



Advancing Transfusion and
Cellular Therapies Worldwide

Sent via e-mail to publicaccess@ostp.gov

December 30, 2011

John P. Holdren
Director, OSTP
725 17th Street Room 5228
Washington, DC 20502

Re: Document #2011-28623

Dear Mr. Holdren,

AABB (formerly the American Association of Blood Banks) is pleased to respond to OSTP's November 3, 2011 *Federal Register* notice requesting comments on "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research." As owner of the medical journal *TRANSFUSION*, AABB appreciates the opportunity to respond to the issues raised in the notice.

AABB is an international, not-for-profit association representing individuals and institutions involved in the field of transfusion medicine and cellular therapies. The association is committed to improving health by developing and delivering standards, accreditation, and educational programs that focus on optimizing patient and donor care and safety. AABB membership consists of nearly 2,000 institutions and 8,000 individuals, including physicians, nurses, scientists, researchers, administrators, medical technologists, and other health-care providers.

TRANSFUSION is the foremost publication in the world for new information regarding transfusion medicine. Written by and for members of AABB and other health-care workers, *TRANSFUSION* reports on the latest technical advances, discusses opposing viewpoints regarding controversial issues, and presents key conference proceedings. In addition to blood banking and transfusion medicine topics, *TRANSFUSION* presents submissions concerning tissue transplantation and hematopoietic, cellular, and gene therapies.

Like many other societies that publish peer-reviewed research, AABB depends on the subscription revenues from *TRANSFUSION* to support activities that serve not only a specialized (in this case, medical) community, but also society in general. Those revenues also enable AABB to conduct the peer-review process, which cannot be accomplished without significant expense.

AABB offers the following responses to the Request for Information appearing in 76 FR 68518.

- 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***

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December 30, 2011

research? How can policies for archiving publications and making them publicly 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 US economic growth and improve the productivity of the American scientific enterprise?

Through its publisher, John Wiley and Sons, *TRANSFUSION* encourages growth in existing and new markets. The journal has a policy for open access to federally funded research. That policy has been in place for some time without controversy or challenge, and appears to meet the needs of the journal's constituency. AABB and Wiley have made investments in digital and online technology, and have actively participated in library consortia worldwide to accelerate and broaden access to the peer-reviewed literature by several orders of magnitude. There is more access to more content by more users now than ever before. In fact, over half the submissions to *TRANSFUSION* are from outside the United States.

AABB is unaware of any studies showing that free access to the research literature will increase research productivity or economic growth. *Access* to the literature does not automatically translate to the ability to *use* that same literature. The modern research enterprise is complex and requires huge investments. Limited resources are the constraint, not access to the research literature.

AABB does not accept the premise that because government funds scientific research, the government is entitled to full access to and control of manuscripts reporting on this research. Publishing peer-reviewed research is expensive. The government pays only for the research; it is unfair for it to lay claim to the final publication. Having each funding agency open its database of funded projects, including research project reports and lay summaries, best serves the public interest and protects the scientific research enterprise.

Many research funders require research progress reports on all grants. Expanding this information by requiring the addition of a one-paragraph lay summary, and making both freely available, has more potential to enhance public understanding than does providing free access to scientific journals. AABB's strong preference would be that the federal government does **not** mandate deposit of journal manuscripts in a freely available archive, regardless of format, process, or timing. Rather, the federal government should strive to provide public access to the information that it already controls and has a right to distribute — for example, research summary reports.

Typically, these reports are produced as part of each federally funded project, and they are provided to the government as a contract deliverable. Thus, there is a report for virtually every project. Each project itself undergoes peer review before being selected for funding, and the research results being reported on are solely those that the government funded. In short, these reports are the federally funded research results. Thus, if the policy is to provide public access to federally funded research results, then these reports are the natural vehicle for doing so. The government already has them, so all it has to do is make them publicly available. Several federal science agencies already do this; no new system is required.

The government should not impose unfunded mandates that pertain to the outputs of the publishing process, including accepted author manuscripts and published journal articles. Such policies would not be

justifiable or warranted. Government-imposed public access policies would violate fundamental copyright principles by allowing the government to diminish existing copyright protections for private-sector journal articles.

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?*

Some options to consider include:

- Make funds available for the purchase of open access to published articles. Several research funders already do this (eg, Howard Hughes Medical Institute, The Wellcome Trust, Max-Planck Institutes). These costs are a small fraction of the investment in the research itself.
- License content from publishers and learned societies and make it available to specific audiences. AABB licenses content to customers of many kinds, and would consider entering into negotiations regarding access by specific communities to packages of content.

What should **not** be considered is to take accepted or published articles from publishers or learned societies (directly or via a mandate placed on grantees) and make them freely available.

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?*

Scholarly journal articles have been published for several hundred years by a combination of society, not-for-profit, and for-profit publishers. This multiplicity of publishers has not prevented broad public access. In fact, one could argue that it has been an advantage in promoting competition that has, in recent years, driven development of increasingly sophisticated platforms to deliver this content.

Over the past decade, publishers have developed the Digital Object Identifier (DOI), a unique identifier for each piece of content, in this case a journal article. Almost 1,000 publishers (including Wiley) and societies (including AABB) participate and assign DOIs to their published content items. Navigation of the research literature is seamless, so that researchers using the bibliography in one article can link from a reference in the bibliography to the full text of the referenced article.

It is questionable whether the government could become a credible provider of these kinds of services. Given government budget constraints, the government would be unlikely to use taxpayer dollars to duplicate an existing, well-functioning service. PubMed Central, the repository for mandated NIH

grantees, is not a simple archive of articles but a sophisticated publishing platform requiring millions of dollars of investment.

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?*
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?*

A number of projects are under way or envisioned for public-private partnerships, including standardization of information on funding sources, DOIs for data sets, assigning of unique identifiers to make individual researcher contributions less ambiguous, management/mining of content, and linking to/from research reports. These projects are more fully described in a separate response by Wiley to Document #2011-28623.

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

Publishers would argue that those who can benefit from access to the peer-reviewed journal literature already have access; researcher surveys bear out this assertion. Publishers and learned societies are committed to the wide dissemination of our content. We support any and all sustainable access models that ensure the integrity and permanence of the scholarly record. This includes open access, where publication is funded by a publication fee or article processing charge. Many publishers now offer open access options and/or publish open access journals, and work closely with funders, institutions, and governments to facilitate these developments. We believe that authors should be able to publish in the journal of their choice, where they feel their work will be best reviewed by their peers and where its publication will have the greatest potential to advance their field. Research funders could provide a fund to publishers to cover open access publishing fees.

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?*

No. Publishers also invest in these other types of content used by researchers, often by conceptualizing the project, commissioning the content, and investing heavily in its development. Any kind of mandated free access to that content is simply an expropriation of that content.

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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 are no “appropriate” embargo periods. Any embargo period is a dramatic shortening of the period of copyright protection afforded all publishers.

AABB believes that peer-reviewed papers should not be made public within the duration of the article’s copyright without the copyright holder’s permission. AABB believes that publishers — and learned societies — themselves should determine the business models under which their publications operate. This should include the time, if any, at which the final peer-reviewed manuscript or final published article is made publicly available. Peer-reviewed papers are the direct result of investment and value added by societies and/or publishers, not the federal government. Thus, material should **not** be made freely available to the public unless the copyright owner authorizes the government to do so.

Respectfully,

Laurel V. Munk, MLS

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Subject: Comment

Date: December 30, 2011 3:48:24 PM EST

To: publicaccess@ostp.gov

There must be full and free public access to all research funded by public funds.

Saleem Jahangeer, Ph.D.

Subject: AIA response to RFI re public access

Date: December 30, 2011 4:58:37 PM EST

The Archaeological Institute of America (AIA) is pleased to join the American Anthropological Association (AAA) in its response to the Request for Information (RFI) issued by the Office of Science and Technology Policy (OSTP) on behalf of the National Science and Technology Council Task Force on Public Access to Scholarly Publications, published November 3, 2011 in the Federal Register. And we join them in requesting that those comments in response to the RFI announced at 76 FR 68518 be made an official part of the rulemaking docket.

Founded in 1879, the AIA is the largest organization in North America devoted to archaeology. With more than 220,000 professional, student, and lay members belonging to more than 100 local societies throughout the US, Canada, and overseas, it represents a very diverse population joined by an interest in learning about the material remains of the past.

One of the primary tools for advancing its mission of education is the scholarly quarterly American Journal of Archaeology (AJA), whose annual print length is approximately 800 pages. While AJA does present some primary archaeological reports (i.e., through its occasional "field reports," data gathered in the field) almost all of its content deals with archaeological interpretation rather than the primary reporting of archaeological data. We agree with the AAA that "while the government might have a right to the unfinished work product (i.e., the research data or 'findings') of researchers to whom they provide financial support, it does not have the right to journal articles that are the cumulative result of the significant time and financial investment of reviewers, editors, copywriters, designers, technology providers, archivists, publishers and distributors of such journal content—none of which is supported by federal research dollars." To get a sense of how much intellectual value is added during production, consider that the average time between the submission of articles to AJA and their final publication is approximately 18 months.

AJA strives to reach a wide readership by offering its content both in print and electronic versions. In the last years, it has expanded its electronic content by moving all book reviews and many museum exhibition reviews to the web. Striving for open access, AJA has made its content accessible in various ways: through a purchased annual subscription (rates are modest, with electronic-only at the lowest price point of \$50); through JSTOR's archive collection program, which gives access to all content except that of the last five years; through purchase of an individual article in PDF format (this applies only articles published after 1923). All content prior to 1923 is freely accessible as it is out of copyright.

We join the AAA in sharing the objective of enhancing the public understanding of our global archaeological heritage and to this end we support the widest dissemination of information possible. Access to such information currently already exists and no additional federal government intervention is necessary.
We thank you for the opportunity to submit these comments.

Elizabeth Bartman
President
Archaeological Institute of America

[Assigned ID #]
[Assigned Entry date]

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Montreal, Quebec, Canada & Southampton, UK

**What Is To Be Done
About Public Access to Peer-Reviewed Scholarly Publications
Resulting From Federally Funded Research?
(Response to US OSTP RFI)**

Stevan Harnad

Moderator, American Scientist Open Access Forum (1998-2011)
Canada Research Chair in Cognitive Sciences, UQAM
&

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<http://users.ecs.soton.ac.uk/harnad/intpub.html>
<http://openaccess.eprints.org/>

[Please note that as parts of several questions sometimes ask the same thing, some of the replies are repeated too, in order to make each reply self-contained rather than requiring cross-referencing.]

QUESTION 1 (1a, 1b, 1c, 1d):

(Question 1a) “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?”

Yes there are very specific practical steps.

(“Markets,” however, is perhaps not the most direct and instructive way to understand the dynamics involved: basic research growth (1) and the resulting growth in R&D applications/products (e.g., technology, medicines) (2) need to be considered separately, with (1) feeding into (2)):

US Federally funded research is funded by the US tax-payer, and conducted, analyzed and published by researchers (and for researchers), so that the research findings can be accessed, taken up, used, applied, and built upon, by all potential users, for the benefit of the US tax-paying public that funded it, through both further research (1) and R&D applications (2).

Barriers to the uptake and usage of publicly funded research are barriers to both research progress itself (1) and to the practical, social and economic benefits of R&D (2). Anything that reduces access to the research findings reduces their impact, which in turn reduces the return in the public benefits from the tax dollars invested in funding, conducting, analyzing and reporting the research.

Here are some papers on the economic benefits of providing open access to research (and hence also the economic losses from not providing it):

Houghton, J.W. & Oppenheim, C. (2009) The Economic Implications of Alternative Publishing Models. *Prometheus* 26(1): 41-54
<http://www.informaworld.com/smpp/content~db=all~content=a920247424>

Houghton, J.W., Rasmussen, B., Sheehan, P.J., Oppenheim, C., Morris, A., Creaser, C., Greenwood, H., Summers, M. and Gourlay, A. (2009). *Economic Implications of Alternative Scholarly Publishing Models: Exploring the Costs and Benefits*, London and Bristol: The Joint Information Systems Committee (JISC)
<http://www.jisc.ac.uk/publications/reports/2009/economicpublishingmodelsfinalreport.aspx>

Harnad, S. (2010) The Immediate Practical Implication of the Houghton Report: Provide Green Open Access Now. *Prometheus* 28 (1): 55-59 <http://eprints.ecs.soton.ac.uk/18514/>

ABSTRACT: Among the many important implications of Houghton et al's (2009) timely and illuminating JISC analysis of the costs and benefits of providing free online access ("Open Access," OA) to peer-reviewed scholarly and scientific journal articles one stands out as particularly compelling: It would yield a forty-fold benefit/cost ratio if the world's peer-reviewed research were all self-archived by its authors so as to make it ("Green") OA. There are many assumptions and estimates underlying Houghton et al's modelling and analyses, but they are for the most part very reasonable and even conservative. This makes their strongest practical implication particularly striking: The 40-fold benefit/cost ratio of providing Green OA is an order of magnitude greater than all the other potential combinations of alternatives to the status quo analyzed and compared by Houghton et al. This outcome is all the more significant in light of the fact that self-archiving already rests entirely in the hands of the research community (researchers, their institutions and their funders), whereas ("Gold") OA publishing depends on the publishing industry. Perhaps most remarkable is the fact that this outcome emerged from studies that approached the problem primarily from the standpoint of the economics of *publication* rather than the economics of *research*.

Below (**Figure 1**) is Houghton et al's summary of the estimated benefit/cost ratio for the UK for the two ways of providing Open Access:
Green OA = authors publishing in their journal of choice, but also making their peer-reviewed final drafts OA by self-archiving them in their institutional OA repository or (ii) **Gold OA** = authors publishing in OA journals that make all their articles free online and charge the author a publication fee. Houghton et al calculate, separately, the benefit/cost ratio for the UK universities ("HE") and for UK as a whole, for converting to Gold OA or for converting to Green OA, and as a function of whether it is the UK alone that converts, or the conversion is done worldwide.

The two important things to note for the US RFI are (1) that, for all conversion scenarios, *the cost of converting to Green OA is much lower (and distributed across institutions) and the benefit/cost ratio is much higher than for converting to Gold OA* and even more important, (2) *federal funders (as well as institutions) can mandate a conversion to Green OA by mandating self-archiving by their grantees (or employees) but they cannot mandate a conversion to Gold OA (because that is in the hands of publishers)*.

Mandating Green OA is hence the optimal policy for the US as well.

Transitional Model	Benefit / Cost			
	Costs	Savings	Increased returns	
Scenario (UK Unilateral OA)				
OA Publishing in HE	1,787	2,990	615	2.0
→ OA Repositories in HE (Green OA)	189	67	615	3.6 ←
OA Repositories in HE (Overlay Services)	1,558	2,990	615	2.3
OA Publishing Nationally	2,079	3,479	850	2.1
→ OA Repositories Nationally (Green OA)	237	96	850	4.0 ←
OA Repositories Nationally (Overlay Services)	1,831	3,479	850	2.4
Scenario (Worldwide OA)				
OA Publishing in HE	1,787	5,198	615	3.3
→ OA Repositories in HE (Green OA)	189	786	615	7.4 ←
OA Repositories in HE (Overlay Services)	1,558	5,198	615	3.7
OA Publishing Nationally	2,079	6,054	850	3.3
→ OA Repositories Nationally (Green OA)	237	1,132	850	8.3 ←
OA Repositories Nationally (Overlay Services)	1,831	6,054	850	3.8

Note: Compares Open Access alternatives against subscription publishing of national outputs, with costs, savings and increased returns expressed in Net Present Value over 20 years (GBP millions). Returns are to public sector and higher education R&D spending. HE = Higher Education.

Data from John Houghton Centre for Strategic Economic Studies and Alma Swan, Key Perspectives

Figure 1. Houghton et al's Benefit/Cost Analyses for Green and Gold OA in the UK

See also:

The effect of open access and downloads ('hits') on citation impact: a bibliography of studies <http://opcit.eprints.org/oacitation-biblio.html>

The main barrier limiting access to research findings in the Internet era is the fact that although the research is publicly funded, *it is only accessible to those researchers whose institutions can afford subscription/license access to the*

journal in which it was published. There are over 25,000 peer-reviewed research journals across all scientific and scholarly fields worldwide. No university or research institution can afford subscription access to all or most of those journals. Most universities can only afford access to a small and shrinking fraction of them:

ARL Statistics on universities' journal holdings <http://fisher.lib.virginia.edu/cgi-local/arlibin/arlcgi?task=setupstats>

In the Gutenberg print-on-paper era, before the Internet era, there was no remedy for this, because the true costs of providing access via print-on-paper were so high that in order to cover those essential, ineliminable costs, institutions had to pay for subscription.

The costs of providing print access are still high today. But the cost of providing *online access alone* is not – in fact it is near zero: Once their papers have been peer-reviewed and accepted for publication, *researchers can provide online access by simply depositing their final drafts online in their institutional repositories, free for all*, whether or not the user's institution can afford to subscribe to the publisher's print or online edition:

Registry of Open Access Repositories (ROAR) <http://roar.eprints.org/>

The costs of providing peer review are not zero. The peers review for free, but the journal editor must choose the peer-reviewers and adjudicate reviews and revisions. But *the journal's costs for all that (peer review + print production and distribution plus online production and distribution) are fully covered today by the subscriptions/licenses paid by the institutions that can afford to subscribe to each journal.*

The Internet now makes it possible to *supplement* this subscription access to the publisher's version-of-record with free online access to the author's final, peer-reviewed draft for all those potential users whose institutions cannot afford the subscription access to the publisher's version-of-record.

Hence the one, simple, cost-free step that federal agencies can and should take to maximize the uptake, usage, applications and impact of peer-reviewed research is to *mandate (i.e., require) that the final, peer-reviewed draft of all federally funded research must be deposited ("self-archived") in the fundee's institutional repository immediately upon acceptance for publication.*

Over 50 research funders [including NIH] and almost 200 universities and research institutions worldwide [including Harvard and MIT] have already mandates Green OA. (see mandate growth curve from ROARMAP (Registry of Open Access Mandatory Archiving Policies - <http://roarmap.eprints.org/>) **Figure 2**, below). This is what has come to be called "*Green Open Access*" self-archiving:

Harnad, S., Brody, T., Vallieres, F., Carr, L., Hitchcock, S., Gingras, Y., Oppenheim, C., Stamerjohanns, H., & Hilf, E. (2004) The green and the gold roads to Open Access. *Nature Web Focus*. <http://www.nature.com/nature/focus/accessdebate/21.html>

Mandating Green OA is the simple, almost cost-free measure that will grow existing and new markets for the fruits of federally funded research.

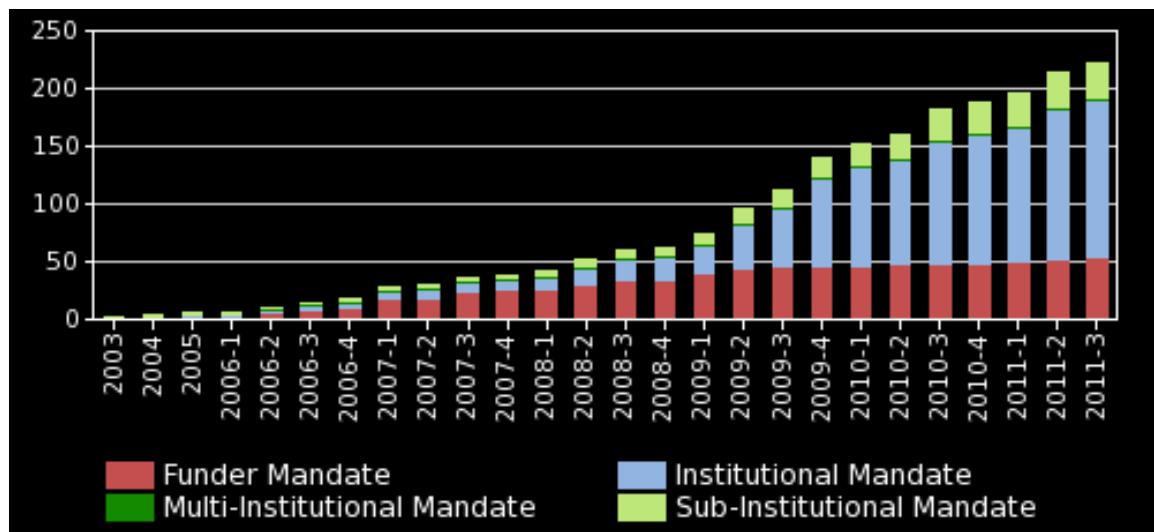


Figure 2. ROARMAP Growth Chart for Green OA Mandates by Funders and Institutions

To see the power of mandating Green OA in accelerating the growth of OA, contrast the growth rate of Gold OA journal publishing (which is not in the hands of the research community nor in the hands of research funders, and hence its growth cannot be accelerated by funder mandates) with the growth rate of Green OA *when it is mandated*. (See the **Figure 3** and **Figure 4** below. See also **Figure 7**.)

According to the estimates of the biggest commercial OA publisher today (Springer, publisher of the BioMed Central Journals and Open Choice), Gold OA will not reach 70% for the top journals (the ones indexed by Thompson-Reuters Web of Science) until 2026; even the more optimistic estimates of Laakso et al (based on all journals) don't reach 70% till 2020. In contrast, Green OA self-archiving, which is less than 20% if it is not mandated, reaches 70% within 1-2 years of adopting a Green OA mandate (and continues to grow toward 100% OA thereafter).

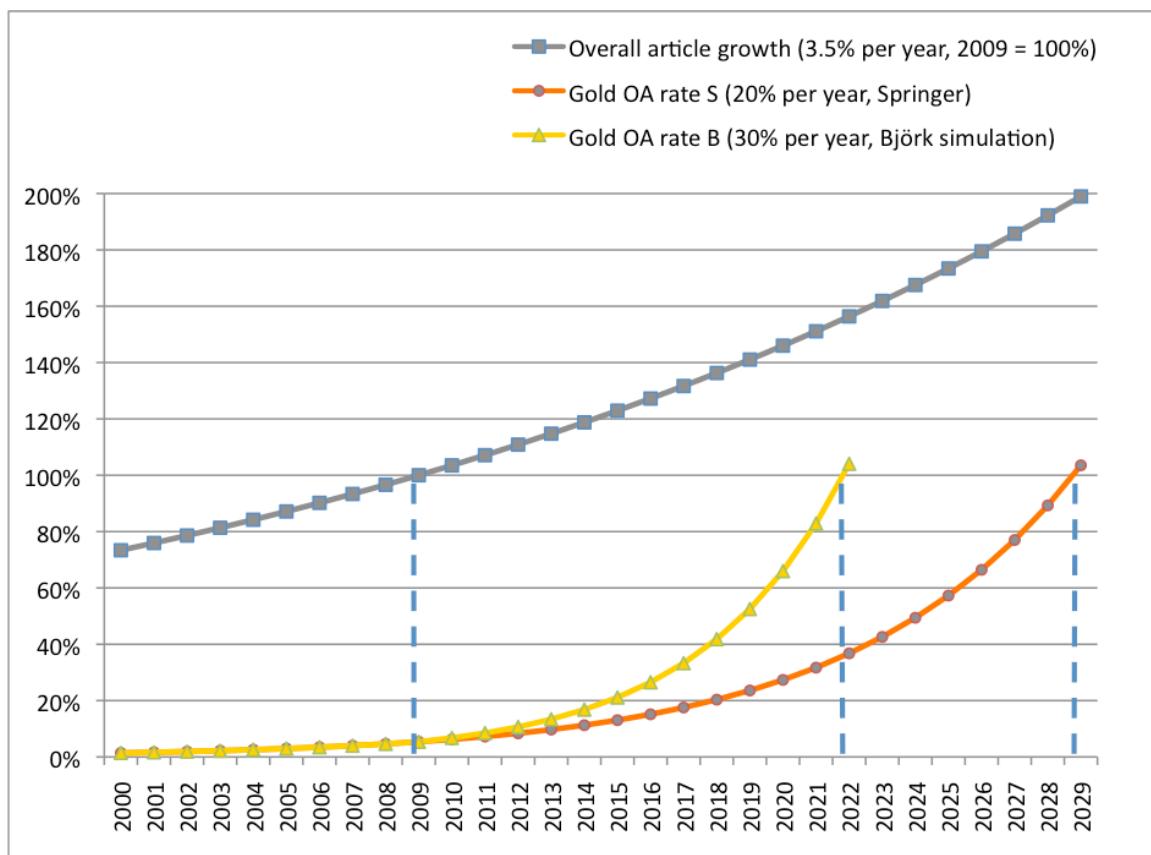


Figure 3. Estimated Growth Curve for Gold OA publishing. Note that 70% gold OA will not be reached till 2020 on Bjork/Laakso simulations and till 2026 on the Springer estimates. Cf. **Figure 4** for mandated green OA.

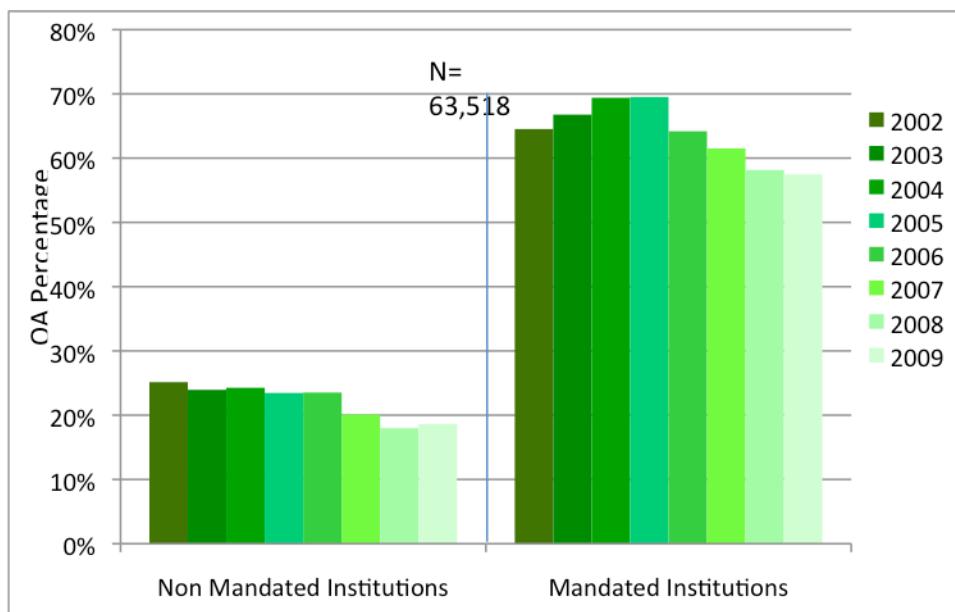


Figure 4. Percentage Green OA when unmandated and when mandated.

Unmandated Green OA is about 20%, whereas mandated Green OA soon rises to 70%. (See also **Figure 7**.)

Poynder, Richard (2011) Open Access by Numbers, *Open and Shut*, 19 June 2011
<http://poynder.blogspot.com/2011/06/open-access-by-numbers.html>

Laakso M, Welling P, Bukvova H, Nyman L, Björk B-C, et al. (2011) The Development of Open Access Journal Publishing from 1993 to 2009. PLoS ONE 6(6): e20961.
doi:10.1371/journal.pone.0020961
<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0020961>

(Question 1b) “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?”

The result of *mandating that the final, peer-reviewed draft of all federally funded research must be deposited (“self-archived”) in the fundee’s institutional repository* immediately upon acceptance for publication will be that the research will be taken up, built upon and applied by *any* researcher, rather than, as now, only those researchers whose institutions can afford subscription access to the journal in which it was published. This maximizes research access, usage and impact, which in turn maximizes research progress, productivity and the benefits of both research and R&D for the tax-payers that funded the research.

The current system of access-denial to the findings of federally funded research for all but the researchers at institutions that can afford to subscribe to the journal in which it was published is a legacy of the economics of print on paper, and it is no longer necessary. In the online era there is no longer any reason left why peer-reviewed research should not be accessible online to all potential users, rather than only to those at institutions that can afford to subscribe.

In careful comparisons of the research impact (downloads and citations) of research published in the same journal and year that was and was not made freely accessible online (open access) it has been repeatedly reported, in every field tested, that the research that is made open access is downloaded and cited significantly more than the research (in the same journal and year) that is not made open access (see **Figure 5**). Access barriers mean barriers to research applications and benefits, hence losses on the tax-payer’s investment in research.

See references cited in:

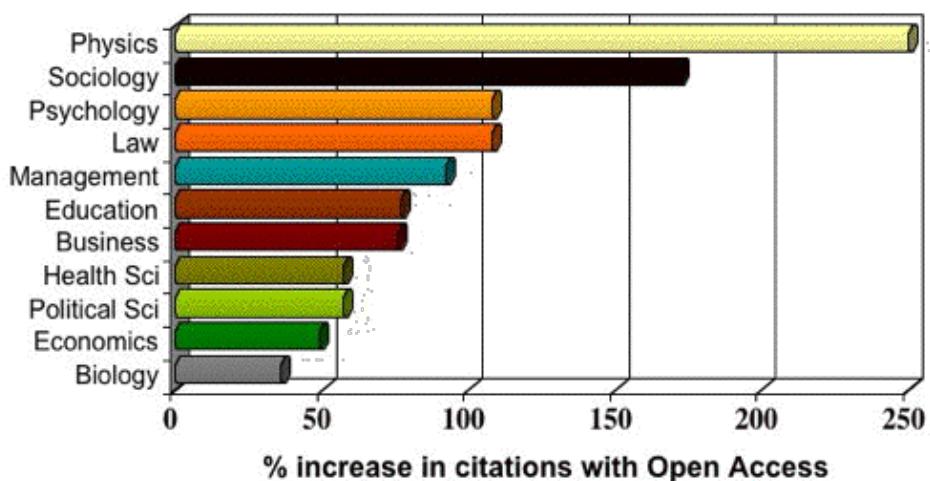
The effect of open access and downloads ('hits') on citation impact: a bibliography of studies <http://opcit.eprints.org/oacitation-biblio.html>

Gargouri, Y., Hajjem, C., Larivière, V., Gingras, Y., Brody, T., Carr, L. and Harnad, S. (2010) Self-Selected or Mandated, Open Access Increases Citation Impact for Higher Quality Research. *PLoS ONE* 5 (10) e13636 <http://eprints.ecs.soton.ac.uk/18493/>

Hajjem, C., Harnad, S. and Gingras, Y. (2005) Ten-Year Cross-Disciplinary Comparison of the Growth of Open Access and How it Increases Research Citation Impact. *IEEE Data Engineering Bulletin* 28(4) pp. 39-47. <http://eprints.ecs.soton.ac.uk/11688/>

Harnad, S. & Brody, T. (2004) Comparing the Impact of Open Access (OA) vs. Non-OA Articles in the Same Journals, *D-Lib Magazine* 10 (6) June <http://eprints.ecs.soton.ac.uk/10207/>

Open Access increases citations



Range = 36%-200%

(Data: Brody & Harnad 2004; Hajjem et al. 2005)

Figure 5. The OA Impact Advantage. Across all disciplines tested, citations (and downloads) are significantly greater for articles that are made (Green) OA by their authors (self-archiving) compared to articles in the same journal and year that are not made OA. (The important point is that the OA impact is always greater, in all disciplines, not the rank order of the size of the advantage by discipline, which varies from year to year and sample to sample.) Citations indicate that the research is being used and built upon in further research and applications.

Lost or delayed research progress also mean losses to the growth and productivity of the *R&D industry* in all fields, and hence to the US economy. It is a very widespread and deep error to reckon the potential gains or losses from providing or not providing open access *in terms of gains or losses to the publishing industry*.

Peer-reviewed research journal publishing is a service industry. It exists in the service of research, researchers and research progress, which are vastly larger and more important economically than research journal publishing itself, as a business. It is hence the research publishing industry that must adapt to the powerful new potential that the online era has opened up for research, researchers, research institutions, research funders, the vast R&D industry, teachers, students, and the tax-paying public that funds the research. Not vice versa.

Economically speaking, it would be a great mistake to conceptualize this new situation as research, researchers and the R&D industry having to compromise their newfound potential to maximize the research progress – along the lines that have now been made possible by the online era -- in order to protect and preserve the current revenue streams and M.O. of the publishing industry, which evolved for the technology and economics of the bygone Gutenberg era of print on paper.

Research having to adapt to publishing would amount to the publishing tail wagging the research dog. It must always be kept clearly in mind that the peer-reviewed research publishing industry exists as a service industry for research, not vice versa:

Publicly funded research is entitled to the full scientific and public benefit opened up for it by the online media. The research publishing industry can and will continue to evolve until it adapts naturally to the new demands and needs of the online age of open access to research.

Harnad, S. (2007) The Green Road to Open Access: A Leveraged Transition. In: *The Culture of Periodicals from the Perspective of the Electronic Age*, pp. 99-105, L'Harmattan.
<http://eprints.ecs.soton.ac.uk/15753/>

ABSTRACT: What the research community needs, urgently, is free online access (Open Access, OA) to its own peer-reviewed research output. Researchers can provide that in two ways: by publishing their articles in OA journals (Gold OA) or by continuing to publish in non-OA journals and self-archiving their final peer-reviewed drafts in their own OA Institutional Repositories (Green OA). OA self-archiving, once it is mandated by research institutions and funders, can reliably generate 100% Green OA. Gold OA requires journals to convert to OA publishing (which is not in the hands of the research community) and it also requires the funds to cover the Gold OA publication costs. With 100% Green OA, the research community's access and impact problems are already solved. If and when 100% Green OA should cause significant cancellation pressure (no one knows whether or when that will happen, because OA Green grows anarchically, article by article, not journal by journal) then the cancellation pressure will cause cost-cutting, downsizing and eventually a leveraged transition to OA (Gold) publishing on the part of journals. As subscription revenues shrink, institutional windfall savings from cancellations grow. If and when journal subscriptions become unsustainable, per-article publishing costs will be low enough, and institutional savings will be high enough to cover them, because publishing will have downsized to just peer-review service provision alone, offloading text-generation onto authors and access-provision and archiving onto the global network of OA Institutional Repositories. Green OA will have leveraged a transition to Gold OA.

(Question 1c) “What are the relative costs and benefits of such policies?”

The costs and benefits of providing Open Access have been extensively analyzed, country by country, in the Houghton reports (see **Figure 1**):

Houghton, J.W. & Oppenheim, C. (2009) The Economic Implications of Alternative Publishing Models. *Prometheus* 26(1): 41-54

<http://www.informaworld.com/smpp/content~db=all~content=a920247424>

Houghton, J.W., Rasmussen, B., Sheehan, P.J., Oppenheim, C., Morris, A., Creaser, C., Greenwood, H., Summers, M. and Gourlay, A. (2009). *Economic Implications of Alternative Scholarly Publishing Models: Exploring the Costs and Benefits*, London and Bristol: The Joint Information Systems Committee (JISC)

<http://www.jisc.ac.uk/publications/reports/2009/economicpublishingmodelsfinalreport.aspx>

Houghton, J.W. and Sheehan, P. 2009, ‘Estimating the potential impacts of open access to research findings,’ *Economic Analysis and Policy*, vol. 39, no. 1, pp. 127-142.

<http://www.eap-journal.com.au/download.php?file=696>

Harnad, S. (2010) The Immediate Practical Implication of the Houghton Report: Provide Green Open Access Now. *Prometheus* 28 (1): 55-59 <http://eprints.ecs.soton.ac.uk/18514/>

ABSTRACT: Among the many important implications of Houghton et al’s (2009) timely and illuminating JISC analysis of the costs and benefits of providing free online access (“Open Access,” OA) to peer-reviewed scholarly and scientific journal articles one stands out as particularly compelling: It would yield a forty-fold benefit/cost ratio if the world’s peer-reviewed research were all self-archived by its authors so as to make it OA. There are many assumptions and estimates underlying Houghton et al’s modelling and analyses, but they are for the most part very reasonable and even conservative. This makes their strongest practical implication particularly striking: The 40-fold benefit/cost ratio of providing Green OA is an order of magnitude greater than all the other potential combinations of alternatives to the status quo analyzed and compared by Houghton et al. This outcome is all the more significant in light of the fact that self-archiving already rests entirely in the hands of the research community (researchers, their institutions and their funders), whereas OA publishing depends on the publishing industry. Perhaps most remarkable is the fact that this outcome emerged from studies that approached the problem primarily from the standpoint of the economics of publication rather than the economics of research.

(Question 1d) “What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?”

What is required is access to the peer-reviewed final draft, free for all users online. The way to provide that is to *mandate (i.e., require) that the final, peer-reviewed draft of all federally funded research must be deposited (“self-archived”) in the fundee’s institutional repository immediately upon acceptance for publication.*

It is important also to specify that *the locus of direct deposit should be the fundee’s institutional repository, not institution-external central or subject-based repositories*. After deposit, institutional repositories can automatically export their

contents to central and subject-based repositories – and/or central and subject-based repositories can automatically harvest them – for search and navigation.

Mutually Reinforcing Mandates. If complementary, convergent *institutional* deposit is mandated by *both* federal funders and institutions (universities and research institutes), instead of needlessly competing, divergent deposit in multiple institution-external repositories, then institutions – the universal providers of all research, federally funded and unfunded -- will be in a position to reinforce, monitor and ensure compliance with the federal funder mandates. This will also encourage institutions to adopt deposit mandates of their own, for all their peer-reviewed research output, funded and unfunded. This will in turn increase the scope and benefit of federal funder mandates, far beyond just the research they fund (see **Figure 1** for the importance of getting the rest of the research world to reciprocate OA so everyone can derive OA's full benefits).

Most universities already have repositories, created out of free software such as DSpace and EPrints. But for fundees at institutions that do not yet have a repository of their own, there are back-up repositories, like [OpenDepot](#), created specifically to perform the same function until the institution has a repository of its own, at which time the institution can automatically import all of its researchers' deposits.

Optimally, access to the deposits should be opened (OA) *immediately upon deposit*, so that uptake and impact can be maximized immediately. The research on the open access impact advantage has shown not only that impact is lost if research is not made open access, but that delayed access does not necessarily recover that lost impact: It is often important with research to strike while the iron is hot, otherwise results may not achieve their full potential impact.

Gentil-Beccot A, Mele S, Brooks T.C. Citing and reading behaviours in high-energy physics. *Scientometrics*. 2010;84(2):345–55 <http://arxiv.org/pdf/0906.5418v1>

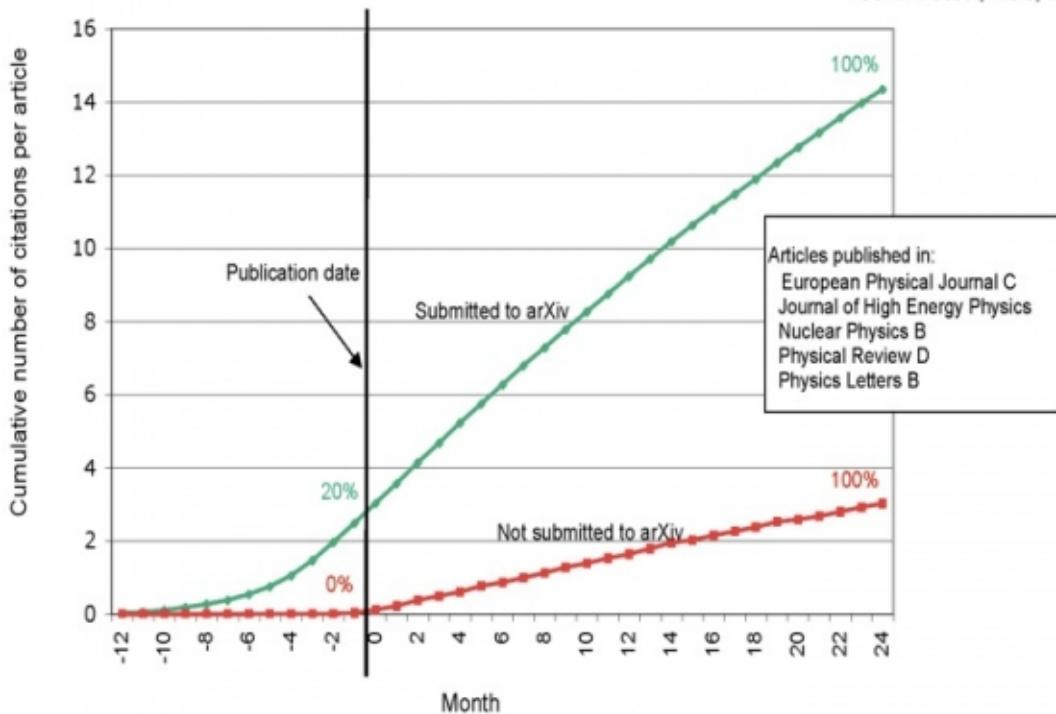


Figure 6. Open Access Impact Advantage Includes Early Access Advantage (Physics). (Note that impact lost because of delayed access is not just delayed; some of it is lost permanently. This is why any access embargo is deleterious to research.)

But if federal funding agencies nevertheless agree to allow a temporary embargo on open access, *the allowable embargo length should be minimal* – not more than 6 months. Meanwhile, the mandatory *deposit should nevertheless be done immediately upon acceptance for publication*. During the embargo period the repository software makes it possible for individual researchers to request – and authors to provide – a single copy of the research to the individual user for research purposes with just one click from the requester and one click from the author. (This is not open access, but it can help tide over research needs during the embargo.)

Sale, A., Couture, M., Rodrigues, E., Carr, L. and Harnad, S. (2012) Open Access Mandates and the "Fair Dealing" Button. In: *Dynamic Fair Dealing: Creating Canadian Culture Online* (Rosemary J. Coombe & Darren Wershler, Eds.) <http://eprints.ecs.soton.ac.uk/18511/>

ABSTRACT: We describe the "Fair Dealing Button," a feature designed for authors who have deposited their papers in an Open Access Institutional Repository but have deposited them as "Closed Access" (meaning only the metadata are visible and retrievable, not the full eprint) rather than Open Access. The Button allows individual users to request and authors to provide a single eprint via semi-automated email. The purpose of the Button is to tide over research usage needs during any publisher embargo on Open Access and, more importantly, to make it possible for institutions to adopt the

"Immediate-Deposit/Optional-Access" Mandate, without exceptions or opt-outs, instead of a mandate that allows delayed deposit or deposit waivers, depending on publisher permissions or embargoes (or no mandate at all). This is only "Almost-Open Access," but in facilitating exception-free immediate-deposit mandates it will accelerate the advent of universal Open Access.

QUESTION 2 (2a, 2b):

(Question 2a) *"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?"*

Scientists: With federally mandated green open access self-archiving of federally funded research, the intellectual property interests of scientists continue to be protected exactly as they are now: Scientists retain the authorship of their work. Usage and citations must be attributed. That's all scientists require, since they do not -- and never did -- seek royalty revenue from the sale of their peer-reviewed journal articles. They only sought that their findings should be accessed, read, used, applied and built upon, in further research and applications. That is called *research impact*, and it is the way research progresses. It is also for this reason that in the research performance evaluation system, it is for research impact that researchers are rewarded with employment, salary increases, promotion, tenure, research funding, prizes and honors. It is also with research impact – through research progress and applications – that the tax-paying public is repaid for its investment in research funding. *Mandating open access maximizes research impact.*

Federal agencies: With federally mandated green open access self-archiving of federally funded research, the intellectual property interests and investments of federal agencies are maximized, by ensuring that peer-reviewed research findings resulting from federally funded scientific research are accessible to all potential users, not just to those whose institutions can afford subscription access. The result is that the uptake, usage, applications and impact of federally funded peer-reviewed research are maximized.

Other stakeholders: With federally mandated green open access self-archiving of federally funded research, the other stakeholders and beneficiaries are: (1) research itself – its progress, applications and impact, (2) researchers, (3) research institutions, (4) research funders, (5) the vast R&D industry, (6) students, (7) teachers, (8) the developing world, (9) science journalists, and the (10) public whose taxes fund the research and for whose benefit the research is conducted.

Note that the real interest here is not “intellectual property”, but research accessibility, uptake, usage, applications and progress.

Publishers: With federally mandated green open access self-archiving of federally funded research, the intellectual property interests of publishers are protected by assigning them the exclusive right to sell access to the print edition and the publisher’s online version-of-record.

If and when the free online accessibility to the author’s final draft eventually causes subscription cancelations, making the subscriptions no longer sustainable as the means of covering publishing costs, publishers can go on to cut obsolete costs by eliminating the online and print editions (for which there is no longer a sustainable demand if and when subscriptions are no longer sustainable) entirely, offloading all access-provision and archiving onto the worldwide network of open access institutional repositories. *The sole remaining essential cost of peer-reviewed publication will then be peer review itself*, which institutions will easily be able to pay for – on the “gold open access” pay-to-publish model -- out of a fraction of their annual windfall savings from their subscription cancelations.

Harnad, S. (2007) The Green Road to Open Access: A Leveraged Transition. In: The Culture of Periodicals from the Perspective of the Electronic Age, pp. 99-105, L'Harmattan.
<http://eprints.ecs.soton.ac.uk/15753/>

ABSTRACT: What the research community needs, urgently, is free online access (Open Access, OA) to its own peer-reviewed research output. Researchers can provide that in two ways: by publishing their articles in OA journals (Gold OA) or by continuing to publish in non-OA journals and self-archiving their final peer-reviewed drafts in their own OA Institutional Repositories (Green OA). OA self-archiving, once it is mandated by research institutions and funders, can reliably generate 100% Green OA. Gold OA requires journals to convert to OA publishing (which is not in the hands of the research community) and it also requires the funds to cover the Gold OA publication costs. With 100% Green OA, the research community's access and impact problems are already solved. If and when 100% Green OA should cause significant cancellation pressure (no one knows whether or when that will happen, because OA Green grows anarchically, article by article, not journal by journal) then the cancellation pressure will cause cost-cutting, downsizing and eventually a leveraged transition to OA (Gold) publishing on the part of journals. As subscription revenues shrink, institutional windfall savings from cancellations grow. If and when journal subscriptions become unsustainable, per-article publishing costs will be low enough, and institutional savings will be high enough to cover them, because publishing will have downsized to just peer-review service provision alone, offloading text-generation onto authors and access-provision and archiving onto the global network of OA Institutional Repositories. Green OA will have leveraged a transition to Gold OA.

(Question 2b) “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) There is no need to require the publisher’s version-of-record to be made open access. The majority of publishers have already endorsed immediate OA self-

archiving of the authors peer-reviewed final-drafts by their authors. The author's final draft is sufficient to ensure that no would-be user is denied online access to the peer-reviewed research findings. <http://www.sherpa.ac.uk/romeo/>

(ii) Mandating free online access to the author's final draft ("gratis OA") would be enough as a first step. Gratis OA is absolutely essential for maximizing research access and impact. In some fields, "libre OA" (free online access *plus* additional republication and "remix" rights), would be welcome too, but the need for libre OA is not as universal or urgent as the need for gratis OA.

<http://www.earlham.edu/~peters/fos/newsletter/08-02-08.htm>

All authors want their research findings to be accessible to all potential users, not just to those whose institutions can afford subscription access to the journal in which they were published. But not all authors want their work to be "remixed". And once freely accessible online, there is hardly a need for it to be re-published!

(Note that along with free online access, the following also automatically comes with the territory:

- (2) clicking,
- (3) on-screen access,
- (4) linking,
- (5) downloading,
- (6) local storage,
- (7) local print-off of hard copy, and
- (8) local data-mining by the user,

as well as global harvesting and search by engines like google.)

(iii) Researchers should continue to be able to publish their findings in the journal that is most appropriate for their work – usually the peer-reviewed journal with the highest peer-review standards that their paper can meet. It is alright to encourage researchers to publish in open access journals (gold OA) whenever a suitable gold OA journal exists, and it is alright to provide funds to pay the gold OA publication fee when funds are available, but publishing in gold OA journals should not – and need not – be mandatory. Publishing in the journal that is optimal for the paper and then making the final draft green OA is sufficient.

Federal research agencies should on no account wait passively for publishers to decide if and when they wish to convert to Gold OA, offering only to divert scarce research funds to pay the fees. Mandate Green OA now and publishing will successfully adapt to the new OA reality quite naturally of its own accord – and the overall cost will be substantially lower for both institutions and funders.

QUESTION 3 (3a, 3b):

(Question 3a) “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?”

To reply to this question, it is essential to distinguish the *locus of deposit* from the *locus of search and navigation*.

The optimal way to mandate (green) OA for all federally funded research is to *mandate deposit directly in the fundee's (OAI-interoperable) institutional repository*. The deposits (either just the metadata plus the link to the full text, or the metadata plus the full-text) can then be *harvested automatically* by subject-based repositories (such as PubMed Central or CiteSeerX) as well as global harvesters (such as Scirus or Google Scholar).

The fundamental principle of the Internet and the Web is (1) *local, distributed deposit* and then (2) *central harvesting, navigation, search and analysis*. (Note that *content is not deposited directly in google!*) The search and analytic tools are all developed at the central harvester level, not at the distributed content-provider level.

Most universities and research institutions already have OAI-interoperable institutional repositories [<http://roar.eprints.org>]. For those institutions that do not yet have one, there are back-up repositories created specifically for that purpose, such as <http://opendepot.org/>.

Deposit institutionally, harvest centrally. Deposit should always be in the author's own institutional repository, with the institution helping to monitor and ensure compliance with funders' deposit mandates. Once embargoes have elapsed, deposits can be automatically harvested by central, discipline-based repositories such as PubMed Central.

(The purpose of this is (a) in order to ensure that authors only ever have to deposit once, (b) in order to recruit institutions to monitor and ensure compliance with the funder mandates and (c) in order to facilitate the adoption and implementation of complementary mandates by institutions, the universal research providers, so that they mandate the deposit of both their funded and unfunded research articles.)

Harnad, S. (2008) How to Integrate University and Funder Open Access Mandates. Open Access Archivangelism 369 (2 March 2008) <http://openaccess.eprints.org/index.php?archives/369-guid.html>

ABSTRACT: Research funder open-access mandates (such as NIH's and RCUK's) and university open-access mandates (such as Harvard's and U. Liege's) are complementary. There is a simple way to integrate funder mandates and university mandates to make them synergistic and mutually reinforcing:

Universities' own Institutional Repositories (IRs) are the natural locus for the direct deposit of their own research output: Universities (and research institutions) are the

universal research providers of all research (funded and unfunded, in all fields) and have a direct interest in archiving, monitoring, measuring, evaluating, and showcasing their own research assets -- as well as in maximizing their uptake, usage and impact.

Universities (and research institutions) also have a direct interest in ensuring that their researchers fulfill their funders' conditions for awarding grants.

Both universities and funders should accordingly mandate deposit of all peer-reviewed final drafts (postprints), in each author's own university IR, immediately upon acceptance for publication, for both institutional and funder monitoring and record-keeping purposes. Access to that immediate postprint deposit in the author's university IR may be set immediately as Open Access if copyright conditions allow; otherwise access can be set as Closed Access, pending copyright negotiations or embargoes. All the rest of the conditions described by universities and funders should accordingly apply only to the timing and copyright conditions for setting open access to those deposits, not to the depositing itself, its locus or its timing.

As a result, (1) there will be a common deposit locus for all research output worldwide; (2) university mandates will reinforce and monitor compliance with funder mandates; (3) funder mandates will reinforce university mandates; (4) legal details concerning open-access provision, copyright and embargoes will be applied independently of deposit itself, on a case by case basis, according to the conditions of each mandate; (5) opt-outs will apply only to copyright negotiations, not to deposit itself, nor its timing; and (6) any central OA repositories can then harvest the postprints from the authors' IRs under the agreed conditions at the agreed time, if they wish.

Search tools and richer metadata are not what is missing: OA content is.

What will create the motivation to develop powerful new tools for searching and analyzing OA content will be *the provision of the OA content*. Unmandated, only a sparse fragment of peer-reviewed research is freely accessible online today. If federal funders mandate green OA, this will not only make federally funded research OA, but it will help and encourage universities and research institutions worldwide to mandate green OA for *all* their research output, funded and unfunded, across all fields.

Universities and research institutions will then also be in a position to help monitor and ensure compliance with funder mandates. The provision of the OA content will also motivate the development of more powerful standards of interoperability, making the OA content increasingly useful and functional. New OA metrics that track and measure research uptake, usage, applications, citations, directions, progress and impact will also be developed, once the OA database has been provided because it is universally mandated by funders and institutions.

Harnad, S. (2008) Validating Research Performance Metrics Against Peer Rankings. *Ethics in Science and Environmental Politics* 8 (11) doi:10.3354/esep00088 "The Use And Misuse Of Bibliometric Indices In Evaluating Scholarly Performance" <http://eprints.ecs.soton.ac.uk/15619/>

(Question 3b) “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?”

It is imperative to distinguish (i) the *peer-reviewed research access/impact problem* from (ii) the *digital storage and preservation problem*. They are not the

same problem, and conflating them makes both harder to understand and to solve.

There is indeed a digital storage and preservation problem, and many measures are underway to meet it, but *it has nothing to do with the research access problem or with open access*. Digital content needs to be preserved regardless of whether it is open access or subscription access. And preserving it does not make it open access.

Mandating (green) open access self-archiving of the peer-reviewed final drafts of all federally funded research solves the research access/impact problem (for federally funded research).

There is no further “custody” issue, once OA has been mandated: The fundee’s peer-reviewed, accepted final drafts are freely accessible online to all users, worldwide, whether or not those users have subscription access to the publisher’s version-of-record through an institutional subscription. The green OA drafts are harvested by multiple central harvesters and it is in everyone’s interest to keep them freely accessible indefinitely, migrating and mirroring them with upgrades and technology developments.

But those green OA drafts are not the publisher’s version of record.

The preservation of the digital version of the publisher’s version-of-record is a matter for national archival deposit libraries, mirroring, LOCKSS, etc., *but it is independent of the problem of open access* – not even the same digital documents are at issue!

The green OA versions need preservation too, and the institutional repositories and harvesters can and will ensure that their contents will remain freely accessible online indefinitely. But that is not the problem of the preservation of the digital version of record.

QUESTION 4:

(Question 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?”

Again, the publisher archives contain *the publisher’s version-of-record*. It is worthwhile pursuing long-term preservation plans for this digital content, but *it has nothing to do with providing Open Access*.

Access to the green OA version is not provided by publishers, it is provided by authors and their institutions, on a distributed basis, and it is further supported

and strengthened by multiple central harvesters of the distributed OA repository content (either the metadata plus links to the full-texts or the metadata plus the full-texts themselves).

It would be an enormous strategic mistake to entrust open-access provision to publishers. That is not, and should not be, the publishers' function. It would be suffused with conflict of interest: The subscription publisher's primary interest today is to protect and preserve payment for access, come what may (via subscriptions, site-licenses or pay-per-view). OA is the antithesis of that: ensure that research is accessible online to all users, not just those whose institutions can afford to subscribe. The interim compromise is to allow publishers to control access to the version-of-record, on paper and online, but to mandate that the author's peer-reviewed final draft is made accessible online free for all in the author's institutional repository.

Open-access provision should not be put under the control of publishers. Complying with a funder OA mandates should be done by the fundee (and monitored by the fundee's institution); *it should not be entrusted to the publisher.*

QUESTION 5 (5a, 5b, 5c):

(Question 5a) “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?”

The one essential step needs to be taken by Federal Research agencies (as well as by universities and research institutions). That step is to mandate the deposit of all peer-reviewed research output in the researcher's institutional repository.

It is providing that annual OA content (80-90% of it still not yet OA today) that will motivate powerful new developments in interoperable search, discovery and analysis tools across repositories and disciplines. There is no incentive for developing powerful new tools now, while the OA content is still so sparse (only 10-20% of research is spontaneously being made OA today, unmandated; see **Figure 7**; cf. **Figure 4**).

Björk B-C, Welling P, Laakso M, Majlender P, Hedlund T, et al. 2010 Open Access to the Scientific Journal Literature: Situation 2009. PLoS ONE 5(6): e11273.
doi:10.1371/journal.pone.0011273

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0011273>

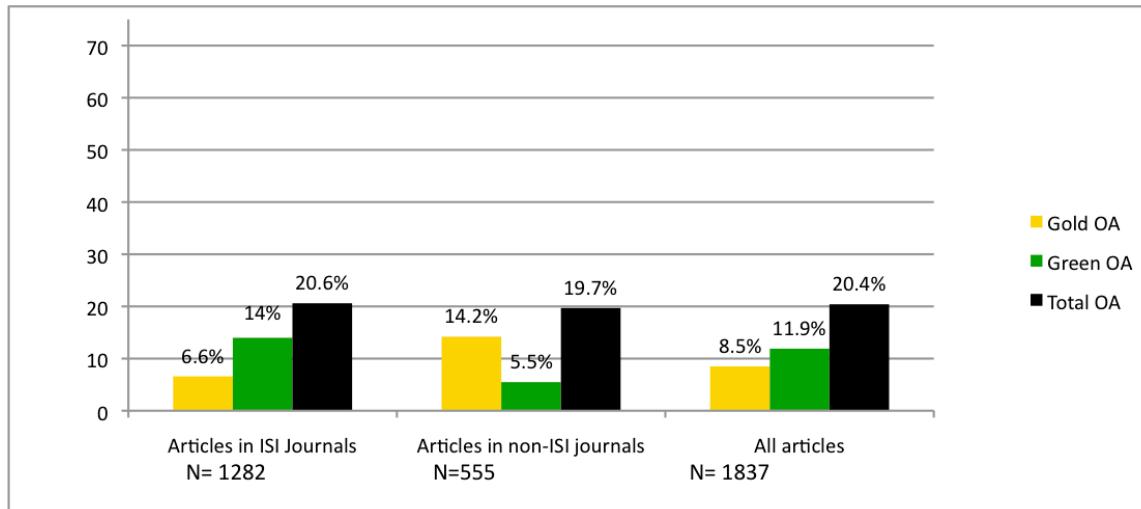


Figure 7. Global Green and Gold OA percentages for the top journals (indexed by Thompson-Reuters-ISI), the unindexed journals, and all journals. The reasons for the green/gold differences in percentage are that (1) about 10% of all journals are gold, (2) a much smaller percentage of the top journals are gold, (3) all journal articles can be self-archived, and (4) over 60% of non-gold journals have already endorsed green OA self-archiving. Cf. **Figure 3** and **Figure 4**.

Publishers (whether commercial or scholarly) can help by endorsing and supporting green OA self-archiving by their authors (as over 60% of them, including virtually all the top journals, have done already -- <http://www.sherpa.ac.uk/romeo/statistics.php?la=en&fIDnum=|&mode=simple>), but only authors' funders and institutions can ensure that the author self-archiving actually gets done, by mandating it.

(Question 5b) “What are the minimum core metadata for scholarly publications that must be made available to the public to allow such capabilities?”

The OAI core metadata – author, date, title, publication, etc. – are the minimum for interoperability. They can be enhanced and made more powerful; the urgent priority, however, is not to enrich the metadata but to provide the OA content itself. OAI is more than enough for most uses of peer-reviewed journal articles – by researchers, harvesters, and the public. What is needed is the articles themselves. And for that, deposit must be mandated. Once the OA content is there, the hard part is done: Further enriching the metadata and capabilities is the easy part, and will be a welcome challenge, taken up by many skilled and creative developers – once there is a database that makes it worth their while (by making it worth the users' while to rely on it – as 20% certainly does not).

(Question 5c) “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?"

To repeat, *OAI-interoperability is more than enough already. What is missing is not metadata, but OA content.* And the solution is to mandate deposit. Once the content is there, the motivation to generate ever richer metadata will follow.

QUESTION 6:

(Question 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?"

The one, simple, cost-free step that federal agencies can and should take to maximize the uptake, usage, applications and impact of peer-reviewed research is to *mandate (i.e., require) that the final, peer-reviewed draft of all federally funded research be deposited ("self-archived") in the fundee's institutional repository* immediately upon acceptance for publication (as over 50 research funders [including NIH] and almost 200 universities and research institutions worldwide [including Harvard and MIT] have already done).

Federally mandated green open access self-archiving of federally funded research maximizes the investment in research for the following nine stakeholders -- (1) **researchers** (scientists), (2) **research institutions** (awardee institutions and their libraries), (3) **research funders** (Federal agencies), (4) the vast **R&D industry**, (5) **students**, (6) **teachers**, (7) the **developing world**, (8) **journalists**, and the (9) **public** whose taxes fund the research and for whose benefit the research is conducted (US taxpayers) – as well as for (10) the uptake, applications, impact and progress of **research itself**.

It is by maximizing research impact and progress that mandating OA maximizes the return on U.S. taxpayers' investment in research. See **Figure 1** and:

Bibliography of Findings on the Open Access Impact Advantage
<http://opcit.eprints.org/oacitation-biblio.html>

Mandating convergent institutional deposit rather than divergent institution-external, central deposit also minimizes the burden and cost – for researchers, institutions and funders – by minimizing and distributing the archiving effort as well as the cost across institutions.

Publishers. *It is a very widespread and deep error to reckon the potential gains or losses from providing or not providing open access in terms of gains or losses to the publishing industry.* Peer-reviewed research journal publishing is a service industry. It exists in the service of research, researchers and research progress,

which are vastly larger and more important economically than research journal publishing itself, as a business.

It is hence the research publishing industry that must adapt to the powerful new potential that the online era has opened up for research, researchers, research institutions, research funders, the vast R&D industry, teachers, students, and the tax-paying public that funds the research. Not vice versa.

Economically speaking, it would be a great mistake to conceptualize this new situation as research, researchers and the R&D industry having to compromise their newfound potential to maximize the research progress – along the lines that have now been made possible by the online era -- in order to protect and preserve the current revenue streams and M.O. of the publishing industry, which evolved for the technology and economics of the bygone Gutenberg era of print on paper.

Research having to adapt to publishing would amount to the publishing tail wagging the research dog. It must always be kept clearly in mind that the peer-reviewed research publishing industry exists as a service industry for research, not vice versa:

Publicly funded research is entitled to the full scientific and public benefit opened up for it by the online media. The research publishing industry can and will continue to evolve until it adapts naturally to the new demands and needs of the online age of open access to research.

Harnad, S. (2007) The Green Road to Open Access: A Leveraged Transition. In: The Culture of Periodicals from the Perspective of the Electronic Age, pp. 99-105, L'Harmattan.
<http://eprints.ecs.soton.ac.uk/15753/>

ABSTRACT: What the research community needs, urgently, is free online access (Open Access, OA) to its own peer-reviewed research output. Researchers can provide that in two ways: by publishing their articles in OA journals (Gold OA) or by continuing to publish in non-OA journals and self-archiving their final peer-reviewed drafts in their own OA Institutional Repositories (Green OA). OA self-archiving, once it is mandated by research institutions and funders, can reliably generate 100% Green OA. Gold OA requires journals to convert to OA publishing (which is not in the hands of the research community) and it also requires the funds to cover the Gold OA publication costs. With 100% Green OA, the research community's access and impact problems are already solved. If and when 100% Green OA should cause significant cancellation pressure (no one knows whether or when that will happen, because OA Green grows anarchically, article by article, not journal by journal) then the cancellation pressure will cause cost-cutting, downsizing and eventually a leveraged transition to OA (Gold) publishing on the part of journals. As subscription revenues shrink, institutional windfall savings from cancellations grow. If and when journal subscriptions become unsustainable, per-article publishing costs will be low enough, and institutional savings will be high enough to cover them, because publishing will have downsized to just peer-review service provision alone, offloading text-generation onto authors and access-provision and archiving onto the global network of OA Institutional Repositories. Green OA will have leveraged a transition to Gold OA.

QUESTION 7:

(Question 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?”

Peer-reviewed journal articles. All researchers want immediate OA for their published articles (whether published in journals or in refereed conference proceedings) in order to maximize their access, uptake, usage, applications, citations and impact -- but not all researchers will want there to be immediate OA for their books, book-chapters or data. Funding agencies should not try to mandate what researchers don't all want to provide willingly, and certainly not in the first instance. That would diminish the credibility of OA itself as well as making it harder to get author consensus, compliance and good will.

Where possible, if the author and publisher both agree, the deposit of publications – over and above refereed journal articles and refereed conference papers – such as book chapters, books and research data should be encouraged as well, *but on no account should it be mandated (required)*.

Bare Minimum Essentials

The minimum should be to mandate that:

- (i) the fundee's revised, accepted **refereed final draft**
- (ii) of all refereed journal **articles** (including refereed conference articles) resulting from the funded research must be
- (iii) **deposited immediately** upon acceptance for publication
- (iv) in the fundee's **institutional repository**.
- (v) Access to the deposit must be made **gratis OA** (online access free for all) immediately (no OA embargo) wherever possible (over 60 % of journals already endorse immediate gratis OA self-archiving).

Below are further steps that can be *encouraged (but not mandated)*:

- (i) Author's final draft.** Where possible, if the publisher endorses immediate unembargoed Gratis OA, the deposit can be the **publisher's version-of-record** rather than (or in addition to) the author's refereed, accepted final draft. (Most of the 60% of journals that endorse immediate, unembargoed OA, endorse it for the

author's final draft only, not for the publisher's version-of-record. This constraint must be kept in mind: it is a small liability, but a far bigger asset.)

(ii) Peer-reviewed journal articles. Where possible, if the author and publisher both agree, publications in addition to refereed journal articles and refereed conference papers (**book chapters, books**) as well as **research data** should be deposited as well.

(iii) Immediate deposit. Where possible, if the publisher agrees (as over 60%, including most of the top journals, already do), the deposit should be made gratis OA immediately upon deposit; *the remaining 40% must still be deposited immediately too*, but making access to them OA may be embargoed for at most an **X-month OA embargo** (length of X to be decided, but preferably not more than 6 months).

(During any OA embargo, individual requests from individual researchers for an individual copy of the Closed Access deposit for research purposes, can be automatically relayed by the institutional software to the author for authorization, and an individual copy can be automatically emailed to the requester by the software upon authorization by the author. This helps tide over research needs during the embargo.)

