138 is to “maximize the value of each research grant, and as such [that] NIH grantees utilize as much of their grant funds as possible for research activities”. The simplest way to achieve this would be to require NIH-funded authors to share manuscripts as preprints on non-profit preprint servers such as bioRxiv (biological sciences), medRxiv (health sciences), chemRxiv (chemistry), and arXiv (computational and physical sciences) before submitting to journals (Sever et al. 2019). Preprint servers provide rapid free public access to research articles and do not require an APC for posting.

Historically, research articles have been disseminated by academic journals following a protracted review and selection process that is a legacy of the print era. The transition to the Web created an opportunity for more rapid and broader dissemination at lower cost; however, the traditional journal process has largely been retained, with its attendant high costs per article. As journal publishers have adapted business models to open access mandates in the US and elsewhere, these costs have been passed on to authors in the form of APCs. For selective journals, APCs can reach more than $12,000 per article. Meanwhile, legitimization of the pay-to-publish model has resulted in an explosion of predatory and quasi-predatory journals willing to publish almost anything for a fee. APCs at both ends of the spectrum thus constitute a significant financial burden on funders such as NIH.

Preprint servers like bioRxiv and medRxiv provide a far more rapid and cost-effective mechanism to distribute research findings. Born digital, these disseminate thousands of articles online in standard formats each month before they are peer reviewed (typically within 2-3 days of submission) at costs two orders of magnitude lower than journals and do not charge authors APCs. Sharing of preprints was pioneered in physics by the arXiv server (launched in 1991). bioRxiv and medRxiv brought the practice to the biological and health sciences in 2013 and 2019, respectively, and are now viewed by ~10 million people each month. Preprint sharing is thus now widely accepted in the disciplines funded by NIH and, while preprints are disseminated before formal peer review, screening of bioRxiv and medRxiv content by scientifically qualified individuals ensures only genuine science is posted.

NIH could thus achieve free public access to research it funds and reduce the costs involved simply by mandating that NIH-funded authors post preprints. An important additional benefit would be the immediate availability of the research without the long delays associated with journal publication (typically up to one year but often significantly longer). An NIH preprint mandate would underscore the fundamental points that it is the results of research to which the public should have access and that evaluation of research is an ongoing process that is

valuable and important but takes place subsequently. It would also widen the possibilities for evolution within the publishing system and avoid channeling it towards expensive APC-based journal models.

Reference

Sever R, Eisen M, Inglis J (2019) Plan U: Universal access to scientific and medical research via funder preprint mandates. PLOS Biology 17(6): e3000273. https://doi.org/10.1371/journal.pbio.3000273

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