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 ensure that article-processing charges (APCs) levied by journal publishers for disseminating these are limited, so 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 articles as preprints on non-profit preprint servers such as arXiv (computational and physical sciences), bioRxiv (biological sciences), and medRxiv (health sciences) before submitting to journals (arXiv 2023). Preprint servers provide rapid free public access to research at no cost to authors and, therefore, posting articles to them does not require funds from author's grants. Meanwhile, the traditional journal process for both print and online content continues to involve protracted review and selection processes. In addition, in order to satisfy increasing Open Access mandates, journal publishers have developed business models, such as charging article processing charges (APCs) that pass the cost of Open Access publishing onto the authors. For selective journals, APCs can reach more than $12,000 per article. With the legitimization of the pay-to-publish model has come an explosion of predatory and quasi-predatory journals willing to publish almost anything for a fee. APCs at both ends of the spectrum constitute a significant financial burden on funders such as NIH.

Preprint servers like arXiv 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 (for arXiv, typically within a day of submission) at a cost per paper of roughly $10 to $20, compared to the thousands of dollars that journals frequently charge.

Sharing of preprints was pioneered in physics by arXiv (launched in 1991), which now hosts papers in eight disciplines, distributing about 1,000 new submissions per working day, with 3 million views per hour. arXiv currently hosts more than 2.7 million articles and has 5 million active monthly users. 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. In some cases, high impact papers are only hosted on preprint servers and not published in traditional journals. There are many examples of this on arXiv, including "Attention Is All You Need," which introduced the Transformer network architecture, and "DeepSeek-R1: Incentivizing Reasoning Capability in LLMs via Reinforcement Learning," which introduced the Deep Seek reasoning models.

NIH could achieve free public access to the research that it funds and reduce the costs involved simply by requiring 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 around one year). An NIH preprint requirement would underscore the fundamental points that the public should have access to the results of research that is publicly funded and that evaluation of research is an ongoing process that 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
arXiv (April 11, 2023). OSTP memorandum response.
https://info.arxiv.org/about/OSTP-04-11-2023.html