Sale, A., Couture, M., Rodrigues, E., Carr, L. and Harnad, S. (2012) Open Access Mandates and the "Fair Dealing" Button. In: *Dynamic Fair Dealing: Creating Canadian Culture Online* (Rosemary J. Coombe & Darren Wershler, Eds.) <http://eprints.ecs.soton.ac.uk/18511/>

ABSTRACT: We describe the "Fair Dealing Button," a feature designed for authors who have deposited their papers in an Open Access Institutional Repository but have deposited them as "Closed Access" (meaning only the metadata are visible and retrievable, not the full eprint) rather than Open Access. The Button allows individual users to request and authors to provide a single eprint via semi-automated email. The purpose of the Button is to tide over research usage needs during any publisher embargo on Open Access and, more importantly, to make it possible for institutions to adopt the "Immediate-Deposit/Optional-Access" Mandate, without exceptions or opt-outs, instead of a mandate that allows delayed deposit or deposit waivers, depending on publisher permissions or embargoes (or no mandate at all). This is only "Almost-Open Access," but in facilitating exception-free immediate-deposit mandates it will accelerate the advent of universal Open Access.

(iv) Deposit institutionally, harvest centrally. Deposit should always be in the author's own institutional repository, with the institution helping to monitor and ensure compliance with funders' deposit mandates. Once embargoes have elapsed, deposits can be **automatically harvested by central, discipline-based repositories** such as PubMed Central. (This is (a) to facilitate the adoption and implementation of complementary mandates by institutions, mandating deposit of unfunded research articles too, and (b) to ensure that authors only ever have to deposit once.)

Harnad, S. (2008) How to Integrate University and Funder Open Access Mandates. Open Access Archivangelism 369 (2 March 2008) <http://openaccess.eprints.org/index.php?/archives/369-guid.html>

ABSTRACT: Research funder open-access mandates (such as NIH's and RCUK's) and university open-access mandates (such as Harvard's and U. Liege's) are complementary. There is a simple way to integrate funder mandates and university mandates to make them synergistic and mutually reinforcing:

Universities' own Institutional Repositories (IRs) are the natural locus for the direct deposit of their own research output: Universities (and research institutions) are the universal research providers of all research (funded and unfunded, in all fields) and have a direct interest in archiving, monitoring, measuring, evaluating, and showcasing their own research assets -- as well as in maximizing their uptake, usage and impact.

Universities (and research institutions) also have a direct interest in ensuring that their researchers fulfill their funders' conditions for awarding grants.

Both universities and funders should accordingly mandate deposit of all peer-reviewed final drafts (postprints), in each author's own university IR, immediately upon acceptance for publication, for both institutional and funder monitoring and record-keeping purposes. Access to that immediate postprint deposit in the author's university IR may be set immediately as Open Access if copyright conditions allow; otherwise access can be set as Closed Access, pending copyright negotiations or embargoes. All the rest of the conditions described by universities and funders should accordingly apply only to the timing and copyright conditions for setting open access to those deposits, not to the depositing itself, its locus or its timing.

As a result, (1) there will be a common deposit locus for all research output worldwide; (2) university mandates will reinforce and monitor compliance with funder mandates; (3) funder mandates will reinforce university mandates; (4) legal details concerning open-access provision, copyright and embargoes will be applied independently of deposit itself, on a case by case basis, according to the conditions of each mandate; (5) opt-outs will apply only to copyright negotiations, not to deposit itself, nor its timing; and (6) any central OA repositories can then harvest the postprints from the authors' IRs under the agreed conditions at the agreed time, if they wish.

(v) Gratis OA (free online access). Where possible, if the author and publisher both agree, access to the deposit can be made not just gratis OA (free online access) but ***libre OA*** (free online access plus various re-use rights).

(Note that with free online access what already comes with the territory is clicking, on-screen access, linking, downloading, local storage, local print-off of hard copy, and local data-mining by the user, as well as global harvesting and search by engines like google. Many authors will not want to allow others to make and publish mash-ups of their verbatim texts. Journal article texts are not like music, videos, software or even research data, out of which creative modifications and remixes can be valuable. All scholars and scientists want their findings and ideas to be re-used, applied and built-upon, but *not that their words should be remixed in mash-ups.*)

Suber, Peter (2008) Gratis and libre Open Access. *SPARC Open Access Newsletter*, August 2008 <http://www.arl.org/sparc/publications/articles/gratisandlibre.shtml>

QUESTION 8 (8a, 8b):

(Question 8a) “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?"

There is no real reason any would-be user should ever be denied access to publicly funded research journal articles. Over 60% of journals (and virtually all the top journals) already endorse immediate green OA to the author's final draft.

But if federal funding agencies wish to accommodate the <40% of journals that do not yet endorse immediate green OA, an embargo period (preferably no longer than 6 months) could be allowed.

The crucial thing, however, is that the embargo should not apply to the date at which deposit of the author's final, peer-reviewed draft in the author's institutional repository is required. That *deposit should be done immediately upon acceptance for publication, for all articles, without exception.*

The allowable OA embargo should apply only to whether access to the immediate-deposit is made OA immediately, or access is instead set as "Closed Access" during the allowable embargo period.

The Immediate-Deposit/Optional-Access (ID/OA) Mandate: Rationale and Model
<http://openaccess.eprints.org/index.php?archives/71-guid.html>

EXECUTIVE SUMMARY: Universities and research funders are both invited to use this document. Note that this recommended "Immediate-Deposit & Optional-Access" (IDOA) policy model (also called the "Dual Deposit/Release Strategy") has been specifically formulated to be immune from any delays or embargoes (based on publisher policy or copyright restrictions): The deposit -- of the author's final, peer-reviewed draft of all journal articles, in the author's own Institutional Repository (IR) -- is required immediately upon acceptance for publication, with no delays or exceptions. But whether access to that deposit is immediately set to Open Access or provisionally set to Closed Access (with only the metadata, but not the full-text, accessible webwide) is left up to the author, with only a strong recommendation to set access as Open Access as soon as possible (immediately wherever possible, and otherwise preferably with a maximal embargo cap at 6 months).

This IDOA policy is greatly preferable to, and far more effective than a policy that allows delayed deposit (embargo) or opt-out as determined by publisher policy or copyright restrictions. The restrictions apply only to the access-setting, not to the deposit, which must be immediate. Closed Access deposit is purely an institution-internal book-keeping matter, with the institution's own assets, and no publisher policy or copyright restriction applies to it.

[In the meanwhile, if there needs to be an embargo period, the IR software has a semi-automated EMAIL EPRINT REQUEST button that allows any would-be user to request (by entering their email address and clicking) and then allows any author to provide (by simply clicking on a URL that appears in the eprint request received by email) a single copy of the deposited draft, by email, on an individual basis (a practice that falls fully under Fair Use). This provides almost-immediate, almost-Open Access to tide over research usage needs during any Closed Access period.]

(Question 8b) "Please describe the empirical basis for the recommended embargo period."

The many empirical studies that have – in every research field tested – repeatedly demonstrated the research impact advantage (in terms of both downloads and citations) of journal articles that have been made (green) OA, compared to articles in the same journal and year that have not been made OA, have also found that the OA impact advantage is greater (and, of course, comes earlier) the earlier the article is made OA. The advantage of early OA extends also to preprints made OA even before peer review. Delayed access means not only delayed impact but also lost impact, in areas of research where it is important to strike while the iron is hot. See especially the findings of the Harvard astrophysicist, Michael Kurtz in:

Bibliography of Findings on the Open Access Impact Advantage
<http://opcit.eprints.org/oacitation-biblio.html>

The optimal OA embargo period is zero: peer-reviewed research findings should be accessible to all potential users *immediately upon acceptance for publication*. Studies have repeatedly shown that both denying and delaying access diminish research uptake and impact. Nor does delayed access just mean delayed impact: Especially in rapid-turnaround research areas (e.g. in areas of physics and biology) delaying access can mean permanent impact loss (see **Figure 6**):

Gentil-Beccot A, Mele S, Brooks T.C. Citing and reading behaviours in high-energy physics. *Scientometrics*. 2010;84(2):345–55 <http://arxiv.org/pdf/0906.5418v1>

EXTRA QUESTIONS (X1, X2, X3):

Question X1. “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.”

Please see the careful comparative economic analyses of John Joughton and co-workers (**Figure 1**):

Houghton, J.W. & Oppenheim, C. (2009) The Economic Implications of Alternative Publishing Models. *Prometheus* 26(1): 41-54
<http://www.informaworld.com/smpp/content~db=all~content=a920247424>

Houghton, J.W., Rasmussen, B., Sheehan, P.J., Oppenheim, C., Morris, A., Creaser, C., Greenwood, H., Summers, M. and Gourlay, A. (2009). *Economic Implications of Alternative Scholarly Publishing Models: Exploring the Costs and Benefits*, London and Bristol: The Joint Information Systems Committee (JISC)
<http://www.jisc.ac.uk/publications/reports/2009/economicpublishingmodelsfinalreport.aspx>

Harnad, S. (2010) The Immediate Practical Implication of the Houghton Report: Provide Green Open Access Now. *Prometheus* 28 (1): 55-59 <http://eprints.ecs.soton.ac.uk/18514/>

ABSTRACT: Among the many important implications of Houghton et al's (2009) timely and illuminating JISC analysis of the costs and benefits of providing free online access (“Open Access,” OA) to peer-reviewed scholarly and scientific journal articles one stands

out as particularly compelling: It would yield a forty-fold benefit/cost ratio if the world's peer-reviewed research were all self-archived by its authors so as to make it OA. There are many assumptions and estimates underlying Houghton et al's modelling and analyses, but they are for the most part very reasonable and even conservative. This makes their strongest practical implication particularly striking: The 40-fold benefit/cost ratio of providing Green OA is an order of magnitude greater than all the other potential combinations of alternatives to the status quo analyzed and compared by Houghton et al. This outcome is all the more significant in light of the fact that self-archiving already rests entirely in the hands of the research community (researchers, their institutions and their funders), whereas OA publishing depends on the publishing industry. Perhaps most remarkable is the fact that this outcome emerged from studies that approached the problem primarily from the standpoint of the economics of publication rather than the economics of research.

Question X2. “Are there evidence-based arguments that can be made that the delay period should be different for specific disciplines or types of publications?”

The optimal OA delay period is zero: the research reported in peer-reviewed journal/conference articles should be accessible to all potential users immediately upon acceptance for publication, in all disciplines. There is no real reason any would-be user should ever be denied access to publicly funded research journal articles. Over 60% of journals (and virtually all the top journals) already endorse immediate green OA to the author's final draft.

But if federal funding agencies wish to accommodate the <40% of journals that do not yet endorse immediate green OA, an embargo period (preferably no longer than 6 months) could be allowed.

The crucial thing, however, is that the embargo should not apply to the date at which deposit of the author's final, peer-reviewed draft in the author's institutional repository is required. That *deposit should be done immediately upon acceptance for publication, for all articles, without exception.*

The allowable OA embargo should apply only to whether access to the immediate-deposit is made OA immediately, or access is instead set as “Closed Access” during the allowable embargo period.

Question X3. “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.”

If Federal funding agencies mandate green OA self-archiving of the fundee's final draft of all peer-reviewed journal articles resulting from federally funded research, deposited in the fundee's institutional repository immediately upon acceptance

for publication (ID/OA mandate), this will not only generate 100% OA for all US federally funded research, but it will inspire funders as well as universities and research institutions worldwide to follow the US's model, reciprocating with OA mandates of their own, thereby ushering in the era of open access to all research, worldwide, in all fields, funded and unfunded (see mandate growth curve from ROARMAP (Registry of Open Access Mandatory Archiving Policies-<http://roarmap.eprints.org/>), **Figure 2**).

Stevan Harnad

Moderator, American Scientist Open Access Forum 1998-2011

<http://amsci-forum.amsci.org/archives/American-Scientist-Open-Access-Forum.html>

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Dear OSTP,

I would like to submit a comment on the question of public access to research. My name is Aram Harrow and I am a Research Assistant Professor of Computer Science & Engineering at the University of Washington, but my views are my own and don't represent my employer.

My address is
Department of Computer Science and Engineering
185 Stevens Way
Box 352350
Seattle, WA 98195

My research is on quantum computing, a fast-moving field at the intersection of physics, computer science, mathematics and electrical engineering. In my field, most papers appear in preprint form at the site arxiv.org. From my perspective, journals add very little value, apart from the refereeing process. And since associate editors and referees are academics who earn no additional salary from their efforts, their work does not seem to be inherently tied to the journal format.

Thus, in evaluating the demands of different stakeholders, I would urge you to be skeptical of the demands from the for-profit publishing industry. The profitability of that sector has little to do with the advance of science, and reflects rather their ability to raise rents from the use of journal articles as credentials.

In my experience, arxiv.org meets almost all of my scientific needs, except for peer review. In particular, as a scientist, I have no use for intellectual property rights in the papers I write, and would be happy with e.g. a Creative Commons license. The best-case scenario I see for publishing is that peer review is done in a way that does not require giving up copyright to publishers. It would be amazing and wonderful if the government could help effect this change.

Of course, whatever policies you adopt should permit innovation in the publishing sector. I think the right way to do this is to require all federally-funded research to be available for free in a repository like arxiv.org. There should be unique identifiers and properly formatted metadata for each paper, so that third parties (government, non-profit or for-profit) can write their own front ends or other utilities. The system should also facilitate mirrors, e.g. the way arxiv.org is mirrored around the world. In this way, innovations (such as google scholar) can be decoupled from holding copyright. Facilitating mirrors will also help to encourage archival.

Thanks for considering these comments, and good luck in your work.

Sincerely,
Aram Harrow



Paul N. Courant

University Librarian and Dean of Libraries
Harold T. Shapiro Collegiate Professor of Public Policy
Arthur F. Thurnau Professor
Professor of Economics and of Information

818 Harlan Hatcher Graduate Library South
Ann Arbor, Michigan 48109-1205
734 764-9356 pnc@umich.edu

31 December 2011

Office of Science and Technology Policy
on behalf of National Science and Technology Council
Attention: Ted Wackler, Deputy Chief of Staff

Re: Response to Notice for Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research (FR Doc. 2011-28623)

Dear Sir:

Thank you for the opportunity to comment on this important matter of public policy. Nearly a year ago to today I had the opportunity to respond to the Request for Public Comment on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government on this important matter of public policy (Letter to Dr. Diane DeEuliis from Paul Courant, January 4, 2010). As noted then, it seems unthinkable that work paid for with taxpayer monies is not already freely available to our citizens for the betterment of industry, education, business and the quality of life generally. Information is expensive to produce. In the current marketplace, it is expensive to share even though this need not be the case. In aggregate, libraries spend over a billion dollars each year to make information available, but even then access by the general public is severely limited by the scope of the licenses involved.

A year ago, the OSTP noted that the American Recovery and Reinvestment Act of 2009 appropriated \$17 billion to support research, research infrastructure and education, primarily through the National Science Foundation (NSF) and National Institutes of Health. The value of this work to our country and our citizens would be greatly increased if the work were easily accessible to all Americans.

With that as background, I turn to your specific questions.

(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 publicly 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?

Our nation's investment in research is an investment in our intellectual and economic infrastructure. The first step is fundamental to using that investment to expand related markets, and to make sure that research results are meaningfully available to all citizens. The American Recovery and Reinvestment Act of 2009 invested \$17 billion to support research, research infrastructure, and education, but the full impact of that investment cannot be felt if it is not meaningfully accessible.

The current state of affairs does not serve the public interest. Today, access to publicly funded research is limited primarily to people at public universities and large corporations – institutions that can afford the high subscription cost of scholarly journals. Yet, we know that small businesses and individual entrepreneurs are key to growing our economy and are crucibles of innovation. It is foreseeable that making research available to specialists will increase our knowledge base. But it is equally important to ensure broad readership.

One example: Karim Lakhani and his colleagues at the Harvard Business School report striking results along these lines in their paper, “The Value of Openness in Scientific Problem Solving.” They looked at more than 150 unsolved scientific problems that had stymied the research laboratories of 26 firms. When those problems were presented to a population of over 80,000 independent scientists who would otherwise be unaware of the problems and who have less relevant specific knowledge or expertise, they solved “one-third of a sample of problems that large and well-known R & D-intensive firms had been unsuccessful in solving internally.” (Lakhani, 2007) The economic benefit of broad access to information is apparent, and this example demonstrates how solutions can come from experts and nonexperts.

We do understand a good deal about the costs of providing such access. The NIH found that the cost of making the research they fund available via PubMed Central is a small fraction of their budget. (Lipman, 2011) At the University of Michigan, we have developed infrastructure consistent with our mission of sharing our work with the world. Deep Blue (our institutional repository) and HathiTrust (a national digital repository created by the cooperative efforts of some of the nation’s top research universities and hosted by our Library) both operate within our normal, day-to-day budget and mission.

Other universities, both public and private, are similarly positioned to share the wealth of knowledge that our researchers create daily but are often unable to do so. For example, the University’s Business Engagement Center and the Library’s document delivery service (the Michigan Information Transfer Source (MITS)) regularly hear from small businesses that want access to our licensed resources — often based on original research performed on our own campus. These small businesses are unable to afford to license or buy the research papers they need despite the fact that they funded much of this research themselves via their taxes. As a result, with the support of the Michigan Economic Development Corporation, the Library is currently a partner on a \$6.8 million dollar grant targeted at building business and job opportunities. The \$150,000 in funding for MITS is to support the cost of providing access to research for entrepreneurs and small businesses that are otherwise unable to afford to read the work done by our researchers and their peers.

Immediate and open access to publicly funded research is both possible and desirable even beyond the fundamental question of transparency, accuracy, and progress that is the goal of science.

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The Value of Openness in Scientific Problem Solving

Karim R. Lakhani, Lars Bo Jeppesen, Peter A. Lohse, Jill A. Panetta

Harvard Business School Working Paper No. 07-050

January 2007

<http://www.hbs.edu/research/facpubs/workingpapers/papers0607.html#07-050>

Statement by

David J. Lipman, M.D.

Director, National Center for Biotechnology Information

National Library of Medicine

National Institutes of Health

U.S. Department of Health and Human Services (HHS)

on

Public Access to Federally-Funded Research

before

Committee on Oversight and Governmental Reform

Subcommittee on Information Policy, Census and National Archives

United States House of Representatives

April 19, 2011

<http://www.hhs.gov/asl/testify/2010/07/t20100729c.html>

Michigan Economic Development Corporation

Michigan Invests in University Efforts to Build Business and Job Opportunities

October 256, 2011

<http://www.michiganadvantage.org/Press-Releases/Michigan-invests-in-university-efforts-to-build-business-and-job-opportunities/>

(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?

We have long been concerned about protecting the intellectual property rights of our scientists and recently joined colleagues at the University of California, Columbia University, M.I.T., Harvard, and Duke University to draft model license language on author rights. (Author Rights,

2010; Anderson, 2010) The rights of authors who create the work, and the rights of the agencies and taxpayers who fund that work, should be the first priority of any policy.

Per the model license language referred to above, the policy should be limited to a requirement that the results of an author's federally funded research be made freely available in institutional, subject-based, national, or other open repositories or archives. This could be handled as a reservation of a non-exclusive right to do so as a condition of accepting taxpayer funding,

The policy should assure that the authors and scientists who create publications and inventions retain their intellectual property, including (but not limited to) patent rights and the right to enter into publishing contracts, for example.

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Author Rights Model License Language

<https://authorrights.wordpress.com/>

"Model Language for Author Rights in Library Content Licenses"

Research Library Issues, no. 269 (April 2010): Special Issue on Strategies for Opening Up Content

Ivy Anderson

<http://publications.arl.org/s691h.pdf>

(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?

While a centralized approach to dissemination of federally funded research has benefits, the decentralized nature of the internet and the ubiquity and effectiveness of web search engines make decentralization possible. For preservation purposes, it is desirable to have a decentralized approach. There are trusted digital repositories spread across the country, often based at public universities and colleges with a history of and experience with providing access to information to all who visit, either in person or via the worldwide web.

Here at the University of Michigan, we provide access to the scholarship and research produced by our faculty via a service known as Deep Blue. Our commitment to permanent, digital access to this work is an embodiment and extension of our long-term mission as a library to preserve and provide access to the scholarly record. We are not alone in doing so; universities and colleges around the country have similar services, and make similar commitments to permanent access.

If a centralized national repository for the research is not desirable — and as a practical matter it is not necessary in this era of search engines and distributed online resources — state-wide, regional repositories, or subject-specific repositories (such as arXiv.org for physics) can be developed or expanded for a modest additional cost above their current operating budgets. The government role in building on this existing infrastructure and expertise can be a limited one, and the Library of Congress' National Digital Information Infrastructure & Preservation Program (NDIIP) provides a model and framework for the auditing, validating, and standards work required to ensure the necessary long-term stewardship.

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NDIIP

<http://www.digitalpreservation.gov/>

(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?

We should encourage and support all commercial academic and society publishers who are willing to open their archives to the general public to do so. However, they can not and should not be the only archives or long-term stewards of federally funded research.

Those whose mission is to act on behalf of the public interest, be they Federal agencies or universities and colleges acting on their behalf, must have direct involvement in every aspect of assuring public access to federally funded research. Publishers currently have few incentives for making their work broadly accessible and interoperable with their private competitors and public partners, so creating those incentives and ensuring shared and co-equal ownership, storage, and responsibility for access is essential in any public-private partnership.

(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?

Robust metadata is crucial for preserving the scholarly record and ensuring innovative future uses of our research output. However, for most users, metadata standards are relatively unimportant. Prompt and reliable access to federally funded research will drive innovation and economic growth.

The first priority should be to make that research accessible using basic citation-level metadata rather than waiting for a standard to emerge or delaying public access while we develop that standard.

(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?

As discussed above, existing policies and models (the NIH Public Access Policy and Author Rights Model License Language) coupled with existing solutions (institutionally- and subject-based repositories) already present an environment where the burden and costs for stakeholders are minimal.

Public access to peer-reviewed scholarly publications resulting from federally funded research can be achieved in short order with off-the-shelf components. The policy should be consistent across funding agencies to make compliance straightforward and promote interdisciplinary research and innovation. Immediate public access is the only piece missing from our country's ability to maximize the benefit from the enormous investment made by the public every year.

(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?

Yes. The eventual or intended medium of presentation for peer-reviewed and federally funded work should have no bearing on whether a publication should be covered by these public access policies.

We suggest the following criteria for determining whether a work should be covered by these public access policies: a work must be peer-reviewed, federally funded, and if formally published, appear or be intended to appear as part of a multi-author or multi-topic/themed compilation (such as scholarly journal, themed monograph, or conference proceeding). As noted below, appropriate embargo periods may vary by discipline. Thus, as disciplines vary in their publication venues, there may be emergent correlations between types of publication and embargo periods.

(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?

The different norms, behaviors, and preferred publishing models in different disciplines are relevant to the determination of embargo periods. The general principle is that the embargo period should be as short as possible — ideally there would be none — consistent with the robust capacity to publish work that meets disciplinary standards.

Embargoes may also be necessary to protect patent interests, but those cases would be exceptions and not the rule; a reasonable embargo period based on the first-to-invent patent law of the recent past is a maximum of one (1) year from the completion of the research to release.

We expect that over time, and with the development of new publishing models, embargo periods will shorten. However, these should be reexamined frequently.

Thank you again for the opportunity to comment on this matter.

Yours,



Paul N. Courant

Subject: responses to RFI

Date: January 1, 2012 4:24:22 PM EST

Responses to Request for Information, as in

<http://www.gpo.gov/fdsys/pkg/FR-2011-11-04/html/2011-28623.htm>

Han Hong
Professor of Economics, Stanford University
Stanford, California

Comment 1:

An important step that agencies can take to grow existing and new markets related to the access and analysis of peer-reviewed publications that result from federally funded scientific research is to cooperate closely with authors, editors and publishers.

Authors, editors, publishers are committed to providing the broadest possible access to publications. The goal of responsible authors, editors and publishers is to expand access to the latest breakthroughs in the scientific research and developments in academic thought. The policies of archiving publications and making them publically accessible have tremendous benefit on the economy and the productivity of the scientific enterprise. The most beneficial type of access is electronic online access. The cost of these policies can be kept small if public access policies take into account the considerable investment to maintain the highest standards for peer-reviewed scientific publication and the sustainable mechanisms to enable this system to cooperate.

It is critically important that any new policies do not damage the publishing institutions on which the Federal Government and science depend.

Comment 2:

The specific steps might include an appropriate amount of time interval between the appearance of scientific discoveries at scholarly journals and their archived public access. Federal funding budgeted for the public access policy should also account for the cost to the publishing institutions.

Premature and uncontrolled public access risks endangering the incentives of authors, editors and publishers to produce cutting-edge scholarly discoveries.

Comment 3:

In the presence of private information and potential incentive incompatibility, a decentralized approach has the benefit of using a price system to align incentives

and to aggregate information. Incentive compatibility and information aggregation in an centralized approach requires a well-designed mechanism that can be difficult to achieve. An centralized approach has the benefit of being able to account for positive externalities that can not be endogenously incentivized based on private costs and benefits in a decentralized system.

Comment 4:

Better public-private partnerships can be achieved if any effort by government to establish policies for peer-reviewed research is be done in consultation with all affected stakeholders, ensuring that such policies do not undermine the sustainability of the peer review publishing system which is necessary to ensure the quality and integrity of scientific research.

Public and private research universities are also an indispensable part of the system for promoting universal and public access to scientific and scholarly inventions, discoveries and publications.

Comment 5:

The National Science Foundation and public and private universities can play an important role in promoting interoperable search, discovery and analysis capacity across disciplines and archives. There are scientific and mathematical principles and foundations that are common to many different disciplines. Federal agencies can play an active role in fostering the establishment and development of such higher level disciplines and studies that provide common infrastructures to various subjects of studies.

Comment 6:

Federal agencies that fund science can better maximize the benefit and minimize burden and costs by providing more transparency in the funding outcomes and providing funding distributional summary statistics across disciplines and institutions and individuals awardees.

Comment 7:

Book chapters and conference proceedings can also be covered by public access policies.

Comment 8:

The appropriate delay period should depend on the cost and benefit analysis of individual publishers. Federal agencies should take the cost of publishing institutions into account when early public access is determined to provide more

public externalities than private costs.

In general, overall access to research articles is good, particularly in the United States, where 97% of researchers are happy with access to journal articles: see Access vs. Importance, A global study assessing the importance of and ease of access to professional and academic information. Phase I Results.

2010. Publishing Research Consortium

http://www.publishingresearch.net/documents/PRCAccessvsImportanceGlobalNo v2010_000.pdf.

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Han Hong
Department of Economics
Stanford University
Stanford, CA 94305



The Linnean Society of London is pleased to respond to the Office of Science and Technology Policy's November 3rd, 2011 Federal Register Notice of Request for Information regarding:

Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research

To provide recommendations on approaches for ensuring long-term stewardship and broad public access to the peer-reviewed scholarly publications that result from federally funded scientific research.

Background information on the Linnean Society of London and its Peer-Reviewed Scholarly Publications

The Linnean Society of London is driven by a single purpose as outlined in its first charter, 200 years ago, '*The cultivation of the Science of Natural History in all its branches*'.

The Society uniquely embraces the entire sweep of natural history, promoting the study of all aspects of the biological sciences, with particular emphasis on evolution, taxonomy, biodiversity and sustainability, as well as maintaining internationally important historical collections in the biological sciences.

The Society encourages and communicates scientific advances in these and associated fields through its three world-class journals, special publications, meetings and website. At the same time, the Society reaches out to future biologists through schools and educational programmes. The Society's meetings are open to all – both Fellows and the general public.

The Society's Fellowship is international, and its Fellows are drawn from all walks of life, ranging from leading professional scientists to amateur naturalists.
For further information on the Linnean Society, please visit www.linnean.org.

The Society publishes its three scholarly journals through Wiley-Blackwell, which is North America's oldest independent publisher and one of the foremost academic and professional publishers in the world, employing around 2,600 staff in the United States. The Society's journals are widely subscribed to by academic and scientific institutions throughout the United States. The revenue that the Linnean Society receives from the subscriptions to its journals is fundamental in supporting the Society's activities listed above.

Comments and Recommendations from the Linnean Society of London

The Linnean Society's comments and recommendations concur with those made by the Society's publishers, John Wiley & Sons, in their recent submission.

The fundamental point to be made here is that taking the results of research through the peer review and publication process (including the value-adds of indexing/storing/content mining/retrieval, stewardship, etc) to achieve a verified 'Version of Record', is costly – and *someone has to pay*. Currently, this is achieved, either through journal subscriptions (or payment on a per article basis) by institutional libraries/individual users, or through authors paying a page charge (as used for current 'open-access' journals).

Because of the considerable investments in digital and on-line technology by publishers and Societies such as the Linnean Society of London, there is more access to more content by more users now than ever before: thus 'broad public access' is already a reality.

There is no evidence that making the current broad public access to the journal literature free will improve research productivity or the public wealth. On the contrary, free access, like copyright piracy, is likely to have the opposite effect. Access to the research literature is not a constraint on creativity and economic growth.

Normally, any grant funding body, including federal government funding, will require that the grantee provides a report of the results generated. These research summaries are the natural vehicle to provide public access to federally funded research results.

Importantly, these research summaries may contain negative data and/or applied research results which are seldom published but nevertheless may well be valuable in informing the direction of future research projects. It is therefore important that such data should be made available.

Thus, we support ***the recommendation*** that the federal government should make the content of these research summaries discoverable and, furthermore, link it to the journal literature, working with private sector publishers to achieve this end. This would provide a two-way flow, sending users from publisher websites to the funder website to view free government-sponsored research reports, and sending users from funder sites to view free abstracts and links to the Version of Record of articles connected to a particular research report or funded project.

In addition to enhancing public access to the results of federally-funded research, this approach would provide benefits to the federal government insofar as it would facilitate identifying all agency-funded research within publisher offerings, provide access to useful metadata, as well as the ability to assess the impact of the funded research through bibliometric and other tools developed by publishing companies.

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

The Protein Society is pleased to respond to OSTP's November 3, 2011 Federal Register notice requesting comments on "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research."

The Protein Society is the leading international society devoted to furthering research and development in protein science. The Protein Society members represent academic, industry, government and non-profit institutions from around the world. Their research interests include protein folding, protein engineering, chemical biology, proteomics, bioinformatics, structural biology and computational biology. The purpose of the Society is to provide international forums to facilitate communication, cooperation and collaboration with respect to all aspects of the study of proteins and to foster the education of the next generation of protein scientists.

In support of the Society's goals, the Society publishes, *Protein Science*, the premier journal in the field in cooperation with Wiley-Blackwell. Revenues from the journal are the main source of support for the Society's work. Indeed, without the journal revenues, the Protein Society would be forced to cease operations. Consequently, the Society is extremely concerned about further extension of open access requirements. Indeed, we believe the damage to the operation of scientific societies will have the unintended consequence of actually diminishing the dissemination of federally funded research because scientific societies like ours would no longer be able to support meetings and publications. Communication of this kind plays a critical role in the spread of new information and ideas among scientists as well as the public.

The Society urges the administration to carefully consider the potential harm done to ours and many other academic societies and, by extension, the scientific enterprise itself when contemplating changes to public access policies.

Most of our members are funded by NIH, which requires deposition of published articles in a public repository one year after publication. We believe this system works well as it provides public access to government funded research, while preserving the ability of publishers to receive compensation for the important work they perform in the publication process. We strongly oppose any further incursion, beyond current NIH mandates, into publisher's rights to control their content.

On behalf of the Protein Society,

Professor Lynne Regan, Yale University: President

Professor James Bowie, UCLA: Chair of the Publications Committee

Professor Brian Matthews, University of Oregon: Editor-in-Chief of *Protein Science*

From: Jed Brown
Subject: White House RFI on public access
Date: January 1, 2012 8:25:43 PM EST

I am a postdoctoral fellow in the Mathematics and Computer Science Division at Argonne National Laboratory.

I believe that it is crucial for the results of all publicly funded research be made freely available to the public as quickly as possible. Relatively informal venues such as the websites of authors and the arXiv are currently used for this purpose. At a bare minimum, I would like to see stronger protections put in place so that publishers cannot bar authors from providing their papers in this way. If at all possible, I would like to see the NIH Public Access Policy extended to all publicly funded research.

A fundamental aspect of the scientific method is that research must be reproducible. As such, papers should include sufficient detail for a third party to reproduce the results of the paper. This may go in supplementary material and (especially in my field of computational science) should frequently include source code. I would like to see explicit support for archival of supplementary material necessary for reproducible research.

More than 90% of my work goes into open source software packages that are freely distributed. For each of my papers, I attempt to have a repository that includes detailed instructions for reproducing the results using an appropriate version of the software package as well as scripts for creating the figures and tables and ultimately compiling the document. This is more work for me as an author, but I feel it is a matter of professionalism and respect for the scientific process. I feel it would be excessive at this time to require that all researchers use this process, but I think it should be strongly encouraged. Some tools (e.g. <http://www.vistrails.org> and <http://www.reproducibility.org/>) can make this process easier.

For more on the topic of reproducible research, I recommend this recent paper. <http://www.stanford.edu/~vcs/papers/SMPRCS2010.pdf>

**Subject: Re: Public Access to Peer-Reviewed Scholarly Publications
Resulting From Federally Funded Research**

Date: January 2, 2012 1:34:08 AM EST

Email: Geoffrey Irving

Affiliation: Otherlab

I am writing in response to the request for information on public access to federally funded research. As a member of a small private research lab without university level access to most publications, I am constantly obstructed by the lack of public access to papers in computer science, mathematics, and many other areas of interest. Open access to federally funded research would have a significant streamlining effect on the daily work of myself and many other researchers and developers in similar positions. Detailed responses to the specific questions follow:

Question 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 publicly 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?

Response 1:

The single and most important step to take is to explicitly grant the authors of federally funded scientific papers the right to make copies of their work freely available, either through personal or institutional websites or public sites such as arxiv.org. I believe the overwhelming majority of researchers already want this freedom, but many are prevented from doing so by publishing agreements with private journals. Therefore, mandating public access is unnecessary if researchers have full rights to distribute their own work alongside journal and conference publication. Specific policies for archiving publications are useful but less important than the right to distribute, since arxiv, Google Scholar and other services already provide ready methods for archiving and finding publications.

The main benefit of such a policy is reduced overhead for individuals and smaller institutions which cannot avoid blanket access to the majority of journals (as would typically be available through a university). The main downside is reduced revenue for conventional publishers. However, government policy should not be geared towards the interests of publishers: the sole metric should be interests of the taxpaying public as a whole.

Question 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?

Response 2:

The easiest way to safeguard the rights of scientists is to make open access an optional but guaranteed right, as mentioned above. In the long term, mandatory open access to federally funded research may be desirable, but I believe most of the benefits can be achieved with rights alone. Moreover, open access to research need not interfere with the patent system, which is the primary mechanism for helping scientists and institutions to commercially profit from their work. The intellectual property rights of publishers could be maintained for past work by enforcing the right to open distribution only for future research. Although open access to past work is also highly desirable, a retroactive forced change to publishing agreements would constitute far more interference with private contracts, and is therefore more questionable.

Question 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?

Response 3:

The pros of a decentralized approach are flexibility and diversity in exploring new methods of distribution, peer review, and search. The pros of a centralized approach are uniformity and simplified access, and institutional levels of security and redundancy. I do not believe it is important to discuss cons of either, since both centralized and decentralized approaches can exist simultaneously. If researchers are guaranteed the right to open distribution, they will naturally take advantage of a variety of distribution mechanisms, including arxiv, self-distribution on websites, and any open government databases. The relative success of the various options can then be judged and evaluated on their merits. In this framework, a government database of open work would constitute both an alternative access point and a long term backup of published work, without interfering with nongovernmental mechanisms and institutions.

Question 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?

Response 4:

Access to existing archives is a more delicate issue, since it requires enforced or negotiated change to past publishing agreements. Therefore, it may be best tackled after open access to future works, especially since solutions for the latter will inform those for past work.

Question 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?

Response 5:

Due to the availability of efficient search, I do not believe it is necessary to mandate any particular set of metadata for text publications themselves. Instead, any government publication databases should provide support for optional metadata such as source code and data sets, or at a minimum links to external storage of such metadata.

Question 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?

Response 6:

As mentioned above, I believe much of the benefit of complete open access can be achieved simply by guaranteeing the right to freely distribute federally funded work. The costs for such a step are minimal, especially since efficient distribution and search mechanisms already exist, and will likely proliferate further if a greater fraction of publications can legally take advantage of them.

Question 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?

Response 7:

The right of researchers to freely distribute federally funded work should be applied as widely as possible. Conference proceedings are particularly important, especially in fields such as computer science where conferences are often the dominant publication venue for many subfields. Book chapters are less clear, since authors benefit

financially from the purchase of each book, and therefore have less incentive to take advantage of free publication rights. However, making free distribution a right rather than a requirement would allow authors to either choose the status quo or explore a variety of ways to take full or partial advantage of free distribution.

Question 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?

Response 8:

The embargo period should be negative: researchers should be allowed to freely distribute their work whenever they choose, including before publication or even before completion. This will minimize the delay between the completion of work and the time when other researchers can begin building on it. Producers of research that do not want their work to be immediately distributed can choose not to do so, and consumers of research that prefer to wait for the filtering and improvement effects of peer review are free to wait. Any other embargo period, even zero, would cause an unnecessary drag on the speed of dissemination and advancement of scientific knowledge.

Thank you for the opportunity to comment on this issue.

Geoffrey Irving

Subject: Response to RFI

Date: January 2, 2012 11:34:58 AM EST

Jenny Oleen Scholarly Communications Librarian Kansas State University Libraries Manhattan, KS

Request for Information: Public access to peer-reviewed scholarly publications resulting from federally funded research

Kansas State University recently signed the Berlin Declaration making the pledge to support an open access paradigm where the dissemination of knowledge is not complete until information is made readily available to society. It is our belief that research results must be made available freely and openly to everyone, regardless of their institutional affiliation or ability to pay. This holds especially true when public funds are financing the research. Taxpayers are entitled to immediate access of the results of the research our tax dollars fund.

1. Grow the open access portion of the existing publishing market. Include open access publishing expectations and publishing fees in the grant structure. Don't just award publishing fee monies when researchers ask. Hold an expectation that articles that result from federal grants will be openly and freely available. Archival and access policies facilitate greater sharing of information, which results in greater productivity from the grants. Data and results are more likely to be built upon by future research if they are freely available, giving more value for the initial grant outlay. Require archiving at an institutional level at the least, allowing universities and institutes to house the research their researchers/scholars produce.

2. Do not allow researchers to sign over copyrights or exclusive licenses to their federally funded scientific research. This protects the intellectual property interests of the scientists, federal agencies, and other stakeholders.

3. A centralized approach puts all the research funded by a particular funding body in one place, which can be very positive for the public who funds it. That said, because

of this centralized approach many publishers only allow researchers to archive their work in the one central archive, and not in their institutional repository as well. With powerful search engines, the need for a central repository is not as great - - the work will still be found where ever it is placed. A distributed approach where the research is deposited in a central repository but also is allowed to be deposited in an institutional repository would be ideal. This allows universities and institutes to archive the research produced on their campus and to produce an inventory of their research. Inventories such as these can be exceptionally valuable for universities to illustrate to stakeholders (donors, state legislators, etc.) the work being undertaken on the campus and why continued funding is important. A distributed system also allows continued stewardship by the granting agency.

6. Treat federally grant funded researchers as what they are – temporary employees of the Federal Government for the research that is grant-funded. As such, the resultant research should be in the public domain. This protects the IP interests of the funding agency and stake holders (tax payers) and allows wider distribution of the research - which is in the best interest of the researchers and other stake holders.

7. Yes. Different areas of research distribute the final product of the research in different ways, from books to articles to conference papers. To fully capture the research resulting from federally funded grants, all forms of transmittal should be covered by public access policies.

8. No more than 6 months. Research (especially scientific) is often out of date by the time it gets through the publishing process. The sooner information is freely available, the sooner more researchers/scholars can build upon it with their own work.

Jenny K. Oleen
Assistant Professor/Scholarly Communications Librarian
Kansas State University Libraries
414 Hale Library



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Re: FR Doc. 2011-28623

Dear Sir or Madam,

We are writing to respond to OSTP's November 3, 2011 "Request for Information" (RFI) regarding "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research."

As a not-for-profit scholarly publisher as well as professional society, one of the goals of the American Institute of Aeronautics and Astronautics (AIAA) is to expand and enhance access to the latest breakthroughs in aerospace engineering research and development. The main purpose of AIAA's scholarly journals is to publish articles that analyze and interpret original, fundamental and applied research to make such information available to the global aerospace research community.

AIAA's institutional mission is to address the professional needs and interests of the past, current, and future aerospace workforce and to advance the state of aerospace science, engineering, technology, operations, and policy to benefit our global society." This mission has roots in the depths of the Great Depression when two distinct communities committed themselves to the pursuit of scientific and engineering excellence. The American Rocket Society (ARS) was originally a group of writers and editors convinced that spaceflight and exploration were achievable. They sought to expand the acceptance of this belief and fostered and conducted direct experimentation in rocket engineering. The Institute of the Aeronautical Sciences (IAS) sought to foster the exchange of the latest ideas and research in the field of aeronautics. The establishment of libraries and rich repositories of technical content became a pursuit of both societies and this was passed along to AIAA, the product of the merger of the ARS and IAS in the 1960s. In the pursuit of this decades-long goal and through the private investment of its own resources and the generous support of the aerospace community at large, AIAA has created complete journal archives dating back to 1930, ebook archives including all titles (with the authors' consent) back to 1960, and conference paper archives back to 1963.

AIAA and its publishing program advance the state of the arts of aerospace engineering and contribute to the success of the U.S. aerospace industry. According the Aerospace Industries Association's "2011 Year-End Review and Forecast" the U.S. aerospace industry remains "one of the most significant contributors to the national economy." The industry as whole is projected to have annual sales of over \$218 billion in 2011. This will be the eighth consecutive year of growth. "In 2011, the industry contributed \$87 billion in export sales to the domestic economy. The industry's positive trade balance of \$57.4 billion places aerospace in the lead, representing the largest positive trade balance of any manufacturing industry." Furthermore, this industry supports more jobs through exports than any other industry (according to the U.S. Department of Commerce) and directly employs about 500,000 workers in scientific and technical jobs across the nation. AIAA and its publications directly serve the intellectual and research core of this workforce."¹

¹ Aerospace Industries Association. "2011 Year-End Review and Forecast" http://www.aia-aerospace.org/assets/YE_Analysis.pdf.

As a learned society and not-for-profit publisher AIAA shares the federal government's mission to expand access to publications that describe and interpret federally funded research, ensure the long-term stewardship of these publications and archives, and support innovation, economic development, and the next-generation workforce derived from and supported by scholarly discovery.

Like all publishers, AIAA has been investing significantly in support of expanding accessibility, improving interoperability, and fuelling innovation in preparation of offering public access. AIAA's investments have already created comprehensive digital archives of its published content, and AIAA is now making an additional investment of over \$410,000 in the current fiscal year in a new platform to offer the latest and continually evolving web capabilities. Researchers will have access to the most complete digital resource in the field of aerospace engineering with faster and more robust delivery of scholarly information. AIAA is committed to invest more than \$185,000 annually to maintain and develop new ways to present data and scientific articles and engage and educate the next generation of aerospace engineer.

AIAA's activities that support peer review, ensure the continued integrity and reliability of the scholarly record, prepare this content to make it accessible to users worldwide and preserve the scholarly record for future generations do not come without costs and ongoing investment. (AIAA's costs exceed \$1500 per article.) These critical value-enhancing functions would be undermined by access policies that do not take these costs into account. In considering policies that could potentially expand public access to research results, it is critically important that any new policy does not damage the private, especially not-for-profit institutions, on which the Federal Government and its scientific researchers depend.

AIAA joins with other publishers in calling for a federal agency public access policy that is sustainable in the long-term and maximizes benefits to researchers and the public at large; will function as a balanced public-private partnership to enhance access and interoperability; adequately protect fundamental intellectual property rights; and respect proprietary contributions of added-value to ensure sustained private investment in innovation. This approach meets the needs of the scientific community by relying on evidence-based assessments and providing access to taxpayer-funded research results through both public and private channels.

The America COMPETES Act, which established a public access policy for research funded by the National Science Foundation (NSF), provides a constructive model that can be replicated in a timely manner at other federal agencies. This is to be contrasted with the NIH policy, which has the potential to significantly damage a well-functioning scientific discovery and innovation system of communication, reduce economic benefits and employment, and undermine intellectual property. Each of these models should be carefully analyzed to be sure its long-term impact on all stakeholders is fully understood.

All scholarly publishers strongly support the view that the Federal Government should be guided by "principles of transparency, participation and collaboration" as noted in the Transparency and Open Government Memorandum and Open Government Directive. AIAA stands ready to work in collaboration with all partners to ensure the continued success, vibrancy, and innovation of the U.S. scientific community.

In addition to the general suggestions above, we would like to comment specifically on some of the questions outlined in OSTP's November 3 Federal Register Notice requesting public comment.

Respectfully submitted,

Dr. Michael B. Bragg, AIAA Vice President of Publications

Ms. Carol A. Cash, AIAA Vice President of Public Policy

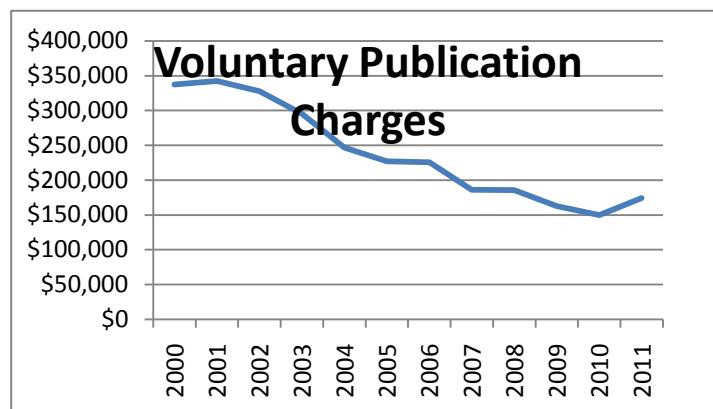
Mr. Rodger S. Williams, AIAA Managing Director of Technical Publications

(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?

There are many options to broaden access to materials that analyze and interpret research for scientists and the public that are already underway, driven by the common mission of scholarly publishers.

Development of recognized standards for data and meta-data to make research more readily searchable and discoverable; clearly indicate the published article as a version of record, thus enhancing the confidence with which scientists but more importantly a lay-users use the content ; and clearly identify and disambiguate the identity of the authors and researchers involved. Publishers and groups and vendors that support publishing are already working in partnership to develop this toolset through initiatives like CrossRef, CrossMark, ORCID and ResearcherID. These represent additional investments and eventually new expenses to be recouped when implemented.

The federal agencies should make funds available to support payment for open access to published articles to cover the real costs not borne by the research grant. In discussions with aerospace engineers who receive federal research monies, often those monies are exhausted well before the research is mature enough for publication, or access to the funds expires before the article has been completed, reviewed, revised, and published. Possibly related to this, AIAA's success in collecting voluntary publications charges has declined 48% between 2000 and 2011 with an average 5% annual decline, as calls for open and public access grew in popularity. Several private research funders already do this (Howard Hughes Medical Institute, The Wellcome Trust, Max-Planck Institutes) and leading research universities are creating funding mechanisms through the Compact for Open-Access Publishing Equity². To minimize the financial burden public access will present to publishers, any new federal policies should ensure a publication fee reserved until the article is accepted and published. If not published the researcher would forfeit those remaining funds or these are not allocated until an acceptance letter is provided by a registered or recognized publisher appropriate to the researcher's field of study.



² <http://www.oocompact.org/>

The federal policies should explore the licensing of content from publishers to make available to specific audiences similar to what is available now as a government purpose license. Publishers already license content to customers of many kinds, and often customize those licenses to meet specific or specialized user needs and have the ability to ensure the availability of their content with existing infrastructure. AIAA has used this model successfully in its book publishing program with service academies and other Department of Defense research and educational entities for many years. Likewise AIAA, unlike some publishers, does not require the surrender of copyright from any of its authors and have special options for government employees and government contractors:

Copyright Form D: I prepared this work as part of my official duties as an employee of a Government contractor.

[Note: If Copyright Form D is signed, the notice will read as follows: "Copyright © 20XX by the American Institute of Aeronautics and Astronautics, Inc. The U.S. Government has a royalty-free license to exercise all rights under the copyright claimed herein for Governmental purposes. All other rights are reserved by the copyright owner."]

Public access government mandates have significant costs to the U.S. economy and the scientific enterprise. Publishing contributes to the U.S. economy by providing jobs and creating commercial relationship between private employers. AIAA, located in Northern Virginia, employs, 90 full-time employees with 13 full-time employees dedicated to its publishing operations. Publications generated revenues of \$7.1million or 30% of the Institute's overall revenue in fiscal 2011. AIAA's publishing vendors provide full- and part-time employment in Virginia, Ohio, Pennsylvania, California, New York, Texas, Oklahoma, and Kansas.

NIH's PubMedCentral (PMC) data indicates 2/3 of its users are from overseas, undermining critical export opportunities for an \$8 billion publishing industry that employs 50,000 Americans. This is the equivalent of pro bono U.S. information sharing and support of global competitors for organizations that rely on the developments, conclusions, and analysis contained in the scholarly literature. Some of the global competitors are undermining the financial viability of critical use industries.

U.S authorship for AIAA's journals stands at 37% with European and Asian authors contributing 53% of the papers. The leading economies of Asia and the E.U. are making competition with the U.S. in aerospace a top priority. While AIAA is open to membership and journal submissions from all nations, AIAA does play a significant role in supporting an industry critical to U.S. exports and international leadership. China is widely reported to provide monetary incentives to its researchers who have papers accepted by leading Western peer-reviewed journals. It is not unreasonable to expect them also to provide ample monetary support for publication fees. The natural competition among papers for limited publication slots will become more intense in the face of rising peer review costs, when cost recovery options become constrained.

(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?

Federal public access policies need to be accompanied and supported by policies and enforcement procedures to ensure copyrighted materials are protected from unauthorized dissemination and piracy. Copyright is an essential ingredient in promoting creativity, innovation, and the continued integrity and reliability of the scholarly record. The current enforcement of IP protection is still weak and presents (both for- and not-for-profit) publishers with ongoing challenges. When resources are stretched publishers are often forced to put a lower priority on policing the violation of their IP rights or spend slim budget dollars on third-party services. These services merely provide detection of suspected violations and the issuance of cease-and-desist notices, but in no way ensure a permanent solution to this problem. Further consumption of limited resources may be entailed if staff and legal resources (even court costs) needs to be involved in enforcement. Some of the investments referenced earlier primarily versions of record and author disambiguation may mitigate abuse, but are not panaceas and are being created by publishing industry initiatives. There is evidence that the NIH policy undermines IP and enables piracy. Not only is PMC undermining an important U.S. export market,³ but PMC copies of copyrighted material appear on rogue sites, contributing to millions of dollars in annual losses to U.S. publishers.

(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?

Centralized, government-controlled stewardship of publications carries significant downsides and few upsides. Long-term stewardship of content carries significant costs that are already being borne by publishers. In an era of dwindling federal resources, central federal repositories are duplicative and an unnecessary expense and recurring burden that may not be viable for long-term stewardship. Furthermore in the current environment where there are myriad calls for the shrinking of the size of government and the reduction the federal deficit this effort will run counter to the current political mood. The current congress remains unable to find modest savings whereas this effort will add additional expenses and risk damage to a viable profit-making industry contributing revenues and creating jobs for the U.S. economy. In fact the U.S. research enterprise does not find accessibility to published research housed in publisher created repositories to be an obstacle. According to Ithaka S+R's 2009 faculty survey "free accessibility online has remained the lowest priority for scholars across

³ See question 1

disciplines in their selection of a journal for publication; in fact, prioritization of free availability fell substantially between 2003 and 2006.”⁴

Publishers, in fact, unify the content from various federal funders and avoid funding inconsistencies from department to department, protect access from the risk of partisan-motivated cuts, and place the research in the broadest research context (alongside content not federally funded) possible.

The publishing industry is already doing a good job of promoting interoperability, search, development of analytic tools, and other scientific and commercial opportunities. There is no reason to doubt that they will continue providing innovative products and services, unless their financial livelihood is undermined by harmful policies. Whereas Government stewardship does not ensure interoperability and has been evidenced by continued challenges on national security intelligence sharing and other examples, Overall there is a poor track record among agencies ensuring interoperability even on critical matters.

(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?

As initially outlined AIAA has maintained the archives for the aerospace engineering research community: it is part of its organizational DNA and regardless of public access mandates this mission will continue. AIAA is enhancing its partnership with internet search engines and abstracting services already. It is in the early days of exploring data repository archives with leading research universities that will be linked to the published research.

(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?

Federal policies should focus on the research, its results, and the original reporting thereof. Publishers are the entities that invest in the peer-reviewed literature. U.S. federally funded research agencies should provide public access to a final research report, rather than the peer-reviewed journal article. This solution would allow standardization of information reported, rapid and broad dissemination of the government-funded materials even before publication of a peer-reviewed article, and the preservation of IP rights. The NSF policy referenced above provides a much better model. A report repository with links to relevant published content such as the peer-reviewed article (clearly identified as a version of record) and the source references through DOIs would be the foundation of a rich research environment ready for further exploitation by other researchers. The application of independent indexes, semantic tagging, and the retroactive application of DOIs to older resources will only enhance the research value.

⁴ Roger C. Schonfeld and Ross Housewright, “Faculty Survey 2009: Key Strategic Insights for Libraries, Publishers, and Societies,” April 7, 2010, Ithaka S+R.

This research environment would be fertile ground for the development of standardized templates for certain kinds of reports and to facilitate various kinds of aggregate meta-analysis. The critical mass of this resource could lead to the development of additional resources perhaps including lay summaries and analyses broadening interest in STEM and cultivating a new generation of scientists, engineers, and mathematicians identified as critical to U.S. global competition, by “Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future.”

In the event accessibility barriers still exist, licenses as mentioned previously or a waiver program for demonstrated needs based users, students, other public development uses could be explored. However some means for sale to private corporations that may capitalize on the content for profit-based motives should remain open to publishers as it would to patent holders.

(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?

This question itself is fundamentally flawed: often these types of publications are called peer-reviewed but not all meet the same level of intellectual scrutiny as journal peer review. Abuse or inadvertent use of this terminology for some book and conference proceeding content would devalue genuine peer-reviewed content and damage the standing of publishers and researchers alike in public opinion; and even misguide the less attuned public.

Beyond the initial concern, public access for other types of content should not be pursued as it would only further erode the resource and means to capture a return on investments only publishers make. These others forms of publication require similar support infrastructures. For conference proceeding in particular, these often organized and published by mission-driven, not-for profit organizations, which need some means of cost recovery. Conference proceeding help defray the cost of the conference where intellectual exchange occurs in real-time. This income also enables student and retiree participation at reduced costs furthering the active life of researchers and fostering a new generation of STEM participants.

For books, where fewer and fewer not-for-profits are publishing, publishers often conceive the project, commission the content, and invest heavily in its development. This greater degree of editorial intervention produces a much smaller ROI. The erosion of value by requiring some chapters if not the whole work be made available for free will limit the publishing opportunity and drive more small publishers out the book business and promote more industry consolidation.

Books serve as a critical bridge between high-level research as in journals and the more tutorial and explanatory nature needed by students and other newcomers to the field. In fact the lay-users that public access aims to serve may require more books to help understand the original research. With no revenue model there is no incentive for publishers to commission and publish these works, stifling innovation at that level. Likewise with e-books just now emerging as a mature product for the STEM market, free electronic access to portions of that content will limited its further development and the costly investment necessary to build upon this success will be unattractive to publishers.

As with any kind of content published by a nongovernmental entity at its own initiative, government-mandated access to books, proceedings, or other such materials is an expropriation of the private property of both publishers and authors who earn a royalty, and there would be downward pressure on royalties for authors--already a modest incentive at best in STEM publishing.

(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?

In short there are no “appropriate” embargo periods, and the research in different disciplines (and even subfields) has different life spans. For example, articles published in the APA’s 37 journals have a long half-life and lifetime usage of about 4.5 and 19.5 years, respectively,⁵ while in mathematics journal articles published in 2009 were as likely to cite articles published before 1998 as after them, and only 10% of the citations were from the previous three years.⁶ For aerospace engineering, the aggregate cited half-life is greater than 10 years and the aggregate citing half-life is 9.7.⁷ Broad categories for the bases of embargo periods will be unacceptable. At best a formula tied to the citation half-life is the only equitable approach to be considered, but any embargo period is a dramatic shortening of the period of copyright protection afforded all publishers, and likely to significantly impact publishers’ ability to add value and innovate.

⁵See page 5 of letter from PSP and DC Principles in response to previous OSTP RFI

⁶ See page 28 of the final report of a February 2011 MSRI Workshop on Mathematics Journals.

⁷Journal Citation Report 2010. <http://admin-apps.webofknowledge.com/JCR/JCR?RQ=RECORD&rank=1&category=ENGINEERING,+AEROSPACE>

Subject: COMMENTS ON PUBLIC ACCESS TO SCIENTIFIC JOURNALS

Date: January 2, 2012 4:14:05 PM EST

To: publicaccess@ostp.gov

Kenneth J. Lanfear

Editor, Journal of the American Water Resources Association

Middleburg, VA

COMMENTS ON PUBLIC ACCESS TO SCIENTIFIC JOURNALS

I offer these comments as the current editor of a science journal and a retired scientist from a major government agency. In my former career, I managed a large government science website and was a member of the founding team for the [Science.gov](#) website. My comments reflect this unique perspective.

I believe current open-access proposals are flawed because: (1) the public's need for full-access science articles is not well established; and (2) the proposed business model of free access is infeasible in terms of completeness and long-term support.

1. The public's need for full-access science articles is not well established. Public interest would be better served by requiring Government scientists to provide a lay-audience summary of their work.

I only wish our journal's articles were as popular with the public as open access advocates believe them to be! High demand might allow more economies of scale. Reporting and documenting scientific findings, however, requires including a lot of tedious detail on sampling and analysis the public typically finds uninteresting.

The public is interested in results, not methods. Abstracts already are openly available online. Many journals, including my own, provide open plain-English summaries. Other open services, such as Science Daily (www.sciencedaily.com) report on the most interesting articles. What about citizen scientists who still want to see the full article? Most authors are happy to email a copy upon request, and our copyright agreement permits this. In rare cases where an article turns out highly popular with the public, I have the authority to ask the article be made open access in the public interest.

In short, open-access requirements would meet a need already served by the current system, and, in doing so, would eat into the legitimate, traditional clientele of scientific publications.

2. The proposed business model of free access is infeasible in terms of completeness and long-term support.

The incentive for scientists is publication, not distribution. One senior manager I knew termed this the “loading dock syndrome,” referring to the interest of scientists in seeing their work printed, put on the loading dock, and who cares where it goes from there? Government agencies have been trying for decades, with mixed results, to produce timely and comprehensive listings of their scientists’ output. Directives, cajoling, even discipline threats notwithstanding, experience tells me it will be nearly impossible to assure an agency repository contains a complete collection of all its scientists’ publications.

Especially problematic will be discussions, replies, and errata, which comprise a critical component of the scientific record and often are NOT written by government scientists covered by proposed policies. Failure to distribute errata, or to quickly remove a discredited or fraudulent article, for example, can lead to flawed public policy and even tragedy.

Internet distribution offers great economies but is far from free. Properly maintaining a continually growing online library and keeping up with search technologies and output standards requires a substantial annual budget. Unlike commercial or society publishers, who see transactions as part of a revenue stream, a government repository sees each transaction only as a cost. The business model for an open-access government repository depends upon the activity being valued enough to win continued funding from Congress far into the future. The present political climate leaves grave concern regarding this assumption.

Flawed though its business model may be, a government repository will nevertheless compete with a commercial/society publication model proven viable for over a century. In the worst case, non-government publishers will be driven out of business, leaving distribution of science articles entirely in the hands of the government. This clearly presents grave dangers to freedom of speech and the independence of science.

Speaking from considerable experience with internet distribution, I have little confidence in the government’s ability to operate a successful long-term repository.

Kenneth J. Lanfear, P.E.

Editor, Journal of the American Water Resources Association

Subject: Request for Information: Public Access

Date: January 2, 2012 4:41:04 PM EST

I am writing in response to the Request for Information regarding public access to peer-reviewed scholarly publications resulting from federally funded research.

It is self-evident that, being the group paying for federally funded research, the taxpaying general public can assert an ultimate right of ownership over the data and papers directly resulting from such endeavors. Anything less than full and open public access to these materials – including unlimited right of reproduction – amounts to government-authorized theft of intellectual property from the citizens of the United States. It is therefore encouraging to see the government taking positive steps toward a strong open access policy.

While the stated goal of "grow[ing] existing and new markets related to the access and analysis of peer-reviewed publications" is worthy in and of itself, it must be understood that any policy toward this objective must be entirely subservient to the rights of the taxpayers funding this research. That said, when considering the economic implications of any public access policy, it would be wise to focus less on the fate of the narrow special interests who benefit from the current scheme of things, than on the wide and cascading array of possibilities opened up by greater public access to scientific knowledge. We must be careful not to protect the buggy whip manufacturers at the cost of the automobile industry, so to speak.

As for "interoperable search, discovery, and analysis capacity across disciplines and archives": This isn't a topic that the government needs to concern itself with in too much detail, beyond simply specifying a minimal, structured, and consistent format for the representation of open access documents. The Internet community excels at coming up with innovative new ways of organizing and presenting data; as long as the data is out there in a usable format and is licensed for unlimited public reproduction, the rest will follow automatically.

Thank you for your time.

--

Mark Shroyer
Software Engineer
Miami, FL

Subject: RFI Response: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Date: January 2, 2012 5:00:05 PM EST

I am writing as a researcher at a small non-profit institution who's work is partially funded by federal grants. I would like to express my strong support for Section 103(b)(6) of ACRA and of OSTP and NSTC's efforts to expeditiously implement those goals.

Regarding question 3: A major advantage of there being a public repository of publicly-funded research papers is that papers would not risk being lost if a private entity fails. A public repository might not be the most convenient place to search for scholarly papers, but its existence would be valuable for ensuring survival of the work.

Regarding question 7: At least in my field (planetary science) book chapters and conference proceedings are no different from journal articles in being both peer-reviewed and a crucial part of the scientific literature. Although the publishing business model may be somewhat different from journals, it makes no more sense to deny the public access to these types of scientific publications than to deny them access to journal articles, when taxpayer dollars paid for the work.

Regarding question 8: It seems to me that the shorter the embargo period before the public is granted free access, the better, if the goal is to boost scientific progress. Embargo periods act as barriers to the scientific discussion taking place in the literature, shutting out private citizens and researchers at smaller institutions with limited library budgets. This reduces the number of participants in the most active phase of the conversation, the time immediately after something appears in the literature. It also delays the involvement of the broader community, meaning that the whole scientific enterprise moves more slowly and less efficiently. Of course, full public access after even a non-zero embargo period would be much better than the situation today, where many publicly funded scientific papers never become available to the public who paid for them or to researchers at smaller institutions. Perhaps a compromise could be reached where, in exchange for keeping a modest proprietary period, publishers would open up access to their catalogs of older papers published prior to the adoption of new open-access policies for federally-funded research.

Sincerely yours,

Dr. William M. Grundy

I am pleased to submit comments in response to the *Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research* issued by the U.S. Office of Science & Technology Policy on behalf of the National Science and Technology Council's Task Force on Public Access to Scholarly Publications. I am the editor-in-chief of the *Journal of Industrial Ecology* (<http://jie.yale.edu/articles>), a peer-reviewed, international, English language bimonthly owned by Yale University, headquartered at the Yale University School of Forestry & Environmental Studies and published by Wiley-Blackwell. The *Journal* is the official journal of the International Society for Industrial Ecology (ISIE). The views expressed here are solely my own and do not necessarily reflect those of Yale University, the ISIE or others associated with the *Journal*.

Industrial ecology is a rapidly growing field that systematically examines local, regional and global materials and energy uses and flows in products, processes, industrial sectors and economies. It focuses on the potential role of industry in reducing environmental burdens throughout the product life cycle from the extraction of raw materials, to the production of goods, to the use of those goods and to the management of the resulting wastes.

The comments that follow can be viewed as responding to question #2 from the *Request for Information*:

(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?

However, my comments seek to address the broad question of the desirability of a shift to an open access scholarly publishing model, not merely issues of intellectual property rights. Thus, while the *Journal of Industrial Ecology* publishes some articles based on research funded by the Federal government, especially the National Science Foundation and the U.S. Environmental Protection Agency, these comments are not oriented toward the specific matter of how best to ensure access to the results of publicly-funded research. Rather they are based on the premise that what the federal government elects to do with regard to open access will inevitably shape all scholarly publishing in the United States and to a significant extent throughout the world. Thus, as the 2010 *Report and Recommendations from the Scholarly Publishing Roundtable* indicates, the issues under discussion concern the entire enterprise of scholarly publishing: "We recognize that to [eliminate access barriers] ...will challenge a complex and interdependent system that depends on the deep commitment of many stakeholders but that operates optimally when the major players — governments, research communities, libraries, and publishers — work together cooperatively."¹ My comments are focused primarily on the impact of open access on authors and research fields, rather than funders, journals, publishers, libraries, readers and the myriad of entities involved in scholarly publishing.

¹ <http://www.aau.edu/WorkArea/DownloadAsset.aspx?id=10044>

It is my view that a shift to open access will inevitably lead to an author-pays business model for scholarly publishing. In using the rubric author-pays, I mean not only payments by authors from their own research funds and grants (i.e., some form of page charges), but also financial support by institutions on behalf of authors, cross-subsidies by open access journals to allow waiver of fees for some authors, and, to a lesser extent, advertising in non-subscription-based journals.

