

August 17, 2023

Louis Barbier, PhD
NASA Associate Chief Scientist
NASA Office of the Chief Scientist
300 E Street SW
Washington, D.C. 20546

RE: Response to NASA Request for Information on the NASA Public Access Plan [Agency/Docket Number - Notice: 23-051; Document Number: 2023-10643]

1. How to best ensure equity in publication opportunities for NASA-supported investigators

The current version of NASA's Public Plan operates on the assumption that the uploading of accepted author manuscript (AM) versions of research articles to the Clearinghouse for the Open Research of the United States (CHORUS) or other Repositories would provide broad choice for researchers to publish their findings open access and be a step forward.¹ The removal of the previous embargo period may be seen as an improvement, but we believe that the ongoing maintenance of dual, if not multiple structures of article dissemination, hosting and access infrastructures etc. is not only duplicating efforts and increasing the overall costs but also creating inefficiencies and greater inequity in the research system than intended. We do not believe that this would bring an equitable experience for NASA-funded authors. The current NASA proposal would maintain a paradigm that perpetuates inequity; well-funded authors get the full value of VoR publication, less well funded authors get repository access to the AM.

Open access to the VoR, supported by other research outputs, is the best way to improve equity in access and accessibility of publications. Only the final published VoR article delivers the full benefit of open access. In addition to the metrics, metadata, and context associated with the VoR, many research artifacts from the research lifecycle such as preprints, open data, software, code, protocols, corrections, EoC, and retractions (to name a few), are linked to the final VoR. Directing readers to the final publication, the VoR, provides transparent, linked access to all associated research artifacts which will ultimately validate the quality and integrity of the research process and support the wider goal of increasing research reproducibility. A NASA-supported investigator uploading an accepted article into a repository would not benefit from this verified interlinking of connected outputs and they would not receive the same visibility, level of engagement, and community recognition that they would otherwise achieve through the sharing of the final VoR publication. By supporting the publication of the VoR on journal platforms, readers can verify the mechanisms through which publishers support and uphold research integrity thereby ensuring trust in the authors work; continued trust in peer review, trust in research, and ultimately trust in scientific practice.

The repository route to public access has been given priority in the United States for almost 20 years now, without ever proving its success. All the standard systems and tools in the modern digital research environment – e.g., DOI resolution, link resolving, abstracting & indexing – as well as the technological superiority of primary publisher platforms – e.g., UX experience, barrier-free access, interoperability with other services – are built around the VoR. Repository infrastructures cannot match up with these service levels. For all their investments and efforts, repositories (with perhaps the exception of arXiv) have generally failed to establish themselves as a relevant tool in the daily life of researchers; in other words, repositories are only a second-rate, and enormously costly, shadow infrastructure, with limited use-value for scientists.

¹ Please note that Wiley already deposits the AM for all NASA funded publications into CHORUS.

With its updated Public Access Plan, we believe NASA is overlooking an opportunity to reinforce the importance of ensuring that access to the final, published, connected version of a researcher's work is made widely available.

2. Steps for improving equity in access and accessibility of publications

As explained, it is hard to regard the removal of the currently allowable 12-month embargo period and giving access to the AMs on myriad distributed repositories as the best possible improvement today. This may have been seen as a promise some ten years ago. But from today's perspective, such a policy update is missing the realities and overlooking the fact that the publishing system has moved beyond the old dichotomies. The world has seen enormous uptake in immediate open access publishing of the VoR in recent years, with massive increases of overall OA market shares. Many publishers (including Wiley) have embarked on the transitional pathways as characterized by Transformative Agreements (TAs), which are designed to facilitate a transition to greater openness and access to scientific research, but our approach to open access transition isn't limited to TAs. Along with several other publishers, we have a growing number of journals (individual as well as portfolio collections) that have flipped, or, in other words, transitioned from a subscription model to OA.² It is a matter of fact that there is significant acceleration toward more open access. We respectfully encourage NASA to study and incorporate these developments in the final version of the new policy and would welcome the opportunity to discuss these issues (and indeed all the elements of NASA's Public Access Plan) in detail ahead.

TAs can be seen as public-private partnership arrangements with the clear goal of repurposing the money already in the system to achieve more OA and better services for authors and readers (in alignment with the goals of the OSTP memo). We submit that it would be worthwhile for NASA to explore how funded investigators and their institutions can be supported in further maximizing the uptake of OA and the impact of their research.

When we look at the current demographics, a large percentage of federally funded authors who publish in Wiley journals are based at R1³ institutions, many of which have TAs or open access accounts with Wiley. This means many NASA-funded authors will have their Article Publication Charges (APCs) covered under those agreements. As previously noted, Wiley published over 1,500 NASA funded articles in 2022. 66% of those articles were made publicly accessible via gold or hybrid open access. Of the total number of NASA funded articles published in Wiley journals in 2022, 44% were eligible for open access funding through one of our TAs. We encourage NASA to collaborate with publishers and libraries to identify gaps in open access funding that may impact NASA funded researchers. We, and many of our institutional partners, are committed to providing funding solutions where there is a demand for open access.

