

CONDUCTSCIENCE

September 8, 2025

Office of Science Policy National Institutes of Health SciencePolicy@od.nih.gov

Re: Response to Request for Information (NOT-OD-25-138): Maximizing Research Funds by Limiting Allowable Publishing Costs

Dear Colleagues,

On behalf of ConductScience.org (CSO), I appreciate the opportunity to respond to the NIH Request for Information on publication costs. While the RFI focuses on Article Processing Charges (APCs), this is also a critical moment to align cost reform with other NIH priorities: the updated Public Access Policy, the 2023 Data Management and Sharing (DMS) Policy, and the new Gold Standard Science framework. Addressing these together would allow NIH to catalyze a publishing ecosystem that is affordable, reproducible, and fully aligned with federal open science mandates. By harnessing market forces to create competition and link publishing to the research supply chain, NIH can lower costs, reward innovation, and incentivize reproducibility at scale.

At CSO, we believe in constant innovation and the application of novel technologies to address these interconnected challenges in publishing, reproducibility, and data sharing. Our platform maintains APCs between \$350–\$750 by integrating publishing with the research supply chain. Each article's *Methods* section is transformed into an interactive protocol, allowing readers to purchase the exact reagents or instruments used in the study directly through the publication. Because CSO also designs and manufactures these instruments, our devices are built to output FAIR-by-design, DMS-compliant datasets such as structured CSV or JSON-LD files with embedded metadata. This approach closes the loop between methods, materials, and data, enabling another lab to acquire the identical apparatus and immediately generate standardized, interoperable data ready for repository submission, subsidizing the cost of the APC fee at publication.

A sustainable publishing ecosystem must also realign incentives for authors. NIH should reward grants that include clear pathways for technology transfer, methodology replication, and monetization. We propose applying Bayh–Dole principles directly to research methodologies, a model we have piloted with several university technology transfer offices. In this framework, institutions license newly developed methods, CSO manufactures standardized apparatuses to implement them, and the devices are sold through linked publications. The originating researcher or institution receives revenue-

sharing, providing recognition and a return on taxpayer-funded innovation. This reframes academic publishing dissemination as technology transfer, ensuring validated methods become reproducible, widely adopted tools.

At the same time, peer reviewers must also be recognized for their essential role in safeguarding quality. To value reviewer labor without inflating APCs, CSO provides flexible compensation through modest payments, service credits, and research supply discounts. This model ties reviewer contributions back into the broader research enterprise, ensuring peer review remains sustainable while keeping publication affordable.

Furthermore, publications must evolve beyond static PDFs into data-rich, computation-ready research objects. At CSO, articles are parsed into structured sections, enriched with UMLS-based semantic tags, and linked to persistent identifiers. This format not only meets FAIR principles and NIH's DMS and Public Access mandates but also generates machine-readable corpora that serve as reusable training datasets for AI/ML. By doing so, each publication extends its value far beyond its original readership, creating both durable infrastructure for future discovery and reusable datasets that support benchmarking, secondary analysis, and AI/ML training.

Critically, NIH is uniquely positioned to accelerate this transition and reshape the publishing market. Instead of allowing grant funds to flow to legacy publishers that trade on prestige alone, NIH can tie grant incentives to participation in publishing ecosystems that prioritize open access, FAIR data sharing, and deep reproducibility. Such a policy would reward smaller publishers who innovate and, in turn, encourage scientists who not only produce high-quality research but also choose to disseminate their work in these truly reusable and verifiable formats.

In summary, we encourage NIH to implement a multi-faceted strategy that includes the following recommendations:

- Encourage market-based policies that lower or eliminate APCs and foster competition among publishing outlets.
- Require NIH-funded articles to appear in publishing outlets that provide FAIR, computation-ready outputs.
- Support publishing outlets that implement flexible peer review compensation (credits, discounts, modest payments).
- Give preference to grant applicants who propose publishing methodologies in outlets with clear pathways for replication and technology transfer.
- Tie funding incentives (scoring, supplements, renewals) to use of publishing outlets that comply with FAIR, DMS, and reproducibility mandates.

By implementing these changes, NIH can not only contain publication costs but also foster a continually evolving, innovation-driven publishing landscape that lowers costs, expands access, serves scientists more effectively, and delivers taxpayers high-quality, lower-cost science.

Sincerely,

A handwritten signature in black ink, appearing to read "Shuhan He". The signature is fluid and cursive, with a large, stylized initial 'S' on the left and a more vertical, pointed section on the right.

Shuhan He, MD Editor-in-Chief,
The ConductScience Journal
ConductScience.org