

OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Compilation of E-Mailed Comments
for Public Access Policy Forum

Part 1

Compiled on February 1st 2010

I am in favor of Open Access after a reasonable time period ... so as to not disrupt current practices and divert research funding to satisfy the needs of only a few researchers that do not have immediate access thru their organization. It costs money to maintain an effective peer review system as shown by responsible society publishers ... such as the APS, ACS, RSC, etc.

Dana L. Roth
Millikan Library
Caltech

Please mandate public access for federally-funded research. The taxpayers are footing the bill, let's see what we're getting. Open access advances research and saves the time of researchers, too!

-Jodi Schneider

I am pleased to have an opportunity to comment:

I am frustrated that research that has been funded publicly (through CDC, VA Administration, etc) is only available online by paying for the service. That means that I, as a taxpayer, am paying for the research and paying again for the benefit of reading it. This seems patently unfair.

The problem for me is exacerbated by the fact that I have limited income. I am on social security disability and a VA disability compensation claim and thus my resources are very limited. I live on about \$30K a year which, while adequate, is not a lot.

In the course of preparing my VA claim there are many articles published by the VA or those working for the VA that can only be viewed by going to a university library collection (for which there is often a charge) or by buying a copy of the article from one of the many publication services that have found a way to make money selling the tax-funded research back to the public (who paid for it in the first place). The price of these articles is not cheap. Often it is in excess of \$20. Given that the service provided for the \$20 is a few minutes access to an existing document. That price seems excessive.

I would hope that some provision could be made for research funded directly by government or conducted by those on the government payroll (e.g. The VA, NIH) could be made available to taxpayers for a small reproduction or download fee.

Thanks again for the opportunity to comment.

John Dowd

Alan I. Leshner, CEO, AAAS
OSTP e-mail comment on Open access to peer reviewed published papers. This includes aside commentary based upon my personal experience with related issues.

SEE ATTACHMENT (MicroSoft Office Word Document)

Michael R. Himes

[**Note:** No document attached]

Dear Sir or Madam,

We respectfully request an extension of the January 7, 2010 deadline for comment submissions. Because of the holiday season, this short time period does not allow for thoughtful responses from the society and scholarly publishers that will be affected by the proposed changes.

Thank you for your consideration.
Sincerely,

Nina Tristani
Director of Publications
American Public Health Association (APHA)

Hello!

I've been working with a colleague (user ID dgraves) to try and help

her post a comment to <http://blog.ostp.gov/2009/12/10/policy-forum-on-public-access-to-federally-funded-research-implementation/>, but haven't had any luck.

Her post is below. She tried Safari, IE and Firefox on Mac and PC, but came up with a blank screen each time, and the post never went through. She even deleted some of the URL strings, but it still wouldn't go through.

I understand she'll be emailing the post to you with a request to make public. In the meantime, would you please advise on these technical challenges?

Thank you!!!

Jennifer

The issue of versions is an important one. While access to the final published version of an article is preferable, access to the authors' peer-reviewed manuscript is an acceptable substitute. It should be clearly identified as such, and include a link to the final published article. Agencies should also follow the practice established by NIH and other research funders of encouraging publishers to replace the author's peer-reviewed manuscript with the published edition if they so choose.

Requiring access to the authors' final manuscript is a common practice for research funders with public access policies. (See <http://www.sherpa.ac.uk/juliet/>). The practice evolved as a mechanism to protect subscriptions and balance the need for journal publishers to earn a return on their investment in the copyediting, formatting and other value-added services that they may put into the final published version.

While some have raised concerns that the author's manuscript may contain errors or omissions that are only corrected during the copyediting process, the reality is that many journal publishers already have programs that routinely provide access to the author's manuscript on their own Web site prior to the journal's publication.

These programs have been in use for years, and frequently cite the faster time to publication as a benefit to scholarly society members as well as to the wider scientific community. . Some examples of publishers in a wide variety of disciplines who do this include:

The American Diabetes Association
<http://care.diabetesjournals.org/papbyrecent.shtml>

The American Geophysical Union
<http://www.agu.org>

The American Meteorological Society
<http://ams.allenpress.com>

The American Speech-Language-Hearing Association
<http://jslhr.asha.org/papbyrecent.dtl>

The Society for Environmental Toxicology and Chemistry
<http://www.setacjournals.org>

The American Physiological Society,
http://www.the-aps.org/publications/articles_in_press.htm

The evolution of Digital Object Identifiers (DOIs) has also provided an industry-accepted standard mechanism to facilitate the identification, location, and linking of electronic articles and manuscripts, as well for components of these articles (images, graphs, etc.) , and is important to consider.

Jennifer McLennan
Director of Communications
SPARC

To the OSTP:

I tried several times to post a comment on the OSTP public access blog yesterday, but was unable to do so. I saw an error note on the website when I used Internet Explorer, which I will reproduce here.
Webpage error details

<http://blog.ostp.gov/2009/12/10/policy-forum-on-public-access-to-federally-funded-research-implementation/>

Rather than continue to fight a balky web page :), I am sending my comments here. If you can post them, please do so; otherwise, please accept my input! Here it is:

The issue of versions is an important one. While access to the final published version of an article is preferable, access to the authors' peer-reviewed manuscript is an acceptable substitute. It should be clearly identified as such, and include a link to the final published article. Agencies should also follow the practice established by NIH and other research funders of encouraging publishers to replace the author's peer-reviewed manuscript with the published edition if they so choose.

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While some have raised concerns that the author's manuscript may contain errors or omissions that are only corrected during the copyediting process, the reality is that many journal publishers already have programs that routinely provide access to the author's manuscript on their own Web site prior to the journal's publication. These programs have been in use for years, and frequently cite the faster time to publication as a benefit to scholarly society members as well as to the wider scientific community. . Some examples of publishers in a wide variety of disciplines who do this include:

The American Diabetes Association

<http://care.diabetesjournals.org/papbyrecent.shtml>

The American Geophysical Union

<http://www.agu.org/contents/journals/ViewPapersInPress.do?journalCode=GL>

The American Meteorological Society

http://ams.allenpress.com/perlserv/?request=get-static&name=papers_appear

The American Speech-Language-Hearing Association

<http://jslhr.asha.org/papbyrecent.dtl>

The Society for Environmental Toxicology and Chemistry

<http://www.setacjournals.org/perlserv/?request=get-toc-aop&issn=1552-8618>

The American Physiological Society,

http://www.the-aps.org/publications/articles_in_press.htm

The evolution of Digital Object Identifiers (DOIs) has also provided an industry-accepted standard mechanism to facilitate the identification, location, and linking of electronic articles and manuscripts, as well for components of these articles (images, graphs, etc.) , and is important to consider.

Diane J. Graves

University Librarian and Professor

Trinity University

San Antonio, TX

To whom it may concern,

On behalf of the American Society of Agronomy, the Crop Science Society of America and the Soil Science Society of America, I am writing to request an extension of the comment period regarding access to publicly funded research.

I understand that the White House Roundtable on Scholarly Publishing will issue their report the first week of January - with just a day or two between that report

coming out and the OSTP deadline. At minimum, scholarly publishers should have time to review this report prior to providing formative comments to OSTP with regard to public access.

Additionally, the Council of Scientific Society Presidents (CSSP), of which our Societies are active participants, will be hosting a meeting of e-publishers in May, 2010 and plans to issue a report. This report has tremendous potential to provide additional valuable insights into Open Access and scholarly publishing based on the publishing activities of a wide variety of scientific societies. Ideally, a delay of the OSTP deadline would allow this report to be produced before action is taken.

Thank you in advance for your consideration of our request.
Sincerely,
Ellen Bergfeld

Ellen Bergfeld, Ph.D.
Chief Executive Officer
American Society of Agronomy * Crop Science Society of America * Soil Science Society of America
Executive Secretary/Treasurer, Agronomic Science Foundation

From: Sharon Tarhirkheli

The American Geological Institute (AGI) is a nonprofit federation of 46 geoscientific and professional associations<<http://www.agiweb.org/members/index.html>> that represents more than 120,000 geologists, geophysicists, and other earth scientists. Our member societies represent some of the most reputable geoscience publishers producing some of the most highly-cited and widely-respected peer-reviewed journals in the discipline. Many of our societies will be impacted significantly by free public access to publicly funded research products. Just what those impacts will be are poorly understood and our societies have only just begun to make that assessment. In October, at the AGI Member Society Council meeting, the society representatives called for the organization of a forum to allow publishers to exchange information and discuss a variety of open-access publishing models as a means to evaluate these impacts. The timeframe for the forum was targeted to be the first half of 2010. A truly meaningful response to the OSTP request for information would be greatly enhanced by allowing the deadlines for discussion of public access to be extended beyond the current January 7, 2010. This would provide a greater opportunity to all impacted parties to formulate thoughtful and reasonable responses to this important question.

Here are my responses to the Office of Science and Technology Policy (OSTP)

Executive Office of the President request for information (RFI) "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government".
--- David A. Wheeler

'We the People' Should Receive what We Paid for: Public Access Policies for S&T Funding

David A. Wheeler (dwheeler *at* dwheeler *dot* com)

2009-12-17

Here are my responses to the Office of Science and Technology Policy (OSTP) Executive Office of the President request for information (RFI) "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government", which "focuses on approaches that would enhance the public's access to scholarly publications resulting from research conducted by employees of a Federal agency or from research funded by a Federal agency".

The U.S. federal government was established and is funded by "We the People" (sic). **If "We the People" pay for unclassified research, then "We the People" should be receiving the results.** The current system instead gives monopoly rights to other organizations at a fraction of their development cost. Thus, "We the People" are unable to fully receive the results we paid for. This is unconscionable, impedes the progress of science, and impedes job creation from the jobs that *could* have resulted from the research.

NIH's system is better than many previous approaches; its biggest problem is that it does not go far enough:

1. NIH has a one-year embargo on research results, but the rationale for this embargo is inadequate. The people paid for the results; why should they not receive them once they are available? For an organization to receive a special one-year monopoly rights over any government work, they should have paid for a significant proportion of that research effort (say, 10% or more) before it began.

2. NIH primarily focuses on the papers, but modern science is more than papers. Supporting data (field and experimental) and software should also be included in such releases, if unclassified and developed using public funds, and they should be released to the public under very broad licenses. For example, imagine that climate modeling software was created and a paper written based on it; without the climate model software, it is impractical for others to determine if various extensions to the model would invalidate the paper's conclusions. These licenses should at least permit arbitrary use (including commercial use), modification, and re-release of either the original or modified information. One exception: personally-identifying data must be handled specially, to protect privacy. Science must be repeatable, and today that requires the release of data and software.

Given the above, here are my responses to the questions the RFI poses.

1. *How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy?*

There are many different development/dissemination approaches, but the government should *not* focus on current techniques at all. These existing approaches were based on the fundamental assumptions that final printing of documents is required, expensive, and must be done by a professional publisher using dead trees. Now that the Internet is widely available, these assumptions are false. Instead, most people want to use a search engine (such as Google), find the results in seconds, and download the results immediately. They may then use screens or print them locally, but any case, there is no need for the current obsolete system.

The Internet's impact is as profound as the invention of the printing press, and thus, we should *expect* that processes will radically change. We should instead focus on what the new processes *should* be, and move to them, instead of worrying that these changes will affect someone. Of course they will!

In particular, many traditional publishers and societies will need to undergo major changes or cease to exist. Publishers/societies will need to undergo changes such as *funding* research, instead of gaining monopolies over research at little cost to them. There is a surfeit of publishers and societies, and there is **no public reason to prop up their obsolete business models**. We now have a better way to spread scientific research results; **we do not need to coddle the manufacturers of buggywhips and quill pens**.

2. *What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?*

A public access policy should focus on the needs and interests of the *public*. It should briefly consider the interests of others, but the public *must* be the *top* priority. "Accommodating" all other parties is completely *inappropriate*. If "We the People" paid for the research, then "We the People" should get it. Period.

Such a policy must be easy to understand and easy to implement. The policy should include a *requirement* that **all government-funded unclassified research results must be "open access"**, that is, they must be free for all users to acquire, read, and use via the Internet or any successor network. Exceptions may be granted, but only in cases where significant research funding (say, at least 50%) was from non-public funds and where the government has specially agreed to this. If exceptions are too easy, then private interests will work to capture the public's research. Licensing should be simple, in particular, papers should be public domain or released under either the Creative Commons CC-BY-SA or CC-BY licenses. Research is cumulative—it often depends on previous research—so works should be released in a way that enables remixing and recombination to enable future research, and in a way that eases commercialization.

This policy should cover not just academic papers, but also **all the supporting unclassified data and software whose creation/generation was funded by the public**. Such supporting data and software should be usable for any purpose, modifiable, and re-releasable in either original or modified form.

To help implement this policy, **a simple centralized U.S. government web site should be established**, in which the papers and supporting data/software can be deposited and made directly available to the public. This should make results accessible to all, without a "paywall" requiring payment for these results. This repository would be backed up in geographically-separated locations so that U.S. research will no longer be easily lost. It should be maintained as a U.S. government site under the .gov domain. Each addition should be posted using web standards (such as RSS or ATOM). It would be inexpensive yet yield large benefits. I believe it should be centralized, not decentralized, because centralized systems are easier to scale, back up, and ensure that *all* of these results are not lost. It is too easy to lose results from a decentralized system.

For each paper, a simple set of metadata (data about the paper) should be captured. This should include title, authors, release date, abstract, keywords, peer reviewer(s) by individual or group, contact information, stable URLs on the government site, and perhaps a few more fields. This information should be provided to users in a format that is easily read by computer (e.g., a simple XML file with a reference to formatting information; that way both humans and computers can process the same file). There should be at least two stable URLs for each paper: A stable URL for the

paper metadata (such as title) in XML format, with human-readable format, and a stable URL for the paper itself. If supporting data is also released, then a stable URL that is a directory for this data should be included. The web repository should be able to automatically determine what other papers in the repository it refers to, and what papers refer to it, and report that information to users. **There is no need for the government to implement a search system**; commercial organizations can perform this service once the data is available to the public.

The policy should require that data be submitted and provided to users using *open standards* for formats. The term “open standard” is often misused, so the definition of “free and open standard” as defined by Digistan (<http://www.digistan.org/>) should be used. Given current technology, research papers should at least be submitted and provided to others in PDF format. Other open standards that should be acceptable include: HTML, JPEG, PNG, and Open Document. Before acceptance, the papers should be tested by being viewed by at least two independent implementations.

The government should withhold part of the research money until researchers submit their materials as required by this policy, and hold them liable for all research funds (with penalties) if they continuously fail to provide what they were paid to provide. Given this, compliance will be high. And it is easy to justify: the government is paying for research, so researchers should only be paid when they provide their results.

I would suggest that the names of peer reviewers (either individually or via some group) be credited as part of the information about a research paper, to give them credit. This would simply have the same meaning as it does now: “We have reviewed it, and did not see any glaring errors”. It would not be a guarantee that there were no errors; should someone find errors, that would be grist for another paper.

The NIH policy currently requires a one-year embargo. This is a nod to obsolete processes and impedes research progress. The U.S. is competing in a world that is moving faster, not slower. Such embargos should be by special exception, requiring significant prepayment, and not a normal part of the process.

3. *Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?*

Currently, much peer-reviewed research is only available via large, wealthy companies or large universities. Publishers often charge monopoly rents for works they did not even pay to create.

The *potential* users of peer-reviewed research is anyone interested in or impacted by U.S. research results. Essentially, that is everyone, because U.S. research covers a wide variety of areas. These users should be able to obtain this research information, without fee, from anywhere in the world. All they would need is a web browser; search engines and other sites would help them find the “most relevant” results, and then they could go to the government sites to actually read those results.

4. *How best could Federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?*

Public access would be best enhanced by *true* public access. **Make the research results available on a government site, without fee, via a .gov website.** Centralizing the site, with routine back-ups to geographically sites, to other locations, will prevent their loss.

5. *What features does a public access policy need to have to ensure compliance?*

As noted above, to ensure that researchers comply, **do not pay researchers until they provide their materials to the government for public dissemination.** Problem solved.

The website which provides research results must be owned by the government itself (a contractor might *run* it on the government's behalf). The public has paid for this research, so the government must ensure that the results become available to the public for its use.

6. *What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?*

At the *least* the "final published version" should be made available to the public under a public access policy. It may also be useful to have older versions available as well. But even *asking* this question makes the incorrect assumption that the publishers with obsolete business models are more important than the public who paid for it. That assumption has it backwards: **the people, who paid for it, come first.**

7. *At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g. final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?*

Peer-reviewed papers should be made available to the public **immediately** if the work was publicly funded. The typical purpose of a delay is to give some organization temporary monopoly rights over work that they did not significantly fund. This should be rejected as unwarranted. Peer review does *not* now require that anyone be granted a monopoly over distribution of a paper. Peer reviewers are often unpaid or paid a small fee; they could receive such amounts without granting monopolies to others.

If private companies decide to fund their own research, then they can decide what kind of delay they want to have. But the government is not a private company; it represents the people. Again, "We the People" paid for it, so "We the People" should get it, directly and immediately, through open access.

8. *How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?*

As noted above, policy should require that data be submitted and provided to users using "**open standards**" for formats. The term "open standards" is sometimes misused; I recommend using the definition of "free and open standards" as defined by Digistan (<http://www.digistan.org/>). Given current technology, research papers should at least be submitted and provided to others in PDF format. Other open standards include HTML, JPEG, PNG, and Open Document.

9. *Access demands not only availability, but also meaningful usability. How can the Federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g. number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access papers be given the opportunity to comment or provide feedback?*

The most important type of "usability" is legal usability. I recommend that all papers be released as public domain, CC-BY-SA, or CC-BY licenses (the CC-BY-SA license is used by Wikipedia and

many other projects). Software should be released under common licenses that allow anyone to use them for any purpose, modify them, and redistribute them unmodified or modified, enabling future research.

“Number of readers” is a misleading metric. If only one person reads a given paper, but in the process cures cancer, who cares that there was only one reader? Instead, I would emphasize these metrics:

- % open access: This would be the percentage of unclassified government-funded research papers that are open access, within 1 week of their release from the researcher(s) and peer review by a small group. This number should be “100%”; anything less means that some paper is being “stolen” from the public who paid for it. Since researchers should not be fully paid until they provide these papers, this value should quickly move to nearly 100%.
- Hours before open access: Once the researchers have released a paper so people (other than reviewers) can read it, how many hours does it take to become available to the general public? This should be measured in seconds to hours, not days or months.

There is no need for the U.S. government to develop a complex search system; commercial organizations like Google do a better job. Simply make the documents available to all, and allow commercial organizations to download them for searches (ensure that there is no robots.txt file, or that its settings permit all to search it). This merely requires that the material be easily processed electronically; open standards and section 508 compliance go a long way toward that goal.

Basic metadata, including contact information, should be provided on each paper in a standard form (I suggest XML plus format information so that human readers would see a “nice” format of it). It would be nice to support some sort of comment system, but the effort to set up a comment system should *not* interfere with releasing research results to the public. I believe that the government should *first* focus on releasing all unclassified government-funded research results as open access; *then* consider comment systems and other methods to improve usability. That way, commenting issues will not impede the more important task:

We must release research results to the people who paid for it. Starting now. Thank you.

The American Association of Immunologists (AAI), a professional association of almost 7,000 research scientists and physicians dedicated to understanding the immune system, and the publisher of The Journal of Immunology (The JI), the world's largest and most cited immunology journal, respectfully requests a 30-day extension of the comment period for the December 9, 2009 "Request for Information" (RFI) by the Office of Science and Technology Policy, Executive Office of the President, regarding "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government."

The issues to be addressed in this RFI are very important and highly complex, particularly as they relate to the continued viability of the nation's scholarly publishers. The Obama Administration's decision-making would be better informed by thorough comments,

particularly from publishers who have been dealing with existing federal public access policies at the National Institutes of Health and the National Science Foundation. The Federal Register notice published on December 9 (Volume 74, Number 235, Pages 65173-65175) sets a deadline of January 7, 2010 for comments. There are two key reasons why a 30-day extension should be permitted:

1. An important study that is being conducted under the auspices of Congressman Bart Gordon (D-6th, TN), Chair of the House Committee on Science and Technology, is currently nearing conclusion. The "Scholarly Publishing Roundtable," which has been charged with "explor[ing] and develop[ing] an appropriate consensus regarding access to and preservation of federally funded research information that addresses the needs of all interested parties," is expected to release its report in early January 2010. AAI believes that our comments, and those of many other stakeholders, would be informed by the recommendations of this group. A postponement of the comment period deadline would give the broader community, as well as the Administration and the Congress, an opportunity to study, consider, and comment on the Roundtable's recommendations.

2. Given the current and upcoming holidays (Chanukah, Christmas, Kwanzaa, and New Year's Day) and the fact that many American workers take time off to be with family and friends during these last weeks of December, AAI believes that the RFI will attract far less commentary - and much less thoughtful input - if the comment period is thus limited.

AAI therefore respectfully requests that the RFI deadline be extended by 30 days, until February 7, 2010.

Please let us know if you have any questions or if AAI can be of any assistance.

Sincerely,
Lauren G. Gross, J.D.
Director of Public Policy and Government Affairs
The American Association of Immunologists

As a research scientist with over 200 publications in over 30 scientific journals I find it unacceptable that I am often unable to access the literature without either paying exorbitant fees for an article or my library paying a ransom to access federally funded research papers. When I write a research paper, scientific proposal, or report it is mandatory that I obtain

immediate, electronic access to all relevant references. Failure to do this will undermine the quality of my research, cause the repetition of previous research, and delay the performance of research. The federal government as an overriding interest in providing free access to publicly funded research because 1) they already paid for it, 2) the editors of most journals are volunteers from universities and laboratories whose salaries are paid by the government, and 3) advancing our economy is dependent on the free flow of information.

Scientific publishers like Elsevier or the American Nuclear Society are provided with final electronic manuscripts which they then place on the Internet for restricted access. Although they invest little they have a monopoly on the distribution of research and charge what the market will bear. The problem is compounded by the fact that access to journals is sold incrementally forcing large additional payments to retrieve archival references. I would like to propose implementation of the following policies for scientific publication.

- 1) Maintain the copyrights on all federally funded research publications
- 2) Require that all papers reporting research supported by federal funds be published as open access
- 3) Refuse the right of publishers to publish federally funded research until a new, federally funded contract can be established allow open access to all.
- 4) Extend open access to archival journal articles no matter how old.
- 5) Support the scanning of archival journals to insure complete electronic access.

The cost of federally funding journal publication will be offset by savings in federally funded library subscriptions and greater efficiency of research efforts. The editing efforts of individual journals would continue to be supported by page charges. Negotiations with publishers would ideally be in concert with foreign interests although it may initially be possible to limit agreements to US access. Wasteful efforts to maintain secondary "draft" copies of papers in federal repositories should be eliminated.

Regards,
Richard Firestone
Group Leader, Isotopes Project
Lawrence Berkeley National Laboratory

Dear Sir/Madam,

Access to free of cost information is a privilege that everyone should have. The current state at Universities and Colleges makes students pay plenty of money in tuition fees and part of this is accumulated in the subscription costs libraries have to pay in order to offer information resources to their patrons. With the current recession and the increasing journal prices [<http://www.arl.org/sparc/bm~pix/journal-price-graph~s600x600.jpg>], a lot of

libraries were forced to cancel subscriptions. Even major and “strong” universities like the MIT and Harvard were forced the past two years to cancel subscriptions, in which they were subscribing for almost 50 years.