As funders, universities and other institutions increasingly require or promote open access, the viability of subscription-based approaches to scholarly publishing declines. Users obtain the content that they need from free sources, librarians see usage drop, and subscriptions become less attractive. I see a shift from a reader-pays to an author-pays system as a choice between two approaches *both of which* entail mixed benefits and drawbacks.

It is my perception that the promotion of open access is based on a big science model of research publication. That is, an author-pays approach appears not to be particularly burdensome to a lab funded by larger grants—where the costs of page charges will be a small fraction of overall research budgets. And it is most advantageous in fields where immediate access to research results is paramount. In fields where considerable research occurs on a slim budget or even without any funding whatsoever (and where the impact of research may be less immediate but perhaps less transient), page charges will present a substantial burden. The notion that such research can or will be funded by internal sources, such as university monies freed up by reduction in subscription budgets is a coherent strategy, but it underestimates the changes in the research “ecosystem” that this entails. While senior faculty may have little difficulty obtaining such funds, the situation may be more difficult for graduate students, non-tenure-track faculty, visiting researchers and the like. In the same vein, in an era of constrained budgets, it is difficult to imagine that such funding would not be subject bureaucratic hurdles. Put another way, it is hard to imagine that funds to pay page-charges would be available without limit. Thus, for those dependent on such funds, page charges would become not only an additional step in getting their work out to the research community, but a new barrier as well.

In the research community served by the *Journal of Industrial Ecology*, there is great diversity among authors. Some are part of large research institutions and successful research groups, but many others come from smaller institutions or programs where regular—external or internal—research funding is not common. Thus, not only the difference between big science and other science (i.e., between fields or disciplines), but also the disparities within fields may be exacerbated by a shift to an author-pays system.

It is also important to note that it is not only, as commentary on this issue has indicated, the humanities and social science that are likely to find an author-pays approach problematic. Interdisciplinary fields (and journals) are likely to suffer as well. As competing models of publication emerge and align by discipline, interdisciplinary collaboration and publication—already a complicated endeavor—becomes one step more difficult.

As a result, the possible consequences of an author-pays system include a handicapping of sources of innovative ideas and research—scholars within institutions with less facile access to

resources, scholars in less wealthy institutions, fields without routine access to external funding and interdisciplinary research.

In sum, the changes discussed in the *Report and Recommendations from the Scholarly Publishing Roundtable*, and implicit in the Request for Information, will eventually lead, I think, to an author-pays system of scholarly publishing. That, in turn, will weaken journals and fields operating outside of “big science” to the detriment of those fields and journals and to the research that they foster, distribute and archive.

Reid Lifset
Resident Scholar in Industrial Ecology
Editor-in-chief, *Journal of Industrial Ecology*
School of Forestry & Environmental Studies
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FR Doc. 2011-28623
Filed 11/3/2011
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Comment 1a: 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?

Response: The ideal for me would be that the Federal government ensures that the complete collection of articles resulting from publicly funded research is made freely accessible to the public and that the public can fully use them without commercial restrictions. Students and scientists especially need full Open Access, immediate, free online availability coupled with rights to reuse fully. Full reuse allows innovation to thrive and helps U.S. companies to compete successfully on the global stage. Thousands of jobs could also be created with direct, easy and quick access to this new scientific research, all the more important in these tough economic times.

Comment 1b: 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?

Response: Open Access allows research results to be quickly incorporated into the teaching and learning process – improving the quality of education quickly and cost-effectively. Professors can obviously only teach what they have access to. Open Access greatly improves students' ability to get a complete education. Furthermore, students lose access to the vast majority of research that is subscription-access only when they graduate. This impedes students' ability to stay current in their field and hinders their ability to hit the ground running when they put their education to work in the Academy or private sector. This cost is even greater in a weak economy where students may spend a significant amount of time in their job search. Strong public access policies help level the playing field for students outside of the wealthiest institutions, who are at a distinct disadvantage when it comes to building their education from the most up-to-date research. Open Access promotes diversity of follow-on research, and increases the pursuit of new research pathways. Open Access lets scientists incorporate new findings into their research faster. Opening access to research articles allows scientists to get to – and read more – information than they previously could. It also lets scientists use new tools to incorporate more articles into their research faster.

Comment 1c: What are the relative costs and benefits of such policies?

Response: I can't claim to know much about the costs of open access versus the benefits but I am guessing the benefits far outweigh the costs. The benefits are laid out above whereas the costs seem to be rather minimal according to some of my more informed colleagues.

Comment 1d: What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?

Response: Access must be free, immediate, and coupled with the rights to reuse the articles fully. Restrictions reduce the return to taxpayers and access without reuse delivers only a fraction of the value. Broad re-use allows researchers to unlock additional value from research investment – now, and for decades. Also, access must be immediate to provide students with the most up-to-date education possible.

Comment 2: No Response

Comment 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?

Response: I don't see much of a problem with encouraging public/private partnerships in the housing of these repositories. They must of course support access and use conditions that allow all interested parties to build on them, and to create new things on top of this publicly funded information. Still, the federal government is the most appropriate entity to provide permanent stewardship of these articles and is in a unique position to ensure that publicly funded articles are permanently preserved, made accessible, and useable. To ensure this, any public access policies that are developed must give the federal government adequate rights to archive and make distribute publicly funded articles.

Comment 4: No Response

Comment 5: No Response

Comment 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?

Response: For any public access policy to be successful, there must be consistency of requirements and mandates. Uniformity of deposit requirements will reduce the complexity and cost while at the same time, increase the rate of compliance.

Comment 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?

Response: Educational materials that result from publicly funded research should be made readily accessible to the public. Other materials, such as book chapters, texts, conference proceedings should be made accessible, although the policies under which they are made accessible may need to differ from those directed at journal articles. Different conditions apply to different types of material and policies should reflect these differences. In no way should these policies jeopardize a researcher's agreement with publishers of his/her book, for example.

Comment 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?

Response: Students want and need access now. It is unacceptable to ask our students to “make do” with old information. Furthermore, since courses are typically only 3 to 4 months long, an embargo necessarily means students are missing information that would provide them a more up-to-date education. Having said that, an embargo period where an author can determine a hard stop-date between 0-12 months has been proven effective across multiple disciplines and would be an acceptable compromise. No data has ever been provided by any publisher that I am aware of that this embargo period has harmed them or their bottom-line. An embargo of 12 months or less has been adopted by hundreds of journals so I tend to agree it would be an acceptable policy.

To
The Office of Science and Technology Policy (OSTP)

The Graduate Representative Organization (GRO) of Johns Hopkins University, representing over 2000 graduate students in Arts & Sciences and Engineering, hereby present our response to the Request for Information regarding Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research.

- (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 publicly 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?

Federal Funding agencies that fund research in Universities and other Research institutions in the U.S. should make the results of this funding, i.e. the peer-reviewed publications, freely and immediately accessible to the public. The taxpaying public should be able to access the results arising from spending their money - furthermore they should be able to use the data to create derivative interpretations or computations.

For Graduate students especially, access to prior research in the form of articles constitutes the building blocks of education and continuing research. Denial of access of articles to the student population literally extinguishes any potential breakthroughs that could have been made. In the current state, graduate students at the more wealthy institutions have a wider access to research articles, and this creates an unfair disadvantage to students in other institutions. In addition, once students leave an academic institution, their access to research diminishes, and this impedes their ability to stay current, and utilize their knowledge in entrepreneurial or other private ventures. The productivity of the U.S. scientific enterprise can only be improved by opening up the potential of these untapped avenues, enabling unforeseen participants and new research pathways to be created from existing research and data.

The NIH reports \$3.5-4.6 million as the annual cost of providing access to all of their funded research. This is an investment of less than 1/100th of 1 percent of their annual budget. The benefits are estimated at 8 times the cost (Houghton & Sheehan, 2006,

<http://www.cfses.com/documents/wp23.pdf>). Leveraging existing infrastructure, as well as utilizing the investments already put into place by NIH can reduce costs of extending the current NIH policy to other funding institutions. Implementing an open access policy to federally funded research supports informed and transparent federal science budget by increasing accountability.

We are in support of full and immediate open access, including rights to re-use fully in a digital form. Immediate access ensures quick and effective turnaround of research, and restrictions on re-use limits the returns to taxpayers. In addition, this would provide the most benefits with minimal additional costs.

- (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?

Public access, as well as the IP interests of stakeholders, can be achieved simultaneously by leveraging the existing copyright framework. There are several licenses, such as the Creative Commons CC-BY license, which can be applied to scholarly articles, which allows for immediate access, as well as appropriate re-use, while discouraging infringement. A suitable compromise can be an embargo period, as in the case of the current NIH statutes, where fair-use rights apply. After this period, articles should be re-licensed to be more open, so that the public make complete use of them.

- (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?

Since the federal government is providing the funding, it is the appropriate entity to provide stewardship of the articles. The public access policies must ensure that the federal government must have

adequate rights to archive and distribute publicly funded articles. The storage can be over multiple repositories for each of the funding agencies, with a central repository containing the entire database. Suitable private entities could also be invited to store a portion or the entire repository of articles, provided they meet guidelines for ensuring access to the public. This could encourage public / private partnership, and reduce the cost to the federal agencies, even though the NIH example shows that the additional cost to maintain a public access repository is minimal as compared to the agency budget.

- (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?
- (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?
- (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?

Public access policies should take advantage of existing infrastructure and protocols to ensure automatic deposit of manuscripts to the appropriate repositories. In addition, the submission of articles should be integrated with grant management and feedback – this would also contribute to increased accountability. The policy must also be implemented uniformly across all federal funding agencies, to reduce complexity for scientists and research institutions. Any embargoes and related policies regarding relicensing should also be uniformly implemented, to minimize overhead for publishers and libraries.

- (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?

Educational materials that result from publicly funded research should be made accessible to the public – this may include book chapters, conference proceedings and other research reports. The policies that govern the access of these may need to differ from those for journal articles. Peer-reviewed conference proceedings are a significant proportion of published research output, and may contain information that is unavailable or unpublished in journals. Conference proceedings may also be a first step towards a journal publication. There are also certain fields, e.g. information technology and computer science, where the research turnaround is so rapid that most, even high impact research is published as conference proceedings. Thus they should be included in the same category as journal articles with respect to policies regarding public access.

- (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?

As a representative organization of graduate students, we are in support of immediate access, with no embargo period. Typical courses last 3-4 months, and students should be able to stay up-to-date on the research that is happening during their courses. This is especially true of graduate level courses, many of which are based on current research, and have projects, which seek to improve the existing knowledge in their field.

However, we understand that publishers rely on subscription income, and to achieve an acceptable compromise, an embargo may be needed. An author-determined embargo period of 0-12 months is the norm in many countries, and this has proven effective in the NIH case as well. Any higher periods than that run the risk of seriously slowing down the pace of research. Embargos of 12 months or less have also been adopted by several journals already. Thus we recommend an embargo of less than 12 months, with the emphasis being on keeping it as low as possible to avoid detriment or slowing down of the U.S. scientific enterprise.

Yours truly,

Josue Martinez, Chair, GRO

John Matsui, Co-Chair, GRO

Manu Madhav, Communications Chair, GRO

Johns Hopkins University

gro@jhu.edu

Subject: RFI, Section 103, America COMPETES Act

Date: January 2, 2012 9:16:00 PM EST

Dear Madam or Sir:

I am a federally funded research scientist working for Sandia National Laboratories. (These comments represent my own views only and not necessarily those of my employer.) I am responding to the Request for Information (RFI) issued by the White House Office of Science and Technology Policy in partial fulfillment of Section 103 of the 2010 America COMPETES Act:

<http://www.gpo.gov/fdsys/pkg/FR-2011-11-04/html/2011-28623.htm>

Today, many peer-reviewed publications are not openly accessible to taxpayers. Federally funded scientists at universities and national laboratories spend dozens of hours a year reviewing publications. Peer review is a necessary public service that keeps scientists honest and ensures quality research. However, many of these publications disappear behind extraordinarily expensive paid journal subscriptions -- in some cases, millions of dollars a year for a single publisher. Public universities and national laboratories must devote their tax-funded revenue to paying these subscriptions, in order to remain competitive and avoid lawsuits due to their frustrated, not legally trained employees struggling to access the publications they need.

Many journals have restrictive copyright agreements that force scientists to take down publicly accessible links to their publications. Laws being considered, such as SOPA (the so-called "Stop Online Piracy Act"), will give publishers more power to intimidate authors and restrict legitimate fair use, even to the point of taking down an entire website (such as the incredibly valuable arXiv (arxiv.org) preprint service) due to a single infringement. Today's scientists are responsible for almost all typesetting and visual layout of their publications, so most journals add little if any value.

Taxpayers deserve immediate free and open taxpayer access to and reuse of federally funded publications. If an author received federal funding, the resulting publication should be accessible to all taxpayers. There should be no embargo period on open access. Information inevitably leaks abroad rapidly to countries in direct competition with the U.S. where copyright laws cannot be enforced. An embargo would put U.S. researchers at a disadvantage. Furthermore,

all federally funded publications should be covered under this policy, not just journal publications. Journal articles may appear only a year or more after their publication (one of my journal articles was finished in 2008 and may only appear this year), whereas conference and workshop proceedings typically appear much sooner. An embargo on the latter would only delay the dissemination of in-progress research.

I am writing this e-mail from my personal e-mail address rather than my work address, because I am currently out of the country on personal business and do not have easy access to my work e-mail. This issue is of deep concern to me and I felt I had to respond, even at risk of using an unofficial e-mail address.

Many thanks for your consideration of these matters.

Respectfully yours,
Dr. Mark Hoemmen
Sandia National Laboratories, New Mexico

Subject: Request for Information: Public Access to Peer-Reviewed Scholarly ,Publications

Date: January 2, 2012 9:23:22 PM EST

To whom it may concern

I am a professor of computer science at MIT who has published over 150 articles in peer-reviewed publications. For several years I served as "electronic publications chair" for SIGACT, the theory group of the Association for Computing Machinery. I do research on information retrieval and management including user interfaces and the Semantic Web.

As co-PI of the SIMILE project (<http://simile.mit.edu/>) I worked with MIT libraries developing tools for long-term archiving and management of digital artifacts. The Library of Congress is currently funding us to develop these tools further

(<http://www.simile-widgets.org/exhibit3/Exhibit3%20press%20release.pdf>). I work hard to provide open access to (draft versions of) all my publications (<http://people.csail.mit.edu/karger/papers.html>) .

I strongly support legislation requiring open access publication of federally funded research. As a scientist who often receives federal funding and who publishes frequently, I have a significant stake in this question and am eager for the opportunity to give my work away. The major obstacle to doing so is the publishers, both commercial and nonprofit, who wish to profit by gate-keeping access to our work.

The key point I wish to make is that the most effective action for the government to take is small and targeted: it should simply require that all recipients of federally funded research provide open access to (the camera ready version of) all of their publications, using whatever common publication format is used in their own domain (I expect that for many domains this would be pdf format). The government should not be diverted from this step by wrestling over relatively unimportant question like standardizing around specific machine-readable citation standards or designing and building a central repository of published articles. The forces that will accomplish these refinements already exist, barred from acting only by the refusal of publishers to make their peer-reviewed content available for access.

Addressing question 1: I do not believe that government can or should grow existing or new markets. If the government simply forces open access, these markets will emerge on their own without encouragement.

It is worth noticing the number of tools, such as Citeseer, Google Scholar, and Microsoft Academic search that have emerged despite the lack of open access. These tools currently make do with material that authors publish

voluntarily online. If peer-reviewed publications were forced open, these tools would get substantial better and more useful, and other tools would emerge to complete with them.

Addressing question 2: I do not believe that publishers should be considered to hold any "intellectual property interests". They are publishing the work of scientists, which has been reviewed by other scientists. These days, publishers rarely even provide editing services, instead publishing whatever "camera ready copy" is provided by the authors. The other stakeholders all accrue benefit through open access publication. The federal government, which funds the research,_does_ have intellectual property rights, and that they should be able to exercise those right to demand open publication of the work they have funded.

Addressing question 3: I believe that the weight of history favors decentralized approaches combined with shared standards. I believe that the ideal legislation would simply require every federally funded scientist to publish their work (i) at a web accessible location and (ii) with bibliographic information in some machine readable format. If this is implemented, a variety of existing and future services such as citeseer, google scholar, microsoft academic search, and DBLP can compete to offer the best aggregation services. As for archiving, this is something which our numerous (decentralized) university libraries have been doing very well, and are well suited to continue doing.

Addressing question 4: I do not believe that new public-private models are necessary, as an existing public-private model, the university, has substantial experience in archiving and dissemination of material. Just as they have served as archives for paper publication, they have been developing substantial expertise in archiving of digital publication. If they can get access to that digital content, they will do a great job archiving and disseminating it.

Addressing question 5: I encourage providing the research community sufficient flexibility to innovate on this question over time, instead of enforcing a standard at the beginning. It is unlikely that every discipline will benefit from the same standards, so undesirable to impose one. Simply requiring that the publications themselves be openly accessible will be enough to break the publishers locked gate; innovation will follow naturally. For example, the Dublin Core has emerged as a de-factor standard for describing basic publication data; numerous projects make use of it and numerous tools produce it.
Requiring use of Dublin Core metadata would not be too onerous, but I also feel it would not be necessary. Aggregation tools like those I described above have worked quite successfully with the raw documents.

Addressing question 6: I work in a field that is eager to disseminate information. A requirement to provide open access would be no burden at

all. Instead it would remove the current burden, of simultaneously managing a "locked" copy on behalf of the publisher and a "draft" that we try to make publicly available. The simplest possible requirement would be to provide, with any application for federal funding, a complete list of (publicly accessible) URLs of articles that were the product of federal funding. The federal government could turn around and publish such lists, unaltered, where they become the raw material for the aggregation services mentioned above that need to find the articles. In general, my list will simply grow over time as I publish additional work; occasionally, I will need to revise the list to reflect moved documents. An alternative would be to require the submission of just a single link, where a document could be found listing the given publications.

Addressing question 7: In my field, the vast majority of cutting edge research appears as conference publications, with journals trailing years behind if at all. Thus, it is essentially to include conference proceedings in the publication requirement---they are the de facto journals for computer science.

Addressing question 8: I believe any postpublication embargo period is damaging. There may be value to researchers in delaying publication of their results while they exploit them for private gain. But researchers already have the opportunity to "embargo" their research for as long as they wish simply by delaying publication. I can think of no case where researchers need to publish their work in order to accrue the private benefit. Note that when they publish in a peer-reviewed journal, they are immediately making the work available to a large population of scientists with access to the publication. Given that the work is federally funded, I see no justification for the public at large to be prevented from accessing the work at the same time. Work in my field also moves exceedingly fast: work published in a conference is often obsoleted by follow-on work published in a conference 3 months later. Thus, an embargo of even a month could noticeably impact the pace of research.

Thanks for your attention
David Karger
Professor, EECS
MIT Computer Science and AI Laboratory

Subject: 2011 White House RFI on public access

Date: January 2, 2012 9:31:52 PM EST

I am writing in regards to the Request for Information (RFI), asking individuals and organizations to provide recommendations on approaches for broad public access and long-term stewardship to peer-reviewed scholarly publications that result from federally funded scientific research. I wished to provide a response that suggests all peer-reviewed publications resulting exclusively from federally funded research be placed in to the public domain immediately upon completion. My rationale is that all deliverables from federally funded research, including publications, should be released to the public except when doing so jeopardizes national security. Regarding the management of these publications, I would suggest that the United State government be held directly responsible for archival management of all publications and that access to that archive be free and widespread. Ideally, in the so-called information age, this requires an Internet database/catalogue of the electronic form of the delivered, peer-reviewed publications. If these publications are also submitted to commerical journal databases, then the USG maintains the right to reproduce and republish those articles accordingly.

Thanks,
Travis Humble

Subject: Public Access RFI Comments

Date: January 2, 2012 11:12:05 PM EST

Eli [Paster](#)

Ph.D. Candidate/Massachusetts Institute of Technology
Cambridge, MA 02139

Comment 1 : Scientific articles that are made publically available can initiate and aid economic growth in various ways. Articles that are made publically available may be more widely read, cited, and the information contain therein be used in applied industrial, academic, research and development settings. More widely available articles can increase the overall efficiency of the scientific enterprise by keeping various organizations and research groups within both academic and industrial settings up-to-date with relevant research. Furthermore, start-up companies and small businesses can spur economic growth and innovation by referencing such published works, licensing and incorporating this work into their products, and contributing to the development and exploration of such work in the future. In order for such a system to maximize economic growth opportunities, full access to the published articles and additional materials should be included.

Comment 2 : Reference should be noted to the current system implemented by the NIH, a system that currently maintains the intellectual rights and interests of the parties involved. A similar system for the current proposed expansion of public access to all federally funded research is recommended.

Comment 3 : The collection of data and the location of a centralized repository may open up the possibility of new data mining tools, techniques, and studies that can not only enhance the utility of data presently available, but could also aid in the development of future scientific research and development. A centralized system offers advantages over disparate, satellite sites

because of the added ease in congruency and fluency through which a central repository site can be navigated, and because standardization in tagging, classifying, and storing research aids researchers during the search and discovery process.

Comment 4 : No comment at this time.

Comment 5 : No comment at this time.

Comment 6 : No comment at this time.

Comment 7 : Conference proceedings encompass a significant portion of published scientific research and should be included under consideration to be made publically available. Other media material, such as video, audio, or web-content, that is easily digitized and is primarily funded by the federal government should also be made available via public access.

Comment 8 : Zero to Twelve months. Immediate access would be the most ideal case for scientists, academic institutions, individuals, students, and industrial groups. Twelve months is a long-time to wait research publications, but as an archival tool, and as older research is commonly referenced and used in progressing current and future research, 12 months would be an acceptable maximum amount of time.

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
GRADUATE STUDENT COUNCIL

General Council Meeting
December 7th, 2011

58gsc.7.3

**Resolution on Public Access to Peer-Reviewed Scholarly
Publications**

Whereas, the Massachusetts Institute of Technology (MIT) Graduate Student Council represents the graduate student population at MIT; and

Whereas, access to scholarly articles is a critical component of the education and research undertaken by graduate students; and

Whereas, public access to scholarly publications would benefit the graduate student population in their scholastic, research and entrepreneurial pursuits; and

Whereas, public access to scholarly research could result in a broader dissemination of publications authored and read by graduate students; and

Whereas, the United States Office of Science and Technology Policy (OSTP) has put forth a Request For Information (RFI) on how open access to federally funded research will affect participating parties, among which are graduate students; now, therefore, be it

Resolved by the Graduate Student Council in meeting duly assembled, that the MIT Graduate Student Council endorses the attached letter in response to the above-mentioned RFI.

Resolved by the Graduate Student Council in meeting duly assembled, that the MIT Graduate Student Council encourages individual students to submit their opinions in response to the RFI within the prescribed deadlines set forth by the Office of Science and Technology Policy.

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
GRADUATE STUDENT COUNCIL

To: Office of Science AND Technology Policy

From: MIT Graduate Student Council
Massachusetts Institute of Technology
Cambridge, MA

[*Special Note to GCM: Questions are listed here: <http://www.gpo.gov/fdsys/pkg/FR-2011-11-04/pdf/2011-28623.pdf>*]

Comment 1: Open access allows all educational institutions, regardless of size or funding, to educate the next generation of scientists and engineers with up to date and relevant information. When students leave the academic community, typically by graduating, they lose access to journals. Without access to both new ideas and archives of older research, young scientists and engineers are less able to innovate and invent. Open access will enable entrepreneurs and small businesses to take advantage of publicly funded research and grow the economy.

The costs of these extraordinary benefits are low. Today, we can take advantage of the very low marginal cost of distributing content electronically through the Internet. A demonstration of these low costs is the NIH Public Access policy, which at around \$3.5M annually represents approximately 0.01% of the organization's \$30B annual budget.

Comment 2: The intellectual property interests of those involved with scholarly publication can best be addressed with disclosure of any new public access policies. This will enable stakeholders to make informed decisions about how to publish and distribute research material. The need for peer reviewed scientific literature will always exist.

Comment 3: Centralized collections simplify data mining and other content intensive research. Splitting content across several repositories could work, provided that the collections are sufficiently interoperable and accessible. The existence of a federally centralized and maintained collection would not prevent interested private parties from building and maintaining similar systems. Federally maintained archives would ensure that content remains available in the long term, independent of private sector disruptions.

Comment 4: No comment at this time.

Comment 5: No comment at this time.

Comment 6: Federal agencies that fund science can maximize the benefit of public access policies to the U.S. taxpayers by mandating that scholarly publications that result from federally funded research are available to the U.S. taxpayers. Federal agencies can maximize their investment in peer-reviewed literature, while minimizing the burden and costs for stakeholders by establishing a public access policy that:

- (1) Does not add any additional cost to the author to publish in a public repository;
- (2) Does not add any additional cost to libraries to access the public repository; and
- (3) Facilitates and streamlines the process of publication submittal between publishers and the public repository, thereby not adding any additional cost to the publishers.

Comment 7: Peer-reviewed conference papers and proceedings represent a significant portion of published literature and information that is relevant to their respective fields. Due to both their impact and contribution, these types of publications should be included in the same category as journal articles with respect to public accessibility. Furthermore, conference proceedings and papers allow authors to share their research with the broader community as it progresses. Public access to such publications will enable others to keep up-to-date with current and future trends on specific subjects, enabling a fast dissemination of knowledge throughout the research process.

Comment 8: Public access to federally funded research should be granted with an embargo period between 0-12 months. A longer embargo period would significantly inhibit the dissemination of up-to-date information.

From: Cheng Hsiao
Subject: public access to peer reviewed research
Date: January 3, 2012 10:50:52 AM EST
To: publicaccess@ostp.gov

It requires considerable investment to maintain the highest standards for peer-reviewed scientific publication and sustainable mechanisms are required to enable this system to cooperate. This could be threatened by access policies that do not take these costs into account, and it is critically important that any new policies do not damage the publishing institutions on which the Federal Government and science depend.

cheng hsiao

January 2, 2012

Office of Science and Technology Policy (OSTP)
and
National Science and Technology Council (NSTC)
Sent via email to publicaccess@ostp.gov

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

The Kauffman Foundation, as the nation's largest foundation devoted to furthering entrepreneurship and innovation, has a strong interest in high-quality social science research relating to the conditions under which entrepreneurs are most likely to develop and succeed. As well, the Foundation is among the largest, if not the largest, private funders of economics-based research in the United States. Taking into account both our purpose and similar role in funding research, we are pleased to offer comments on the Office of Science and Technology Policy's (OSTP) and National Science and Technology Council's (NSTC) request for information related to "Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research."

Before we respond to the specific questions raised in the request, we saw some topics that were omitted from the call which seem as or more important to advancing scientific innovation. Even more important than simply providing open access to peer-reviewed publications is the release of the intermediate data and methodologies that stand behind the research. Much scientific research is no longer able to be replicated, or even completely understood, simply by reading the 'methods' section of a scientific article. Research is now made up of complicated procedures, combined datasets, and complex computational algorithms all used to create new knowledge. Mandating that federally funded research make the entire scientific process more open and freely available will ensure that scientific results can be replicated, new methods can be easily created, and new knowledge can be built on what we already know. In addition, by creating a mechanism for publicizing computational methodologies, knowledge that can be used for commercialization will be disseminated and the creation of new companies will be fostered.

While we recognize this discussion is very discipline-specific, we see opportunity for cross-disciplinary impact through the creation of an online federal repository for the data and methods underlying federally funded research. While the actual repository would be just of federally funded research, the metadata, procedures, and overall processes could become standards within the industry. This is an area of standardization that, to our knowledge, has not advanced as quickly as some other areas of scholarly research search-and-storage practices.

Beyond this overall comment, we have arranged our comments directly in response to the requested questions from the Task Force on Public Access to Scholarly Publications:

- (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 publicly 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?*

Unfortunately, embargoes as currently used are entirely backwards when it comes to scientific freedom. There is immediacy to new scientific knowledge, so new papers are more valuable. However, we currently operate under the assumption that the papers at the frontier of knowledge should be trapped behind paywalls (at least for a certain amount of time), rather than open to all.

So, how should we think about embargoes for science? There are two components in new scientific knowledge: the data and underlying computational methods behind the research, and the final research results embodied in the scientific paper. While the data and computational methods are vital to a scientist's ability for new discoveries, the scientific paper is the end result and should be promulgated as quickly as possible.

Therefore, while an embargo can be constructed for the data and underlying methods, with public dissemination six to twelve months after publication through placement in a public repository, no such embargo should exist for scientific publications. Many newspapers allow free access to new articles, with articles older than a certain amount of time behind a paywall. A similar model could be used for federally funded research. During the first month of an article's release, when it is perhaps most scientifically valuable, an article should be open access. After this month, for example, a small charge could be levied for access to older articles. Of course, this shouldn't be a burdensome cost to the reader, as, ultimately, it is vital that federally funded research be open in order to encourage new knowledge creation.

But how could these be achieved? Ultimately, we want to focus on two steps that would encourage this possible end goal. First, the federal government must actively continue the person-level databases necessary to track the people undertaking federally funded research and the research they are undertaking. We will return more to that topic shortly. Second, federal funding agencies need to consider how such policies to

encourage open access to timely scholarship could be implemented without too much hardship on scholarly publishers. One possible solution would be a nominal open access fee that could become standard within federally funded grants above a certain threshold, much like administrative costs are standard in academic grant proposals. Institutions would include this very marginal fee in new grant proposals to federal funding agencies; it would be collected by research institutions in an “open access fund,” and then paid to publishers of academic materials when a journal article was accepted in recognition that the journal article would be made free to the public for a set amount of time.

- (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?*

How can journals be viable under this model? The traditional scientific publishing model is obsolete. It is time for the decoupled journal, where distinct functions of the journal—peer review, editing, and more—can be accomplished separately and more cost-effectively. Others, including Priem and Hemminger (http://www.frontiersin.org/computational_neuroscience/abstract/14455),¹ have written on this topic.

Ultimately, what is important is that we ensure that scientists are given credit for their own work and are provided a certain amount of priority in dealing with their own novel datasets and findings, and that science is disseminated rapidly so it can be built upon to create discoveries and even the commercialization of knowledge. Everything else—such as maintaining the current publishing business models—is secondary.

That said, we recognize that these academic systems are very rigid and that the inherent tensions in academia to publish or perish do not lend themselves to bold movements. If a means of compensating existing publishers for the important service they provide through incorporating something like the proposed “open access fee” into new grants made federally is not agreeable, then perhaps the federal funding agencies

¹ A pre-review copy is available at https://docs.google.com/document/d/1xDOy9GXXrUFc9TUIR2C470DTau8JEgZ9k-SMNIx5pb8/edit?hl=en_US&authkey=CMeCqOYD&pli=1. We recognize the irony that the final journal copy of the article is currently blocked for download by the general public; although we do not know if this research received any public funding.

and publishing industry could reach another agreement on how best to allow for open access using existing systems.

- (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?*

The commercial marketplace, from Google to many others, have actively expanded access to published research recently, even if some of the final articles eventually remain behind firewalls. If the federal government wants to encourage open access to its funded research, ultimately it has to be able to track the people producing that research much better than it currently does. While nascent efforts are underway through programs such as STAR Metrics, this work should be accelerated and, ideally, more information on the underlying names of people receiving federal funds made public. STAR Metrics uses administrative records from universities to collect person-level, longitudinal information on the people involved in carrying out federally funded research. Finding a way to expand STAR Metrics so that it begins to cover the universe of federally funded programs moving forward, integrate with other new efforts to create a uniform researcher ID (such as ORCID) that would track researchers across time, and ultimately use this data to interface with commercial publications databases is imperative. If existing databases (and their metadata standards) could be adapted to include a “federally funded” tag that was either designated by the author or arrived at through an administrative process, then this tag could be incorporated into the very smart systems that publishers have for tracking the places from which people are trying to download their publications.

It is of note here that we are primarily talking about a means of addressing this issue moving forward; addressing access for existing and past publications is an entirely different issue and one that probably would be best left until a later time. With timely research being the most important for driving innovation, putting in place a new regime of agreements and standards is most important.

- (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?*

There has been a proliferation of models in recent years, so we won't be able to give a full account except for those in which we are involved. We engaged a private company, Social Science Research Network (SSRN), some six years ago to help us expand the repositories available for entrepreneurship scholarship. Under the terms of our agreement, we provided seed funding for their expansion and a per-university flat fee for use of the network. Such a setup allowed SSRN to spend resources establishing the network; Kauffman money was spent only when users were actually using the network. SSRN is also an interesting example: By entering into hosting agreements with educational institutions around the world, it has worked around some issues about how its data ultimately will be curated. Other foundations, such as the Sloan Foundation, have interest in this space, too, so as public-private partnership is explored, perhaps we could help to be catalysts. Mellon's early involvement in setting EconLit is a great example of how we can help to influence this space.

- (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?*

This doesn't seem to be a big problem with final, published research, from our view. The march of companies like Google and others into this space seems to be pushing parties to have interoperable systems for the basics of a given article/citation. As stated previously, the problems lie more with the underlying data and procedures used to create the research. Those things are not currently very transparent.

- (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?*

We have proposed two actions that could lead to a possible solution: the "open access fee" and an expanded STAR Metrics (or similar) database. Our proposal has the advantage of working through existing infrastructures. The "open access fee" could be incorporated into new grant proposals to federal agencies, collected from the federal government by research institutions, and paid to journal publishers in return for open (or at least more open) access to the research when research is published. An expanded STAR Metrics program would create the people-level records necessary to more automatically track what federally funded research is being produced by whom.

Additional possibilities might exist around an expanded PubMed or other proven discipline-specific solutions.

- (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?*

The boundaries between forms of scholarship increasingly are blurred. We believe the focus should be on the peer-reviewed journal articles, realizing that this focus also will include many conference proceedings and book chapters. But the infrastructures for systematically addressing these latter two forms of scholarship in a standardized fashion are considerably more nascent.

- (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?*

As stated earlier, it's not clear to us that the focus of the embargo period is correctly placed. Priority should be given to open, immediate access with perhaps then the embargo period coming after a delay.

Please feel free to contact us (816.932.1000) to clarify any of these comments or request additional information.

Sincerely,



Samuel Arbesman, PhD
Senior Scholar, Research and Policy
sarbesman@kauffman.org



E.J. Reedy
Research Fellow
ereedy@kauffman.org

Below are a few comments to some of the questions in your recent RFI. PLEASE NOTE: while I live in Canada, I am a USA Citizen.

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James P. Kehrer, Ph.D.

Professor and Dean

Katz Group Centre for Pharmacy & Health Research 3142C
University of Alberta

(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 do not believe additional steps are needed to protect the interests of publishers, scientists, etc. However, mandating release of information immediately would remove protections. Specifically, the intellectual property of the scientists is developed through Federal funding, but should not be “owned” by such funding. Similarly, the value added to publications by a publisher must receive some protection. It requires considerable investment to maintain the highest standards for peer-reviewed scientific publication and sustainable mechanisms are required. This is threatened by access policies that do not take these costs into account, and it is critically important that any new policies do not damage the publishing institutions on which the Federal Government and science depend.

(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?

The one pro is that there would be consistency. This is counterbalanced by many cons including cost of creating something new when what we have is working well. In fact, 97% of researchers in the USA are happy with access to journal articles. A federal agency should not maintain custody of all published content – except perhaps as a secondary/backup archivist. The publisher has a responsibility in this field and should meet that responsibility. On the other hand, creating federal standards so there is inter-publisher consistency would be very useful.

(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?

Simply (well, I am sure it will not be simple) require publishers to provide access after the defined embargo period.

(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?

Peer-reviewed work is the ONLY work that should be covered by public access. Anything else will have no quality standard. Furthermore, book chapters and conference proceedings lag rather significantly the publication of original data and duplicate such data and are thus not necessary to be covered.

(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?

I believe the appropriate embargo period should be 6 months. This is the period chosen by many publishers already, and provides sufficient time for “new” information to be available at a higher cost (like a patent) while making it available to all in plenty of time for everyone to benefit.

To whom it may concern:

I am a research scientist who recently graduated with my PhD in Computer Science, specifically machine learning. Before I started my PhD I was unemployed because the dot-com crash of 2000 had just occurred and my startup company went under like so many others. There is no way I could have afforded to pay for any scientific articles to read while I was unemployed. Moreover, I had lost both my parents earlier that year along with my job and was in desperate need of mental fortification against depression that threatened to overcome me. I found solace in scanning the free preprint server called <http://arxiv.org/> each and every day and found that I could enjoy math and computer programming at a deeper level than I had ever been able to before perhaps because of my need to cope with grief and move on in a meaningful way. I found meaning in the papers I read and started to write computer programs to study, simulate, and verify the papers and results that were simple enough for me to understand. I sent these programs via email to computer science professors at far-away universities and soon enough was offered a PhD position. I gladly accepted this offer for a new life and new direction and it had the desired therapeutic, intellectual, and economic effects. Six years later I have graduated with my PhD and had a couple decent papers published that continue to be of interest in the scientific community and generate enough economic derivative impact to have led to several patents, none of which I hold. I have inspired students in America, Italy, and other countries by participating in classroom exercises utilizing the new research area of machine learning using data compression. The work has been applied to automatic machine translation of human languages, national security and defense, biological genetic, immunological, and neural signal analysis, and text authorship detection to name a few of the more significant areas. I also have new friends and a new community of support around the world and feel more a part of a global society of scientists.

Moreover I am much more able to contribute to America's economy now with the skills that I developed in that time period. None of this scientific research would have been possible without the free preprint server. I feel honored to be able to upload some of my preprints to this server and have noticed through email that its existence continues to stimulate interest around the country and the world in the line of research that our group helped pioneer. The economic benefits of opening the doors of opportunity to people in difficult situations cannot be emphasized enough and America cannot afford to turn its back on its future scientists and engineers by shutting down the free access to scientific information that we have enjoyed on the internet since its inception. Please realize that even a small fee of just a few dollars per article is enough to keep almost all of the taxpaying public (our as-yet undiscovered scientists) out of the scientific loop entirely at the most important point in their careers: the beginning, before they are able to get paid to do science. It is this group that we must

encourage with our policies and acknowledge their contribution to our work with their tax payments by providing as much open access as possible. We must continue to carry our noble egalitarian tradition of true enfranchisement in higher education for all people who have the interest and ability to pursue it. We must appreciate the unique inspirational qualities that only the internet can bring in its low cost delivery of textual information to all people. If we value science and our future economy, it is imperative to keep the positive feedback cycle of higher education flowing through the internet to allow the new Digital Renaissance for scholars everywhere to continue to unfold. Never before have so many people around the world had access to the internet through inexpensive devices like mobile phones, and thus we have never had so much to lose. Please don't let us down.

Rudi Cilibarsi
Machine Learning Researcher and Scientific Author

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Happy to Code with Integrity!

<http://www.nspe.org/Ethics/CodeofEthics/index.html>

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January 4, 2012

To: Office of Science and Technology Policy
Executive Office of the President
725 17th Street Room 5228
Washington, DC 20502

From: Alan M. Garber, Provost
Harvard University

Alan M. Garber

Re: Harvard response to the White House RFI on OA publications

I write on behalf of my colleagues at Harvard University in response to the White House Office of Science and Technology Policy request for information on “Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research.” In summary, we strongly support White House action to require and enhance public access to government-funded research. We provide our general recommendations, as well as more detailed responses to the eight particular questions that were called out in the RFI below. However, we emphasize that decisions on many of the detailed issues under discussion here and in the other responses to the RFI are secondary to the general principle of requiring public access.

We endorse the view that every federal agency funding non-classified research should require free online access to the full-text, peer-reviewed results of that research as soon as possible after its publication. There are three powerful reasons to take such a step. First, taxpayers deserve access to the results of taxpayer-funded research. It is their right. Second, public access maximizes the visibility and usefulness of this research, which in turn maximizes the return on the public’s enormous investment in that research. Third, public access accelerates research and all the benefits that depend on research, from public health to economic development, manufacturing, and jobs.

The United States already recognizes the public interest in amplifying the impact of publicly funded medical research. A strong public-access policy has been in place at the National Institutes of Health (NIH) since April 2008. But the same interest calls on us to amplify the impact of publicly funded research in every field, from alternative sources of energy to American history and culture. The NIH policy has been good for professional researchers, good for lay readers, good for medical professionals, good for patients, good for the NIH, and good for taxpayers.

If the NIH policy is flawed, it is for allowing needlessly long delays before the public gains access to this body of publicly funded research, and for allowing needless

restrictions on the public use and reuse of this research. The NIH policy should be strengthened in these two respects and the strengthened version of the policy should be extended across the federal government.

Even Harvard University, whose library is the largest academic library in the world, is not immune to the access crisis motivating much of the campaign for public-access policies. In fact, the Harvard library system has had to make a painful series of budget-driven journal cancellations, and we are deciding on a set of further cancellations at this very moment.

With respect to some of the specific questions posed in the request for information, we provide our recommendations below.

(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 publicly 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?

We will separate the economic from the non-economic questions in this cluster, and address them separately.

Are there steps that agencies could take to grow existing and new markets...? How can policies for archiving publications and making them publicly accessible be used to grow the economy? ...What are the relative costs and benefits of such policies?

Yes, there are steps to grow new and existing markets arising from access to cutting-edge research. The most important step is to require public access (also called open access and free online access) to the final versions of the authors' manuscripts of peer-reviewed articles arising from publicly funded research.

Businesses need access to cutting-edge research to stimulate innovation, for example to develop new medicines, reduce the size and energy requirements of computer chips, strengthen lightweight composite materials, reduce harmful emissions from fossil fuels, increase the efficiency of solar panels, and make food safer. Public access to publicly funded research nourishes R&D in these industries, allowing them to develop new products, improve existing products, and create jobs.

The question is not whether useful, publicly funded, basic or pre-competitive research will continue. Even in an age of budget cuts, it will continue. The question is whether we will make the results of that research easily available to all those who can make use of it, or whether we will allow it to be locked down by a private interest at the expense of the public interest.

In March 2011, the UK Science Minister, David Willetts, held a Roundtable on precisely these topics. (Disclosure: Two members of the Harvard community were invited participants.) Willetts released the results of his ministry's deliberations in mid-September. One of his chief conclusions is directly pertinent to the current

RFI: <http://nds.coi.gov.uk/content/Detail.aspx?ReleaseID=421232&NewsAreaID=2>

Research stimulates and fuels innovation and economic growth. So, to maximise UK innovation we need to maximise access to and the use of research findings.

Just last month (December 2011) the UK Department for Business, Innovation and Skills converted the Willetts Roundtable results into national policy. From the Department's executive summary: <http://www.bis.gov.uk/assets/biscore/innovation/docs/i/11-1387-innovation-and-research-strategy-for-growth.pdf>

To succeed in the global innovation economy, the UK must strengthen its ability to accelerate the commercialisation of emerging technologies....We [seek] to ensure that government policies stimulate, rather than hinder, UK innovation through...[i]ncreasing access to public data or to knowledge created as a result of publicly funded research.

In October 2011, the HOST consulting group addressed the same set of topics in a report commissioned by the UK Joint Information Systems Committee (JISC), "Benefits to the Private Sector of Open Access to Higher Education and Scholarly Research," October 2011. Excerpt from the HOST/JISC report:

http://open-access.org.uk/wp-content/uploads/2011/10/OAIG_Benefits_OA_PrivateSector.pdf

A substantial body of research literature establishes the benefits to private sector businesses of publicly funded research. Mansfield (1991,1995,1998), Beisea and Stahle (1998) and other studies provide evidence of tangible economic benefit, in particular in terms of product innovations achieved and revenue gained through enhanced sales. The work of Houghton et al. (2011) confirmed these conclusions and also drew out the benefits of access to research in terms of shortening product and service development cycles. This study confirms the importance placed by businesses on access to scholarly research and its broad impact in terms of product, service and process innovation....Open Access publishing provides a way of opening much more university and scholarly research to the business sector....[M]ost businesses spend considerable amounts of time working around paywalls....The review suggests that, at a time of accelerating pressure on SME [small and medium-sized enterprises] competitiveness, a shift to Open Access would create significant cost savings by enabling businesses to review more quickly the relevance of individual papers and act accordingly. By boosting discoverability OA may also add value directly to levels and speed of knowledge transfer in this part of the economy.

The HOST/JISC report cites the research of economist John Houghton at Victoria University in Australia. Houghton has done the most extensive and careful research on the economic impact of national open-access policies.

One of Houghton's most recent studies, commissioned by Denmark's Agency for Science, Technology, and Information [Forsknings- og Innovationsstyrelsen, or FI], focused on how public access helps small and medium-sized businesses: "Access to Research and Technical Information in Denmark," FI, April 2011. Among his findings: <http://goo.gl/pfAf6>

Research articles, patent information, scientific and technical standards, technical and market information were seen as the most important information sources [for small and medium-sized businesses, SMEs]. Forty eight per cent rated research articles as very or extremely important, and among those in research roles a higher 64% did so....More than two-thirds reported having difficulties accessing market survey research and reports and Doctoral or Masters theses, 62% reported difficulties accessing technical reports from government agencies and 55% reported difficulties accessing research articles....[R]esearch articles and market survey research and reports are seen to be both important and difficult to access....Use of Open Access materials is widespread. More than 50% used free institutional or subject repositories and Open Access journals monthly or more regularly, and among researchers 72% reported using free institutional or subject repositories and 56% Open Access journals monthly or more regularly....Access barriers and delays involve costs. It would have taken an average of 2.2 years longer to develop or introduce the new products or processes in the absence of contributing academic research. For new products, a 2.2 years delay would cost around DKK 36 million (EUR 4.8 million) per firm in lost sales, and for new processes it would cost around DKK 211 000 per firm.

An earlier Houghton study focused on the United States: "Economic and Social Returns on Investment in Open Archiving Publicly Funded Research Outputs [in the United States]," SPARC, August 4, 2010. From the summary:

<http://www.arl.org/sparc/publications/papers/vuFRPAA/index.shtml>

<http://www.arl.org/sparc/bm~doc/vufrpaa.pdf>

Preliminary modeling suggests that over a transitional period of 30 years from implementation, the potential incremental benefits of the proposed FRPAA [Federal Research Public Access Act] archiving mandate might be worth around 8 times the costs. Perhaps two-thirds of these benefits would accrue within the US, with the remainder spilling over to other countries. Hence, the US national benefits arising from the proposed FRPAA archiving mandate might be of the order of 5 times the costs.

These results confirm Houghton's September 2006 study on Australia: "Research Communication Costs in Australia: Emerging Opportunities and Benefits." Excerpt:
<http://goo.gl/Rnnns>

Expressing these impacts as a benefit/cost ratio we find that, over 20 years, a full system of institutional repositories in Australia costing AUD 10 million a year and achieving a 100% self-archiving compliance would show: [1] A benefit/cost ratio of 51 for the modelled impacts of open access to public sector research (i.e. the benefits are 51 times greater than the costs); [2] A benefit/cost ratio of 30 for the modelled impacts of open access to higher education research; and [3] A benefit/cost ratio of 4.1 for the modelled impacts of open access to ARC [Australian Research Council] competitive grants funded research.

Finally, a Houghton study from July 2006 used conservative assumptions to conclude that an OA policy could add billions to the U.S. economy: "The Economic Impact of

Enhanced Access to Research Findings.” Excerpt:
<http://www.cfses.com/documents/wp23.pdf>

With the United State’s GERD [Gross Expenditure on Research and Development] at USD 312.5 billion and assuming social returns to R&D of 50%, a 5% increase in access and efficiency [Houghton’s conservative estimate] would have been worth USD 16 billion.

Some publishers have criticized John Houghton’s research, and are likely to repeat their criticisms in this RFI. We ask the OSTP to look closely at Houghton’s methods and data rather than taking the judgment of stakeholders who have an economic interest in dismissing his conclusions. In our judgment, JISC (on Houghton’s behalf) and Houghton himself have adequately answered all these criticisms.

JISC Response [on behalf of Houghton et al.] to: Some comments prepared jointly by The Publishers Association, the Association of Learned and Professional Society Publishers and the International Association of STM Publishers on the report “Economic Implications of Alternative Scholarly Publishing Models: Exploring the costs and benefits” by Houghton et al. & Oppenheim et al., commissioned by JISC (published January 2009)
<http://www.jisc.ac.uk/media/documents/publications/responseoneiaspmreport.pdf>

John Houghton and Charles Oppenheim, “Widening access to research information: A response,” January 2010. [http://www.cfses.com/EI-ASPM/Comments-on-Hall\(Houghton&Oppenheim\).pdf](http://www.cfses.com/EI-ASPM/Comments-on-Hall(Houghton&Oppenheim).pdf)

Public access not only facilitates innovation in research-driven industries such as medicine and manufacturing. It stimulates the growth of a new industry adding value to the newly accessible research itself. This new industry includes search, current awareness, impact measurement, data integration, citation linking, text and data mining, translation, indexing, organizing, recommending, and summarizing. These new services not only create new jobs and pay taxes, but they make the underlying research itself more useful. Research funding agencies needn’t take on the job of providing all these services themselves. As long as they ensure that the funded research is digital, online, free of charge, and free for reuse, they can rely on an after-market of motivated developers and entrepreneurs to bring it to users in the forms in which it will be most useful. Indeed, scholarly publishers are themselves in a good position to provide many of these value-added services, which could provide an additional revenue source for the industry.

The Houghton studies (above) show very high benefit/cost ratios for national public-access policies, and we’ve enumerated (above and below) some of the specific benefits of such policies for research and commerce. For the specific costs of implementing a public-access policy, the Department of Health and Human Services reports that “[a]nnual operating costs for [implementing the NIH policy], including ingest of articles, refinement of the submission system and search tools, staffing of a help desk and a central coordinating office for NIH, are approximately \$3.5–\$4.0 million per year. This represents a small fraction [about one one-hundredth of 1%] of NIH’s budget authority of more than \$30 billion per year.” <http://www.hhs.gov/asl/testify/2010/07/t20100729c.html>

Needless to say, every U.S. federal agency funding non-classified research is significantly smaller than the NIH, and could benefit from the infrastructure and workflow procedures created and refined by the NIH.

How can policies for archiving publications and making them publically accessible be used to...improve the productivity of the scientific enterprise?

Public access improves researcher productivity in many ways. By making published literature more visible and discoverable, public access prevents unintended duplication of effort. It prevents delays while researchers try to gain access to relevant articles they have discovered but cannot retrieve. It makes literature available to our hardware and software, not just to ourselves, and supports a fast-growing ecology of computer tools for mining and analyzing data and literature. It makes literature available to researchers outside the academy, such as those based at hospitals, museums, non-profits organizations, and for-profit manufacturing companies. By enlarging the audience for research, public access multiplies the chances that prepared users will be able to make use of the research and translate it into clinical treatments or marketable products and services.

Some of these productivity gains can be quantified. See for example Karim R. Lakhani et al., "The Value of Openness in Scientific Problem Solving," Harvard Business School Working Paper, October 2006. Excerpt:

<http://www.hbs.edu/research/pdf/07-050.pdf>

Lack of openness and transparency means that scientific problem solving is constrained to a few scientists who work in secret and who typically fail to leverage the entire accumulation of scientific knowledge available....Our study finds that the broadcast of problem information to outside scientists results in a 29.5% resolution rate for scientific problems that had previously remained unsolved inside the R & D laboratories of well-known science-driven firms.

What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?

One type of public access merely provides research results online free of charge. A second type provides research results free of charge and free of certain copyright restrictions. Only the second type frees research for data- and text-mining, translation, conversion to new formats, integration with other tools and bodies of research, and other value-added services. Hence the second type does far more than the first to amplify the benefits of publicly funded research.

Limiting the reuse of publicly funded research limits the return on our investment. If we are serious about maximizing that return on investment, we must lift restrictions on use and reuse, not just restrictions on access for reading. The public access policy at the NIH does just the former.

In practice, the way to free an article for use and reuse is to include a license or permission statement from the copyright holder explaining what the user may and may not do with it. An "open license" allows uses that would otherwise require the delay and expense of hunting down the rights-holder in order to ask permission.

In August, Phil Malone and Harvard's Berkman Center for Internet & Society released a report evaluating the copyright licensing policies used by certain public and private funding agencies. The report recommended that research funders require the use of open licenses for funded research. It articulates nine benefits of open licenses for researchers and the funders themselves. Here are the first four:

http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/OCL_for_Foundations_REPORT.pdf

- [1] Furthering the core components of the foundation's philanthropic mission.
- [2] Serving to expand the size and speed of the dissemination and visibility of supported work in ways that mere placement of those works on grantee or foundation websites rarely could, because of the "viral" spread of materials that open licenses allow. The foundation is able to "do more good with the same money." ... Thus, for example, the Wellcome Foundation sees unrestricted access as a "fundamental part of its charitable mission and a public benefit." ...
- [3] Enhancing distribution and use of foundation works by greatly increasing the ease and lowering the transaction costs of users obtaining "permission" to share and reuse the works. In the absence of open licenses, users have to seek specific, individual approval for most uses or distribution, a process that often delays or deters such uses.
- [4] Increasing the impact of the foundation's funding even more when the open license permits the work to be freely tested, translated, combined, remixed, repurposed or otherwise built upon, potentially by many subsequent researchers, authors, artists or other creators anywhere in the world, as the basis for new innovation, discovery or creation. Allowing broad adaptation and follow-on innovation can provide a magnification or leveraging of the original foundation funding that would be difficult to achieve otherwise.

There are many open licenses. We recommend the Creative Commons Attribution (CC-BY) license, which permits any use provided the user makes proper attribution to the author. We recommend against licenses that bar commercial use (such as CC-BY-NC), in part because they would limit the utility of publicly funded research for businesses and industry.

This type of public-access policy would not be unprecedented for the United States. In January 2011, the Departments of Labor and Education launched the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program, a four-year, \$2 billion funding program for open educational resources to be released under CC-BY licenses. <http://www.whitehouse.gov/blog/2011/01/20/new-job-training-and-education-grants-program-launched>

(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?

The existing policy at the NIH uses a simple and elegant method to provide public access without copyright infringement. The policy requires grantees publishing peer-reviewed articles arising from NIH-funded research to retain the non-exclusive right to authorize NIH to provide public access to the final version of their peer-reviewed manuscript. Hence, when grantees sign publication agreements, they may not transfer the full bundle of copyrights to publishers, as they formerly could. They may transfer all the rights the journal needs to publish the article, and more, but they may not transfer the right that their prior funding agreement requires them to retain. The result is that publishers do not acquire the full copyright bundle. Public access through the NIH repository, PubMed Central, is authorized by the authors, before they transfer rights to publishers, not by the publishers, after acquiring rights from authors. Public access is authorized by the rights-holders.

Some publishers dislike the policy because they would like to acquire the right that NIH-funded authors retain. But not even those publishers believe that the policy infringes any rights that publishers acquire. If they did, they would go to court. Instead they have gone to the legislature, and backed the so-called Fair Copyright in Research Works Act (H.R. 6845 in the 110th Congress and H.R. 801 in the 111th Congress), which would amend U.S. copyright law precisely to block the NIH policy and to prevent other federal agencies from following its lead. This is an acknowledgment that the NIH policy is lawful under current copyright law.

We ask the White House to use this sensible and effective method to secure the rights needed to provide public access without infringement. When disbursing public money for non-classified research, public funding agencies should obtain the non-exclusive right to make the results public. Any alternative would leave authors subject to irresistible pressure to transfer their rights to publishers, with the harmful effect of transferring the public-access decision to publishers as well. That would undermine the public mission of our public funding agencies, and put the interests of publishers ahead of every other stakeholder, including researchers, research institutions, and everyone who depends on the benefits of research from medical patients to technology manufacturers and consumers.

Under the NIH policy, publishers retain the fundamental right to refuse to publish any work for any reason, including NIH-funded work. Whenever they believe that the costs of publishing NIH-funded authors exceed the benefits, they may refuse to publish those authors. But to date, 100% of surveyed publishers accommodate the NIH policy.

http://oad.simmons.edu/oadwiki/Publisher_policies_on_NIH-funded_authors

(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?

The NIH policy requires public access through a central repository, PubMed Central.

The Federal Research Public Access Act (FRPAA, S.2695 in the 109th Congress, S.1373 in the 111th Congress) would have provided more flexibility. Under FRPAA, federal funding agencies Agencies could host their own public-access repositories, like PubMed Central, or they could ask grantees to deposit their work in any public-access repository meeting certain conditions of open access, interoperability, and long-term preservation. We support this flexibility.

FRPAA has not yet come to a vote. But the Swedish Research Council adopted a policy in October 2009 (taking effect in January 2010) with FRPAA-like flexibility. The SRC requires deposit in a public-access repository, and specifically approves deposit in suitable institutional repositories hosted by universities. The Irish Research Council for Science, Engineering & Technology (IRCSET) open-access policy of May 2008 positively encouraged the use of institutional repositories (“[t]he repository should ideally be a local institutional repository”), as did the European Commission’s open-access policy of August 2008 (grantees should deposit their EC-funded work “into their institutional or if unavailable a subject-based repository”). As far as we know, these policies have been implemented without problems.

<http://www.vr.se/inenglish/aboutus/policies/openaccess.4.44482f6612355bb5ee780003075.html>

<http://www.ircset.ie/tabid/142/tabid/102/default.aspx>

<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/548&form>

We support centralized access in repositories like PubMed Central and distributed access in suitable institutional repositories. Both solutions provide the important safeguard that the repositories are independent of publishers who have an interest in limiting access.

Public access through the web sites of private-sector publishers is very welcome. But it must not be the only source of public access to publicly funded research. The chief problem with publisher-hosted public access is its uncertainty. Public funding agencies like the NIH are in a position to regulate grantees, not publishers. Congress could regulate publishers, but we believe that it should not do so, and should steer clear of creating risks to the freedom and independence of the press. In the absence of the regulation of publishers, however, a federal policy of publisher-hosted public access would inevitably fail to achieve its own objectives. Publishers may assert that they will provide public access. However, their willingness and ability to provide public access would always be contingent and beyond the proper reach of federal power. Because we can achieve assured public access by revising federal funding contracts, or regulating federal grantees, there is no need to depend on uncertain (late, temporary, selective, and unenforceable) public access from publishers.

(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?

A reasonable public-access policy could provide that copies of peer-reviewed articles arising from publicly funded research be jointly hosted by federal agencies and private-

sector publishers. However, for the reasons spelled out in response to Question 3, public access should never be available solely through private-sector publishers. There are good reasons to require public access, and not merely encourage it, and there are good reasons for the federal government not to require affirmative acts from private-sector publishers. Moreover, there are good reasons to think that in the absence of legal obligations, public access from publishers would be variable and uncertain, undermining the fundamental rationale for a public-access policy.

Publishers have an understandable interest in traffic and download data from the repositories providing access publicly funded research. But that doesn't mean that publishers must be the sole hosts of those repositories. If those repositories are hosted by federal agencies (as the NIH hosts PubMed Central) or by the institutions employing the individual authors (as Harvard hosts DASH, or its Digital Access to Scholarship at Harvard repository), federal policy could require repositories to share traffic and download data with publishers.

(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?

We would like to see the repositories hosting publicly funded research comply with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), and eventually with its strengthened successor, the Open Archives Initiative Object Reuse and Exchange (OAI-ORE). We regard the open licenses recommended in response to Question 1 to be a kind of metadata, and would like to see them required for all articles arising from publicly funded research.

But we are not prepared to list all the standards with which publicly funded research results ought to comply. On the contrary, we believe that they cannot all be specified in advance and should be allowed to evolve. One reason is that some promising standards are still emerging, such as Activity data to Enhance and Increase Open-access Usage (AEIOU), Counting Online Usage of Networked Electronic Resources (COUNTER), Open Researcher and Contributor ID (ORCID), and Publisher and Institutional Repository Usage Statistics (PIRUS). Public access is urgently needed for research and the economy, and cannot wait for all the relevant standards to emerge.

(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?

To reduce the burden on awardee institutions, different federal funding agencies should adopt uniform public-access policies. Uniformity will not only reduce the burden on institutions, but increase compliance and potentially reduce costs.

We support the approach taken in the Federal Research Public Access Act (FRPAA, see citations in response to Question 3). FRPAA requires different agencies to develop their own public-access policies within the general framework laid down in the bill.

Universities support the FRPAA approach. When FRPAA was re-introduced in 2009, it was publicly endorsed by the presidents or provosts of 120 U.S. institutions of higher education.

<http://www.arl.org/sparc/advocacy/frpaa/institutions.shtml>

Similarly, in the last White House consultation on public-access policies (December 2009 –January 2010), when the question was whether to extend the NIH policy across the federal government, and hence to impose that kind of uniformity across the federal government, the suggestion received overwhelming public support.

<http://www.whitehouse.gov/blog/2010/03/08/public-access-policy-update>

(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?

We could support mandatory public access for any work which arises from publicly funded research, is voluntarily published or presented by the author, generates no royalties for the author, and is not classified.

This would cover many peer-reviewed journal articles (or author manuscripts), book chapters, books, conference proceedings, theses and dissertations, and open educational resources.

However, we think these are secondary issues and must not delay a policy to require public access to peer-reviewed journal articles (or author manuscripts) arising from publicly funded research.

We are not prepared to list all the types of content to which a federal public-access policy ought to apply. One reason to proceed with peer-reviewed journal articles first and consider other categories later is that there may be good reasons for a public-access policy to treat different categories of content differently, just as the White House, in the present RFIs, treats publications differently from data. Another reason—as in our response to Question 5—is that public access to research articles is urgently needed and cannot wait for the policy nuances for other categories to be hammered out.

(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?

Embargoes limit the utility of research both for researchers and for businesses. Embargoes therefore limit the return on the public's investment in research,

and compromise the public interest. They may be justified, but only in the ways that compromises may be justified.

Embargoes should be as short as possible. If federal policy initially allows embargoes, then it should reduce their maximum permissible length over time, eventually to zero. We could support a plan to do this gradually rather than suddenly in order to give publishers time to prepare.

A zero-embargo policy would not force premature disclosure of patentable discoveries, since the policy would only apply to work that authors voluntarily decide to publish. If publicly funded researchers make a patentable discovery, and wish to apply for a patent before publishing, the public-access policy would only kick in at the time of publication.

If government policy is to allow embargoes, even temporarily, it might allow different embargoes in different fields, on the ground that the demand for articles seems to drop off at different rates in different fields. However, we have not seen good data on these different rates of demand decay. Publishers have this data, and if they wish to support differential embargo periods, they should provide data to justify them. In any case, variable embargo periods would burden universities by making compliance with an agency in one field different from compliance with an agency in another field (in tension with Question 6 above).

Similarly, if publishers believe that short embargo periods would harm them, they should release data showing it. Researchers, research institutions, and taxpayers cannot be expected to prove the negative, or to prove the harmlessness of short embargoes. Until there is data to show harm, we must act in the public interest and provide early or immediate public access to publicly funded research. If publishers provide data showing substantive harm, then it may become appropriate to consider what kind of compromise with the public interest might be justified.

Finally, we should not use the NIH policy as a model on this issue. The NIH policy allows an embargo period of up to 12 months. But while that makes it a conspicuous precedent in the U.S., it is the exception worldwide, not the norm. Even in its own field of biomedicine, it is an outlier. Every other biomedical funding agency in the world with a public-access mandate caps the maximum permissible embargo at six months: the Arthritis Research Campaign (UK), British Heart Foundation, Canadian Breast Cancer Research Alliance, Canadian Health Services Research Foundation, Canadian Institutes of Health Research, Dunhill Medical Trust (UK), European Research Council, Cancer Research UK, Chief Scientist Office of the Scottish Executive Health Department, Department of Health (UK), Fonds de la recherche en santé du Québec (Canada), Fund to Promote Scientific Research (Austria), Genome Canada, Heart and Stroke Foundation of Canada, Howard Hughes Medical Institute, Joint Information Systems Committee (UK), Michael Smith Foundation for Health Research (Canada), National Cancer Institute of Canada, National Institute for Health Research (UK), Vetenskapsrådet (Swedish Research Council, Sweden), and the Wellcome Trust (UK).



GeoScienceWorld

Response to OSTP Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research

To:

Office of Science and Technology Policy (OSTP)
publicaccess@ostp.gov

From:

Alexandra Vance
Executive Director
GeoScienceWorld
4220 King Street
Alexandria, Virginia 22302

December 2011

GeoScienceWorld

Response to OSTP Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research

About GeoScienceWorld (GSW)

GeoScienceWorld is a nonprofit collaborative of 26 global scholarly earth science organizations developed to provide and sustain an expanding platform of 40 digital journals, integrated with the GeoRef index, developed by the American Geosciences Institute, which is the leading abstracting and indexing service for geoscience content. GSW's mission is to improve affordable access to earth science scholarship globally. GSW works with many U.S. and non-U.S. research societies to deliver research content affordably to users in 40 countries worldwide.

Public Discovery of and Access to Research in GSW

GSW content hosted in connection with a vast number of contextually-relevant digital resources. We invest in making the research we host discoverable via numerous public channels at no charge to users. GSW and its partners create full-text abstracts, PDF previews, digital object identifiers, and metadata for all articles and abstracts, which are available through public channels, including Google, Google Scholar, CrossRef, GeoRef, and others, to expose the content for maximum discovery and use.

All GSW-hosted journals are indexed in AGI's GeoRef. This facilitating step enables live linking to and from our content to millions of relevant, copyrighted and public/open materials hosted elsewhere on the Web. For users seeking access to more than contextual browsing, abstracts, and page previews, the vast majority of our current and archival full-text articles are publicly available at nominal pay-per-use prices. The GSW platform does not solicit advertising to subsidize its delivery efforts.

