

Open@RIT Position Paper: Federal Funding To Support Peer Review in Government-Funded Research

Author: Stephen Jacobs, Director, Open@RIT, [ORCID](#)

Introduction

In the last several years, we've seen significant [federal guidance](#) emerge to support aspects of Open Science and national plans for Open Science, such as the [French National Plan](#), outside of the US. The year 2023 was designated the "Year of Open Science" by the White House.

These efforts to support Open Science are partly driven by the number of challenges facing peer review, including the decreasing number of qualified reviewers. This, along with the massive growth in the area of for-profit, not-for-profit, pre-prints, and Open Access journals, has created a surplus in demand for reviewers.

[Open Peer Review](#), as part of the larger Open Science push, has been suggested as one possible avenue to expand the pool of reviewers and build greater efficiencies into the system. That concept [lacks a significant body of evidence](#) to establish acceptance in mainstream academia. And it doesn't address the lack of incentives to engage as a reviewer.

In an ideal world, peer review would extend beyond journal article-style publications to include the review of data sets and source code. This is already required on work done directly by the federal government under the [Information Quality Act](#) and is in place for some journals such as the [Journal of Open Source Software](#) and the [Journal of Statistical Software](#).

It is time for the federal government to support peer review directly as part of its efforts to move toward Open Science and greater reliability in the scientific enterprise.

A Structural Problem Within Academia, the Primary Source of Peer-Reviewers

Like Blanche Dubois in '*Streetcar Named Desire*,' peer review has "...always depended on the kindness of strangers." According to [Publons/Web of Science](#), academic peer reviewers spend approximately 100 million hours evaluating scholarly work, mainly without direct monetary compensation and limited recognition. [Academics, in particular](#), are spread too thin to support peer review. This results in significant time and energy for the author(s) to find reviewers and [significant delays](#) in reviews being performed. Some efforts exist to pay faculty and other peer reviewers directly for their time. However, direct payments to academic reviewers don't address the structural challenge for pre-tenure and pre-promotion faculty.

Even though the traditional peer review model is partially supported by university overhead, as Institutes of Higher Education (IHEs) and other research institutions face financial and staffing challenges, individual academics and researchers find themselves spread too thin to conduct

reviews. Due to these institutional financial challenges, most services to the profession, like peer review, [carry less weight](#) in annual evaluations, tenure, and promotion processes than efforts resulting in high-overhead research dollars. To complicate the matter further, more review is required as more research is funded and findings are published. Advancing developments to credit researchers for their peer review activities directly is one way that the federal government and the academy can incentivize richer contributions.

There is significant precedent for Federal Government engagement and action in the areas of external intellectual property and its own internal science and research activities. These include but are not limited to the following:

Some essential items in the history of Federal Government engagement with internally and externally generated research and intellectual property

- The United States first established the United States Patent and Trademark Office ([USPTO](#)) and the United States [Copyright Office](#) in the late 1800s.
- The Office of the United States Trade Representative ([USTR](#)), established in 1962, works with Foreign governments on aspects of IP.
- The [Bayh-Dole Act](#) of 1980 enables universities, nonprofit research institutions, and small businesses to own, patent, and commercialize inventions developed within their organizations under federally funded research programs.
- The Office of Management and Budget (OMB) Information Quality Guidelines, 2001, [regulates peer review](#) for government science.
- The [Paperwork Reduction Act](#) of 1995 and the [Information Quality Act](#) of 2002 both require peer review of federal agency science.
- The 2022 Office of Science and Technology Policy (OSTP) [memo](#) requires peer review for minimum compliance.
- The Office of Management and Budget (OMB) [Uniform Guidance on Research Grants](#) of 2014 states that the US Government can use all intangible property generated by Federal grants.
- [2CFR44 Section 200.315](#), most recently amended on 10/23/2023, includes the government purpose license detailing the specific terms and conditions recipients of federal grants must adhere to.

While some critics of this direction may raise concerns that Federal support of peer review would lead to “State-Certification” of Science and Research writ large, clearly, the precedents above and the establishment of policy and practice to ensure the growing need for support of peer review, furthermore, the Federal government is the primary funder of research in the United States — a 2021 study put the [ratio of Federal funding](#) for the studied pool of researchers at 82% Federal vs 11% private sector.

Recommendations:

Establish peer review management positions and funding within agencies to support peer review of Federally-funded research.

Funding to support staff managers and external peer reviewers should be a part of the overall budget of a given agency or office. These federal staff managers would recruit and engage with external reviewers and provide reimbursement for their time to their employers in IHEs. A

mechanism similar to the one used by the NSF for Interagency Personnel might be another option for these reviewer management positions. Funding for external reviewers would be provided as course buyout or “summer pay” through the IHE to the reviewers. This would increase the pool of reviewers and elevate the value of peer review within the academy, allowing for such work to get greater weight in annual evaluations, tenure, and promotion. Doing this could also reduce or alleviate the burden experienced by authors and their need to secure reviewers.

Limit the number of papers that “count” toward grant progress or other metrics to reduce the load on the system.

While there are such specifications and limitations on an agency-by-agency level, standardization would help. Doing so would reduce the overall load on the academic system, as would the demand for the pool of peer reviewers.

Increasing the Acceptance of Pre-Prints into the Ecosystem

Rich support of pre-prints could [increase collaboration, get more eyes and voices engaged in research](#), and potentially reduce the load and bottlenecks at the publication level. This ecosystem would require academia and research institutions to better support and incentivize pre-prints in evaluation, tenure, and promotion processes. Some agencies, such as NASA, NIH, and NSF, are now allowing pre-prints to be included for grant review.

Provide guidelines, certified technology, or other support for automated tools to assist in reference checking and other aspects of peer review

These types of efforts have been growing in the research community in the last few years, with accelerated growth in the space over the last 18 months. This is exemplified by efforts such as the work at the [University of Southern California](#), among others.

While putting these proposals in action will not, in and of themselves, fully address the challenges faced by the professoriate in the academic peer review ecosystem, doing so will be a significant step in the right direction.

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