On the other hand, smaller colleges, for instance public colleges, were not able to renew not even half of the journals titles they used to subscribe in the past. In the College I am studying, Simmons College, Boston- MA, our Library was forced to cut down dramatically on the journal’s titles they were subscribing. For the time being access to journals that we, the students, used to access, is not possible. The result is that we cannot produce breakthrough papers and be able to access all the existing research on our field of interest. Personally this situation makes me feel that I cannot be a competitive scientist, and that the future of the research I conduct depends highly on the money I have to buy the research papers I need.

What I envision is equal access to information for everyone, especially for research funded from taxpayers money. Immediate access promotes widely scholarly communication, and the results for problems not solved are more accurate. Public access allows students and researchers to be equally competitive and produce work no matter if they have the money or not to access valuable but expensive information. This is a public good that taxpayers should be able to benefit from. On the other hand, publicly funded research must be accessed immediately to promote scholarly communication and also must be archived and organized for future reference. Access to information is essential for us the students, not only while we are in school, but also when we graduate, if we want to consider ourselves as competitive future professionals.

Therefore, the final peer-reviewed version of the research papers must be available free of cost to everyone. The final version of a paper includes the most accurate information, in contradiction with the drafts, and this is the quality of information students need to cite in their papers. For this to happen, the policies must be mandatory and not voluntary. In general researchers and authors are busy and think that it is hard to submit their papers in an open access medium, therefore they don’t do it regularly. A mandatory policy, not only allows broadening the collection of open accessed papers, but also contributes to change the authors’ publication habits. As a result, it will become every authors’ regular procedure to submit their papers in an open accessible medium, such as a personal website, or an institutional repository.

I trust also that the willingness of the people in this country to enhance public access will be a great example of change for other countries in the world to make research results available to everyone free of cost.

Best,

Nancy

--

Athanasia (Nancy) Pontika
Doctoral Student
Graduate School of Library & Information Science
Simmons College
OAD Assistant Editor

Key to gaining cooperation and acceptance by stakeholders is understanding who has rights to what. If nothing else, a basic first step is to mandate and implement policies and procedures for Identification and Notice of Government Sponsorship. Typically authors credit research and funding support in "Acknowledgements" found at the end of an article. Even though Government grant agreements and contracts require a notice of government support in resulting publications, often the notice is omitted or is incomplete. Additionally there is no similar requirement to identify "works of the U.S. Government" (Title 17 USC 101 & 105) authored by Federal Government employees. Recommend that authors must include and publishers must carry forward notices of government sponsorship, thereby providing a means to identify, quantify and analyze who is funding who to do what research.

CURRENT NOTICE REQUIREMENTS:

GRANTS:

See "Assistance Terms & Conditions" (2008). National Science Foundation
<http://www.nsf.gov/pubs/policydocs/rtr/termsidebyside.pdf>

Sec 215.51(a) Monitoring & Reporting Requirements:

(a) Publications. The recipient is expected to publish or otherwise make publicly available the results of the work conducted under the award. An acknowledgment of awarding agency support must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, as follows (1) The acknowledgment will be: This material is based upon work supported by the [name of awarding agency(ies) under Award No. [recipient should enter the awarding agency(ies) award number(s).

CONTRACTS:

See "Federal Acquisitions Regulation." Section 52.227-14 -- Rights in Data - General. As prescribed in 27.409(b)(1):

(c) Copyright- (1) Data first produced in the performance of this contract.

(i) Unless provided otherwise in paragraph (d) of this clause, the Contractor may establish, without prior approval of the Contracting Officer, claim to copyright in scientific and technical articles based on or containing data first produced in the performance of this contract and

published in academic, technical or professional journals, symposia proceedings or similar works. The prior, express written permission of the Contracting Officer is required to assert copyright in all other data first produced in the performance of this contract.

(ii) When authorized to assert copyright to the data, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402, and acknowledgment of Government sponsorship (including contract number).

(iii) For data other than computer software, the Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license in such copyrighted data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government

GOVERNMENT AUTHORED WORKS

Articles and conference papers authored by a Government employee using on-the-job government time, materials or equipment are "works of the U.S. Government" and are not eligible for copyright protection (Title 17 USC Sec 105). Scholarly journals routinely require scientists to sign standard copyright or royalty agreements which purport to transfer copyright in the employee's work to the publisher. There being no copyright to give away for U.S. Government works, such agreements have no force. Nevertheless, they cause confusion for Government authors, publishers and the public. Publishers may only claim copyright in original material they add to a Government work. Section 403 of the Copyright Law is aimed at a publishing practice that, while technically justified under present law, is misleading. In cases where a Government work is published or republished commercially, publishers frequently add some "new matter" in the form of an introduction, editing, illustrations, etc., and then include a general copyright notice in their name. This in no way suggests to the public that the bulk of the work is uncopyrightable and therefore free for use.

B.Klein

GAPSA fully supports the Obama administration's efforts to maximize the return on federal investments made in research. Pressing issues regarding access to research are: financial costs, complicated systems regarding accessibility, and limited networks of collaboration. Recommendations to solve these problems are: mandate a public access policy for all publicly funded research, require timely access within six months to this research, and include all federal agencies that distribute federal funds for research.

Analysis: Financial costs to research are a huge burden, especially for university libraries. Published research has become increasingly expensive, causing many libraries to drop their subscriptions. According to the Scholarly Publishing and Academic Resources Coalition, the cost of academic journals has risen 260 percent in the past twenty years. The limited budgets of university libraries has greatly affected GAPSA's constituency of over 25,000 graduate and professional students. Since taxpayers, like our constituents, pay for publicly funded research, they also have a right to this research.

The current system of accessing research is not only costly but also complex and time consuming. Graduate and professional students often are unable to access entire journal articles or publications. Since only fractions of academic bodies of research are available depending on a library's budget, access to innovative research is limited. Graduate and professional students' academic work of professional, thesis, and dissertation writing is slowed due to lack of access. Without a mandatory public access policy, the ability to cross-reference and build on previous research is difficult. A public access policy expands knowledge to the public, including all students. Current publicly funded research practices without public access limit interdisciplinary work and collaboration that is essential in our globalized society.

Recommendations: The concerns outlined above can be addressed by the following three recommendations:

1. Mandate a public access policy to publicly funded research. The NIH's public access model provides empirical evidence that a mandatory policy results in complete deposition rates. The federal government should expand the NIH's policy to mandate a public access policy for all publicly funded research.
2. Require timely access to research. Immediate access to publicly funded research is necessary within a reasonable timeframe of six months. The most current and pertinent information must be accessible, especially for graduate and professional students regarding their work.
3. Include all federal agencies that distribute federal funds for research, excluding classified projects. All federal agencies are intrinsically linked to academic fields; thus, a public access policy will foster collaboration amongst all disciplines. The ability to cross-reference particularly benefits students as they are working on academic research.

In conclusion, mandating a public access policy will expand knowledge and lead to innovation. The benefits to society far outweigh the marginal costs of implementing this policy. Students and all taxpayers have a right to research that they are funding. The opportunity cost is huge if we continue to deny information and do not mandate public access. Limited or no access to certain fields of research is a common experience for graduate and professional students. Requiring a six month time period to deposit newly published research ensures access to significant and useful information. Finally, including all federal agencies that distribute federal funds for research with this policy will produce interdisciplinary work and further collaborations.

Also attached is a resolution GAPSAs has passed. Please give me confirmation of this email and a link to the post on the blog. Thank you.

Best,

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Jacob Chin
GAPSA Public Affairs Assistant
University of Minnesota
Graduate and Professional Student Assembly (GAPSA)

RESOLUTION

Graduate and Professional Student Assembly – University of Minnesota

Date: 12/9/09

Co-Authors: Timothy J. Salo, COGS; Monica Howell, GAPSA

Topic: Support for Federal Research Public Access Act, S. 1373

WHEREAS, Open Access advances scholarship, research, and public knowledge by making peer-reviewed journal articles freely available online, where they are readily accessible to students, researchers, and the public; and

WHEREAS, the National Institutes of Health (NIH) requires the published results of NIHfunded research to be posted on the NIH's freely accessible, online, digital archive of biomedical and life sciences journal literature; and

WHEREAS, the proposed Federal Research Public Access Act of 2009 (S. 1373) extends to other Federal agencies the requirement that the published results of federally funded research be made freely available online within six months of publication; and

WHEREAS, endorsing the Federal Research Public Access Act of 2009 will mandate that all federally funded research is publicly available in order to maximize its access, uptake, usage, application, impact, and progress; and

WHEREAS, the Federal Research Public Access Act of 2009 is publicly supported by 41 Nobel Prize-winning scientists and by students and administrators at more than 75 colleges and universities;

THEREFORE, BE IT RESOLVED, that the Graduate and Professional Student Assembly supports the *Federal Research Public Access Act of 2009* (S. 1373) and urges Minnesota's senators and others to co-sponsor and support this legislation

On behalf of Peter McPherson, President, Association of Public and Land Grant Colleges, I submit the attached response the White House Office of Science and Technology RFI concerning public access.

David E. Shulenburg
Vice President for Academic Affairs
Association of Public and Land-grant Universities

OSTP RFI Public Access Response from the Association of Public and Land-grant Universities,
APLU

On behalf of the Association of Public and Land-grant Universities (APLU), I write in strong support of providing public access to the results of research funded by the federal government and published in scholarly journals. A·P·L·U's endorsement of public access is based on our polling of the Association's Board and of all the Provosts and Research Officers at our member universities. Our member universities have a special mission of outreach and engagement with their communities; making the research they produce widely available to the public at no additional cost to them is a true expression of that mission.

Background of the Association

APLU is an association of public research universities, including the land-grant institutions in every state and many state public university systems. Our 219 members enroll more than 4.7 million students, award 60 percent of U.S. doctoral degrees and conduct nearly two-thirds of all federally-funded academic research, totaling more than \$34 billion annually.

Benefits to Research

Provision of public access to scholarly work arising from federally-funded grants and published in scholarly journals will enable faculty and researchers to benefit from these findings and to build on them in their own research. While 131 of our member universities are classified by Carnegie as “high” or “very high” research universities, their libraries cannot afford to subscribe to all of the scientific literature. Their faculty from time to time experience delays in accessing articles published in scholarly journals or cannot gain access. These roadblocks negatively affect their research productivity. We think that the AAAS survey of difficulties encountered in accessing copyrighted literature is representative of the difficulties researchers at APLU institutions face. (*Intellectual Property Experiences In the United States Scientific Community*, Stephen A. Hansen, et. al., on behalf of the American Association for the Advancement of Sciences http://sippi.aas.org/Pubs/SIPPI_US_IP_Survey.pdf surveyed 2,157 U.S. scientists; 562 of those scientists reported negative effects on their work because of difficulty in accessing the scientific literature. The table below reports the degree of effect on their work by category [p. 112]. The consequences ranged from brief delay to abandonment of the research project.

Q 35. Problems associate with accessing scientific literature had the following effect(s) on your work (check all that apply):

	Count	Percent
I have not had problems associated with accessing scientific literature	52	10%
There were no effects on my research	51	10%
They delayed my research less than one month	217	42%
They delayed my research for one month or more	108	21%
I had to change the research approach	67	13%
I had to abandon my research project	18	3%
There were other effects on my research. Please explain.	16	3%
Loss of research funds to pay for access or to duplicate work	24	5%
Less background research done	49	9%
Unspecified delay of work	12	2%
Total	614	119%

516 responses out of 534; item response rate+96%

We are confident that improved access to research findings will have positive effects on the research products of faculty at public research universities in the United States.

Additionally, our universities have global missions that would be aided by broadened access to research findings. Especially in low-income and developing countries where access is now difficult if not impossible, improved access could lead to substantial advances in scientific discovery. Many faculty in universities in these countries received their Ph.D.s from U.S. universities and would readily make use of improved access in both their research and their teaching. The latter is of great importance because many of their students will ultimately become graduate students in the U.S. It is

in our interest for those students to arrive with undergraduate educations fully informed by the most recent scientific findings.

Benefits to Education

Clearly, superior graduate education is based on use of scholarly literature. Graduate student research papers, theses and dissertations involve substantial access to the literature. Ensuring that all published research arising out of federally-funded research is available to graduate students would improve their papers and permit them to build on past findings in their research. Since many doctoral students serve as research assistants while pursuing their degrees, improved access to research findings also has the potential of improving the research products of the faculty members for whom they work.

Undergraduate study at our universities differs from study at non-research universities. Our faculty members are well versed in the research literature and use research findings in their classroom presentations. The best of our undergraduates incorporate undergraduate research experiences in their programs of study. Essentially all of our undergraduate students access the scholarly literature as they write papers for their courses. Improved access to research will benefit undergraduate education.

While it varies across member universities, 20% to 60% of admitted students took coursework at community colleges. Few community colleges can afford to subscribe to an extensive array of scholarly journals. Thus, during the community college portion of their education students have far less access to the scholarly literature than after they transfer to research universities. Thus papers that they write while at the community college cannot benefit from access to scholarly literature. Similarly, their faculty members cannot incorporate in their instruction the latest research discoveries. While improved public access would have significant positive impact on research university undergraduates, it arguably would have the greatest impact on community college students.

Benefits to Business and Citizens

Having faculty research fully and freely accessible to all citizens is of high importance to public institutions. As scholarly journals have migrated from print to electronic form, access to their contents has been restricted largely to those who are members of the university community for which the electronic journal is licensed. Universities that once could lend copies of journals to the general public or permit them to have photocopies through inter-library loan, can no longer do so. Thus the continuing migration of the scholarly literature to electronic form reduces its availability to the public.

Many businesses need access to scholarly literature. Clearly high-tech start-ups are in this category but so are existing businesses whose processes are dependent on technology. Better information access improves their chances of remaining competitive and profitable.

Many individuals require access to the scholarly literature as well. Those faced with disease want to know first-hand the results of government research that may provide greater understanding of their conditions, and many informed laymen can bring referenced findings to the attention of their physicians. Citizens who simply want to be well informed also appreciate access to the scholarly

literature. The same motivations that lead government agencies to commission a scholarly work motivate such citizens to want to read the results.

What form of Public Access does A·P·L·U Favor?

The NIH public access model has proven very popular with our member universities.

Ease of Compliance: This model is designed in such a way that compliance is easy. We have received only positive feedback from our members about the deposit process during the 18 months the policy has been in place.

Because a federal government-wide public access policy would involve multiple research funding agencies, it could potentially involve multiple public access repositories. Major research universities will have faculty members who hold grants from all of these agencies and some will have grants from multiple agencies at the same time. We urge that the ease of compliance presented by the single NIH policy be maintained as the policy is applied to multiple agencies. We suggest that, to the extent practicable, uniform requirements and procedures regarding deposit of papers be established across all funding agencies covered. Uniformity of deposit requirements will reduce the complexity and cost and, simultaneously, increase the rate of compliance.

Ease of Access: Access to those items placed in PubMed Central is also easy. The PubMed Central data base is fully searchable and items in it are fully accessible by Google and other search engines.

Period of Embargo: The flexible zero to twelve months embargo period, depending on the preference of the journal of publication, also is acceptable. While everyone would like to have immediate access to text, such complete open access may not be compatible with the economics of the dominant form of journal, the subscription-based journal. We know of no rigorous studies that delimit how long an embargo is needed to provide financial viability for subscription-financed journals. We are unaware of any journals whose financial viability has been significantly damaged by the NIH Public Access requirement. On this basis we favor at least initial implementation of public access more broadly with the zero to twelve month embargo period.

To What Federally-Financed Research Should Public Access Requirements Apply?

In principle, open public access should be the practice for research arising out of all federally-funded grants. In practice however we believe that all federally-funded research except that funded by the National Endowment for the Humanities and the National Endowment for the Arts should be covered by the public access policy. These two agencies are small relative to other funders and cost of public access per covered manuscript is likely to be very large. Both of these endowments fund activities that are less likely to be published in scholarly journal article form than are works funded by other federal funding agencies. In addition, journals in the humanities and the arts are more likely to be negatively impacted by a 12 month maximum embargo period than are journals in the social, biological and natural sciences because the material in them is little diminished in value as time passes.

In What Form Should the Material be Made Available?

The choice is between the final manuscript version of the article and the form in which it appears in the journal. We favor the latter so long as full-text, word-by-word search ability can be made

available. The article form of the material permits easy citation directly from the public access data base as the page numbers of publication are present in the article form of the material. Should full-text search ability be limited in the article form, we favor inclusion of the manuscript form (XML) in the public access repository. Our preference for full-text search capability is because very powerful search engines with access to all content produce search results of greatest use to scholars.

Who Should Have Access to the Collections of the Public Access Repository?

In brief, everyone. Since the material included will have been published, there will be no need for bans on access for any reason. Full transparency is more easily guaranteed if there is full access to the repository.

“Everyone” includes all types of searchers. The numbers of articles on some topics are simply too great for individuals to read them all. Intelligent crawlers must be permitted full access to the collections so that all the material can be assessed by artificial intelligence. In this way individual researchers can be pointed to articles that appear to be relevant to their interests.

What Form Should the Repository Take?

We are agnostic on the question of form. The NIH BioMed Central model has proven to be functional but it may or may not be superior to a distributed model in which the material is deposited in multiple locations but brought together virtually as though it were located in a single repository. Thus an article conceivably could be placed in a faculty member’s own university repository and be automatically and seamlessly included virtually in the funding agency’s public access repository. Clearly, wherever and however the material is stored, it must be regularly backed up by multiple repositories in diverse geographic locations and otherwise protected against loss of data.

Ultimately, items in the repository should be operationally linked to the data on which an article is based such that a researcher can easily access the data. In time all federal agencies will require that data generated from grants be accessible and the public access repository should be designed such that the data will be easily matched with articles that rely on it.

How Should the Repository be Evaluated?

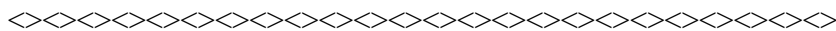
The repository should be evaluated on the use made of it. Frequency of access to the scholarly literature it will contain will undoubtedly be far greater than is presently the case. We can take on faith that greater access will produce more rapid advance of knowledge although we can never measure the subjunctive.

The American Society of Limnology and Oceanography would like to request an extension of the deadline for comments. The topics raised in the Federal Register notice are complex and include requests for data regarding publication turnover rate (for lack of a better term) in various fields as well as information on how publishers are operating now. As the open access discussion has gained momentum in the past decade, our society has continuously adjusted our business model in anticipation of mandated open access. Indeed, many of our authors are in countries where open

access of their research results is already mandated. We have information relevant to the specific requests in the Federal Register notice, but need longer to pull it together.

The Federal Register provides less than 30 days for comment, including the holiday break when many are on vacation, which is not long enough for our society which is run almost entirely by volunteers - to put together meaningful comments. This is a complex issue and what works in one field (or for one agency) may not be the best for all. We urge OSTP to extend the deadline by at least one month.

On behalf of the ASLO Board of Directors,
Carlos Duarte, President and
Adrienne Sponberg, Director of Public Affairs



Adrienne Froelich Sponberg, Ph.D.
Director of Public Affairs and co-editor, Limnology & Oceanography Bulletin
American Society of Limnology and Oceanography

Dear sirs,

At one time Los Alamos National Laboratory reprinted as UR reports the papers that were delivered at technical conferences. This has stopped and this has directly affected my having the resource available to write proposals to advance the technology of neutron detection. Since Los Alamos also puts articles into the Nuclear Instruments and Methods journal and these cost \$30 to get a download pdf file, the small business that I am associated with can not keep up with the latest research. There are published paper after published paper that I can get the abstract for and just can not afford to buy. The same goes for the IEEE Nuclear Science papers and the Material Research Society papers, except these journals don't even make the abstract of the papers available. An elite of those inside the system exists that keeps those outside the system out. By this I mean that small businesses are not afforded a level playing field in having access to the technical work done funded by the DOE National Laboratories or the DOD laboratories.

There must be a way that federally funded research can be put into the public domain after a period of time if there is to be equal access under the law to the work funded by the United States taxpayer. Reprints on the sites of the laboratories would be one way to have access to the public. And the posting of the published papers must be mandatory.

So many small businesses just can not afford to peruse the technical literature to keep up with the technology to allow timely responses to be made to request for proposals. Please consider forcing the publishers to accept the reprinting of articles on the sites of the originator of the paper after six months of the release of the hardcopy of the journal to which the paper is submitted. NIM in particular is an outstanding journal, but it is foreign owned and if they would not agree to such a reprint right, legislation should be enacted stating that no work done funded by the US taxpayer

is to be submitted to this journal. Simple enough. As for the IEEE and the MRS, the same stick would be used, only not only would papers not be allowed, but attendance at conferences with the delivery of papers reporting publicly funded work would be denied. I can assure that the conferences would be pale shadows of what they are not if publicly funded work was not presented.

I do believe that the legislative process can be used to enact good public policy. Making available the technical results government sponsored work to the public is good public policy.

From: Mike Marchywka

[First let me apologize for sloppy editing, I was going to submit via email but finally decided to try blog first and it never appeared so I'm submitting email but be aware hotmail may "reformat".]

Hi, I'm responding to the RFC published at

<http://edocket.access.gpo.gov/2009/E9-29322.htm>

[Federal Register: December 9, 2009 (Volume 74, Number 235)]

[DOCID:fr09de09-111]

OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Public Access Policies for Science and Technology Funding

Agencies Across the Federal Government

AGENCY: Office of Science and Technology Policy (OSTP), Executive

Office of the President.

ACTION: Notice; request for public comment.

I became aware of this solicitation via wikipedia,

[http://en.wikipedia.org/wiki/Wikipedia:Village_pump_\(miscellaneous\)#Public_access_to_U.S._federally_funded_s](http://en.wikipedia.org/wiki/Wikipedia:Village_pump_(miscellaneous)#Public_access_to_U.S._federally_funded_s)

as I often contribute to and read this resource which benefits greatly from freely available government sponsored works. Previously, I have responded to requests from other agencies [3-6] about seemingly unrelated regulations but my

conclusion and suggestions have always been the same: we need better computer readable information to reach the widest possible audience with the most complete results. In this case, the details of what and when to release full text seem to be largely an issue of publisher revenue models. I will focus on question "8" from the RFC, more on "how" or in what formats to release the data and text, and generally advocate that publications and suitable raw data be made available via an "API"[8,10], and not just a human readable web interface. In the detailed responses below, I have tried to reword essentially the same "API" notion to show how it applies in each case, this leads to some redundancy however. An API provides flexible and vendor neutral access to the information for automated analysis or repackaging by anyone. I would also comment that "simpler is better" and make sure that current standard formats not obscure or confuse information with various features. When works are available in formats such as pdf, be sure to include a requirement that the computer readable information, usually the text, be easily available- I couldn't even get text from some PDF IRS instructions in a comprehensible format and presumably there is no reason to restrict these. Some agencies accept "scanned" or other types of pdf files (see for example submissions on Drugs@FDA [2] which contrast with the structured and versatile documents that the SEC[7] is adopting, I recall problems extracting information from FCC submissions too) which do not allow for best use of computers to automate data processing. Often, these alternative formats encumber the information with unhelpful formatting and security "features." The NCBI eutils facility[1] provides an excellent example of an "API" from which most information is available in a simple, appropriate computer readable format using automated access tools. Overall, we need to think about what computers can do and not just try to make computers act like paper nor just throw every high-tech "standard" and high margin feature into the "solution". The government need not anticipate the needs of every possible user, just make sure that their chosen interface doesn't limit those with simpler equipment or those who wish to repackaging the information (Wikipedia being one example of such a group). Where needed, revenue models can be changed too(I guess if banks can get TARP what about a bailout for publishers?) but this is a political and business issue and I will confine my remarks largely to less controversial issues I have found while trying to use available publications.