Facilitating Investment

GSW makes significant and ongoing investments in technologies that improve the user experience, which, increasingly, are tailored to the specific requirements of researchers in our domain. An example is our recent investment in geographic search capabilities, made possible by latitude and longitude coordinates assigned to our articles in metadata. These services are invaluable to users in geo-scientific disciplines but would not be relevant to research journals across other disciplines.

Because we recognize that research access is made better through the development of services, which incorporate an understanding of the science and needs of our specific users, GSW developed a network of research societies that add expertise to scholarly research with negotiated discounts, shared services, and effective cost controls that enable us to serve our distribution missions. This was one of the founding aims of the organization in 2004.

Our content is hosted at Stanford University. As we move forward, we also plan to take make investments that enable us to archive our content in secure digital repository systems such as CLOCKSS and/or Portico, which will ensure that our materials are secure and accessible in perpetuity.

GSW's Position on Open Access

Our mission is fundamentally concerned with providing affordable, digital access to high-quality, vetted research materials within a domain-specific context. We recognize that this is essential to supporting knowledge transfer between researchers around the world.

Despite our alignment with certain open access principles, GSW does not see a necessity for widespread government intervention or a one-size-fits-all solution mandating no-charge access to the published outcomes of public-supported research. We do believe that publicly-funded research can and should be made available to all through open Web-based discovery tools along with free abstracts and previews. We also believe that it would be appropriate to require publishers to make individual journal articles available to the public at rental and on-demand printing prices that are easily and broadly affordable. In fact, as per the responses below, we see the marketplace for digital scholarly information already evolving to realize these objectives. Given the multiple emerging models for delivery, which include article rentals, purchases, and fair-use sharing, we see no reason that publicly-funded research cannot be made available for individual, dead-based access at low per-article prices.

We are not a profit-seeking organization, so our position is not motivated by commercial interests. However, we are committed to supporting the resilience of nonprofit scientific societies, which may be seriously jeopardized by sweeping mandates for "free" access.

Enormous amount of investment and industry occur behind the scenes in digital scholarly publishing after an article is submitted for publication. While research endeavors may be publicly funded, the processes of developing research articles and including them in accessible, high-value databases (not only through editorial steps but through tagging, hosting, and service extensions) are internally supported -- and yet cannot be entirely divorced from the content which requires their existence. Requiring free delivery may under-value the requirements that contribute to useful, future-proofed delivery in a rapidly-evolving industry.

GSW does not believe that the publishing process will be equivalently supported, in terms of continuity and quality, by models that prohibit charging end-users or their sponsors for access. We also do not envision that one broad solution will recognize the specific requirements of scholarly works, which vary considerably by specialization.

In response to the specific questions posed in this Request for Information on Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research, GSW seconds the responses of the Association of Learned and Professional Society Publishers (ALPSP), which we have included below for reference.

Sincerely,

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GeoScienceWorld
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Alexandria, VA USA

From ALPSP:

Scholarly publishing is an international enterprise, with around 1.5 million articles published annually¹. US researchers dominate this output with a 29% share of the total. The majority of publishers (95%) are small, publishing one or two journals. At the other end of the scale, the 100 largest publishers account for 67% of the total number of journals.

Publishers are dedicated to providing the widest dissemination of the peer-reviewed results of research and to supporting the scientific enterprise. In addition to investing heavily in staff and technology, not-for-profit learned and professional society publishers redirect their 'surplus' back into the community through organization of conferences, scholarly awards, teaching fellowships, skills transfer through workshops and seminars, enhancing professional standards and benchmarking, travel and other grants. Commercial publishers also invest directly in the scientific community, through grants, awards and other sponsorship schemes.

Publishers support any sustainable models of access, the most common being the subscription-based model. Gold Open Access, where the author (via the institution or funder) provides payment to fund publication, is gaining popularity, though it should be noted that this is not a fully tested model with regard to long-term sustainability. Publishers are working with funding organizations to investigate the issues surrounding this new access model to ensure it can provide sustainable business models for publishers to continue to disseminate value-added peer-reviewed literature.

Policies which require open access publication but do not provide funding for that publication, such as Green Open Access (author self-archiving in openly accessible repositories) threatens to undermine the publication system on which it depends, as evidenced in a recent report from the Research Information Network².

The PEER project³ in Europe has been investigating the effects of large-scale, systematic deposit of the Accepted Manuscript (see NISO/ALPSP definitions for Journal Article Versions⁴) in repositories. This project is a rational approach towards defining the problems and thereby identifying potential solutions. It is a broad ranging project encompassing economic, behavioral and usage aspects. The behavioral study has reported and noted that authors value highly peer-reviewed journals and whilst there is still some confusion regarding open access publishing, there were reservations about peer-reviewed papers being held in open-access repositories. It also found that readers were unlikely to go to a repository to search for journal articles.

(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?

1. Current markets for peer-reviewed publications exist globally and publishers have invested heavily to ensure that there are many channels of access to publications. The

¹ <http://www.stm-assoc.org/industry-statistics/the-stm-report/>

² <http://www.rin.ac.uk/news/press/heading-open-road-costs-and-benefits-transitions-scholarly-communications>

³ <http://www.peerproject.eu/>

⁴ <http://www.niso.org/publications/rp/> NISO RP-8-2008 Journal Article Versions (JAV): Recommendations of the NISO/ALPSP JAV Technical Working Group

markets are already well-served and a recent survey from the Publishing Research Consortium found that 97% of researchers in North America have very or fairly easy access to research journals⁵. This study also demonstrated that North America enjoys one of the best 'access to information' versus 'importance of that information', profiles of any of the regions investigated.

2. Publishers have recognized the needs of the myriad communities they serve and have responded appropriately, leading the way with technical tools and services to enhance the access, usability and analysis of published research, collaborating widely with various stakeholders in the process.
3. In this regard, a number of publisher-led initiatives have increased access to many different user groups. For example, DeepDyve⁶, an article rental system, enables anyone to access thousands of scholarly and academic journals. Users may browse an article online and subsequently purchase the article for download if desired. patientINFORM⁷ brings up-to-date, authoritative information from the world's leading medical journals to patients and caregivers. Information is provided in a summarized form, with links to free or reduced-price access to the full article on the publisher website. The Emergency Access Initiative⁸ is a partnership between the Association of American Publishers (plus other publishers), the National Library of Medicine and the National Network of Libraries of Medicine with the aim of providing temporary and free access to those affected by disasters and those providing assistance to them. It includes public access.
4. In addition to the collaborations in paragraph 12, publishers also provide free or very low cost access to universities and colleges, research institutes, schools, hospitals, governmental offices and national libraries in the lowest gross national income per capita countries throughout the world through the Research4Life⁹, eIFL¹⁰ and PERii¹¹ initiatives, amongst others.
5. It is clear that publishers are keen to ensure that the needs of different markets in accessing scholarly information are met appropriately and are keen to do so in collaboration with other stakeholders. Publishers are keen to engage with the US Government to address the further gaps it has identified in public access. It would be useful for agencies to detail the particular needs of such user groups and to collaborate with publishers to establish the most efficient and appropriate ways in which to address those needs.
6. The need for archiving digital information has been recognized by publishers, librarians, funders and researchers. Collaborative projects already exist to ensure the long term preservation of scholarly information through initiatives such as Portico¹², LOCKSS¹³, CLOCKSS¹⁴ and the National Library of the Netherlands (Koninklijke Bibliotheek) eDepot¹⁵.

⁵ <http://www.publishingresearch.net/projects.htm> Access vs. Importance

⁶ <http://www.deepdyve.com/>

⁷ <http://www.patientinform.org/>

⁸ <http://eai.nlm.nih.gov/docs/captcha/test.pl?url=>

⁹ <http://www.research4life.org/>

¹⁰ <http://www.eifl.net/>

¹¹ <http://www.inasp.info/>

¹² <http://www.portico.org/digital-preservation/>

¹³ <http://www.lockss.org/lockss/Home>

¹⁴ <http://www.clockss.org/clockss/Home>

¹⁵ <http://www.kb.nl/index-en.html>

7. Very careful consideration needs to be given to archiving and public access policies, if these are to be tied to growth in the US economy and improving output of the US scientific enterprise. Public access cannot be restricted to one local region. Ensuring public access to publications resulting from federally-funded research will result in global access, therefore benefiting researchers and other users all over the world (and potentially also their economies), not just the US. This removes any competitive advantage for the US economy and research output.
8. The National Institute of Health has noted that more than half of all PubMedCentral users are from outside the US. [**I've seen this written but it wasn't referenced – does anyone have a reference?**] This repository is therefore reducing the export market for the US publishing industry which, in total, employs around 50,000 people and contributes c. US\$3.5 billion to the US balance of trade.

(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?

9. The US government is clearly aware that allowing global public access to the peer-reviewed published output from federally-funded research has the potential to open such content to piracy and other unauthorized dissemination.
10. Such piracy undermines the income that scholarly publishers require to continue their investment in the aforementioned projects, tools and collaborations for the benefit of the scholarly community.
11. The most efficient way to ensure appropriate protection of intellectual property interests of all stakeholders would be to make the final Research Report freely available. This would allow a rapid and very broad dissemination of the research results obtained directly from federal funding. This would also facilitate such reporting to be tied back to the original grant made by the federal agency. Final project reports could also be linked to the peer-reviewed published research, available online whether free, via rental or for full purchase as the publisher business model dictates.
12. GSW is not in favor of mandated deposit to centralized open repositories. In addition to significant concerns about long-term sustainability and piracy, open repositories have deleterious effects on the publishing model; for example, NIH does not currently provide publishers with full, detailed usage statistics from PubMed Central, which means publishers are unable to supply libraries with the complete picture with regard to their institution's use of a wide range of journals. Such usage data is crucial in determining renewals and whilst this situation persists, subscriptions are being cancelled based on incomplete usage data.

(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?

13. Studies have demonstrated that researchers prefer to access the publisher-created Version of Record (VoR) from a peer-reviewed journal as the authoritative, definitive version, over versions in subject or institutional repositories^{16, 17}.
14. In an interconnected age, with current and ever-improving technology, centralization is not required and moreover, requires unnecessary duplication of effort at considerable expense. Indeed the report from the Scholarly Publishing Roundtable in January 2010¹⁸ recommended decentralization to achieve the interoperability needed to "enhance the impact of the scholarly literature and ignite the generation of new knowledge".
15. Publishers have gone to considerable lengths in developing tools to ensure interoperability between different access systems. For example the Digital Object Identifier (DOI)¹⁹ system, to provide persistent identification of digital objects, the CrossRef²⁰ organization and its various ongoing projects aimed at connecting users with primary research content and the Open Research and Contributor ID (ORCID)²¹ initiative, to solve author name ambiguity in scholarly communications and latterly resolving institutional naming ambiguity.
16. Publishers are also continuing to invest in the development of discipline-specific tools to enable users to interact with and analyze specialized content. Such tools would be lost with centralization.
17. Publishers are continuing to invest in metadata standards, which improve the ease with which relevant articles can be discovered. With such excellent standards, search tools are all that is required to connect users with the most appropriate content for their needs, and importantly to the VoR. Such metadata standards include those developed by EDItEUR²², IDEAlliance (PRISM)²³ and NISO²⁴ (see also paragraphs 33 and 34 below).

(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?

18. In addition to the many public-private partnerships already mentioned, publishers are keen to engage further with Government and its agencies. Proposals have already been put to NSF for collaborative projects to enhance the public access, utility and preservation of publications resulting from federally-funded research.
19. Such proposals include standardizing the collection, display and use of metadata to indicate the federal grant supporting the research from which a scholarly publication derived and potential linking back to the Federal Agency website. A further example is

¹⁶ <http://www.peerproject.eu/reports/> D4.2 PEER Behavioural Research – Final Report

¹⁷ <http://www.publishingresearch.net/projects.htm> Research Publication Characteristics and Their Relative Values

¹⁸ <http://www.aau.edu/WorkArea/DownloadAsset.aspx?id=10044>

¹⁹ <http://www.doi.org>

²⁰ <http://www.crossref.org>

²¹ <http://orcid.org>

²² <http://www.editeur.org/>

²³ <http://www.idealliance.org/specifications/prism/>

²⁴ <http://www.niso.org/standards/>

the proposal for a project to understand the requirements for and benefits derived from content mining and to establish a methodology for overcoming current barriers, such that publishers can facilitate such content mining with sustainable business models.

20. These are just two of the proposals under discussion with the NSF.

(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?

21. As already mentioned above (paragraph 27), publishers are already undertaking a project with CrossRef and the Department of Energy (DoE) to standardize the way funding information is collected publishers and included in article metadata. This would enable Federal agencies to easily obtain information about publications resulting from federally-funded research.
22. Such collaborative projects enable cost-effective standardization across all Federal agencies and publishers.
23. Metadata allows users to discover information and find related information without the requirement of accessing the full text. Two initiatives are important in this regard.
24. The Dublin Core Metadata Initiative²⁵ provides key specifications and best practice regarding the use of metadata for the description of various digital resources (including books and journal articles). It enables interoperability of different applications and vocabularies and optimizes the metadata for searching.
25. CrossRef²⁰ provides a cross-publisher linking network. This allows readers to easily link to other resources of interest on other publisher platforms. This works seamlessly through DOIs and metadata which are embedded in articles and other content as part of the value-added publication process.

(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?

26. Federal agencies funding scientific research should maximize the products that they invest in, that is the research reports required by Federal agencies from the research scientist. Some already make such research reports available (e.g. the DoE Information Bridge²⁶), but others do not. Making all such reports freely available would solve the "public access" issue.
27. Federal agencies do not invest in peer-reviewed journals. Publishers add significant value to peer-reviewed publications and this is reflected in researcher preference for the

²⁵ <http://dublincore.org/>

²⁶ <http://www.osti.gov/bridge/>

VoR^{16,17}. Publishers should then be at liberty to employ appropriate business models by which they may recover their investment and to reinvest.

(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?

28. No. Publishers invest considerably in all types of content they produce to add value to the scholarly and academic community that utilize them. Such publications should not be appropriated without rightsholder permission and compensation. To behave otherwise would compromise the sustainability of high quality publication, dissemination and preservation of the research results.

(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?

29. There is no single “appropriate” embargo period. Federal agencies should not impose inappropriate embargo periods on non-federally funded businesses. Individual publisher business models are not arbitrary, but are carefully calibrated to meet the needs of the market.
30. The most common current embargoes range from zero, for gold Open Access material, to 12 months, as a result of the NIH-mandate. Publishers, however, should be able to set their own appropriate embargo, depending on the material they publish and the market for which they publish, and this may be more or less than 12 months.
31. An indication of the length of usage an article in a given discipline received, the journal half-life forms a useful measure. For example, the American Physiological Society reports journal half-life from 4.3 to over 10 years²⁷.
32. Imposing mandates on the potential to recover investment from such usage further undermines publishers’ ability to continue to innovate and add value for the benefit of the scholarly and academic community.
33. In the current economic climate, recovering investment is all too important. Journal budgets are being squeezed and foreshortening the length of time a publisher is able to recoup their investment has the potential to seriously damage publishers and therefore the overall economy.
34. As already referred to, the lack of transparency demonstrated by NIH has the potential to undermining the entire system. Librarians utilize usage statistics as part of their considerations for journal renewals. Whilst publishers have worked with NIH to assist authors in fulfilling their mandated deposit, NIH has been unwilling to provide publishers with usage statistics, which would allow publishers to provide a more accurate picture to librarians of the usage of journals by their faculty.

²⁷ http://www.the-aps.org/publications/journals/info/impact_factors.htm

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.

35. Scientific research and scholarly communication is an international enterprise. Any efforts to improve "public" access through collaborations, standards or other projects, should necessarily be considered on an international, rather than national scale, if the real benefits of improving access to data are to be efficiently and cost-effectively recognized.
36. Publishers are very willing to enter into collaborative projects to explore the nature of these issues with the aim of producing the most cost-effective and appropriate solutions for both federal agencies and end users.



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

Response from Oxford University Press, USA

To:
Ted Wackler
Deputy Chief of Staff
Office of Science and Technology Policy
725 17th Street
Washington, DC 20502

via e-mail to: publicaccess@ostp.gov

From:
Niko Pfund
President and Academic Publisher
Oxford University Press
198 Madison Avenue
New York, NY 10016

January 2012

Office of Science and Technology Policy consultation on Public Access to Peer Reviewed Scholarly Publications

Introduction

The world's largest university press, Oxford University Press (OUP) is an international publisher of scholarly and educational material with offices across the globe including major centers in New York City and in Cary, NC. OUP furthers the University's objective of excellence in research, scholarship, and education by publishing worldwide.

OUP publishes 270 peer reviewed scholarly journals (most of which are published in partnership with learned societies) and circa 2,000 research monographs a year. OUP is an innovative and forward-thinking publisher and was one of the first university presses to publish a fully open access journal (*Nucleic Acids Research*) and the first to introduce 'hybrid' open access on its journals. OUP therefore welcomes the opportunity to respond to the Office of Science and Technology Policy consultation on Public Access to Peer Reviewed Scholarly Publications.

Question 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?

Scholarly publishing is international in nature. Researchers based in the US need access to the latest scholarship from around the globe and not just that produced by fellow Americans. Indeed unilateral action by US agencies potentially makes US federally funded work available for other nations to use while not making the research funded by foreign nations available for US researchers, which actually disadvantages the US.

Recent research published by the Publishing Research Consortium¹ found that 97% of researchers in North America report having easy access to research journals and a number of industry initiatives² have emerged to facilitate free or very low-cost access to the trust-worthy Version of Record for the general public, including many

¹ www.publishingresearch.net

² For example DeepDyve (www.deepdyve.com); patientINFORM (www.patientinform.org/); Emergency Access Initiative (<http://eai.nlm.nih.gov/docs/captcha/test.pl?url>)

millions of articles that are made freely available through delayed open access models³ and other open access modes of publishing.

It should be noted that there is a scarcity of reliable research into the costs and benefits of open access, particularly specific to the US. The often cited work by Houghton *et al*⁴ is based on a number of assumptions by the authors that were at best questionable⁵ but a more recent (April 2011) and more representative report released by the Research Information Network and commissioned by a cross-stakeholder group including publishers, research funders, and library groups examined the costs and benefits of a transition to open access⁶.

Question 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?

OUP has a commitment to ensure the long-term sustainability of our journals in order to fulfill our mission of promoting research, education, and scholarship. To do so, we believe we need to be in a position to determine which business models best support this goal.

We believe that publishers, in consultation with authors, learned societies, and appropriate sponsoring institutions, are best placed to make the decision whether and when to make content freely available and to determine the length of any embargo periods. In doing so, publishers can respond to the needs of the academic communities they serve and protect their intellectual property and the intellectual property of their authors.

Question 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?

We believe that a centralized approach would duplicate efforts and costs – at the expense of the public purse - which have already been developed, largely by

³ See, for example, the DC Principles Coalition - www.dcpinciples.org/signatories.htm

⁴ <http://www.jisc.ac.uk/publications/reports/2009/economicpublishingmodelsfinalreport.aspx>

⁵ [Review of 'Open Access -what are the economic benefits? A comparison of the United Kingdom, Netherlands and Denmark'](#) (Michael Jubb, 2010, *Learned Publishing* 23: 169-170)

⁶ [Heading for the open road: costs and benefits of transitions in scholarly communications](#) - www.rin.ac.uk/news/press/heading-open-road-costs-and-benefits-transitions-scholarly-communications

private enterprise. In any event many research publications do not arise from government funding and so a distributed approach will always be required in order to ensure effective access to the literature (a point that was acknowledged by the 2009 Scholarly Publishing Roundtable group convened by the House of Representatives Committee on Science and Technology in coordination with OSTP⁷).

The publishing industry has, for example, invested in the development of the Digital Object Identifier (DOI) to enable persistent linking to online content. Further, publishers work closely with generic search engines such as Google and Bing to maximize discoverability, and a number of specific search services and other discovery tools have been, and continue to be, developed. Further efforts to ensure interoperability should be dealt with via the development and implementation of robust standards, e.g. by NISO.

Publishers and libraries together provide stewardship of the scholarly record both in terms of physical and digital preservation⁸ (for example through initiatives like Portico and CLOCKSS) and in terms of curation at considerable cost and we see no benefit by this being replicated by federal agencies.

In addition, recent studies^{9, 10} have confirmed that researchers prefer to access the publisher generated 'Version of Record' from authoritative journals that provide the definitive version of an article. In addition to increasing cost, the proliferation of different copies of articles held in different places creates needless complexity around version control.

Question 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?

Scholarly publishers are proactively working with government agencies¹¹ to develop projects that would enhance the public access, utility, and preservation of materials that report on federally funded research for the benefit of both the research community and the public.

The disambiguation of authors' identities is a persistent problem embedded in the scholarly publishing system and the Open Researcher and Contributor ID project (ORCID¹²) is a public-private partnership of 275 organizations which is addressing the issue with the benefit of \$2 million of loans from publishing partners.

⁷ Report and Recommendations from the Scholarly Publishing Roundtable (www.aau.edu/WorkArea/DownloadAsset.aspx?id=10044)

⁸ For an overview see the PARSE.insight final project report (www.parse-insight.eu)

⁹ D4.2 PEER Behavioural Research – Final Report (www.peerproject.eu/reports)

¹⁰ Research Publication Characteristics and Their Relative Values (<http://www.publishingresearch.net/projects.htm>)

¹¹ For example the National Science Foundation

¹² www.orcid.org

For the reasons outlined in our answer to question 3, we believe that it is preferable for publishers to maintain the ‘Version of Record’ and to remain responsible for the stewardship of scholarly material. Should access be required to a collection of articles from a single portal, other organizations or agencies should link to publisher sites using persistent DOI linking to minimize duplication of effort, cost, and confusion arising from poor version control.

Question 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?

All online scholarly material is already exposed to, and indexed by, search engines and publishers invest heavily via search engine optimization and other initiatives to ensure that their content is discoverable. In addition, CrossRef DOI linking has already revolutionized the way that the research literature is navigated, with a consequential improvement in researcher productivity. Publishers are already experimenting with persistent linking at a more granular level than the research article or scholarly monograph chapter – for instance by assigning DOIs to data sets, supplementary material, individual data tables and figures.

We do believe that there is an opportunity for better, more standardized descriptions of research funding sources and we note the project underway involving publishers, CrossRef and the Department of Energy investigating ways that funding information can be collected and included in article metadata.

We also note initiatives¹³ being undertaken by the scholarly publishing industry to make information regarding copyright status, licensing, and re-use terms machine readable and available in metadata.

Question 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?

The key principle here is not to duplicate actions already being undertaken elsewhere. It is appropriate to let private enterprise (publishers) provide access, and for them to work with libraries and other bodies to ensure curation and preservation of scholarly material.

¹³ For example the Automated Content Access Protocol (www.the-acap.org)

Publishers add great value to scholarship by the validation and authority bestowed through peer-reviewed scholarly journals and we do not believe that government restrictions of business models is likely to add to our successful pursuit of our mission.

Every federally funded research project is required by law to provide a detailed final report but not all agencies make these reports available. It is this report – and not the peer reviewed material produced by publishers – that has been publicly funded and that should therefore be made publicly available. Making these reports publicly available and discoverable would ensure public access to the results of publicly funded research, and in advance of peer reviewed publication, in a manner which respects copyright and the intellectual property rights of publishers and authors.

Federal agencies should help to fund the development and deployment of standards to enable the exchange of metadata and other information about scholarly material, e.g. via NISO.

Open Access Publishing (also known as 'gold' open access or author-side funded open access) is already established as a mainstream business model in some areas of scholarly endeavor but is unlikely to become the dominant business model in the foreseeable future or to figure at all in some areas of scholarship. Key to the viability of this model are adequate funds and transparent mechanisms to support this mode of open access publication and government agencies may have a role to play in ensuring an environment conducive to this model.

Question 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?

Any public access policies should not result in the appropriation of scholarly publications without rightsholder permission and, where appropriate, compensation. With this in mind, however, it should be noted that different types of scholarly material have different importance depending on the academic discipline / sub-discipline and the same principles should apply to all. In scholarly book publishing for instance, publishing models range from works that are important but not commercially viable and that therefore require publication subventions on the one hand to explicitly commercial works sold at auction via agents to the highest bidder. We find it difficult to envision how public access policies can usefully encompass such a wide range of publishing models.

Naturally, specific details in practice will vary due to differing research characteristics and business models used for scholarly publishing.

Question 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?

Different areas of scholarly endeavor have different requirements and utilize different modes of research. It is clear, for example from different publishing profiles, citation rates and citation half-lives, that "one size does not fit all". There is therefore no single appropriate embargo period.

Rather, embargos should be set by publishers at levels that meet the needs of the communities that they serve but which do not harm current business models.

<ENDS>

I have been a biotechnology scientist for 24 years. One of my biggest concerns for the future development of medicines is that researchers at the majority of the nation's biotech companies cannot afford access to the scientific literature. Big Pharma companies have cut back on their internal research programs and are hoping to source the majority of their new medications from smaller, more innovative biotech companies. This means that affordable access to the science literature for biotech scientists is more critical now than ever. I have written about this problem in national blogs and journals several times now:

http://www.xconomy.com/seattle/2011/01/18/what-does-biotech-really-suffer-from-information-overload-or-underload/?single_page=true

<http://www.nature.com/nbt/journal/v29/n7/full/nbt.1909.html>

I recently detailed a proposed solution to this "lack of affordability" problem that is known as **iPubSci**. **iPubSci** essentially blends the best features of PubMed with an iTunes like interface and would allow for the purchase of science journal articles on a per article basis. A detailed description of this approach can be read here:

http://www.xconomy.com/seattle/2011/12/05/ipubsci-a-solution-to-the-problem-of-unaffordable-science-journals/?single_page=true

I had a number of conversations with people in many different areas in response to my **iPubSci** proposal, including the open access community. One key problem that **iPubSci** solves is that it provides affordable access to the large percentage of the scientific literature that the for-profit science publishers are sitting on and selling access to at currently unaffordable rates (\$30-35 per article on average). Any solution to the issue of providing affordable access to the literature MUST include these legacy publications, which make up about 2/3 of PubMed. I have not heard any credible plan from open access advocates that would deal with this key issue.

I am happy to provide whatever help is needed to help the nation achieve a solution to the problem of a lack of affordable access to science journals.

Thanks, Stewart

Stewart Lyman, Ph.D.
Lyman Biopharma Consulting LLC

To whom it may concern:

I work at the University of Kansas, which was the first public university to approve a faculty-led open access policy. All of my publications in applied linguistics are available through KU ScholarWorks. Thank you for this opportunity to respond to questions regarding public access to digital data. I am in favor of a broader open-access policy for peer-reviewed scholarly publications and data sets, particularly those supported by federal grants. I will respond to questions (7) and (8):

(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?

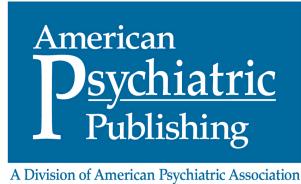
Yes. These publications should be available in digital, accessible form after a suitable “embargo period” of six months for non-critical literature. Book chapters and conference proceedings are particularly important contributions to long-term scholarship in any field, and they are notoriously difficult to access in digital form.

(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?

Six months is an appropriate embargo period. University researchers, many of whom have access to digital databases through library subscription, will have first access rights in real time, and publishers will continue to be compensated. After six months, access to journal articles should be available to all. I recommend that the embargo period for book chapters and conference proceedings be somewhat longer (12 months), since review, editing, and production typically take more time and resources from publishers than journal publications, and they deserve to be compensated for this increased effort.

Respectfully,

Terese Thonus, PhD
Director, KU Writing Center
Associate Professor of English (by courtesy)
1301 Hoch Auditoria Drive, Room 424
University of Kansas – Anschutz Library



American Psychiatric Publishing, Inc.

Publisher for the American Psychiatric Association

1000 Wilson Blvd, Suite 1825, Arlington, VA 22209

(703) 907-7322 • Fax (703) 907-1092

January 5, 2012

Re: FR Doc. 2011-28623

I am writing to respond to the Office of Science and Technology Policy's November 3, 2011 request for information regarding "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research." I very much appreciate the opportunity to provide recommendations on approaches for ensuring long-term stewardship and broad public access to the peer-reviewed scholarly publications that result from federally funded scientific research.

I lead the Publishing Division of the American Psychiatric Association, a medical organization representing 36,000 physician leaders in mental health. American Psychiatric Publishing is the world's premier publisher of books and multimedia on psychiatry, mental health, and behavioral science. We offer authoritative, up-to-date and affordable information geared toward psychiatrists, other mental health professionals, psychiatric residents, medical students and the general public. A critical part of our publishing operations is our vibrant journals program, led by the APA's flagship publication, *The American Journal of Psychiatry*.

The main purpose of a scholarly journal is to publish articles that analyze and interpret original research or experimentation in order to make such information available to the global research community, thereby advancing the knowledge base. As a scholarly publisher, our goal is to promote the latest scientific research and developments in academic thought to as wide an audience as possible. Now the core publishing activities of research validation (i.e., peer review) and dissemination do not come without costs and ongoing investment, so any public access policy with long-term sustainability that maximizes benefits to researchers and the public at large will need to function as a balanced public-private partnership. With that in mind, scholarly publishers are uniquely positioned to help the federal government in expanding public access to publications that describe and interpret federally funded research, ensuring the long-term stewardship of these publications, and supporting innovation and economic development derived from scholarly discovery.

In addition to the general observations above, I would like to comment specifically on the questions put forth.

(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 publicly 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?

Publishers have been investing significantly in support of expanding accessibility, improving interoperability, and fueling innovation. Our investments have created digital platforms with the latest and continually evolving Web capabilities and provided researchers with faster and more robust delivery of scholarly information, including new ways to present data and scientific articles. We have improved interoperability through new metadata standards and pilot projects, which are driving innovation and providing for better information discovery and expanded use of research results. U.S. publishers provide a robust, innovative market for peer-reviewed publications around the world that has led to multiple channels of access to and analysis of research across a broad array of social and scientific disciplines. For example, publishers have led in technological developments that promote the value of

content and its dissemination. They have likewise been active in assisting the formation of library consortia, both in the United States and globally. These and other publisher initiatives have helped accelerate and broaden access to the peer-reviewed literature.

Options to broaden access to materials that analyze and interpret research for scientists and the public include developing standards for data and metadata to make research more readily searchable and discoverable. Publishers are already working in partnership to develop standardized information and collections through initiatives like CrossRef and use of the NLM DTD. Federal agencies can also definitively stipulate to grant awardees that a portion of funds should be earmarked toward publication fees to support payment for open access to published articles. Several research funders already do this (Howard Hughes Medical Institute, The Wellcome Trust, Max-Planck Institutes). Publishers can customize licenses to meet specific or specialized user needs, including those of government agencies, and have the ability to ensure the availability of their content with existing infrastructure.

(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 would recommend against having the peer-reviewed accepted manuscript being made publicly available, as post-acceptance work performed in preparing a paper for publication could lead to versioning issues and differences in quality due to lack of standardization of information reported. I would be in favor of Federal agencies working with individual publishers to establish agreed-upon embargo periods, after which unfettered access to content would be offered to allow broad dissemination of the government-funded materials.

(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?

Centralized, government-controlled custody of publications carries significant downsides and few upsides. Long-term stewardship of content carries significant costs that are already being borne by publishers. In an era of dwindling federal resources, central federal repositories are duplicative and an unnecessary expense and recurring burden that may not be viable for long-term stewardship when Internet search engines, abstracting services, and other tools do an excellent job of ensuring the discoverability of research. In addition, the publishing community (professional associations, commercial publishers, and university presses) has introduced new technologies that meet researchers' demands for faster and more user-friendly delivery of scholarly information. For instance, over the past decade publishers have developed the "Digital Object Identifier" (DOI)--a unique identifier for each piece of content in a scholarly publication. We are also continuing to innovate in the creation and standardization of metadata to make it easier for researchers and the public to find and use scientific research information. Finally, publishers have collaborated with librarians and database providers to establish COUNTER (Counting Online Usage of Networked Electronic Resources) which has produced an international set of standards and protocols governing the recording and exchange of online usage data. This enables libraries to better understand how digital collections are being used and allows publishers to better understand the usage patterns of their digital content.

(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?

Our flagship publication, *The American Journal of Psychiatry*, dates back to 1844. Recent efforts to scan and upload the voluminous back catalogue have resulted in a veritable treasure trove of valuable content for both researchers and medical historians alike. But such initiatives are dependent on continued funding to offset substantial costs of

implementation and maintenance, which should be recognized within any partnership model promoting accessibility. Since the work of ensuring availability and accessibility of content has already been undertaken by publishers, efforts to promote public access to such content can be negotiated via licensing or subscription sponsorship deals.

(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?

Federal agencies should work with publishers and other stakeholders who have expertise in developing and promulgating metadata to ensure standardization across disciplines and share best practices.

Partnerships are already underway to determine, develop, and include appropriate metadata in publications. Examples of such metadata initiatives include:

- a. Standardizing and facilitating funding agency information. Publishers are collaborating with agencies to create a pilot initiative to clearly indicate the funding agency responsible for research described and analyzed in a scholarly publication or an associated dataset, giving the research community and public easy links to a variety of access options on the publishers' site. Working with the publishing community to gather and link this information will save agencies considerable effort and expense compared with producing or maintaining such information or services on agency websites.
- b. DOIs for data sets and article supplementary material. There is considerable opportunity for strengthening the multiple organizational partnerships that already exist to promote the identification, discoverability and archiving of data, including Datacite (www.datacite.org) and the NISO/NFAIS Working Group on Supplementary Journal Information (www.niso.org).
- c. Author and institution disambiguation. Name ambiguity and attribution are persistent, critical problems embedded in the scholarly research ecosystem. The Open Researcher & Contributor ID (ORCID) project (www.orcid.org) is a successful public-private partnership with 275 participating organizations, funded by \$2M in loans from publishing partners and building on successful investments by publishers in the past. A pilot demonstration began earlier this year and is on schedule, and institutional IDs will be addressed in a second stage.

Partnerships are also underway to develop discovery tools to facilitate journal content mining, access dark archives, and improve data management. Content mining projects could be developed as collaborations between publishers and federal funders. For many years, publishers have produced and archived data-specific journals, and they are maintaining and updating such data sets with DOIs and semantic tagging.

(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?

An excellent mechanism to ensure public access to materials that analyze and interpret research funded by the taxpayer is already partially implemented. By law every federally funded research project is required to provide a detailed final report. Some science funding agencies make these reports freely available via the Web, but others do not. Making them all available would solve the access problem. Other agencies such as NSF are exploring alternate means of providing public access to researcher-supplied reports. Agencies should seek productive and mutually beneficial projects and partnerships that ensure greater availability of both taxpayer-funded research directly from the government and peer-reviewed, value-added publisher content. For example, publishers are ready to partner with Federal agencies to provide easy links between progress reports detailing research results, perhaps including lay summaries, and the peer-reviewed version of record, including complete access to the abstract or summary. Such projects would result in interoperability between funding agencies and publisher content, ensuring more timely and complete availability of scientific communication related to federally-funded research, as well as better reporting on the results of taxpayer funding for research.

(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?

Publishers also invest in these other types of content used by researchers, often by conceptualizing the project, commissioning the content and investing heavily in its development. As with any kind of content published by a nongovernmental entity at its own initiative, government-mandated access to books, proceedings or other such materials is an expropriation of private property.

(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?

Peer-reviewed papers are not the direct result of the expenditure of taxpayer funds; conversely, they result from a significant publisher investment. The ability to recoup that investment enables innovation, allows infrastructure to be developed (including archives and metadata), and provides incentives to try new approaches. For accepted author manuscripts and published journal articles, both of which publishers have invested in heavily, publishers should determine the business models on which their publications operate and this should include the time, if any, at which the final peer-reviewed manuscript or final published article are made publicly available.

Again, I greatly appreciate the opportunity to contribute to this conversation and welcome any requests for additional information or clarification.

Sincerely,

Rebecca D. Rinehart
Publisher
American Psychiatric Publishing
A Division of the American Psychiatric Association

Cc: James R. Scully, MD, Medical Director
Michael Roy, Editorial Director, Journals

January 5, 2012

Dear White House Office of Science and Technology Policy Staff Member:

Thank you for the opportunity to respond to the White House Office of Science and Technology Policy's call for public comment on long-term stewardship and broad public access to the peer-reviewed scholarly publications that result from federally funded scientific research.

To paraphrase our Mission and Purposes statement, Williams College understands its own responsibility to contribute by thought and example to the world of higher education. The academic virtues which we value include the capacities to explore widely and deeply, think critically, reason empirically, express clearly, and connect ideas creatively. Our faculty and students are dedicated to expanding human knowledge and understanding through original research, thought, and artistic expression. Our desire to create and disseminate knowledge is not complete if that scholarship is not widely and freely available. We support, therefore, the most timely and broadest possible access to information for our academic community and the community at large.

In addition, we believe that citizens are entitled to prompt and full use and reuse of the results of research funded by our tax dollars. Limiting access to this research, by hiding results behind expensive journal subscriptions, greatly reduces the benefit to society of important research.

(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 publicly 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?

It only stands to reason that, the sooner results of research are disseminated to the widest possible audience without commercial restriction, the better our citizenry is poised to reuse this knowledge in creative ways. Such a step enables individuals and companies to build new products, allows more users to stay on top of cutting-edge ideas, generates new uses and applications, and speeds the launch of new services and products into the marketplace. Faster commercialization spurs economic growth, creating the potential for new jobs across broad sectors of the economy. Such use of taxpayer funded research promotes the best return on our nation's investment, and increases benefits to the economy and to society at large.

(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?

Immediate access to published research results optimizes the scientific and commercial utility of information, putting new findings into the hands of the broadest possible audience who can use them. As librarians we know that unanticipated users often find creative uses for scholarly information that even authors had not imagined. Minimizing the delay in providing access to newly published research enriches the marketplace of ideas without delay.

However, we know that many journal publishers continue to rely on subscription income to support the dissemination of new content. An embargo period of 0-12 months has proven effective across multiple disciplines. We are not aware of any data provided by any publisher that this embargo period (currently in use by NIH and numerous other funders around the world) has harmed them. Embargos of 12 months or less are the norm in the policies of research funding agencies and institutions around the globe. Embargos of 12 months or less have been adopted by hundreds of journals <http://highwire.stanford.edu/lists/freeart.dtl>

Even publishers who previously expressed concern that opening access to back content might result in loss of revenue have now changed practices. The JSTOR moving wall stipulations set by publishers are routinely decreasing with some even set at no delay before content is accessible. In addition, the Royal Society, publisher of the world's first scholarly journal, recently opened access to their back file of articles with a 12-month embargo period, noting that this prestigious and heavily cited back file, dating back to 1665, accounted for less than one half of one percent of their overall publishing revenue.

Thank you for your consideration.

David M. Pilachowski
College Librarian
Williams College



publicaccess@ostp.gov

6th January 2012

A response from Taylor & Francis to the Office of Science and Technology Policy Request for Information: Public Access to Peer-Reviewed Scholarly Publications resulting from Federally Funded Research

Taylor & Francis is a leading international academic publisher. Operating from a network of 20 global offices, including New York, Philadelphia, Oxford, Melbourne, Stockholm, Beijing, New Delhi, Johannesburg, Singapore and Tokyo, the Taylor & Francis Group publishes more than 1,500 journals and around 3,600 new books each year, with a books backlist in excess of 60,000 specialist titles.

(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?

- Researchers have more access to more material than at any time in human history, facilitated by a vibrant and healthy publishing industry. If lack of access to information was constraining growth and productivity then these constraints have lifted significantly in the last decade.
- A range of business models are emerging including “traditional” subscriptions to print and online journals; site-license access to journals, books and databases; author/funder pays open access. This is all part of a healthy knowledge economy, if agencies interfere in this then they incur real costs for no clear benefit and may undermine the sustainability of the existing system.

(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?

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- Publication in the peer-reviewed literature involves considerable costs which are borne by publishers and recovered in subscription and/or open access fees. Funding agencies should not expect this peer-reviewed literature to be freely available unless the publishers are rewarded for the service they have provided, the products they have created and the value that they have added. Unfunded mandates for open access deposit of published material threaten the sustainability of the publishing system.

(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?

- Existing standards for identifying digital works (www.crossref.org) and authors (www.orcid.org) need to be fully adopted by government agencies to allow a distributed model of access to flourish. This spreads cost and risk throughout the system rather than concentrating it in federally funded projects. The case for a distributed archive is demonstrated by the success of the LOCKSS initiative (www.lockss.org).

(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?

- Site-license access to publisher archives is now widely facilitated by state-funded library consortia and this has worked well to increase access. Increased funding to libraries has the potential to deliver even greater benefits.

(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?

- Public availability of journal abstracts is established practice and well supported by publishers and researchers. Funding agencies could do more to support the digital object identifier (www.crossref.org) as a means of permanently linking to the peer-reviewed literature.

(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?



- The published peer-reviewed literature is well maintained by the current publishing ecosystem. Federal agencies could enhance this by working with publishers to establish a registry of grants, so that items in the peer-reviewed literature could be linked back to their supporting grants. The original research progress reports that are sent to the funding agencies should be made publicly available by them and also linked to the resulting peer-reviewed publications. Funding agencies have a poor track record of documenting and providing access to their own material and could learn a great deal from the publishing sector on how to make material widely available in a sustainable way. This collaboration is beginning to take shape around CrossGrant, a pilot project between Crossref, NISO, DOE-OSTI and Wellcome Trust.

(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?

- If funding agencies were more open with their information on what grants had been awarded when and to whom and if this information were accessible and organised then publishers could link publications to grants. This would make the whole system far more useful and transparent, but publishers would still have to charge for access to the resulting publication. If books were to be made open access without payment to publishers then there would be no more books.

(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?

- If content is made “free” after an embargo period then it effectively limits the copyright term during which the publisher can make a return on their investment. Shorter embargo periods will reduce publisher investment and degrade the quality of the peer-reviewed scholarly literature.
- There is considerable variation across subject areas but research in this area is still in its infancy and it is too early to establish definitive embargo periods for any discipline. These issues are being explored by the PEER project, funded by the European Commission (www.peerproject.eu).

Subject: RFI Public Access to Scientific Publications

Date: January 6, 2012 11:26:34 AM EST

First and foremost, taxpayers should have full access to the results of the research our tax dollars fund. This access should be easy and free. Publicly funded research research should provide public data. After all, we paid for it.

The benefits of such access will be a better informed public, more able to contribute to and support research and technology. Further, an educated and informed public will raise educated and informed children, who will be in a position to continue the role of the US as the world leader in R&D. Didn't Steve Jobs claim that the reason he moved production of Apple computing to Asia was because he needed better engineers? This should not be possible - America should have those engineers, American people should get those jobs, the American public should reap the benefits.

Most academics and researchers are doing peer-review for free now, and the editorial staff of most peer-review journals are likewise academics and researchers. In the case of state universities, these people are paid by the taxpayer (taxpayers who pay tuition pay twice), so the researching, writing, reviewing, rewriting and initial editorial costs are paid by the taxpayer. Therefore, it seems unreasonable to prevent Federal funding institutions like NIH or NSF from demanding that the taxpayer have access to what we have paid for. But when members of Congress are receiving contributions from major publishing houses, like Elsevier, then a conflict of interest occurs, and legislation is introduced to force the taxpayer to pay again, out of pocket, to read whatever work we have paid for. Since libraries, universities, museums and research institutes already pay for access to these publications, and most of the work is done by researchers, it seems we could channel that money into paying for the printing as well as the research, reviewing, etc.

There is also a problem in question #1. Why do we believe we need to "grow markets" related to access of scientific research? Why are we using the word market, or a market model? Why not think of this as education, as making knowledge more widely available? Why not conceive of this as augmenting public libraries and museums? If we are to grow as a nation, if we are to remain at the forefront of scientific research and development in the 21st century, then we need a public that understands science, applies science, and supports science. We cannot afford to put the profits of overseas companies ahead of American progress and the success and development of American people.

Best wishes,
Roderick B. Salisbury

Name/Email: Lori A. Goetsch,
Affiliation/Organization: Kansas State University Libraries
City, State: Manhattan, KS

Thank you for the opportunity to respond to this RFI on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research. This topic is a critical one to academic and research communities and the libraries that support them.

Access to taxpayer funded research is a right for US citizens. As a taxpayer and an academic librarian, I have seen the benefits of readily available research personally and professionally. As a personal example, I am part of family that is at risk for breast cancer. Both my sisters have been diagnosed and treated. Because of my risk level, I am a participant in the Sisters Study and Army of Women, two initiatives that promote and conduct research into causes and cures of breast cancer. The Sisters Study is longitudinal research that looks at both genetic and environmental causes. Army of Women connects women with various studies and clinical trials. It is important for me to be involved in this efforts and, as both a participant and a taxpayer, I want immediate access to the research results to make decisions about my own health and risk.

Professionally, the scientists that we support at Kansas State University conduct research in critical areas that impact our state and national economy, health, and security. Some of this research results directly in opportunities for economic development through technology transfer, start-ups, new product development, and other ventures that provide employment and attract related business activity to Manhattan and the state. As with the rest of the nation, Kansas has been facing challenging economic times but Manhattan has been very fortunate to attract the National Bio-Agro Defense Facility and we are seeing related small businesses and research facilities moving into the area as a result. While we have managed better than many, the recent announcement that Boeing will move its operations out of Wichita, Kansas will result in the loss of over 2,000 jobs. Where will the new work opportunities come from? Many will come through innovative partnerships between universities and the business community and will directly benefit from the research and scholarship that is conducted here and at other state universities. That is, as long as those results are shared easily and quickly. Immediate access is desirable; however, realistically, embargo periods of a year or less are likely to be needed for various reasons including the economic viability of some journal publishers.

Public access to scholarly publications is also important to the teaching mission in higher education. The rapid proliferation of information, ever-increasing interdisciplinarity, and expectations for immediate and ready access to information are driving students and faculty to look for and apply cutting-edge

research and scholarship in the classroom. At a time when the quality and value of higher education and student learning outcomes are under close scrutiny by legislators, parents, funding agencies, donors, and others, open access to scholarship is essential. Graduating students who have studied and applied new and emerging theories, research, and ideas will create the next generation of scholars who will continue to advance these concepts as well as workers who will apply them to economic growth and societal needs.

Thank you again for the opportunity to respond.

Lori A. Goetsch
Dean of Libraries
504 Hale Library
Kansas State University

"Singing has always seemed to me the most perfect means of expression. It is so spontaneous."--Georgia O'Keeffe

ASSOCIATION FOR
COMPUTERS AND THE HUMANITIES



To: White House Office of Science and Technology Policy

From: Association for Computers and the Humanities

Date: 6 January 2012

Subject: ACH commentary on two OSTP RFIs (*Public Access to Digital Data Resulting From Federally Funded Scientific Research and Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research*)

We write on behalf of members of the Association for Computers and the Humanities (ACH), in response to the OSTP's recent requests for information on public access to data and publications resulting from federally-funded scientific research. ACH urges the White House to ***adopt a more expansive definition of "research" to include the work of humanities scholars, and to work closely with government humanities agencies*** (such as the National Endowment for the Humanities, the Smithsonian, and the Library of Congress) in developing public access policies for federally-funded research and scholarship.

ACH is the primary US-based professional society for the digital humanities, which include computer- and technology-enhanced humanities research, pedagogy, data curation, and knowledge production. The humanities themselves encompass history, literature, ethics, archaeology, linguistics, and other areas of inquiry into the human condition – research disciplines the American Council of Learned Societies define as “those fields of knowledge and learning concerned with human thought, experience, and creativity.” As such, they are intimately connected with work in areas as diverse as cognitive science, computer science, environmental science, and human health. Such connections have only strengthened as humanities disciplines

have moved into the era of “big data,” and as liberal arts scholars contribute in increasing numbers to the digital humanities. Scholars and knowledge workers in this field develop innovative software tools and research methodologies for grappling with digitized content, and partner with information scientists and colleagues in a variety of research disciplines to create common standards for data interchange.

Agencies, offices, and public institutions among our peers in the UK, Canada, and Germany commonly use the term “research” to include work in the humanities and sciences alike. This means that policy and funding reforms are typically made **with consideration to their impact on the whole research output of universities and centers of learning**. In times of plenty, all research disciplines benefit from this shared attention. In hard times, they share burdens more equitably and are prompted to form productive collaborative relationships outside of traditional academic silos and create economies of scale – or at least are able to compete on a more level playing field. Most importantly, policy-makers are driven to seek the interdisciplinary advice that can position them to create larger enabling frameworks – systems that respect the increasing interdisciplinarity of the research enterprise.

American innovator and tech entrepreneur Steve Jobs attributed the commercial and aesthetic success of his endeavors to the blending of what have been called our two cultures: “It’s technology married with liberal arts, married with the humanities that yields the results that make our hearts sing.” On a practical level, R&D in library science and the digital humanities has driven and enabled numerous advances in science, technology, and industry. Examples include the development of XML (extensible markup language, a chief engine of the World Wide Web) and Dublin Core Metadata (a key standard for linked open data discovery across disciplinary silos), advances in location-based tools and methods and in usability and user interfaces, and the development of e-Science cyberinfrastructure, or the

creation of – often discipline-agnostic – virtual research environments. **Critical research involves scholars from across the sciences, social sciences, and humanities.** Increasingly, US funders are working together to promote such interdisciplinary research. For example, the Digging into Data Challenge brings together the NEH, the NSF, and the IMLS, along with five international funders, to encourage cutting-edge research with large datasets. Government funders and agencies across all disciplines – sciences, humanities, and medicine – need to work together to harmonize policies on open access to research publications and data.

Digital humanities scholars, developers, and publishers **are among the staunchest allies of open access, data stewardship and digital data preservation, and open source.** We have viewed our work as part of a complex ecosystem encompassing cultural heritage and scientific research since long before initiatives like SPARC (the Scholarly Publishing and Academic Resources Coalition) and documents like the 2003 *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* began to signal the cross-disciplinary nature of these issues so strongly. There are indeed challenges particular to the humanities in making the transition to open access publishing; however, those challenges are not primarily about principles of intellectual property, but rather about the sustainability of various publishing models and revenue streams for scholarly societies. The digital humanities community represented by ACH sees its work as having strong public value, understands that open access brings greater visibility and spurs research advances, and depends on long-term access to research data for scholarship and teaching.

Broad public access to research content produced with tax-payer dollars and the long-term survival of resulting digital data are **as crucially important to the humanities as they are to the sciences.** It is vital to the health of humanities research and to our ability to collaborate effectively with colleagues in the sciences, social sciences, and medicine that **humanities perspectives be formally included**

in these important conversations. Policy decisions related to open access are bound up with scholarly funding mechanisms, varying publication models, and unique challenges of long-term preservation, with different impacts in different disciplines. We strongly urge the OSTP, working through the NSTC's Task Force on Public Access to Scholarly Publications and Interagency Working Group on Digital Data, to **strengthen the connection of the humanities and cultural heritage research community to these important initiatives** by including representation from government organizations like the National Endowment for the Humanities' Office of Digital Humanities in deliberations about public access to federally-funded research.



Bethany Nowviskie, Ph.D.
ACH Vice President and Chair for Outreach & Advocacy

together with ACH officers and Executive Council members:

Dr. Julia Flanders, President
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Prof. Jarom McDonald, Treasurer

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Prof. Neil Fraistat
Prof. Geoffrey Rockwell
Prof. Susan Brown
Prof. Kathleen Fitzpatrick
Dr. Lisa Spiro

The purpose of taxpayer-funded research must be to benefit our country and the world. The results must be freely available to the public. Anything less is simply corruption and greed.

Chris Bacon

Name/Email: OSU Libraries Scholarly Communication Working Group

Authors: Bonnie Avery, Michael Boock, Sue Kunda, Janet Webster, Andrea Wirth

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Affiliation/Organization: Oregon State University Libraries

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Comment 1 Making access to federally funded research so expensive that only a privileged few can afford to read the results limits scientific progress and economic development. Open access creates a business climate where the private sector can more easily leverage public research and invest in and develop new products and services. Immediate open access without restrictions to federally funded research provides the private sector with access to research results. In today's web environment, it is far simpler, and thereby more efficient, to discover research that has already been conducted than it is to redo research that has already been done.

Comment 2 Copyright resides with the author until the author shares or surrenders those rights, usually to a publisher. Publishers require the right or permission to distribute publicly funded works through publication, for a period of time. Authors of federally funded research should retain other rights to meet their own teaching and research obligations, and in order to make their work available open access.

Mechanisms to enable full use (i.e. distribution, reuse, text mining, data mining, computation, etc. to aid in access to and reuse of research) should be part of a federal government public access policy. This can be accomplished by implementing appropriate licenses such as Creative Commons CC-BY licenses that are enforceable under current copyright law.

Comment 3 A successful centralized approach requires financial, technical and political commitment. Often, these three components are difficult to bring together in a timely and efficient manner. Decentralized approaches emerge because of this challenge. Local efforts to archive and provide access to federally funded research results develop from local needs. At Oregon State University, the Libraries receive requests from users internal and external to the university for publications that are difficult to find and expensive to acquire. College deans want better means of tracking faculty productivity and researchers desire legitimate means to archive their finished products. OSU is not unique in demonstrating the desire for easily accessible digital repositories that clearly indicate who is responsible for their long-term maintenance.

Decentralized repositories do not preclude a centralized approach. Multiple copies, at times messy, are a proven means of preservation. If one repository has technical problems, another can fill the gap. Access is improved by having multiple "vendors." This provides users with a choice. Systems may find some copies more easily than others depending on location and format. Analytic tools are more problematic in a decentralized system as item usage is currently system specific.

The use of private repositories is problematic if they are the only source. Users are dependent on corporate policy for access and corporate management for

preservation. A blended system of federal, institutional and private systems seems the most feasible and possibly reliable.

Comment 4 One of the most viable models is the creative use of embargoes. Publishers retain rights to control access to publications for the initial three to six months after publication, and then institutional and federal interests can ingest those publications for public access. This allows the publishers time to reap the economic reward of their investment while relieving them of the need to provide perpetual preservation and to develop public interfaces beyond what the more sophisticated user needs. The linkages among public and private archives could enhance usage of both.

Comment 5 Federal agencies, publishers, and or scholarly and professional societies should work together to “develop robust standards for the structure of full text and metadata, navigation tools, and other applications to achieve interoperability across the literature, taking international standards into account.” Federal agencies should work with organizations and stakeholders “that have cyber infrastructure programs to develop a multiagency program supporting research and development to expand interoperability capability.” To achieve maximum interoperability and reuse of the research record, distributed database providers must work in concert with agencies and organizations, such as PubMed Central, that have developed robust internal operability technologies.

Comment 6 Effective communication and use of technology will help maximize the benefits of access to publicly funded research. As the funders of the research, taxpayers likely already expect to have access to the results of the research conducted, even though this is not currently the case.

The burden of a public access policy is relative, and the concept of minimizing it overlooks the significant burden that is currently experienced by many of the stakeholders.

- Awardee institutions may wish to share the original scholarship produced by their faculty and other researchers with alumni, donors, and recruits in marketing and recruiting efforts. For institutions with Land Grant status, this is part of their duty to disseminate research findings to the citizens of the state they serve. The burden of a policy that supports this dissemination would be in ensuring the requirements of the grants are followed. This burden could be lessened by creating a simple compliance structure that is easy to understand and implement by institutions receiving grants and the authors of the grants.
- For scholars conducting research at an institution, they sometimes find that they cannot access the work of their peers as easily as the Internet could allow (and ironically, sometimes they can't access the published copy of their own works). Frequently, time is wasted while colleagues use informal networks for sharing documents, rely on their institution's interlibrary loan services, or simply go without. The burden for scholars to follow through on their commitment to make their work publicly accessible would be minimal. Many faculty (or their staff) already post citations to their works on professional or personal websites and record their research activities in their dossiers and departmental reports. Uploading documents and providing some metadata to their publications

would be a small extension of activities already taking place.

- The current lack of coordinated dissemination of publicly funded research is more of a burden to federal agencies and libraries than putting a model in place that allows better collaborative efforts and cost savings. Unique repositories exist that are already meeting the spirit intended in the concept of free access to publicly funded research. These efforts however are kept from being fully effective by the publisher-controlled restrictions on access such as variations in the versions (if any) that can be made available, and varied embargo periods. Simplification through national policy would streamline a good process already under way, making the work more uniform and manageable.
- Following the PubMed Central example, publishers could opt to participate in compliance by helping authors place their work in appropriate online repositories, which would likely be a minimal cost relative to overall profits. The primary burden to publishers will be in the form of loss of revenue. However, academic institutions have been experiencing a loss of buying power for decades to support ongoing publisher profits. Perhaps this is a burden that should be more fairly distributed between publishers, libraries, institutions of higher education, and other stakeholders.

Comment 7 Public access policies should provide unfettered access to **all** peer-reviewed publications, including book chapters, conference proceedings and any other peer-reviewed work that might result from federally funded research. At Oregon State University we know research results can take many forms; all publications add value to the scholarly discussion, and it is just as easy to provide access to alternative forms of publication as it is to provide access to journal articles.

However, policies under which **educational materials** (such as book chapters, texts, and conference proceedings) are made accessible **may need to differ** from those directed at journal articles. Different conditions apply to different types of materials (i.e., authors of journal articles are not paid while textbook authors may be remunerated for their work) and policies should reflect these differences.

Comment 8 No publisher has indicated that the NIH embargo period policy has harmed them financially. And, except in the case of the NIH public access policy, only publishers currently make decisions about the length of embargo periods, not the disciplines or taxpayers or the government on their behalf. Authors accrue no benefits from embargoes; we have never heard an author say "I wish my article was not available."

A definitive statement from the government is needed that says all publications resulting from publicly funded research data must be freely available to the public via a persistent link on the Internet. A federal standard could be set for a reasonable lag between publication and availability in an open access repository which researchers could then quote to publishers when assigning their copyrights, rather than allowing the publisher to make this choice against the public interest -- which is now the case.

To: OFFICE OF SCIENCE AND TECHNOLOGY POLICY

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

Date: 1/6/2012

From: Johns Hopkins University Scholarly Communications Group

Robin N Sinn, Chair, Research Services Librarian, Sheridan Libraries

Julie Adamo, National Library of Medicine Associate Fellow, Welch Medical Library

Mark Cyzyk, Scholarly Communication Architect, Sheridan Libraries

David Reynolds, Manager of Scholarly Digital Initiatives, Sheridan Libraries

Gabrielle Dean, Research Services Librarian, Sheridan Libraries

Claire Twose, Associate Director, Public Health and Basic Science Informationist Services, Welch Medical Library

Sue Woodson, Associate Director, Digital Library Services, Welch Medical Library

1a. 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?

Most importantly, agencies can develop policies that support free, immediate, and complete access to publications resulting from federally-funded research. Supporting the complete reuse of articles promotes the development of new services and products. This type of commercialization is far more probable in a fully open and accessible environment where content is fully reusable. Complete access makes cutting-edge ideas and research accessible to a much greater number and variety of users. Organizations, companies, and individuals who are not part of the traditional research enterprise have more opportunity to develop unforeseen applications out of publicly funded research. This increased commercialization supports economic growth, by encouraging private investment to capitalize on a government resource. Furthermore, unrestricted access promotes social growth and development by allowing all people, regardless of institutional affiliations or social status, to learn from the research that has been funded by their tax dollars.

1b. 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?

Open Access increases the citation count of an article and promotes follow-on research, supporting growth, advancement, and diversity of knowledge (Eysenbach, 2006). This open accessibility of information accelerates advancement in knowledge and research by making it easier to incorporate new findings into research and writing, and opening doors to follow-on research to an unrestricted pool of users (See testimony from David Lipman, MD, Director of the National Center for Biotechnology Information: <http://www.hhs.gov/asl/testify/2010/07/t20100729c.html>). Open Access facilitates interdisciplinary research by making information available to users outside of traditional knowledge silos. It also facilitates use by non-profit research and advocacy organizations who traditionally have had limited accessibility to research.

Additionally, Open Access enables machine reading and computer-driven research, data mining, text mining and other methods that were impossible prior to the digital environment. This is another example of how Open Access provides opportunities for commercial development through the enabling of computer-driven research. This type of research is better supported and facilitated by an unrestricted environment.

Eysenbach G (2006) Citation Advantage of Open Access Articles. PLoS Biol 4(5): e157.

1c. What are the relative costs and benefits of such policies?

[Research conducted through SPARC](#) shows that an estimated five-fold increase in return on investment will result from opening access to all U.S. publicly funded scientific articles, while an Open Access policy similar to the NIH policy will generate benefits approximately eight times larger than the costs.

There is considerable infrastructure stemming from databases such as PubMed Central from the National Library of Medicine, that are already in existence, that can be further developed to support expanded Open Access policies. Building on existing infrastructure will minimize costs through reducing duplication of effort.

PubMed Central currently receives over 500,000 users per day, a statistic that embodies the great demand and potential for freely available research. A vast user base also serves as a means to increase transparency of, and accountability for, research investments, building upon the capacity of federal agencies to account for the outcomes of the research that they fund. There is also potential for positive impacts on policy, through improved access to information that guides policy decisions.

1d. What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?

Complete, immediate, and free Open Access, with rights for re-use, will maximize the value of research, and return to taxpayers. Restricting access will limit the extent and types of follow-on research that can be conducted. Possibilities for computer-based research are maximized in an unrestricted environment. Placing restrictions on access also creates an unequal grounding for diverse groups of researchers, allowing those with full access to have greater opportunity than those with restricted access. Furthermore, full reuse prevents duplication of research efforts, making it possible to extract value on initial investments far into the future.

2a. 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?

2b. 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?

A public access policy for scholarly publications resulting from federally funded scientific research could easily be crafted to enhance access for many sectors of the public without infringing on the intellectual property interests of rights holders. Current copyright laws would enable rights holders to control initial dissemination of the research, re-use that work, and to produce derivatives work. A public access policy would not undermine any of these rights, but it would enable more researchers and the general public to put the results of the research to good use. The "facts" of the research are not protected by copyright now, only their expression. Wider and quicker dissemination of these facts would likely result in more scientific and commercial applications for the research. There is no evidence that pre-print services such as ArXiv have harmed commercial publishers. Scientists still publish their papers in peer-reviewed journals, but their work is also made available to researchers who cannot subscribe to such journals. The Johns Hopkins library has not cancelled any journal subscriptions as a result of the availability of pre-print services, and we do not know of other libraries that have done so. A policy that utilized the Creative Commons CC-BY license would enhance access to publicly funded research while still protecting copyright holders. It would also provide researchers the right to reuse research data in new and interesting ways. This could be combined with a reasonable embargo period to protect the value of the original publication to publishers.

3a. 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?

3b. 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?

The pros with respect to a centralized service include the following: Centralization of the service presumes centralization of the administrative functions of the service. Having a service managed in a single, centralized facility makes for a simpler service. Centralization also enables direct control of the service and easier provision of tools for search, analytic tools, etc. In short, a centralized service is administratively a simpler service. However, the downside here is that the burden of the service as a whole will likewise be focused and centralized.

The pros with respect to a decentralized service include the following: A decentralized service can likewise be administered in a decentralized manner, pushing administrative tasks out to participating partners. This relieves the administrative burden on a central entity. However, the downside here is that the functions surrounding the service, search, analytic tools, etc., become more difficult to implement. Interoperability among and between participating nodes in the service becomes crucially important. And this interoperability will inevitably require some sort of administrative and

technical "glue" to hold it together. The administrative glue here will need to consist of a well-thought-out set of rules and policies to which each and every participating partner in the decentralized service must conform. Likewise, from a technical perspective, there must be a small set of standards gluing the system together and enabling the various nodes in the overall system to interoperate. A good example of such technical "glue" is something called the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). OAI-PMH is a way of exposing metadata provided by a network service such that it can be "harvested" and ingested into a centralized index enabling search functionality across the entire set of harvested materials. So the data and publications themselves, the content, reside in a decentralized network of nodes; yet this content can be centrally searched. The glue of OAI-PMH makes this possible.

A hybrid model of centralization is also possible. One scenario here would be for the content to be decentralized, the metadata (data about the content) to be centralized, and a parallel system aimed at long-term, trusted preservation of both content and metadata be set up. One such preservation system, LOCKSS (Lots of Copies Keep Stuff Safe), does just this. LOCKSS is a federation of nodes holding encrypted copies of content -- multiple, duplicate, encrypted copies of content. The LOCKSS network itself actively monitors the health of each copy of content such that, if one copy degrades, it is automatically overwritten with a known-good copy housed elsewhere in the LOCKSS network. In this way, content on the publicly-available nodes in the system can be thought of as working copies; metadata about that content in a centralized service can provide access to such content; and the copies of the content held in the preservation system can be deemed archival copies, copies to be used in case a working copy on the public network degrades to the point of being unusable.

At the least, it seems prudent for federal agencies to maintain preservation copies of content. This could be accomplished, as illustrated above, as simply as setting up a LOCKSS network into which a copy of content is deposited.

Whether a centralized or decentralized approach is used, the federal government will generate and enforce the rules of the system: open access to content and the long-term availability of the content. A decentralized approach will need to stress interoperability and will also encourage innovative partnerships with other entities.

The policies that are developed must give federal agencies the right to store and make freely available publicly funded articles. If the content is to be stored across multiple sites, public or private, the agencies will use contracts to outline the technical and legal requirements for the participation of private entities in the provision of services. Long-term stewardship will be part of that contract.

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?

In order to build a national system of open repositories that feature interoperability, robust metadata, excellent search functionality, ingestion, and consistent policies and procedures, public-private partnerships are necessary. The federal government, publishers, libraries, archives, universities, and commercial businesses will need to work together to provide the infrastructure and services needed to make this project successful.

Openness is one aspect that must be stressed. The content in the repositories must be open to the public; code should be available to both commercial and non-profit entities for service development.

One possible model is [DRIVER](#) (Digital Repository Infrastructure Vision for European Research), a set of distributed repositories that share a mission to support European research and public access.

