The Center for Open Science's Response to NIH Request for Information Inviting Comments on Maximizing Research Funds by Limiting Allowable Publishing Costs (NOT-OD-25-138)

Submitted on behalf of the Center for Open Science (COS) by Maryam Zaringhalam, Senior Director of Policy, and David Mellor, Senior Policy Analyst.

We are writing today on behalf of the Center for Open Science (COS), a non-profit organization working to increase openness, integrity, and reproducibility of research. To meet that objective, COS employs a systems strategy involving technology to make open practices possible and easy, community building to make open practices normative, and stakeholder engagement to make open practices rewarding and required. COS enacts this Theory of Change with mutually reinforcing activities: providing infrastructure to support research and enable collaboration through the Open Science Framework (OSF); conducting research on research (also known as metascience) to understand contributors to reproducibility, efficiency, and integrity; and advocating for policies to support open science practices and culture change. COS appreciates the opportunity to draw from this work to provide comments on NIH's proposal to limit allowable publishing costs.

Proposed Policy Options

We are in strong support of NIH's efforts to maximize free and immediate access to NIH-funded research. We appreciate NIH's attention to financial strains placed on researchers — and indirectly on the taxpayers who fund their research — because of unreasonably high charges to publish. Capping article processing charges (APCs), however, does not address the root cause of why journals have been able to charge such high fees in the first place: the pressure to "publish or perish."

The current research incentive and reward system emphasizes the volume of peer-reviewed publications and the prestige of highly selective journals, as determined by opaque indicators like the journal impact factor (JIF). This structure allows journals, particularly prestigious ones, to charge authors publishing fees (i.e., APCs) that may not align with the actual production cost for that article (i.e., expenses incurred by publishers to produce, deliver, and maintain an article online). Setting stringent caps will not solve this problem. Well-funded researchers at well-funded institutions can continue to publish in

prestigious, expensive journals, while lower-resourced researchers or early stage investigators who may only have one NIH grant will be priced out as their careers suffer.

NIH has an opportunity to drive a paradigm shift away from publications as the primary unit of currency for research communications and towards a more holistic ecosystem for knowledge dissemination and evaluation that promotes the transparency, rigor, and trustworthiness of research results. In doing so, NIH can promote more cost-effective opportunities for researchers to continue sharing their work while maximizing NIH's investments in research. We recommend that any policy proposal that imposes restrictions on publishing is complemented by the following policy considerations and reforms:

- **Rethinking and supporting innovation in research assessment.** As the crown jewel of American science, NIH holds great influence in how research is done and how those research practices are rewarded. There are several community-driven efforts underway outlining policy recommendations to shift away from publication-based metrics, including the Declaration on Research Assessment, the Coalition for Advancing Research Assessment, and the Roundtable on Aligning Incentives for Open Scholarship. NIH has an opportunity to draw on this work as a funder, rethinking its grant application and progress reporting processes to place greater emphasis on research contributions outside of peer-reviewed scholarly papers. NIH already has policies in place to maximize appropriate sharing of data and encourage the use of preprints to communicate research more quickly. NIH can build on these policies, which increase access to a broader suite of research outputs. As a complement, NIH should support innovations in research assessment, particularly through engagement with the metascience community, to develop, implement, and test a broad range of open and community-developed impact measures. Transparent and meaningful measures of impact will enable NIH, and the research ecosystem more broadly, to appropriately reward the societal impact of increasing public access to research outputs. Development of such metrics aligns neatly with NIH's Strategic Plan for Data Science.
- **Modeling incentive reform to align with open science goals.** Relatedly, as a research performing organization, NIH can model incentive reform for other academic institutions by explicitly and publicly communicating how its intramural researchers are evaluated to include contributions outside of peer-reviewed publications.
- **Investing in open research infrastructures to enable rapid dissemination of varied research outputs.** Traditional publishing practices remain rooted in a print-based legacy that disseminates research results only after the research has taken

place. The digital age has enabled researchers to share other research outputs that underlie discovery, including preregistrations, data, code, materials, protocols, preprints, and more. Open research infrastructures, such as the OSF, allow for these research products to be shared and linked, providing a more complete picture of the process underlying discovery while supporting greater research transparency, reproducibility, and rigor. These infrastructures require funding support to develop, manage, and sustain to meet community needs, while tackling new challenges like the rise in fake or AI-generated content. Related more directly to publications, preprint repository and review services offer a cheaper alternative to Hybrid and Gold Open Access models that rely on APCs; further, open-source infrastructures enable further innovations, increasing the potential return on these investments. We recommend NIH increase its investments in these critical infrastructures, as well as provide funding opportunities to build and test new capabilities that enable dissemination and transparent evaluation of research outputs.