Responses to Specific Questions:

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1. How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy?

The federal government is an originator of both data and analyses in many fields. I'm not sure if "peer review" is generally associated with academics or

hard sciences, but just to be clear on the obvious, the government's data and analysis authoring role extends into many fields including weather, securities, demographics, etc. Often, government generated raw data is invaluable to authors elsewhere.

Except in some cases, everyone wants unrestricted access to information but the limiting issue is often the revenue problem. Probably the private sector publishers are the biggest moderating influence against unrestricted free access to everything. They contribute valuable editorial and peer review facilities and often their financial objectives restrict availability of content. Any regulations which restrict their ability to profit could impact review quality, even if many peer reviewers are paid by other institutions.

For me, the libraries and universities serve as "access domains" within which more journals are available. Without publisher imposed restrictions, they would not be relevant to most electronic journal access.

2. What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

Regardless of issues on full text access, we need a good database of articles searchable via an automated "API." Even if some papers are not available for free, we need to know that they exist and generally what they have concluded. Teaser abstracts should be avoided when it is known that full text will be restricted for any length of time(" did our experiment work? Buy the paper and find out"). The biggest problem I've seen so far from many government information sources isn't even so much the access policy as much as the usage of confining computer tools that are often skewed towards human readability at the expense of automated data processing or favor one company's products, which tend to be similarly limiting. In the case of journals, this is probably driven largely by publishers' desire for digital rights management that comes from some software formats, as well as sales efforts from some software vendors. I have not yet found an author who wanted to restrict usage of his own work and most users of course want flexible unencumbered access to either human or machine readable results. The general public presumably benefits if more people can repackage the scientific results for different audiences, a task facilitated with computer readable publications.

3. Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

It probably is worth stating that peer reviewed govt funded work is often the best source of information on most topics and everyone would end up using it directly or indirectly if it was easy to repackage at places like Wikipedia. I use peer reviewed publications for for everything from stock research to general interest. Essentially every aspect of life today is better served by examination of primary sources and original scientific works. I tend to use the NCBI eutils facility for almost everything related to medicine and would use similar facilities if they existed for agriculture, physics, or weather. With the NCBI eutils facilities for example, members of the public can and have written their own computer programs to reformat citations into a form that can be used by wikipedia, allowing even more people to benefit[9], " This uses a cygwin bash script to invoke java code and some other pubmed eutils scripts [...] You should be able to integrate this into your own scripts if desired for testing."

The existence of a computer readable API, and not just web interfaces or display formats which confine the use to special purpose applications like a pdf reader, allows it to be used more flexibly to reach a wider audience.

I often use articles for general background or exploratory work and may post excerpts on various message boards or generate my own notes. This usually involves skimming lots of articles and abstracts. I could not do this if I had to click and download a pdf file for each article of interest. Obtaining a short text file of all abstracts in one place, which I can do with the NCBI eutils facility without the need to even use a SOAP API, is a big benefit as I can use it with a large number of software products including scripts I have written myself.

4. How best could federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

Generally, I think the best strategy here is to let the private sector worry about addressing specific audiences by allowing companies to repackage government information for best use by their own audiences. This means providing computer readable publications with a simple and flexible API. Also note that private sector doesn't mean for profit, I think I mentioned wikipedia earlier.

5. What features does a public access policy need to have to ensure compliance?

Most researchers want publicity and indeed those I have talked to are often confused that some file formats are restrictive and many authors don't even like

publisher restrictions. I guess if you could find a way around publisher revenue models that would eliminate most problems with compliance.

6. What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

I have gotten everything from early manuscripts to actual reprints in response to specific queries to authors. Personally I find reviewer and editor comments and questions helpful but these are not supposed to serve any archival purpose or even become public, just fix the paper. The final product is presumably the best intellectual quality.

7. At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

AFAIK, the only concern here is publisher revenue. I think some people on the blog mentioned patent or security issues but as I understand the question it is only over publisher revenue, public disclosure has already been made in a journal. Optimal of course depends on your figure or merit- for a publisher, never would be good (up to the point of creating disinterest maybe) but for those who are constantly trying to sanity check various ideas, immediately would be optimal. I'd be wary of anyone who has a quantitative figure of merit. Researchy results lead to unpredictable usages and their relevance to particular usages can be short or long lived.

8. How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?

See related comments under the other sections. Generally, I have seen that information gets obscured as people try to inflict paper models, even with the latest hitech features, onto information in an attempt to enhance human readability while destroying automated usages of the data. The format needs to be simple, computer readable and computer searchable, and not something supported only with tools predicated on human interaction even if these claim to be "Standards" based. Generally for articles, this means a simple text format that can be separated from the article artwork and page layout/columns, often this is difficult to obtain from pdf submissions. Tabular data should be available in something like a line-oriented text format (csv maybe). The SEC

is moving towards highly structured XML submissions, the NCBI eutils facility cited previously offers an excellent and simple API for searching and repackaging of research results. While I have made several negative comments about some formats that are well supported with some authoring tools, the existence of various commercial authoring tools should be considered a positive but with a federal standard commercial products should become available and more versatile. Commercial tools of course are often designed to lock an author into formats most beneficial for the vendor in the absence of strong sentiment otherwise.

I'm not sure I can emphasize this issue enough as it isn't just in this area where commercial interest exist but in many publications that have no reason to be obfuscated. Many govt and private authors may not be aware of these issues. Indeed, I couldn't even extract text instructions from PDF IRS publications in a useful text format. Presumably there is no reason to "protect" these and even filled out forms like 1040 should allow a private user to extract information without all the archaic formatting or use of proprietary commercial tools. Federal courts seem to encourage documents be submitted in an unreadable format even when these submissions will be public but the SEC requires structured documents be submitted for ease of computer readability. Generally people probably need to think about computers as something that automates data processing and not just try to make them act like paper or papyrus or clay tablets that paradoxically contain lots of high-tech resource hungry features .

9. Access demands not only availability, but also meaningful usability. How can the federal government make its collections of peer- reviewed papers more useful to the American public? By what metrics (e.g., number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access

The largest issue here is computer readability. Many govt and private sites focus on human readability- and this makes sense if you are supported by advertisers but it prevents the best use of information and computers. Certainly govt access does need to accomidate the casual or naive user. Interactive web pages that present human readable information is important but no website designer is omniscient and computer readable information allows others to address the needs of many potential users. Many human readable formats obscure, clutter, and even remove information needed by others. This needs to be avoided as the only means of making data and information available. Computer readability insures that the private sector can repackage and use this information to make it available to even more people who may currently not even know about it. The revenue model in the private sector has actually created some barriers to usage that the federal government has and should continue to avoid.

Metrics are a huge problem if you need to measure results such as utility to a reader and not just click-thru rates. Tying a publication to economic value would be difficult but just publishing raw usage rates would at least tell us if anyone is using a facility. I guess there is a concern that "artistic merit" will be used as an evaluation criterion. While a friendly human readable website is a big plus, it is largely a dead end for most users and its usage shouldn't be considered as the only factor. Private sector figures like click thru rate or interaction measures may not make much sense here. You may only need to use a API once to download the paper and data that let's you license the govt patent you need to start your business.

Since many issues are technical and "Computer related", I'd like to be able to cite someone like IEEE as a good example (and skimming other comments at blog.ostp.gov they are mentioned and represented here) but they don't have much for the public and in any case I'm not sure if they offer any API to members for automated access to their own journals. Personally for the human readable website, something as simple as Google Scholar would be fine,

<http://scholar.google.com/scholar?q=marchywka>

which really isn't much different from Citeseer,

<http://citeseerx.ist.psu.edu/search?q=marchywka&submit=Search&sort=rel&ic=1>

but Citeseer generally offers full text in a format which is not computer readable. As far as I know there is no API for automated access (I've gotten kicked off of one commercial search engine for using automated access) . Neither of these are much different from the pubmed website,

<http://www.ncbi.nlm.nih.gov/sites/entrez?db=pubmed>

but again I wouldn't worry too much about a super fancy and complicated website- often these mean you need the latest browser and lots of memory, CPU, and bandwidth. Something simple that runs on older PC's or cell phones is great, especially if there is an API to let others add value to your article database. Last time I checked, pubmed had a hard time with cell phones but they do have a text version. A special text version would not be needed if their main site html was simpler. For my needs, however, I have the option of writing my own interface using eutils results.

Thanks.

References

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[1] http://www.ncbi.nlm.nih.gov/entrez/query/static/eutils_help.html

[2] <http://www.accessdata.fda.gov/Scripts/cder/DrugsatFDA/>

[3] <http://www.sec.gov/comments/s7-04-09/s70409-2.pdf>

[4] <http://www.sec.gov/comments/s7-27-08/s72708-19.pdf>

[5]

http://www.federalreserve.gov/SECRS/2008/December/20081210/OP-1338/OP-1338_7_1.pdf

[6] <http://files.ots.treas.gov/comments/fddad554-1e0b-8562-eb37-34e416089fee.pdf>

[7] <http://xbrl.sec.gov/>

[8] <http://www.mail-archive.com/bbb%40bioinformatics.org/msg00145.html>

[9]

http://en.wikipedia.org/wiki/Wikipedia_talk:WikiProject_Medicine/Archive_15#pubmed_cits_to_w

[10] http://en.wikipedia.org/wiki/Application_programming_interface

As a public servant in a public library it is my opinion that: If public funds helped pay for the research then the results should be available for free to the public.

If we want our citizens to continue a cycle of lifelong learning we must give them access to help them continue to learn. Many students and active citizens would use the research gleaned from research in the science area.

If we want to have more youth and young adults study in the scientific fields, then we must have the information given to more than just the elite who can attend expensive universities that purchase these expensive databases with this information.

As a librarian in a rural area, the lack of really good scientific information (without paying for such databases) really hampers the growth of our citizens in small rural areas.

Melany Wilks
Library Director
Pioneer Memorial Library

Dear OSTP,

While reading your request for public comment on the public's access to information I was struck by several themes throughout the request that may or may not be discussed in detail. The purpose of my email is shed light on not only getting the information you want out to the public, but how you get there. Throughout the RFI I read the words "more timely, easier, and less costly". Other comments included " exploring ways to leverage investments to increase access to information " and research taking many forms, including data sets, technical reports, etc... Well, how do knowledge workers assemble that information? How quickly and easily do they access and combine different file formats ?

In a recent study, knowledge workers said that business application software was the most difficult to use. They want consumer technologies like the iPhone or Facebook. Not a 3 day training on how to use software. They want software that supports both simple and complex document workflows that should be easy. A tool aimed at windows users for creating PDF's, can create PDF/A-1b complaint files, can convert PDF back to word for editing and combine PDF, Word, Excel, and Power Point all with drag and drop functionality. A tool that makes sharing, managing and collaborating fast and easy.

Let's start focusing more on the task at hand not the paperwork or the technology. Let's get timely actionable information to those who need it the most. Let's automate common mundane tasks and reduce time for information gathering. How about the ability to create PDF's for free ? How nice would it be to take two pages of a word document along with an excel spreadsheet and several different PDF's and send them along as one file so a colleague could review and add notes ? In 2008 the digital universe grew by 487 billion gigabytes. Information will grow tenfold in the next five years, but our ability to assimilate it will not. The haystack gets bigger and the needle smaller.

As you can see from the signature below I work for a software company that has such a product that can do all of the things I discussed and more. However this is not a solicitation for business. I have not mentioned the product name nor will I. This email was simply to open the discussion on how do we get to where we want to go. If anyone would like any information they are free to contact me. Thank you.

Respectfully,

William Leonard
Federal Business Manager
Global Graphics Software Inc.

Greetings:

I am writing to strongly support open, public access to the Federal Register<<http://blog.ostp.gov/category/public-access-policy/>> so all students and faculty can access all data and research that is funded by the US Federal Government.

I am the eLearning Director for the Washington State Board for Community and Technical Colleges. Our 470,000+ students don't currently have access to all the scholarly research they need in pursuing both their education and their research. Our library budgets have been cut dramatically during this economic downturn and they can no longer afford to purchase critical scholarly materials.

President Obama has called for significantly increasing the number of college graduates in the United States ... and how Community and Technical Colleges will play a major role in that push. If we are to answer that call, we need open access to the country's digital knowledge assets.

Most important is... when public (state or federal) tax dollars are used to create digital knowledge, those digital goods should be made freely and immediately available to those that paid for it.

All agencies that conduct research on the public's behalf should be included in sharing digital knowledge that is created with public funding regardless of the agency budget or size of grant operations.

Please contact me anytime if I can be of assistance in this important conversation.

Sincerely,
Cable

Dr. Cable Green
eLearning Director
State Board for Community and Technical Colleges

Hello, I received the e-mail below from a fellow SLA member.

As a professional librarian, I would support open access for SMT literature in the final draft as published to be posted on the NIH or PubMed Central website within 4 to 6 months maximum. Waiting nearly 12 months is too long a time for an embargo. I do not feel it would significantly impact the publishing world to make this information public sooner.

Thanks for the opportunity to make a comment. You can reach me at this e-mail address or my work phone 401-457-3001 (M-F, 8a-4:30p), if you'd like.

Cheryl R. Banick, MLIS - Past President Special Libraries Assn., RI Chapter

[Transmitted by N. Dean Pentcheff for John Long, Vice President for Research and Collections, Natural History Museum of Los Angeles County

A COMMENT FROM THE NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY IN RESPONSE TO:

THE CALL FOR SUBMISSIONS FROM THE PRESIDENT'S OFFICE OF SCIENCE AND TECHNOLOGY POLICY ON OPEN ACCESS FOR FEDERALLY-FUNDED RESEARCH (<http://edocket.access.gpo.gov/2009/E9-29322.htm>)

The Natural History Museum of Los Angeles County (NHMLAC) is one of the premier research and educational institutions in the United States. Our extensive collections, containing an estimated 35 million specimens and artifacts, form the basis for regular scientific publications and the disseminating of knowledge in a variety of forms. Our researchers, among the best known in the world in their respective fields, are often the recipients of federal funding and regularly play an important role in reviewing proposals for federal funding from other institutions throughout the country.

A core mission of research museums such as NHMLAC is to generate knowledge through research and to disseminate that knowledge through a mixture of scholarly activity and direct contact with the general public. Federally-funded research is essential for the expansion of knowledge through further research activities, but also because research in turn is the core of the extensive exhibit and educational programs that depend on that research and that are uniquely the purview of major natural history museums like ours. For instance, this museum is currently making once-in-a-lifetime changes to more than half of its permanent exhibit space in part to be able to bring to the public new understanding and new questions that have been generated by recent research advances, including those funded by federal grants.

Therefore it is natural that the NHMLAC fully and enthusiastically supports the greatest possible public access to the products of federally funded research. Our job is to make research knowledge publicly accessible. Full open access to scholarly publications is clearly parallel to the traditional role already played by museums.

The Museum and its staff fully support the "unprecedented level of openness in government" as outlined by President Obama in his

Memorandum on Transparency and Open Government, and we strongly support the Federal Research Public Access Act (FRPAA). We urge the White House to direct federal funding agencies to mandate a policy of immediate Open Access for any publications stemming from federal funding (or at most within six months of their appearance in printed form), following the current NIH model of Open Access for all federally funded research.

In answer to the specific questions raised, our replies follow.

1. How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy?

Answer: The Natural History Museum of Los Angeles County publishes peer-reviewed research papers from its federal funding for science. It also disseminates information through its exhibitions, public programs and in-house publications, such as its journal Contributions to Science and the less frequent Science Series publications. Under a public access policy that provided funding to disseminate research papers, this aim could be realized by allowing direct public access to research papers from its web site , and by the digitization of its Contributions to Science and Science Series publications to allow free public access to all back issues (funding would be required to do so).

2. What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

Answer: Creating and maintaining open access to research results will require a commitment to financial support from the federal government. Making research results available on demand does take time, effort, and resources. Financial support will be needed to establish and maintain central or institutional repositories (e.g. for computer hardware and ongoing curatorial work), for the initial digitization and organization of the materials (e.g. scanning and processing of paper documents), and for the accommodation of special or extensive requests for materials.

For all of the stakeholders listed in question 2, with one exception, the unambiguously clear answer is that immediate and full access to published research provides the greatest benefit. The sole exception to that, of course, is the publishers. The scientific publishing model that developed over the last few centuries is built on the idea that it costs significant amounts of money to print and distribute scientific papers. To recoup that expense, publishers use

copyright to prohibit or limit dissemination of published papers unless they receive payment for them. Researchers are not paid for their publications, nor are the scientific editors or the peer reviewers. Publishers today are trying to make that traditional model persist by limiting dissemination of scientific publications in electronic form (via copyright).

Over the last two decades, the actual cost of publishing and disseminating a scientific paper has plummeted to near-zero. The added value that scientific publishers used to provide (typesetting, printing, and distributing) is essentially non-existent today. Although increased public access might hurt some publishers, it is not the mission of the federal research establishment to ensure continued business success for publishers. It is, however, incumbent on the government to make the products of federally funded research available to the public as widely and quickly as possible. We strongly urge immediate public access to the products of federally funded research. The benefit to researchers, practitioners, and the general public outweighs any harm that would result to commercial scientific publishing companies.

3. Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

Answer: The users of peer-reviewed research publications include other researchers, government agencies, universities (for both research and teaching), environmental consultants, non-university school teachers at various levels, and to some degree the inquisitive public. They currently access papers either by being subscribers to the journals (principally through their libraries) or by requesting reprints of the papers directly from the authors. If the papers were freely accessible, we expect there would be much greater use of the work, especially by students and the general public.

4. How best could federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

Answer: Federal agencies could best enhance public access to their peer-reviewed papers arising from their research funds by mandating that all funded researchers publish in open access journals, by allowing costs for the purchase of pdf reprints for each journal, by funding improvement of the host institutions website so that public access to research publications (by pdf download) is facilitated, and by direct negotiation with journals in order to seek access to all

published work.

Ensuring effective access will require financial support for either (or both) centralized or institutional repositories. This expense, however, will be trivial compared to the investment already made in generating the research. We strongly recommend that federal funding agencies be instructed to set aside a small but significant amount of funding directly for public access to research. This very small amount of funding would multiply the value of the research by making it available and would allow the researchers to comply with the access mandate.

5. What features does a public access policy need to have to ensure compliance?

Answer: To be effective, a public access policy must provide strong incentives to ensure that publications (and possibly supporting data) are properly deposited. We recommend that future funding from federal agencies should be made contingent on proper deposition of previously funded publications (starting from the time of adoption of a public access policy). This could be achieved by requiring the “Results of Prior Research” sections of grant applications to enumerate the public depositories where those results were placed. Failure to properly deposit publications in a public access repository should be treated in the same way as failure to publish the results of federally funded research, or failure to account for expenditure of federal research funds.

Additionally, to ensure compliance, a public access system must take into account the legal requirements of the publishing companies who produce the original papers and often retain copyright over each publication with respect to providing open access to the published intellectual property; the system must also take into account clear and unambiguous acknowledgement of the author and institutional rights pertaining to copyright and intellectual property embodied within the publications being made freely public. Publishers who wish to publish the results of federally funded research will be required to make Open Access to the papers a part of their copyright policy.

6. What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

Answer: We believe that the final published version is preferable to earlier copies of the manuscript. Clearly, only peer-reviewed manuscripts should be required to be available to the public. Any non-reviewed work could be erroneous or represent the biased views of an individual rather than a peer-assessed viewpoint. We see no hypothetical cases whereby a non-reviewed scientific paper would have

advantages for clarity or correctness over a peer-reviewed manuscript.

A common compromise in scientific publishing today is for publishers to permit open access to the final peer-reviewed manuscript in public depositories, but to prohibit public access to the final published version. This approach is not acceptable to museum scientists, and we recommend requiring public access to the final published version. An example of the reasoning behind this recommendation stems from the requirements of a major component of museum research: taxonomic publications. Taxonomy, the discipline responsible for systematically naming and organizing our biodiversity knowledge, depends on precise knowledge of publication dates and the exact language of textual species descriptions in order to achieve stability in describing the natural world. Those requirements are analogous to the need to know a date of publication to determine precedence in other scientific fields when essentially similar ideas are near-simultaneously published. However, in taxonomy, those date of publication requirements pertain to every single publication that erects a new species or taxon name.

Because of the requirements for precise knowledge of dates of publication in taxonomy, having multiple versions of papers accessible (for example, a final manuscript in a depository and a “published” version at a journal depository) is damaging to the science. Therefore we strongly recommend that a public access requirement should require access to the final published version.

7. At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

Answer: We believe that access to peer-reviewed papers should be immediate upon publication. The only reason for delaying access is to provide financial reward to publishers. We believe that the benefits of immediate open access outweigh the harm to publishers that is likely to result.

Because we recommend that the final published version should be the version made available (see answer to question 6), there is no decision to be made regarding different delays for different versions.

8. How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are

these anticipated to change?

Answer: Peer-reviewed papers arising from federal investment could be made publicly available from the host institution website or from newly created websites that host specific subject areas where the public can access published works (e.g. a portal about North American biodiversity or Paleontology etc). Data should be submitted as published pdfs of the papers with a consistent naming system (e.g. author date abbreviations and subject abbreviation). We would suggest that devising a system for free public access be done by archivists working with scientific librarian expertise. We do not know how these systems might change in future.

9. Access demands not only availability, but also meaningful usability. How can the federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g., number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access papers be given the opportunity to comment or provide feedback?

Answer: The federal government could make its collections of peer-reviewed papers more accessible to the public if funds were made available to develop clear, easily understood short summaries to accompany each paper, such as a synopsis written in lay terms that summarizes the fundamental points of the publication. Museums that use federally funded research to enhance their exhibitions and public programs could highlight areas in displays where federally funded research enabled the information to be developed, or have free access via download stations within its newly developed exhibitions if funds were made available to add such facilities to existing exhibitions. A tangible example of this might be in the Natural History Museum of Los Angeles County's newly developed "Age of Mammals" Gallery (to open July 2010) where several new kinds of prehistoric mammals will be displayed publicly, some of which were described using federally funded grants. If funds were made available a simple computer terminal could be added to the gallery where interested members of the public could type in a request for a free copy of the research paper and then have it automatically e-mailed to them.

Attached please find commentary on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government.

