

# Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Submitted by:

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*(1) Are there steps that agencies could take to grow existing and new markets related to the access and analysis of peer-reviewed publications that result from federally funded scientific research? How can policies for archiving publications and making them publically accessible be used to grow the economy and improve the productivity of the scientific enterprise? What are the relative costs and benefits of such policies? What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?*

**With the appearance of new open access publishing models like that employed by PLoS ONE, it is clear that there is already major growth and change in the scientific publishing market. The benefits of open access to scientific information are innumerable and, while I do not have any specific recommendations as to how new markets can be developed, I think the US government could have a tremendous effect by promoting a culture of open access to science. Services such as Pubmed and Pubmed Central have revolutionized science by making it more effective and efficient, and they both are open-access-to-science services. They have enabled scientists to see the benefits of free access to scientific information and I think they have even promoted the view that access to scientific information is a moral right. As such, more and more scientists are paying to have their publications open access. I think the growth of new markets will occur naturally as this mindset is encouraged – new open access journals will appear, new types of data repositories will be created, new software and businesses that make use of freely-available data will appear, opportunities for new forms of education will arise. It will occur naturally, in this free market economy, as these incredible resources actually become accessible to the public. It just needs a nudge and a bit of guidance.**

*(2) What specific steps can be taken to protect the intellectual property interests of publishers, scientists, Federal agencies, and other stakeholders involved with the publication and dissemination of peer-reviewed scholarly publications resulting from federally funded scientific research? Conversely, are there policies that should not be adopted with respect to public access to peer-reviewed scholarly publications so as not to undermine any intellectual property rights of publishers, scientists, Federal agencies, and other stakeholders?*

**I myself have been a biomedical (neuroscience) researcher for over 10 years and have never come across any case of intellectual property aside from the seemingly artificial one created by journals that copyright the final published article. In no case, for my 8 peer-reviewed publications, have publishers ever added anything substantial to the quality of the manuscript itself, other than aesthetic reorganization. The vast majority of my colleagues produce scientific data meant solely to further our understanding of biology. They have no intellectual property interests. Maybe I'm missing something here?**

*(3) What are the pros and cons of centralized and decentralized approaches to managing public access to peer-reviewed scholarly publications that result from federally funded research in terms of interoperability, search, development of analytic tools, and other scientific and commercial opportunities? Are there reasons why a Federal agency (or agencies) should maintain custody of all published content, and are there ways that the government can ensure long-term stewardship if content is distributed across multiple private sources?*

**I think databases curated by the National Library of Medicine, such as Pubmed and others, have proven fantastically useful and they are completely maintained by a Federal agency. Therefore, I can easily envision that federally-maintained approaches to accessing scholarly publications would also be largely effective. On the other hand, it is likely that different disciplines and projects will depend on different aspects of the scholarly literature and so it seems that allowing a decentralized approach would facilitate the rapid growth of different uses for scientific publications**

and associated data. Perhaps a federal agency could maintain the “raw data” but allow independent, non-governmental agencies to access it and re-use. Another option would be for libraries (eg at universities) to be responsible for maintaining the literature, since funds would become available as massive journal subscription fees would no longer be an issue.

*(4) Are there models or new ideas for public-private partnerships that take advantage of existing publisher archives and encourage innovation in accessibility and interoperability, while ensuring long-term stewardship of the results of federally funded research?*

I can't think of many, maybe because the world of scientific publishing is so old fashioned (it's just articles, out there to be read). There are tools like Elsevier's Sciverse, which allows individuals to make applications that search articles for specific sentences, identify “hot” papers based on Twitter conversations etc but these tools often don't search the entire literature - I'm assuming because of fees and copyrights they can only search certain publishers. I think these sorts of collaborations will become more common as access to scientific literature grows (scientists are hungry for new ways to publish, people are hungry for new ways to use and explore data) I think the field is too young for there to be many examples at this point.

One example, perhaps, is the author-pays model used by PLoS ONE. Traditional scientific publications are rather old-fashioned. They don't share the underlying data, they're merely text on a page. But in the future if other services arose that, like PLoS ONE, charged authors for the ability to archive and disseminate relevant data, multimedia, and other novel scientific contributions there could be a wealth of new business growth.