- **Promoting innovation in scholarly communication to enable access to and evaluation of research outputs across the research lifecycle.** Traditional publishing has failed to leverage the digital advances of the 21st century, which enable rapid and real-time dissemination of various research outputs for community deliberation and evaluation. Peer-reviewed publications are necessarily retrospective and often rely on opaque and slow review processes that impede the pace of scientific discovery. There are now various innovative models in place that leverage new technologies to increase access to research outputs over the course of the research lifecycle. These models decouple and democratize dissemination of research outputs from formal publication processes. One such model is COS's proof-of-concept research and development project, *Lifecycle Journal*. A Diamond Open Access journal, *Lifecycle Journal* uses a "publish-before-review" model that allows researchers to publish their work before it undergoes evaluation by the community. The platform enables researchers to publish their work as it occurs — from their initial plans through their observed outcomes — and has integrated various review services, ranging from expert to automated methods, to provide multiple independent assessments of the research. NIH should encourage — and invest in — continued experimentation with new forms of scholarly communication, as well as recognize researchers who are early adopters of these models, particularly as they do so with some risk to their reputations and career advancement.

Available Evidence Related to Publication Costs and Proposed Options

Defining reasonable costs for publishing peer-reviewed articles is no trivial task and has been the subject of much scholarship as open science policies have emerged over the last decades. The cost for a publisher to produce an article, including costs for sorting, editing, curation, marketing, administration, outreach, and training, is often misaligned with the charges publishers levy on authors. Production costs are generally opaque and vary greatly depending on a variety of factors, including the publisher's size, revenue model, open access business model (e.g., Green, Gold, Hybrid, Diamond/Platinum), organization type, quality assurance processes, reliance on automation, and more. There have been efforts to understand reasonable publication costs, such as work synthesized by a 2024 Invest in Open Infrastructure report, as well as pushes to increase journal pricing transparency, led by cOAlition S. A notable example is EMBO Press's model of financial transparency, breaking down the cost and revenue generated from its high quality and selective journals. In addition, there has been substantial scholarship estimating APCs, including estimating the financial burden of APCs on federally-funded researchers. Notable efforts include a 2023 report from the White House Office of Science & Technology Policy, which estimated average APCs for NIH-funded researchers publishing in fully open access (~$3,500) and hybrid open access journals (~$4,500), and a recent analysis from the ScholCommlab projecting the impact of NIH's proposed caps on the ability of NIH researchers to publish.

A blanket cap on APCs can undermine efforts to push for greater pricing transparency, allowing lower quality journals to charge the maximum allowable cost, while journals with higher per-article production costs may be forced to make compromises and cut corners to compete. In addition, imposing such a cap may stymie innovation in alternative models for information dissemination as the publishing industry standardizes business practices around maximum allowable prices. Instead, NIH can build on its 2017 guidance to the research community around article publishing to include recommendations on pricing transparency to incentivize more publishers to justify how their APCs align with production costs. Nevertheless, pricing transparency cannot counteract pressures to publish in prestigious journals without additional reforms around research evaluation, such as those outlined above.

Publishing Best Practices

Scholarly publishing relies on peer review to assess credibility of empirical research findings. However, the journal in which results are published should not be the sole indicator of this credibility. Instead, readers should be able to evaluate the evidence that underlies claims made in papers to make more informed assessments for themselves. The

Transparency and Openness Promotion (TOP) Guidelines is a policy framework led by COS that provides a set of recommended practices for journals, as well as research institutions and funders, to increase the verifiability of empirical research claims. These practices include making various research design elements and outputs, like protocols and data, openly available. By opening access to the entire research lifecycle, researchers can better verify that conclusions are sound and more readily build on previous research. COS is continuing to develop implementation guidance for the TOP Guidelines aimed at various communities, which may be of interest to NIH and the researchers it supports. Implementing and monitoring compliance with various TOP practices may incur added production costs for publishers; COS cannot estimate the extent of these costs and again encourages NIH to incorporate measures to incentivize pricing transparency into any potential policy changes.

We thank you for the opportunity to share COS's perspectives. Please contact Maryam Zaringhalam (maryam@cos.io) with any questions.