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

Re: Request for Public Comment on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government

Thank you for the opportunity to comment on this important matter of public policy. President Obama's Memorandum on Transparency and Open Government of January 21, 2009 calls for an • unprecedented level of openness in government. || **When the nation pays to conduct** research it seems unthinkable that the work is not already freely available to our citizens for the betterment of industry, education, and business. Information is expensive to produce and, in the current marketplace, expensive to share. In aggregate, libraries spend over a billion dollars each year to make information available — but even then access is limited by the scope of the licenses involved. Whether by subscription to journals or • pay per view || **models, general use and browsing is** prohibitively expensive for most people. This is a perplexing result for research that has been paid for by taxpayers. Most recently, 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. How can the full impact of that research be felt if the research itself is not meaningfully accessible to our citizens? Access to the best research done in the US benefits everyone and takes from no one. Thomas Jefferson's observation remains universal and true: • ... no one possesses the less because everyone possesses the whole of it. He who receives an idea from me receives [it] without lessening [me], as he who lights his [candle] at mine receives light without darkening me. || **Today, the public does not** readily have access to the fruits of much federally-funded research without paying explicitly for that access — despite having paid for performance of the work in the first place.

The University of Michigan Library has a long-standing commitment to the broadest possible access to scholarly materials. This is reflected in our efforts like Deep Blue (our institutional repository), HathiTrust (a national digital repository created by the cooperative efforts of some of the nation's top research universities that is hosted by our library), or our Scholarly Publishing Office (which supports scholarship by providing sustainable electronic publishing services). These resources strive to provide open, web-based access to the research and scholarship where possible; access is limited only as required by contract or copyright. Unfortunately, these limitations are often binding. Members of the general public are free to search our catalog and holdings on-line, but they are generally not free to read the works unless our licenses with publishers permit public access. Thus it is a common occurrence that research funded by the US government, held in our library, can only be accessed by the University of Michigan community, on whose behalf we subscribe to scholarly publications.

We see our efforts here at the University of Michigan Library in the larger context of activities nationwide and worldwide. We are delighted but unsurprised at the success of the NIH mandate and PubMed Central as a free, publicly accessible, reliable source for NIH-funded research. It is a clear example of what is possible when the results of current scientific research can be widely and

generally shared and repurposed. It would be a profoundly significant change to make the fruits of government-funded research openly accessible to the general public in a timely manner. It would also be relatively straightforward to achieve at little additional cost, taking advantage of existing infrastructures. Indeed, the cost of preservation, access, and dissemination of research articles would be modest as a portion of the overall cost of the research itself.

Please note that consistent with the Invitation to Comment, this response addresses specifically *scholarly publications* resulting from research conducted by employees of a federal agency or from research funded by a federal agency rather than other kinds of grant-funded activity (such as performing or fine arts), which may differ from scholarly publications both in type and modes of production. These are perhaps appropriate for another discussion in another forum, but I do not treat them here, as they are not scholarly publications as such.

My response to the questions raised in the Invitation to Comment follows.

1. How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer-reviewed papers arising from federal funds now, and how might this change under a public access policy?

There is a long-standing ecosystem of information in scholarly publishing. For decades, we have all participated in and necessarily relied on one another as authors, publishers, libraries, and universities to address aspects of peer review and distribution. Development of peer-reviewed paper is paid for by universities, research institutes, the contributed time of scholars, and, of course, granting agencies, notably including governments. Publishers, whether commercial or nonprofit, help to organize the review of scholarly work, and edit, • print,|| distribute and market the work. Selection, editing, distribution and sale are generally in the hands of publishers, a set of practices that made economic sense when printing and distribution were expensive.

But today's technologies allow for free and open access at essentially zero marginal cost. The issue is not and should not be • what has been|| in the past or the preservation of no -longer-relevant business models for their own sake. The academy's publishing practices will change and are changing in response to new information technologies. The tie between publication and peer review will almost certainly become weaker, as it already has in the fields that use extensive pre-publication sharing of work on the Web. But academic credentialing and peer review are properly the purview of the academy broadly, and their design and implementation should be orthogonal to the question of how best to make government funded scholarly research publicly available.

What might change under an open access policy? The Office of Science and Technology Policy's inquiry itself makes the case for public access to scholarly publications resulting from federally-funded research, listing several ways the return on federal investment in research may be better leveraged. To paraphrase some of the compelling reasons listed: the potential to promote advances in science and technology; improved cross-government coordination of government funding (and thus improved management of the federal research investments); more timely, easier, and less costly access to scholarly publications resulting from federally-funded research for educators and students, and • end users|| of research, such as clinicians, patients, farmers, engineers, and practitioners in virtually all sectors of the economy. (*End user* is a rather clinical term in this case for our citizens and our entrepreneurs. We talk today of a knowledge economy. They (we) have a right to this information as part of that economy. Moreover, in the use of scholarship, there often is no end user; there is merely a next user. (Who is the end user of Euclidian geometry or differential calculus?)) No doubt there will be a number of changes in the distribution of scholarly work under a federally-mandated open access policy. Such changes, as always, will create both gainers and losers. It is likely that the commercial publishers will see a reduction in profit. It is likely that the business models used

by many scholarly societies will have to be revised, and that universities and other supporters of research will want to work with societies to see how their vital work can best be supported. Provided that the system of scholarly communication continues to provide well-vetted work, and I am confident that it will, there is no general social loss associated with an open access mandate of the kind being considered here, and there is tremendous social gain in making the fruits of federally funded work broadly available.

2. What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

The policy should require — mandate — open access, not merely request it. The experience of the NIH in implementing PubMed Central is informative.

The mandate should apply to the Version of Record. Certainly the mandate could require access to the final peer-reviewed version *sooner* than the Version of Record. However the final Version of Record itself should be made open after a fairly short embargo period – a year or two at most. The final peer-reviewed paper and the ultimate Version of Record may differ considerably, thus it is important that the Version of Record as the authoritative reference and scholarly artifact be made publicly available under a mandate. I discuss this further in item 6, below.

The policy should apply primarily to work published in peer-reviewed publications. The policy should allow grantees to use grant funds, or to apply for supplementary funds, to pay the publication fees at open access or open access hybrid journals that charge fees.

The policy should let authors choose which open access repository to use, provided it meets certain conditions of open access, interoperability, and long-term preservation.

The policy should apply to articles that result from research funded in whole or in part by the funder's grant.

The mandate should be enforceable.

(Much of this list of features of a successful policy is based on a discussion of open access found at <<http://www.earlham.edu/~peters/fos/newsletter/08-02-06.htm>>.)

3. Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible?

Today, users are limited to those who can afford to pay for access. Other than the articles deposited in PubMed Central, the fruit of federally-funded research is often distributed through private publishers that charge fees for access in one form or another. Typically, users are likely to be affiliated with universities or industry-specific companies that necessarily make paying for information a priority. Many articles may end up in discipline-based repositories that the general public is unlikely to be aware of.

Even when they can be found, articles often cannot be used. Currently, public indexing usually identifies bibliographic information — but not the article itself. Today, a quick check on a search engine will usually lead one to articles of interest; they are findable. But one will generally be unable to access the articles themselves unless one is affiliated with a university or other institution that pays for the privilege of access. Consistent descriptions alone will not make the articles themselves.

Would others use these papers if they were more accessible? What would people use them for?

Presumably many people would use these papers if they were accessible. It is impossible to predict because we have no data upon which to base an estimate. What we know is that millions of potential users cannot access the material under current practices.

We do have some relevant anecdotal information. Our librarians tell us that when our students graduate and leave the University of Michigan with all of its rich resources, they are often surprised to discover that they no longer have access to our professional journals and databases. This is a rude

shock for many who have become accustomed to easy access to a rich set of resources during the course of their studies. Our alumni ask us what they can do to obtain access, and we tell them that we cannot legally provide access to alumni without incurring large increases in license fees. The works upon which they rely are on the other side of a pay wall that we cannot afford to scale or breach. The lifelong learning that we know is crucial to a vibrant knowledge economy is impossible without access to the work done by federally funded researchers.

4. How best could federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

Simply having a mandate to make peer-reviewed papers that arise from taxpayer-funded research publicly available would be a tremendous first step toward enhanced public access.

In the scholarly community, one way to gauge increased return will be to look at citation patterns, which tend to show an increase when articles are made openly available — meaning freely available to anyone with access to the internet. We see that pattern in open access journals generally. It is too soon to see that impact specifically for citations from PubMed Central. The best current analogy relates to citations to or from open access articles in general.

Another concern is the integrity of and access to accurate data in the course of public debates. An example is highlighted by discussion on November 30, 2009 on the Dot Earth blog from *The New York Times*. The blog • examines efforts to balance human affairs with the planet's limits. || A recent discussion about climate change and peer review addresses concerns about the integrity of data used in the science of global warming <http://dotearth.blogs.nytimes.com/2009/11/30/more-on-the-climate-files-and-climate-trends/>. The discussion focuses on questions about the availability and reliability of data sets and how science and related public policy affect each other accurately — or inaccurately — depending on the honesty of such data; whether such data is made available in its entirety — or not — affects the ability of others to make accurate analysis.

This question of the completeness and trustworthiness of data collected with public money is significant in and of itself. Yet there is another layer here. The discussion in the blog relies heavily on information in an article that was funded with the support of the National Science Foundation. The article includes a copyright notice for the year 2000 by the American Geophysical Union and may be obtained for a modest fee of \$9 (for non-subscribers) from the *Geophysical Research Letters* (• Causes of Global Temperature Changes During the 19th and 20th Centuries || (see <http://www.agu.org/pubs/crossref/2000/2000GL006109.shtml>). The *Geophysical Research Letters'* policy is to make articles open access for six months from first publication. After that, access is available by subscription or by fee.

In this case, the fee is modest, and I applaud the experimentation of the hybrid open access economic model of the journal. That said, should there be any fee for this article if it was funded by the NSF with taxpayer dollars? How would public policy and public debate about global warming be affected if the citizens had direct access to articles like this? Is the integrity of our public processes and democratic assumptions something that we can measure? What is trustworthy information?

5. What features does a public access policy need to have to ensure compliance?

A successful policy will make it easy for researchers and scholars to deposit articles, will mandate that deposit, and will make compliance with the mandate a quid pro quo for funding. To elaborate on the issue of ease, partnering with trusted institutional partners — those with a proven record of providing broad access and digital preservation — to create workflows and systems will promote

compliance on the part of researchers and ensure access for the public. The University of Michigan has, for example, worked with the NIH to act as a *publisher* in its deposit system, and in doing so helps to assure that our researchers comply with the NIH Public Access Policy (Division G, Title II, Section 218 of PL 110-161). Cultivating such partnerships and creating a distributed environment for preservation will result in a robust infrastructure that supports both researchers and the public. With regards to the importance of mandates and the aforementioned quid pro quo, the NIH experience regarding deposit into PubMed Central is instructive. Per <http://www.nihms.nih.gov/stats/>, fewer than 650 articles per month were deposited before the mandate was required by law. Now that the mandate is legally required, the average rate of deposit in the most recent six months is over 5000 per month.

6. What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

The public interest and our researchers are both best served by having the final published versions — the so-called Version of Record — available to them.

Under the present system, that interest is balanced against the research community's current reliance on publishers to manage some aspects of credentialing. While the researchers themselves perform both the research and the peer review, today most publishers handle the logistics of this review as well as performing additional copyediting functions. They pay for this editorial work via subscriptions, and the argument that this requires compensation and some say over how the results are distributed has merit, although it is less clear that a subscription model is necessary to pay for the requisite work.

In any case, exclusive control of distribution and access to the published work for the long duration of copyright is inconsistent with the public's right to have access to the research it funds (especially given that as a general proposition a term of copyright of • life of the author plus seventy years|| could easily mean 150 years of copyright protection). For an interim period, as new models for distribution and credentialing are tested and developed, access to the final, peer-reviewed paper, cross-referenced to the published version, may be the best that we can provide. However, our ultimate goal must be deposit of and public access to the Version of Record, as soon after publication as is practicable.

7. At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines? The ideal is immediate public access, though publishers argue that such access might undermine their business model and stress current systems for managing a number of editorial functions they have traditionally provided. The optimal length of time to protect that business model varies by research discipline, but a period of 6-12 months from publication of the final version or Version of Record is an embargo that most agree is suitable to balance the competing needs of private enterprise and the public good. The benefit of association with established journals and the importance to the academic community of having immediate access are likely to be sufficient for publishers to continue to thrive (albeit with some reduction in profit in some cases) with a relatively short embargo period.

Regarding fair use, there can be no use without access, so this policy should focus on access to research. Fair use principles are essential to effective copyright law quite independent of the issue under discussion here. However, because whether a given use is legally a *fair use* is always

determined on a case-by-case basis, it is not helpful in the context of ensuring broad public access. Alternative licenses have not evolved or converged on a standard as well established as current copyright law and are infrequently used; as such, they are also not yet useful in this context. It is likely that the optimal embargo period varies by field, and I can imagine that the granting agencies are best situated to make such determinations in consultation with the research communities and with OSTP. That said, it may well be that the simplicity of a blanket rule (six months or a year) with an appeals process would outweigh the benefit from a more elaborate set of optimizations. The implicit suggestion that the final peer-reviewed version be made open sooner than the Version of Record may provide a useful compromise. But the Version of Record should be made open after a fairly short embargo period — a year or two at most — even in this case.

8. How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?

Today, universities, libraries, indexers, search engines, and publishers work together and have developed an infrastructure that addresses the question of how to make works discoverable. As long as the discovered work is also accessible, we can and do index and preserve and present it in ways that are flexible, addressing new formats and technical needs quickly — perhaps more quickly than any centralized body.

Decades, even centuries, ago a collaborative network of universities, through their libraries, made discovery and access to our collective knowledge its mission. We argue that as long as such a network has stewardship of this content — non-exclusive stewardship is appropriate here — finding and disseminating it will follow naturally. I think the following is instructive. The University of Michigan was an early partner in bringing scholarly journals online, starting in the pre-worldwide web days. During their reformatting and digitization projects, publishers relied on our collections, and the collections of other research libraries, to fill in gaps in runs of their own journal back files. Their own archives were incomplete, in some cases missing years of content.

Archiving and interoperability standards exist. There are many to choose from, in fact, and converging on the appropriate ones will require coordinated effort, perhaps via a system akin to the Federal Depository Library system that served the nation's needs for so many years. Preservation and dissemination of the work is assured by such redundancy, and by limiting our reliance on organizations whose mission includes service to shareholders and who must be responsive to the demands of quarterly earnings statements.

9. Access demands not only availability, but also meaningful usability. How can the federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g., number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access papers be given the opportunity to comment or provide feedback?

With regards to a commenting function, there are two important cases to consider — commenting on policy proposed as a result of the material published in peer-reviewed works, and commenting on the peer-reviewed works themselves. The OSTP comment process, via blogs and public forums provides a model for how the former can occur. We should encourage such dialogue and continue to provide venues for it. With regard to the latter, here again a mechanism for feedback on the peer-reviewed work itself already exists. Peers communicate both informally via conferences, email, blogs, etc., and formally through published letters, clarifications, and other peer-reviewed papers. Preserving those

mechanisms is also essential, as those mechanisms currently in place work quite well and probably would not be greatly enhanced by adding centralized forums or functionality to them.

Regardless, the first step towards making peer-reviewed papers more useful to and more often discussed by the American public is to make them available. The greatest barrier to use is, as Tim Berners-Lee has pointed out, the absence of content itself, not want of good interfaces. (See • The Next Web|| presented at TED, February 4, 2009

http://www.ted.com/talks/tim_berniers_lee_on_the_next_web.html. Berners-Lee specifically talks about data, but the principle is the same.) Public and private sector solutions to usability problems abound, and will continue to flourish as universities, companies, and the federal government all continue their work in this area — some with an eye towards the public good, others with an eye towards market share and profitability. Quantitative measures for determining success abound as well — hits, downloads, citations, etc. — but we publicly fund research because we have, in the words of our Constitution, a national interest in • the Progress of Science and Useful Arts.||

Ronald Reagan famously invoked the image of a • shining city upon a hill|| for our country, as did John F. Kennedy years before him. In terms of research, we have sought this ideal for the world. We now have the opportunity to assure that the doors to that city’s library are always open, for the benefit of all. We will not and cannot know which visit to that library, which hit on a database, which download from a repository, or which subsequent published work will solve a pressing social, medical, or other problem, so we must first set our sights on accessibility, knowing that use and progress will follow.

Thank you for the opportunity to comment on this matter.

Sincerely,

Paul N. Courant

Greetings,

It is perfectly simple to me: We taxpayers paid for the research, we own the results. It would be most convenient to have the results posted on the web for free.

Wayne Montgomery, MLS, MA
Engineering Librarian
Robert E. Kennedy Library
Cal Poly University

TO WHOM IT MAY CONCERN

I write to support public access to all publically funded research. This is absolutely essential for the future of the dissemination of academic work, not only in medicine and science, but in all areas of academic research, which are very rapidly being taken over for profit by global corporations. Moreover, these corporations are making billions of dollars by selling academic publications, usually without paying for it or paying only a pittance to authors.

The corporation practices in this regard are already having serious consequences, to wit:

They are grabbing up the majority of publications that come from the collectivity of academics, grabbing up the entire supply or a huge part of it and selling off individual bits of it, which ultimately aggregate into millions and even billions of dollars gleaned off scholarly productions.

Further, not only are most of the big academic publishers getting our works free, they are taking away virtually all our traditional rights through the egregious demand that we transfer and assign copyright to them, otherwise they will not publish anything of ours.

And most seriously from the point of view of public access, these publishers are also obstructing, even preventing proper dissemination of our work which, even though they are often getting it free off our backs, do not want anyone else to get it free. So, they charge inordinate fees to purchase our articles online. Some, if not all, are also even including in the so-called agreement to transfer rights to them a provision limiting, even in some cases barring us from posting our articles online.

At the same time, some of these publishers violate our own copyright in the rare cases when we manage to retain them.

Providing public access at the very least to publically funded research would be an important step towards limiting these scandalous, exploitative practices from spreading to every corner of academic publication.

Paul R. Brass
Professor Emeritus of Political Science and South Asian Studies
University of Washington
Seattle

Classification: UNCLASSIFIED
Caveats: NONE

Public access to archived publications supported by federal tax dollars is imperative for continued innovation in the sciences. Scientific literature has a long history of being openly available, and the scholarly research method encourages sharing what one knows to help advance science. Only recently has private gain challenged public good, and intellectual property become a commodity.

We need to enable free and open access to all research funded by federal tax dollars. This includes not only publications, but initial data sets as well.

Sincerely,

I only just became aware of the OSTP solicitation of input from all stakeholders in regards to the Public Access Policy.

I am writing mostly as a taxpayer, secondarily as a working scientist in biomedical Research (MD, PhD, post-doctoral training, and 20+ yr independent research career mostly funded via competitive awards from NIH). My main thoughts about the Public Access Policy as formulated and applied:

A. I have serious reservations as to whether it has had anything like an appropriately realistic analysis of true costs, and suspect that over the long run the costs and damage to research will greatly exceed the benefits - despite government policy that new policy ought to have a positive cost-benefit balance.

[I know, the mandatory aspect was snuck in originally as report language in an Omnibus Appropriation, since 're-affirmed'; the point still stands that, as implemented, it is wasting my tax \$\$\$\$. There are cheaper ways to implement public access.

B. Federally-funded scientists should have the option of meeting a Public Access requirement by means independent from PubMedCentral.

Example - Requirement would be met EITHER if the article is available free of charge via PubMed because the publisher made final content available (Web link embedded, as already was being done by many journals even before the mandatory PubMedCentral upload law) within one year after publication (not acceptance), OR if it was uploaded via PubMedCentral.

The effect would be to reduce costs to the taxpayer while still meeting the demand for full publications after a reasonable time. At a time of huge government deficits, I get angry at the thought of \$\$\$ wasted on PubMedCentral for articles that were already freely available by the route noted above.

[The mechanism in the example would still achieve the reasonable objective of making sure that taxpayers gain access to studies - especially clinical trials, drug studies, device studies, etc - that were published in journals that were still refusing to create free access via PubMed-embedded links after 12 months.

C. One year is the reasonable time limit. Six months starts to waste tax \$\$ for reasons spelled out below (impact on publication costs).

D. Earlier time limits will end up draining even more over-scarce money from the research efforts, and be that much more onerous to science and scientists. Destroy the subscription base and journals will simply demand that ever-larger fees be paid for publication; these will mount to thousands of \$\$\$ per article. The page charges / publication costs will be charged by scientists to the Federal grants that sponsored the research. Multiply those thousands by the number of articles published per year; the costs (in addition to the high cost of running

PMC) will be in the scores to hundreds of millions of \$\$\$ diverted from research funds.

E. Another bad effect of the PMC mandate is that it creates two different versions of the same work. Real pollution of the scientific record.

F. As a smaller aside, as implemented the Public Access Policy (PMC) is a real disincentive in terms of even bothering to be a scientist.

Doubling back to the numbered questions:

1. "How do authors . . . & how might this change under public access policy?" -

We write the papers, publishers edit them, often making important improvements or clarifications. Taken further, Public Access will mean less, and lower quality, copy-editing, worse overall editing, at higher cost and, as noted in E, will create confusion in the record. In addition, the hassle is such that I already am trying to consolidate and publish less, and wait longer before publishing. Furthermore, publishers will simply eliminate journal titles. There is a real likelihood of further shortening of time to Public Access delaying emergence of important data.

2. "What characteristics would best accommodate needs and interests . . . ?"

Greater simplicity. Public Access is one straw helping to break many camels' backs. Diversity - at a minimum, take the suggestion in the example of B. Most of my published work was and is publicly available to all (after one year) even without having been put into PMC.

3. "Who are the users?"

Other scientists or medical researchers, almost all of whom already have subscription-based access, are almost certainly still the main users of full articles. (some community clinicians and disease advocates may benefit in the cases where they don't have subscription-based means of access at a fair cost - was a real problem but I doubt this pool of users is even a sizable minority of article consumers.

4. "How best to enhance PA? How to gauge if it increases return?"

At NIH level, the only enhancement would be to bypass the monopoly of PMC and implement a system where the mandatory PA requirement can be met by other means (noted in B above).

Given the way it was implemented, I doubt there ever will be an honest analysis whether it is increasing return on federal investment and would bet that whatever metrics are put in place will be designed to avoid risk of showing anything other than a positive result.

6. See above.

7. The period should be one year.

Society journal publishers (examples in my areas: ASBMB, AAI, ASM) will be able to provide you the data on number of downloads across time after publication, impact on journal subscriptions, and impact of the NIH PMC requirement.

NLM might be able to provide you data on what % of PubMed users who see both a PMC link and a journal publisher's link use PMC vs the journal's free-access link.

8. Via the publisher when publisher willing and able. Backup upload requirement (PMC if you will) if journal can't / won't. Just have articles in PDF form. Digital search tools are emerging that will use actual PDF file content as part of the search; the market and private enterprise of the software industry will help public access in this respect. The gov't, for all its virtues, will not do as well as the search company engineers.

9. Usability

Best metrics are % downloads from initial visitors (drawn mostly by the Abstract, which was reached by search engine), and total number of downloads.

Sure, allow some annotation to bypass "letters to the editor" - it probably will have little value (few useful entries; no expert comments if it's not anonymous, but imagine the blog-type comments if anonymous) or high cost (if gov't has to filter, curate or edit comments to keep out the garbage).

Mark Boothby, MD, PhD
Professor
Vanderbilt University School of Medicine

We are pleased to submit our response to the consultation on Public Access to Federally-funded Research.

Dr Stuart Taylor
Head of Publishing

The Royal Society
6-9 Carlton House Terrace
London SW1Y 5AG

Response to the response to Office of Science and Technology Policy public consultation on Public Access to Federally Funded Research

The Royal Society welcomes the opportunity to respond to the OSTP consultation on public access to federally funded research. The issue of open access, in general, of which this consultation is a significant part is of critical importance to the future development of scholarly communication and we believe it is essential to consult as widely as possible before preparing any legislation.