*(5) What steps can be taken by Federal agencies, publishers, and/or scholarly and professional societies to encourage interoperable search, discovery, and analysis capacity across disciplines and archives? What are the minimum core metadata for scholarly publications that must be made available to the public to allow such capabilities? How should Federal agencies make certain that such minimum core metadata associated with peer-reviewed publications resulting from federally funded scientific research are publicly available to ensure that these publications can be easily found and linked to Federal science funding?*

I think Pubmed is a good starting point – it is very useful to be able to search based on a scientist's name or affiliation, chemicals used in the study, discipline etc etc. Obviously there will be more data available when the whole paper is freely available and so there will be potentially more metadata to create, but the general framework could be copied. How to decide on the exact items to include in the metadata is a tough question but will probably require experimentation. If different groups are able to create metadata as they see fit, for their own particular interests, then certainly some will discover which methods and metadata are most useful. I think of it like any type of service currently available online – similar services are offered by many different groups but, eventually, one group “gets it” and discovers the way to do it best.

*(6) How can Federal agencies that fund science maximize the benefit of public access policies to U.S. taxpayers, and their investment in the peer-reviewed literature, while minimizing burden and costs for stakeholders, including awardee institutions, scientists, publishers, Federal agencies, and libraries?*

If federal agencies were to play a role in the archiving, generation of metadata etc (as mentioned in the above questions) then, by providing the relevant services, third parties that re-use the scientific publications and data will be encouraged to maximize the benefit (to the public etc). I mean, just making this happen (open access to science) will massively benefit the public. But, just for example, off the top of my head, what if the metadata for each paper identified whether a study utilized things like toxic reagents, human surveys, or few material resources. Personally, I'm interested in “citizen science” – the idea that anyone can do an experiment and money doesn't have to be a limiting factor. If one was a high school teacher who wanted to educate their students on the scientific process while simultaneously generating real and relevant data that could actually be published they could search the literature and find studies that were safe (and didn't involve toxic chemicals) and affordable (e.g. by simply employing human surveys or experiments that didn't require costly reagents). This may not be the greatest example but my point is that by guiding the metadata one could encourage specific uses of the publication archive, e.g. ones that benefit the public.

I don't really understand who would be at risk of burden and costs. Publishers can charge authors once, up front, to publish their paper (a la PLoS ONE) and become very profitable. Libraries will save many thousands since subscription costs will be nil. Scientists' research will be more available to the public and to other researchers making it not a burden but a benefit (even at wealthy institutions like the University of Toronto I have found many promising articles that I would probably have cited but didn't because the library could not afford to subscribe to the journal. Free access makes it easier for scientists to get credit).

*(7) Besides scholarly journal articles, should other types of peer-reviewed publications resulting from federally funded research, such as book chapters and conference proceedings, be covered by these public access policies?*

**Absolutely! Of course! Why wouldn't they?! In fact, this is interesting. I have absolutely zero interest in writing book chapters. Why? Because they never get read (scientific books are often rare and expensive). Were they accessible it might be a different story...**

*(8) What is the appropriate embargo period after publication before the public is granted free access to the full content of peer-reviewed scholarly publications resulting from federally funded research? Please describe the empirical basis for the recommended embargo period. Analyses that weigh public and private benefits and account for external market factors, such as competition, price changes, library budgets, and other factors, will be particularly useful. Are there evidence-based arguments that can be made that the delay period should be different for specific disciplines or types of publications?*

**There is no appropriate embargo period. There should be no embargos. If the science is taxpayer funded and if the science provides information that is useful to the health of the public then I think it should be given to the public asap. Why, as in the case of Pubmed Central, release the study up to an entire year after it is published? What if the information could have saved someone's life? What if a scientist working at a poorer institution or poorer country is working on something similar but they cannot read the paper for another year? And then they find out the last year's worth of work was totally misguided and a waste of time, money, energy, and emotional frustration? Again, paying the publisher up front, once, to publish your study means that no embargo is necessary.**

*Please identify any other items the Task Force might consider for Federal policies related to public access to peer-reviewed scholarly publications resulting from federally supported research.*

**In the future I can envision a new world, where scientific progress is not driven by competitiveness but by a pure desire to discover and share information for the betterment of the world. It is currently very far from this ideal but at the same time there is so much turmoil that it is clear that change is around the corner. Your interest in these issues is very encouraging and I thank you! I am sorry that my responses could not be more helpful in places.**

-Jason