We urge NASA to recognize that all public access business models have costs and require some form of funding to ensure they are sustainable, be that through the subscription model or an open access model. There are no cost-free routes to public access. Supporting a Green OA route to public access and removing embargoes without providing adequate funding for Gold OA, and alternative OA models, will severely threaten the sustainability of journals and ultimately limit publication choice for NASA funded researchers. The provision of publishing services come at a cost, irrespective of OA model, and without funding to cover

² Just to select a few key examples with relevance for NASA: The American Astronomical Society (AAS) flipped all of their journals with only short notice from subscription to an open access model in 2022. In the same year, the EDP Science's flagship journal *Astronomy & Astrophysics* was successfully converted to OA without author-facing fees, adopting the subscribe-to-open model. And with *The Monthly Notices of the Royal Astronomical Society* the next high-profile journal in the field has already been announced to be published OA from 2024 onward. The AGU is committed to transitioning their journals to a fully open access business model with a strategic plan to make at least 50% of their journals to be fully OA by 2027.

³ R1: Doctoral Universities with very high research activity.

these costs, many journals will struggle to remain financially viable, meaning that the number of trusted publication venues will decrease, ultimately limiting publication choice for researchers.

3. Methods for monitoring evolving costs and impacts on affected communities

New costs that will arise from updated NASA public access requirements could impact equity in the scientific research community. To protect the scientific ecosystem and make it more robust and equitable, NASA should consider efforts to improve equity in research funding, understanding what sustainable high-quality publishing and repository costs entail, and guiding the NASA research community to adopt cultural changes so that researchers become accustomed to including OA publishing costs in their research proposals and spending research funds on publishing in their venue of choice.

Funding agencies such as NASA should help researchers to budget for anticipated publishing costs, and should consider creating a dedicated fund to support open access publication costs.⁴ If such a fund is fairly distributed, it could help to tackle inequality in publishing opportunities, create transparency for the monitoring of costs and impact of the new mandates, and avoid the problem of placing additional financial burdens on individual researchers and libraries.

We are aware that OA fund management can be extremely challenging and investment in tools and services to support Institutions and Funders is needed to build a sustainable and effective open science infrastructure. Oable, an open access management software solution, was developed by Knowledge Unlatched (a Wiley company) with significant stakeholder input to effectively manage the ever-growing complexity of OA activities and changing business models. Continued investment in these kinds of tools is needed to ensure Institutions and Funders can effectively manage OA funding.

Wiley is actively working towards greater transparency by helping our customers to understand the value of the services we provide. We provide public access to data related to the peer review services we provide (turnaround times, acceptance rates), engagement (usage), impact (citations, media references (Altmetric), author contributions (CRedit), and re-use (scite). In 2022, Wiley delivered data to the Plan S Price and Service Transparency Framework and Journal Comparison Service (JCS) with the aim of providing more transparency around the services that we offer. To date, we are the only major academic publisher participating in this initiative.

4. Efforts to increase findability and transparency of research

Access to high quality research for diverse, global audiences is vital for achieving open science. Information has to be discoverable. Wiley doesn't just make content available; we enable content to be found, providing the best opportunities for it to be discovered, so that the right audiences are aware of the latest research. Throughout our multi-step publishing process, we adhere to industry-accepted standards, from discoverability and archiving to presentation of published content.

We support the FAIR principles and recognize the benefits of large-scale bibliometric analysis of research outputs that may lead to greater scientific and medical discovery. In 2022, we signed on to participate in the Initiative for Open Abstracts (I4OA) which allows for Crossref deposit and interrogation of abstract metadata. In addition, we support unrestricted access to article metadata on our publishing platform (Wiley Online Library) including abstracts, references, funder acknowledgements, data availability statements, and in many cases important contextual information like lay summaries and patient summaries.

⁴ The German Science and Humanities Council is setting a good example in this respect with their 2022 "Recommendations on the Transformation of Academic Publishing: Towards Open Access" (cf. <https://doi.org/10.57674/0gtq-b603>).

We are continually investing in improvements and innovations in response to the evolving needs of the communities we serve while ensuring responsible ethical publishing and preservation practices. By investing in new technologies and initiatives, we enable knowledge to be created, accessed, shared, and discovered more quickly on a global scale. Publishers have the skill and capacity to invest in maintaining the integrity of the VoR and in increasing the findability and transparency of research outputs. We recommend that NASA make best use of existing tools and initiatives to avoid unnecessary costs and duplication of effort.

The importance of having an appropriate and interoperable infrastructure to support these services cannot be underestimated. Crucial to this shared infrastructure is a set of commonly agreed persistent identifiers (PIDs) for researchers and organizations. These include the Open Researcher Contributor identifier (ORCID), the Research Organization Registry (RoR), and the Digital Object Identifier (DOI) for different scholarly outputs. An agreed set of scholarly PIDs and open and non-proprietary metadata, to enable attribution to original publication sources, has many benefits and is key to reproducibility and research integrity. Machine reading can then link and mine different research outputs and connect them to researchers or organizations, as well as to grants and different projects. This will enable verification, replication, discovery, and the reporting and tracking of research outputs, people, projects, and organizations.

5. Considerations on the sharing and archiving of software?

For this question, we do not have any specific recommendations or solutions to offer, but our society and industry partners, the AGU, Research Data Alliance (RDA), and others potentially will have guidelines and suggestions to help inform NASA's approach to the archiving and sharing of software.