Introduction

The Royal Society is the UK's national academy of science and has been publishing scientific journals since 1665 when *Philosophical Transactions* was founded. *Philosophical Transactions* effectively invented the system of peer review which is now standard practice for all high quality journals. It is now published biweekly and is the world's longest running scientific journal.

The Society publishes seven peer reviewed journals in all:

Philosophical Transactions of the Royal Society A and *Proceedings of the Royal Society A* cover mathematics, the physical sciences and engineering; *Philosophical Transactions of the Royal Society B* and *Proceedings of the Royal Society B* cover the biological sciences; *Biology Letters* provides rapid publication of short articles on all aspects of biology; *Journal of the Royal Society Interface* is a high impact, international journal covering interdisciplinary research at the boundary between the physical and life sciences; *Notes and Records of the Royal Society* is dedicated to the history of science. Royal Society Publishing is committed to the highest editorial standards achievable and the very best service to authors and readers. We are also one of the most open access friendly of all the established science publishers and we believe in the widest possible dissemination of research outputs, provided that this is done in a sustainable manner. We are fully compliant with the open access mandates of the Wellcome Trust, the UK research Councils, the NIH and many other funding agencies. Alongside the traditional subscription model, we provide open access to our journal content in the following ways; "Delayed" open access All our current articles over 12 months old (on the B-side) and 24 months old (on the A-side) are freely available to all. This excludes the Digital Journal Archive (1665-2000).

"Green" open access Authors may deposit a "pre-print" of their article in a repository at any time and they may deposit the final, accepted manuscript version of their article in a repository from 12 months after publication. We also deposit appropriate articles in PubMedCentral (and its UK mirror site) on behalf of our authors in line with our 'Delayed' open access policy.

"Gold" open access Under our EXiS Open Choice scheme, authors may have their article made freely available to all immediately on publication on payment of an article processing charge. Such articles are covered by a Creative Commons license allowing redistribution and re-use, and we deposit them in PubMedCentral on the author's behalf. Developing world access The Royal Society also makes all of its journals available free of charge, on publication, to scientists in the world's poorest nations through programmes run by the World Health Organisation and the UN.

The importance of quality control

Any system which aims for wider dissemination of research results is to be welcomed provided that it recognises the central role of journals as the primary means of quality control in the scholarly communication chain. This quality control is provided primarily by the process of peer review which, though not perfect, has served science very well for the last three and a half centuries. If this crucial quality filter were ever to be dispensed with science would pay a very heavy price. The efficiency of the research process would suffer under the enormous burden of material of widely variable quality through which the hapless researcher would have to trawl laboriously trying to find the best and most relevant articles. So-called post-publication peer review is hardly a workable system judging by the paucity of comments generally posted to articles in journals which currently allow this, e.g. PLoS. If the central role of peer review is acknowledged – as we believe it must be - it must also be recognised that this comes at a cost. Traditionally, this cost has been borne by publishers from subscription revenues. Under a fully open access system there would be no such revenue and these costs would need to be recovered in other ways. The so-called "Gold" open access system allows for

author charges (in the region \$1000 - \$5000 depending on the journal) to be levied and this is a system we believe to be viable provided that funding is made available to researchers, either from their funding body via their project grants, from their institution or a combination of both. Authors based in industry would be likely to recover these charges from corporate funds. There are many other costs in the publishing system too, even in the paperless world we are likely to evolve towards in the near future. The process of correcting and formatting manuscripts, the preparation of the illustrations, origination, hosting, indexing and linking are all important ways in which publishers add value to the article and enhance its discoverability and usefulness to the researcher. The building and servicing of online submission systems and production tracking tools have enabled much faster publication times and allow authors to find out exactly where their article is at any point in the publication process. Publishers are constantly innovating and providing enhancements to the content they provide such as video podcasts and social media tools. In addition, most publishers provide some sort of facility for the storage and display of supplementary material such as datasets, video files etc. These are all welcomed by authors and readers alike and it is important that publishers remain able to fund them through a sustainable economic model.

Repositories

We also recognise, however, that institutions, universities and research funding bodies have a right to the outputs of the research they fund. Increasingly, they are building repositories to store these outputs and are asking or requiring their researchers to deposit their work in them. We believe it is entirely reasonable for an institution to do this, provided that they respect the terms and embargoes in publishers' licenses. There is no reason why a university, for example, should not hold a copy of every article written by their staff members and students for archival purposes.

In the case of the "author pre-print" (i.e. the version of the article submitted to the publisher and before any peer review or editing has been carried out), this is entirely the property of the author and the institution and since the publisher has invested no time or effort in it, we see no reason why this version of the article should not be stored or made available by the institution without any restrictions.

The case of the "post-print" or accepted version of the article, the situation is somewhat different. The publisher has invested time and money in the peer review process and therefore has some reasonable claim on what happens to this version. If a post-print is held in a "dark archive" it poses no threat to publishers' existing economic models. If, however, the institution wishes to make this version available to readers, it should do so in compliance with the publisher's license terms and it behoves publishers not to set unreasonable limits on when access may be provided (typically 6 or 12 months after publication). The "final published version" of the article has had the most significant amount of input and investment from the publisher and we believe it should not be stored in a repository, but only made available by the publisher. This version contains detailed mark-up, reference linking and often many other added value features and has been fully indexed by the various systems in the scholarly information chain. It is the "version of record." It is vital that this version is the one that is cited by the literature and to which any corrections, addenda or retractions are applied. These are all crucial elements in the research communication network and can only be provided in a controlled and systematic way by the publisher.

It is worth noting that the repository community has made it very clear to us that they make strenuous efforts to ensure they comply with publishers' licenses and operate rapid "take down" policies in the event that a deposited item is found to be in breach of them. This attitude is greatly to be welcomed.

Public access to publicly funded research

We believe that the public should be able to enjoy the fullest possible benefit from the research they have contributed towards through taxation. How this benefit is provided, however, is not merely as straight forward as allowing them to read the research articles it generates. In many cases, the highly technical nature of the material would not be easily assimilated or understood by a non-technical reader. However, providing other scientists with the fullest possible access to research outputs is likely to maximise the benefit of research and this is a goal we support in the ways we have outlined above. In addition, most publishers now engage actively with the media in order to disseminate the key messages from their publications to the public in a meaningful way. We do this very successfully ourselves and we would encourage all publishers to do so too.

To summarise;

1. We support the widest possible dissemination of research outputs provided this is done in a way which does not threaten the long term sustainability of journals and the crucial quality control they provide.
2. We believe that peer review is absolutely critical to the scholarly communication process and must be maintained.
3. We believe that any system of open access must recognise that there are costs in the scholarly publishing process and that these costs must be met.
4. We support the creation and use of repositories provided they respect the terms of publishers' licenses with their authors.
5. We believe that there must be a universally agreed "version of record" of any published article and that this should be maintained by the publisher.

Dr Stuart Taylor
Head of Publishing
The Royal Society

Dear Sir or Ma'am:

Attached (and below) are my comments on your office's questions regarding public access to government-sponsored research.

How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy? Currently many scientists maintain copies of their published articles which they supply to requestors on a case-by-case basis. A public access mandate would require that the authors supply the article to a repository where they could be accessed (printed or downloaded) freely without manual intervention. This would relieve the scientist of the burden of maintaining the files, naming them distinctly enough to identify the article and would also prevent accidental loss due to local (e.g. desktop) system failure.

What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public? The system of peer-review of scientific research, while it may be flawed, is nevertheless the best system we have available to us. While journal publishers do not pay authors for their work, they nonetheless provide a service in the coordination of the review system and distribution of the content. And of course the costs of providing these services will not go away just because the author (or one of the co-authors) of a paper is a federal employee. But the costs

should be perhaps shifted to those who benefit most from the service: the authors. The conventional publishing model is that the publisher provides the content and the reader pays them for it. But in the world of scholarly (peer-reviewed) publishing, a large component of the service benefits the reader more than the author by providing an outlet to publish their results and on which professional recognition is based. Therefore it may be best for federal agencies (or funding bodies) to pay open access charges where necessary.

Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose? It has been mistakenly emphasized in news reports around open access that those who would benefit from this information are patients suffering from diseases or their families. While there maybe cases of interested lay-people, the more likely beneficiaries of unfettered access to the fruits of government-sponsored research are the scientists and researchers across the country and throughout the world who work for under-funded institutions and who are unable to afford the rapidly increasing subscription costs of peer-reviewed journals.

How best could federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access? To enhance usage text created by federal authors could be marked up using semantic properties to assist in creating sophisticated search and retrieval systems as well as capturing. To adequately measure the effectiveness of such a program there would of course have to be a baseline measurement taken of some of the following suggested metrics. First, a simple count of downloads from the agency website or repository versus counts by publishers for the same content might show effectiveness of the policy. Effectiveness could also be measured by an increased public inquiry regarding the agency's scientific activity and/or invitations to scientists to speak or write further on their topic.

What features does a public access policy need to have to ensure compliance? In the best of all possible worlds, each agency would mandate that authors, upon submitting a manuscript for formal publication to a peer-reviewed journal, would at the same time send a digital copy to the IT office, library, archives or other department charged with making the results publicly available. Where periodic and regular review of scientists' work is a routine part of the agency's function, it could be built into the system that review cannot take place until manuscripts are submitted to this central office and that publication lists submitted by the scientist in advance of the review must match the items which were deposited in a repository.

What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper? Current copyright law states that works created by federal employees as part of their normal job duties are not copyright-able and are in the public domain. While this would appear to permit the published version of federal scientists' works to be made freely available on agency websites, there are some questions that need clarification. One is the status of works that are co-authored (not solely written) by federal staff. Are these, too in the public domain? Several court decisions on this appear to be in conflict. It also is unclear whether the publisher's version of a document authored by a federal employee is in the public domain. But in the interest of implementing this policy as quickly as possible, agencies should require the final, accepted version of the author's manuscript at the very least. Where an open access fee has been paid

(by the author, his/her agency or someone else) the published version should certainly be made available. In either case researchers who need the information for practical (rather than research) purposes can have access to the information they need and which was funded for the public good. Those who need to cite the publication in subsequent research publications can either obtain the published version from the publisher or other provider (e.g. library) or have some confidence that the item they are reading (if the manuscript version) is substantially identical to the item that forms part of the body of scholarship which the published version represents.

At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines? If the author's institution or agency pays the publisher for the service they provide (review, editing, see open access fee, above) then it makes no difference whether the item is available immediately or not.

Presumably with other business models, the publisher would want to protect their source of revenue by delaying access to the item for which they are receiving subscription payments. But if their payment is received not from readers but instead from authors, then they can expect no further income from the item once it is published. Therefore it should not matter to them whether it is made publicly available immediately upon acceptance, etc. If the author is posting only the final, accepted manuscript version and not the published version, again it should not require a delay because those who wish to cite the work will need to obtain (presumably for a fee) the published version.

How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change? Ideally each federal agency (or some unified body) would coordinate the format and markup of the document to create some ease of search, filter and retrieval of information. Commonly items are available as PDF today and there is an archival standard, PDF/A which ensures some longevity of the document. Most use of scholarly material by scholars is done on a "known-item" basis. That is, a person queries a data source in pursuit of an item that s/he has seen cited or mentioned somewhere else. Generally this is done by author/date or title search. This is as opposed to a subject-based access method where the search is not for a specific item but for all items with the keyword, "climate change" for example. In the case of known-item search, all that is necessary to index is the author, title and publication year. So in that case a simple compilation of PDF/A articles is workable for now. But a future consideration should be that these items be semantically marked up, perhaps using XML to make them much more rich and usable.

Alvin Hutchinson
Smithsonian Institution Libraries

**American Association of Community Colleges Comments on
*Public Access Policies for Science and Technology Funding Agencies Across the Federal
Government***

On behalf of the American Association of Community Colleges (AACC), I am pleased to have the opportunity to submit this brief response to the Office of Science Technology Policy's (OSTP) request for public comment in this matter. I wish to endorse the comments submitted in this proceeding by the Association of Public and Land-grant Universities (APLU).

AACC is the national voice for the nation's 1,177 community colleges. According to the latest Department of Education figures, these institutions enrolled 6.7 million students in credit programs in the fall of 2007, comprising 44% of the nation's undergraduates. Based on a survey of its membership, AACC estimates that community college enrollment has grown to 8 million students in the fall of 2009. As APLU noted in their comments, community colleges play an important role in providing education to eventual baccalaureate degree recipients. According to the latest National Center for Education Statistics (NCES) Baccalaureate and Beyond Longitudinal Study, 49% of the students who received a bachelor's degree in 1999-2000 attended a community college at some point during their academic career. 44 % of those students began their studies at a community college and later transferred to a four-year institution. An informal examination of NCES data indicates similar percentages for baccalaureate degree recipients in science, technology, engineering and mathematics (STEM) disciplines. Approximately half of STEM baccalaureate degree recipients attended a community college at some point during their academic career, with nearly 20% of these degree recipients starting their studies at a community college.

Given their central role in providing undergraduate education to the nation's baccalaureate degree recipients and cutting-edge technical degrees and certificates, community colleges are keenly aware of and interested in issues of public access to federally funded research. College administrators, faculty and librarians have repeatedly expressed concerns about the escalating costs of subscribing to scientific journals and the reduced access to them that has resulted from their conversion to electronic formats. As APLU notes in their comments, improving access to the latest research would have an even greater impact on community colleges than research universities, as community colleges typically have fewer resources in this area.

We support the improvement of access to federally-funded research as outlined in the APLU comments. Thank you to the OSTP for their examination of this issue.

Sincerely,



George R. Boggs
President and CEO

I am writing to support the NIH initiative to provide public access to all research supported by taxpayers dollars. This is a crucial part of the research enterprise and one that needs to be fully implemented - ie with no delay between publication and accessibility to everybody - as soon as possible.

Increasingly, researchers at small institutions such as small colleges, small Universities and small companies find the price barriers to access to the scientific literature to be unaffordable. In addition, many schools where students are participating in science fairs cannot get at the original literature that

would make their research more meaningful and relevant. Patients diagnosed with diseases such as cancer cannot access the primary literature that would help them push their doctors towards the most up-to-date treatments. In contrast they can find all the junk science that is freely available on the internet.

This must cease. It is imperative that the whole scientific literature be freely available to everyone who wants to read it. Despite what many publishers are saying it is possible to devise business models that permit immediate access to the scientific literature. Nucleic Acids Research, a journal for which I was chief editor for more than 20 years, successfully transferred from a subscriber only model to a true open access model a few years ago. That journal is flourishing and is successful. We did it by simply asking authors to pay publication charges, the sort of charges that people are used to paying to advertize their products. There is no reason other than greed why other publishers cannot do the same thing.

I would urge you to insist that all publications that result from taxpayer revenues are made completely free to the public as soon as they are published. We no longer live in a world where it is appropriate for a small cadre of publishers to control access to the products of taxpayer-funded academic research. As a senior executive of Elsevier reported to me: "if we can't make good profits from publishing scientific research we will look elsewhere for our profits."

I suggest they do and allow those journals that have openly embraced open access to take full responsibility for publishing the results of our research.

Yours Sincerely
Rich Roberts

Sir Richard Roberts Ph.D. F.R.S.
1993 Nobel Laureate in Physiology or Medicine
Chief Scientific Officer
New England Biolabs

Re: extended time to comment on phase III

I want to express my support for the creation of online access, similar to the health & medical research access, for the rest of the federally funded research. In similar fashion, making the results public within the first year can be voluntary and mandatory after that. The file format used should be indexed, searchable, and multi-platform. I favor PDF, but other formats may be more practicable or technologically more advanced or flexible.

Roger W. Wisner

My opinion, unless government funded program including the certain funding for the publishing process. Publishers should charge the basic operation cost or other cost according to those programs.

Wendy Ding
Deputy Director

To whom it may concern:

On behalf of Duke University and the Duke University Libraries, I would like to thank the Office of Science and Technology Policy for the opportunity to comment on the importance of public access policies for research that is federally funded. Duke has long supported these policies, including the National Institutes of Health's Public Access policy and the Federal Research Public Access Act as it was introduced in 2006 and 2009. Such support is, we believe, consistent with our "enduring theme" of putting knowledge in the service of society. Beyond acknowledging the importance of public access, however, I would like to stress four important points.

First, the Internet has provided a tremendous opportunity for researchers to explore new relationships with one another and with the public. Public access to federally funded research is a new online opportunity that promises to benefit not only those taxpayers who have not previously been able to obtain access to research output, but also researchers themselves. In addition to enhancing accountability for the expenditure of tax dollars, public access can increase the efficiency of searching for information, help ensure that researchers can find a larger percentage of relevant articles and decrease the time lag between the reporting of research results and their application to new projects. Researchers at Duke have indicated that open access to research funded by the National Institutes of Health has already provided these benefits. More widespread application of public access policies will do even more to further the progress of science.

Second, public access policies should be formulated so that researchers' compliance with them is as simple and quick as possible. Many of the benefits to the research process that are offered by public access would be lost if researchers had to spend large amounts of time that would otherwise be dedicated to their work struggling to comply with various mandates from funders. For this reason, the more consistent these policies can be across different agencies, the better the results will be. Also, ingestion mechanisms need to be as intuitive as possible. Here too, a single ingest for multiple funding agencies, or at least very similar mechanisms, would best serve the goal of promoting scientific progress.

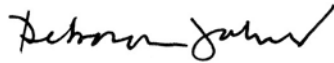
The public access policy at the National Institutes of Health is a good model in this regard, although ongoing efforts to streamline the process are still needed. Duke University is proud of the leadership it showed in 2008 toward helping educational institutions comply with the new, mandatory policy. Our researchers have generally found that compliance has not been as difficult as they feared, and that the benefits from that policy have justified the small amount of extra work. Much of the success of the NIH policy could and should be imitated as other funding agencies implement public access.

Finally, funding agencies should be encouraged to seek partnerships with academic institutions as they implement public access policies. The NIH benefitted from having a public database already in place when they moved to mandatory public access. For other agencies that do not have that advantage, partnering with academic institutions, especially those with a strong research community in the relevant field and a functioning open access repository, would offer an expedited path for implementing a public access policy. The sharing of expertise would benefit both sides of such a partnership, and the institution would enhance its reputation in the area. Such partnerships are, we

believe, already being initiated in some cases, and agencies considering public access should be encouraged to explore the opportunities.

Again, thank you very much for the opportunity to share these reflections, and for the interest shown by the OSTP in the important topic of public access to taxpayer-funded research.

Sincerely,



Deborah Jakubs, Ph.D.
Rita DiGiallonardo Holloway University Librarian
& Vice Provost for Library Affairs
Duke University

Response to OSTP Invitation for comment on the development of policies to deliver public access to the published results of taxpayer-funded research:

First of all, I want to thank the Office of Science and Technology Policy (OSTP) for taking an interest in this issues and for taking the time to explore it thoroughly with stakeholders. At the University of Pittsburgh Library System, we have years of experience with mounting open access documents on the Internet from public domain books, to archival materials, to preprints of journal articles and now even open access journals, all of which we support with a technology infrastructure to insure longterm access and preservation. We have, for example, mounted the PhilSci Archive, a preprint server for the discipline of the Philosophy and History of Science, currently with more than 2,000 articles contributed by hundreds of scholars around the globe. This material receives heavy use internationally. We also have repositories for the study of the European Union, minority health issues, and others. We have several open access journals mounted on our platform including the new International Journal of Telerehab-ilitation. The use of these open access papers is far higher than the equivalent journal articles in subscription based journals because both discovery and access is open and free on the Web. We support the NIH approach to public access to the research results arising from NIH sponsored research and would very much support such a policy for other federal science and technology agencies. Public deposit of taxpayer-funded research for the benefit of science and taxpayers is something that should be done, especially after the NIH experience has proved so valuable to the public.

At the present time, most scientific research is available from subscription-based journals. Prices of scientific journals is quite high, especially from commercial publishers. As libraries at research universities are being forced to cancel many of these titles because of reduced funding and increasing costs, access to this research is actually shrinking. Some scholars are able to place their versions of research into local repositories such as the ones we manage at Pitt, but this is by no means the majority of them, and access to this research in local repositories is not permanent and stable. It is important that this material be mounted in a single, government-sponsored environment that will insure permanency and systematic access in a consistent fashion. It is further important that the format be standardized so that the material can be fully read and used. XML is the current preferred standard. PDF, a common format, is not sufficient as it is proprietary and does not support granular-level linking and other requirements. Implementation of any policy requiring deposit for public

access must be closely coordinated across all agencies to ensure seamless compliance. Multiple policies would introduce unnecessary overhead and costs into the system. I would favor a short embargo period, no more than six months, which is more than sufficient to ensure that there is no negative impact to publishers of these journals. Research libraries will not wait six months for this information and so will continue to subscribe to journals reporting this research to the extent possible.

I urge the adoption of a uniform federal policy requiring deposit into a publicly available repository of all journal articles arising from federal funding, regardless of agency and with a minimum embargo period.

Rush G. Miller, Ph.D.
Hillman University Librarian and
Director, University Library System

Thank you for giving the public the extended opportunity to comment on your Public Access Policy Forum. I have read many of the comments, and can tell you at the outset, mine are purely from the perspective of a member of the public, as I was directed here by another forum because of my growing interest in patient participation in public health.

As such, these are a couple of points from the perspective of a medical patient-one diagnosed more than once with somewhat rare disorders (Cluster headache, and Sweet's Syndrome):

1. For some patients, the ability to do research on their own health, and take an active part in seeking to improve it, equates directly with psychological well-being, because it enables us to manage the feelings of powerlessness that often accompany illness. Not knowing, and not being able to make efforts to find out, because of incomplete data, can be and often is far more distressing than the empowerment of knowledge—even in cases where the knowledge might be disconcerting, or challenging to understand; and data pertinent to a particular patient's health issues is often scattered across several studies and reports that deal with different aspects of the issue at hand. This makes it not just impractical, but impossible for most patients to afford the cost of pay-per-view articles while tracking down the needed information. Further, allowing publishers to opt out of an open resource policy will guarantee non-compliance on issues of the greatest urgency (and therefore the greatest potential revenue stream), thus nullifying the real benefit of the program, if it is not mandatory across the board.

2. There are many conditions (if not most) for which the jury is not in on what the data mean. Doctors, being full time health *practitioners*, cannot possibly have the time to do the secondary (or tertiary) research and comparisons that particular patients might be interested in doing for themselves; and, in my experience, those patients who are able to educate themselves on their health are also likely to try, and likely to get decent results, either in terms of improved self-care, or at the very least, better acceptance of what they might be dealing with. Free and timely access to relevant primary research via the Internet for all patients (and therefore all persons) should be made available—in the interest of public health, and of driving down the cost of health care by making it possible for patients and their full range of advocates to cull the available information on health issues, so that when they visit their doctors they will be ready to ask informed and relevant questions and proactively pursue good health.