Another model is PubMed and PubMed Central. Both are open. [PubGet](#) and [Quosa](#) have built products that utilize the information in both PubMed and PubMed Central.

5a. 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?

5b. 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?

Proper metadata is vitally important for maximizing the utility of federally funded research. Metadata is more than a way to facilitate discovery of research articles—it must also enable researchers to use the publications and underlying data in new and interesting ways. Services such as data mining and visualization could greatly increase the value of the research. In order to perform such actions, the metadata must be in a common, machine-actionable format such as XML. Whatever standard or standards are used must go beyond minimal data such as Dublin Core, and include richer descriptions and relationships. The NLM DTD Journal Archiving and Interchange Tag Set Library shows much promise as a minimal standard. The use of discipline-specific controlled vocabularies for elements such as subjects will enable a high level of interoperability.

Whichever standard or standards are chosen, it is essential that they should be allowed to evolve. Emerging standards should constantly be examined for relevance. As long as interoperability is considered in their adoption, there is no reason to stick with a static set of metadata standards forever.

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?

Consistency of the requirements engendered by a mandate for broad public access and long-term stewardship of research articles will be fundamentally important to the success of this program. Uniform requirements across granting agencies will enable the most gain for the public, for research, and for business, while also leveraging the work done by researchers, publishers, libraries, institutions, and entrepreneurs.

- Researchers, institutions, and publishers will follow one set of uniform requirements to comply with the law. This eliminates complexity and duplication of effort, increasing compliance.
- Businesses and entrepreneurs who wish to build applications and services using the information in the repositories will be able to work with a large system working under one set of rules. This means that their work will appeal to larger markets, thus creating more incentive for them to do the work in the first place.
- The public, as well as librarians, researchers and educators, will find information more quickly and reliably since search engines won't have wildly different types of repositories to work with.
- The granting agencies will have the opportunity to work together on this system and create something truly efficient. One system for multiple agencies would allow them to share the staffing, training, and funds to support that system. This will keep costs down and encourage high compliance rates.
- Higher compliance rates will provide the public, libraries, institutions, researchers, educators, and entrepreneurs with more information to work with and on. It's a positive feedback cycle that encourages growth and participation.

The policies created to support the public access policy should incorporate certain beneficial characteristics.

- Use of existing and developing IT protocols will increase interoperability and save time. [SWORD](#) is an example of an extant protocol that can be incorporated into the new policies, saving time and increasing compliance. [ORCID](#) is in development and will individually identify authors and link them to their published work. Optimizing the information for searching by Google and Google Scholar will improve the discovery of this information.
- New ideas and products should be encouraged. IT changes constantly, so the repositories created by this program should be structured for easy adaptation of new technologies. Ongoing programming work will need to be part of the infrastructure.
- Agencies and institutions can create policies and infrastructure that allow them to integrate the articles arising from grants with their grant management programs. This will improve tracking and reporting for both groups. Institutions and agencies will be able to assess grants, PIs, and research teams using the information made available from this integration. The public will also be able to see what their tax dollars are supporting.
- This integration can also help individual researchers keep their CVs, bibliographies, and PI profiles up-to-date, thus improving efficiency for all involved in the grant process.
- These open repositories will provide many educational opportunities. Librarians will be able to teach their patrons better ways to search the scholarly literature. New ways to measure research productivity will emerge and need to be taught as well.

Consistency, openness, interoperability, and integration will make this a very successful program.

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?

Other types of publication arising from federal funding should be publicly accessible. Those other publication types may need a different set of policies than journal articles. Authors are generally paid for books and book chapters, while journal article authors are not paid. This is a fundamental difference that requires separate policies for open access.

Conference proceedings should also be considered separately from journal publishing. There are enough differences between conferences and journals that it would be too difficult to fold conference proceedings into the current discussion. Some conferences only publish abstracts, some publish papers of the presentations made. Some treat the proceedings as a journal, others as a book series. Often, conference proceedings aren't published until 2 or 3 years after the event.

8a. 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.

8b. Are there evidence-based arguments that can be made that the delay period should be different for specific disciplines or types of publications?

Since scientific research moves so rapidly, its value to researchers is greatest soon after publication. Therefore, it is important to make the results of publicly funded research widely available as soon as possible. Such prestigious publishers as the American Institute of Physics, the American Mathematical Society, and the New England Journal of Medicine allow authors to make their published research available through institutional repositories or other free-access e-print servers either immediately upon publication or after a six-month embargo period. They have reported no reduction in number of subscriptions as a result of this policy. In fact, no publishers have presented evidence that a six-month or less embargo period on public access to research has harmed them. As mentioned in a previous question, the Johns Hopkins Libraries have not cancelled any journal subscriptions as a result of the availability of journal articles in open access repositories. There are many factors that contribute to journal cancellations, but those relate to overall budget constraints and competitive pricing of rival journals.



January 6, 2012

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Re: OSTP Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research [<http://federalregister.gov/a/2011-28623>]

Creative Commons (CC) is pleased to submit comments to the Office of Science and Technology Policy's Request for Information (RFI) on the topic of Public Access to Peer-reviewed Scholarly Publications Resulting From Federally Funded Research. Creative Commons (<http://creativecommons.org>) is a 501(c)(3) U.S.-based nonprofit corporation dedicated to making it easier for people to share and build upon the work of others, consistent with the rules of copyright. CC develops legal and technical tools used by individuals, cultural, educational, and research institutions, governments, and companies worldwide to overcome barriers to sharing and innovation. Creative Commons operates globally. The international CC affiliate network consists of 100+ affiliates working in over 70 jurisdictions, and there are over 500 million CC-licensed works available on the web.

Thousands of academic researchers release journal articles, datasets and educational materials under Creative Commons licenses, allowing those materials to be easily found, accessed, and reused around the world. CC licenses offer a flexible set of permissions so that authors and publishers can release their scholarly publications on the terms they wish while ensuring that they receive attribution for their work.

We answer the specific questions laid out in the RFI below.

Question 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?

Comment 1

This RFI comes in response to The America COMPETES Reauthorization Act of 2010. The purpose of that law is “to invest in innovation through research and development, and to improve the competitiveness of the United States.”¹ All the suggested priorities listed in Question 1 of the

¹ See http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_public_laws&docid=f:publ358.111

RFI (e.g., “grow existing and new markets,” “grow the economy,” “improve the productivity of the scientific enterprise”) should be explored and acted upon with the public interest in mind. The public funds tens of billions of dollars in research each year. The federal government should set up policies so that the public has immediate, cost-free, unimpeded access to the research and publications that are developed with public funds (taxes).

Scholarly articles created as a result of federally funded research should be released under full open access. Full open access policies will provide to the public immediate, free-of-cost online availability to federally funded research without restriction except that attribution be given to the source.²

The complete collection of articles resulting from publicly funded research needs to be made available under a full open access regime so that the maximum value of federally funded research publications can be realized. In this context, we speak of value in a broad sense, including economic, scientific, and social value. Full open access policies will maximize scientific productivity, accelerate commercial innovation, and support the public’s right to access and use the materials it pays for.

The federal government can support economic efficiency of the taxpayer dollars they expend by instituting an open licensing policy. The incumbent system oftentimes results in the government essentially paying into the research chain from various angles: first, when the government pays for the development of research by awarding federal grants; second, when the government subsidizes the salaries of the academics who serve as peer-reviewers; third, when the government pays for libraries in research universities that subscribe to the journals.³ The public should receive a better return on the investments being made for the research, development, and publication of federally funded scholarship.

Existing policies such as the NIH Public Access Policy are a good first step to increasing access to federally funded research outputs. And, as suggested during this comment period last year, the federal government should require that all grantees that receive federal research funding deposit either the final, published version of their peer-reviewed journal articles or the final electronic manuscript of such an article in a publicly available digital repository. However, the NIH Public Access Policy does not go far enough in communicating the rights for reuse that should be available to the public that paid for the development and publication of that research. Releasing the outputs of federally funded research free of cost online should be a baseline, but if downstream users (including researchers within the same domain, scholars from other disciplines, creative entrepreneurs, government employees, citizens) are unclear about their legal right to copy, amend and redistribute the federally funded research, those publications will be reused less. This will significantly diminish the potential impact of the research—and, by extension, the public’s investment. With a renewed attention to clarifying available rights in

² Carroll, Michael. *Why Full Open Access Matters*. PLoS Biology, November 2011. Volume 9, Issue 11. Available at <http://www.plosbiology.org/article/info:doi%2F10.1371%2Fjournal.pbio.1001210>.

³ Mays-Smith, Simon et al. *Three Pillars of Wisdom: the STM journal industry*. Credit Suisse First Boston. April 2004. Not available, but see <http://www.earlham.edu/~peters/fos/newsletter/05-03-04.htm#creditsuisse> for a synopsis.

advance, the federal government can increase the speed of scientific discoveries, promote innovation, and support new business opportunities looking to capitalize on federally funded research outputs. And as scientific researchers, creative startups, and traditional commercial players are granted the reuse rights they deserve, these and other groups can best leverage federally funded research to advance the scientific enterprise and increase U.S. competitiveness by developing new products and services.

One study showed that restricted access to gene-level research led to 30% less downstream scientific research and product development when compared to open access.⁴ By extension, in at least some disciplines, scientific innovation and economic activity that is desired under the America COMPETES Act is more likely to occur on federally funded research that is made available under open access than on research that is locked down with technological protection measures, that charge for access, or that restrict use to only noncommercial purposes.

If federal agencies want to maximize the impact of publicly funded research, they should provide explicit, easy-to-understand information about the rights available to the public. The simple process of posting federally funded research articles on the web so that they can be viewed (and even downloaded) is not sufficient to promote scientific progress. Even where it is the intention that research created with public dollars be widely shared, as long as those materials are not clearly marked with information describing the rights and permissions under copyright, the use of the resources will be diminished and impact of public investment lessened. The standard means for granting permission to the public is through a Creative Commons Attribution (CC BY) license. This license is aligned with the principle of full open access because it allows rights (including commercial rights) to be communicated with the only requirement that users give credit to the rightsholder.⁵

Full open access allows for a greater number and diversity of researchers to participate in the process, and can help promote access and reuse by researchers in related fields who might not have had access to the full corpus of research because it was too expensive or because they were not granted full reuse rights. By allowing more people to interact with federally funded scholarly research, federal agencies open the door to increasing the impact of scientific discovery.⁶ It has been demonstrated that reaching out to communities of researchers beyond the primary research domain helped solve one-third more problems that experienced research and development firms

⁴ Williams, Heidi. *Intellectual property rights and innovation: Evidence from the human genome*, December 2009, p. 25. Available at http://deugarte.com/gomi/Williams_jmp.pdf.

⁵ CC BY is a copyright license that grants permission to the public to reproduce, distribute, perform, display or adapt the licensed materials for any purpose so long as the user gives attribution to the author or as otherwise directed by the copyright holder. For more information, see <https://creativecommons.org/licenses/by/3.0/>

⁶ There's also been growing participation in "citizen science," whereby the public is able to discover and assist with complex scientific research projects. Over 500,000 people participate in the Zooniverse (<https://www.zooniverse.org/>) citizen science initiative.

had been able to solve by themselves.⁷ One study reasoned, “the significance of this effect may be due to the ability of ‘outsiders’ from relatively distant fields to see problems with fresh eyes and apply solutions that are novel to the problem domain but well known and understood by them.”⁸ Empowering the unexpected reader by making federally funded research outputs full open access is one method for opening the discovery horizon.⁹ Another study suggests that supporting open access to research may contribute to the exploration and creation of novel research lines.¹⁰ Making federally funded research available under full open access promotes the advancement of research from previously unforeseen angles, and communicates broad reuse rights so that economic activity and new markets can blossom.

Policies aligned with full open access should be the default for federally funded research. By doing so, the federal government maximizes their investments by encouraging competition because research is available to all to build upon, including commercial enterprises. As a result, such research outputs—and the business opportunities they generate—will be more attractive to private, venture capital, and foundation funding. Already, some philanthropic foundations have adopted open licensing policies for particular grant programs. These policies require that any grant recipient must agree to release outputs arising from foundation funding under open licenses, such as the Creative Common Attribution license.¹¹ If federal agencies adopt a licensing policy aligned with full open access, the outputs of federal funding can be shared, combined and repurposed with similarly licensed research, educational content and data funded by philanthropic foundations. The network effects and utility of the research increases when data and other content are legally and technically interoperable under a common licensing framework.

Full open access to federally funded research articles can be a central driver of scientific innovation and productivity. Federally funded scholarly research should be “read/write” and not simply “read only.” Scientific and scholarly communities conduct research, for example, not only directly through the act of reading, but also through computational methods such as the mining of scientific literature and data. Not only would a full open access policy expand the number and diversity of human readers able to access and reuse federally funded scholarly publications, it would provide fuel for powerful new machine learning capabilities, which are

⁷ Lakhani, et al., *The Value of Openness in Scientific Problem Solving*, October 2006, p. 2. Available at <http://www.hbs.edu/research/pdf/07-050.pdf>.

⁸ Ibid, at 12.

⁹ For example, see Kevin Smith’s description of “unexpected readers” at <http://blogs.library.duke.edu/scholcomm/2011/11/15/the-unexpected-reader/>

¹⁰ Murray, et al., *Of Mice and Academics: Examining the Effect of Openness on Innovation*, October 2008, p. 3. Available at <http://www.hbs.edu/units/tom/seminars/2007/docs/Of%20Mice%20and%20Academics%20Stern.pdf>.

¹¹ For example, the Shuttleworth Foundation requires that grantees apply CC BY (or allow CC BY-SA, in some cases) to the content they produce with grant funds. See <http://www.shuttleworthfoundation.org/about-us/our-philosophy/open-licensing/>. The Gates- and Hewlett-funded Next Generation Learning Challenges grant program stipulates that grantee outputs be licensed under CC BY. See http://nextgenlearning.org/sites/default/files/IP_Policy_105.pdf.

able to conduct novel types of computational research on huge sets of open texts. Under the current regime of restricted (or even unclear) access and reuse capabilities, such innovation and next-generation semantic text analysis is either impossible, prohibitively expensive, or fraught with potential legal liability.

Full open access makes financial sense and maximizes the impact of federal spending on research. Adopting a broad open access policy for all US federally funded scientific articles is projected to produce an estimated 5X return on investment.¹² The benefits of a public access policy similar to the existing NIH Public Access Policy would be 8X greater than costs, and the net gain of extending NIH-like policies to all U.S. federal agencies with annual extramural research budgets greater than \$100 million is estimated to be about \$1.5 billion.¹³ The NIH public access policy has proven to be cost effective. Currently, it costs approximately \$4.5 million per year to deliver the current level of access (assuming ~80,000 articles/year).¹⁴ Thus, the annual implementation of the NIH public access policy costs 1/100th of 1% of the annual NIH budget (assuming ~\$30 billion annually).

It is possible for a government-wide full open access policy to be implemented in a cost-effective manner because the federal government has already built the PubMed Central repository. In order for federally funded research outputs to align with full open access, such a repository would need to also communicate rights statements such that any scholarly publication be released with at most the requirement that attribution be made to the author (as mentioned, the standard means for communicating these rights is through a Creative Commons Attribution license). Such an addition would go a long way to making sure that the public knows how they may reuse federal funded scholarly research publications. Several universities have already integrated the technical means to support open licensing within their institutional repositories.¹⁵ Leveraging existing infrastructure and current community best practices is increasingly important because agencies continue to face significant budget reductions.

In addition to speeding the potential for scientific discovery and research, adopting a full open access policy for the outputs of federally funded research will benefit integral government processes too. Government agencies will be able to operate more efficiently because they too will have access (and will know the permissions available to them) to the outputs of federally

¹² Houghton, et al., *Economic and Social Returns on Investment in Open Archiving Publicly Funded Research Outputs*, July 2010, p. 7-8. Available at <http://www.arl.org/sparc/bm~doc/vufrpaa.pdf>.

¹³ Ibid.

¹⁴ National Institutes of Health, *Analysis of Comments and Implementation of the NIH Public Access Policy*, September 2008, p. 22. Available at http://publicaccess.nih.gov/analysis_of_comments_nih_public_access_policy.pdf.

¹⁵ Examples include MIT's DSpace (<http://libraries.mit.edu/dspace-mit/index.html>) and the University of Michigan's Deep Blue (<http://deepblue.lib.umich.edu/>).

funded research publications.¹⁶ And, with full open access, Congress and appropriations bodies will be able to more easily see the return on investment by assessing the value of existing expenditures, and target future federal funding toward the most promising and high impact research areas.

Question 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?

Comment 2

The current climate around intellectual property (IP) is increasingly one of ratcheting up enforcement and maximization of copyright and other IP rights. However, it's important to understand the underlying priorities of scholarly authors to determine whether the default copyright regime reflects their needs and supports their academic endeavors. The primary motivation for scientists to publish their works is "to inform others about their work."¹⁷ Scholarly authors wish to have their research read, consumed, and cited. By adopting a full open access policy for the outputs of federally funded research, the federal government would further the fundamental goal of the scientific community.

A full open access policy for the outputs of federally funded scientific research is not incompatible with protecting the copyrights of authors and publishers. Creative Commons—and CC BY, the license aligned with full open access—is not a replacement for copyright. CC licenses operate within the current system by allowing authors and publishers to retain their copyright but mark their work with the rights they wish to communicate in advance. At the same time, CC licenses ensure that the rights holder receives credit in the manner they prefer. And, policies aligned with full open access encourage scholarly authors to share their work widely, thus increasing the ability for their work to be read and cited. One study shows that research made available via an open access repository (as opposed to a restricted access repository) experience a citation boost between 50-125%.¹⁸

There are now alternative publishing models for making research articles available to readers. Under a model leveraged by the Public Library of Science (PLoS), the author pays for publication and the resulting article is made available under full open access. In this way, PLoS

¹⁶ In 2009 the Department of Justice paid about \$4 million each year for access to public court records via PACER. See <http://www.wired.com/threatlevel/2009/12/doj-pacer/>.

¹⁷ Hansen, et al., *Intellectual Property Experiences in the United States Scientific Community*, 2007, p. 8. Available at http://sippi.aaas.org/Pubs/SIPPI_US_IP_Survey.pdf.

¹⁸ Furman, Jeffry L and Scott Stern, *Climbing Atop the Shoulders of Giants: The Impact of Institutions on Cumulative Research*, National Bureau of Economic Research working paper. September 2006, p. 4. Full version not openly available. Abstract at <http://www.nber.org/papers/w12523>.

is exercising copyright, but simultaneously promoting openness via the use of open licensing (CC BY) instead of the default all rights reserved approach.¹⁹

The U.S. federal government should take into account the broad range of stakeholders in its policy-setting process, and should consider the needs and requirements of the global science and scholarly research communities. More than ever before, scientific research is no longer conducted in national silos. Digital networking, advanced communication technologies, and widespread information-sharing tools support a truly global research ecosystem where disparate researchers around the world collaborate with each other on scientific activities. The U.S. will progress most rapidly if it can take full advantage of the world's research results by urging other governments to do the same. The full value of our nation's collective investment in scientific research can only be realized if we allow these articles to be freely accessed, used, and built upon. The U.S. can participate in and even lead such efforts by adopting a full open access policy for its federally funded research outputs.

We assume the federal government is interested in widespread distribution of the non-defense research it funds because it increases the reach and impact of that research. If the federal government wishes to maximize the impact of the public's tax dollars, it should set the license and copyright terms for content created using its funds. A grant recipient may choose, or not, to accept those terms when funding is offered. The federal government might explore other options such as full open access policies, which exercise copyright law less than "all rights reserved" by leveraging open licenses to communicate rights and permissions to downstream users.

Open licensing requirements are already in place in some federal grant programs. The Department of Labor's Trade Adjustment Assistance Community College and Career Training grant program mandates that grant recipients make available any new content created with grant funds under the Creative Commons Attribution license.²⁰ The CC framework ensures broad access and re-use for persons wishing to utilize the federally funded research while

¹⁹ As an example, see the PLoS Biology Terms of Use, available at <http://www.plosbiology.org/static/terms.action>

²⁰ The open licensing requirement in the Department of Labor Solicitation for Grant Applications says: "In order to further the goal of career training and education and encourage innovation in the development of new learning materials, as a condition of the receipt of a Trade Adjustment Assistance Community College and Career Training Grant ("Grant"), the Grantee will be required to license to the public (not including the Federal Government) all work created with the support of the grant ("Work") under a Creative Commons Attribution 3.0 License ("License"). This License allows subsequent users to copy, distribute, transmit and adapt the copyrighted work and requires such users to attribute the work in the manner specified by the Grantee. Notice of the License shall be affixed to the Work." Available at <http://www.doleta.gov/grants/pdf/SGA-DFA-PY-10-03.pdf>.

simultaneously ensuring that proper credit and important legal protections are retained.²¹ CC licenses have also been upheld in copyright litigation are enforceable under copyright law.²²

Question 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?

Comment 3

The federal government is the appropriate entity to provide permanent stewardship and long-term access to federally funded research outputs. To ensure that the federal government is able to provide that stewardship and make federally funded scholarly research permanently available online, it must have the adequate authority to allow it to save and archive scholarly articles. This is familiar territory, as the NIH Public Access Policy already requires that grantees submit final peer-reviewed journal manuscripts that arise from NIH funds to the digital archive PubMed Central upon acceptance for publication. Grantees (or their publishers) have had to manage copyrights properly in order to make sure that the final manuscript is submitted with the necessary authority to grant NIH permission to make it publicly available within 12 months of publication.²³ The full open access framework would require authors and publishers to ensure that the federal government has the rights to share the scholarly publications resulting from federal funds under a license that offers full open access, such as CC BY.

As mentioned previously, government stewardship of federally funded research is cost effective because the government has already developed the underlying infrastructure and related policies. However, a distributed approach could be considered as long as it can deliver a level of service that ensures that federally funded research articles are made available under full open access. Several U.S. research universities have already demonstrated they have the necessary technical, policy, and institutional stability to host distributed repositories.

Question 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?

²¹ There are additional features to CC licenses that grant broad access and re-use for persons wishing to utilize federally funded research outputs while ensuring that proper credit is given to federal agencies and authors sharing that research. See

<http://epsiplatform.eu/sites/default/files/Topic%20Report%20No%202023%20Creative%20Commons%20and%20PSI.pdf>, p. 7-10.

²² For more information, see http://wiki.creativecommons.org/Case_Law.

²³ Mike Carroll previously explains these options in the context of managing copyrights with regard to the National Institutes of Health Public Access Policy. *Complying with the National Institutes of Health Public Access Policy: Copyright Considerations and Options*, SPARC/Science Commons/ARL. February 2008, p. 3. Available at http://www.arl.org/sparc/bm~doc/NIH_Copyright_v1.pdf.

Comment 4

Public-private partnerships should be encouraged so long as they align with the requirements of a full open access policy. This ensures that wherever researchers access/locate/read the publicly funded scholarly articles, it will be clear how they may reuse that content.

Some for-profit publishers may argue that they should host federally funded research articles published in their journals. But the long-term viability of privately managed repositories is that their long-term viability is not guaranteed. Due to the volatility in the publishing market, for-profit publishers should not be the sole gatekeepers for public access to publicly funded research. A publishing house could go out of business and access to the research articles they hold would become inaccessible to the public that paid for that very content.

Despite those concerns, if privately managed repositories can demonstrate they can meet every necessary requirement, it could encourage the development of new markets and promote innovative ways to distribute and capitalize on federally funded scholarly research.

Question 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?

Comment 5

Federal agencies should mandate that as a condition for receiving federal funds grantees must make available the metadata specified by the agencies. Since it is desirable for the outputs of federally funded scholarly research to be made available under the full open access regime, federal agencies should mandate that licensing information aligned with full open access be attached to each publication. Metadata should be viewed as a mechanism to enable specific actions, to proactively provide the information that researchers, machines, and unexpected readers will use to study and innovate on top of federally funded research.

By mandating that scholarly publications that arise from federally funded research be released under full open access, federal agencies ensure that downstream users will know how they may use that research. With robust metadata and thoughtful architecture for repositories (be they centralized or distributed), researchers can be assured that definitive versions of their original federally funded research papers are accessible, maintained, and archived. It will also alleviate concerns that some researchers have in making their scholarly or scientific research available for derivative use. With proper licensing and marking, the federal government promotes the correct attribution for authors and preserves the integrity of the federally funded research.²⁴

²⁴ For more information, see a blog post on the ePSIplatform blog, “CC Tools and PSI: Supporting attribution, protecting reputation, and preserving integrity,” February 2011. Available at <http://epsiplatform.eu/content/cc-tools-and-psi-supporting-attribution-protecting-reputation-and-preserving-integrity>.

Question 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?

Comment 6

Federal agencies that fund science can maximize the benefit of public access policies to U.S. taxpayers by adopting a full open access policy. For the reasons mentioned above, a full open access policy ensures the greatest level of access to the public while simultaneously making sure that the author receives credit for the work s/he creates using federal funds. For any public access policy to be effective, grantees must be clear on the requirements they must follow if they accept taxpayer money. Requirements should be consistent and clearly communicated. Full open access policies can be communicated clearly by adopting the CC BY license. The permissions and requirements of CC BY are simply and easily understood by licensors and licensees, and are also available for consumption by search engines via machine-readable metadata.

To minimize burden and costs for stakeholders, uniform language with regard to full open access policies should be used across all federal agencies. As mentioned above, there is already draft language set in place that mandates CC BY for the Department of Labor TAACCCT grant program. That language can be used as a template to communicate the legal regime under which federally funded scholarly research should be made available. Uniform deposit requirements (including licensing requirements) will make it easier and more streamlined for researchers to properly comply with federal guidelines. It will reduce complexity and cost and increase the rate of compliance overall.

Question 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?

Comment 7

All materials created as a result of federal funding should be made available to the public either by placing them in the public domain or making available under a CC BY license. The public should have open, unimpeded access to the content paid for with their tax dollars.

Question 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?

Comment 8

The public should be granted immediate access to the content of peer-reviewed scholarly publications resulting from federally funded research. Immediate access is the ideal method to optimize the scientific and commercial utility of the information contained in the articles. Especially for the scientific community, publicly funded scholarly research should be immediately available to speed the discovery of cures for diseases and promote the advancement of science.²⁵ Immediate access speeds up the research and development cycle, thus leading to faster development of value-added research, products and services. Immediate access can promote the creation of new and unexpected jobs in the agricultural, green energy, and biotechnology sectors, and boost interdisciplinary research collaborations and partnerships. Of course, if articles are published in an open access journal, there is no embargo period. For example, PLoS provides immediate, free access and unrestricted reuse (with attribution required under CC BY) to their peer-reviewed journals.

We thank OSTP for the opportunity to provide comments to this RFI, and we're happy to answer any other questions you may have.

Sincerely,

Catherine Casserly, CEO, Creative Commons
Timothy Vollmer, Policy Coordinator, Creative Commons

²⁵ The Tuberculosis Commons (TB Commons) Initiative Open Innovation Team “believes that open models can accelerate knowledge turns resulting in a faster drug development process.” Content provided by end-users to the site is released into the public domain using the under the CC0 Public Domain Dedication tool. See <http://www.tbcommons.org/initiative/>.

I have personal and professional reasons for supporting both the NIH policy on open access and its extension to other federal branches:

1. As a librarian, I support as much open access to information as possible.
2. As a taxpayer, I support the idea that taxpayers should be able to access information for which they have paid.
3. As a citizen, I support open access as a way of addressing one aspect of the digital divide.
4. As an individual, I support open access in order to be able to access relevant information to my personal needs--health, economic, other.

I do not understand opposition to these concepts. The current NIH policy affords corporations 12 months in which to sell their products. If the repeated push to shut down access persists, researchers will find other ways to circumvent corporations altogether and corporations will find themselves worse off than if they accepted this compromise in information access.

Aline

--

Aline Soules, Library Faculty
California State University, East Bay

From: Sue Parchick
Subject: **It's wrong for a Publicly Funded study to be controlled for any reason.**
It's dishonest!!! see below
Date: January 6, 2012 8:56:05 PM EST
To: publicaccess@ostp.gov

It's wrong for a Publically Funded study to be controlled by any publishing or private company for any reason, for any fee or profit. It's dishonest!!!

Anyone who voted for this shameful bill should be exposed, fined, and booted OUT of congress. People whose purpose is self profit with public funds is an "embarrassment" to honest hardworking people.

Subject: Open access

Date: January 7, 2012 11:52:29 AM EST

To: publicaccess@ostp.gov

Open access to federally funded studies is essential. We paid for it. It belongs to all of us.

P.L. Lambert

Yelm, WA

As one involved in the open-access policy discussions at Harvard this year, I write to endorse the comment submitted on January 4, 2012, by Harvard University. I reproduce it here.

Peter Suber
Director, Harvard Open Access Project
Faculty Fellow, Berkman Center for Internet & Society
Special Advisor, Harvard Office for Scholarly Communication
Senior Researcher, Scholarly Publishing and Academic Resources Coalition
psuber@cyber.law.harvard.edu
T.207.326.9482

===== (Begin, Harvard comment)

Harvard University
Office of the Provost
Massachusetts Hall
Cambridge, MA 02138
T.617.496.5100
F.617.495.8550

January 4, 2012

To: Office of Science and Technology Policy
Executive Office of the President
725 17th Street Room 5228
Washington, DC 2050

From: Alan M. Garber, Provost
Harvard University

Re: Harvard response to the White House RFI on OA publications

I write on behalf of my colleagues at Harvard University in response to the White House Office of Science and Technology Policy request for information on “Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research.” In summary, we strongly support White House action to require and enhance public access to government-funded research. We provide our general recommendations, as well as more detailed responses to the eight particular questions that were called out in the RFI below. However, we emphasize that decisions on many of the detailed issues under discussion here and in the other responses to the RFI are secondary to the general principle of requiring public access.

We endorse the view that every federal agency funding non-classified research should require free online access to the full-text, peer-reviewed results of that research as soon as possible after its

publication. There are three powerful reasons to take such a step. First, taxpayers deserve access to the results of taxpayer-funded research. It is their right. Second, public access maximizes the visibility and usefulness of this research, which in turn maximizes the return on the public's enormous investment in that research. Third, public access accelerates research and all the benefits that depend on research, from public health to economic development, manufacturing, and jobs.

The United States already recognizes the public interest in amplifying the impact of publicly funded medical research. A strong public-access policy has been in place at the National Institutes of Health (NIH) since April 2008. But the same interest calls on us to amplify the impact of publicly funded research in every field, from alternative sources of energy to American history and culture. The NIH policy has been good for professional researchers, good for lay readers, good for medical professionals, good for patients, good for the NIH, and good for taxpayers.

If the NIH policy is flawed, it is for allowing needlessly long delays before the public gains access to this body of publicly funded research, and for allowing needless restrictions on the public use and reuse of this research. The NIH policy should be strengthened in these two respects and the strengthened version of the policy should be extended across the federal government.

Even Harvard University, whose library is the largest academic library in the world, is not immune to the access crisis motivating much of the campaign for public-access policies. In fact, the Harvard library system has had to make a painful series of budget-driven journal cancellations, and we are deciding on a set of further cancellations at this very moment.

With respect to some of the specific questions posed in the request for information, we provide our recommendations below.

(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 publicly 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?

We will separate the economic from the non-economic questions in this cluster, and address them separately.

Are there steps that agencies could take to grow existing and new markets...? How can policies for archiving publications and making them publicly accessible be used to grow the economy? ...What are the relative costs and benefits of such policies?

Yes, there are steps to grow new and existing markets arising from access to cutting-edge research. The most important step is to require public access (also called open access and free

online access) to the final versions of the authors' manuscripts of peer-reviewed articles arising from publicly funded research.

Businesses need access to cutting-edge research to stimulate innovation, for example to develop new medicines, reduce the size and energy requirements of computer chips, strengthen lightweight composite materials, reduce harmful emissions from fossil fuels, increase the efficiency of solar panels, and make food safer. Public access to publicly funded research nourishes R&D in these industries, allowing them to develop new products, improve existing products, and create jobs.

The question is not whether useful, publicly funded, basic or pre-competitive research will continue. Even in an age of budget cuts, it will continue. The question is whether we will make the results of that research easily available to all those who can make use of it, or whether we will allow it to be locked down by a private interest at the expense of the public interest.

In March 2011, the UK Science Minister, David Willetts, held a Roundtable on precisely these topics. (Disclosure: Two members of the Harvard community were invited participants.) Willetts released the results of his ministry's deliberations in mid-September. One of his chief conclusions is directly pertinent to the current RFI:

<http://nds.coi.gov.uk/content/Detail.aspx?ReleaseID=421232&NewsAreaID=2>

Research stimulates and fuels innovation and economic growth. So, to maximise UK innovation we need to maximise access to and the use of research findings.

Just last month (December 2011) the UK Department for Business, Innovation and Skills converted the Willetts Roundtable results into national policy. From the Department's executive summary:

<http://www.bis.gov.uk/assets/biscore/innovation/docs/i/11-1387-innovation-and-research-strategy-for-growth.pdf>

To succeed in the global innovation economy, the UK must strengthen its ability to accelerate the commercialisation of emerging technologies....We [seek] to ensure that government policies stimulate, rather than hinder, UK innovation through...[i]ncreasing access to public data or to knowledge created as a result of publicly funded research.

In October 2011, the HOST consulting group addressed the same set of topics in a report commissioned by the UK Joint Information Systems Committee (JISC), "Benefits to the Private Sector of Open Access to Higher Education and Scholarly Research," October 2011. Excerpt from the HOST/JISC report:

http://open-access.org.uk/wp-content/uploads/2011/10/OAIG_Benefits_OA_PrivateSector.pdf

A substantial body of research literature establishes the benefits to private sector businesses of publicly funded research. Mansfield (1991,1995,1998), Beisea and Stahle (1998) and other studies provide evidence of tangible economic benefit, in particular in terms of product innovations achieved and revenue gained through enhanced sales. The work of Houghton et al. (2011) confirmed these conclusions and also drew out the benefits of access to research in terms of shortening product and service development cycles. This study confirms the importance placed by businesses on access to scholarly research and its broad impact in terms of product, service and process innovation....Open Access publishing provides a way of opening much more university and scholarly research to the business sector....[M]ost businesses spend considerable amounts of time working around paywalls....The review suggests that, at a time of accelerating pressure on SME [small and medium-sized enterprises] competitiveness, a shift to Open Access would create significant cost savings by enabling businesses to review more quickly the relevance of individual papers and act accordingly. By boosting discoverability OA may also add value directly to levels and speed of knowledge transfer in this part of the economy.

The HOST/JISC report cites the research of economist John Houghton at Victoria University in Australia. Houghton has done the most extensive and careful research on the economic impact of national open-access policies.

One of Houghton's most recent studies, commissioned by Denmark's Agency for Science, Technology, and Information [Forsknings- og Innovationsstyrelsen, or FI], focused on how public access helps small and medium-sized businesses: "Access to Research and Technical Information in Denmark," FI, April 2011. Among his findings:

<http://goo.gl/pfAf6>

Research articles, patent information, scientific and technical standards, technical and market information were seen as the most important information sources [for small and medium-sized businesses, SMEs]. Forty eight per cent rated research articles as very or extremely important, and among those in research roles a higher 64% did so....More than two-thirds reported having difficulties accessing market survey research and reports and Doctoral or Masters theses, 62% reported difficulties accessing technical reports from government agencies and 55% reported difficulties accessing research articles....[R]esearch articles and market survey research and reports are seen to be both important and difficult to access....Use of Open Access materials is widespread. More than 50% used free institutional or

subject repositories and Open Access journals monthly or more regularly, and among researchers 72% reported using free institutional or subject repositories and 56% Open Access journals monthly or more regularly....Access barriers and delays involve costs. It would have taken an average of 2.2 years longer to develop or introduce the new products or processes in the absence of contributing academic research. For new products, a 2.2 years delay would cost around DKK 36 million (EUR 4.8 million) per firm in lost sales, and for new processes it would cost around DKK 211 000 per firm.

An earlier Houghton study focused on the United States: "Economic and Social Returns on Investment in Open Archiving Publicly Funded Research Outputs [in the United States]," SPARC, August 4, 2010. From the summary:

<http://www.arl.org/sparc/publications/papers/vuFRPAA/index.shtm>

<http://www.arl.org/sparc/bm~doc/vufrpaa.pdf>

Preliminary modeling suggests that over a transitional period of 30 years from implementation, the potential incremental benefits of the proposed FRPAA [Federal Research Public Access Act] archiving mandate might be worth around 8 times the costs. Perhaps two-thirds of these benefits would accrue within the US, with the remainder spilling over to other countries. Hence, the US national benefits arising from the proposed FRPAA archiving mandate might be of the order of 5 times the costs.

These results confirm Houghton's September 2006 study on Australia: "Research Communication Costs in Australia: Emerging Opportunities and Benefits." Excerpt:

<http://goo.gl/Rnnnns>

Expressing these impacts as a benefit/cost ratio we find that, over 20 years, a full system of institutional repositories in Australia costing AUD 10 million a year and achieving a 100% self-archiving compliance would show: [1] A benefit/cost ratio of 51 for the modelled impacts of open access to public sector research (i.e. the benefits are 51 times greater than the costs); [2] A benefit/cost ratio of 30 for the modelled impacts of open access to higher education research; and [3] A benefit/cost ratio of 4.1 for the modelled impacts of open access to ARC [Australian Research Council] competitive grants funded research.

Finally, a Houghton study from July 2006 used conservative assumptions to conclude that an OA policy could add billions to the U.S. economy: "The Economic Impact of Enhanced Access to Research Findings." Excerpt:

<http://www.cfses.com/documents/wp23.pdf>

With the United State's GERD [Gross Expenditure on Research and Development] at USD 312.5 billion and assuming social returns to R&D of 50%, a 5% increase in access and efficiency [Houghton's conservative estimate] would have been worth USD 16 billion.

Some publishers have criticized John Houghton's research, and are likely to repeat their criticisms in this RFI. We ask the OSTP to look closely at Houghton's methods and data rather than taking the judgment of stakeholders who have an economic interest in dismissing his conclusions. In our judgment, JISC (on Houghton's behalf) and Houghton himself have adequately answered all these criticisms.

JISC Response [on behalf of Houghton et al.] to: Some comments prepared jointly by The Publishers Association, the Association of Learned and Professional Society Publishers and the International Association of STM Publishers on the report "Economic Implications of Alternative Scholarly Publishing Models: Exploring the costs and benefits" by Houghton et al. & Oppenheim et al., commissioned by JISC (published January 2009)

<http://www.jisc.ac.uk/media/documents/publications/responseoneiaspmreport.pdf>

John Houghton and Charles Oppenheim, "Widening access to research information: A response," January 2010.

[http://www.cfses.com/EI-ASPM/Comments-on-Hall\(Houghton&Oppenheim\).pdf](http://www.cfses.com/EI-ASPM/Comments-on-Hall(Houghton&Oppenheim).pdf)

Public access not only facilitates innovation in research-driven industries such as medicine and manufacturing. It stimulates the growth of a new industry adding value to the newly accessible research itself. This new industry includes search, current awareness, impact measurement, data integration, citation linking, text and data mining, translation, indexing, organizing, recommending, and summarizing. These new services not only create new jobs and pay taxes, but they make the underlying research itself more useful. Research funding agencies needn't take on the job of provide all these services themselves. As long as they ensure that the funded research is digital, online, free of charge, and free for reuse, they can rely on an after-market of motivated developers and entrepreneurs to bring it to users in the forms in which it will be most useful. Indeed, scholarly publishers are themselves in a good position to provide many of these value-added services, which could provide an additional revenue source for the industry.

The Houghton studies (above) show very high benefit/cost ratios for national publicaccess policies, and we've enumerated (above and below) some of the specific benefits of such policies for research and commerce. For the specific costs of implementing a public-access policy, the Department of Health and Human Services reports that "[a]nnual operating costs for [implementing the NIH

policy], including ingest of articles, refinement of the submission system and search tools, staffing of a help desk and a central coordinating office for NIH, are approximately \$3.5–\$4.0 million per year. This represents a small fraction [about one one-hundredth of 1%] of NIH’s budget authority of more than \$30 billion per year.”

<http://www.hhs.gov/asl/testify/2010/07/t20100729c.html>

Needless to say, every U.S. federal agency funding non-classified research is significantly smaller than the NIH, and could benefit from the infrastructure and workflow procedures created and refined by the NIH.

How can policies for archiving publications and making them publically accessible be used to...improve the productivity of the scientific enterprise?

Public access improves researcher productivity in many ways. By making published literature more visible and discoverable, public access prevents unintended duplication of effort. It prevents delays while researchers try to gain access to relevant articles they have discovered but cannot retrieve. It makes literature available to our hardware and software, not just to ourselves, and supports a fast-growing ecology of computer tools for mining and analyzing data and literature. It makes literature available to researchers outside the academy, such as those based at hospitals, museums, non-profits organizations, and for-profit manufacturing companies. By enlarging the audience for research, public access multiplies the chances that prepared users will be able to make use of the research and translate it into clinical treatments or marketable products and services.

Some of these productivity gains can be quantified. See for example Karim R. Lakhani et al., “The Value of Openness in Scientific Problem Solving,” Harvard Business School Working Paper, October 2006. Excerpt:

<http://www.hbs.edu/research/pdf/07-050.pdf>

Lack of openness and transparency means that scientific problem solving is constrained to a few scientists who work in secret and who typically fail to leverage the entire accumulation of scientific knowledge available....Our study finds that the broadcast of problem information to outside scientists results in a 29.5% resolution rate for scientific problems that had previously remained unsolved inside the R & D laboratories of wellknown science-driven firms.

What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?

One type of public access merely provides research results online free of charge. A second type provides research results free of charge and free of certain copyright restrictions. Only the second type frees research for data- and text-mining, translation, conversion to new formats, integration

with other tools and bodies of research, and other value-added services. Hence the second type does far more than the first to amplify the benefits of publicly funded research.

Limiting the reuse of publicly funded research limits the return on our investment. If we are serious about maximizing that return on investment, we must lift restrictions on use and reuse, not just restrictions on access for reading. The public access policy at the NIH does just the former.

In practice, the way to free an article for use and reuse is to include a license or permission statement from the copyright holder explaining what the user may and may not do with it. An “open license” allows uses that would otherwise require the delay and expense of hunting down the rights-holder in order to ask permission.

In August, Phil Malone and Harvard’s Berkman Center for Internet & Society released a report evaluating the copyright licensing policies used by certain public and private funding agencies. The report recommended that research funders require the use of open licenses for funded research. It articulates nine benefits of open licenses for researchers and the funders themselves. Here are the first four:

[http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu
/files/OCL_for_Foundations_REPORT.pdf](http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/OCL_for_Foundations_REPORT.pdf)

- [1] Furthering the core components of the foundation’s philanthropic mission.
- [2] Serving to expand the size and speed of the dissemination and visibility of supported work in ways that mere placement of those works on grantee or foundation websites rarely could, because of the “viral” spread of materials that open licenses allow. The foundation is able to “do more good with the same money.” ...Thus, for example, the Wellcome Foundation sees unrestricted access as a “fundamental part of its charitable mission and a public benefit.” ...
- [3] Enhancing distribution and use of foundation works by greatly increasing the ease and lowering the transaction costs of users obtaining “permission” to share and reuse the works. In the absence of open licenses, users have to seek specific, individual approval for most uses or distribution, a process that often delays or deters such uses.
- [4] Increasing the impact of the foundation’s funding even more when the open license permits the work to be freely tested, translated, combined, remixed, repurposed or otherwise built upon, potentially by many subsequent researchers, authors, artists or other creators anywhere in the world, as the basis for new innovation, discovery or creation. Allowing broad adaptation and follow-on innovation can provide a magnification or leveraging of the original foundation funding that would be difficult to achieve otherwise.

There are many open licenses. We recommend the Creative Commons Attribution (CC-BY) license, which permits any use provided the user makes proper attribution to the author. We recommend against licenses that bar commercial use (such as CC-BY-NC), in part because they would limit the utility of publicly funded research for businesses and industry.

This type of public-access policy would not be unprecedented for the United States. In January 2011, the Departments of Labor and Education launched the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program, a four-year, \$2 billion funding program for open educational resources to be released under CC-BY licenses.

<http://www.whitehouse.gov/blog/2011/01/20/new-job-training-and-education-grants-program-launched>

(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?

The existing policy at the NIH uses a simple and elegant method to provide public access without copyright infringement. The policy requires grantees publishing peer-reviewed articles arising from NIH-funded research to retain the non-exclusive right to authorize NIH to provide public access to the final version of their peer-reviewed manuscript. Hence, when grantees sign publication agreements, they may not transfer the full bundle of copyrights to publishers, as they formerly could. They may transfer all the rights the journal needs to publish the article, and more, but they may not transfer the right that their prior funding agreement requires them to retain. The result is that publishers do not acquire the full copyright bundle. Public access through the NIH repository, PubMed Central, is authorized by the authors, before they transfer rights to publishers, not by the publishers, after acquiring rights from authors. Public access is authorized by the rights-holders.

Some publishers dislike the policy because they would like to acquire the right that NIHfunded authors retain. But not even those publishers believe that the policy infringes any rights that publishers acquire. If they did, they would go to court. Instead they have gone to the legislature, and backed the so-called Fair Copyright in Research Works Act (H.R. 6845 in the 110th Congress and H.R. 801 in the 111th Congress), which would amend U.S. copyright law precisely to block the NIH policy and to prevent other federal agencies from following its lead. This is an acknowledgment that the NIH policy is lawful under current copyright law.

We ask the White House to use this sensible and effective method to secure the rights needed to provide public access without infringement. When disbursing public money for non-classified research, public funding agencies should obtain the non-exclusive right to make the results public. Any alternative would leave authors subject to irresistible pressure to transfer their rights to publishers, with the harmful effect of transferring the public-access decision to publishers as well. That would undermine the public mission of our public funding agencies, and put the interests of publishers ahead of every other stakeholder, including researchers, research institutions, and everyone who depends on the benefits of research from medical patients to technology manufacturers and consumers.

Under the NIH policy, publishers retain the fundamental right to refuse to publish any work for any reason, including NIH-funded work. Whenever they believe that the costs of publishing NIH-funded authors exceed the benefits, they may refuse to publish those authors. But to date, 100% of surveyed publishers accommodate the NIH policy.

[http://oad.simmons.edu/oadwiki/Publisher policies on NIH-funded authors](http://oad.simmons.edu/oadwiki/Publisher_policies_on_NIH-funded_authors)

(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?

The NIH policy requires public access through a central repository, PubMed Central.

The Federal Research Public Access Act (FRPAA, S.2695 in the 109th Congress, S.1373 in the 111th Congress) would have provided more flexibility. Under FRPAA, federal funding agencies Agencies could host their own public-access repositories, like PubMed Central, or they could ask grantees to deposit their work in any public-access repository meeting certain conditions of open access, interoperability, and long-term preservation. We support this flexibility.

FRPAA has not yet come to a vote. But the Swedish Research Council adopted a policy in October 2009 (taking effect in January 2010) with FRPAA-like flexibility. The SRC requires deposit in a public-access repository, and specifically approves deposit in suitable institutional repositories hosted by universities. The Irish Research Council for Science, Engineering & Technology (IRCSET) open-access policy of May 2008 positively encouraged the use of institutional repositories (“[t]he repository should ideally be a local institutional repository”), as did the European Commission’s open-access policy of August 2008 (“grantees should deposit their EC-funded work —into their institutional or if unavailable a subject-based repository”). As far as we know, these policies have been implemented without problems.

[http://www.vr.se/inenglish/aboutus/policies
/openaccess.4.44482f6612355bb5ee780003075.html](http://www.vr.se/inenglish/aboutus/policies/openaccess.4.44482f6612355bb5ee780003075.html)

<http://www.ircset.ie/tabid/142/tabid/102/default.aspx>

<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/548&form>

We support centralized access in repositories like PubMed Central and distributed access in suitable institutional repositories. Both solutions provide the important safeguard that the repositories are independent of publishers who have an interesting in limiting access.

Public access through the web sites of private-sector publishers is very welcome. But it must not be the only source of public access to publicly funded research. The chief problem with publisher-hosted public access is its uncertainty. Public funding agencies like the NIH are in a position to regulate grantees, not publishers. Congress could regulate publishers, but we believe that it should not do so, and should steer clear of creating risks to the freedom and independence of the press. In the absence of the regulation of publishers, however, a federal policy of publisher-hosted public access would inevitably fail to achieve its own objectives. Publishers may assert that they will provide public access. However, their willingness and ability to provide public access would always be contingent and beyond the proper reach of federal power. Because we can achieve assured public access by revising federal funding contracts, or regulating federal grantees, there is no need to depend on uncertain (late, temporary, selective, and unenforceable) public access from publishers.

(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?

A reasonable public-access policy could provide that copies of peer-reviewed articles arising from publicly funded research be jointly hosted by federal agencies and private-sector publishers. However, for the reasons spelled out in response to Question 3, public access should never be available solely through private-sector publishers. There are good reasons to require public access, and not merely encourage it, and there are good reasons for the federal government not to require affirmative acts from private-sector publishers. Moreover, there are good reasons to think that in the absence of legal obligations, public access from publishers would be variable and uncertain, undermining the fundamental rationale for a public-access policy.

Publishers have an understandable interest in traffic and download data from the repositories providing access publicly funded research. But that doesn't mean that publishers must be the sole hosts of those repositories. If those repositories are hosted by federal agencies (as the NIH hosts PubMed Central) or by the institutions employing the individual authors (as Harvard hosts DASH,

or its Digital Access to Scholarship at Harvard repository), federal policy could require repositories to share traffic and download data with publishers.

(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?

We would like to see the repositories hosting publicly funded research comply with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), and eventually with its strengthened successor, the Open Archives Initiative Object Reuse and Exchange (OAI-ORE). We regard the open licenses recommended in response to Question 1 to be a kind of metadata, and would like to see them required for all articles arising from publicly funded research.

But we are not prepared to list all the standards with which publicly funded research results ought to comply. On the contrary, we believe that they cannot all be specified in advance and should be allowed to evolve. One reason is that some promising standards are still emerging, such as Activity data to Enhance and Increase Open-access Usage (AEIOU), Counting Online Usage of NeTworked Electronic Resources (COUNTER), Open Researcher and Contributor ID (ORCID), and Publisher and Institutional Repository Usage Statistics (PIRUS). Public access is urgently needed for research and the economy, and cannot wait for all the relevant standards to emerge.

(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?

To reduce the burden on awardee institutions, different federal funding agencies should adopt uniform public-access policies. Uniformity will not only reduce the burden on institutions, but increase compliance and potentially reduce costs.

We support the approach taken in the Federal Research Public Access Act (FRPAA, see citations in response to Question 3). FRPAA requires different agencies to develop their own public-access policies within the general framework laid down in the bill.

Universities support the FRPAA approach. When FRPAA was re-introduced in 2009, it was publicly endorsed by the presidents or provosts of 120 U.S. institutions of higher education.

<http://www.arl.org/sparc/advocacy/frpaa/institutions.shtml>

Similarly, in the last White House consultation on public-access policies (December 2009 – January 2010), when the question was whether to extend the NIH policy across the federal

government, and hence to impose that kind of uniformity across the federal government, the suggestion received overwhelming public support.

<http://www.whitehouse.gov/blog/2010/03/08/public-access-policy-update>

(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?*

We could support mandatory public access for any work which arises from publicly funded research, is voluntarily published or presented by the author, generates no royalties for the author, and is not classified.

This would cover many peer-reviewed journal articles (or author manuscripts), book chapters, books, conference proceedings, theses and dissertations, and open educational resources.

However, we think these are secondary issues and must not delay a policy to require public access to peer-reviewed journal articles (or author manuscripts) arising from publicly funded research.

We are not prepared to list all the types of content to which a federal public-access policy ought to apply. One reason to proceed with peer-reviewed journal articles first and consider other categories later is that there may be good reasons for a public-access policy to treat different categories of content differently, just as the White House, in the present RFIs, treats publications differently from data. Another reason —as in our response to Question 5— is that public access to research articles is urgently needed and cannot wait for the policy nuances for other categories to be hammered out.

(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?*

Embargoes limit the utility of research both for researchers and for businesses. Embargoes therefore limit the return on the public's investment in research, and compromise the public interest. They may be justified, but only in the ways that compromises may be justified.

Embargoes should be as short as possible. If federal policy initially allows embargoes, then it should reduce their maximum permissible length over time, eventually to zero. We could support a plan to do this gradually rather than suddenly in order give publishers time to prepare.

A zero-embargo policy would not force premature disclosure of patentable discoveries, since the policy would only apply to work that authors voluntarily decide to publish. If publicly funded

researchers make a patentable discovery, and wish to apply for a patent before publishing, the public-access policy would only kick in at the time of publication.

If government policy is to allow embargoes, even temporarily, it might allow different embargoes in different fields, on the ground that the demand for articles seems to drop off at different rates in different fields. However, we have not seen good data on these different rates of demand decay. Publishers have this data, and if they wish to support differential embargo periods, they should provide data to justify them. In any case, variable embargo periods would burden universities by making compliance with an agency in one field different from compliance with an agency in another field (in tension with Question #6 above).

Similarly, if publishers believe that short embargo periods would harm them, they should release data showing it. Researchers, research institutions, and taxpayers cannot be expected to prove the negative, or to prove the harmlessness of short embargoes. Until there is data to show harm, we must act in the public interest and provide early or immediate public access to publicly funded research. If publishers provide data showing substantive harm, then it may become appropriate to consider what kind of compromise with the public interest might be justified.

Finally, we should not use the NIH policy as a model on this issue. The NIH policy allows an embargo period of up to 12 months. But while that makes it a conspicuous precedent in the U.S., it is the exception worldwide, not the norm. Even in its own field of biomedicine, it is an outlier. Every other biomedical funding agency in the world with a public-access mandate caps the maximum permissible embargo at six months: the Arthritis Research Campaign (UK), British Heart Foundation, Canadian Breast Cancer Research Alliance, Canadian Health Services Research Foundation, Canadian Institutes of Health Research, Dunhill Medical Trust (UK), European Research Council, Cancer Research UK, Chief Scientist Office of the Scottish Executive Health Department, Department of Health (UK), Fonds de la recherche en santé du Québec (Canada), Fund to Promote Scientific Research (Austria), Genome Canada, Heart and Stroke Foundation of Canada, Howard Hughes Medical Institute, Joint Information Systems Committee (UK), Michael Smith Foundation for Health Research (Canada), National Cancer Institute of Canada, National Institute for Health Research (UK), Vetenskapsrådet (Swedish Research Council, Sweden), and the Wellcome Trust (UK).

===== (End, Harvard comment)

Subject: Request for Information: Public Access to Federally Funded Research

Date: January 7, 2012 3:46:42 PM EST

To Whom It May Concern:

The quantity of research being produced and published has recently increased dramatically. The advent of the Internet allows scientists to quickly share new research and also reduces the burden of making results and publications publicly available. As the Internet has grown, we have the capacity not only to share written articles but raw data itself. This takes sharing and collaboration to new heights. Articles can be read but with the actual data, results can be double checked, other researchers in academia, industry, members of the public, anyone can look over the data and draw their own conclusions. Nevertheless, despite the capacity for sharing and making data and articles publicly available, the system is still holding on to the antiquated ways of the past---professional journals where no data is published and the articles themselves are only accessible to members of universities or those who can afford the high price of their own subscription.

This hampers research advancement. This restricts access to knowledge to the elite. The motto of the University of California system is fiat lux---let there be light. What good is light hidden away from the public?

The Office of Science and Technology Policy is in a unique position to address these issues and better science and the American public. First by requiring all publications resulting from federally funded research to be published in open access journals. Further, requiring the data collected with federal funds to be deposited in a public repository. One concern with publicly shared data is that the original collectors may not receive adequate credit. If there was a single, public data repository. Each researcher could be given their own, unique ID. Any data deposited to the repository would be linked to their ID. All federally funded articles would have to not only be open, but indicate what data set was used for the research. This would ensure that federally funded research had both the articles and data made publicly available. It would also mean that the original collectors of the data would have to be given credit, inhibiting data theft or plagiarism.

Why is it so important that data be publicly available? First, if the public pays taxes to support it, they should be able to access the

results. Second, with the data, it is easier to verify that analyses and conclusions drawn in articles accurately reflect the data. Third, individual studies are often small or conducted on specific populations. If many such studies are carried out, it is possible to use meta-analysis to combine results and draw more reliable, accurate conclusions by pooling data from many studies. Theoretically many journals require authors to share data for purposes of verification or meta-analysis, but my experience is that reality falls woefully short of this ideal. Public access to data would greatly enhance the ability of researchers to accurately combine and synthesize the results of many studies. Obviously, there are many details that would need to be considered. Some data sets contain sensitive data and mechanisms would be required to maintain confidentiality in this case.

Some change can come organically from the ground up, other change requires a top down approach. There have been some efforts to develop data repositories and open access journals, but the most benefit would come from something similar to the www.pubmed.gov website. A centralized place for articles and data where researchers and public alike can read and learn.

Sincerely yours,

Joshua Wiley

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Joshua Wiley
Ph.D. Student, Health Psychology
Programmer Analyst II, Statistical Consulting Group
University of California, Los Angeles
<https://joshuawiley.com/>

Subject: response to Request for Information (RFI) asking for public comments regarding ‘Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research’:

Date: January 8, 2012 9:48:01 AM EST

- Authors, editors and publishers are committed to providing the broadest possible access to our publications. Our goal is to expand access to the latest breakthroughs in the scientific research and developments in academic thought.
- The main purpose of a scholarly journal is to report on original research or experimentation in order to make such information available to the global research community.
- It requires considerable investment to maintain the highest standards for peer-reviewed scientific publication and sustainable mechanisms are required to enable this system to continue. This is threatened by access policies that do not take these costs into account, and it is critically important that any new policies do not damage the publishing institutions on which the Federal Government and science depend.
- Overall, access to research articles is good, particularly in the United States, where 97% of researchers are happy with access to journal articles[\[1\]](#).
- Publishers are committed to identifying any gaps in access and have developed a number of mechanisms to close those gaps in sustainable ways. These include initiatives to broaden access for researchers in developing countries, patients, and the public.
- Any efforts by government to establish policies for peer-reviewed research should be done in consultation with all affected stakeholders, ensuring that such policies do not undermine the sustainability of the peer review publishing system which is necessary to ensure the quality and integrity of scientific research.

Sincerely, Nancy Keller

To: publicaccess@ostp.gov

Comments from Lee C. Van Orsdel, Dean of University Libraries

Grand Valley State University
Allendale, Michigan

Summary statement

Thank you for the opportunity to comment on the critical issues associated with providing public access to and preservation of the broad range of research funded by taxpayers in the U.S. I am Dean of Libraries at Grand Valley State University, a Midwestern university with a Carnegie Classification of Masters Large. While we are not a research university, *per se*, our faculty, staff and students conduct research on a regular basis, often with the help of government and foundation grants, as do a number of distinguished research centers funded by GVSU.

Our University, located on the west side of Michigan, is deeply committed to helping our state recover from the severe downturn in the economy. We are, no doubt, reflective of the country as a whole—trying to leverage the opportunities emerging from an increasingly globalized, hyper-connected and hyper-competitive world into a stronger economy for our region. Innovation, creativity and discovery are the surest paths to success. Timely access to information facilitates all three, making your inquiry into federal information policy of huge importance to our University and to our region.

We strongly support the expansion of the NIH Open Access Mandate to all federal agencies that fund research with taxpayer dollars. Gaining access to all non-classified, federally funded research would unlock countless valuable resources that are not currently available to our university or to the citizens of our region because they are too costly for us to purchase. Then NIH mandate is a case in point. It has unlocked tens of thousands of articles and made them available. Our University has strong baccalaureate, masters and doctoral level programs in nursing and the health sciences, and our researchers have already benefited from immediate, free access to the invaluable collection of cutting-edge research emerging each year from NIH grants.

The NIH mandate has been successful on every level—providing critical, free information to citizens across the whole spectrum of expertise, from doctors and researchers to patients, parents, advocacy groups, medical supply and pharmaceutical companies, inventors, and lawmakers. Its value extends well beyond institutions of higher education like my own. The cost has been minimal—about one-hundredth of 1%--of the NIH annual budget. The NIH policy could be improved upon with a shorter embargo period (6 months as opposed to the current 12 months) and looser restrictions on re-use, but it is fundamentally a viable model that can be easily expanded to accommodate research from other government agencies.

In sum, there are compelling reasons for the United States to adopt an Open Access policy for non-classified, federally funded research. Taxpayers provide the billions of dollars the government invests in research each year. We should have access to the outputs of that

research. Not just on principle, which is important enough, but because it can make a real and immediate difference in their lives at a personal level and across their communities.

You have only to look at the usage data and at anecdotal reports about the effects of the NIH mandate to see how directly the benefits of research can flow to citizens and to communities when access is opened to the public.

In addition, a broad Open Access policy for taxpayer-funded research would help economic growth. The European Union, the UK, China, India and other emerging nations are embracing open access to state-funded research and data. They recognize that information drives discovery and innovation and they want, for their countries, a more robust return on their investment in research. Our global economic competitors will have a competitive advantage if their research and data are open and ours are still locked away behind unnecessary tollgates in the form of subscription fees.

- (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 publicly 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?

Encouraging commercialization

The single most important step to grow existing and new markets using results of federally funded research is to require public access to the resulting research results as quickly after publication as possible (typically this means deposit of the final version of the author's manuscript after peer-review and before final formatting as a published journal article within 12 months of publication).

A collateral issue is to increase the speed with which access is provided. The NIH mandate uses a 12-month window; research has to be made publicly accessible no more than 12 months after publication of the article. A shorter window—6 months—would still provide a reasonable window of protection to the publishers who have invested in the formal presentation of the article, and it would double the speed with which the returns on our investment in research begin to manifest themselves in the market.

For-profit publishers have pushed hard to protect their economic interest in the existing publishing model. They will say that earlier access to journal articles will hurt their business. Yet no publisher has been able to provide hard evidence to suggest a 6-month embargo results in cancellations of subscriptions to publisher's journals. Even before the recent economic cuts in higher education, which certainly have caused deep cuts in journal subscriptions in most academic libraries, there was no viable evidence that librarians would cut a subscription to a scientific or medical journal because the articles would be free in six

months. Six months is too long to wait for the article if you are teaching and supporting research in those fields. Publishers are using their *fear* of such an outcome to try and block needed reforms in the dissemination of research findings. When all of the factors that lead libraries to cancel journal subscriptions are considered, there is simply no compelling evidence to suggest that the publishers' concerns about the market should outweigh even more compelling evidence about the positive benefits to the populace and the economy when information is free and accessible to all. I believe that six months is a reasonable compromise on this issue. Twelve months is too long.

Increasing scientific productivity

Research productivity is one of the concerns of this RFI. There is no question that Open Access improves research productivity in a number of ways. It improves the visibility of existing research, making prior research more discoverable and less likely to be needlessly duplicated. It speeds the research process, in that it lessens the amount of time a researcher has to wait to get access to material that is not owned by the library in the research facility. It makes research available to users who are not in the academy, such as those in non-profit organizations, for-profit enterprises, hospitals, independent research labs, and museums. Full open access makes possible the crawling and mining of text and data by machines. And it increases the possibility that the benefits of research will be fully exploited by a host of interested users who will no longer be barred from access.

Cost/Benefits

The most extensive research on the economic impact of open access on economies has been done by John Houghton from the Centre for Strategic Economic Studies at Victoria University in Australia. For a number of years now, Houghton's studies have consistently found positive economic effects from open access policies. For example, Houghton conducted a study in 2006 using conservative measures to assess the impact of an open access public policy on the US economy. The report, "The Economic Impact of Enhanced Access to Research Findings" (<http://www.cses.com/documents/wp23.pdf>) concluded that, "With the United State's GERD [Gross Expenditure on Research and Development] at UD 312.5 billion and assuming social returns to R&D of 50%, a 5% increase in access and efficiency would have been worth USD 16 billion."

Since the early reports, Houghton has consulted on a number of similar studies, all seeking the connection between the cost/benefit relationship of open access to the scientific literature. A few examples are included here. He was commissioned by SPARC (Scholarly Publishing and Academic Resources Coalition) in 2010 to conduct a study in the United States. The report, "Economic and Social Returns on Investment in Open Archiving Publicly Funded Research Outputs [in the United States]," (<http://www.arl.org/sparc/publications/papers/vuFRPAA/index.shtml>) was published in August, 2010 and contained the following assessment:

Preliminary modeling suggests that over a transitional period of 30 years from implementation, the potential incremental benefits of the proposed FRPAA [Federal

Research Public Access Act] archiving mandate might be worth around 8 times the costs. Perhaps two-thirds of these benefits would accrue within the US, with the remainder spilling over to other countries. Hence, the US national benefits arising from the proposed FRPAA archiving mandate might be of the order of 5 times the costs.

In a study commissioned by Denmark's Agency for Science, Technology, and Information and released in April 2011 (<http://goo.gl/pfAf6>), Houghton assigned costs to the delays associated with trying to get access to information in the current system. He was studying the effect of open access on small and medium-sized businesses. His finding (emphases mine):

Access barriers and delays involve costs. It would have taken an average of 2.2 years longer to develop or introduce the new products or processes in the absence of contributing academic research. For new products, a 2.2 years delay would cost around DKK 36 million [EUR 4.8 million] *per firm* in lost sales, and for new processes it would cost around DKK 211 000 *per firm*.

Houghton's research was also cited in an October 2011 report commissioned by the UK Joint Information Systems Committee (JISC), "Benefits to the Private Sector of Open Access to Higher Education and Scholarly Research" (http://open-access.org.uk/wpcontent/uploads/2011/10/OAIG_Benefits_OA_PrivateSector.pdf):

This study confirms the importance placed by businesses on access to scholarly research and its broad impact in terms of project, service and process innovation....Open Access publishing provides a way of opening much more university and scholarly research to the business sector....[M]ost businesses spend considerable amounts of time working around paywalls....The review suggests that, at a time of accelerating pressure on SME [small and medium-sized enterprises] competitiveness, a shift to Open Access would create significant cost savings by enabling businesses to review more quickly the relevance of individual papers and act accordingly. By boosting discoverability OA may also add value directly to levels and speed of knowledge transfer in this part of the economy.

