

Request for Information (RFI): Request for information (RFI): Including preprints and interim research products in NIH applications and reports



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Name

Gary McDowell

Email

info@futureofresearch.org

Name of Organization

Future of Research

Types of interim research products your or your organization create/and or host.

Future of Research (FoR, futureofresearch.org) is a non-profit organization promoting grassroots advocacy by junior researchers to solve the problems that they perceive with the scientific enterprise. Our organization also seeks to provide information with junior researchers to increase transparency about the scientific enterprise, with the aim of helping those with a passion for science navigate their training to achieve their scientific goals. Our organization regularly holds symposia and workshops and aims to disseminate the outcomes of these meetings. FoR also works with others in academia to collect and analyse data about the research enterprise. As our aim is to discuss changes to the scientific enterprise, we make use of preprints as interim research products to solicit feedback and critique in our use of data to drive policy changes. Our preprints are written to be "complete manuscripts (data, methods, and interpretation) posted on an established, public server typically prior to or during journal-organized peer review", the definition laid out at ASAPbio.org. Our organization seeks to enable junior researchers to practice open and transparent science safely and so supports the posting of interim research products, and aims to help junior researchers feel confident doing so.

Feedback on what are considered to be interim research products, and how they are used in your field.

We use interim products such as preprints to make our work open, transparent, reproducible and in particular open to critique before we make final policy recommendations on changes to the scientific enterprise. These products are used to create a dialogue with affected researchers and interested parties, rather than producing only final, static products that are difficult to update. This process, of a collaborative and discursive scientific process rather than the production of static products with a lesser potential for input from the field before dissemination, reflects more accurately the dynamic nature of the scientific method and applies not only to our policy work but is also a directly applicable principle in the scientific disciplines we study.

Insight on how particular types of interim research products might impact the advancement of science.

The inclusion of preprints and interim research materials by NIH will provide a greater desire to make use of these materials in the scientific community, which we believe will benefit both junior scientists and the research enterprise itself. Most crucially to our organization, enabling junior scientists to demonstrate progress and productivity will reduce the gaps in apparent productivity that occur when junior researchers transfer to new positions as part of their training. Junior researchers are encouraged to apply for fellowship mechanisms at NIH early in a new position, but may not have appropriate markers of productivity in their current work to support the application, and may have a limited publication history overall. Many junior

scientists are also motivated to practice open science, and make their results and practices more openly available to those who normally are unable to view published findings, or to solicit feedback before final publication in a journal.

Feedback on potential citation standards.

The citation of interim research products such as preprints should be identical to the standards for publication of journal articles and indeed this is often already practiced in other forms of communication, such as the citation of personal communications between scientists. This necessarily goes together with an appreciation within the scientific community, and a greater communication with the non-academic community, about what a preprint is and means in the landscape of academic discourse.

Insight on the possible need and potential impact of citing interim products on peer review of NIH applications.

Enabling junior scientists to demonstrate progress and productivity in a short period of time and particularly after training transitions into new projects will allow a clearer picture of their productivity, independent of journal publication times and review processes, which are invisible to the reviewers of NIH applications.

Advice on how NIH reviewers might evaluate citations of interim research products in applications

We support the statement from ASAPbio on this issue: "We favor the language used in the CIHR Peer Review Manual for Grant Applications (<http://www.cihr-irsc.gc.ca/e/4656.html>), with a recommended addition (bolded): "Communications, quick-print reports, letters and electronic distribution of pre-prints are important vehicles for disseminating research results. The data presented in [all] such contributions should be treated equally when assessing quality and impact, and reviewers should not regard certain types as "second class" or "grey literature." Evaluation of published papers is often strongly influenced by the journals in which they appear. Because the names of preprint servers (unlike the names of journals) bear no assumed relationship to article quality, reviewers should be encouraged to directly evaluate the content of preprints and assess the merit and relationship of the data to grant application. In general, relying more heavily on article content (rather than on journal title) will improve the quality of evaluation of all papers." The use of impact factor as a proxy for more direct assessment of the quality of an applicant's work leads to impact factor itself, and not the science within a publication, being the currency sought by the junior academic. Perverse incentives in chasing high impact factor publications can be reduced by greater use of interim research products which rely on critique of the science and data itself.

Any other relevant information.

As preprints are divorced from impact factor, and their evaluation requires reading of the paper itself, it could be used in hiring, promotion, and tenure of faculty with the potential of removing biases generated by reliance on impact factor. Their potential as research products that could be used for PhD graduation and recognized as products in postdoc hiring could reduce time spent in a graduate position simply waiting on a journal's publication process to be completed. The use of preprints in fellowship applications and job search criteria could allow early application to positions and reduce postdoctoral training times also. They could therefore be a useful tool in the drive to reduce the time for a scientist to reach independence, which is held as a point of national concern about the research enterprise. There is also a conversation presently that there are too many publications, whereas our concern is rather that scientists no longer have sufficient time to read papers, and so cite papers that may support their argument without closely reading them. Introducing a greater reliance on close reading of manuscripts and interim research products, rather than using a metric or its inclusion in a publication as a proxy for reading a paper, can only benefit the scientific enterprise and the reliability and reproducibility of science, particularly if more detailed protocols and methods can be included in interim research products, as well as negative results and reproducibility studies which are more difficult to publish in traditional journals.



National Institutes of Health (NIH)
9000 Rockville Pike
Bethesda, Maryland 20892



Department of Health
and Human Services (HHS)