3. Medical researchers are the ones doing the most actual study of particular conditions, medications, systems, and so forth-not doctors. Again, doctors may have time to look up the patient's condition, but not likely as much time as the patient or their family has for this, and there is a huge amount of information available from researchers' published work on any given condition, which can be much more useful if made freely available. In particular, at the onset of my Sweet's Syndrome, I was misdiagnosed, and had to do my own research to find out enough to know who to go to for a correct diagnosis. This was the case for many of the SS patients I now know (through an online forum). The same was true for me previously, when I was a child and had cluster headaches: because I was only ten at onset, and female, which is not typical, no one guessed what was wrong. I had to hit the books (there was no Internet back then) and figure it out before I knew to go to a neurologist who specialized in my problem (by then I was 19, and had been living with the condition undiagnosed and untreated for 9 years). This can't be all that abnormal if it happened to me twice. And I'm not trying to insinuate anything negative about GPs or emergency doctors; there are just too many things that can happen to people's health, and these doctors do quite well to know and recognize as many as they do. The catch comes when the patient needs a specialist to do the diagnosis, and it's not readily evident which specialist to send them to. Patients who are willing and able to scour the data looking for clues ought to have the opportunity, and they should not have to wait years, or even months, to see these data. I therefore advocate for free release of health and medicine related articles on a quarterly basis.

4. In light of the many benefits to patients, medical practitioners, and scientists in having health and medical primary and secondary research made free to the public in a timely manner, it makes sense to me, also, that other scientific research funded by the US government should also be made freely available to all. I agree with others who have commented that such policies can and should be implemented by incorporating the open policy into the grant writing process, by using the many sources cited of exemplary similar work in other nations and other fields as benchmarks in the process, and also by building into the policy a re-evaluation mechanism whereby comparisons of like issues and policies across platforms, as well as developing a set of common goals and standards, can be used to improve each system in place.

Thank you again for giving me the opportunity to comment. I recognize that I am not a professional in the scientific, or research fields, but I hope that my comments have added something to the discussion. It is an important matter for all of the public, as well as for the betterment of science and the role of government as liaison between the two.

Kind regards,
Leha Carpenter

Dear Sirs,

Please find attached a response on the topic of "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government" from Enabling Open Scholarship, an organisation of senior managers in universities and research institutes worldwide and policymakers in government departments.

Yours faithfully,

Alma Swan
(on behalf of the EOS Board)

Alma P Swan BSc PhD MBA
Convenor
EOS (Enabling Open Scholarship)

[**Note:** Please see attachment. The.pdf would not format properly within the Word document.]

Thank you for the opportunity to comment on issue of great import to every citizen of the US. Please excuse my extensive use of cutting and pasting in my contribution here. But I do want to second the very valuable comments of Rich Roberts, particularly his statement, "We no longer live in a world where it is appropriate for a small cadre of publishers to control access to the products of taxpayer-funded academic research."

And those of Rush G. Miller when he says, "At the present time, most scientific research is available from subscription-based journals. Prices of scientific journals is quite high, especially from commercial publishers. As libraries at research universities are being forced to cancel many of these titles because of reduced funding and increasing costs, access to this research is actually shrinking. Some scholars are able to place their versions of research into local repositories such as the ones we manage at Pitt, but this is by no means the majority of them, and access to this research in local repositories is not permanent and stable. It is important that this material be mounted in a single, government-sponsored environment that will insure permanency and systematic access in a consistent fashion. .Implementation of any policy requiring deposit for public access must be closely coordinated across all agencies to ensure seamless compliance. Multiple policies would introduce unnecessary overhead and costs into the system. I would favor a short embargo period, no more than six months, which is more than sufficient to ensure that there is no negative impact to publishers of these journals. Research libraries will not wait six months for this information and so will continue to subscribe to journals reporting this research to the extent possible.

I urge the adoption of a uniform federal policy requiring deposit into a publicly available repository of all journal articles arising from federal funding, regardless of agency and with a minimum embargo period."

The comments of Paul R. Brass here are also important to note as they illustrate the deleterious effects of the current state of affairs on scholars and scientists, "Further, not only are most of the big academic publishers getting our works free, they are taking away virtually all our traditional rights through the egregious demand that we transfer and assign copyright to them, otherwise they will not publish anything of ours."

And those of the librarian Melany Wilks are important and touching ("Many students and active citizens would use the research gleaned from research in the science area. If we want to have more youth and young adults study in the scientific fields, then we must have the information given to more than just the elite who can attend expensive universities that purchase these expensive databases with this information.") and as a graduate of a land grant university and a beneficiary of community college programs and as someone who has worked with young nursing students in such a program, I very much second the comments of Cable Green and those of Peter McPherson, President, Association of Public and Land Grant Colleges here:

"Clearly, superior graduate education is based on use of scholarly literature. Graduate student research papers, theses and dissertations involve substantial access to the literature. Ensuring that all published research arising out of federally-funded research is available to graduate students would improve their papers and permit them to build on past findings in their research. Since many doctoral students serve as research assistants while pursuing their degrees, improved access to research findings also has the potential of improving the research products of the faculty members for whom they work.

Undergraduate study at our universities differs from study at non-research universities. Our faculty members are well versed in the research literature and use research findings in their classroom presentations. The best of our undergraduates incorporate undergraduate research experiences in their programs of study. Essentially all of our undergraduate students access the scholarly literature as they write papers for their courses. Improved access to research will benefit undergraduate education.

While it varies across member universities, 20% to 60% of admitted students took coursework at community colleges. Few community colleges can afford to subscribe to an extensive array of scholarly journals. Thus, during the community college portion of their education students have far less access to the scholarly literature than after they transfer to research universities. Thus papers that they write while at the community college cannot benefit from access to scholarly literature. Similarly, their faculty members cannot incorporate in their instruction the latest research discoveries. While improved public access would have significant positive impact on research university undergraduates, it arguably would have the greatest impact on community college students.

Benefits to Business and Citizens

Having faculty research fully and freely accessible to all citizens is of high importance to public institutions. As scholarly journals have migrated from print to electronic form, access to their contents has been restricted largely to those who are members of the university community for which the electronic journal is licensed. Universities that once could lend copies of journals to the general public or permit them to have photocopies through inter-library loan, can no longer do so. Thus the continuing migration of

the scholarly literature to electronic form reduces its availability to the public. Many businesses need access to scholarly literature. Clearly high-tech start-ups are in this category but so are existing businesses whose processes are dependent on technology. Better information access improves their chances of remaining competitive and profitable.

Many individuals require access to the scholarly literature as well. Those faced with disease want to know first-hand the results of government research that may provide greater understanding of their conditions, and many informed laymen can bring referenced findings to the attention of their physicians. Citizens who simply want to be well informed also appreciate access to the scholarly literature. The same motivations that lead government agencies to commission a scholarly work motivate such citizens to want to read the results."

Thank you again for sponsoring this edifying forum.
Hope Leman

TO: The White House Office of Science and Technology Policy (OSTP)

Re: The development of policies to deliver public access to the published results of taxpayer-funded research

To Whom It May Concern:

As president of HONORreform Foundation, I want to personally thank the OSTP for taking a deep interest in this issue and for taking the time to explore it thoroughly with all stakeholders. In the relatively brief time that the internet has been available, we have seen the valuable ways that patient advocacy organizations, policy makers and researchers are able to interact with the results of research in new ways. We must take advantage of this important opportunity to make sure we have policies that optimize these new opportunities. We support the NIH approach to ensuring public access, through a policy that requires researchers to deposit articles accepted for publication. We encourage OSTP to extend NIH's successful public access policy framework to all other science and technology agencies.

We know that the government spends billions of taxpayer dollars to fund research, and the public has a right to access and use those results. This research is conducted to drive discovery and development that advance the public good. The public as a whole is concerned with ensuring that the process of research dissemination and use is as efficient as possible, so that it delivers the best return on our investment.

I am a victim of healthcare associated transmission of Hepatitis C through unsafe injection practices. My case is not an isolated incident; in the past decade there have been over 100,000 Americans who received a letter from their local public health agency urging them to be tested for Hepatitis C, Hepatitis B and HIV. Research is ongoing at the CDC regarding these outbreaks. It is vital that we share this information broadly so that we can prevent these needless outbreaks – that result in unimaginable suffering for the victims – from happening again. However, currently there is currently only one real way to access the results of research funded by taxpayer dollars – to subscribe to journals. The cost of doing so is increasingly prohibitive. There is a real need to democratize accessibility and usability of this information.

We believe that public access to the published results of federally funded research should be a requirement across all agencies. Articles that result from federal funding should be made freely accessible within zero to six months of publication. Articles should be housed in permanent, interoperable digital archives. Access may be either to the author's final manuscript or to the final published version. Articles should be presented to the public in a standard digital format that allows them to be fully read and used. The archives must ensure permanent public search, retrieval, and full use rights – such as the rights to data and text mining, etc. Implementation should be closely coordinated across all agencies to ensure seamless compliance. Multiple policies would introduce unnecessary overhead and costs.

Once again I would like to thank the OSTP for facilitating such a robust discussion of this important new opportunity, and we encourage you to follow through on expanding the NIH public access policy to cover all other federal science agencies.

Sincerely,
Evelyn V. McKnight, AuD
President HONOReform Foundation

From: Kara Malenfant

The American Library Association (ALA) and the Association of College and Research Libraries (ACRL) write in response to the request for information issued December 9, 2009, by the Office of Science and Technology Policy (OSTP) regarding public access policies for science and technology funding agencies across the federal government.

The ALA is a nonprofit professional organization of more than 65,000 librarians, library trustees, and other friends of libraries dedicated to providing and improving library services and promoting the public interest in a free and open information society. ACRL, the largest division of ALA, is dedicated to enhancing the ability of academic library and information professionals to serve the information needs of the higher education community and to improving learning, teaching, and research. Both the ALA and ACRL publish scholarly, peer-reviewed journals in the field of library and information science. The ALA and ACRL appreciate the opportunity to comment on increasing public access to scholarly publications resulting from federally funded research. Many of our individual members and their libraries will also submit detailed comments on the OSTP blog. The ALA and ACRL have long believed that ensuring public access to the fruits of federally funded research is a logical, feasible, and widely beneficial goal. The National Institutes of Health's (NIH) Public Access Policy, as enacted, provides a tremendous public benefit and accelerates the advancement and practical application of, and access to, knowledge.

It is entirely in keeping with the missions of all types of libraries, especially public, college, and university libraries. Both the ALA and ACRL have endorsed "The Federal Research Public Access Act of 2009" (S. 1373) noting, "It reflects ALA policy regarding access to federal government information by providing for the long-term preservation of, and no-fee public access to, government-sponsored, taxpayer funded, published research findings."

We understand you are not looking for sweeping philosophical statements about the benefits of public access policies, but rather for specific information and evidence to

support recommendations on implementation, features and technology, and management. In that spirit, the ALA and ACRL offer the following comments.

1. **Which Agencies.** All federal agencies funding significant research should adopt public access policies. This is important in a wide variety of disciplines, as new research in many fields can have an immediate impact on the public good. It is also necessary to establish consistent expectations and conditions for the management of grants and resulting output, saving institutions and principal investigators valuable time. ALA/ACRL Comments to Office of Science and Technology Policy, January 12, 2010. p. 2

2. **Mandatory.** Based on the initial experience of low manuscript deposit rates under a voluntary NIH Public Access Policy, mandatory policies are necessary to ensure compliance and routine uptake of such submissions.

3. **Earlier Access.** We urge a short embargo period and recommend a 6-month maximum to bring U.S. policy into alignment with policies already in place in Canada, the United Kingdom, and the European Union. This would better reflect the rapid pace of research in the science and technology fields and would enable more timely use of research results.

4. **Version.** While the final published version of an article is preferred, we consider the authors' peer-reviewed manuscript to be an acceptable substitute, as long as it is clearly noted as such, and includes the publication citation and a link to the final published article. Research funders and journal publishers commonly provide broad access to authors' manuscripts prior to publication. ACRL employs this practice with its own scholarly journal, *College and Research Libraries*. We also support deposit of authors' final manuscripts in their home institutional repositories in addition to the managed repository environment that would be established by the funding agencies. So long as each version is properly documented, we believe that any potential confusion caused by having multiple versions available is offset by the expansion of access this would create.

5. **Format.** The authorized repository should provide support for converting the file to a standard mark-up language, such as the currently preferred XML, if the file is not submitted in that format. PDF, a document format in ubiquitous use, does not support robust searching, linking, text-mining, or reformatting over the longterm, nor does it provide full accessibility for the blind and reading impaired. Standardization of format across the board is a key element to long-term public access. The options for submission format should follow the conventions of the disciplines from which the papers come, and not create an undue burden for the authors or publishers.

6. **Cost control.** To keep implementation costs reasonable, it will be important for agencies to avoid establishing independent proprietary repositories. Federal agencies should look for possible economies of scale by partnering with each other or with academic institutions.ⁱ The latter's research libraries already have experience with repository management, archiving, and access by coordinating investments for maximum advantage to scholarship as a whole. NIH has instructive implementation data. ⁱⁱ Additionally, the primary policy requirements

should be coordinated across agencies to reduce the burden on grantees to learn requirements for multiple policies, to facilitate compliance across the board, and to maximize the discoverability of all relevant papers regardless of funding agency.

7. Comment/feedback features. Scholars are increasingly communicating peer-to-peer while research is in progress and, “what the publisher produces—the final journal article—is more or less a footnote to the R&D process.”ⁱⁱⁱ In some disciplines, there is a movement to “democratize knowledge,” which can be interpreted as both reaching out to the public to share academic discoveries and inviting contributions.^{iv} In light of this, any measures or policies being adopted now must be carefully crafted to allow, and not inadvertently thwart, changes in scholarly practices that are emerging or that have yet to emerge.

Academic and research libraries across the country invested significant time helping their campuses prepare for and implement the new NIH policy – through outreach, copyright education, technical support, and other means. Should additional federal agencies adopt public access policies, ACRL is well-suited to assist our libraries and campuses again by sharing best practices, promulgating model publication agreements, and providing education about the rapidly changing scholarly publishing environment in which these policies fit. Meanwhile, the ALA will continue its mission to assist our patrons in accessing such critical federally funded information that would be made available.

i Harnessing Openness to Improve Research, Teaching and Learning in Higher Education. Committee for

Economic Development. 2009. See second recommendation for colleges and universities. p 44.

http://www.ced.org/images/library/reports/digital_economy/dcc_opennesedu09.pdf

ii Analysis of Comments and Implementation of the NIH Public Access Policy. September 30, 2008. p 2

http://publicaccess.nih.gov/analysis_of_comments_nih_public_access_policy.pdf

iii Reality Bites: Periodicals Price Survey 2009. By Lee C. Van Orsdel & Kathleen Born -- *Library Journal*, 4/15/2009

<http://www.libraryjournal.com/article/CA6651248.html?q=periodicals+price+survey+2009>

iv For more on this see <http://www.hastac.org/forums/hastac-scholars-discussions/democratizingknowledge-digital-humanities>

ACCESS TO GOV RESEARCH DOCUMENTS

From: Deborah P. Teel

YES

To whom it may concern:

First I would like to thank you for the opportunity to provide input. I believe this is a very important issue. Healthy science requires the free

flow of information. Scientific journals published by for profit companies make a profit by controlling access. There is a fundamental conflict that needs to be mediated, especially when the research is publicly funded. There is no question that high journal and book prices inhibit the free flow of information. Institutional journal prices can be in the thousands of dollars per year for a single journal, and many university libraries have had to cut journals primarily based on cost. Reading the acknowledgements in those journals makes it clear that much of the research reported in there is supported by public monies (NSF, etc.). I very much support the NIH policy, and would love to see it expanded to other agencies. Having a reasonable embargo period provides an opportunity for compromise, to find a workable solution for publishers. However, given that the only real access to the primary products of much research is through published journal articles and or books, it is only fitting that publicly funded research publications be made widely and easily available.

I would like to suggest that any legislation or rules be carefully developed. Demanding access to scientific results prior to publication has and can be used to try and influence the science and its public and legal use, in a way that seriously compromises the development of good science. Those that understand the scientific process understand that publication is a critical dividing point in time, and that the peer review process very much helps make the end product. Allowing open public access to publicly funded 'results' before that point in time would have very deleterious effects.

Again, thank you for the opportunity to have input.

Dr. Harmon D. Maher Jr.
Interim Associate Vice Chancellor for Research and Creative Activity,
Professor of Geology
Address: Office of Sponsored Projects, or
Dept. of Geography and Geology
University of Nebraska at Omaha

open access for knowledge

From: Deborah P. Teel

Obviously, we need to know about research done without our immediate knowledge and we need access to it without need of \$\$\$\$ to get it.

DTeel

On behalf of the Creutzfeldt-Jakob Disease (CJD) Foundation I would like to thank the White House Office of Science and Technology Policy for taking the time to review feedback pertaining to the

enhancement of access to archived publications from research funded by Federal science and technology agencies.

The ongoing growth of the internet has allowed the general public equal access to information and the opportunity to further develop their understanding of an infinite variety of subjects. The NIH's approach to ensuring public access through a policy that requires researchers to deposit articles accepted for publication supports our current Administration's call for a transparent and open government.

As a patient and family support organization for Creutzfeldt-Jakob Disease (CJD), a rare 100% fatal brain disease, the CJD Foundation encourages affected families to act as their loved one's advocate to ensure the best care. This can only be possible with the utilization of accurate, up to date accurate information. The NIH's successful public access policy approach can be improved upon by extending this framework to all other science and technology agencies. The government spends billions of taxpayer dollars to fund research, the public should have the right to access and use those results. The NIH's approach to ensuring public access through a policy which requires researchers to deposit articles accepted for publication supports this advocate role.

It also gives the general public an important opportunity to learn about the latest research funded by their taxpayer dollars.

Currently, the only way to access the results of research funded by taxpayer dollars is to subscribe to journals. Unfortunately, the cost involved is increasingly prohibitive. And although we are a small not for profit foundation with a small budget we have an unlimited need for prion disease research information.

Presently there is very limited research information available to us and our families without a costly fee. Our role as one of the only U.S. organizations providing rational information about a terrifying disease to those turning to us for help has been severely hampered by this current policy.

As President of the CJD Foundation acting on behalf of our patients and families as well as a concerned citizen and tax payer, I am asking the Office of Science and Technology Policy to require public access to the published results of federally funded research across all agencies within a maximum of six months of publication. The final published articles or final manuscripts would best serve the general public in permanent, interoperable digital archives in a format such as XML which is easily accessible and allows full use rights to the reader. Any policy put in place should be cohesive across all agencies and easy to interpret.

Thank you once again for allowing this discussion to take place and for openly welcoming feedback. We ask that the NIH public access policy will be extended in the near future to include all other federal science agencies.

Sincerely,

Florence Kranitz,
President

This is to register my support for public access policies for science and technology funding agencies across the federal government. As both an academic librarian and a member of the taxpaying public, I strongly support public access to published research arising out of federal agencies funded by our tax dollars. A couple of years ago, the National Institutes of Health (NIH) were required to do so after a six-month embargo following publication of such research.

While I certainly understand the need for commercial publishers to stay solvent, research that has already been funded by the public for scientific and technological research really should, in this day and age of the Internet, be made freely available, at least after a reasonable embargo period such as six months, certainly no more than a year. Aside from any moral reasons, one very good reason for doing so is that freely available scientific and technical information makes it an awful lot easier for everyone from scientists to inventors to the general public, to become better informed and this, in turn, benefits American society in general since innovation and improvement becomes much more feasible. Restricting such information will only ensure that the elite will be the only entities to have access and this, in turn, will handicap innovation and education in our society.

I am not requesting that privately-funded research facilities and companies necessarily make their research findings freely available. Publicly-funded research, though, really should be freely available. Nothing is free in this world but since we, the public, will have already paid for the creation and dissemination (via the Internet) of such scientific and technical information, there is no compelling argument, in my opinion, for withholding such public access.

Thank you for your consideration.

Sincerely,

Tim Dodge
History and Political Science Subject Specialist

Tim Dodge
Reference Dept.
Ralph Brown Draughon Library

Dear Office of Science and Technological Policy,
Attached please find Elsevier's submission to the public consultation on public access policy. Please contact me with any questions.

Regards,
Dori Gardner
Manager, Universal Sustainable Research Access

[**Note:** Please see attachment. The.pdf would not format properly within the Word document.]

Dear Madam or Sir,

As you craft policies related to dissemination of publicly funded research, I appreciate the dilemmas that you encounter. From one perspective, it is desirable to have the research made accessible to research organizations as quickly and inexpensively as possible. At the same time it is important

that quality research be adequately peer reviewed and presented in a clear and professional fashion, and that those involved in the dissemination of the research be fairly compensated. At this stage, I am more concerned about the degree of government involvement in the process and the possibility of a double standard in that even today Congressionally mandated studies by the National Academy of Sciences are not available for free, although I assume taxpayer dollars are used for those studies.

So my bottom line is craft a policy that promotes access while fairly compensating those involved in publishing the results without having the government competing with private organizations and companies.

Sincerely,
Rich Lomneth
Associate Professor/Dept. Of Chemistry
Univ. of Nebraska at Omaha

Dear Office of Science and Technology Policy,

The attached letter from the American Association of Anatomists is in response to OSTP's request for information regarding "Open Government Recommendations." We appreciate the opportunity to comment and would be happy to continue this important dialogue.

Best wishes,
Andrea Pendleton

Andrea Pendleton
Executive Director
American Association of Anatomists

Dear Office of Science and Technology Policy:

The American Association of Anatomists, based in Bethesda, MD, was founded in 1888 for the "advancement of anatomical science." Today, AAA is the professional home for biomedical researchers and educators focusing on anatomical form and function. In addition to being the primary educators of medical students in their first year of medical school, AAA members worldwide work in imaging, cell biology, genetics, molecular development, endocrinology, histology, neuroscience, forensics, microscopy, physical anthropology, and numerous other exciting and developing areas. AAA publishes three journals—*The Anatomical Record*, *Anatomical Sciences Education*, and *Developmental Dynamics*—plus a quarterly newsletter. Among its other programs and services, we sponsor an Annual Meeting, run an extensive awards program, and maintain a website (www.anatomy.org) that offers members and others a variety of tools to enhance their teaching, research, and overall professional development.

It is in this context, as the chief custodian of the scientific literature related to the anatomical sciences for more than 100 years, that we respond to this request for public comment. In posing such

comprehensive and thoughtful questions, OSTP clearly recognizes that—despite years of discussion and debate—there is still no authoritative source of data on this topic. Indeed, while this request for feedback will generate numerous responses, it is unlikely that you will find much in the way of concrete facts and figures.

We very much appreciate the fact that this Administration values the role of science and understands the need for data. Therefore, we urge you to consider taking the collaborative, evidence-based approach of the [European PEER project](#). The PEER project, a collaboration between publishers, repositories and researchers, is investigating the effects of the “large-scale, systematic depositing of authors’ final peer-reviewed manuscripts on reader access, author visibility, and journal viability, as well as on the broader ecology of European research.” (See Appendix A for additional detail on this study.) A more appropriate model in the U.S. might be for a respected and impartial body such as the National Academy of Science to carry out such an assessment.

At a time of world turbulence, we are happy to point out that there is no crisis in the world of scholarly publishing or in the dissemination of scientific materials. Unlike so many other issues faced by this Administration, there is no emergency to address. Taking the time to ask for a full, impartial, evidence-based assessment will help ensure that unintended consequences do not lead to a crisis in the future.

Page 2 – American Association of Anatomists/Open Government Recommendations

Prior to responding to the questions posed by OSTP, we must acknowledge that we question the first basic argument on which the concept of public access is based, while at the same time heartily endorsing the second basic principle.