Data for the positive relationship between open access and scientific literature continues to mount. Most recently, a study was commissioned by the Australian National Data Service to "examine the costs and benefits of public sector organisations making their data....freely available." A quote from their website (<http://www.andis.org.au/resource/cost-benefit.html>) (emphases mine):

He was also able to model the savings to users and estimate the wider benefits to the economy, which include factors like multiple and sequential use (and re-use) of data....The study involves a number of agencies, each suggesting different benefit:cost ratios (*but all positive*). Professor Houghton stresses that the ratios themselves should not be compared, because they reflect more the nature of the underlying data rather than the agencies involved, a caveat which is most important.

That said, the study does demonstrate that the benefits outweigh the costs by some considerable margins, meaning that the case for making PSI [Public Sector Information] freely available is strong. Importantly, these are not one-off figures, they are annual and ongoing, and so the benefits accrue.

Houghton's research has been criticized by some publishers. No doubt those criticisms will be part of their response to this RFI. There are formal responses to the publishers' criticisms at <http://www.jisc.ac.uk/media/documents/publications/responseoneiaspmreport.pdf> and at [http://www.cfses.com/EI-ASPM/Comments-on-Hall\(Houghton&Oppenheim\).pdf](http://www.cfses.com/EI-ASPM/Comments-on-Hall(Houghton&Oppenheim).pdf). Even better, experts at the White House should review Houghton's models and findings and determine for themselves the credibility of the various reports. The address of his Centre at the University of Victoria is www.cfses.com/.

Type of access needed

There are levels of open access. At a minimum, open access can guarantee online, free access to readers. The NIH mandate exemplifies the basic level of open access. Of far more value is the second level, which allows both free access *and* permission to use and reuse the research with attribution to the author/s. The Creative Commons Attribution (CC-BY) license is the emerging standard among open access licenses that allow these broader uses (<http://creativecommons.org/licenses/by/3.0/>).

Taxpayers get more for their money when more scientists can both read and re-use the results of the research they supported. Broad re-use allows researchers and businesses to exploit the value of research investment more quickly and for years into the future. Access *without re-use delivers only a fraction of the value.*

- (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?

The NIH mandate provides exactly these protections—public access without copyright infringement. When a researcher receives a grant from the NIH, it is made clear to the grantee that when s/he is ready to publish results of the research, the author is required to send the peer-reviewed, final manuscript to the NIH so that it can be posted in an open access repository (PubMedCentral). Publishers are aware from the get-go that manuscripts reporting NIH research are going to carry this stipulation, and they are free to decline to publish the manuscript if they do not like the restriction.

In no way does the NIH mandate infringe on the rights of any publisher, agency or other stakeholder, despite claims to the contrary by publishers. If their copyrights were truly infringed during the four or so years the NIH mandate has been in place, publishers would have filed suit in court. They have not done so because they know there is no infringement. Instead, they are lobbying for legislation that would overturn the NIH mandate and bar all government agencies from issuing open access mandates. Their strategy is to ensure that taxpayer rights to access publicly funded research never come into play. This legislation is not about copyright protection; it is about economic protection for a distribution model that was essential in a paper world but obsolete in a digital one. The latest example of such legislation is The Research Works Act (H.R.3699) that was introduced into the U.S. House of Representatives on December 16, 2011.

It would be economically foolish and ridiculously self-defeating to put the interests of a relatively small segment of the US economy (the scientific publishing industry) ahead of the immense economic and social potential of a federal open access policy for taxpayer-funded research, particularly on the basis of a spurious claim to violated copyrights. The research and its findings are funded by the nation, belong to the nation and must be exploited for the benefit of the nation. Publishers can continue to play a valuable role in scholarly publishing and research dissemination. They can rightfully expect to negotiate with authors for right of first publication, a right that is already protected in the NIH mandate. But they have no right to expect the government to decide federal information policy based on publishers' desires to satisfy their stockholders and their stakeholders. No one has a greater stake in federal information policy than the American taxpayer, and no corporation deserves to limit or control the return on that investment by controlling access to research it had no hand in creating.

- (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?

Centralized versus de-centralized approaches

The NIH uses a centralized model, a repository called PubMedCentral, to house the research resulting from NIH research grants. FRPAA, the proposed legislation that would extend the NIH mandate to other federal agencies, proposes a more flexible system, allowing agencies to host their own and/or allow deposit in any public-access repository (at universities, for example) that meets established standards for openness, interoperability and long-term archiving and preservation. In all cases, multiple venues for access and preservation are needed to safeguard the literature.

That said, any public-access policies that are developed must give the federal government adequate rights to archive and distribute publicly funded articles. Simply providing the government with a copy to put in a “dark archive” (accessible only under certain conditions) is not a viable solution. Without regular access and use, the archival integrity of “dark archive” content cannot be ensured.

A caveat. Some publishers have lobbied to be the repository for deposit and archiving of the papers they publish (often in “dark archives”). Private sector repositories have value, certainly. But there are dangers in allowing publishers to house the *only* archives. Publishers go out of business. They have different ideas about who should be able to access “their” articles. Federal agencies have no regulating authority over private sector publishers. These uncertainties suggest that multiple repositories provide more secure, accessible archiving of research over time.

- (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?

Public/private partnerships already exist. Universities and academic libraries have created archival repositories and are building the infrastructure to house, preserve and provide access to scholarly literature. We have gained extensive experience in the last decade. These libraries should be encouraged to partner with federal agencies.

Under no condition, however, should a single site—library or otherwise—be the only point of access for federally funded articles. There are over fifty research foundations that currently have open access mandates (similar to the NIH mandate) for their research findings. In no case are they using proprietary (typically publisher) sites as their final archives. However, there are many examples of funders partnering successfully with academic and research institutions in this role.

- (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?

This is not my area of expertise and I defer to the suggestions of my colleagues who are supplying detailed suggestions regarding metadata, interoperability and other desirable standards.

- (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?

Consistent requirements across federal agencies regarding deposit of peer-reviewed articles is necessary. This will not only minimize the burden, it will also increase the rate of compliance and reduce potential costs among stakeholders. Academic libraries, with the help of their professional associations (particularly the Association of Research Libraries), are already working with NIH grantees on our campuses to help with submissions to PubMedCentral. This could continue and expand as part of the public/private partnerships described in question (5) above.

- (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?

It makes sense to consider expanding a federal policy for open access to taxpayer supported research to extend to any other type of publication besides peer-reviewed journal articles. Differences in the inherent nature of different types of material—textbooks, for example, usually pay royalties to the author—will need to be taken into account as those policies are developed.

- (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?

Immediate access is the ideal time to optimize scientific and commercial advantages of publicly funded research. As economic research has shown (reference the Houghton studies in the Cost/benefit portion of question one above), delays have costs associated with them at the level of small and medium sized businesses, as well as society as a whole. Worldwide, virtually every biomedical research funding agency outside of the NIH has a 6-month embargo for peer-reviewed journal articles, including those in biomedical fields. The US government should work towards a 6-month embargo as expeditiously as possible.

The existing 12-month embargo in the NIH mandate has been a reasonable compromise between the ideals and the concern of publishers. No doubt they would oppose a shorter embargo period. However, *there has been no data provided by publishers that a 12-month embargo has harmed their business*. In fact, embargos of 12 months or less have been adopted voluntarily by hundreds of journals (<http://highwire.stanford.edu/lists/freeart.dtl>).

It is worth pointing out that journal cancellations are driven by any number of factors, including price and pricing history, the impact of large bundles (so-called big deals) on the cancellation of individual titles from smaller publishers, library funding, pressure to add new and emerging titles, and other factors. If it is useful to know, my library, with an acquisitions budget of over \$4M has never cancelled a journal subscription because the articles were going to be available for free in 6 to 12 months.

From: Florida Biotech News
Subject: Public Access to Peer-Reviewed Scholarly Publications
Date: January 8, 2012 6:20:28 PM EST
To: publicaccess@ostp.gov

If we as a country are to innovate our way out of this economic mess we are in, the open exchange of scholarly research is priceless. Without open access to the research, we will not have those "eureka" moments; we will be condemned to unnecessary and expensive repetition of failed experiments. Our society will not be able to connect the dots, if we don't know where the dots are.

The purpose of scientific research is to share findings so our peers can build on them. Locking research behind private paywalls enriches the few at a terrible cost to our country's innovation economy. Public access to peer-reviewed scholarly publications must be preserved and promoted.

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<http://www.FloridaBiotechNews.com>
<http://twitter.com/flabiotechnews>
<http://www.facebook.com/FloridaBiotechnology>

From: Esteban Domingo
Subject: Peer-reviewed publications
Date: January 9, 2012 4:03:46 AM EST
To: publicaccess@ostp.gov

- Authors, editors and publishers are committed to providing the broadest possible access to our publications. Our goal is to expand access to the latest breakthroughs in the scientific research and developments in academic thought.
- The main purpose of a scholarly journal is to report on original research or experimentation in order to make such information available to the global research community.
- It requires considerable investment to maintain the highest standards for peer-reviewed scientific publication and sustainable mechanisms are required to enable this system to continue. This is threatened by access policies that do not take these costs into account, and it is critically important that any new policies do not damage the publishing institutions on which the Federal Government and science depend.
- Overall, access to research articles is good, particularly in the United States, where 97% of researchers are happy with access to journal articles
- Publishers are committed to identifying any gaps in access and have developed a number of mechanisms to close those gaps in sustainable ways. These include initiatives to broaden access for researchers in developing countries, patients, and the public.
- Any efforts by government to establish policies for peer-reviewed research should be done in consultation with all affected stakeholders, ensuring that such policies do not undermine the sustainability of the peer review publishing system which is necessary to ensure the quality and integrity of scientific research. I adhere to the above statements.

Yours sincerely, Esteban Domingo, Associate Editor, Virus Research

Dear Science and Technology Policy Office,

Thank you for extending the deadline for comments on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research.

Like many of my colleagues I wasn't aware of the call until the initial deadline had passed. Knowing now that comments are requested, I am moved to write by the appearance of the Research Works Act.

I think that most scientists, like me, assumed that this battle was over: that the right and natural claim of the general population to have access to the results of work that they had funded was so self-evident that no-one would think to challenge it. Certainly the open-access mandates adopted by funding bodies such as the NIH and research institutions such as Harvard and MIT indicate that this is the case. If there has been a weak response to the OSTP's call RFI, that is the reason: we have assumed the issue was as settled as, say, slavery or women's suffrage.

But now that the Research Works Act has been proposed, it's apparent that there are still parties wanting to drag the whole scientific enterprise back to the dark age of walled gardens, and so apparently it is necessary to make the argument AGAIN that publicly funded research should benefit the public rather than the shareholders of monopolist profiteering foreign corporations.

As simply as possible, then: long-term stewardship and broad public access to the peer-reviewed scholarly publications that result from federally funded scientific research can best be achieved by having science funding bodies make it a condition of their grants that the resulting research papers be published as open access, in accordance with the standard definition of that term found in the Budapest Open Access Initiative: "free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited." (See
<http://www.earlham.edu/~peters/fos/boaifaq.htm#openaccess>)

The existence of an act like the RWA, so clearly contrary to the interests of the American people and the wider world, is only possible due to self-interested lobbying by for-profit publishers who continue to leech off the work of scientists. For example, Elsevier, who contributed campaign funds to both RWA co-sponsors, posted a profit of 36% of revenue in 2010, as reported in the Economist at <http://www.economist.com/node/18744177/> -- in part by accepting manuscripts produced by publicly funded US scientists, assuming copyright, and selling expensive copies back to publicly funded US institutions. Such a business model serves no-one but the publishers

themselves, and must not be allowed to receive support from US legislation.

(The language in the RWA is highly misleading, attributing to publishers far more input into the scientific process than they really have. The truth is that scientists -- often funded by public money -- provide the underlying research, the writing and the figure preparation that result in a manuscript submitted for publication.

Other scientists then provide the editorial services and – contra publishers' claims, as can be easily verified -- the peer review. Publishers' contributions are limited essentially to typesetting and web hosting.)

To summarise, I strongly support the continuation of open-access mandates by US funding bodies (and those of other countries) because they are morally right, economically advantageous, and without any drawbacks whatsoever to the progress of science.

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Effective Date: 2011-11-03

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Location: San Francisco, California

Comment 1.

In order to assist the growth of markets related to the access and analysis of the results of federally funded scientific research, agencies should 1) require free, public access to publications and 2) encourage grant recipients to make available that data which their publications are based upon. The productivity of the scientific enterprise is predicated on the ability of scientists and engineers to locate, read and synthesize the hypothesis, data and conclusions of other researchers. It is via this process that we “stand on the shoulders of giants” in order to reach ever greater heights of achievement in physics, in medicine, and in all branches of science and its technological applications. By insisting that federally funded scientific work be made promptly and permanently available, both to specialists and knowledgeable laypeople (e.g. cancer awareness and support groups), the government can ensure that taxpayers continue to receive the benefits of the scientific work their money has commissioned. Policies such as the open-access policy of the National Institutes of Health bear minimal costs, those of archiving electronic documents and permitting them to be accessed via the Internet, but brook disproportionate rewards: the ability of American academia and industry to build on the failures and successes of the past, enriching America's economy by delivering new technologies which improve the lives of people around the globe, and the ability of medical professionals to advise patients on the basis of the most recent and most accurate information. Access to publicly funded research work must therefore be free and open not only to active scientific researchers and engineers, but to the general populace as embodied by doctors, patient groups and knowledgeable citizens.

Comment 2.

In order to protect the intellectual property rights of all stakeholders in the production and dissemination of scientific work, it is necessary to identify the concerned parties and

their roles. Scientists embody the technical wherewithal to perform and review scientific research. Their efforts are the base upon which all other parties in this process depend, and they are supported primarily through monies granted by the federal government, and also in part by salaries and wages from universities and public research institutions, which are typically incorporated non-profits and also heavily funded by government grants themselves. It is therefore the tax paying public that has commissioned these institutions to provide a public good by furthering the scientific and technological progress. Publishers of scientific work are integral to the process of disseminating (as opposed to producing) scientific work, and they provide a valuable service by organizing peer review as well as scientific conferences and meetings. Yet, the act of peer review is also carried out by working scientists who operate either on a volunteer basis, or through the same government funds that have been provided them to perform their research. The open-access model practiced by publishers such as BioMed Central, the Oxford University Press, the Public Library of Science, and others is ideally suited to balancing the needs and rights of the publishers with those of scientists, research-funding agencies and the general public those agencies represent. There could be no policy more destructive to scientific progress and productivity than one that restricts the rights of scientists – that is, the authors of research publications – from freely spreading their work to their colleagues.

Comment 3.

Centralized approaches to managing public access to scholarly publications have the substantial benefit of easing search and analysis of those publications by providing a unified foundation for their organization and access. Federal agencies should maintain custody of all scientific work which benefits from their largesse, both to ensure that that work is available to scientists and the public, and to guard it against loss. Indeed, the concept of the modern patent in which trade secrets are revealed in exchange for a temporary monopoly on production, was developed in order to prevent advances in glassblowing technology from dying with their inventors. Then, as now, it is the government that is best placed to maintain a central repository of the invaluable fruits of research work, especially when it is the American taxpayer who has commissioned federal agencies to fund the research itself. The advantage of decentralized methods for managing publication and public access is that organization, search and analysis of published results may be specialized towards certain fields. A combination of centralized and decentralized approaches towards publication management can be

applied sustainably, as long as access to abstracts and full-text is possible via scientific search engines such as Google Scholar, ISI Web of Knowledge and the National Institutes of Health's own PubMed Central. Again, the profitable open-access publication model of BioMed Central, Public Library of Science, Oxford University Press and others is ideally suited to maintaining public stewardship of, and access to, the fruits of publicly funded science.

Comment 4.

Broad-based scientific search engines such as Google Scholar, ISI Web of Knowledge, SciFinder and others embody public-private partnerships which are lucrative to the private organizations providing these services as well as to the public (including scientists) who use them. By aggregating article metadata and linking to full-text sources from publisher websites to the self-archival pages of individual researchers, while providing rich search and analysis capabilities, these services "take advantage of existing publisher archives and encourage innovation in accessibility and interoperability." Without services such as these, which range from the free, simple search capability of Google Scholar to the premium, technically advanced "concept" searching of SciFinder, scientific research would still be limited by the slowness of research in the pre-Internet era. Complete, on-demand access to scientific publications has become a key component of modern research, and federal funding agencies' stewardship of the work they have commissioned on behalf of the taxpaying public will be incomplete if they do not pursue opportunities to maintain a high level of access to the most recent and most accurate scientific knowledge.

Comment 5.

Interoperable search, discovery and analysis are most surely delivered by an policy of enforced open access for federally funded research publications. Due to the extremely large corpus of modern scientific publication (the PubMed database alone stands at over 21 million citations), the tasks enumerated above are increasingly dependent on methods for automated text analysis, itself a rapidly developing area of computer science. Automated text analysis and other forms of computer assisted search, organization and analysis, function best when works are available on demand, and in full. They also benefit from the availability of structured metadata which can make these difficult computational tasks more tractable and their results less ambiguous. At

minimum, the metadata to describe a scientific publication includes a unique identifier such as a DOI, a title, a list of authors, a list keywords and disciplines, a list of involved laboratories or research institutions, a publication date, the forum and location of publication (journal name, volume and issue numbers, page numbers), the funding source or sources and the abstract or a condensed abstract. This last should be regarded as essential for the efficient operation of automated text analysis and search capabilities. Federal agencies should mandate that metadata and preferably full text for funded publications be freely available, and should additionally enforce that mandate by making receipt of further funding contingent on compliance.

Comment 6.

Agencies can maximize the benefit of public access by consistently enacting and enforcing policies which require open access to publications be provided. They can also ease the deposition and retrieval of government funded publications by provided simple and easy means for authors and publishers to upload and annotate their work, and for researchers and laypeople to search and download that work. As a working scientists, the present author submits that there is no greater hindrance to research success, and therefore scientific progress, than the inability to access critical information within publications chained by draconian access provisions, which often cannot be met even by organizations like medical advocacy groups and small or underfunded universities.

Comment 7.

In addition to journal articles, book chapters and conference proceedings form the core of the scientific canon. The latter two forms of publication differ significantly and should be treated as such by the open access provisions of federal agencies. Book chapters typically focus on past work, perhaps giving a synthesis of work in a scientific area, or presenting in detail research work which was the topic of many other successive publications. Conversely, conference proceedings represent the cutting edge of work in a field. Furthermore, papers are often guaranteed publication in an associated journal after acceptance into a conference (e.g. papers accepted to the 2012 Asia-Pacific Bioinformatics Conference will also be published in *BMC Genomics*). Given the disparate roles of book chapters and conference proceedings, and the high similarity of proceedings to standard journal articles, it is meet that open access requirements be wholly extended to conference proceedings, which are often very difficult to obtain

regardless of access policies and despite their high scientific value, but not to book chapters whose information is usually available from other sources. It should also be noted that while authors of peer-reviewed journal articles and conference proceedings do *not* receive royalties or other forms of compensation (on the contrary, authors pay publishers to disseminate their work), authors of books or book chapters *do* receive royalties and/or upfront payment for their work. Thus, journal articles and conference papers are not, in a loose sense, “owned” by the authors, while books and book chapters are. To ensure the long term stewardship of the former, they should be firmly placed in the public hand via its representatives, the federal funding agencies.

Comment 8.

The embargo period for general, peer-reviewed journal articles should be as short as possible, to ensure rapid dissemination of the information contained within. That information is often critical to continuing research, as well as to the making of sound medical decisions on the parts of doctors, patients' groups and patients themselves. American taxpayers have paid for federally funded scientific work to be conducted, and as soon as that work is complete and in print, Americans should be able to access it – whether they be scientists, doctors or laypeople. To be sure, the subscription-free business model of closed-access publishers is likely not sustainable without an embargo period during which they may profit by monopolizing the spread of scientific knowledge. However, this cost must be weighed against the competitiveness of American scientists and engineers who are dependent on the timely availability of that knowledge. Furthermore, universities and libraries across the nation are finding the up-front, per-article fee model of the open-access publishers to be far more palatable in the long term. Once an open-access publication is paid for, it remains paid for, while closed-access publishers are free to increase subscription fees at anytime. Effectively, they may retroactively raise the price for publicly funded work already conducted. This truth was made painfully clear to the research faculty of the University of California in 2010, when the Nature Publishing Group elected to increase fees by a staggering 400% [1]. While the library of the University of California was able to come eventually to an agreement with NPG, the California State Universities were not so lucky, and many CSU campuses – including the present author's – do not have access to new or archived articles from NPG and a long list of other subscription-fee publishers [2], whose prices have risen beyond the capacity of many public universities. This widespread lack of access is devastating to the competitiveness of the American

scientific enterprise.

Making strong, empirical arguments for or against specific embargo lengths for specific publication types is difficult to the a dearth of actuarial data pertaining to the production and publication of scientific articles. Nevertheless, it is indisputable that the open-access model, in which there is no embargo period, has proven profitable, even highly profitable for outfits such as BioMed Central, Oxford University Press, the Public Library of Science and others. PloS in particular has a particularly attractive embargo policy, which balances the public need for information with the need for responsible reporting and publishing. PloS distributes publications to exclusively to media organizations for a period of about one week, before allowing unlimited access. This short embargo period for journal articles is ideal because it “serves scientists, journalists, and the public by ensuring that the article is available to everyone when it is reported in the media. The policy also allows fair and equal access to our content, ensuring that no one reporter or organization receives preferential treatment or advantage over any other. It also gives the media the opportunity to research and accurately report on scientific articles while ensuring that publicity does not appear before the articles are accessible to the public. Furthermore, it gives authors the chance to comment on research before it is reported in the media. It is likewise designed to give public information officers adequate time to coordinate coverage with scientists at their institutions.” [3]

[1] University of California Office of the President. “Re: Informational Update on a Possible UC Systemwide Boycott of the Nature Publishing Group.” June 2010. (Attached PDF).

[2] California State University Systemwide Electronic Information Resources. FY 11/12 Campus Subscription. (Attached spreadsheet).

[3] Public Library of Science. Embargo Policy. <http://www.plos.org/about/media-inquiries/embargo-policy/>

Further Considerations.

The massive global impact of open-access policies for American academic publications must be considered. In addition to American researchers at small or underfunded institutions, scientists working in the developing world are often unable to access important scholarly works. Science is a universal human endeavor; when science is retarded anywhere on the Earth, all suffer the consequences in the form of

reduced technological availability and economic output. While the American taxpayer is undoubtedly deserving of free access to the scientific knowledge that his or her money has commissioned, there is a moral impetus to spread the benefits of that knowledge around the world. Modern science is a global phenomenon to which men and women of many countries and cultures have given over their labor and their lives. Its success rests on the trust we place in the process of peer-review, in the focus and conviction of our working scientists and on its ability to satiate, through technology, our desire for longer, more productive and better lives. It is a collaborative effort: though we see far, it is only because we stand on the shoulders of those who have come before. Continued scientific progress is absolutely dependent on the ability of researchers to stand on each others' shoulders, and mandated open-access terms for publicly funded scientific work, along with availability of that work over the global networks, have rapidly become foundational cornerstones of the incredible human capacity for collaborative advancement.

Daniel Asarnow

Department of Chemistry and Biochemistry, San Francisco State University

CAMPUS LIBRARY E-RESOURCE PARTICIPATION

CAMPUS LIBRARY E-RESOURCE PARTICIPATION

FY 11/12 Renewal - Ca										
Vendor:	CollegeSource	CountryWatch	CQ Roll Call	Dun & Bradstreet	EBSCO	Elsevier - El Village	Elsevier Geobase	Elsevier SD	Emerald	
Bakersfield	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Channel Islands	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Chico	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ 8,033	\$ -	\$ -	\$ -
Dominguez Hills	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
EastBay	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ 8,033	\$ -	\$ -	\$ -
Fresno	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ -	\$ -	\$ -	\$ -
Fullerton	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ 8,033	\$ -	\$ -	\$ -
Humboldt	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ 8,033	\$ -	\$ -	\$ -
Long Beach	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ -	\$ -	\$ -	\$ -
Los Angeles	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ 6,300	\$ -	\$ -	\$ -
Maritime Acad.	\$ -	\$ -	X	\$ -	\$ -	\$ 4,211	\$ -	\$ -	\$ -	\$ -
Monterey Bay	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Moss Landing	\$ -	\$ -	X	\$ -	\$ -	\$ 4,211	\$ -	\$ -	\$ -	X
Northridge	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ 8,033	\$ -	\$ -	\$ -
Pomona	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ -	\$ -	\$ -	\$ -
Sacramento	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ -	\$ -	\$ -	\$ -
San Bernardino	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
San Diego	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ -	\$ -	\$ -	\$ -
San Francisco	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ -	\$ -	\$ -	\$ -
San Jose	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ -	\$ -	\$ -	\$ -
San Luis Obispo	\$ -	\$ -	X	\$ -	\$ -	\$ 8,421	\$ -	\$ -	\$ -	\$ -
San Marcos	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sonoma	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Stanislaus	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Campus Fee Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 109,474	\$ 46,465	\$ -	\$ -	
Renewal Fee Status	Pending	Pending	Final	Pending	Pending	Final	Final	Final	Pending	Pending
Renewal Term	Jan-Dec	Jan-Dec	July-June	Oct-Sept	July-June	July-June	July-June	Jan-Dec	Jan-Dec	Jan-Dec

CAMPUS LIBRARY E-RESOURCE PARTICIPATION

FY 11/12 Renewal - Ca										
Vendor:	Encyclopedia Britannica	Gale Group	HW Wilson	IEEE	JSTOR	Lyrasis	Mergent	OCLC FirstSearch & RLG	Oxford University Press - Databases	
Bakersfield	\$ -	\$ -	\$ -	\$ 2,950	X	\$ -	X	\$ -	\$ -	
Channel Islands	\$ -	\$ -	\$ -	\$ 1,950	X	\$ -	X	\$ 2,831	\$ -	
Chico	\$ -	\$ -	\$ -	\$ 13,888	X	\$ 9,589	X	\$ 1,614	\$ -	
Dominguez Hills	\$ -	\$ -	\$ -	\$ 3,950	X	\$ -	X	\$ 929	\$ -	
EastBay	\$ -	\$ -	\$ -	\$ 4,531	X	\$ -	X	\$ 1,614	\$ -	
Fresno	\$ -	\$ -	\$ -	\$ 57,350	X	\$ 11,562	X	\$ 2,543	\$ -	
Fullerton	\$ -	\$ -	\$ -	\$ 29,203	X	\$ 12,075	X	\$ 36,959	\$ -	
Humboldt	\$ -	\$ -	\$ -	\$ -	X	\$ 7,775	X	\$ 10,763	\$ -	
Long Beach	\$ -	\$ -	\$ -	\$ 57,350	X	\$ -	X	\$ 8,843	\$ -	
Los Angeles	\$ -	\$ -	\$ -	\$ 57,350	X	\$ 10,075	X	\$ 21,193	\$ -	
Maritime Acad.	\$ -	\$ -	\$ -	\$ 1,950	X	\$ -	X	\$ -	\$ -	
Monterey Bay	\$ -	\$ -	\$ -	\$ -	X	\$ -	X	\$ 4,794	\$ -	
Moss Landing	\$ -	\$ -	\$ -	\$ -	X	\$ -	X	\$ 1,731	\$ -	
Northridge	\$ -	\$ -	\$ -	\$ 57,350	X	\$ -	X	\$ 30,739	\$ -	
Pomona	\$ -	\$ -	\$ -	\$ 57,350	X	\$ -	X	\$ 17,747	\$ -	
Sacramento	\$ -	\$ -	\$ -	\$ 57,350	X	\$ -	X	\$ 25,002	\$ -	
San Bernardino	\$ -	\$ -	\$ -	\$ 9,063	X	\$ -	X	\$ 2,543	\$ -	
San Diego	\$ -	\$ -	\$ -	\$ 57,350	X	\$ 12,075	X	\$ 38,248	\$ -	
San Francisco	\$ -	\$ -	\$ -	\$ 57,350	X	\$ 27,510	X	\$ 2,543	\$ -	
San Jose	\$ -	\$ -	\$ -	\$ 48,396	X	\$ -	X	\$ 30,498	\$ -	
San Luis Obispo	\$ -	\$ -	\$ -	\$ 48,396	X	\$ -	X	\$ 17,747	\$ -	
San Marcos	\$ -	\$ -	\$ -	\$ -	X	\$ -	X	\$ 7,909	\$ -	
Sonoma	\$ -	\$ -	\$ -	\$ -	X	\$ -	X	\$ 9,529	\$ -	
Stanislaus	\$ -	\$ -	\$ -	\$ -	X	\$ -	X	\$ 8,479	\$ -	
Campus Fee Total	\$ -	\$ -	\$ -	\$ 623,073	\$ -	\$ 90,661	\$ -	\$ 284,798	\$ -	
Renewal Fee Status	Pending	Pending	Final - FY 11/12 Fees were CPO in FY 10/11 Funds	Final	Pending	Final	Final	Final	Pending	
Renewal Term	Nov-Oct	Jan-Dec	July-June	July-June	Jan-Dec	July-June	July-June	July-June	July-June	

CAMPUS LIBRARY E-RESOURCE PARTICIPATION

FY 11/12 Renewal - Ca										
Vendor:	Oxford University Press - Grove	Oxford University Press - Journals	ProQuest	Sage - CQ Press	Sage - Premier	Springer	Thomson Reuters BioSys	Thomson Reuters WOS	Wiley Blackwell	
Bakersfield	x	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Channel Islands	x	\$ -	\$ 15,944	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Chico	x	\$ -	\$ 17,899	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dominguez Hills	x	\$ -	\$ 2,481	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
EastBay	x	\$ -	\$ 10,861	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fresno	x	\$ -	\$ 18,438	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fullerton	x	\$ -	\$ 24,010	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Humboldt	x	\$ -	\$ 21,521	X	\$ -	\$ -	\$ 3,497	\$ -	\$ -	\$ -
Long Beach	x	\$ -	\$ 16,245	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Los Angeles	x	\$ -	\$ 25,547	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Maritime Acad.	x	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Monterey Bay	x	\$ -	\$ 16,745	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Moss Landing	x	\$ -	\$ -	X	\$ -	\$ -	\$ 4,410	\$ -	\$ -	\$ -
Northridge	x	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pomona	x	\$ -	\$ 13,819	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sacramento	x	\$ -	\$ -	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
San Bernardino	x	\$ -	\$ 16,920	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
San Diego	x	\$ -	\$ 55,029	X	\$ -	\$ -	\$ 9,566	\$ -	\$ -	\$ -
San Francisco	x	\$ -	\$ 83,315	X	\$ -	\$ -	\$ 5,516	\$ -	\$ -	\$ -
San Jose	x	\$ -	\$ 45,695	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
San Luis Obispo	x	\$ -	\$ 14,667	X	\$ -	\$ -	\$ 1,366	\$ -	\$ -	\$ -
San Marcos	x	\$ -	\$ 16,921	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sonoma	x	\$ -	\$ 21,800	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Stanislaus	x	\$ -	\$ 1,035	X	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Campus Fee Total	\$ -	\$ -	\$ 438,892	\$ -	\$ -	\$ -	\$ 24,354	\$ -	\$ -	\$ -
Renewal Fee Status	Final	Pending	Final	Final	Pending	Pending	Final	Pending	Pending	Pending
Renewal Term	July-June	Jan-Dec	July-June	July-June	Jan-Dec	Jan-Dec	July-June	Jan-Dec	Jan-Dec	Jan-Dec

CAMPUS LIBRARY E-RESOURCE PARTICIPATION

FY 11/12 Renewal - Ca	
Vendor:	Wiley InterScience
Bakersfield	\$ -
Channel Islands	\$ -
Chico	\$ -
Dominguez Hills	
EastBay	\$ -
Fresno	\$ -
Fullerton	\$ -
Humboldt	\$ -
Long Beach	\$ -
Los Angeles	\$ -
Maritime Acad.	\$ -
Monterey Bay	\$ -
Moss Landing	\$ -
Northridge	\$ -
Pomona	\$ -
Sacramento	\$ -
San Bernardino	\$ -
San Diego	\$ -
San Francisco	\$ -
San Jose	\$ -
San Luis Obispo	\$ -
San Marcos	\$ -
Sonoma	\$ -
Stanislaus	\$ -
Campus Fee Total	\$ -
Renewal Fee Status	Pending
Renewal Term	Jan-Dec

UNIVERSITY OF CALIFORNIA

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SANTA BARBARA • SANTA CRUZ



OFFICE OF THE PRESIDENT
California Digital Library

415 20th Street
Oakland, California 94612

June 4, 2010

Re: Informational Update on a Possible UC Systemwide Boycott of the Nature Publishing Group

Dear UC Divisional Chairs and Members of the UC Faculty,

UC Libraries are confronting an impending crisis in providing access to journals from the Nature Publishing Group (NPG). NPG has insisted on increasing the price of our license for *Nature* and its affiliated journals by 400 percent beginning in 2011, which would raise our cost for their 67 journals by well over \$1 million dollars per year.

While *Nature* and other NPG publications are among the most prestigious of academic journals, such a price increase is of unprecedented magnitude. NPG has made their ultimatum with full knowledge that our libraries are under economic distress—a fact widely publicized in an [Open Letter to Licensed Content Providers](#) and distributed by the California Digital Library (CDL) in May 2009. In fact, CDL has worked successfully with many other publishers and content providers over the past year to address the University's current economic challenges in a spirit of mutual problem solving, with positive results including lowering our overall costs for electronic journals by \$1 million dollars per year.

NPG by contrast has been singularly unresponsive to the plight of libraries and has employed a ‘divide and conquer’ strategy that directs major price increases to various institutions in different years. Their proposed new license fee is especially difficult to accept in a time of shrinking UC library budgets and with the many sacrifices we all continue to make Systemwide. Capitulating to NPG now would wipe out all of the recent cost-saving measures taken by CDL and our campus libraries to reduce expenditures for electronic journals. More information about the UC Libraries’ concerns, including a history of previous unsustainable price increases from this publisher and others, is available on the CDL’s *Challenges to Licensing* page at <http://www.cdlib.org/services/collections/current/challenges.html>

UC Libraries have already taken a stand against NPG. After recently acquiring *Scientific American*, NPG doubled the institutional site license fee and raised the price of an institutional print subscription seven-fold. In response, UC Libraries, along with numerous other institutions throughout the country, discontinued their license to the online version and reduced the number of print subscriptions. As a first response to the current NPG proposal, UC Libraries plan to forgo all online subscriptions to any new NPG journals. But more drastic actions may be necessary.

What can UC Faculty do to help?

UC Faculty and researchers author a significant percentage of all articles published in NPG journals and are a major force in shaping the prestige of its publications. In the past six years, UC authors have contributed approximately 5300 articles to these journals, 638 of them in the flagship journal *Nature*. Using NPG’s own figures, an analysis by CDL suggests that UC articles published in *Nature* alone have contributed at least \$19 million dollars in revenue to NPG over the past 6 years—or more than \$3 million dollars per year for just that one journal. Moreover, UC Faculty supply countless hours serving as reviewers, editors, and advisory board members.

Many UC Faculty now believe that a larger and more concerted response is necessary to counter the monopolistic tactics of NPG. Keith Yamamoto, a Professor and Executive Vice Dean at UCSF (yamamoto@cmp.ucsf.edu) who helped lead a successful boycott against Elsevier and Cell Press in 2003 (<http://www.libraryjournal.com/article/CA379265.html>), has begun to assemble a group of Faculty that will help lead a UC Systemwide boycott of NPG. This means that unless NPG is willing to maintain our current licensing agreement, UC Faculty would ask the UC Libraries to suspend their online subscriptions entirely, and all UC Faculty would be strongly encouraged to:

- Decline to peer review manuscripts for journals from the Nature Publishing Group.
- Resign from Nature Publishing Group editorial and advisory boards.
- Cease to submit papers to the Nature Publishing Group.
- Refrain from advertising any open or new UC positions in Nature Publishing Group journals.
- Talk widely about Nature Publishing Group pricing tactics and business strategies with colleagues outside UC, and encourage sympathy actions such as those listed above.

We clearly recognize that the consequences of such a boycott would be complex and present hardships for individual UC researchers. But we believe that in the end, we will all benefit if UC can achieve a sustainable and mutually rewarding relationship with NPG. In the meantime, UC scholars can help break the monopoly that commercial and for-profit entities like NPG hold over the work that we create through positive actions such as:

- Complying with open access policies from Federal funding agencies such as the NIH (<http://publicaccess.nih.gov>).
- Utilizing *eScholarship*, an open access repository service from CDL (http://www.escholarship.org/publish_postprints.html).
- Considering other high-quality research publishing outlets, including open access journals such as those published by PLoS and others.
- Insisting on language in publication agreements that allows UC authors to retain their copyright (http://osc.universityofcalifornia.edu/manage/retain_copyrights.html).

A full list of journals currently licensed from NPG by UC Libraries is attached. We will keep you informed as this situation progresses, including the possibility of canceling all NPG titles. Please feel free to contact the University Librarian on your campus with questions or concerns, or any of us. You can also communicate your concern to key contacts at NPG. The managing director of NPG, Steven Inchcoombe, and other members of the executive committee can be reached at exec@nature.com.

Sincerely,



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University Librarian & Assistant
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Sharon DeDecker
Acting University Librarian
University of California – Santa Barbara

Lucia Snowhill
Acting University Librarian
University of California – Santa Barbara

Ginny Steel
University Librarian
University of California – Santa Cruz

Nature Publishing Group Journals Licensed at UC

Number of journals: 67

Includes: **25 Nature-branded journals**
42 academic and specialist journals

Note: NPG publishes 85 journals in total, including titles not licensed at UC. For a complete list of publications, see <http://www.nature.com/siteindex/index.html>

Nature	EMBO Journal
Nature Biotechnology	EMBO reports
Nature Cell Biology	European Journal of Clinical Nutrition
Nature Chemical Biology	European Journal of Human Genetics
Nature Genetics	Evidence Based Dentistry
Nature Geoscience	Eye
Nature Immunology	Gene Therapy
Nature Materials	Genes & Immunity
Nature Medicine	Heredity
Nature Methods	Immunology and Cell Biology
Nature Nanotechnology	International Journal of Impotence Research
Nature Neuroscience	International Journal of Obesity
Nature Photonics	ISME Journal
Nature Physics	Journal of Antibiotics
Nature Protocols	Journal of Cerebral Blood Flow & Metabolism
Nature Structural & Molecular Biology	Journal of Exposure Science & Environmental Epidemiology
Nature Reviews Cancer	Journal of Human Genetics
Nature Reviews Cardiology	Journal of Human Hypertension
Nature Reviews Drug Discovery	Journal of Investigative Dermatology
Nature Reviews Genetics	Journal of Perinatology
Nature Reviews Immunology	Kidney International
Nature Reviews Microbiology	Lab Animal
Nature Reviews Molecular Cell Biology	Laboratory Investigation
Nature Reviews Neuroscience	Leukemia
Nature Reviews Rheumatology	Modern Pathology
American Journal of Gastroenterology	Molecular Psychiatry
American Journal of Hypertension	Molecular Therapy
Bone Marrow Transplantation	Neuropsychopharmacology
British Dental Journal	Obesity
British Journal of Cancer	Oncogene + Oncogene Reviews
Cancer Gene Therapy	Pharmacogenomics Journal, The
Cell Death & Differentiation	Prostate Cancer & Prostatic Diseases
Cell Research	Spinal Cord
Clinical Pharmacology and Therapeutics	

Below is an overview of online journal subscriptions and license fees managed by the California Digital Library for the entire UC System. Individual UC campuses also purchase many journal subscriptions locally and those figures are not included here. Please consult with your University Librarian for more information about online journal subscriptions at each of the ten campuses.

- Amount spent for online journal licenses for UC Systemwide: \$24.3 million
- Current number of online journals for UC Systemwide:¹ 7,846
- Average UC cost per journal:
 - Life and health sciences: \$4,142
 - Physical sciences and engineering: \$6,814
 - All journals (includes social sciences and humanities): \$3,103
- Current average UC cost per Nature Publishing Group journal: \$4,465
- Proposed average UC cost per Nature Publishing Group journal for 2011: \$17,479
- Increase in UC Library materials budget from 2005–2009: 7.46%
- Increase in major journal package license fees from 2005–2009:² 15%
- Reduction to UC Library materials budget in 2010: -\$1.9 million
- Current number of journals licensed from Nature Publishing Group: 67
- Increase in Nature Publishing Group license fees from 2005–2009:² 137%
- Proposed increase in Nature Publishing Group license fees for 2011: 400%

In 2010, CDL successfully reduced the cost of many major licenses by 15% or more in response to the current economic downturn. Virtually all publishers with whom we have concluded agreements in 2010 have cooperated with us to address UC's budget challenges.

¹ Includes research journals licensed directly from publishers only. More than 30,000 journals are available systemwide including aggregated databases.

² A small percentage of this increase is due to licensing additional journals from these publishers.

I'm a taxpayer and registered voter in California and I oppose the Research Works Act. I find publications of public research both educational and interesting to read and I would hate to see my access limited. Thank you for considering public taxpayer opinion on this matter!

Kind regards,
Catherine Fowler
San Diego, CA

Response to Request for Information: "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research," November 2011

January 8, 2012

Prudence S. Adler

Association of Research Libraries

Washington, D.C.

Summary

Thank you for the opportunity to comment on "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research." These comments are submitted on behalf of the Association of Research Libraries (ARL). ARL is an Association of 126 research libraries in North America. These libraries directly serve 4.6 million students and faculty and spend \$1.4 billion annually on acquiring information resources, of which 62% is invested in access to electronic resources.

Enhancing public access to federally funded research results is a priority for ARL and its member libraries because such policies are integrally tied to and support the mission of higher education and scholarship. ARL believes that extending and enhancing public access policies to federally funded research to other science and technology agencies will drive scientific discovery and innovation, and promote economic growth.

Extending enhanced public access policies to other federal agencies is long overdue.

Question 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 publicly 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?

Comment 1) There are a number of steps that agencies should take to grow existing and new markets relating to access and analysis of peer-reviewed publications resulting from federally funded scientific research. All peer-reviewed articles resulting from publicly funded research should be freely available immediately so that scientists, researchers, students, teachers, citizen scientists, and members of the public can utilize these resources. Importantly, for these uses to be the most effective, accessibility must include the ability to text and data mine, perform computational analysis, and create new derivative works—all executed with no restrictions, for both non-profit and for-profit purposes. It is time to take full advantage of networked, information technologies in order to spur innovation, advance science, and grow new markets.

Despite the growing market share of open access journals, a large percentage of federally funded, peer-reviewed research results are still only available via subscriptions, or sometimes through the purchase of individual articles at a very high

cost. This marketplace model significantly limits access to those who could both conduct research and design new tools and services and, yet, are handicapped by cost and access barriers. There is ample evidence that openly available data and research resources leads to more research, quickens the pace of that research, and yields greater commercialization and development of new tools and services. For example, two reports described below provide clear evidence that openly available resources with no reuse restrictions promoted economic growth and created new jobs and markets. As noted in the Battelle Technology Partnership Practice report, *Economic Impact of the Human Genome Project*, “the \$3.8 billion the U.S. government invested in the Human Genome Project (HGP) from 1988 to 2003 helped drive \$796 billion in economic impact and the generation of \$244 billion in total personal income. In 2010 alone, the human genome sequencing projects and associated genomics research and industry activity directly and indirectly generated \$67 billion in U.S. economic output and supported 310,000 jobs that produced \$20 billion in personal income. The genomics-enabled industry also provided \$3.7 billion in federal taxes during 2010” (http://www.battelle.org/spotlight/5-11-11_genome.aspx).

The link between publicly available research resources, innovation, and commercialization was evident as early as 2002 in a study by Peter Weiss of the National Oceanographic and Atmospheric Administration, “Borders in Cyberspace: Conflicting Public Sector Information Policies and Their Economic Impact.” Three key findings in the report concluded that:

- In Europe, there was little commercial meteorology or weather risk management activity because most European governments did not have open access policies resulting in data being readily, economically, and efficiently available.
- Since the size of the US and EU economies were approximately the same, there was no reason for the European market not to grow to the size of the US with the accompanying revenue generation and job growth.
- A significant contributor to the disparities in weather risk management activity was the difference in information policies between Europe and the United States. In the US, there were no restrictive laws or policies that limited the commercialization of government information.

By making federally funded research results publicly accessible, new audiences and new innovators with differing perspectives are able to benefit from such access. Yet by having much of the federally funded, peer-reviewed literature behind subscription barriers, we are severely constraining our US competitive advantage and our country's needed investments in STEM education. Extending public access policies that permit full use and reuse rights with no cost barriers will significantly enhance STEM education, level the playing field, and generate more economic growth and job creation in diverse new areas, as seen in the weather risk management and genomic industries. For example, recently we have seen the emergence of new services such as Google Scholar, BioCreAtivE, CoPub, PubGene, and more.

There are deep linkages between openly accessible federally funded, peer-reviewed

research literature and scientific productivity. Research has shown that open access to research literature provides many benefits to science and discovery. For example, it expands the use of research papers, thus increasing citations and the ability to build on the work of others. Previous studies of over a dozen disciplines have shown that open access articles are cited 50–250% more often than those behind subscription barriers (<http://opcit.eprints.org/oacitation-biblio.html>). Reproducibility and building on the work of others are integral to science, and they are also necessities in this new budget environment.

Similarly, an article by Furman and Stern compared citations in follow-on research using materials from Biological Resource Centers (BRC) versus research in closed archives. The authors concluded that articles based on BRC materials received 220% more citations and they were 3–10 times more cost effective in increasing funding of BRCs than funding new research. (<http://www.nber.org/papers/w12523.pdf>). In addition, as described in the paper by Murray, Aghion, Dewatripont, Kolev, and Stern, who evaluated follow-on research done under the auspices of the NIH Public Access Policy, there was “a substantial increase in the rate of exploration of more diverse research paths” (<http://www.nber.org/papers/w14819.pdf>). Another study by Heidi William compared publication and commercial developments resulting from Celera’s intellectual property policies of the human genome and those policies of the US Government. The author concluded that Celera’s intellectual property policies had a negative impact on subsequent research and product development in comparison to the use of Government resources that were in the public domain (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1648013##).

Open access to research resources sparks new approaches to scientific discovery, particularly across scientific disciplines, and such access is especially critical as science is increasingly interdisciplinary and global. As more countries and funders implement open access policies (the United Kingdom being the most recent, “Innovation and Research Strategy for Growth,” 12/2011) the US Government must construct comparable policies for the global scientific enterprise to be as effective as possible in order to address the grand challenges of the 21st century in areas such as health, clean energy, national security, education, and life-long learning.

It is time to reap the benefits of the enormous investments that the US Government has made in cyber and information infrastructure. It is widely understood that these investments are central to advancing science, education, innovation, and our competitive marketplace. And these investments have given rise to new forms of research, allowing scientists to be more productive and explore new research pathways via computational research and analysis. A recent report by the US Food and Drug Administration, “Driving Biomedical Innovation: Initiatives to Improve Products for Patients,” details the many advantages of effectively utilizing computational systems and tools to drive scientific research, innovation, and commercialization.

“The ability to integrate large data sets across multiple clinical trials, post-market surveillance data, and pre-clinical data will enable FDA to generate new insights into a variety of important issues confronting medical product development and use. Examples of such insights include the identification of patient subsets who do or do not respond to a specific therapy during a clinical trial, which has the potential to drive

personalized medicine; identification of patient subsets with differential safety profiles, efficacy, or side effects related to age or gender; evaluations of standard of care; analyses of disease progression; assessment of current endpoints based on aggregated data; and potential to generate better endpoints and insight into placebo effects. This work, which will address broader scientific issues, is intended to impact whole product classes and therapeutic areas and will be central to driving innovations in medical product development and basic research”

(<http://www.fda.gov/AboutFDA/ReportsManualsForms/Reports/ucm274333.htm>).

Research has shown that if the US Government were to adopt an open access policy, it would result in a five-fold increase in the return on investment. Given the current and anticipated budgetary environment, it is difficult to understand why the US Government would not adopt an open access policy. The net gain of extending an National Institutes of Health (NIH)-like policy to other agencies is estimated to be \$1.5 billion (www.arl.org/sparc/publications/papers/vuFRPAA/index.shtml).

There has already been investment in needed infrastructure by the NIH. Extending an NIH-like Public Access Policy to other federal agencies could be accomplished in a cost-effective manner by building on NIH’s investment in PubMed Central. Such an approach would avoid duplication of effort and is the most logical given the current budgetary environment. For example, the annual cost of providing access to the results of NIH funded research is between \$3.5–\$4.6 million dollars. For the nominal cost of one one-hundredth of one percent (.0001%) of NIH’s overall budget, more than 500,000 users per day from public and private domains have access to a database of over 2 million articles.

One important driver of the NIH Public Access Policy is accountability with regards to NIH’s research portfolio. Maintaining a repository of all NIH-funded research results provides the agency with information and analyses concerning the investments it has made in biomedical research. The NIH Public Access Policy supports science-based budget determinations and assists NIH, Congress, and the biomedical research community in understanding the outcomes of the funded research and how best to identify and target new areas of research to support.

In order to maximize the investments in cyber and information infrastructure, advance science, and promote innovation, free immediate access with full reuse rights to federally funded research literature would achieve the most benefits. There should be no restrictions placed on use of this literature or on who is able to use these federally funded information resources. This would be consistent with existing federal policy, the Paperwork Reduction Act and Circular A-130, concerning government information. If an embargo period is deemed necessary, it should be as short as possible.

Question 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?

Comment 2) Key to the success of advancing research, and spurring innovation and commercialization, will be to provide unfettered access to federally funded research resources and permit the widest possible use within the law. This is possible by utilizing Creative Commons CC-BY or comparable open licenses that work within copyright law and are already widely employed by individuals in all sectors. Use of these licenses permits the user full use rights to mine data and text, and manipulate, reuse, and integrate data and information in publicly accessible digital repositories. The use of CC-BY licenses or open licenses should be integral to a new federal open/public access policy.

As the White House considers a new federal open/public access policy, it is essential that the results of federally funded research be accessible in the most effective manner. So for example, if an embargo is deemed necessary, it should be as short as possible. And once the embargo is lifted, then full reuse rights should be associated with the research literature. Such an approach takes into account the needs and interests of all stakeholders. Regardless of where the publications reside, full reuse rights are essential elements of an effective policy.

Question 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?

Comment 3) The US Government has a long history of ensuring that there is long-term preservation of and access to works via centralized deposit. For example, through a provision in the Copyright Act, printed copyrighted and public domain works are placed on deposit at the Library of Congress. Beginning in 2010, the Library extended this deposit requirement to include electronic-only serials. The National Library of Medicine has been providing long-term preservation of and access to biomedical information for 175 years. More recently, NIH implemented the NIH Public Access Policy, which is a natural continuation of this role. It is appropriate and necessary for the US Government to ensure that the long-term preservation of and access to these resources is undertaken and with appropriate use rights for the Government and users alike.

As more and more institutions and organizations establish digital repositories, there will be many sites providing access to federally funded research literature, nationally and internationally. For example, PubMed Central is one of many sources for the biomedical literature it archives once any embargo period for an article has expired. Any US policy must ensure that these repositories of federally funded research resources are interoperable and accessible with appropriate use rights both now and in the future, regardless of who is curating these resources. As we have learned, long-term preservation of and access to digital resources requires use; dark archives are not an option. To ensure that there is not deterioration of these digital resources and that there is a valid record going forward, continuous use is required.

Innovative public/private partnerships may emerge that will allow for the creation of new tools and services built upon these federally funded research resources. And as these partnerships emerge, clearly delineating roles and responsibilities will be key. Importantly, it will be critical to stipulate that if a provider for some reason is unable to meet its obligations of service—either short-term or long-term—a migration path should be in place to recover the resources. This latter point is especially important given the recent study by Cornell University and Columbia University that found that the majority of their journal holdings are not archived by LOCKSS and Portico (<http://2cul.org/node/22>).

Question 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?

Comment 4) Libraries and many universities have a long history of partnering with others to ensure the long-term preservation of and access to research resources. For example, the Inter-University Consortium for Political and Social Research (ICPSR) is comprised of about 700 academic institutions and research organizations. “ICPSR provides leadership and training in data access, curation, and methods of analysis for the social science research community. ICPSR maintains a data archive of more than 500,000 files of research in the social sciences. It hosts 16 specialized collections of data in education, aging, criminal justice, substance abuse, terrorism, and other fields” (<http://www.icpsr.umich.edu/icpsrweb/ICPSR/index.jsp>).

Another example is ArXiv, hosted by Cornell University Library. It is an archive of 726,955 electronic preprints of research papers in the fields of mathematics, physics, computer science, quantitative biology, statistics, and quantitative finance (<http://arxiv.org/>). More recently, HathiTrust Digital Library was established and is a partnership of major national and international research institutions and libraries working to ensure that the cultural record is preserved and accessible in the future. There are more than 60 partners in HathiTrust (<http://www.hathitrust.org/>).

These partnerships demonstrate the commitment of research libraries and universities to the long-term preservation of and access to cultural and scientific records. Key to their success includes requiring the appropriate terms and conditions for long-term preservation, curation, interoperability, and use rights. In addition, these partnerships show that universities and libraries have expended and will continue to expend a significant amount of resources—staff expertise, financial support, and infrastructure investments—to ensure that these resources are publicly accessible in an effective manner both today and in the future.

Question 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?

Comment 5) Well-documented metadata is an important means to enable use, reuse, and analysis of the research literature and data. All of these uses should be machine-readable and interoperable. Readers, both human and machine, must know the terms and conditions and provenance under which this research may be used. Thus federal agencies should understand the important linkages between metadata and achieving a robust open/public access policy for science and technology-related agencies.

Given the extensive community efforts already underway, there is deep value in building upon existing standards such as Dublin Core, OAI-PMH, DataCite Metadata Schema, and Europeana Semantic Elements. In addition, efforts such as ORCID provide important contributions to this arena. ORCID seeks to resolve “the author / contributor name ambiguity problem in scholarly communications through the creation of a central registry of unique identifiers for individual researchers and an open and transparent linking mechanism between ORCID and other current author ID schemes. These identifiers, and the relationships among them, can be linked to the researcher’s output to enhance the scientific discovery process and to improve the efficiency of research funding and collaboration within the research community” (<http://www.orcid.org/>). Finally, there is value in looking to other existing organization such as the National Information Standards Organization, a non-profit organization devoted to collaborative standards development amongst content publishers, libraries, and software developers.

Question 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?

Comment 6) Ensuring that all federally funded research results are accessible, and available in an effective and timely manner, will maximize the benefits to the scientific enterprise and to the public. For any open / public access policy to be successful, there must be consistency of requirements and mandates. It will be difficult for research universities to comply with multiple and differing mandates, in part, because a federal open / public access policy may involve multiple research funding agencies. Research universities have faculty members and researchers who hold grants from all or several federal funding agencies, and some of them have grants from multiple agencies concurrently. To the extent practicable, uniform requirements and procedures regarding deposit of peer-reviewed literature should be established across all funding agencies, as uniformity of deposit requirements will reduce the complexity and cost, while at the same time increase the rate of compliance. Ensuring relative consistency across agency policies is one key element to ensure a valuable return on investment and foster a culture where sharing of these resources continues to promote the interests of science.

To that end, open/public access policies should build upon existing policies and protocols for deposit of peer-reviewed literature, should promote development of new tools and services, and should integrate federally funded research grants and resources into the grants management systems within the agencies and in the research institutions. Such measures build on accountability metrics that many research universities are actively integrating into the research enterprise. These metrics assist the research university in detailing their research outputs and the local, state, national and international value of their institution. It is in this context that many institutions have invested in digital repositories so that the research results of their institution are publicly available, and for their community of users to build upon these repository resources as teaching tools and to advance scientific discovery.

Question 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?

Comment 7) There are other important types of scholarly communications beyond the peer-reviewed research literature. Monographs and book chapters, conference presentations, theses and dissertations, working papers, and datasets are also increasingly being made available via open access or public access policies. Policies covering ETDs (electronic theses and dissertations) are also common, well developed, and generally supported by students as well as their faculty advisors. Since ETDs are authored by students rather than faculty, ETD policies are usually developed through a different process than policies targeted at faculty research outputs. Since there are different terms and conditions associated with each of these educational materials, it will be important to distinguish the various approaches to each type of scholarly output.

The related RFI concerning data policies indicates that data policies may be differentiated from peer-reviewed literature and other types of scholarly output as different terms and conditions may apply. Nevertheless, data is central to the scholarly and research enterprise and should be treated equally in terms of importance to the scholarly record and tenure and promotion.

Question 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?

Comment 8) Isaac Newton's statement that he "stood on the shoulders of giants" aptly describes how advances in science build on prior knowledge and the sharing of information. It is time to accelerate such advances by significantly decreasing or eliminating embargoes to currently available, published research resources. Nationally and internationally, embargo periods of 12 months or less are the standard for journal

publishing (<http://highwire.stanford.edu>). If it is necessary to accommodate those journal publishers whose marketplace models depend upon subscription revenue, the US Government should adopt a policy with an author embargo period that is as short as economically feasible, but no more than 12 months. It is important to note that the NIH Public Access Policy (with an embargo period of 12 months) is not representative of international biomedical funder policies. A six-month embargo is now standard (<http://roarmap.eprints.org/>).

Any determination of the need for a different embargo period must be based on data provided by a subscription-based publisher that shows a negative market impact resulting from the open/public access policy. In so doing, a range of factors should be considered. First, the pricing history of the journal and other journals within that discipline must be compared. Second, the impact of subscriptions via bundles vs. single journals in a discipline should be considered. Third, peer-reviewed journals include information well beyond articles stemming from federally funded research. They include articles based on other funding sources and also include information about conferences, professional development, and more. As a result, it will be important to identify the percentage of articles based on federally funded research in a subscription-based journal to truly understand the need for a different embargo period. Fourth, it is incumbent upon a subscription-based publisher to provide data on the revenue that results from long-tail citation articles.

Finally, the economy has significantly affected research universities, and as a result has impacted research library budgets. This is particularly true for public institutions as state budgets face weak economic growth, receive fewer federal dollars, and local governments are unable to keep pace with demands for services. This all translates into fewer and fewer dollars from states to their public institutions. And more reductions are anticipated. ARL conducted a survey of its members between 2008–2010 to better understand the fiscal environment. Overall, over 79% of ARL member libraries had flat or reduced annual budgets from FY 2008–09 to 2009–10. Of the 61% that had real dollar budget reductions, the maximum budget cut was a striking 22%. ARL libraries continued to face budget reductions in 2011 and planned for permanent reductions in both staff and collections resources.

Understanding the relationship between these fiscal challenges, indeed all of the factors noted above, and subscription cancellations is very important. All of these factors and in particular, the “new norm” of budget realities factor in to how research libraries approach collection development. If a different embargo period is considered due to a *perceived* negative marketplace impact, all of these factors must be considered to understand the real impact of the embargo period.

Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Date: January 9, 2012 9:51:27 AM EST

Dear Science and Technology Policy Office,

I am definitively against the restriction of public access to publicly funded research.

My opinions are summed up eloquently here:

<http://svpow.wordpress.com/2012/01/09/do-your-bit-to-oppose-the-evil-research-works-act/#comment-13659>

David Maas

Graphics Artist

David@brainpets.com

Subject: Public access to peer-reviewed scholarly publications

Date: January 9, 2012 10:26:36 AM EST

Dear Science and Technology Policy Office,

Thank you for extending the comment period on **Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research**. The Research Works Act has only very recently come to the notice of most of us in the scientific community, and it is because of this extraordinary proposal that it is now apparent to us that we need to reaffirm what we thought was once settled.

It should go without saying that scientific work funded by the public should be **freely accessible** to the public. I do not understand how this is even a matter for discussion. The public pays for the research; the public should benefit in every way possible, including access to work once it is published.

The language in the RWA is overly complicated and often misleading, attributing to publishers far more involvement in the scientific process than they really have.

The truth is that scientists (whether funded by public or private money) provide the many hours of underlying research, the writing and the figure preparation that result in a manuscript that is submitted for publication. Other scientists then provide the editorial services and (contra publishers' claims, as can be easily verified) the peer review. In most cases, these editorial and reviewer services are provided to publisher gratis, and involve many more hours of work by the peers of the author submitting the manuscript.

Publishers' contributions are limited essentially to formatting the manuscript, the provision of web hosting, and sometimes (rarely) a very limited amount of compensation for senior editors only (usually not the handling editors who actually deal with authors' works). The notion that such a minor contribution should suffice to hand publishers, rather than the public, the right to determine how, where and under what limitations the resulting works are disseminated, makes no sense at all.

Regards,

Michael J. Everhart

Transactions Co-editor

Kansas Academy of Science

Adjunct Curator of Paleontology
Sternberg Museum of Natural History
Fort Hays State University, Hays, Kansas

Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Date: January 9, 2012 10:28:12 AM EST

Dear Science and Technology Policy Office,

Thank you for extending the deadline for comments on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research. The Research Works Act has only very recently come to the notice of scientists, and it is because of this extraordinary proposal that it is now apparent to us that we need to reaffirm what we thought was settled: that OF COURSE scientific work funded by the public should be freely accessible to the public. I do not understand how this can even be a matter for discussion. The public pays: the public should benefit in every way possible.

Dr. Francois Toutain Research Engineer Orange Lab – France Telecom Research & Development FRANCE

Subject: Re: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Date: January 9, 2012 12:11:50 PM EST

Dear Office of Science Technology and Policy,

I am writing to provide additional information in support of my original letter regarding open access.

According to an article in The Economist, Elsevier's profits in 2010 were \$1.1 billion, and they enjoyed a profit margin of 36% (<http://www.economist.com/node/18744177>). Divided by the world's total scholarly output of 1.5 million articles per year, that comes out to about \$730 per article. Right now the publication fee at PLoS ONE, the most visible but hardly the only open-access journal, is \$1350.

So the pure profit--not counting any other revenue--of Elsevier alone could fund 60% of the global scholarly output at PLoS ONE's rate, which presumably includes some institutional overhead in addition to the cost of publication itself. If the profits from Springer, Nature Publishing Group, and other commercial publishers were added to Elsevier's, they would greatly exceed the cost of all scholarly publishing, worldwide. No industry should be allowed to deny the results of publicly-funded research to the taxpayers who funded it, especially not one that is already posting such immense profits.

Furthermore, as Peter Murray-Rust of the University of Cambridge has argued, closed access means people die:

- Information is a key component of health-care
- Closed access publishers make money by restricting access to information.
- The worse the medicine and healthcare, etc. the more people die.

In a publicly-posted blog comment (<http://svpow.wordpress.com/2011/10/22/economics-of-open-source-publishing/#comment-11702>), Dr. Murray-Rust argued,

"To clarify the discussion of:

'closed access means people die' This applies to ALL scientific publication.

If you are an engineer and want to be sure that a new material is safe for a medical device you need to read the literature.

If you are a policy wonk and worried about epidemics you need to know the mathematics of epidemiology (maybe in a stats or maths journal).

If you are trying to improve the drainage in tropical countries you need to know about the sociology of cooperation and conflict over water.

If you are worried about obesity you need to know about the psychology of human behaviour.

And that's just medical.

I was in two earthquakes last week (in Berkeley). Small ones. But I would like to know that everyone involved in prevention and warning could read the appropriate literature.

There is NO discipline which can be regarded as irrelevant to the benefit of humankind."

Please consider all of this carefully, and thank you for your time and attention.

Best,

Mathew Wedel

Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications

Date: January 9, 2012 11:27:25 AM EST

Dear Science and Technology Policy Office,

It has recently come to my attention that a new act ("Research Works Act") is seeking to prevent the public to have access to research that is publically funded, solely to the benefit of certain large publishing companies. The many ways in which this is wrong cannot be understated. It is a complete mystery to me how this act has reached the current stage. The public has the right to see what they funded, and no private company should be able to restrict what is made available.

Best regards,

Kilian Hekhuis

From: Alton Dooley
Subject: Public access to taxpayer-funded research
Date: January 11, 2012 1:35:08 PM EST
To: publicaccess@ostp.gov

Dear Science and Technology Policy Office,

Science thrives on the open exchange of information. Efforts to restrict the dissemination of scientific information will, at best, make progress in science much less efficient. As a result any policies concerning the dissemination of scientific information should err on the side of greater accessibility. This is especially true of publicly funded research; I think it is indisputable that the funders of research should always have unfettered access to the results. It is impossible to imagine, for example, a pharmaceutical company paying for research, but then being denied access to the results unless they paid again. Why should the standard be any different if the funders happen to be the taxpayers?

The ability to distribute literature by electronic means has removed most of the technical obstacles that once limited dissemination of research, and federally funded research groups should be required to make full use of this opportunity. Ideally, the federal government should provide hosting and archival services to accommodate these works; PubMed Central provides an excellent model that could be extended to other disciplines.

Some federally funded research is published in for-profit journals printed by academic publishers. While the publishers incur some costs that need to be recovered, their contributions to scientific endeavors should not be overstated. Academic publishers make a much smaller contribution to the production of scientific works than in many other fields. In the case of almost all scientific works, the underlying research, writing, figure production, basic editing, peer review, and acceptance/rejection decisions are all done by scientists who are not compensated for their work by the publisher.

The contribution of publishers is largely limited to typesetting, issuing press releases (also often written by the researchers), and in some instances web hosting. The minor contributions of the publishing companies to research in no way justifies the restriction of accessibility of taxpayer-funded research. Again, PubMed Central offers a useful model for dealing with these competing interests, by placing a one-year embargo on commercially published manuscripts before they become freely available.