The premise we question is that, because government funds scientific research, it is entitled to full access to and control of the manuscripts stemming from this research. As explained below in response to specific questions, we believe that taxpayers fund the research, but they do not fund the publication of this research and therefore should have no expectation of receiving free access to this material.

We do, however, strongly endorse the assertion that the public understanding of science is critical to our national well-being. But, as explained in more detail below, we do not feel that such an understanding is enhanced by public access to scholarly scientific publications.

In responding to this request for information, we have answered questions both from our perspective as a scientific professional society and as a non-profit publisher.

QUESTION 1: How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy?

- A. The federal government funds a sizeable portion of the research done in the biomedical sciences. As such, funding agencies receive regular reports from grantees that can be made available as the government deems appropriate, likely at minimal additional cost.

- B. Turning research results paid for by the government into peer-reviewed papers suitable for publication is an expensive and time-consuming process. As the steward of the literature in our discipline, we create, manage, and finance the process by which a submitted manuscript becomes a peer-reviewed paper. This process is vital to the validation and dissemination of scientific information.
- C. It is important to understand that only a portion of manuscripts submitted to a given scientific journal are ever published. In our journals, for example, nearly two-thirds of submitted manuscripts are not deemed acceptable for publication. Nonetheless, nearly all submitted manuscripts must be logged and managed through an extensive and costly peer-review process before they are even ready to be copy edited, proofed, typeset, and published.
- D. Publishers—especially those affiliated with non-profit societies—also take responsibility for archiving their journals and maintaining accessibility in perpetuity. We also ensure the integrity of scientific literature by guarding against plagiarism and irresponsibility in the publication of research results.

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- E. In sum, publishers make ongoing capital investments and incur significant operating expenses in carrying out these value-added activities. These are not paid for by taxpayer dollars. Any mandate that decreases the revenue we derive from journal publication has the potential of limiting our ability to create the peer-reviewed literature in the first place.

QUESTION 2: What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

- A. While the federal government has paid for the raw data of scientific research, it has not paid for the end product of scientific literature that stems from this research. Therefore, it is the position of the AAA Board of Directors that the government should not mandate that outputs of the scientific publishing process, such as accepted author manuscripts and published journal articles, be made freely available.
 - B. Nonetheless, we recognize that the current NIH public access mandate is not going away in the foreseeable future. Given this reality, we strongly recommend that any effort on the part of Congress or any federal entity to shorten the current 12-month embargo be firmly opposed by the OSTP and the Administration. This would best accommodate our needs as a publisher under the current policy.
 - C. Speculating on what would best accommodate the needs and interests of the general public, we respectfully suggest that providing public access to the published literature of basic science is not the best approach. (Please see our response to Question 9 for further comments.)
-

QUESTION 3: Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

- A. The primary users of peer-reviewed publications are academics—those who teach about the related subject matter—and other researchers in the same or related field of inquiry.
- B. As noted earlier, there is little more than anecdotal evidence regarding the impact of current public access policies. However, there is data to show that 96% of the journals in science, technology, and medicine (STM) are available online ([Scholarly Publishing Practice Third Survey](#), ALPSP).

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- C. Moreover, data also shows that, while academics rank information as 5th out of 15 factors important to their success, access to this information is ranked 13th out of 16 factors as a barrier to success. Most academics access the necessary literature via subscriptions maintained by their institutions. ([Access by UK Small and Medium-sized Enterprises to Professional and Academic Information](#), Mark Ware Consulting Ltd for Publishers Research Consortium – April 2009).
 - D. AAA is one of many publishers whose journals are available to researchers and academics in the developing world via such programs as [HINARI](#), [INASP](#), and [AGORA](#).
-

QUESTION 4: How best could Federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

- A. This question, as many of the others, accepts as a given the premise that public access to the actual peer-reviewed literature is desired. This is unlikely to be the case. As part of the overall need to obtain additional data, we suggest that one goal be to assess actual public demand as it pertains to various areas of scholarly research. (Please see our response to Question 9 for further comments.)
 - B. We appreciate and share the government’s concern about finding measures to gauge return on investment. In fact, this has been one of the significant stumbling blocks encountered by publishers in regard to the existing NIH public access mandate. Libraries make their journal purchasing decisions based on usage data. As journal usage moves from paper to electronic, the provision of detailed online usage data becomes more and more important. By replicating our journal content in its own repository, NIH is drawing usage away from our online journals, and then compounding this situation by not providing publishers with the comprehensive usage statistics that would enable us to assess the impact of this policy.
-

QUESTION 5: What features does a public access policy need to have to ensure compliance?

- A. Taxpayers fund research but they do not fund the publication of research. Therefore, our strong preference would be that the federal government 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.

Page 5 – American Association of Anatomists/Open Government Recommendations

- B. That said, given the current mandate in regard to NIH-supported research, we believe that compliance would be best assured if:
1. The public resource (in this case, PubMed Central), were linked directly to publishers' websites, where the final peer-reviewed and edited articles are already posted at no additional expense to taxpayers;
 2. The embargo period be no less than 12 months; and
 3. A simple process enabled publishers to sign off on the linking of each journal on a monthly basis, rather than relying on individual authors to submit their manuscripts.

QUESTION 6: What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

- A. There would be no need to pose this question if public access was provided via a simple link to a journal's existing website, as noted in our response to QUESTION 5 (Response B1).
- B. Even better, the publicly accessible version should be the research project report already required for each research grant and already paid for by the granting agency.
- C. Since this is not the case at present in regard to biomedical research, we—as scientists and publishers—are presented with a classic “lady or the tiger?” dilemma: Do we risk the confusion and scientific compromise of letting the author version remain in the archive or do we risk considerable financial loss by providing free access to our final published product?
- D. As authors and researchers, we recognize that serious errors in manuscripts are frequently corrected *after* the peer review process. We are extremely concerned that using any version other than the true “final” one will cause confusion, at a minimum, and could significantly compromise the scientific record.
- E. We have the same concern when wearing our “publisher hat” Nonetheless, as a publisher, we also recognize the costs we incur in copyediting, proofing, reference checking, formatting of images, and other functions that add real value to manuscripts. We must be able to recoup these real costs in order to carry out these important tasks.
- F. We fear that the current reality in regard to different versions of a scientific paper is even more distressing. Questioning our members about how the existing NIH public access submission process is working, we received the following response from a well respected investigator and author:

“What happens is that they (NIH) take your Word file and Photoshop/Illustrator files and create a PDF. They then send it to you for your approval. I'm sure that most people merely glance at that and click the approval box to complete the task. I doubt that anyone actually proofreads this. Thus, NIH does reformat and require approval of what they reformat, but I doubt that many authors invest much time in this since the author's goal is to get the paper published. Beyond that, authors have little interest, other than in officially complying.”

QUESTION 7: At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

- A. A “one-size-fits-all” policy is not appropriate across subject disciplines. Just as each journal has a different business model, the so-called “optimal embargo period” will differ from one discipline to another and even within disciplines. As noted earlier, there is little empirical data in this arena. However, we have learned anecdotally that some society journals that began by offering a shorter embargo period found it necessary to roll back their embargos to 12 months to maintain subscription sales and sustain peer review.
 - B. Of relevance here is what is known as the “[cited half-life](#),” a calculation that indicates the long-term value of the source items in a journal. As an example, the cited half-life for one AAA journal, *The Anatomical Record*, is >10.0 years, while the cited half-life of another AAA journal, *Developmental Dynamics*, is 4.9 years. In part, these figures relate to the pace at which research in a given area is moving and, thus, to how long a given issue of a journal may retain “commercial” value.
 - C. Once again, we note that this question—as others in this request—would be moot if the publicly accessible version were the research project report already required for each research grant and already paid for by the granting agency.
 - D. And again, should the current NIH public access mandate remain in place, we strongly oppose any effort to make the embargo period less than 12 months.
-

QUESTION 8: How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?

- A. Not only is PubMed Central reformatting manuscripts rather than linking to the original published document (see QUESTION 6, Response F), but PMC is also using its own

system of article identification (PubMed Identifiers), rather than adopting the widely-accepted Digital Object Identifier (DOI) as a means of identifying authoritative material. This extra identifier can only contribute to reader confusion and adds no apparent value. The DOI system is managed by the [International DOI Foundation](#), an open membership consortium including both commercial and non-commercial partners, and has recently been accepted for standardization within ISO. Approximately 40 million DOI names have been assigned worldwide.

- B. Even with the best of intentions, the federal government is not known to be the most innovative or quickest to respond in regard to technological challenges. In nearly all cases, private enterprise will be quicker to develop and adopt innovative information technologies.
- C. Mandating a single approach to public access could actually stifle innovation in what is now a rapidly changing environment, both by decreasing the amount that publishers are able to invest and reducing their incentive to try new approaches.
- D. In such an environment, it makes most sense—and is most cost effective—for the government to take advantage of investments already being made by publishers and, in some cases, to provide additional financial support for efforts already underway (see example in QUESTION 9, Response F, below).

QUESTION 9: Access demands not only availability, but also meaningful usability. How can the Federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g., number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access papers be given the opportunity to comment or provide feedback?

- A. Academic scientific literature, as it currently exists, is intended for and used by academics. As most scholarly publications, AAA's journals are rather esoteric—of significant value to researchers in particular areas of investigation, but not useful to the American public or, indeed, even to researchers in other areas of science.
- B. If the goal is truly “meaningful usability,” we urge OSTP to look closely at the America COMPETES Act (Pub. L. No. 110-69, Aug. 9, 2007) as it pertains to the reporting of research results by the National Science Foundation (NSF). The Act reads: “*SEC. 7010. REPORTING OF RESEARCH RESULTS. The Director shall ensure that all final project reports and citations of published research documents resulting from research funded, in whole or in part, by the Foundation, are made available to the public in a timely manner and in electronic form through the Foundation’s Web site.*” To fulfill this mandate, NSF announced that it would modify its reporting system and require principal scientific investigators to prepare a brief summary – specifically for the public – on the nature and outcomes of the award that will be posted on the Foundation’s website.
- C. An earlier [Audit of Interest in NSF Providing More Research Results](#), based on a survey of key constituents, noted that, “in terms of the best format to convey the research results, organization

executives and NSF program officers expressed an overwhelming interest in NSF posting brief summaries of research results and publication citations on its website... They cited multiple advantages to NSF providing this information, such as helping researchers identify possible collaborators and improving the public's understanding of scientific research... By providing greater public access to the results of the research it funds, NSF would further the public's knowledge and understanding of scientific research, assist researchers in building on prior work, and make its operations more transparent and accountable.”

- D. NIH already has research progress reports on all grants. Expanding this information by requiring the addition of a one-paragraph lay summary has more potential to enhance public understanding than does providing public access to all the scientific journals in the world.
- E. Most funding agencies already maintain databases listing the names of award recipients and titles of their proposals; many agencies already receive lay summaries of projects for distribution to the public. Investigators can also be directed to submit lay summaries with their annual progress reports. This approach recognizes and does not undermine the value-added that publishers bring to the formal scholarly communication system.
- F. For the important research funded by the government and carried out by our members to have true “meaningful usability,” scientific discovery must be translated into language understandable by the public. Publishers have already created [PatientInform](#), a free online service that provides patients and their caregivers access to some of the most up-to-date, reliable, and important research available about the diagnosis and treatment of specific diseases. Federal funds would be better spent to support this and similar projects, rather than to create repositories that duplicate information already accessible to scientists and of little practical value to the American public.

SUMMARY & CONCLUSION

Scientific journal publishers have an important role to play in the preservation and dissemination of research literature. As NIH is the steward of medical research for the nation, publishers such as AAA are the stewards of research for our respective disciplines. We believe that the “public access” process, as presently implemented by NIH, threatens our ability to fulfill this mission over the long term. While it may take several years for widespread harm to result, we caution the Administration, in creating an open government, not to damage the private institutions on which the government depends.

Should the Administration decide to implement broader public access policies, we urge that OSTP view implementation of the NIH Public Access Policy as a case study in how not to proceed. The transparency that the Administration seeks can only be achieved if stakeholders have real, rather than token, input in designing the process and if decisions are based on evidence rather than anecdote.

There are many journal business models. The bottom line is that publishing peer-reviewed research is expensive and someone has to pay for it; it is wrong for the government to pay only for the research, yet still lay claim to the final publication. Having each funding agency open its database of funded projects, including research project reports and lay summaries, not only better serves the public interest, but also is the right thing to do.

Thank you very much for the opportunity to share our views on this important issue. Our members are available for further input on this topic, if needed.

Sincerely,



Kathryn J. Jones, Ph.D.
President, American Association of Anatomists
Professor, Loyola University Chicago Stritch School of Medicine

P.S. The *Report and Recommendations from the Scholarly Publishing Roundtable* was released just after this letter had been vetted through our approval process. Since there was insufficient time for our members to read this report and assess its recommendations prior to the OSTP deadline, our letter does not respond to the Roundtable document. However, on first reading, we note that it appears to accept the current NIH/PubMed Central mandate as a given. If that is the case, it is unlikely to change our basic position or suggested approaches.

APPENDIX A

News Release -- 14 October 2008

PEER Publishing and the Ecology of European Research Pioneering collaboration between publishers, repositories and the research community launched

PEER (Publishing and the Ecology of European Research), supported by the European Union, will investigate the effects of the large-scale, systematic depositing of authors' final peer-reviewed manuscripts (so called Green Open Access or stage-two research output) on reader access, author visibility, and journal viability, as well as on the broader ecology of European research. The project is a collaboration between publishers, repositories and researchers and will last from 2008 to 2011.

Peer-reviewed journals play a key role in scholarly communication and are essential for scientific progress and European competitiveness. The publishing and research communities share the view that increased access to the results of EU-funded research is necessary to maximise their use and impact. However, they hold different views on whether mandated deposit in open access repositories will achieve greater use and impact. There are also differences of opinion as to the most appropriate embargo periods. No consensus has been reached on a way forward so far.

The lack of consensus on these key issues stems from a lack of clear evidence of what impact the broad and systematic archiving of research outputs in open access repositories might be, but this is about to change.

The aim of PEER is to build a substantial body of evidence, by developing an "observatory" to monitor the effects of systematic archiving over time. Participating publishers will collectively contribute 300 journals to the project and supporting research studies will address issues such as:

- How large-scale archiving will affect journal viability
- Whether it increases access
- How it will affect the broader ecology of European research

- ❑ Which factors influence the readiness to deposit in institutional and disciplinary repositories and what the associated costs might be
- ❑ Models to illustrate how traditional publishing systems can coexist with self-archiving.

The International Association of Scientific, Technical and Medical Publishers (STM), the European Science Foundation, Göttingen State and University Library, the Max Planck Society and INRIA will collaborate on PEER, supported by the SURF Foundation and University of Bielefeld, which will contribute the expertise of the EU-funded DRIVER project.

Michael Mabe, CEO of STM and Chair of the PEER Executive said “STM is delighted to take a leading role in PEER. Not only will PEER lead to a greater understanding of journal and repository use in the digital age, but it will also do much to foster trust and mutual understanding between the stakeholders in academic research and scholarly publishing.”

For further information on PEER, please contact Michael Mabe, STM, Prama House, 267 Banbury Road, Oxford OX2 7HT, UK (tel: +44 1865 339324/fax: +44 1865 339325/e-mail mabe@stm-assoc.org)

About PEER <http://www.peerproject.eu/about/>

To who it may concern,

I am writing to comment on the impact of limited vs. open access on the work, research, and education of medical students. As a fourth year medical student currently planning a residency in emergency medicine, I can attest that access to the medical literature is fundamental to medical education both in medical schools and throughout one's medical career. Textbooks and class lectures provide the basic foundation for a student physician's medical knowledge, but in the ever-changing world of medicine, published articles are necessary to keep up to date on the current standards of care for the diagnosis and treatment of disease. And while most medical schools attempt to provide access to as much of this literature as possible for their students, it is not uncommon for us to come across an article that we cannot access because our school does not have a subscription. The consequence of this is a gap in our knowledge, which can potentially translate down the line into inappropriate or inadequate care for our patients, and thus increased morbidity and mortality. These barriers become even steeper when one graduates and must rely on personal subscriptions to access medical journals. And the costs of these subscriptions, even to an individual physician, not only provides a disincentive to acquire the literature, but in some cases puts the literature financially out of reach.

I encourage the ongoing efforts of the government agencies and the academic community to continue their efforts to increase access to information and knowledge to the world. As a student and future physician, I know that this issue will affect me for the rest of my career, and I hope that I will not be limited in my pursuit of knowledge for the sake of my patients' care.

Thank you for your time. Sincerely,

Laura Janneck
Case Western Reserve U. School of Medicine, MD Candidate
Harvard School of Public Health, MPH Candidate
American Medical Student Association, Open Access Representative

Aloha,

The University of Hawaii at Manoa (UHM) Library very strongly supports the idea of increasing public access to research that is funded by federal science and technology agencies. This action would be consistent with the National Institutes of Health policy and would support the growing world-wide movement to provide open access to research and scholarship. The UHM Library feels the policies should be mandatory as in this manner emerging scholarly practice would be supported and the fruits of scholarship could be enjoyed by everyone.

Beth Tillinghast
Web Support Librarian
University of Hawaii at Manoa
Honolulu, Hawaii

Please visit the following link for the results: [link omitted]

Respectfully,
Dr. Brenda Nelson-Porter, DM, Founder & CEO
The Alumni Association Network, a Subsidiary of _Brigitte's Technology
Consulting and Research Firm

Dr. Brenda Nelson-Porter, CEO/Founder
Dr. Cynthia Grey, Director of Veterinary Science, Reviewer and Editor
Alumni Association Network
December 2009

Introduction

This research centers on the need for doctoral candidates and graduates to become involved in the scholarly article submission process. Most graduate students become familiar with scholarly sources, academic and research journals, and peer-reviewed and refereed articles during their course of studies. Journals identified as “flagship” serve as “agent[s] of change, proactive and give direction to research so that big socially relevant issues, such as dealing with a society's ‘leisure problems’, will be systematically addressed by scholars, researchers and ultimately policymakers” (Iso-Ahola, 2009, p. 1). At the post-graduate level, doctoral students become consumed by in-depth knowledge while reviewing literature written by well-known scholars in most industries. Various journals are published by small, medium, and large domestic and international organizations. Large publishers include but are not limited to: Elsevier, Hindawi, IGI-Global, Inderscience, John Wiley & Sons, Oxford, Sage, Springer, and Taylor and Francis. Large academic databases that provide access to journal articles, such as EBSCOhost, FirstSearch, Gale, Informaworld, InterScience, ProQuest, ScienceDirect, and Sage, are owned by large publishers and

often used as a point of reference for scholars.

Journals are seldom published in hard cover or with decorative images used to entice readership. Journals with soft covers usually range in assorted sizes (width, length) displaying no image or less graphic images, giving the journals a more scholarly appearance. Due to similar and lengthy titles, many journals are recognized by their acronyms, such as JLR, which serves as representation for the *Journal of Leisure Research* (Iso-Ahola, 2009).

Many professional associations publish and sell peer-reviewed journals to the public and offer the journals to their members at no additional charge. Abstracts of journal articles are often presented online as a means to influence readers to access the full-text of an article, whether in an html or PDF format, or to purchase an article online. Sample copies are usually available online as well as in print with the intent that inquirers will subscribe or contribute as an author to the publication. The response time for receiving print sample copies from domestic and international publishing houses is relative quick.

Sample and Data Collection Process

Over the course of 5 months, more than 150 editors of various print and online journals (including open-access) were emailed questions that centered on the submission of scholarly articles. Potential participants included editors and publishers both domestic and abroad from various disciplines: global security, computer science and security, mathematics, leadership, education (higher, online), human resources, psychology and sociology, manufacturing, veterinary, and so forth. Domestic as well as international journal titles focusing on journalism, data as an asset, information risk, content management, cyber law, cybernetics, virtual reference network system, higher education executives, offshoring, hybrid workforce, advance practice nurses (APNs), emotional intelligence (EI), and fashion returned limited results.

Searching AOL and Yahoo were the methods used to obtain email addresses from various web sites. Of the distribution, two emails were returned as address errors. A hard copy listing of editors or publishers was not formulated during the search; therefore, follow-up emails were not distributed.

Two potential participants responded requesting further explanation about the nature of the study, the reason for the research project, the affiliate that will fund the project, and the avenue whereby the findings will be displayed. Five responded providing additional information concerning the reasons for not completing the research questions: one organization charged a fee for completing questionnaires, one editor's term was expiring, some research institutes and higher education newspapers do not publish or edit journals, one organization produced policy and conducted commissioned research but do not produce academic journals, and one editor was not suitable for the study. Eight scholarly journal editors or executives responded to the research questions. Four primary questions guided this research project. Research Question 1 pertained to approaches used that prompt awareness of journal information for doctoral candidates. Research Questions 2 and 3 pertained to the lack of submissions of scholarly manuscripts by doctoral candidates and graduates. Research Question 4 pertained to critical thinking skills of doctoral graduates used to enhance information presented in scholarly journals.

RQ1. How is the information presented in your journals relayed to the magnitude of doctoral candidates?

RQ2. What is the primary reason that doctoral candidates do not submit articles to be published in your publication?

RQ3. What is the primary reason that more doctoral graduates do not submit articles to be published in your publication?

RQ4. How might doctoral graduates improve their critical thinking to enhance the materials for scholarly publication?

Findings

Although limited, the responses provided sufficient data to complete this report. Leedy (1997) stated, “phenomenologists typically involve 5 to 10 people in their studies” (p. 162). As a provision and to maintain research ethics, participants’ actual responses were either paraphrased or placed in quotations with no reference to the actual source in narrative form, ensuring confidentiality. Seven of the eight editors reside in the United States, and 1 resides in the United Kingdom (UK). Two U.S. residences were from Southern states (FL, NC), and 2 of the editors’ journals were published in the UK. Participants’ domestic and international target markets included doctoral candidates and graduates, educators, academicians, and professors, libraries, researchers, practitioners (social science) and professionals, politicians, and parents. Participants’ target markets by profession included radio and audio media scholars, psychologists and scholars in organizational behavior and human resource management, and experienced nurse practitioners (NPs).

Presentation of information to the magnitude of doctoral candidates

Journals are comprised of research papers on different topics that often relate to the research papers composed by Doctoral candidates. “Doctoral candidates are likely to read about [a] journal online or through printed copy.” Although information about a specific journal is sometime presented in the mission statement, doctoral candidates are unlikely to read the statement. General information about a journal, including submission details, can be found on websites, in calls for papers at conferences, and at specific doctoral colloquia, early career researchers and doctoral students’ workshops, institutions and other marketing opportunities. A participant stated the following: We make no special attempt to reach the doctoral candidate market--that is not our target. Our target audience is the experienced nurse practitioner clinicians. We want articles that can update skills and knowledge of these individuals, and so many doctoral students particularly the DNP [Doctor of Nurse Practitioner] students who are not now NPs would have a difficult time writing anything that would interest these readers.

“Through library collections, the network of Editorial Review Board members, and stakeholders of each journal,” doctoral candidates become familiar with information presented in the journal. Journal (serial) indexing involves identifying published information through the use of technology versus going to the local library and searching for appropriate references, evaluating the quality of published information based on strict criteria, and documenting creditable scholarship (Herbert, 2008). Peer-reviewed articles are also relayed to doctoral candidates through the university library system.