It should be noted that the general public is not the only group adversely affected by restrictions on dissemination. The exorbitant fees charged by some publishers for access to their journals places these work completely beyond the financial means of many smaller colleges, museums that are not affiliated with universities, public high schools, and other groups that may need access to particular studies.

In short, there is a substantial public interest in ensuring that the result of publicly funded research be easily and freely available to any interested party.

Dr. Alton C. Dooley, Jr.
Curator of Paleontology
Acting Assistant Director of Research and Collections
Virginia Museum of Natural History
www.vmnh.net

Visit the VMNH Vertebrate Paleontology Blog at:
<http://www.paleolab.org>

Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Date: January 9, 2012 1:29:13 PM EST

To: publicaccess@ostp.gov

Scientific work funded by the public should be freely accessible to the public. Period. This is not a copyright issue. Scientists funded by taxpayer dollars are allowed to present their research results, figures, and raw data in whatever form they choose. Historically it was necessary to disseminate research in print form, but that era is long gone. Scientists can post their data to an internet forum for free, publish with an open-access or not-for-profit journal. It is not and never has been necessary or useful for publishing companies to own the copyright to publicly funded research results. For-profit publishing companies actively inhibit the dissemination of scientific research in pursuit of their own profits, and they are attempting to protect those profits with this legislation. They have made significant donations to Rep. Maloney in return for her support for this bill, which is not designed to serve the American people but instead deny taxpayers potentially life-saving access to publicly funded science.

I am a scientist and I am against the Research Works Act.

Sincerely,

Dr. Anne Peattie
Berkeley, CA

Subject: The RWA would make research at small colleges more difficult

Date: January 9, 2012 1:47:05 PM EST

Dear Science and Technology Policy Office,

I would like to comment on the RWA from a point of view that I'm not sure you're getting a lot of- that of an active researcher at a university with a mostly-teaching mission. Places like ours do not have the research or library budgets of the large research universities. Thus any piece of legislation that, even as a side effect, prevents or reduces rates of publication of scientific work in open-access journals effectively makes it more difficult for people like me to get ahold of literature sources. This is particularly true for new articles and those in popular multidisciplinary journals (Science-Nature-PNAS), as these are often 'firewalled' by for-profit journals for six months or a year, if they allow access to non-subscribers at all. Since my University simply can't afford an institutional subscription for these very expensive journals, keeping current with the research in these journals becomes difficult (begging reprints from colleagues?... yeah, that's fun and dignified). Open access journals are extremely helpful in my situation.

While the proliferation of public databases and the wide availability of powerful computers for analysis makes it possible to do cutting-edge work at small and medium sized colleges, control and distribution of completed scientific work by for-profit journals slows us down. This makes research slower, and more expensive overall. Open access is one thing that lets me do R1-level research at a Master's-level university, something that would have been much more difficult 10 years ago, before the open access movement began. For-profit journals are an unworthy sink for public funds, if they keep publicly-funded research out of the hands of the public.

Sincerely,
Dr. Joseph Spagna

*Joseph C. Spagna
Assistant Professor of Biology
William Paterson University of New Jersey*

Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Date: January 9, 2012 2:07:30 PM EST

To the Office of Science and Technology Policy:

Thank you for extending the comment period for your "Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research."

In your deliberations to establish "approaches for ensuring long-term stewardship and broad public access to the peer-reviewed scholarly publications that result from federally funded scientific research," I strongly urge you to permit the broadest, freest public access to scientific information that has arisen from federally funded research.

The public has paid for the research: The public should reap the broadest benefits from the research it has so generously funded.

The pecuniary interests of private corporations must not take precedence over universal access to publicly funded research results.

Very sincerely yours,

Kevin Ahern
Student Nurse
San Francisco State University

Subject: re research works act

Date: January 9, 2012 2:19:58 PM EST

I was publications editor for the peer-reviewed Journal of Paleontology while the University of Oklahoma handled the publication and for half a year thereafter. When we took over, the time lag between acceptance and publication was 18 months. We worked it down five months, four and a half of those being the publication process itself. The journal used and still uses Allen Press (Lawrence KS).

My point here is that Allen Press had no direct influence on the path our journal took. They had absolutely no say in what was published. They did the physical publication work. Period. To suggest that Elsevier or anyone else wields any power over content, and therefore should say where and how that content may be disseminated, is ludicrous.

PLEASE scrub the Research Works Act; it is egregiously misguided and detrimental to the free and necessary exchange of research information upon which we all depend. I do not want access to my published work curtailed in any manner and I do not want barriers to learning of others' work.

Your respectfully,

Dr Sandy Dengler

Sandy Dengler

Paleontologist at large

Subject: Against the Research Works Act

Date: January 9, 2012 3:40:27 PM EST

Dear Science and Technology Policy Office,

I am writing to voice opposition to the proposed Research Works Act. Publicly funded science should be freely accessible to the public. The proposed bill is counterproductive and misleading.

Yours sincerely,
Levana Taylor

**Elsevier submission to Office of Science
and Technology Policy public consultation
on Public Access to Peer-Reviewed
Scholarly Publications Resulting from
Federally Funded Research**

January, 2012

INTRODUCTION

Elsevier welcomes the opportunity to comment on the Office of Science and Technology Policy (OSTP) Request for Information on public access to peer-reviewed scholarly publications resulting from federally funded research. As a leading publisher of science and health information we serve 30 million scientists, students and health and information professionals worldwide. We help advance science and health by providing world-class information and innovative tools that help customers make critical decisions, enhance productivity, and improve outcomes.

Elsevier is an established, integral partner to the scholarly research community in the United States. Our US workforce includes nearly 3,000 people spread across 15 offices in 10 states. We publish around 260,000 journal articles each year, many of which are authored by US researchers and of which approximately 35,000 acknowledge support from the US government. In addition, we publish over 250 journals in partnership with US scholarly societies, such as American College of Cardiology, American College of Surgeons, and American Academy of Otolaryngology – Head and Neck Surgery. There are over 3,000 researchers in the US whom we engage as editors and reviewers for our more than 2,000 journals.

Elsevier's vision for Universal Access

One of Elsevier's primary missions is to work towards providing universal access to high-quality scientific information in sustainable ways. We are committed to providing the broadest possible access to our publications, whilst at the same time upholding the highest level of quality in our publications. This means significant, continued investment in the publication system. As this system develops new sustainable mechanisms need to be found to enable this system to continue to operate. The value of publishing services is recognised; the costs need to be recouped. Open access business models , such as author pays and sponsored articles, have a role to play as part of a diverse landscape that also includes other business models – in particular the proven licensing and subscription model.

Current Access Levels for Researchers

Since 1999, there has been a dramatic increase in access levels delivered by providing access to digital content under license through the subscription business model.

- Researchers now have access to significantly more content than they did in the print-only era: they now read from 25% more journals than in the mid-1990s and university faculty are reading 34% more articles¹.
 - 97% of researchers in the US (93% globally) express satisfaction with their access levels to research in journal articles². This very wide access is a reflection of the innovation and vibrancy of America's successful publishing community.
 - Access to journals is 14th on their list of concerns (lack of funding is number one; too much paperwork is number five)³.

¹ Heading for the open road: costs and benefits of transitions in scholarly communications. (CEPA - Joel Cook, Daniel Hulls, David Joss and Mark Ware Consulting - Mark Ware) April 2011 52pp. <http://www.rin.ac.uk/news/press/heading-open-road-costs-and-benefits-transitions-scholarly-communications>

² Access vs. Importance, A global study assessing the importance of and ease of access to professional and academic information. Phase I Results. 2010. Publishing Research Consortium

http://www.publishingresearch.net/documents/PRCAccessvsImportanceGlobalNov2010_000.pdf

³ Ware, Mark. "Access by UK small and medium-sized enterprises to professional and academic information," Mark Ware Consulting Ltd for Publishers Research Consortium (April 2009)

- ScienceDirect, Elsevier's online journal platform, hosts more than 10 million articles dating back to the 1820s and now has more than 600 million full text article downloads per year, approaching 2 million article downloads per day.

Current Access Levels for the Public

While researchers are satisfied with their access, this is not always the case for other groups such as individual members of the public or small businesses. Sound market-based solutions are already in place to fill these gaps, for example through online lending services such as [DeepDyve](#)⁴, through walk-in user provisions in library licenses, and via document delivery services. As part of our commitment to Universal Access we actively identify and close access gaps in ways that are sustainable and maintain quality. For example:

- [Research4Life](#)⁵ is a public-private United Nations initiative that makes thousands of STM journals available to over 5,000 institutions in over 100 developing countries at no or low cost. In 2010, Elsevier alone provided access to over 2,000 journals and 2.5 million articles from these journals were downloaded by researchers in developing countries. In addition Elsevier provides access to over 6,000 e-books through this initiative.
- Publishers, including Elsevier, have created [patientINFORM](#)⁶ in partnership with key medical associations including the American Cancer Society, the American Heart Association, and the American Diabetes Association. [patientINFORM](#) is a public health literacy project that provides patients and caregivers with a free online resource of interpreted, packaged, and up-to-date research about specific diseases that is based upon recently published journal articles.
- Elsevier provides patients and their family members with an option to rent articles through the online DeepDyve service. Articles from 100 medical journals are available for a fee of less than \$4 per article.
- Elsevier's "walk-in" license clause enables our library customers to give any member of the public free electronic on-site access to any journal article licensed by the library. Other publishers have similar programs.

Role of Publishers

Publishers have not always been good at explaining the essential role we play in scientific communication, and there are many misperceptions. We:

- Identify and support new areas of research by establishing and creating communities around new journals and adapting journals as fields evolve.
- Establish and develop the editorial perspective and scope for each of the existing 27,000 journals and create the reputation and brand to attract author's manuscript submissions to the "right" journal in highly focused fields of research.
- Find and manage the appointment of journal editors and the ongoing development of journal editorial boards to ensure the proper editorial perspective, authority and responsibility to the scientific discipline and readers.
- Establish and maintain sophisticated systems to manage the processing of some 2-3 million manuscripts submitted from researchers around the world annually.

⁴ <http://www.deepdyve.com/>

⁵ <http://www.research4life.org/>

⁶ <http://www.patientinform.org/>

- Organize, manage, and financially and technologically support the peer review of submitted pre-prints, a labor-intensive globally-dispersed process that results in some 1-2 million accepted manuscripts annually.
- Deliver the primary mechanism to ensure the veracity, and to improve accounts, of new research through peer review. Peer review, the process of subjecting an author's scholarly manuscript to the scrutiny of highly qualified experts in the same field prior to publication, is widely supported by the academic community. In a recent study, 85% of researchers agreed that peer review greatly aids scientific communication and 90% said that it improves the quality of the published paper⁷.
- Manage the communication of peer review results to several million globally dispersed authors annually.
- Solicit, edit and prepare for production some 1-2 million manuscripts that are accepted for publication. This includes copyediting, proofing, formatting, branding, paginating, adding metadata and identifiers, checking and enhancing artwork quality, and adding links to ensure interoperability using industry standards like CrossRef. We also convert, structure, and semantically tag text, data, and artwork in XML.
- Produce some 1.5 million final published journal articles each year, and disseminate them globally both in print journals and online electronic journal websites to 30 million of researchers and members of the public.
- Archive journal volumes and promote their use in perpetuity, "future-proofing" against developments such as electronic document file format changes through arrangements with partners such as national libraries and Portico⁸.
- Ensure the integrity of the published scientific record against plagiarism and distortion. For example, publishers regularly add errata or notices to articles and (on rare occasions) remove articles from the scientific record. [CrossCheck](#)⁹, a system developed by the STM publishing industry, has also been developed to detect plagiarism in manuscripts.
- Enable visibility of research through abstract and indexing services, providing free-to-read abstracts of published journal articles, and by ensuring publications are indexed in Google and other search engines.

Question 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 publicly 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?

Elsevier shares the view that there is a direct link between investment in science and growing the economy and understands that contribution that broad access to information can make to help society to progress. One of Elsevier's primary missions is to work towards sustainable universal access to high-quality scientific information. We are committed to providing the broadest possible access to our publications, and also

⁷ Publishing Research Consortium (2007) "Peer Review in Scholarly Journals: perspective of the scholarly community. An international study."

⁸ Journals preserve the scientific record for future generations of researchers to build on. Professional publishers and libraries create and archive over one million peer reviewed journal articles every year. Over the last hundred years they have digitized and archived over 35 million articles, and these continue to be available for use today. At current growth rates a further 50 million articles will be added in the next 25 years. Publishers have organized and licensed well-established organizations such as the Koninklijke Bibliotheek (the Royal Library of the Netherlands, The Hague) and Portico to provide digital archival support for researchers and library customers.

⁹ <http://www.crossref.org/crosscheck/index.html>

understand that it requires considerable investment to maintain the highest standards for peer-reviewed scientific publications. The value of publishing services is recognised; the costs need to be met.

There is already a strong, innovative market for peer-reviewed publications, and researchers report good levels of access to research journal articles. No specific action is needed to improve access to publications by researchers; indeed backing any single business model would be reckless and risks destabilizing academia and the contributions it makes to the financial well-being of the United States.

With this in mind, we recommend:

- Individual agencies work with publishers and other stakeholders to develop standards for data to make research more readily discoverable. Initiatives such as CrossRef and ORCID are described further in our response to Question 4.
- Agencies make research reports and datasets of taxpayer-funded research freely available. Note that these outputs arise from publicly funded research and, unlike peer review publications, do not rely on investment from publishers.
- Agencies that wish to fund publication costs should provide their grant recipients with funds to publish in the title of their choice. These costs would be a small fraction of the research investment.
- Agencies should make members of the public more aware of their existing access options (e.g. the Deep Dyve lending service, free abstracts, patientINFORM, and access in libraries).
- If there are specific public access gaps of concern, government agencies should work in partnership with publishers to assess these gaps and develop sustainable business models (e.g. license extensions) for closing them.

Question 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?

Copyright is an exclusive right of authors. Copyright protection granted to publishers by authors provides incentives for publishers to invest in peer review; to improve the quality, appearance and ease of citation of articles; and to enhance the infrastructure to publish and distribute scientific articles. In return for this copyright protection publishers provide authors with a wide array of valuable services.

Publishers compete for authors, and give very careful consideration to balancing author/publisher rights.

- Elsevier, for example, ensures that authors retain a broad array of reuse rights in their publications including the right to voluntarily post accepted manuscripts in repositories and on websites. See www.elsevier.com/copyright for additional information.
- Employers and funders sometimes seek to adopt copyright policies that are intended to override or undermine the agreements between authors and publishers. These are unfortunately often developed without consultation with publishers. More direct dialog between employers, funders, and publishers to find mutually agreeable and sustainable ways forward would be far preferable.

Elsevier is working successfully with an array of funding bodies (for an overview of these agreements see www.elsevier.com/fundingbodies) on sustainable solutions, and would like to extend this to finding win-

win models that work for employers too. Such options can include 'gold' Open Access, whereby publication is funded by an article processing charge paid by the author or another sponsor such as a funding body. Gold Open Access provides one approach toward our shared goal of expanding access to peer-reviewed scientific works and maximizing the value and reuse of the results of scientific research. Another option is 'green' Open Access where manuscripts are made publicly available via repositories after a title-specific embargo period.

We have specific concerns about 'green' Open Access policies such as the National Institutes of Health (NIH) Public Access Policy. Early indications show the NIH Public Access Policy has had a negative impact on Elsevier and other publishers. We have experienced a modest reduction of usage (by subscribers) and transactional sales (for non subscribers) for articles on our publishing platform after they are placed on PubMed Central even with links to the published journal article. The NIH policy has only been in effect a few years and so these early warning signs are important: they indicate usage and revenue loss could increase over time as the content duplicated in PMC increases. This early evidence also suggests that PMC is providing access to users already served by the publishing system – essentially using tax payer funds to duplicate publisher efforts, and depriving publishers of revenue for their investments. The current NIH public access policy therefore seems neither efficient nor sustainable.

Further, the NIH Public Access Policy seriously diminishes copyright protections for private-sector journal articles. Government mandated submission of private-sector journal articles without compensation undermines a publisher's intellectual property rights and a publisher's ability to recoup the significant investment they have made in the peer review, editing and distribution of these articles. In addition, the NIH policy undermines incentives for the private sector to continue to invest in the peer review system that helps ensure the quality and integrity of published research articles. The NIH Public Access Policy is very problematic and should not be considered as a viable model.

Question 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?

There is a large body of peer reviewed scholarly publications and a wide array of existing public access mechanisms (e.g. [DeepDyve](#) rental, [patientINFORM](#), inter-library loans, document delivery, walk-in use at libraries) detailed above. Therefore, a decentralized approach is already well established and continues to make sense. In these challenging economic times it makes sense to encourage collaboration rather than duplication of effort.

There are problems with consistent quality and version control when content is made accessible to the public via repositories. One of the important roles that publishers play is to carefully shepherd the version of record for each article along with any errata or retraction notices subsequently made.

Publishers have invested and continue to invest in archiving. Therefore federal "custody" would be an unnecessary duplication of effort and a poor use of public funds. Professional publishers and libraries create and archive over one million peer reviewed journal articles every year. Over the last hundred years we have together digitized and archived over 35 million articles, and these continue to be available for use today. At current growth rates a further 50 million articles will be added in the next 25 years. Publishers

have organized and licensed well-established organizations such as [CLOCKSS](#) (based at Stanford University), the Royal Library of the Netherlands, and [Portico](#) to provide digital archival support for researchers and library customers. Government agencies concerned about digital preservation should collaborate in these initiatives rather than duplicate effort.

A decentralized approach relies on common technical standards. The publishing industry actively promotes interoperability and standards development and deployment. Through the [CrossRef](#) initiative publishers over the past decade have developed the Digital Object Identifier (DOI) - a unique identifier for each piece of content, including scholarly articles and datasets¹⁰. This in turn has leveraged exciting services such as [CrossCheck](#) (for plagiarism detection), [CrossMark](#) (for version identification and control), and the emerging [CrossGrant](#) (to link funding bodies to the publications that flow from funded research). Publishers including Elsevier are active partners in the [ORCID](#) initiative to develop open researcher and contributor identifiers.

Question 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?

Elsevier welcomes public-private partnerships. In fact, the current system for the dissemination of scholarly information is an example of a well-functioning public-private collaboration:

- the government contributes funds for research
- researchers and their institutions then provide the facilities and knowledge to support research and informal communications
- publishers develop journals and manage the value-added peer review publishing and distribution system which places research into context, assists in its validation, disseminates it, and ensures it is preserved for posterity
- libraries and their institutions subscribe to journals to provide access to their researchers and readers
- partnerships such as [CLOCKSS](#) (based at Stanford University) and [Portico](#) provide digital archival support for all stakeholders

The role of every stakeholder, including the publisher, is critical in this process. Our contribution as publishers is to manage the peer review of manuscripts, apply quality standards, create new journals in developing fields of science, provide electronic platforms for efficient discovery and archive the version of record. Publishers also provide a number of other value added services such as high quality production, reference checking and reference linking. Publishers are also positioned to collaborate with stakeholders within disciplines to develop solutions to discipline-specific challenges. For example, through the [STIX project](#)¹¹, Elsevier, along with other publishers and stakeholders are creating fonts for mathematics and engineering publications.

¹⁰ CrossRef , a not-for-profit group founded by publishers in 2002 and maintains 50 million items. Almost 1000 publishers participate and assign DOIs to published content items. Development of the CrossRef service has resulted in seamless navigation of the research literature by users so that researchers using the bibliography in one article can link from a reference to the full text of the referenced article.

¹¹ The mission of the Scientific and Technical Information Exchange (STIX) font creation project is the preparation of a comprehensive set of fonts that serve the scientific and engineering community in the process from manuscript creation through final publication, both in electronic and print formats. Toward this purpose, the STIX fonts will be made available, under royalty-free license, to anyone including publishers, software developers, scientists, students, and the general public

Journal publishers are actively developing collaborative projects with federal research agencies that will enhance the public access, utility, and preservation of the results from federally-funded research including reports, scholarly publications and data for use by both the research community and the general public. Many of these focus on the standards and persistent identifiers that can enhance the discoverability of government funded research results and to promote interoperability among different nodes in which scholarly information is surfaced on the web. Examples include:

- a. **standardizing funding information** - Publishers have been working via CrossRef and with government agencies to create CrossGrant, a standard to link the funding agency, research reports, published journal articles, and datasets. Working together in this way saves all of us considerable effort, and significantly improves the efficiency with which scientists can access relevant information.
- b. **persistent identification of datasets and publications** – standard identifiers such as the DOI (which links citations in articles to those articles) make possible the inter-linking of datasets and publications and increase the discoverability of data.
- c. **author and institution disambiguation** - name ambiguity is a persistent, critical problem entrenched in the scholarly research ecosystem. The Open Researcher & Contributor ID (ORCID) project (www.orcid.org) is a successful public-private partnership with 275 participating organizations, including government agencies, funded by \$2M in loans from publishing partners and building on earlier work by Elsevier's Scopus author ID system and the Researcher ID system by Thomson Reuters.

Question 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?

Elsevier and other publishers are working with government and other stakeholders to develop appropriate identification and metadata standards (see our response to Question 4). We encourage federal agencies to work with publishers and other stakeholders that have expertise in developing and deploying metadata to ensure standardization and shared best practices.

The capability to mine content across large datasets of scholarly publications is an exciting development for cross-disciplinary research. Publishers are actively working to advance the use of content mining in research, and as an industry we are interested in developing standard mining-friendly formats, and model licensing terms. Elsevier has developed a [content mining policy](#)¹². Again, we are happy to work in partnership with federal funding agencies. The Publishing Research Consortium recently published a survey of current practice in this area which we commend to you¹³.

Finally, publishers already work in partnership on a broad array of public access initiatives ([DeepDyve](#), [PatientINFORM](#), library walk-in policies, document delivery agreements). We provide free access to abstracts, invest in abstracting and indexing services, and ensure that our publications are integrated into Google and all key search engines to maximize their discoverability. Government agencies could help by

¹² http://www.elsevier.com/wps/find/intro.cws_home/contentmining

¹³ <http://www.publishingresearch.net/documents/PRCSmitJAMreport20June2011VersionofRecord.pdf>

making members of the public more aware of the range of access options that citizen-researchers already enjoy. If there are other specific access gaps that are of potential concern to government agencies, publishers are ready to work in partnership and to deploy our skills in accurately assessing these gaps and developing sustainable business models for closing them.

Question 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?

It is important to note that the government funds research. The peer-reviewed literature, online environment, customer services, and related applications are, however, not funded by the government but are a result of investment by publishers.

The government should not appropriate versions of scholarly material (accepted author manuscripts and published journal articles) in which publishers have invested and added value. Such policies would not be justifiable or warranted, and would result in government “taking” of private-sector products.

If a government agency does implement a public access policy that pertains to published research outputs, it should do so according to these clear principles:

- Respect copyright
- Work in full and open consultation with all stakeholders
- Provide full and sustainable funding for any articles to be made freely available
- Develop evidence-based policy, nuanced to account for differences across subject disciplines, journals, etc.

Publishers already have a number of public access initiatives (e.g. [DeepDyve](#), [PatientINFORM](#), library walk-in policies, document delivery agreements, and free abstracts). Government agencies could help by making members of the public more aware of the range of access options that citizen-researchers already enjoy.

If open access models are used by government agencies, then these must be sustainable. They should cover the full cost of publication, and drive traffic to the publisher websites where the final, curated version of record for each article is located. Models for achieving this include gold and hybrid open access where authors, or their funders, pay an article processing charge to make the article available open access. Elsevier has a number of sustainable open access agreements with funding agencies in Europe (e.g. the Wellcome Trust, and Medical Research Council UK, FWF in Austria and Telethon in Italy) and we would be happy to engage in constructive discussions with US government funding agencies about win-win solutions.

Federal agencies could expand public access very quickly simply by making available their research reports (which, unlike scholarly publications are fully funded by the tax payer) and link these to related peer-reviewed published articles on publisher platforms. Access to research reports such as experimental data, technical reports, grant reports, abstracts, and conference papers could be easily posted online. Such a policy would not infringe on or appropriate the value-adding activities of the publishing process.

Question 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?

Peer reviewed articles emerge from the peer review publishing process that publishers fund. Federal agencies fund the underlying research, but not the publication process or the publications themselves.

Journals, books, and conference proceedings all have different production workflows, costs, and business models. Publishers invest substantially in producing books, particularly textbooks, and all of these costs need to be met in sustainable ways. Books are produced at the active editorial direction of the publisher and represent significant publisher investment. Conference proceedings too are often published professionally, and where this happens the costs of these publications need to be met in a full and sustainable way. Elsevier believes the bundling of even more content types is unhelpful as it adds to the complexity of an already complex, and often unclear, debate.

We believe the government should focus efforts to make data and datasets more accessible. Research shows that these resources are important to researchers, and yet academics are largely unsatisfied with their access to data¹⁴.

Question 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?

We believe that copyright should be respected, and therefore peer-reviewed articles should not be made publicly available without permission of the copyright holder. For accepted author manuscripts and published journal articles, both of which publishers have invested in heavily, publishers should determine sustainable business models for their publications. This includes the time, if any, at which the accepted author manuscript or final published article is made publicly available. Publishers have a right to recoup their investments. The ability to recoup that investment enables innovation, allows infrastructure to be developed and maintained, and provides incentives for innovation and services, including mobile accessibility and content mining.

There are no “appropriate” embargo periods; one size does not fit all. The research in different disciplines (and in different journal titles) has different usage patterns and other characteristics. For example, articles published in the American Psychological Association’s psychology journals have a long half-life and lifetime usage of about 4.5 and 19.5 years, respectively,¹⁵ Elsevier is piloting title-specific embargo periods with a number of institutions and funding bodies. Our embargo periods are carefully set based on comprehensive article usage data. We are very concerned that there are early indications of a modest negative impact of

¹⁴ Access vs. Importance, A global study assessing the importance of and ease of access to professional and academic information. Phase I Results. 2010. Publishing Research Consortium

http://www.publishingresearch.net/documents/PRCAccessvsImportanceGlobalNov2010_000.pdf

¹⁵ Letter from PSP and DC Principles in response to previous OSTP RFI

the NIH policy (with 12 month embargo) on both our usage levels and Pay-Per-View revenue. This reinforces the message that one size does not fit all for embargo periods, and publishers need the flexibility to determine appropriate embargo periods on a title-by-title basis.

Our proposal for a policy framework for public access to peer-reviewed scholarly publications resulting from federally funded research

- 93% of researchers report they are happy with access to research information in journal articles. 38% are satisfied with their access to data. OSTP's primary focus should be to improve access to data for researchers. By enabling the development of standards for data deposit and curation, and incentivizing academics to deposit their data the United States can play an essential and transformative role. Elsevier, and other publishers, can play a role to help encourage and support compliance with such policies.
- Where access gaps exist, OSTP policies should encourage government agencies and publishers to work together to fill these gaps in sustainable ways. It is important that the OSTP should remain business model neutral. In these fiscally straitened times it is important that the OSTP encourages all sustainable approaches to broadening and widening access: whether that is through commercial lending models, information philanthropy, license extensions, paid open access publications, public library service provision, or any other route.
- The OSTP should not adopt government mandated approaches that require the deposit of private-sector journal articles. If the government finds evidence that there are some access gaps that can only be filled through open access publishing models, then government agencies must provide funding to enable those articles/titles to be made available open access in sustainable ways.
- OSTP should encourage the many constructive partnerships already underway between publishers and government agencies to increase awareness of, and access to, the research outputs of those agencies.



Youngsuk Chi
Chairman
Elsevier
360 Park Avenue South
New York, NY 10010

Hello,

I write in response to the Federal Register document [FR Doc No: 2011-28623] issued by the Office of Science and Technology Policy entitled "Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research".

Given previous NIH and other mandates for open access to federally funded research, it is wildly unwise to undercut or back away from this policy. It will cause much chaos in the scientific community around the world and hamper future research immeasurably. I gladly offer my tax dollars to such a beneficial policy as open access for government funded projects.

Please count me in favor of continuing this policy.

Respectfully,
Johannah White
Shawnee, KS 66216

From: Susan B Kay
Subject: Support for online public access to federally sponsored scientific research!
Date: January 9, 2012 5:26:29 PM EST
To: publicaccess@ostp.gov

Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Date: January 9, 2012 5:45:20 PM EST

To: publicaccess@ostp.gov

Dear Science and Technology Policy Office,

Please ensure that science funded by taxpayers is freely available to the public by open access agreements with journals and online resources. All scientific articles for research paid for by US taxpayer dollars should be published either directly on a website in pdf form, or only in journals that provide a pdf of the peer reviewed article to all people for free.

Sincerely,

Dr. Christine Huffard

Santa Cruz, CA 95060

From: Dave Hone
Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research
Date: January 9, 2012 6:26:24 PM EST

I am writing as a currently unemployed researcher. Even though I am currently between research positions I am still engaged in the scientific process of producing scientific papers.

As stands, the dominant model for publication of research is within one of the numerous private journals (such as is run by companies like Elsevier. While others exist that are run as not-for profit or open access (like PLoS ONE) they are in the massive minority.

Currently most research worldwide is generated (ultimately) by the tax payer as the work is funded by a central government grant. This is then submitted to a journal. Unpaid academic then handle editorial, review, and even formatting and typesetting duties for *free* (or at best token reward such as free copies of a single journal for a few months). They then hand over the copyright of that work in its entirity to the company. If they want to distribute this public funded work, or if others want to see this publicly funded work, they then have to pay for access to it.

In short, the scientists (paid by taxpayers) do the research, and most of the publication process, but hand over all of this to money-making publishers and then pay them to see any other related work. Publishers have enjoyed this over thousands of researchers for decades. Changing the system to protect this 'right' that is more an accident of history is not beneficial to science and is not beneficial to the U.S. taxpayer. All science will suffer and the only people to benefit will be those who profit from the exploitation of federal funds.

Yours

David Hone

Dr David W. E. Hone
School of Biology and Environmental Sciences, UCD, Dublin



SEISMOLOGICAL SOCIETY *of* AMERICA

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January 9, 2012

SSA Response to OSTP Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research

The Seismological Society of America (SSA) appreciates the opportunity to respond to OSTP's November 3, 2011 Federal Register notice requesting comments on "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research."

SSA is a scientific society devoted to the advancement of seismology and its applications in understanding and mitigating earthquake hazards. Founded in 1906 in San Francisco, the Society now has approximately 2,000 members from 70 countries representing a variety of technical interests: seismologists and other geophysicists, geologists, engineers, insurers, and policymakers in preparedness and safety. SSA is a non-profit corporation and is exempt from federal taxes under section 501(c)(3) of the Internal Revenue Code.

SSA publishes two peer reviewed journals: The Bulletin of the Seismological Society of America (BSSA), which has been the premier journal in earthquake seismology since 1911, and Seismological Research Letters (SRL), a more general forum for informal communication among seismologists, as well as between seismologists and those non-specialists interested in seismology and related disciplines.

Society publishers add significant value to the research papers submitted to our journals through rigorous peer review, quality control, and other activities in the publication process. We copyright the published article that represents that value-added product. If we cannot recover our costs in some way this important validation of research would be lost or would have to be supported by government funding elsewhere.

While scientific societies can provide quality control at much lower cost than any other organization, our investments in technology have been substantial for a small society. That is what is required to make content successfully searchable and useful.

At SSA, we have worked hard to make all of our content publicly available on the internet for a reasonable price. We participate in the non-profit consortium, GeoScienceWorld (GSW). We include access to back files of BSSA from 1911 in our member and library subscriptions for very modest subscription rates. In SRL there is a substantial amount of free content. Our pay-for-view fees for individual articles in both journals are low.

Seismological Society of America Comment on Open Access

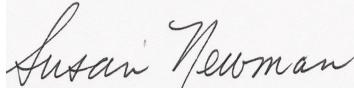
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We support the statement submitted by GeoScienceWorld including their endorsement of the answers to specific questions posed in this Request provided by the Association of Learned and Professional Society Publishers (ALPSP), which we have included below for reference.

Thank you again for this opportunity to comment.

Sincerely,

A handwritten signature in cursive script that reads "Susan Newman".

Susan Newman
Executive Director
Seismological Society of America

From GeoScienceWorld

About GeoScienceWorld (GSW)

GeoScienceWorld is a nonprofit collaborative of 26 global scholarly earth science organizations developed to provide and sustain an expanding platform of 40 digital journals, integrated with the GeoRef index, developed by the American Geosciences Institute, which is the leading abstracting and indexing service for geoscience content. GSW's mission is to improve affordable access to earth science scholarship globally. GSW works with many U.S. and non-U.S. research societies to deliver research content affordably to users in 40 countries worldwide.

Public Discovery of and Access to Research in GSW

GSW content hosted in connection with a vast number of contextually-relevant digital resources. We invest in making the research we host discoverable via numerous public channels at no charge to users. GSW and its partners create full-text abstracts, PDF previews, digital object identifiers, and metadata for all articles and abstracts, which are available through public channels, including Google, Google Scholar, CrossRef, GeoRef, and others, to expose the content for maximum discovery and use.

All GSW-hosted journals are indexed in AGI's GeoRef. This facilitating step enables live linking to and from our content to millions of relevant, copyrighted and public/open materials hosted elsewhere on the Web. For users seeking access to more than contextual browsing, abstracts, and page previews, the vast majority of our current and archival full-text articles are

publicly available at nominal pay-per-use prices. The GSW platform does not solicit advertising to subsidize its delivery efforts.

Facilitating Investment

GSW makes significant and ongoing investments in technologies that improve the user experience, which, increasingly, are tailored to the specific requirements of researchers in our domain. An example is our recent investment in geographic search capabilities, made possible by latitude and longitude coordinates assigned to our articles in metadata. These services are invaluable to users in geo-scientific disciplines but would not be relevant to research journals across other disciplines.

Because we recognize that research access is made better through the development of services, which incorporate an understanding of the science and needs of our specific users, GSW developed a network of research societies that add expertise to scholarly research with negotiated discounts, shared services, and effective cost controls that enable us to serve our distribution missions. This was one of the founding aims of the organization in 2004.

Our content is hosted at Stanford University. As we move forward, we also plan to take make investments that enable us to archive our content in secure digital repository systems such as CLOCKSS and/or Portico, which will ensure that our materials are secure and accessible in perpetuity.

GSW's Position on Open Access

Our mission is fundamentally concerned with providing affordable, digital access to high-quality, vetted research materials within a domain-specific context. We recognize that this is essential to supporting knowledge transfer between researchers around the world.

Despite our alignment with certain open access principles, GSW does not see a necessity for widespread government intervention or a one-size-fits-all solution mandating no-charge access to the published outcomes of public-supported research. We do believe that publicly-funded research can and should be made available to all through open Web-based discovery tools along with free abstracts and previews. We also believe that it would be appropriate to require publishers to make individual journal articles available to the public at rental and on-demand printing prices that are easily and broadly affordable. In fact, as per the responses below, we see the marketplace for digital scholarly information already evolving to realize these objectives. Given the multiple emerging models for delivery, which include article rentals, purchases, and fair-use sharing, we see no reason that publicly-funded research cannot be made available for individual, dead-based access at low per-article prices.

Seismological Society of America Comment on Open Access

January 9, 2012

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We are not a profit-seeking organization, so our position is not motivated by commercial interests. However, we are committed to supporting the resilience of nonprofit scientific societies, which may be seriously jeopardized by sweeping mandates for "free" access.

Enormous amount of investment and industry occur behind the scenes in digital scholarly publishing after an article is submitted for publication. While research endeavors may be publicly funded, the processes of developing research articles and including them in accessible, high-value databases (not only through editorial steps but through tagging, hosting, and service extensions) are internally supported -- and yet cannot be entirely divorced from the content which requires their existence. Requiring free delivery may under-value the requirements that contribute to useful, future-proofed delivery in a rapidly-evolving industry.

GSW does not believe that the publishing process will be equivalently supported, in terms of continuity and quality, by models that prohibit charging end-users or their sponsors for access. We also do not envision that one broad solution will recognize the specific requirements of scholarly works, which vary considerably by specialization.

In response to the specific questions posed in this Request for Information on Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research, GSW seconds the responses of the Association of Learned and Professional Society Publishers (ALPSP), which we have included below for reference.

Sincerely,

Alexandra Vance
Executive Director
GeoScienceWorld
4220 King Street
Alexandria, VA USA

From ALPSP:

Scholarly publishing is an international enterprise, with around 1.5 million articles published annually¹. US researchers dominate this output with a 29% share of the total. The majority of publishers (95%) are small, publishing one or two journals. At the other end of the scale, the 100 largest publishers account for 67% of the total number of journals.

¹ <http://www.stm-assoc.org/industry-statistics/the-stm-report/>

Publishers are dedicated to providing the widest dissemination of the peer-reviewed results of research and to supporting the scientific enterprise. In addition to investing heavily in staff and technology, not-for-profit learned and professional society publishers redirect their 'surplus' back into the community through organization of conferences, scholarly awards, teaching fellowships, skills transfer through workshops and seminars, enhancing professional standards and benchmarking, travel and other grants. Commercial publishers also invest directly in the scientific community, through grants, awards and other sponsorship schemes.

Publishers support any sustainable models of access, the most common being the subscription-based model. Gold Open Access, where the author (via the institution or funder) provides payment to fund publication, is gaining popularity, though it should be noted that this is not a fully tested model with regard to long-term sustainability. Publishers are working with funding organizations to investigate the issues surrounding this new access model to ensure it can provide sustainable business models for publishers to continue to disseminate value-added peer-reviewed literature.

Policies which require open access publication but do not provide funding for that publication, such as Green Open Access (author self-archiving in openly accessible repositories) threatens to undermine the publication system on which it depends, as evidenced in a recent report from the Research Information Network².

The PEER project³ in Europe has been investigating the effects of large-scale, systematic deposit of the Accepted Manuscript (see NISO/ALPSP definitions for Journal Article Versions⁴) in repositories. This project is a rational approach towards defining the problems and thereby identifying potential solutions. It is a broad ranging project encompassing economic, behavioral and usage aspects. The behavioral study has reported and noted that authors value highly peer-reviewed journals and whilst there is still some confusion regarding open access publishing, there were reservations about peer-reviewed papers being held in open-access repositories. It also found that readers were unlikely to go to a repository to search for journal articles.

(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 publicly 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?

1. Current markets for peer-reviewed publications exist globally and publishers have invested heavily to ensure that there are many channels of access to publications. The markets are already well-served and a recent survey from the Publishing Research Consortium found that 97% of researchers in North America have very or fairly easy access to research journals⁵. This study also

² <http://www.rin.ac.uk/news/press/heading-open-road-costs-and-benefits-transitions-scholarly-communications>

³ <http://www.peerproject.eu/>

⁴ <http://www.niso.org/publications/rp/> NISO RP-8-2008 Journal Article Versions (JAV): Recommendations of the NISO/ALPSP JAV Technical Working Group

⁵ <http://www.publishingresearch.net/projects.htm> Access vs. Importance

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demonstrated that North America enjoys one of the best 'access to information' versus 'importance of that information', profiles of any of the regions investigated.

2. Publishers have recognized the needs of the myriad communities they serve and have responded appropriately, leading the way with technical tools and services to enhance the access, usability and analysis of published research, collaborating widely with various stakeholders in the process.
3. In this regard, a number of publisher-led initiatives have increased access to many different user groups. For example, DeepDyve⁶, an article rental system, enables anyone to access thousands of scholarly and academic journals. Users may browse an article online and subsequently purchase the article for download if desired. patientINFORM⁷ brings up-to-date, authoritative information from the world's leading medical journals to patients and caregivers. Information is provided in a summarized form, with links to free or reduced-price access to the full article on the publisher website. The Emergency Access Initiative⁸ is a partnership between the Association of American Publishers (plus other publishers), the National Library of Medicine and the National Network of Libraries of Medicine with the aim of providing temporary and free access to those affected by disasters and those providing assistance to them. It includes public access.
4. In addition to the collaborations in paragraph 12, publishers also provide free or very low cost access to universities and colleges, research institutes, schools, hospitals, governmental offices and national libraries in the lowest gross national income per capita countries throughout the world through the Research4Life⁹, eIFL¹⁰ and PERii¹¹ initiatives, amongst others.
5. It is clear that publishers are keen to ensure that the needs of different markets in accessing scholarly information are met appropriately and are keen to do so in collaboration with other stakeholders. Publishers are keen to engage with the US Government to address the further gaps it has identified in public access. It would be useful for agencies to detail the particular needs of such user groups and to collaborate with publishers to establish the most efficient and appropriate ways in which to address those needs.
6. The need for archiving digital information has been recognized by publishers, librarians, funders and researchers. Collaborative projects already exist to ensure the long term preservation of scholarly information through initiatives such as Portico¹², LOCKSS¹³, CLOCKSS¹⁴ and the National Library of the Netherlands (Koninklijke Bibliotheek) eDepot¹⁵.

⁶ <http://www.deepdyve.com/>

⁷ <http://www.patientinform.org/>

⁸ <http://eai.nlm.nih.gov/docs/captcha/test.pl?url=>

⁹ <http://www.research4life.org/>

¹⁰ <http://www.eifl.net/>

¹¹ <http://www.inasp.info/>

¹² <http://www.portico.org/digital-preservation/>

¹³ <http://www.lockss.org/lockss/Home>

¹⁴ <http://www.clockss.org/clockss/Home>

¹⁵ <http://www.kb.nl/index-en.html>

7. Very careful consideration needs to be given to archiving and public access policies, if these are to be tied to growth in the US economy and improving output of the US scientific enterprise. Public access cannot be restricted to one local region. Ensuring public access to publications resulting from federally-funded research will result in global access, therefore benefiting researchers and other users all over the world (and potentially also their economies), not just the US. This removes any competitive advantage for the US economy and research output.
8. The National Institute of Health has noted that more than half of all PubMedCentral users are from outside the US. This repository is therefore reducing the export market for the US publishing industry which, in total, employs around 50,000 people and contributes c. US\$3.5 billion to the US balance of trade.

(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?

9. The US government is clearly aware that allowing global public access to the peer-reviewed published output from federally-funded research has the potential to open such content to piracy and other unauthorized dissemination.
10. Such piracy undermines the income that scholarly publishers require to continue their investment in the aforementioned projects, tools and collaborations for the benefit of the scholarly community.
11. The most efficient way to ensure appropriate protection of intellectual property interests of all stakeholders would be to make the final Research Report freely available. This would allow a rapid and very broad dissemination of the research results obtained directly from federal funding. This would also facilitate such reporting to be tied back to the original grant made by the federal agency. Final project reports could also be linked to the peer-reviewed published research, available online whether free, via rental or for full purchase as the publisher business model dictates.
12. GSW is not in favor of mandated deposit to centralized open repositories. In addition to significant concerns about long-term sustainability and piracy, open repositories have deleterious effects on the publishing model; for example, NIH does not currently provide publishers with full, detailed usage statistics from PubMed Central, which means publishers are unable to supply libraries with the complete picture with regard to their institution's use of a wide range of journals. Such usage data is crucial in determining renewals and whilst this situation persists, subscriptions are being cancelled based on incomplete usage data.

(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?

13. Studies have demonstrated that researchers prefer to access the publisher-created Version of Record (VoR) from a peer-reviewed journal as the authoritative, definitive version, over versions in subject or institutional repositories^{16, 17}.
14. In an interconnected age, with current and ever-improving technology, centralization is not required and moreover, requires unnecessary duplication of effort at considerable expense. Indeed the report from the Scholarly Publishing Roundtable in January 2010¹⁸ recommended decentralization to achieve the interoperability needed to "enhance the impact of the scholarly literature and ignite the generation of new knowledge".
15. Publishers have gone to considerable lengths in developing tools to ensure interoperability between different access systems. For example the Digital Object Identifier (DOI¹⁹) system, to provide persistent identification of digital objects, the CrossRef²⁰ organization and its various ongoing projects aimed at connecting users with primary research content and the Open Research and Contributor ID (ORCID²¹) initiative, to solve author name ambiguity in scholarly communications and latterly resolving institutional naming ambiguity.
16. Publishers are also continuing to invest in the development of discipline-specific tools to enable users to interact with and analyze specialized content. Such tools would be lost with centralization.
17. Publishers are continuing to invest in metadata standards, which improve the ease with which relevant articles can be discovered. With such excellent standards, search tools are all that is required to connect users with the most appropriate content for their needs, and importantly to the VoR. Such metadata standards include those developed by EDItEUR²², IDEAlliance (PRISM)²³ and NISO²⁴ (see also paragraphs 33 and 34 below).

(4) Are there models or new ideas for public-private partnerships that take advantage of existing publisher archives and encourage innovation in

¹⁶ <http://www.peerproject.eu/reports/> D4.2 PEER Behavioural Research – Final Report

¹⁷ <http://www.publishingresearch.net/projects.htm> Research Publication Characteristics and Their Relative Values

¹⁸ <http://www.aau.edu/WorkArea/DownloadAsset.aspx?id=10044>

¹⁹ <http://www.doi.org>

²⁰ <http://www.crossref.org>

²¹ <http://orcid.org>

²² <http://www.editeur.org/>

²³ <http://www.idealliance.org/specifications/prism/>

²⁴ <http://www.niso.org/standards/>

accessibility and interoperability, while ensuring long-term stewardship of the results of federally funded research?

18. In addition to the many public-private partnerships already mentioned, publishers are keen to engage further with Government and its agencies. Proposals have already been put to NSF for collaborative projects to enhance the public access, utility and preservation of publications resulting from federally-funded research.
19. Such proposals include standardizing the collection, display and use of metadata to indicate the federal grant supporting the research from which a scholarly publication derived and potential linking back to the Federal Agency website. A further example is the proposal for a project to understand the requirements for and benefits derived from content mining and to establish a methodology for overcoming current barriers, such that publishers can facilitate such content mining with sustainable business models.
20. These are just two of the proposals under discussion with the NSF.

(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?

21. As already mentioned above (paragraph 27), publishers are already undertaking a project with CrossRef and the Department of Energy (DoE) to standardize the way funding information is collected publishers and included in article metadata. This would enable Federal agencies to easily obtain information about publications resulting from federally-funded research.
22. Such collaborative projects enable cost-effective standardization across all Federal agencies and publishers.
23. Metadata allows users to discover information and find related information without the requirement of accessing the full text. Two initiatives are important in this regard.
24. The Dublin Core Metadata Initiative²⁵ provides key specifications and best practice regarding the use of metadata for the description of various digital resources (including books and journal articles). It enables interoperability of different applications and vocabularies and optimizes the metadata for searching.
25. CrossRef²⁰ provides a cross-publisher linking network. This allows readers to easily link to other resources of interest on other publisher platforms. This

²⁵ <http://dublincore.org/>

works seamlessly through DOIs and metadata which are embedded in articles and other content as part of the value-added publication process.

(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?

26. Federal agencies funding scientific research should maximize the products that they invest in, that is the research reports required by Federal agencies from the research scientist. Some already make such research reports available (e.g. the DoE Information Bridge²⁶), but others do not. Making all such reports freely available would solve the “public access” issue.
27. Federal agencies do not invest in peer-reviewed journals. Publishers add significant value to peer-reviewed publications and this is reflected in researcher preference for the VoR^{16,17}. Publishers should then be at liberty to employ appropriate business models by which they may recover their investment and to reinvest.

(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?

28. No. Publishers invest considerably in all types of content they produce to add value to the scholarly and academic community that utilize them. Such publications should not be appropriated without rightsholder permission and compensation. To behave otherwise would compromise the sustainability of high quality publication, dissemination and preservation of the research results.

(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?

29. There is no single “appropriate” embargo period. Federal agencies should not impose inappropriate embargo periods on non-federally funded businesses. Individual publisher business models are not arbitrary, but are carefully calibrated to meet the needs of the market.
30. The most common current embargoes range from zero, for gold Open Access material, to 12 months, as a result of the NIH-mandate. Publishers, however, should be able to set their own appropriate embargo, depending on the material

²⁶ <http://www.osti.gov/bridge/>

they publish and the market for which they publish, and this may be more or less than 12 months.

31. An indication of the length of usage an article in a given discipline received, the journal half-life forms a useful measure. For example, the American Physiological Society reports journal half-life from 4.3 to over 10 years²⁷.
32. Imposing mandates on the potential to recover investment from such usage further undermines publishers' ability to continue to innovate and add value for the benefit of the scholarly and academic community.
33. In the current economic climate, recovering investment is all too important. Journal budgets are being squeezed and foreshortening the length of time a publisher is able to recoup their investment has the potential to seriously damage publishers and therefore the overall economy.
34. As already referred to, the lack of transparency demonstrated by NIH has the potential to undermining the entire system. Librarians utilize usage statistics as part of their considerations for journal renewals. Whilst publishers have worked with NIH to assist authors in fulfilling their mandated deposit, NIH has been unwilling to provide publishers with usage statistics, which would allow publishers to provide a more accurate picture to librarians of the usage of journals by their faculty.

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.

35. Scientific research and scholarly communication is an international enterprise. Any efforts to improve "public" access through collaborations, standards or other projects, should necessarily be considered on an international, rather than national scale, if the real benefits of improving access to data are to be efficiently and cost-effectively recognized.
36. Publishers are very willing to enter into collaborative projects to explore the nature of these issues with the aim of producing the most cost-effective and appropriate solutions for both federal agencies and end users.

²⁷ http://www.the-aps.org/publications/journals/info/impact_factors.htm

From: Ginny Steel
Subject: Response to RFI on open access
Date: January 9, 2012 7:56:16 PM EST
To: publicaccess@ostp.gov

To Whom It May Concern,

I am writing in my capacity as the Chair of the University of California Council of University Librarians to submit the attached comments in response to the RFI on open access issued by the Office of Science and Technology Policy in late 2011. Collectively, the UC libraries make up the largest research/academic library in the world, with over 35 million volumes in our holdings as well as significant digital collections. The 10 campuses and the California Digital Library work together to expand the scope of our collections, improve access to information, and develop alternative modes of scholarly communication so that all faculty, students, and staff have access to the resources they need to support their teaching, learning, research, and service. One of the primary goals for UC's Council of University Librarians in 2012-15 is to support efforts to change the current, unsustainable models of scholarly communication that are having a calamitous and wide-reaching effect on academic library budgets and that are limiting access to important research. In light of our serious concern that there be widespread public access to peer-reviewed scholarly publications resulting from federally funded research, we offer the attached recommendations.

Sincerely,

Ginny Steel
University Librarian and
Chair, UC Council of University Librarians
University of California, Santa Cruz

To: Office of Science and Technology Policy (publicaccess@ostp.gov)
From: University of California Libraries
Subject: Response to the OSTP RFI on Public Access to Peer Reviewed Scholarly Publications
Dec. 21, 2012

The University of California's Academic Senate has requested that the University of California system "actively encourage open access to publications by promoting national legislation and policies by federal funding agencies that support open access."¹ The Council of University Librarians is pleased to submit the following response to the OSTP Request for Information on Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research.

To preface our response, we quote from the University's systemwide faculty committee on Libraries and Scholarly Communication, which wrote in May, 2009:

"Scholars at the University of California have a vested interest in ensuring that their work reaches the widest possible audience, including members of the public whose tax dollars support much of the University's research enterprise."

Responses

(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 publicly 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?

Providing, open, unrestricted access to federally funded research will help to grow the economy as individuals, institutions, and companies use the freely available material to create new services and products, whether commercial or not. Faster access to scholarly output means that new constructions and ideas can be formulated at a more rapid pace, thus speeding the launch of new products into the market. Open access also enables serendipitous discoveries by readers and researchers from different fields and remote locations, leading to new ways of interpreting material and new uses for scientific (and other) discoveries. This, in turn, may further increase the reach of and market for scholarly publications.

Studies have shown that offering increased access to federally funded research brings a significant return on investment,² including accelerating and widening opportunities for adoption of research findings, positively impacting the quality of services offered in various fields, and the potential for new industries to emerge. The NIH public access policy provides a real-life example of how a public access policy can work.³

The University of California receives federal grants and research funding in fields such as life and health sciences, physical sciences, and agriculture, and offers numerous examples of the economic potential of scholarly information.⁴ For example:

- UC researchers produce, on average, four new inventions per day.
- In California alone, more than 1,000 R&D-intensive companies use UC research in their work every day.
- Since 1976, 461 startup companies have been formed with UC inventions. UC's medical centers perform hundreds of clinical trials every year, resulting in new drugs and disease treatments.
- Research funding leads to a well-trained workforce and increased employment as researchers work with graduate students, train undergraduates, and hire staff.

(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?

Current copyright, intellectual property, and contract laws offer a plethora of possible arrangements for publishers, scientists, authors, and other stakeholders involved with publication and dissemination of peer-reviewed scholarly publications from federally funded research. The current business model for the vast majority of scholarly peer-reviewed publishing is for scholars to perform the research that underpins the articles, write the articles for submission to scholarly journals, and then review articles and work by colleagues for those journals. Following all of that effort for no monetary compensation, publishers require those same authors to transfer their copyrights, which then locks up the content and prevents the results of publicly funded research from being made broadly available to the public that funded it. Research libraries, not publishers, provide the aggregate, long-term stewardship and preservation of the results of publicly funded research. Insuring broad public access to and long-term preservation of federally funded research and results through a federal requirement or provision that also preserves the publisher's right to monetize the content would be a great improvement in this arena.

Another possible step would be a simple low-cost or free registration requirement and process for documenting copyright ownership that would allow for more transparent and seamless management of copyright. Current copyright law does not require formal registration before copyright is affixed, and adding a registration requirement would make it much more likely that publicly funded publications would all be made accessible and preserved. Currently, the best protection for all stakeholders may be to encourage (or mandate) immediate open access upon publication under a CC-BY license, thus ensuring that the economic foundation of the publication process is predicated on open access rather than in conflict with it, producing a far better alignment of public and private interests. Use of CC-BY

licenses would facilitate appropriate attribution and credit, which are critical to scientists and to preserving the formal record of research.

Any new policies or legislation should be sure not to increase the intellectual policy protections afforded under the US Copyright Law that would make it more difficult to insure public access and preservation of publicly funded research and publications. In order to further “promote the progress of science,” scientific discoveries and the publications that result from them that are publicly funded should not be locked up so that the majority of Americans have no access. UC supports the concept of streamlining regulations that govern creative expression and research publications to insure new discoveries can be found and utilized. Additional copyright and intellectual property protection would only create unnecessary burdens that do not provide meaningful protection and delay and thwart important new research, discoveries and innovations that can be useful to the public that funded the research. The “fair use” exemption of the Copyright Law provides few options in this age of online resources that are locked up behind firewalls and pay-per-view.

(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?

The question of whether to centralize or decentralize the management of public access to peer-reviewed scholarly publications that result from federally funded research is a complex one with technical, cultural and financial implications. The argument in favor of centralizing management of this work includes the following *technical* considerations:

- i. Ease in managing compliance auditing
- ii. Ease in building new tools and services on top of the repository (for submission, for access)
- iii. No need to develop technical solutions for edge cases where content might otherwise need to live in multiple places (i.e., interdisciplinary work, co-funded work, etc.)
- iv. Control for consistent metadata. A single workflow can ensure that comparable metadata is collected for all publications submitted to the system, supporting better discoverability, refined searching, content grouping, etc.

The argument in favor of centralizing the management of these publications also includes the following *cultural and financial* considerations:

- i. A centralized repository is likely to have a single submission workflow, making it easier for individuals, campuses, publishers to comply with federal deposit mandates.
- ii. A centralized repository will also provide a consistent access environment for publications.

- iii. The repository itself is likely to become a known research destination, with comprehensive coverage of fields of study.
- iv. A sustainability plan can be developed which, if successful, will protect access to all content within the repository equally – an advantage over a distributed model where the financial health of the local repositories could be variable.

There are, however, a few technical considerations in favor of decentralization of the management of these publications.

- i. A single, centralized repository will have a significant technical/resource burden in one location. Should that burden exceed available resources, the repository could be at risk – and the liabilities associated with that risk are greater when there is a single point of access for all materials.
- ii. Centralized management also typically results in less capacity for customization at the local level. The one-size-fits-all model will support scalability, but will potentially limit the ability of the repository to develop distinct tools and services for distinct bodies of research.
- iii. Challenges around search and discovery are more significant in vast collections. Particular attention would need to be paid to this technical challenge to avoid compromising the discoverability of any research deposited in the repository.

Regardless of the decision to centralize or decentralize management of publicly funded publications, any solution must emphasize robust discovery, access to and preservation of this research. All potential repositories must support access and use conditions that enable robust use by all interested communities – including the ability to layer services, products, etc. on top of this publicly funded research. It is also crucial that the repository infrastructure includes highly developed preservation and curation services, to ensure enduring access to the research regardless of the vicissitudes of local economic and technical environments. Third party providers might prove strong partners in these regards. However, the federal government should retain the right, regardless of repository location/technical platform, to archive and distribute publicly funded articles.

(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?

The HathiTrust digital archives (www.hathitrust.org) is a partnership of major research institutions and libraries who have come together to ensure that cultural history is preserved into the future by collecting, organizing, preserving and sharing the record of human knowledge. Among other goals, the HathiTrust offers preservation of digitized works from universities and other institutions. The partners include public and private institutions, and the majority of the files were digitized in partnership with Google. HathiTrust also partners with publishers. For example, Duke University Press is working with HathiTrust to make a large number of its backlist titles freely available using files digitized by Google. With permission from rights holders, the books will be made available under a Creative Commons

noncommercial license, so that anyone may read and use them for nonmonetary purposes, while Duke will be able to offer print-on-demand copies for sale. It is estimated that as many as a thousand titles could be made openly accessible under this arrangement, which is intended to be a model for other publishers who want to widen access to their material.⁵

The NLMPPlus semantic search engine (<http://nlmplplus.com/>) was developed by a start-up company called WebLib that specializes in creating search and knowledge discovery tools for the web. NLMPPlus searches sixty National Library of Medicine databases to find relevant articles, including 1.6 million PubMed Review articles.

Organizations such as arXiv, JSTOR, Portico, and CLOCKSS have long-standing relationships with publishers to archive content which could conceivably be leveraged to provide access to that archived content. The JSTOR “Data For Research” service (<http://dfr.jstor.org/>) aggregates 6.4 million records from content archived in the JSTOR repository for content mining purposes. Such a service could be more fully developed to incorporate additional content. Ensuring that content is openly accessible would allow additional similar services to be developed and flourish, serving both general and specialized constituencies.

Services from PubMed and PubMed Central to Mendeley to Google Scholar demonstrate the power of aggregating research information in ways that enhance researchers’ ability to locate, access, and work with a wide array of research content; enabling full access to content through such services will speed innovation and research.

(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?

In order to encourage interoperable search, discovery and analysis and timely deposit, this system must make the work of submitting metadata and related content extremely easy and as low-cost as possible. The attainment of some critical goals would help achieve this, including the following:

- The system must have a clearly published metadata schema that accommodates the essential bibliographic elements of scholarly published content. At this point the majority of content covered under this act is likely to fall into standard genres, i.e. monograph-like objects or journal articles. However, new genres are emerging (for instance, data sets) and those materials will need to be accounted for as well. Because these different genres of material have different core metadata elements, any schema(s) that are adopted will need to be flexible and not deeply mapped to the practices of any discipline subset. It will also be

beneficial to turn to schemas already in use, in order to take advantage of existing workflows, documentation, knowledge bases, etc.

With the above concerns in mind, an excellent starting point would be the NLM suite of schemas (<http://dtd.nlm.nih.gov/>) that together cover a wide array of scholarly material formats, from non-peer reviewed product reviews to formally published monographs.

Many publishers and repositories from across a wide variety of disciplines use these standards already as a relatively efficient medium of data exchange. While local metadata formats may be entirely different, the NLM standards are clear and well-documented, thus are relatively reasonable as transformation targets.

- Content deposits should include both the source's original metadata record and a transformation that adheres to the published standard(s) described above. Supplying original metadata records ensures that unique metadata meaningful to content from that source will be retained, and could be surfaced to those interested in materials from that source. For instance, controlled vocabularies relevant to a particular discipline but not meaningful in a more general display system, could still be available via these records and could potentially be a source for a third-party to develop a service based on them.
- Data should be regularly exposed in a variety of ways, including a web interface for people, an OAI-PMH interface, a RESTful API, etc. New means for making content searchable should be folded in as they develop and are adopted.
- Unique identifiers for individuals (ORCIDs, once they become available) and publications (ARKs, DOIs, Handles) should be used when they are submitted with records, and should be added to records that lack them.

(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?

Federal agencies can implement consistent open access policies for the research results generated from their grant funding. Immediate public access to scientific results will maximize funders' investments by exposing the results to the widest audience possible. New policies should minimize the burden of compliance by having common standards and protocols to follow. There are existing protocols, for example, for depositing manuscripts into repositories, and the NIH/PubMed requirement also provides procedures that could be replicated by other agencies.

Direct OA publishing, supported via grant funds, is perhaps the most straightforward and least burdensome mechanism by which to implement public access for all stakeholders, since it eliminates the need for secondary deposit mechanisms of refereed articles alongside the normal publishing stream and also provides for funding of research publication at a time when such funding is at risk in many quarters. Deposit in a consistent repository or set of interoperable repositories is also desirable; however, with

direct OA publishing, articles could be harvested into repositories using automated means, without cumbersome deposit mechanisms.

(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?

Other materials that have been funded by federal funds should surely be considered for public access, but different types of materials also have other issues that would need to be considered, such as varying conventions for intellectual property (e.g., book chapters are often “works made for hire,”), digitization or lack thereof (print publications that would need to be scanned to be deposited in a repository), and immediacy of need from the consumer’s perspective (some material might be considered more crucial than others). A single policy most likely cannot cover all of the types of materials that might result from federally funded research.

(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?

Very limited embargoes on content that is not published as open access is generally sufficient to protect publishers. It is well established that making preprints freely available in the arXiv repository has not had a negative impact on the American Physical Society (APS) or its British counterpart, the Institute of Physics (IOP).⁶ In addition, most journals on HighWire Press release their content after 12 months, as do any number of other leading journals (e.g. journals from Cell Press, some journals published by Nature Publishing Group, etc.), and subscriptions have not been affected. Perhaps the most widely known example of appropriate embargo periods (and the lack of impact on the marketplace for scholarly journals) is the NIH public access policy, which states that the results of research funded by the NIH must be available no more than twelve months after publication. A number of journals have experimented with much shorter embargo periods, without ill effect (for example, *Molecular Biology of the Cell* releases its content after two months). These examples illustrate the real viability of a federal open-access requirement that will help ensure more rapid access to vitally needed research results. Some attention may need to be paid to humanities and similar disciplines with extended periods between issues and a longer citation half-life. Shorter embargo periods are obviously preferable. The interests of the American people must guide this decision; in any analysis, the long-term public good must outweigh short-term commercial interests.

In a 2005 study on author self-archiving, Tim Berners-Lee, et. al, concluded: “All objective evidence from the past decade and a half of self-archiving, however, shows that self-archiving can and does co-exist peacefully with journals while greatly enhancing both author/article and journal impact, to the benefit

of both. Journal publishers should not be trying to delay and block self-archiving policy; they should be collaborating with the research community on ways to share its vast benefits.”⁷

¹ Academic Council Chair Mary Croughan to UC President Mark Yudof, June 16, 2009, and attachment: <http://www.universityofcalifornia.edu/senate/reports/MC_Yudof_open%20access%20FINAL.pdf>

² John Houghton and Peter Sheehan, “The Economic Impact of Enhanced Access to Research Findings,” CSES Working Paper No. 23, July 2006 <www.cses.com/documents/wp23.pdf>

³ NIH Public Access Policy <<http://publicaccess.nih.gov/policy.htm>>

⁴ UC for California, specifically, “UC Impacts” <<http://www.ucforcalifornia.org/uc4ca/home/resources>> and Economic & Planning Systems Inc.’s September 2011 study <<http://www.universityofcalifornia.edu/news/article/26216>>

⁵ “HathiTrust and Google Will Help Duke U. Press Digitize a Trove of Older Titles,” Chronicle of Higher Education, Sept. 12, 2011. <<http://chronicle.com/article/HathiTrustGoogle-Will/128949>>

⁶ Open Access Self-Archiving: An introduction. Technical Report, JISC, HEFCE. Swann, Alma. <<http://eprints.ecs.soton.ac.uk/11006/>>

⁷ Berners-Lee, T., De Roure, D., Harnad, S. and Shadbolt, N. Journal publishing and author selfarchiving: Peaceful Co-Existence and Fruitful Collaboration. <<http://eprints.ecs.soton.ac.uk/11160/>>

From: Dianne Greenfield <dianne.greenfield@gmail.com>
Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research
Date: January 9, 2012 9:07:52 PM EST
To: publicaccess@ostp.gov

Dear Science and Technology Policy Office,

Thank you for extending the deadline for comments on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research. The Research Works Act has only very recently come to the notice of scientists, and it is because of this extraordinary proposal that it is now apparent to us that we need to reaffirm what we thought was settled: that OF COURSE scientific work funded by the public should be freely accessible to the public. I do not understand how this can even be a matter for discussion. The public pays: the public should benefit in every way possible.

The language in the RWA is highly misleading, attributing to publishers far more input into the scientific process than they really have. The truth is that scientists (often funded by public money provide the underlying research, the writing and the figure preparation that result in a manuscript submitted for publication. Other scientists then provide the editorial services and (contra publishers' claims, as can be easily verified) the peer review. Publishers' contributions are limited essentially to typesetting, the provision of web hosting, and sometimes a very limited amount of compensation for senior editors only (usually not the handling editors who actually deal with authors' works). The notion that such a minor contribution should suffice to hand publishers, rather than the public, the right to determine how, where and under what regime the resulting works are disseminated, is ludicrous. It would be laughable if it were not so iniquitous.

Dr. Dianne Greenfield

Research Assistant Professor

University of South Carolina, Columbia SC, USA.

From: Douglas Knox
Subject: Public Access to Scholarly Publications
Date: January 9, 2012 11:04:37 PM EST
To: publicaccess@ostp.gov

Regarding document 76 FR 68518
<http://federalregister.gov/a/2011-28623>

I am a member of the Association for Computers and the Humanities (ACH), and as a member of ACH, and also as a citizen of the U.S. who understands public access to information and public debate to be the lifeblood of American civic life, I endorse without reservation the ACH response, which can be found here.

<http://ach.org/ach-response-white-house-rfis-open-access-research>

My opinions and endorsement are my own.

Douglas Knox
Assistant Director, Humanities Digital Workshop
Washington University in St. Louis
St. Louis, MO

ASSOCIATION FOR
COMPUTERS AND THE HUMANITIES



To: White House Office of Science and Technology Policy

From: Association for Computers and the Humanities

Date: 6 January 2012

Subject: ACH commentary on two OSTP RFIs (*Public Access to Digital Data Resulting From Federally Funded Scientific Research and Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research*)

We write on behalf of members of the Association for Computers and the Humanities (ACH), in response to the OSTP's recent requests for information on public access to data and publications resulting from federally-funded scientific research. ACH urges the White House to ***adopt a more expansive definition of "research" to include the work of humanities scholars, and to work closely with government humanities agencies*** (such as the National Endowment for the Humanities, the Smithsonian, and the Library of Congress) in developing public access policies for federally-funded research and scholarship.

ACH is the primary US-based professional society for the digital humanities, which include computer- and technology-enhanced humanities research, pedagogy, data curation, and knowledge production. The humanities themselves encompass history, literature, ethics, archaeology, linguistics, and other areas of inquiry into the human condition – research disciplines the American Council of Learned Societies define as “those fields of knowledge and learning concerned with human thought, experience, and creativity.” As such, they are intimately connected with work in areas as diverse as cognitive science, computer science, environmental science, and human health. Such connections have only strengthened as humanities disciplines

have moved into the era of “big data,” and as liberal arts scholars contribute in increasing numbers to the digital humanities. Scholars and knowledge workers in this field develop innovative software tools and research methodologies for grappling with digitized content, and partner with information scientists and colleagues in a variety of research disciplines to create common standards for data interchange.

Agencies, offices, and public institutions among our peers in the UK, Canada, and Germany commonly use the term “research” to include work in the humanities and sciences alike. This means that policy and funding reforms are typically made **with consideration to their impact on the whole research output of universities and centers of learning**. In times of plenty, all research disciplines benefit from this shared attention. In hard times, they share burdens more equitably and are prompted to form productive collaborative relationships outside of traditional academic silos and create economies of scale – or at least are able to compete on a more level playing field. Most importantly, policy-makers are driven to seek the interdisciplinary advice that can position them to create larger enabling frameworks – systems that respect the increasing interdisciplinarity of the research enterprise.

American innovator and tech entrepreneur Steve Jobs attributed the commercial and aesthetic success of his endeavors to the blending of what have been called our two cultures: “It’s technology married with liberal arts, married with the humanities that yields the results that make our hearts sing.” On a practical level, R&D in library science and the digital humanities has driven and enabled numerous advances in science, technology, and industry. Examples include the development of XML (extensible markup language, a chief engine of the World Wide Web) and Dublin Core Metadata (a key standard for linked open data discovery across disciplinary silos), advances in location-based tools and methods and in usability and user interfaces, and the development of e-Science cyberinfrastructure, or the

creation of – often discipline-agnostic – virtual research environments. **Critical research involves scholars from across the sciences, social sciences, and humanities.** Increasingly, US funders are working together to promote such interdisciplinary research. For example, the Digging into Data Challenge brings together the NEH, the NSF, and the IMLS, along with five international funders, to encourage cutting-edge research with large datasets. Government funders and agencies across all disciplines – sciences, humanities, and medicine – need to work together to harmonize policies on open access to research publications and data.

Digital humanities scholars, developers, and publishers **are among the staunchest allies of open access, data stewardship and digital data preservation, and open source.** We have viewed our work as part of a complex ecosystem encompassing cultural heritage and scientific research since long before initiatives like SPARC (the Scholarly Publishing and Academic Resources Coalition) and documents like the 2003 *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* began to signal the cross-disciplinary nature of these issues so strongly. There are indeed challenges particular to the humanities in making the transition to open access publishing; however, those challenges are not primarily about principles of intellectual property, but rather about the sustainability of various publishing models and revenue streams for scholarly societies. The digital humanities community represented by ACH sees its work as having strong public value, understands that open access brings greater visibility and spurs research advances, and depends on long-term access to research data for scholarship and teaching.

Broad public access to research content produced with tax-payer dollars and the long-term survival of resulting digital data are **as crucially important to the humanities as they are to the sciences.** It is vital to the health of humanities research and to our ability to collaborate effectively with colleagues in the sciences, social sciences, and medicine that **humanities perspectives be formally included**

in these important conversations. Policy decisions related to open access are bound up with scholarly funding mechanisms, varying publication models, and unique challenges of long-term preservation, with different impacts in different disciplines. We strongly urge the OSTP, working through the NSTC's Task Force on Public Access to Scholarly Publications and Interagency Working Group on Digital Data, to **strengthen the connection of the humanities and cultural heritage research community to these important initiatives** by including representation from government organizations like the National Endowment for the Humanities' Office of Digital Humanities in deliberations about public access to federally-funded research.



Bethany Nowviskie, Ph.D.
ACH Vice President and Chair for Outreach & Advocacy

together with ACH officers and Executive Council members:

Dr. Julia Flanders, President
Ms. Dot Porter, MLS, Exec. Secretary
Prof. Jarom McDonald, Treasurer

Dr. Paul Caton
Dr. Susan Schreibman
Prof. Stéfan Sinclair
Dr. Matthew Jockers
Prof. Matthew Kirschenbaum
Prof. Katherine Walter
Dr. Tanya Clement
Prof. Neil Fraistat
Prof. Geoffrey Rockwell
Prof. Susan Brown
Prof. Kathleen Fitzpatrick
Dr. Lisa Spiro

From: Melissa
Subject: Research Works Act
Date: January 9, 2012 11:11:25 PM EST
To: publicaccess@ostp.gov

Dear. OSTP,

I firmly believe that scientific of which has been funded by the public should also be freely accessible to the public.

Thank you!

Melissa

From: Joel Abraham
Subject: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research
Date: January 9, 2012 11:20:12 PM EST
To: publicaccess@ostp.gov

Dear Science and Technology Policy Office,

I was extremely disappointed to learn about the "Research Works Act". I'm sure you have received many emails from a number of scientists, so I will not go into the specifics of why this is an unfair and dangerous bill. My research is typically publicly funded and therefore should be available to members of the public. Given the recent attacks on publicly funded science by congress members, one would think congress would be pushing for more guaranteed and unfettered access for the public. Instead, Reps. Maloney and Issa seek to support corporate profiteering from taxpayer funded research. The Research Works Act is two steps in the wrong direction.

Dr. Joel K. Abraham
Assistant Professor
Department of Biological Science
California State University, Fullerton

Subject: In Strong Opposition to the Research Works Act

Date: January 9, 2012 11:42:24 PM EST

Dear Science and Technology Policy Office,

Publicly funded research must be freely available to the public. Research paid for by the public should not be a commodity that private entities may control and profit from.

As Peter Murray-Rust argues in a [comment](#) on Mike Taylor's [blog post concerning the Research Works Act](#):

To clarify the discussion of: "closed access means people die" This applies to ALL scientific publication.

If you are an engineer and want to be sure that a new material is safe for a medical device you need to read the literature

If you are a policy wonk and worried about epidemics you need to know the mathematics of epidemiology (maybe in a stats or maths journal)

If you are trying to improve the drainage in tropical countries you need to know about the sociology of cooperation and conflict over water

If you are worried about obesity you need to know about the psychology of human behaviour.

and that's just medical

I was in two earthquakes last week (in berkeley). Small ones. But I would like to know that everyone involved in prevention and warning could read the appropriate literature.

There is NO discipline which can be regarded as irrelevant to the benefit of humankind

Murray-Rust's own [blog post concerning the Research Works Act](#) on the Unilever Centre for Molecular Informatics site argues this point at more length.

Thank for accepting comments on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research.

Emily Tunnat

491 23rd St

Oakland, CA 94612

Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications

Date: January 10, 2012 12:07:53 AM EST

Dear Science and Technology Policy Office,

The Research Works Act will hinder scientific progress in the United States. It is only by building on existing research that any new scientific findings can occur. It is vital to keep publicly-funded research accessible to the public. Not all scientists have access to expensive journal subscriptions. Even with the large library resources of UC Berkeley, I cannot always access research articles that I need. This problem will be horribly exacerbated if the Research Works Act passes. We need to keep research accessible, or the US risks losing scientific integrity and knowledge.

Sincerely,

Emily M. Dangremont
Ph.D. Candidate
Dept. of Integrative Biology
University of California, Berkeley

Hi,

I'm a graduate student in biology at UC Berkeley. It has always seemed to me that it goes without saying that knowledge produced from publicly funded research should be the property of the public and no one else. Private interests should have no rights to this public knowledge. The Research Works Act will bar the public from access to information that is theirs by right. How do we expect to increase knowledge without access to publicly-funded past work? Without access to previous work, researchers will not have an easy time of standing on the shoulders of giants.

Please do all in your power to oppose the Research Works Act as it is antithetical to the advancement of human knowledge.

- Zach Hanna
Ventura, CA

January 9, 2012

U.S. Office of Science and Technology Policy
Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research
Docket number OSTP-2011-0023
publicaccess@ostp.gov

Office of Science and Technology Policy,

The following comments are in response to the December 23, 2011 Federal Register notification (Vol. 76, No. 247, p. 80418-80420) inviting public comment on the “Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research”.

Question 1 comment

I believe federal agencies need to work as a group to set a common embargo period for federally funded scientific research that recognizes the value that non-profit and for-profit publishers contribute the publishing enterprise. If the established embargo is too short the publishers will no longer be able to contribute continuing value to the scientific publishing enterprise.

I would suggest that there be a transition period to allow both non-profit and for-profit publishers to adjust their business models in an orderly and efficient manner.

Question 3 comment

I see little value in insisting upon one single centralized repository of federally funded scientific research. However, it may make sense for a consortium of federal agencies to work with non-profit and for-profit publishers to insure that in the case of insolvency that a collection of federally funded scientific research can be efficiently migrated to other repositories.

Question 5 comment

I'm glad to see awareness of the need to have a common set of metadata to allow optimum search and discovery across different structures. I believe the Dublin Core Metadata set serves as a good core of needed metadata. There would be the need to add enhancements to provide unambiguous tags for journal title, volume, issue, and page numbers. There could also be instances where additional alias tags are needed to broadly address all the various search engines that serve internet users.

I believe a consortium of federal agencies need to partner with major organizations that hold federally funded scientific research to insure that publically accessible information can be readily located. Many such organizations are using using DOI (digital object identifier) which can provide a continuing link to published information.

I think there also needs to be consideration to ensuring that the actual content of published federally funded scientific research can be searched. For example that legacy PDF files were created with optical character recognition (OCR).

Question 7 comment

For book chapters the challenge is that such books are created to achieve income for the publisher, whether a for-profit or non-profit, and in chapter contributors are recognized through providing free copies of the resulting book. As well books are expected to return income over a longer time frame than journal publications. The result will be that application of public access policies to book chapters will diminish the incentive for such book publishers to include chapters from federally funded research. At best I believe an embargo duration of ten years should be considered.

For conference proceedings I believe there is a greater potential to partner with hosting organizations to make such content available. For example, I'm associated with a small conference that is interested in making its legacy content available and searchable and would likely welcome a content hosting resource. As conferences are more recently starting to share conference content through a number of different means, e.g. powerpoint + audio; video recording, etc, the model is more under development. Given the newness of making such content available I believe there is much more potential for partnership with sponsoring federal agencies to make such content available per public access policies.

Question 8 comment

My personal opinion is that there should be a one year minimal embargo period to help assure the continued viability of non-profit publishers of scholarly content. I believe these publishers contribute significant value in the peer review process that is applied to such scholarly content. The

General

It is admirable of the involved federal agencies to insure public access to federally funded scientific research. However, I would also like to point out that the National Technical Information Service charges for many of the publications it offers. These publications are as well the result federally funded scientific research. So I would ask that the same be expected of federal agencies as is envisioned of both non-profit and for-profit publishers.

Sincerely yours

Mr. Donivan Porterfield
Los Alamos, NM 87544

Dear Science and Technology Policy Office,

I am writing to express my strong opposition to the Research Works Act, currently being considered by Congress. The proposed Act would greatly restrict public access to scientific research, undermining the fundamental principles of academic pursuit. The U.S. is the world's leader in science and technology, and open access to published research is essential to our leadership. The American public pays for fundamental research in medicine, environment and other fields and has every right to have access to the resulting discoveries and publications. The Research Works Act runs counter to public interest and to current trends in science and information sharing. It would take the United States backwards and erode our leadership.

Sincerely,

David Ackerly

David Ackerly
Associate Professor
Dept. of Integrative Biology
Univ. of California
Berkeley CA 94720

Dear members of the science and technology policy office,

although I am not based in the US, I would like to provide some input on the public availability of scientific results.

The public interest in science seems to be steadily increasing, thanks to the ease of accessing information on the internet and thanks to the efforts of many scientists and writers who try to make science accessible to laypeople. Since we live in a time where knowledge of science and technology and their impact is highly important for every citizen, anything that hinders the public in freely accessing scientific information seems to me to be politically unwise, especially if the research results are produced with tax-payer funding. It would seem strange to me to deny tax-payers access to the results that they have actually payed for.

The current NIH policy that requires publications to be made accessible after 12 month is therefore a laudable step in the right direction. That even this 12-month-period may be unnecessarily long can be seen from the current practice in the physics community, where papers are directly uploaded to preprint-servers and are accessible to everyone even before they are accepted for publication in a journal.

Anything that restricts open-access for publicly funded research strongly hinders the public outreach of scientists. It may also reduce the impact of US-based research, since research institutes that are not well-funded may not have access to this research, thus reducing its visibility.

Best regards,

Martin Bäker, Ph.D.

Priv.-Doz. Dr. Martin Bäker
Institut für Werkstoffe
Technische Universität Braunschweig
Langer Kamp 8
38106 Braunschweig
Germany

Subject: Re:Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research
Date: January 10, 2012 6:36:30 AM EST

To: Office of Science and Technology Policy
Executive Office of the President
725 17th Street Room 5228
Washington, DC 2050
From: Janice Flahiff

Re: Response to the White House RFI on OA publications
Thank you for the opportunity to respond to the White House Office of Science and Technology Policy request for information on "Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research."

As a library employee with over 15 years of professional and paraprofessional experience, I have seen how limited access to government funded research affects students and researchers. Unnecessary access limitations often result in relevant articles not being read. For example, an embargoed article may be too expensive for the library to obtain via interlibrary loan. This embargoed article may well be a key source of information to fill in a knowledge gap for either a student summarizing current trends in an area. It also could contain good information for a researcher's grant application or experiment. Multiply these individual concerns and the larger concerns are continued roadblocks to innovation, progress, and a nimble knowledge base.

For these reasons I strongly support White House action to require and enhance public access to government-funded research.

It is understood that there are many areas and stakeholders in this area. There are compensation and intellectual property issues.

However, unless we all work together in advancing pure and applied research, misplaced efforts in areas of ownership and compensation will work towards detriment to all stakeholders.

While I have not answered specifics in the RFI, I am hoping all concerned work together in a spirit of cooperation for the greater common good. For some reason, I cannot get the image of Benjamin Franklin's cartoon out of my head, "Join or Die".

Please do all you can to bring together all stakeholders for true scientific progress.

Your efforts in creating this RFI are much appreciated. May the upcoming discussions be conducted in a spirit of cooperation.

Dear Science and Technology Policy Office,

Thank you for offering us the chance to share opinions on what effects the research we fund. The fact that it has come to this is shocking to be honest, but I'm glad you are fighting in our corner. I'm sure you have heard the arguments, and I won't add anything here, except my full support for those who oppose the ridiculous idea that science, funded by the public should benefit large business, not us. It's almost as if banks, propped up by us, were still making huge sums of money for the senior management and shareholders. Oh wait. Bad example. Nevermind.

Anyway, please do the right thing.

Thank you

Andrew Abrahamson

"Thank you for extending the deadline for comments on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research. The Research Works Act has only very recently come to the notice of scientists, and it is because of this extraordinary proposal that it is now apparent to us that we need to reaffirm what we thought was settled: that OF COURSE scientific work funded by the public should be freely accessible to the public. I do not understand how this can even be a matter for discussion. The public pays: the public should benefit in every way possible.

The language in the RWA is highly misleading, attributing to publishers far more input into the scientific process than they really have. The truth is that scientists (often funded by public money provide the underlying research, the writing and the figure preparation that result in a manuscript submitted for publication. Other scientists then provide the editorial services and (contra publishers' claims, as can be easily verified) the peer review. Publishers' contributions are limited essentially to typesetting, the provision of web hosting, and sometimes a very limited amount of compensation for senior editors only (usually not the handling editors who actually deal with authors' works). The notion that such a minor contribution should suffice to hand publishers, rather than the public, the right to determine how, where and under what regime the resulting works are disseminated, is ludicrous. It would be laughable if it were not so iniquitous."

Andrew Abrahamson
Educational Opportunities Officer
Centre for Excellence in Educational Opportunities
cf Educational Opportunities Team
The University of Liverpool

Dear Science and Technology Policy Office,

Thank you for extending the deadline for comments on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research. The Research Works Act has only very recently come to the notice of scientists, and it is because of this extraordinary proposal that it is now apparent to us that we need to reaffirm what we thought was settled: that OF COURSE scientific work funded by the public should be freely accessible to the public. I do not understand how this can even be a matter for discussion. The public pays: the public should benefit in every way possible.

The language in the RWA is highly misleading, attributing to publishers far more input into the scientific process than they really have. The truth is that scientists (often funded by public money) provide the underlying research, the writing and the figure preparation that result in a manuscript submitted for publication. Other scientists then provide the editorial services and (contra publishers' claims, as can be easily verified) the peer review, usually for free as a service to the field! In contrast, the latest figures show profit margins of 20-40% for the major academic publishers-- do they really need to be handed a bigger windfall? Consider that it is the science community that needs to be better served, by open access.

Publishers' contributions are limited essentially to typesetting, the provision of web hosting, and sometimes a very limited amount of compensation for senior editors only (usually not the handling editors who actually deal with authors' works). In my case I get ~\$250 per year as a token fee for my >20 annual hours of work for Elsevier, which are nominally worth over \$150/hr as per my university salary). I am an Associate Editor for an Elsevier journal (Theoretical Biology) and can say this with total confidence based on my 5 years working for them.

The notion that such a minor contribution should suffice to hand publishers, rather than the public, the right to determine how, where and under what regime the resulting works are disseminated, is ludicrous. It would be laughable if it were not so iniquitous. Please do not support this act.

=====

Dr. John R. Hutchinson
Professor of Evolutionary Biomechanics
Department of Veterinary Basic Sciences
Structure and Motion Laboratory
The Royal Veterinary College
University of London
<http://www.rvc.ac.uk/sml/People/jhutchinson.cfm>

=====

Dear Science and Technology Policy Office,

I just learned about the Research Works Act and about the letter that Michael Taylor sent to you (I have pasted it below). After reading it carefully, I fully endorse Mike's statements. I would like to point out that I am Chief Editor of an Elsevier journal, the *Comptes Rendus Palevol*

(http://www.elsevier.com/wps/find/journaldescription.cws_home/623404/description#description), and that indeed, most of the work is done by the authors, referees, and Editors. Authors usually have their salary paid by public money. Editors and referees are not paid for their work (except in exceptional circumstances; some publishers pay book editors, for instance), although after seeing the huge profits that Elsevier has made recently, I think that this should change! This process, entirely paid by governmental or university money, results in papers that just need to be formatted to meet the journal's style, a small technical step for which they charge a lot, apparently.

I think that Science's interests are best served by Open Access publications because scientists write for the general progress and other scientists of all countries need to have access to the results. Thus, I certainly hope that publishers will make rates to do this more affordable, as many charge over 800\$US to publish a paper in Open Access. I have made a point of publishing some of my recent papers Open Access journals (where all articles are automatically Open Access), such as *Acta Palaeontologica Polonica* (<http://www.app.pan.pl/issue.html?issue=forthcoming>) and *Contributions to Zoology* (<http://dpc.uba.uva.nl/cgi/t/text/text-idx?c=ctz;cc=ctz;sid=c96a561c070a0a72fe3d3dae14372c8a;tpl=home.tpl>), and I have recently accepted to serve as a specialty Associate Editor of an open access journal, *Frontiers in Evolutionary and Population Genetics*, a specialty section of *Frontiers in Genetics* (http://www.frontiersin.org/evolutionary_and_population_genetics/about).

If you want to learn more about me and the various journals that I am involved with, just follow the link to my home page (http://tolweb.org/notes/?note_id=3669) or my online CV (http://tolweb.org/notes/?note_id=3671).

Best wishes,

Michel Laurin

Mike Taylor's letter:

Thank you for extending the deadline for comments on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research. The Research Works Act has only very recently come to the notice of scientists, and it is because of this extraordinary proposal that it is now apparent to us that we need to reaffirm what we thought was settled: that OF COURSE scientific work funded by the public should be freely accessible to the public. I do not understand how this can even

be a matter for discussion. The public pays: the public should benefit in every way possible.

The language in the RWA is highly misleading, attributing to publishers far more input into the scientific process than they really have. The truth is that scientists (often funded by public money) provide the underlying research, the writing and the figure preparation that result in a manuscript submitted for publication. Other scientists then provide the editorial services and (contra publishers' claims, as can be easily verified) the peer review. Publishers' contributions are limited essentially to typesetting, the provision of web hosting, and sometimes a very limited amount of compensation for senior editors only (usually not the handling editors who actually deal with authors' works). The notion that such a minor contribution should suffice to hand publishers, rather than the public, the right to determine how, where and under what regime the resulting works are disseminated, is ludicrous. It would be laughable if it were not so iniquitous.

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UMR 7207
Muséum National d'Histoire Naturelle
Batiment de Géologie
http://tolweb.org/notes/?note_id=3669

From: Mark Venable
Subject: Opposed to Research Works Act, H.R. 3699
Date: January 10, 2012 10:19:52 AM EST
To: publicaccess@ostp.gov

I am a professor doing research in the area of biofuels. I also teach students in Biology who are training for careers in biotechnology or medicine. Access to research information is critical as we try to move forward and solve problems. Publishers seems to be simply trying to make as much money as possible on the information dissemination process. This surprising considering the role they play.

Scientists come up with the ideas for how to use science to make progress.

Government agencies, corporations (not publishers) and private foundations pay for the research. Universities and corporations (not publishers) provide the space where the work is done. Researchers analyze and write up their work and submit it to publishers who send it out to others researchers to review the research and the text. When the article is accepted it goes back to the publisher, that runs it through programs to edit and format it and then send it back to the researchers to make sure they did not make any mistakes in the process. The publishers then put them together into a journal issue and in many cases charge the researchers page charges, etc to do so.

I really do not think that this role publishers play affords them any special rights to the information. Publishers should facilitate not bog down research.

Please do not support this legislation.

Thank you

Mark E. Venable, PhD

Professor

Biology Department

Appalachian State University

"Be the change you want to see in the world"

Hello,

in response to the RFI on "Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research":

(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 publicly 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?

The first step to growing the intellectual market is to allow publications to be distributed and easily read by those who are interested. Today, this primarily means making scientific papers readily available on the Internet.

Policies that encourage making data and results freely available will be highly beneficial. These might include clear statements that paying open access publication fees are allowable budget expenses, while charges for journals that are not open access are not allowable expenses.

The costs are to develop new business models for publishing scientific papers. The model of journal subscriptions may no longer be appropriate for the Internet age.

(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?

It is not clear to me what the intellectual property interests of publishers are, as they are generally not the originators of scholarly information. On the other hand, it is clear that they have legitimate financial interests, and part of the way they have traditionally made profit is by requesting scientist to transfer their intellectual property rights. Thus, it is very important that we keep distinct profit motive and intellectual property particularly with regard to publishers.

(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?

Managing public access to research results is largely a solved problem. The ability to find new research findings has never been better. Federal agencies might want to retain copies of published content for their own internal bookkeeping, but there isn't a clear reason to think that this is a preferred solution to archiving the scientific literature.

(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?

Perhaps one of the best examples of a public-private relationship that has expanded our ability to get to existing archives has been Google Scholar. There, it was important that publishers digitize their archive and make it machine searchable.

(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?

Encouraging scientists to publish data sets, particularly large data sets, in a readily downloadable electronic format would be useful. Perhaps one of the important pieces of metadata would be as simple as an identifier that would never change, similar to DOI numbers for publications. That way, even if the location of the archive changed, the archive would still be identifiable and findable.

(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?

Policies that would prohibit agencies from requiring public access, such as the current proposed 'Research Works Act' (HR3699), are **not helpful**. Simply put, it is not up to the federal government to protect the business plans or profit margins of scientific publishing companies. However, I do recognize that the publishers are relevant stakeholders which is why I'd support policies that make some modest, reasonable accommodation to the interests of publishers. For example, a short time when a modest payment is required to read a scientific article before making it freely available seems perfectly reasonable to me.

Ultimately, though, we're going to benefit by making scientific knowledge readily available to anyone who wants to read it. This is the direction that should be encouraged.

(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?

Yes. Scholarly research is scholarly research.

(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?

Ideally, immediately. That said, I recognize that exclusivity is a primary mechanism by which publishers have maintained profit. Thus, a short period of embargo, followed by complete open access, is currently an acceptable compromise until new business models are developed. I do not however have any empirical research to support my recommendation.

--
Zen Faulkes
Department of Biology
The University of Texas-Pan American
<http://doctorzen.net>



Mershon Center, The Ohio State University, 1501 Neil Avenue, Columbus OH 43201-2602 USA

January 10, 2012

TO: Office of Science and Technology Policy

FROM: American Folklore Society

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

The American Folklore Society (AFS), the 2,000-member and subscriber learned society for the field of folklore studies, supports the response to this RFI adopted and submitted by the Association for Computers and the Humanities (ACH).

The Executive Board that governs the AFS shares the ACH view that the humanities must be included in federal research policy. AFS has consistently adopted policies designed to further public access to folklore research, most notably through our collaboration with Indiana University on the Open Folklore project (www.openfolklore.org) and our adoption of an author agreement for our quarterly *Journal of American Folklore* that is consistent with best practices for "green" open access.

Thank you for the opportunity to make these comments.

Sincerely,

A handwritten signature in black ink that reads "Diane E. Goldstein".

Diane E. Goldstein
President

Subject: The Research Works Act is intolerable

Date: January 10, 2012 11:12:01 AM EST

Dear Office of Science Technology and Policy,

I write as a concerned scientist who has only very recently become aware of the Research Works Act. You will note that I am not based in the USA (but the UK): nevertheless, I feel that the implications of this Act transcend national borders, since all of us who use the technical literature, wherever in the world, benefit from publicly-funded, open-access literature. We benefit by being able to access research that is germane to our own interests, but we also benefit in that the open-access dissemination of published research is a tremendous boon to the sum total of human knowledge. I am truly appalled that some publishers are seeking to restrict public access to publicly funded research simply because they wish to increase the already enormous profits than they receive. Indeed, the fact that this is such a profit-driven Act should immediately result in its rejection from consideration.

The argument from the publishing houses is that they deserve a special right to the profits made by federally funded research since they add special value to the publishing process. I regard this as laughable since I have worked for some years now as an associate editor for Elsevier and thus have a very good understanding of the inside process involved in academic publishing. I can state without exaggeration that the publishers actually do the absolute minimum amount of work required in the process - the real work (editing, reviewing and handling) is done by scientists who are either unpaid by the publishers, or receive a small compensation for their efforts (a compensation that is certainly not in keeping with the profits made by Elsevier, Wiley and other academic publishing companies). I have recently resigned from Elsevier.

In short, I am offended by the idea that someone would honestly propose something as vile and profiteering as the RWA, especially given that it concerns publicly funded research, and I reject the suggestion that publishers somehow 'deserve' special financial rights to the work they publish.

Thank you for your time in considering this email.

--

Dr Darren Naish
Ocean and Earth Science
National Oceanography Centre, Southampton
University of Southampton
Southampton SO14 3ZH
UK

Subject: RFI: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research

Date: January 10, 2012 11:23:15 AM EST

Dear Science and Technology Policy Office,

Thank you for extending the deadline for comments on Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research. The Research Works Act has only very recently come to the notice of scientists, and it is because of this extraordinary proposal that it is now apparent to us that we need to reaffirm what we thought was settled: that OF COURSE scientific work funded by the public should be freely accessible to the public. I do not understand how this can even be a matter for discussion. The public pays: the public should benefit in every way possible.

The language in the RWA is highly misleading, attributing to publishers far more input into the scientific process than they really have. The truth is that scientists (often funded by public money provide the underlying research, the writing and the figure preparation that result in a manuscript submitted for publication. Other scientists then provide the editorial services and (contra publishers' claims, as can be easily verified) the peer review. Publishers' contributions are limited essentially to typesetting, the provision of web hosting, and sometimes a very limited amount of compensation for senior editors only (usually not the handling editors who actually deal with authors' works). The notion that such a minor contribution should suffice to hand publishers, rather than the public, the right to determine how, where and under what regime the resulting works are disseminated, is ludicrous. It would be laughable if it were not so iniquitous.

Dr. Christopher Schommer-Pries
C. L. E. Moore Instructor
Department of Mathematics
Massachusetts Institute of Technology
Cambridge, MA 02139

Response of **Raymond E. Spier**, Emeritus Professor of the University of Surrey, UK to the “Request for information on the Public Access to Peer-Reviewed Scholarly Publications resulting from Federally Funded Research.

Organisation: The Spier Partnership: 6 Parklands Place, Guildford, Surrey, GU1 2PS, UK

January, 10th, 2012

By way of introduction, the qualifications of this author and editor that enable him to contribute to this enquiry consist of:

He was the founder and Editor in Chief of the peer-reviewed journal “Vaccine” for some 28 years beginning in 1983.

He is the founder and Co-Editor in Chief of the peer reviewed journal “Science and Engineering Ethics” since 1995.

He was the originator of the European Society for Animal Cell Technology in 1975

He was the originator of the International Society for Vaccines in 1995

He is presently:

Past President of the International Society for Vaccines

Vaccine Series Editor in Chief

Reviews Editor for Vaccine

Editor in Chief of Procedia in Vaccinology (Web-based, not peer reviewed)

Editor in Chief of the peer reviewed and Web-based journal called Trials in Vaccinology

Principal of the about-to-be-launched Web-based information and Vaccinologists support facility called VaccineOrb

He was a Professor of Microbiology for 12 years and a Professor of Science and Engineering Ethics for 7 years at the University of Surrey, UK.

Presently, he is an Emeritus Professor of Science and Engineering Ethics of the University of Surrey, UK.

He is formally qualified in Chemistry, Biochemistry, Chemical Microbiology and Biochemical Engineering, and has Fellowships with the UK Institutions of Biology, Chemical Engineering, the Royal Society of Medicine, the Royal Society for Arts and Manufactures and the American Association for the Advancement of Science.

He presently enjoys a contractual relationship for his editorial and consultancy services with the publishers Elsevier and Springer

Response to the Request for Information.

In seeking to expand access to the latest breakthroughs in the area of vaccines and vaccination Elsevier has:-

Launched two new web-based and openly accessible journals

Procedia in Vaccinology

Trials in Vaccinology

Is about to launch a web-based facility called “VaccineOrb” which will include such nodes as:-

Events

Partnerships

Manufacturers

Experts

Jobs

Glossary of Terms

Acronyms

Vaccine Channel Webcasts

Trials in Vaccinology

Procedia in Vaccinology

Vaccine Table of Contents Page (with abstracts)

Views of the Vaccinologists

Latest Patents

Conferences/Congresses/Symposia/Workshops Calendar

Vaccine Safety (Brighton Collaboration)

Vaccine Safety Quarterly

About us

People

Mission statement/editorial Vaccine Alert Service

News and breaking events/ reports

Top Cited Papers

Hottest Articles

Just Published

Resource Centre

Publications

Contacts

Suggestions

Links

It is hoped at some future date to provide web-based courses in Vaccinology that may be freely available to students in the Developing World so that they may be able to invent and

make vaccines that will enhance the health and well being of their indigenous populations of humans and animals.

To underpin the above efforts in publication and information dissemination Elsevier, in conjunction with the International Society for Vaccines, has been active in setting up an Annual Global Congress for Vaccinologists and in supporting local Regional Congresses in the same area – the first such was held in Abu Dhabi in November, 2011.

It is clear that Elsevier is mindful of its role in collecting and disseminating the results of research in a way that constitutes a public good. This publisher takes risks when it funds the publication of a new and untried journal and its day to day commitment to the well being of its journals is a hallmark of its approach to its task. Its commitment to success in these activities is spurred on, not only by financial considerations but also by a sense of mission in being a catalyst for progress and improvements in the well being of humans, animals, biota in the round and the planet.

While the Elsevier journals make reports of research and experimentation available to the research community it should be noted that data and information that is used to progress a Patent application does not generally go through the open access journal system until the Patent has been accepted and published. It should also be noted that in writing a Patent patentees are required to give a full description of their purported invention. In so doing the precise conditions of a method are provided as a “within the range...” designation which may delay the direct implementation of the method as and when the protected period of the patent is exceeded.

Presently we have a system of journal publications that are available to those with a “need to know”. They exist in repositories in libraries and journal collections. Many such journals become freely available on the Web after a period of 6 to 12 months. They are also made known to those who need such information via sophisticated search engines such as ScienceDirect, Sirius, SpringerLink, and, very often, a straight “Google” search will yield the required data. Also there is the area of the public access journals such as the PLoS, PubMed and Wikipedia. That such collections of information exist make the searching of the available literature practical. It will remain for the individual researcher to work out how to use the mass of data, information, papers and documents it is possible to cull from the vast repositories of information that are presently available and accessible. That they will be used mainly by

people in the field is necessitated by the requirement for expertise in the search and analysis processes. It cannot be reasonably expected that members of the general public would either wish to, or need to, use the masses of information that are generated and deposited in accessible form on a daily basis.

It should be a matter of concern that this wealth of data and information needs to be protected against all forms of destructive agencies.

Malfunction or malevolent manipulation of this enormous data base of articles and reviews has to be countered. The effects of magnetic storms emanating from the Sun as well as the radiation from discharged nuclear weapons have to be taken into account when engineering storage and retrieval systems for the “knowledge of the world”. We have to guard against the redundancy or incompatability of the software that enables access to the existing repository and the material stored in the future – we must make sure that however the data is stored, its accessibility in 100 or 1000 years from now must be secured. This will require the multiplication of storage systems, methods, locations and protective devices.

Publishers would take the view that, for legal reasons, they require the copyright of all the material they publish. This protects their intellectual property. This is a different form of protection than Intellectual Property Rights (IPR) measures. Generally, publishers respect the need of authors for private publication of limited numbers of copies for teaching purposes. They are less willing to let authors use copyright papers for publicity or public relations purposes.

Clearly, information and data generated as a result of the expenditure of Federally derived monies are not in the same category as the same kind of material from commercial, charity, foundation or private funding sources. There is a sense of obligation to make such information readily available to any *bona fide* member of the society. But this clearly does not pertain for work that is commissioned in the area of the military or in areas that may cause diplomatic unease. Indeed, work that impinges on the political sensitivities of elected representatives or civil servants (government employees) may also be deemed subject to restricted distribution orders. Police and criminal/legal matters can also be considered in this light also.

There is presently much work that is effected throughout the research community on the Responsible Conduct of Research (RCR) much of which is published in the journal Science and Engineering Ethics. The US government has set up the Office of Research Integrity (ORI) to oversee

the integrity of the science output and to adjudicate on disputes that arise from contentions of “Scientific Misconduct”. While there are many facets of the peer-review process that impede the publication of outstanding works (lack of understanding of a new paradigm, competitiveness of reviewer or jealousy) I have generally found, from some 30 years of handling peer-reviewed papers, that the reviewers bring to the area a careful and considered response that mostly leads to an improvement in the quality and impact of a paper. The mechanics of soliciting and receiving reviews and their dispatch to authors with the subsequent receipt of a revised manuscript is a highly refined operation often dependent on sophisticated software that takes all possible circumstances into account.

Clearly, any changes to the present system has to depend on the development of a consensus between all the interested and involved parties.

From: Joseph Greene
Subject: Support Open Access to scholarly and scientific research
Date: January 10, 2012 11:55:18 AM EST

Dear OSTP,

I would like to add my support to the calls for the expansion of the NIH public-access policy to other federal science and technology agencies and Open Access to scholarly and scientific research in general, especially research that is publicly funded. I am a US citizen currently working in higher education outside of the US.

Firstly I would like to point out that requiring works to be made Open Access by funding bodies and research institutes is the *only* proven method of guaranteeing more than 15%-20% of scholarly and scientific research being made Open Access, which significantly increases the research impact of those publications [1][2].

Secondly, as the Open Access repository manager at the largest university in the Republic of Ireland, University College Dublin, I would like to offer a few concrete examples from my own experience that illustrate the importance of Open Access to research:

The research/industry link

- **Review of long seabed samplers and criteria for new sampler design[3]**
was downloaded 510 times in November. Server log analysis shows that the paper was first found via a Google search, downloaded a second time ten minutes later, then over the course of the next half hour was downloaded a total of 499 times. The downloads all originate from a large environmental instruments and systems company in the UK. Two days later, the item was found via Google with different search terms and downloaded several times by an onshore/offshore equipment company in Indonesia. The paper was uploaded one month previously.

Universities in need of access

- **Electronic properties of F/Zr co-doped anatase TiO₂ photocatalysts from GGA + U calculations[4]** was downloaded 992 times in June. Server logs show a similar pattern to the previous example; the item was downloaded once, twenty minutes later was downloaded again, and for the next hour was downloaded 980 times. Though the agent and referring site data were concealed, we can determine that all of the downloads originated from a large university in Iran.
- One third of the downloads of UCD's Open Access research originating from Ireland are within UCD's IP range. UCD has access to millions of euro worth of databases and electronic journals, and yet it is the fourth highest consumer of its own Open Access collections.

Open Access in teaching and learning

- **The last major Irish bank failure : lessons for today?[\[5\]](#) and Moral hazard and quasi-central banking : should the Munster Bank have been allowed to fail?[\[6\]](#)**, saw a spike in downloads in late October to mid-November (212 and 251 downloads, respectively). We contacted author, a professor at UCD, and he responded that he had made an assignment asking students to compare the failures of the Munster Bank with the more recent case of the Anglo Irish Bank. More than one third of the downloads came from within UCD's IP range.

Scholarly research for use by the public

- On 15 December, 2011, tropical storm Washi made landfall in the Philippines. **Effect of rainfall intensity on infiltration into partly saturated slopes[\[7\]](#)** was downloaded 484 times on 17 December from an IP address corresponding to a 3G network in nearby Indonesia.

These few examples can only highlight the kind of use being made of items in the repository. They are more obvious because of the notable spikes in downloads; we can only imagine the long-tail effects of the other tens of thousands of downloads at our repository.

With kind regards,

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[1] Gargouri Y, Hajjem C, Larivière V, Gingras Y, Carr L, et al. (2010) Self-Selected or Mandated, Open Access Increases Citation Impact for Higher Quality Research. PLoS ONE 5(10): e13636. doi:10.1371/journal.pone.0013636

² Sale A (2006) The acquisition of open access research articles. First Monday 11(9). Available: <http://eprints.utas.edu.au/388/>.

³ Marine Geology, 226 (1-2): 145-165 <<http://hdl.handle.net/10197/3100>>

4 Chemical Physics Letters, 498 (4-6): 338-344 <<http://hdl.handle.net/10197/2789>>

⁵ UCD Centre for Economic Research Working Paper Series, WP 10 38.
<<http://hdl.handle.net/10197/2672>>

6 Dickson, David and Ó Gráda, Cormac(eds.). Refiguring Ireland : essays in honour of L.M. Cullen. <<http://hdl.handle.net/10197/441>>

7 Geotechnical and Geological Engineering, 26 (2): 199-209

<<http://hdl.handle.net/10197/3104>>

- [1] Gargouri Y, Hajjem C, Larivière V, Gingras Y, Carr L, et al. (2010) Self-Selected or Mandated, Open Access Increases Citation Impact for Higher Quality Research. PLoS ONE 5(10): e13636. doi:10.1371/journal.pone.0013636
- [2] Sale A (2006) The acquisition of open access research articles. First Monday 11(9). Available: <http://eprints.utas.edu.au/388/>.
- [3] Marine Geology, 226 (1-2): 145-165 <<http://hdl.handle.net/10197/3100>>
- [4] Chemical Physics Letters, 498 (4-6): 338-344 <<http://hdl.handle.net/10197/2789>>
- [5] UCD Centre for Economic Research Working Paper Series, WP 10 38. <<http://hdl.handle.net/10197/2672>>
- [6] Dickson, David and Ó Gráda, Cormac(eds.). Refiguring Ireland : essays in honour of L.M. Cullen. <<http://hdl.handle.net/10197/441>>
- [7] Geotechnical and Geological Engineering, 26 (2): 199-209 <<http://hdl.handle.net/10197/3104>>

Dear Science and Technology Poicy Office,

I agree with the sentiment that the results of publicly-funded science should be available to the public. However, the Research Works Act does not help to further this goal; instead, it makes it more difficult, by preventing many researchers from disseminating their work in the most efficient and cost-effective manner.

I'm an astronomer at the Rochester Institute of Technology, in Rochester, NY, and I've published many papers, many of which involved federal and state funds. The fastest and easiest way for me to present my results to my peers and to the general public is via on-line avenues such as [arXiv.org](http://arxiv.org/)

<http://arxiv.org/>

or the Public Library of Science

<http://www.plos.org/>

My colleagues and I perform the research, write the papers and carry out the peer review. I have never received any compensation for the many papers I have reviewed. There is no need or any reason to give the publishers any control over the dissemination of our results.

Please reject the Research Works Act.

Michael Richmond
Professor
Physics Department
Rochester Institute of Technology



January 9, 2012

As Executive Officer of the American Sociological Association (ASA), I appreciate the opportunity to respond to the Office of Science and Technology Policy's (OSTP) November 3, 2011 *Federal Register* notice (2011-28623) on "Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research."

The American Sociological Association

ASA, founded in 1905, is a non-profit membership association dedicated to advancing sociology as a scientific discipline and profession serving the public good. With over 14,000 members, ASA encompasses sociologists who are faculty at colleges and universities, researchers, practitioners, and students. About 20 percent of our members work in government, business, or non-profit organizations. ASA hosts an Annual Meeting with more than 6,000 participants and publishes nine scholarly journals that are among the most selective in our discipline.

ASA's publication of these nine scholarly journals is central to our mission of advancing sociology as a scientific discipline and promoting the contributions and uses of sociology to society. Government requirements for mandatory free access to the final copy of articles published in our journals could diminish this mission because it does not recognize the significant financial costs the Association incurs to support our editorial process, including peer review and editing. If the financial stability of our scholarly journals and others in the social and behavior sciences is damaged through free public access, it could threaten the ability of scholarly societies, including the ASA, to continue publishing journals, much less expand in areas of scientific growth.

Responses to issues raised in the Federal Register request for comment

The need for free federal repositories. It remains unclear why the federal government should spend scarce taxpayer dollars appropriated for scientific research to add to existing dissemination avenues. This is what scientific societies such as the ASA and our private sector publishing partners have done for over a century, and continue to do extremely well today. The national and international marketplace demonstrates that non-profit and profit-making scientific publishers in collaboration with scholarly societies have responded vigorously and competitively to expand access to scientific

knowledge as new demands for content and sophisticated communication technologies have emerged. This success suggests that federal science agencies should invest taxpayer dollars in the research itself, especially as federal dollars that support scientific innovation fail to keep up with the pace of research.

Non-profit and profit-making publishers who collaborate with scholarly societies such as the ASA are growing new markets around the world as developing economies become more robust and their societies need the products of science. Making U.S. scientific societies' content available worldwide at no cost is likely to stifle our expansion as journal subscribers choose to access free versions of journal articles rather than pay for the Version of Record. This will dry up ASA's only source of revenue to support our peer review and publication program as well as make it difficult for us and our publishing partners to utilize the newest communication technology. We all know that there are businesses across the world already engaged in the wholesale commercial *selling* of free PubMed Central content, which largely consists of content published in scientific journals. The requirement that NIH-funded studies be made available for free on PubMed coupled with the fact that businesses are repackaging and selling the articles deprive scholarly societies of our ability to generate necessary revenue from our copyrighted content. It seems extremely unclear how U.S. taxpayers benefit from the free transfer of intellectual property owned by U.S. not-for-profit scientific societies to businesses and governments in the developed as well as less-developed world.

There are no empirical studies that I know of which support the notion that free access to the scientific research literature will increase research productivity or economic growth in the United States.

The contributions of scientific societies as publishers. Our nation depends on a system of scientific research communication that provides strong quality controls as well as broad access. The ASA and other scholarly societies are the custodians of this system because of the essential role we play in assuring the quality, dissemination, and permanent preservation of scientific knowledge. No one who is knowledgeable about science and its value to our society disputes the centrality of scientific peer review as the standard for assuring quality science.

ASA invests significant resources in the management of the peer review process through financial support of the editorial groups who review, edit, and manage the selection of submitted articles for publication in our nine journals. Managing the peer review and editing of social science research papers is an expensive undertaking that requires a considerable financial commitment. ASA spends nearly \$600,000 annually on journal editorial office expenses alone (which does not include administrative costs, printing and mailing expenses, editor honoraria, legal or overhead costs). ASA does not pay peer reviewers, but in return we sacrifice some revenue by a long-standing policy of keeping our university library subscription prices low (averaging well under \$300 in 2011) in

explicit recognition of the contribution university faculty make as peer reviewers, editors, and editorial board members.

The high cost of scientific publication in the social sciences. Independent audits of *social science* journals have shown that per-article costs are far higher than in the natural and bio-medical sciences. (See report at http://www.nhalliance.org/bm~doc/hss-study_press-release.pdf.) One reason is that social science articles are significantly longer; another is the nature of peer reviewing in the social sciences. Our scholarly societies view peer review of submissions to our journals as part of the professional development of our scholars who submit manuscripts. Therefore, our journal editors return to authors multiple, lengthy written reviews whether the manuscript is accepted *or not accepted* for publication. Peer reviewers' extensive comments are used by authors and our journal editors to edit accepted articles for final publication. Peer reviewer comments are also used by authors of rejected articles (or those asked to revise and re-submit) to improve their manuscripts for resubmission to the same journal or to another social science journal. This pedagogical function is not common in the natural sciences.

ASA makes ongoing capital investments and incurs significant operating expenses in carrying out the value-added activities that identify the scholarship we publish as quality science and make it widely available electronically. These are not now paid for by taxpayer dollars; but in a free public access world, federally-funded and non-funded social science researchers will have to find the resources to pay to have their scientific contributions published in our peer-reviewed journals. This is already happening in some journals and social scientists are unhappy about the costs. In the social sciences, it is likely that the costs of a free open-access publication will be borne by the authors' universities, scholars themselves, or, in some cases, larger federal research grant requests. None of this is desirable for obvious reasons: universities should not be in the position of picking and choosing which science/scholars to subsidize; scholars with limited resources should not be left outside the scientific publication process; and federal funders should not have to add dollars to research grants to cover dissemination. It is hard to see how any process with these characteristics advances scientific knowledge building in the U.S.

The problems with free federal access to journal content. There are no "appropriate" universal embargo periods for free federal government copies of research publications that protect the current financial support of scholarly publications at least in the social sciences because research in different disciplines (and even subfields) have different useful life spans. Articles published in the ASA's nine journals, for example, have documented citation half-lives of over 10 years. Free electronic access of peer-reviewed content, regardless of the embargo period, is likely to significantly impact ASA's ability to continue publishing nine sociology journals, much less develop new journals in currently underserved areas of scientific research. Over time, free public access to our journal content is likely to seriously erode and eventually jeopardize our financial ability

to perform the critical, value-added peer review and editorial functions of scientific publishing because, at this time in the social sciences, there is no viable alternative to library subscription income as a means of recovering our costs.

In sociology, as in other social sciences, the federal government often provides grant support *for only part of the research costs* that go into a single scientific study (and it is often only a *small* part). The federal government can and should claim on behalf of the taxpayer the research reports submitted to the government agency as a result of its grant-making; but the federal government should not lay claim to final peer-reviewed, edited scholarly publications based on these studies for which the ASA pays. It should also not lay claim to copyrighted scholarship that is published years after the conclusion of the federal grant just because the author uses some data from a federal grant made years previously. *This situation is extremely common in the social sciences.*

Long-term retention of scholarly content carries significant costs that are already being borne by scholarly publishers and will continue to be. In an era of dwindling federal resources, federal repositories not only do not contain the Version of Record, but they are also a recurring financial burden that may not be sustainable for long-term stewardship of this content. *ASA is a scholarly society that is over a hundred years old. It is, has been, and always will be, our organizational responsibility to the discipline of sociology to maintain permanent access to all scholarship published in our journals.* As a scholarly society, we must protect the scientific knowledge that has been placed in our care by scholars who transfer copyright for the Version of Record to us for that purpose. We cannot abandon this responsibility even if the federal government creates repositories.

How the federal government could be helpful. OSTP could encourage federal science funding agencies to make freely available electronic copies of all products of taxpayer-funded research submitted to the government, including final grant reports (or other reports that contain research knowledge), as well as databases collected under the grants (as, for example, the National Institute of Justice has done for decades). The ASA and our publishing partners would be open to finding ways to link that type of content to relevant published literature.

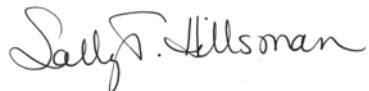
If OSTP has evidence that there are scientific audiences that do not have access to the published scholarly literature, the federal government could make funds available to purchase access for them. ASA provides such subsidies for our journals both through our publishing partners and by providing free electronic journal access to ASA members who reside in economically disadvantaged countries. Several research funders already do this including the Howard Hughes Medical Institute, The Wellcome Trust, and the Max-Planck Institutes.

ASA is dedicated to the widest possible dissemination of our publications that contain social science research. Wide dissemination benefits ASA members, the discipline of

sociology, policymakers, and the public at large. We already publish some ASA documents for mobile devices, and we are working with our journal publishing partners to develop and include appropriate metadata in our journals, such as: (1) standardized identification of federal and other funding agency information; (2) DOIs for related datasets (and supplementary information); and (3) unique author and institution name identification (e.g., the Open Researcher and Contributor ID Project (ORCID)). There may be ways in which OSTP could be a productive collaborator in this important dimension of the electronic publication of scientific knowledge.

Conclusion. The ability of the ASA to recoup our significant ongoing investments in peer reviewing, selecting, editing, publishing, and archiving scholarly journal content enables us to develop and use innovative new infrastructure (including archives and metadata) and approaches to communication. But we will not be able to continue publishing nine scholarly journals and add journals in new areas of science without the revenue that sustains our publishing program. To date, no one has found a *viable* financial alternative to subscription income. Anything that undermines this revenue source will hurt scientific communication in sociology and other social sciences.

Thank you again for the opportunity to provide OSTP with input.



Sally T. Hillsman, PhD
Executive Officer

Subject: Comment on RWA, HR#3699

Date: January 10, 2012 2:20:16 PM EST

To: publicaccess@ostp.gov

The President should commit to vetoing RWA if it reaches his desk in anything approaching its current form.

RWA amounts to giving publishers like Elsevier Letters of Marque to serve as privateers, pillaging the public of things (federally-funded research) they (the public) have already paid for. The publisher value-added is minuscule. As a half-owner of a Mom and Pop consulting firm, the results of government research are an important resource for the work we do.

The President needs to decide, finally, whether he is on the side of the rent-seeking, campaign-funding 1% or on the side of the public.

James S. Dukelow, Jr.
Benton City, WA

10 January 2012

White House Office of Science and Technology Policy Request for Information on public access to peer-reviewed scholarly publications resulting from federally-funded research.

RESPONSE from: The Oberlin Group of Libraries

We appreciate the opportunity to provide comments on this important issue. The Oberlin Group of Libraries is a consortium representing 80 libraries of selective liberal arts colleges (see <http://www.oberlingroup.org/>). Our institutions are critical training grounds for young scientists, innovators, and entrepreneurs; we help fill the pipeline for graduate-trained scientists and inventors. According to the National Science Foundation, more than half of the top 50 baccalaureate institutions that produced Science & Engineering doctoral recipients from 1997 to 2006 were baccalaureate colleges (after normalizing for number of bachelor's degrees awarded 9 years earlier). Our institutions – the so-called “Oberlin 50” – have been cited as having particular importance in producing doctoral candidates (see <http://www.nsf.gov/statistics/infbrief/nsf08311/>). Our curricula are based on inquiry in laboratories, field stations, and other primary research materials – including the peer-reviewed reports of federally funded research under discussion here – and not primarily on textbooks. Our faculty publish sponsored research in collaboration with their undergraduate students. However, our schools do not receive the level of research funding available to larger institutions. Our faculty and students require access to cutting-edge research reports and data to assure they remain current with research in their fields and learn current science as science is actually practiced.

In these comments, we recommend that peer-reviewed published articles reporting research funded by any U.S. government agency be required to be freely available on the Web, in full, to all readers, no later than 12 months after publication, with full rights of re-use for text mining, data mining, computing, and creation of derivative works, without commercial restriction.

All of the references in our answers are openly accessible on the Internet.

Respectfully submitted on behalf of The Oberlin Group by:

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Richard Fyffe

Samuel R. and Marie-Louise Rosenthal Librarian of the College
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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?

Immediate free access to federally funded research will maximize both educational and commercial potential. These papers should be searchable through open repositories (if there is more than one federal repository, then the policy should mandate interoperability; see our answers to question 5). Access should be free of charge and should include a broad range of re-use rights so that users can build on and innovate from the research that they find.

Providing open access to federally funded scientific and scholarly research reports – including full rights to re-use or mine these reports – allows more users to stay abreast of cutting-edge ideas, access these ideas quickly, and generate new uses and applications from this research, speeding the launch of new services and products into the marketplace and energizing the economy. Moreover, open access levels the educational playing field for teachers and students alike, helping teachers at both the high school and college levels stay current with their fields and giving students a more direct look at science as it is practiced, complementing the syntheses presented by textbooks. Open access also levels the economic playing field, giving new and established enterprises equal opportunity to compete.

We urge full open access as the norm: free, immediate access with full rights of re-use. Restrictions on access or on use simply reduce the return on taxpayer investment – whether that return is in the

education of new researchers or the entry of new products and services into the marketplace. We see the current NIH mandate as a good first step in this direction, one that matters to our faculty and students who routinely use PubMed Central and Google Scholar as research tools, in addition to benefiting research scientists, businesses, and private citizens. A good example of open access usage can be found in the testimony before Congress in 2011 given by the Director of the National Center for Biotechnology Information, who noted that in the previous year “99% of the articles in PubMed Central were downloaded at least once, and 28% were downloaded more than 100 times,” and that 17% of the users are from companies and 40% from personal Internet accounts (not universities or government) (see <http://www.hhs.gov/asl/testify/2010/07/t20100729c.html>).

Moreover, the NIH mandate appears to have spurred development of new services like the Public Library of Science journal suite and BioMed Central journals. As a for-profit publisher of open-access journals, BioMed Central makes a particularly interesting case study. Research papers in BMC journals are freely available via the Web, and copyright is retained by authors (for federally funded research papers we recommend instead that authors be required to release full rights for re-use). BMC sells value-added products and services that take advantage of these open-access publications, but those products do not impede access to the research papers themselves for non-customers. BMC's business model was sufficiently successful that Springer, a major STM publisher, acquired it in 2008. We think that to unlock the whole value of federally funded research, the NIH mandate needs to be extended to all federal funding agencies and expanded to release full rights of re-use.

Finally, we note that an openly accessible database of research papers can itself become the target of innovative commercial or not-for-profit services that analyze, select, or present the results. Increasingly, scientific research depends on computer-based mining of text, data, and other digital information – but the mining can be only as productive as the lode is rich: full open access ensures both the availability of the right information to these analyses and a properly competitive position among the researchers.

(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?

The purpose of copyright is to “promote the progress of science and useful arts”. In considering intellectual property protection, it is important to be clear about the different kinds of intellectual contribution made by the various participants in the research and publication chain, and to reward them according to their value (we are specifically addressing copyright here, and not patents or trademarks). Scientists and other scholarly authors are the primary creators of the intellectual property in research articles, and these researchers are rewarded through the institutions that support them rather than through direct payment or royalties on sales. The interests of these authors are best advanced through wide dissemination of their work, as attested by the numerous studies that show that open access to scholarly articles increases the pace and number of citations by other researchers (see, *inter alia*, Eysenbach, G. 2006. Citation advantage of open access articles. *PLoS Biology*, 4(5), 692-698.

Available as an open-access article at

<http://www.plosbiology.org/article/info:doi/10.1371/journal.pbio.0040157> (accessed 16 Dec. 2011)).

In this respect, scholarly authorship is special, and copyright is not the best policy tool to create incentive for innovation. Ensuring wide distribution, the authors' right of attribution, accurate quotation, and the authors' ability to measure and report on the quantity and type of use of the work – rather than protection against copying – best secure their interests.

The contributions of publishers are important, too, but those interests should not overshadow the interests of their authors. We recognize that limited periods of embargo – during which use-rights might be limited to fair use – may be necessary to reward publishers for their investments. As we note in our answer to question #1, we urge that after that embargo period, full rights of re-use be granted.

(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?

Repository services for managing and maintaining long-term public access to peer-reviewed scholarly publications from federally funded research require these basic elements: open access, technical interoperability, and long-term stewardship. A centralized repository may be able to enforce these expectations more easily than a decentralized set of repositories. On the other hand, there will be some differences in the practices of the different disciplines funded by the various federal agencies, and a small set of decentralized repositories (each perhaps with its own advisory group) might be more successful in accommodating these differences. Whether centralized or interlinked, this repository structure must be open to commercial search engines like Google Scholar, since even advanced researchers often start there for an information search.

Any repository in this system must also support access and use conditions that allow all interested parties (human and machine readers alike) to read the work, re-use it in ways that respect attribution, and create new services and products on top of this publicly funded information.

The repositories must be able to ensure that the information contained in them will remain fully useable over the long term (decades, not years). Commercial entities are subject to the vicissitudes of the marketplace, and even well-established publishers have not traditionally acted as archivists for their own work (instead, they have relied on libraries to archive their publications over decades or even centuries – Oxford University Press, for example, was established in 1586). Even non-commercial third-party projects are not keeping pace with the quantity of research needing long-term preservation. A recent presentation at the Fall 2011 meeting of the Coalition for Networked Information reported that even the well-established Portico and LOCKSS preservation initiatives preserve only 15-20% of the journals held by Cornell and Columbia University Libraries (“Preservation Status of e-Resources: A Potential Crisis in Electronic Journal Preservation,” <http://www.cni.org/topics/digital-preservation/preservation-status-of-eresources>; accessed 16 December 2011). The funding agencies

themselves should collect the papers and data they sponsor and provide unrestricted access for the educational, research, and commercial sectors to utilize. Federal custody of research papers has proven to be cost-effective: the Director of the National Center for Biotechnology Information testified before Congress in April of 2011 that PubMed Central costs less than 1/100th of one percent of NIH's operating budget (<http://www.hhs.gov/asl/testify/2010/07/t20100729c.html>).

If third-party repositories that met conditions for public accessibility, use rights, interoperability, and long-term preservation of articles were to be approved as the dissemination vehicles for federally-funded research papers, it would still be necessary for the federal government to maintain ultimate custody of these resources, and any third-party contract would have to acknowledge the government's permanent stewardship responsibility.

(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?

The existing stakeholders – higher education, not-for-profit agencies, industry, and government – can all make important contributions to this emerging repository structure as designers, advisers, administrators, and hosts. Members of the Oberlin Group of Libraries believe that research universities represent the best candidates for partnership with federal agencies in ensuring access and preservation for publicly funded research papers (and data). Many of the researchers funded by federal agencies are university faculty who understand and trust their institutions; universities already have sophisticated technology infrastructures; and university libraries have long and successful traditions of working with federal agencies to preserve and disseminate the government's own publications.

We urge, however, that if non-governmental agencies (including universities) serve as hosts to the database of research papers then federal agencies must maintain an open mirror site to ensure ongoing accessibility for the public. Among models of partnerships, we suggest that particular attention be given to ArXiv, the e-print server for Physics, Mathematics, Computer Science, and related subjects, which was started at Los Alamos National Laboratory and later moved to Cornell University (<http://arxiv.org/>), and HathiTrust, an partnership of major research institutions and libraries working to ensure that the cultural record is preserved and accessible long into the future (<http://www.hathitrust.org/about>).

Any partnership should be predicated on clearly articulated standards for access, interoperability, and preservation.

(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?

Descriptive metadata following the Dublin Core standard and the Open Archive Initiative Protocol for Metadata Harvesting (OAI-PMH) should be the core standards for repositories and their contents; they will ensure the greatest interoperability with existing search and discovery systems, including commercial search engines like Google and Google Scholar and commercial indexing and discovery services like Serial Solutions' Summon. NISO and the Library of Congress – each with deep experience in developing and implementing such standards – should be enlisted to ensure that as linked data standards such as the Resource Description Framework (RDF) mature, these standards are reflected in the repository architectures that provide access to federally funded research papers (and data).

In addition, the metadata must carry information about the rights of re-use associated with research papers (and data). These metadata must be both human-readable and machine-readable, to ensure that the papers can be mined for the greatest benefit. We urge that Creative Commons licenses – specifically, the Attribution-ShareAlike 2.0 Generic (CC BY-SA 2.0) license – be embedded in metadata since CC licenses are machine-readable. Maximizing the accessibility of the research corpus and the metadata to machine processing will enhance research and educational use, optimize return on taxpayer investment, and lessen the compliance burden on researchers.

Finally, we recommend that any repository fulfilling a public-access mandate follow the COUNTER standard (Counting Online Usage of Networked Electronic Resources; <http://www.projectcounter.org/>), to ensure that authors, agencies, and the public see download and usage statistics generated in a consistent way (there are many ways to count downloads and accesses – libraries and publishers worked together to develop the COUNTER standard to lessen confusion for publishers and libraries alike). This is a basic step in ensuring accountability.

(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?

Public access provides good value for taxpayers in economic return. We noted in our answer to Question 3 the small percentage of NIH's operating budget required to operate PubMed Central. John Houghton and Peter Sheehan's 2006 working paper "The Economic Impact of Enhanced Access to Research Findings" estimates that "With the United State's [sic] GERD [Governmental Expenditures on Research & Development] at USD 312.5 billion and assuming social returns to R&D of 50%, a 5% increase in access and efficiency would have been worth *USD 16 billion*" (John Houghton and Peter Sheehan, "The Economic Impact of Enhanced Access to Research Findings," CSES Working Paper no. 23, Centre for Strategic Economic Studies, July 2006. Emphasis supplied. Available open access at <http://www.cfses.com/documents/wp23.pdf>; accessed 16 December 2011).

The Oberlin Group of Libraries believes that open-access requirements can be implemented without creating a burden for the stakeholders. The most important factor in keeping that burden low will be consistency of policy and procedures across the funding agencies – different requirements and submission procedures will surely increase complexity and confusion. It will also be important to implement repositories and submission systems that take advantage of automated protocols like SWORDS (<http://swordapp.org/about/>) which facilitate deposit of articles into multiple repositories, schedule the release of embargoed material, etc.

(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?

Journal articles, along with research data (to which the articles should be linked), represent the highest priorities for open access. There would be benefits to open-access release of other kinds of material that result from federally funded research, but the benefits would be smaller and should not distract attention from the primary goal of opening access to journal articles and their research data.

The Oberlin Group of Libraries recommend giving next priority to educational materials, especially materials targeted to the K-12 sector. It would be desirable for book chapters to be released openly as well, but these – unlike journal articles and research data – typically pay royalties to their authors and therefore require a different kind of business model. For such materials, longer embargoes or shorter terms of copyright (with dedication to the public domain at the end of the term) might be in order.

(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?

Immediate access is the best way to leverage taxpayer investment in research for educational, scientific, and commercial progress. Anything short of this withholds value from taxpayers and the larger economy. Even so, we recognize that journal subscriptions are an important source of revenue for publishers and that an embargo period might be necessary to protect them against loss. A period between 6 and 12 months has emerged as a world-wide norm for such an embargo. It's the standard used by NIH (12 months), the Wellcome Trust (6 months), and other major funders (see, for instance, <http://roarmap.eprints.org/>), and it has been adopted by hundreds of commercial and not-for-profit journals (see the list at <http://highwire.stanford.edu/lists/freeart.dtl>).

As librarians, however, we also want to urge that any argument based on anticipated subscription cancellations by libraries be analyzed and tested carefully. Evidence needs to be presented that immediate access would actually cause economic harm. Libraries cancel journals for many different reasons. Among the key reasons are local budget reductions; price and price history (high annual percentage increases are flagged for review and cancellation in many libraries); emergence of new journals that have higher priority for the local academic program; and changes in the local academic or research program. In our collective experience, libraries rarely if ever cancel journal subscriptions based on any single reason, including open-access availability with or without an embargo.

Subject: Research Works Act

Date: January 10, 2012 2:41:08 PM EST

If my tax dollars are used to fund research, I would like that research to be open access. This is just common sense. Please kill this act; denying the public access to research we have *already paid for* is infuriating.

thank you,
Erik Haugen