To complement electronic searches, doctoral candidates locate journals through peers and professors. Journals are sent to universities with doctoral programs whereby the program coordinator can disseminate journals to the all but dissertation (ABD) students.

Participation of doctoral candidates and doctoral graduates

The reasons why many Doctoral candidates or graduates do not submit articles for publication is often unknown to the publisher unless publishers have direct contact with the general population of academia. Many doctoral students and graduates, however, submit manuscripts for publication in journals, but few manuscripts are actually accepted. Two participants indicated that more female scholars submit manuscripts. One participant indicated more male scholars submit manuscripts.

The other 5 participants indicated an equal distribution of male and female scholars. The lack of submission may be due to the level of expertise, mentorship process, and time constraints. The research area may not be appropriate for the graduate's background. Candidates who are not an expert cannot effectively write about a particular subject. "The academic status and typically more scrutinizing of content by reviewers," play a significant role in the submission and acceptance processes. A participant stated the following:

We do publish work from many doctoral candidates or graduates but they may not submit articles because they are new to the process of publishing. Perhaps they think they do not have a realistic chance of publication or perhaps their tutors do not encourage them.

"A good mentor will assist the ABD with time management." "Emphasis placed on publication from the dissertation committee--particularly the chair" may enhance the submission process. One publisher offers a contest for graduate students whereby the top three manuscripts are published.

Enhancement of critical thinking of authors

The role of the university (faculty), rather than the publisher, encompasses improving critical thinking while enrolled in an academic program to enhance the information in scholarly publications. "Easy access to scholarly research is the primary roadblock to critical thinking."

Many authors merely copy and paste information and do not think about the process or the consequences. An NP faculty member for over 30 years further commented:

Many DNP programs are now encouraging their students to send a series of articles to be published in journals--literature review, methodology, completed study. That type of format may be fine for some journals, but not for clinically focused journals. Our readers are busy clinicians who want scientific knowledge disseminated that will assist them in their diagnostic decision-making or update treatment knowledge. Articles that do not provide that information would be automatically rejected before they even got to peer review.

In general, I find that the articles that have come to me from NP, DNP students are just student papers written for which they received a good grade. They do not understand the difference between a student paper and a publishable paper. Editors do not have the time to instruct every potential author on the differences. Our Journal now requires any student to have a faculty co-author who will agree to help with that transition process. It is discouraging to note that even many of these papers are poorly written with grammar and spelling errors, failure to follow guidelines, and an arrogance in attitude that if off-putting (e.g., "You'd be a fool not to publish this paper. I worked on it a long time!") We also will commonly hold an article for publication until after a student has graduated. Article content published by student authors is often rejected out of hand by more experienced readers.

Critical thinking may not be priority for certain editors. "Being prepared to address the clinical diagnostic issues faced by typical readers of the journal" may be a more critical issue. To enhance critical thinking skills, however, authors might perform the following:

1. Acquire in-depth knowledge about research methods and statistics including new statistical methods, such as structural equation modeling and confirmatory factor analysis.
2. Provide in-depth literature reviews with thorough support of arguments via citations. Arguments that flow from the *review of literature* through *results* need to be tightly argued from beginning to end.
3. Submit manuscripts per submission guidelines to avoid additional revision and address reviewer comments thoroughly.

Recommendations and Conclusion

As publishers continue to compete in the global markets, editors will continue to invite scholars to submit “quality” manuscripts, and seasoned and new scholars will continue to compete to become published journal authors. Independent scholars realize that utilizing open-access architectures are effective means to compete with large publishers because independent scholars often do not receive recognition for their works (Wolfson & Willinsky, 2001). Open-access journals would enhance the availability of articles and the transfer of knowledge as only a small percentage of certain major data warehouses (publishers) index journals, thus underreporting significant information (Wolfson & Willinsky).

Time, however, seems to be a critical factor in regard to composing, editing, publishing, and indexing quality scholarly articles. To reduce composition and editing errors, doctoral candidates and graduates might take additional courses on how to develop peer-reviewed articles, using virtual open access architectures, prior to the submission to the editor. Guidance may help scholars develop additional knowledge and critical thinking skills warranted to become Research Scientists or Advanced Practice Researchers (APR), Assessors or Reviewers, and/or Editors for major publishing warehouses or as a Sole Proprietor.

Although a wide variability is noticeable in what different universities teach, creditable information should be the common element that binds all scholars and indexes. To enhance critical thinking, scholars might participate in online discussions to advance or dispute theories. The Alumni Association Network (AAN), a central hub for research scholars, has formed a “Group” section in the Institutional Members area for doctoral graduates promoting a platform whereby information can be transferred reducing multi searches. The Scholastic Research Institute (SRI), a division of AAN, serves as a research laboratory architecture to obtain direction concerning the composition of peer-reviewed articles based on the request of the editor of a scholarly journal. The sponsorship of Publishers, which includes submitting complimentary copies of journals to the staff of AAN, may provide another avenue of exposure to scholarly articles, information, and scholarship. The International Blog (IN-Blog) featured on AAN’s web site presents “Call for Papers” as an avenue to decrease multiple searches for opportunities to become recognized for works and means to encourage doctoral candidates and graduates to enroll at the SRI to become a *Certified Scholastic Reviewer* (CSR).

References

- Herbert, J. T. (2008). Journal indexing and return of “gray matter.” *Rehabilitation Education*, 22 (1), 3-5. Retrieved from EBSCOhost database.
- Iso-Ahola, S. (2009). The flagship journal and its role in advancing new knowledge and the field of inquiry. *Journal of Leisure Research*, 41(3), 301-305. Retrieved from EBSCOhost database.
- Leedy, P. D. (1997). *Practical research: Planning and design* (6th ed.). Upper Saddle River, New Jersey: Prentice Hall.
- Wolfson, J., & Willinsky, L. (2001). The indexing of scholarly journals: A tipping point for publishing reform? *The Journal of Electronic Publishing*, 7(2).
<http://dx.doi.org/10.3998/3336451.0007.202>

Hi,

Attached are some comments I would like to post. If this is not the mechanism to add comments I would appreciate hearing from you how it might be done.

Thank you,
Brian Ricketts

An outsider reading many of the blog entries on the topic of open access would likely form the opinion that the science community at large is in favour of 'open access' to published research, and that any negative consequences are relatively trivial. A more discerning view might then ask what those negative consequences might be, because they seem to be paid little attention by the majority of bloggers.

My addition to this blog is more a reminder that, without careful consideration, there will be unintended consequences that potentially may tear at the very heart of science itself. From the outset, I will admit that open access is very appealing; for minimal or no cost I will be able to access any recently published research, which of course would be very useful for my own research. However, as in most aspects of an open society, there are costs, some of which may not be immediately apparent.

Most science research is published by societies, and most of these societies are not-for-profit organizations. Science societies generally rely on subscriptions to survive; these subscriptions pay for the published science, for young scientists to attend conferences and other technical meetings or scholarships, and for promotion of science - the latter can have significant political and societal ramifications - witness the current information and debate on climate change. Science societies in fact are the real core of science as we see it today; without its myriad societies, science would be a depauperate venture.

The role of science societies is nothing new. The Royal Society of London is celebrating its 350 year anniversary in 2010; Isaac Newton spoke and attended meetings during the enlightenment; Charles Darwin presented, and his Bulldog Thomas Huxley defended evolution by natural selection. Comment and argument may have raged on every street corner and living room, but it was societies like this that formally recorded debates and outcomes. In the USA, the AAAS, currently the world's largest general science society, plays an important role in political decisions that involve all facets of science.

Most science societies exist on a 'shoe-string' budget. Those budgets depend in most cases, on subscriptions and it is these subscriptions that provide the where-with-all to publish science research and perform those additional activities noted above. In most cases even a decrease of 10-15% subscriptions will result in the demise of those societies. If a decree of 'open access' is such that it significantly reduces or even removes the financial foundations of science societies, then most will disappear. If this happens, the real losers will be not just the scientific community, but society at large. The proponents of open access need to ask "who will do the publishing?" There may be practical ways for societies to respond to this, but the issue of financial viability needs to be thoroughly investigated, and not be as rushed as this current proposal seems to be. I have no doubt that open access will, in some form, become part of the scientific milieu. But if it is at the expense of scientific societies, then it will have achieved nothing.

Brian Ricketts (NZ)

Please see the attached letter for comments from the Duke University Office of Scholarly Communications.

Thank you very much.
Perkins Library, Duke University

On behalf of the Duke University Office of Scholarly Communications, thank you for the opportunity to comment on the best methods and policies for implementing public access to federally-funded research. The call for comments and the online conversation have created a stimulating and productive conversation about this important topic, and the OSTP is to be commended for its sustained and in-depth attention to the benefits that can be gained through public access policies.

The perspective of these remarks is that public access policies benefit both the public at large and researchers themselves. Beyond this, we wish to emphasize that it is important to implement public access policies in a way that encourages compliance and does not add a significant administrative burden to the workload of researchers. In this regard, the public access policy implemented by the National Institutes of Health has been a successful model, and should be emulated as much as possible.

At Duke University, one of the “enduring themes” that underlies our 2006 strategic plan “Making a Difference” is “knowledge in the service of society.” From that perspective, Duke’s history of support for public access policies makes great sense; public access to research performed at Duke that is funded with taxpayer monies is part of our core self-identity. Such access also increases the public accountability for how research money is spent, which is beneficial both to the funding agency and to the University that carries out the research.

In the Office of Scholarly Communications, our commitment to public access is fundamentally driven by the belief that such access is beneficial for scholars themselves, since it increases the efficiency with which they can locate prior work to support their current research. Also, public access, especially if managed in a way that facilitates searching across databases and agency repositories, improves the possibilities for serendipitous discoveries and for locating unexpected collaborations.

Duke University has had a leading role in guiding academic compliance with the NIH Public Access Policy. Our policy and procedures, developed in collaboration between the Medical Center Library, the Office of Scholarly Communications and the offices for Research Support, provided a model for many other institutions. We have been pleased to discover through that process that most of our researchers have adapted fairly easily to the process of NIH submission and approval. Neither the NIH procedures themselves nor the contract review necessary to prevent conflicts over copyright have proved to be significant barriers, and most researchers report that the benefits they perceive from public access outweigh the challenges. Thus the NIH is an excellent model to emulate in many ways.

Access to scholarship is a continuing problem, for researchers as much as for the general public. Before becoming Duke's Scholarly Communications Officer, this author was the library director at a small liberal arts college in the Midwest. In spite of the presence of a large cohort of science majors and a committed faculty at that college, in 2004 the library lacked even one current subscription to a scholarly journal in chemistry. Rapid price increases in the commercial publishing industry had made subscription costs prohibitive; research and teaching at the College was more difficult and less efficient as a result. This problem exists even at major research universities, where budget increases, even if they do occur, cannot keep pace with periodical subscription costs. Cancellations are a fact of life in all academic libraries, and these cuts hamper research and the training of new scientists and scholars. And this significant problem for academic libraries reflects an even greater barrier for laypeople without university affiliation who want to access current research out of interest or to gain greater insight into, for example, a medical condition or the issues around environmental protection.

The success of a public access policy depends on the willingness of researchers to comply with its requirements, which in turn requires a carefully considered structure that is easy and intuitive. The following points suggest some of the elements of a successful public access policy:

- Consistent policies across multiple agencies are vital. It certainly makes sense for all federal agencies that provided significant funding for research to implement a public access policy, but the success of that implementation depends on not having a wide variety of different policy requirements that would confuse busy researchers and discourage compliance.
- The speed at which scientific research occurs is increasing rapidly. Thus public access, in order to show the anticipated benefits, should occur as shortly after publication as possible. The Federal Research Public Access Act of 2009, which is currently before Congress and which Duke University supports, suggests a maximum embargo of six months. This rule would facilitate the improved access that is important for the progress of science.
- Researchers often worry about the proliferation of multiple versions of a research article. To minimize this concern, public access policies should call on researchers to deposit their final author's manuscript, after the changes that occur during the peer-review process, or the final published version, whenever the researcher's agreement with her publisher will permit that.
- The choice of archives to house these research articles is extremely important. In the case of the NIH the PubMed Central database was already in place and available; other agencies will not have such ready-to-use infrastructure. The digital archives that are developed should be permanent, interoperable and support public search across multiple platforms.
- Progress toward successful public access platforms can be facilitated by partnerships between the funding agencies and private or public academic institutions. Especially where a university has a signature program or research emphasis, the opportunity to create a partnership that exploits the public access repositories and other infrastructure that is already in place or being developed offers both efficiency and the potential for greater impact on a particular field of study.
- The possibility of using a distributed system of repositories, rather than a single archive, should be explored. Again, the purpose is to make the products of federally-funded research accessible and usable by the public. The location and management of the archive, even if distributed, should not matter as long as both the researcher who is depositing work and the user see a seamless interface.
- For some of the most important benefits of public access to be realized, it is important that repositories be interoperable and support searching at a very granular level. In order to discover relevant research or potential collaborators in a field different than that which the

researcher is familiar with, it is necessary that searching be possible on very specific concepts and words, across agency platforms. This means that the PDF format, although probably the best format to require for deposit, will not suffice on the public end of the repository. XML, used by PubMed Central, is the preferred standard.

- Compliance with a public access policy is best ensured by requiring researchers to indicate that prior research was made accessible when they report progress on a funded project, apply for grant renewals or make new applications. This requirement is not punitive, but simply congruent with the way other funder requirements are enforced, and it is familiar to researchers.
- Success of a public access archive can be measured in many ways. The number of unique hits and downloads is an obvious criteria of success. These metrics can be made more sensitive and significant if types of users could be determined. A large number of users from academia would indicate one type of success – improving the efficiency of research – while a large number of “unaffiliated” hits, such as those from commercial ISPs, would indicate success in improving access for those who might otherwise lack it. These kinds of specific metrics should be designed, of course, so that the privacy of individual users is not compromised.
- When considering success, it is important to compare the current situation to that which can be created. In the environment where paid subscriptions are virtually the only reliable means of access, there are tremendous “lost opportunity” costs such as those imposed on the small liberal arts college described above. The ability to significantly reduce these lost opportunities and leverage more access into better, more effective, science is the most significant mark of success for public access policies.

Thank you again for the opportunity to share these comments, and for the OSTP’s sustained interest in the important question of public access. The Scholarly Communications Office at Duke University encourages the OSTP to support the implementation of public access policies in ways that encourage compliance, do not overburden researchers, and improve the efficiency of scientific research.

Sincerely,
Kevin L. Smith, M.L.S., J.D.
Scholarly Communications Officer

Attached please find the comments of the Association of Research Libraries concerning "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government." ARL very much appreciates OSTP's interest and focus on this set of issues and its request for public input on enhancing access to federally funded research results.

Please let me know if I can provide additional information.

Sincerely,
Prudence S. Adler
Associate Executive Director
Association of Research Libraries

Comments of the Association of Research Libraries Concerning “Public Access Policies for Science and Technology Funding Agencies Across the Federal

Government” Submitted to the Office of Science and Technology Policy, January 15, 2010

Summary

Thank you for the opportunity to comment on “Public Access Policies for Science and Technology Funding Agencies Across the Federal Government.” Enhancing public access to federally funded research results has been and continues to be a priority for the Association of Research Libraries (ARL) and its member libraries. We very much appreciate the interest and focus of the Office of Science and Technology Policy in stimulating a public discussion regarding the benefits of enhancing public access to federally funded research. ARL supports enhanced access to federally funded research resources because such policies are integrally tied to and support the mission of higher education and scholarship. ARL believes that extending public access policies to federally funded research to other science and technology agencies will be a central component of President Obama’s transparency and open Government initiative. We fully support such an extension. ARL is an association of 124 research libraries in North America. These libraries directly serve 4.2 million students and faculty and spend \$1.3 billion annually on information resources of which 45% (in 2008) is spent of electronic resources. New investments in cyber and information infrastructure are critical components to advancing science and education and spurring innovation. Reports such as the National Academies report, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, reflect the pressing need to ensure an environment that is conducive to enabling the United States to meet the global challenges of the 21st century. This means that researchers, students, and the public must be empowered by having the full array of information resources needed to make contributions in all arenas. Broad distribution of information and research enables scientists, including citizen scientists and university researchers, to build upon it and approach problems with new perspectives. It permits educators and students to have access to needed resources previously unavailable, without regard for geographic location or financial limitations. And it gives members of the public access to resources that they have paid for and may require in their daily lives or in support of educational interests. Many discoveries result from building on prior studies. For example, the discovery of the structure of DNA, the development of penicillin, and the development of radiation treatment for cancer patients all stemmed from researchers building on the work of others. It is time to extend discovery and access well beyond current bounds to foster new educational applications and advance science.

Through an Executive Order or working with congressional leaders on a legislative approach, the Obama Administration should mandate that all grantees who receive federal funds from an agency be required to deposit either the final, published version of a peer-reviewed journal article or the final electronic manuscript of such an article in a publicly available digital repository. The role of the digital archive would be to provide long-term curation and access to this literature and to be interoperable with other digital archives and institutions. There should be no restrictions placed on use of this literature, on who is able to use these federally funded information resources, and the embargo period, if there is one, should be as short as possible.

1. How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer-reviewed papers arising from federal funds now, and how might this change under a public access policy?

Federal agencies, universities, researchers and authors, libraries, and publishers contribute to the scholarly publishing enterprise in different ways and to varying degrees. Agencies fund researchers who increasingly, through collaboration with others nationally and internationally, conduct research, disseminate their work through multiple channels and engage in peer review on a voluntary basis.

Universities play a key role in supporting their faculty, researchers, and graduate students in multiple ways, including the contribution of time to undertake peer review, funding of their laboratories and research libraries, and more. Publishers (both not-for-profit and commercial) help to organize the peer review, copy edit, publish, and disseminate the peer-reviewed works in print (decreasingly available) or via licenses electronically. Research libraries license these journals and in turn make them accessible to members of their campus. When possible, these libraries also preserve these works. More recently, research libraries have established institutional repositories comprised of the intellectual content of their institution and are working with agencies such as the National Institutes of Health (NIH) in support of public access policies. Although license terms and conditions prohibit many research libraries from making non-open access (OA) journal literature more broadly available, many public research institutions do provide access to these articles (licensed resources) to members of the public who physically come to the research library.

Faculty, researchers, and students affiliated with our institutions conduct and collaborate on research and share the results of their research in support of the scholarly and scientific enterprise. As noted in the AAAS report, *Intellectual Property Experiences in the United States Community*, the primary motivation for scientists to publish their works is “to inform others about their work.” (http://sippi.aaas.org/Pubs/SIPPI_US_IP_Survey.pdf, page 8). Thus, providing greater access to these works through new and/or extended public access policies of federal science and technology agencies is completely consonant with scientific practice.

The widespread use of information technologies has fundamentally changed the conduct of science and is now changing how scientific research results are made available. Scientific and research communities conduct research, for example, through computational methods such as the mining of scientific literature and data. Publication of peer-reviewed research results needs to reflect and incorporate this evolving practice. This change in practice has led to new roles for research libraries. For example, most research libraries have established institutional repositories to collect, maintain, preserve, and provide access to the intellectual content of their institution. With the implementation of the NIH Public Access Policy, universities and their research libraries are providing new services, as this policy presents an opportunity for these institutions to support their faculty and researchers in new ways while meeting federal requirements. It is anticipated that these new campus-based roles will continue to evolve and that the number of institutions working collaboratively with federal agencies in this capacity will increase. It is exactly this type of innovation that enhanced public access policies should stimulate.

2. What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

There are a number of key characteristics or components that frame successful, existing national and international public access policies. First, one integral component of a public access policy that can be undertaken prior to and after implementation is appropriate consultation with affected communities. Before implementing the NIH Public Access Policy, the agency engaged in extensive outreach to various affected constituencies. This consultation has continued, and the NIH Policy evolved to reflect these discussions. Even though NIH, like all federal agencies, has the authority to implement enhanced public access policies (e.g. federal purpose license), they chose to work with the various stakeholders to fashion a policy to meet community needs. Similarly, the Office of Science and Technology RFI reflects this type of public consultation. Consultation should occur within the normal legal parameters to elicit valued input; however, care should be taken to ensure that such

consultation does not slow down or inhibit agencies from instituting public access policies. Second, an important outcome of the NIH Public Access Policy discussion and early implementation was the change in policy from voluntary deposit of the final electronic manuscript to mandatory deposit. Any new public access policy relating to federally funded research should learn from the NIH experience and that of other countries and mandate deposit of the final, peer-reviewed electronic manuscript or published article. Third, accountability and long-term access to federally funded research results are critically important and compelling reasons that governments invest in public access to federally funded research policies. Thus establishing stable, interoperable, and permanent digital archives are additional characteristics of robust public access policies. Such archives do not need to be within federal agencies and can be found, for example, at universities or other institutions. Fourth, national and international public access policies call for inclusion of peer-reviewed literature—either the final, published version of the article or as, in the case of the NIH Policy, the final, electronic peer-reviewed manuscript. The final, published version is clearly preferable, but only if there is permission of the copyright owner, and importantly, only if users are able to fully use and reuse the article without limitation. Full use rights (e.g., data mining, linking to and more) are essential components of successful public access to funded research policies. This is a key enabler of research and discovery. Such use rights are in contrast to only permitting the right to read and access a work. Utilizing the final, published version may entail some additional delay in access, so deposit in a public repository of the final electronic manuscript for use until the final, published version is available is an important consideration. Ideally, such an embargo period should be as short as possible. The common embargo period for public access to funded research policies is six months, with NIH's embargo period of 12 months being the maximum. Of course, if articles are published in an open access journal, there is no embargo period. Finally, other characteristics of public access policies relating to funded research concern compliance issues. For example, grantees must retain certain rights (e.g., the ability to deposit in a public access repository) as a condition of funding in order to comply with the agency policy, and the agency must implement compliance mechanisms to ensure that the policy is successfully enforced.

3. Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

Today, with the exception of federally funded research literature in open access journals, timely access to peer-reviewed publications is limited by subscription barriers and embargo periods. Research libraries, on behalf of their faculty, researchers, and students, are the predominant subscribers to scientific and research publications, and even these institutions are unable to afford all of the needed journal literature. Embargo periods of 12 months or more constitute too much of a delay for the research community; thus, research libraries must subscribe to these journals for their users. As mentioned previously, licensing terms and conditions (to non-open access journals) restrict use of the journal articles. As a result, members of the public—citizen scientists, students, teachers, small business owners and others—must subscribe to journals, which in some cases can range from \$630.00 for the *New England Journal of Medicine* to \$29,914.00 for *Brain Research*, or purchase, when possible, individual articles. The cost of each article is not trivial (usually more than \$30.00 per article within the science, medicine and technology arena), again limiting access by non-academic users.

As has been demonstrated with the implementation of the NIH Public Access Policy, the daily use of peer-reviewed literature in PubMed Central (PMC) is significant and growing. The ability to read, data and text mine, link to, and discover data and information should be available to all members of the public who have funded this research, especially as more and more individuals search the Internet

for needed information. Importantly, making these research articles publicly available levels the playing field for many institutions that are unable to afford access to needed research materials.

4. How best could federal agencies enhance public access to the peerreviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

Agencies could mandate that all grantees who receive federal funds from an agency be required to deposit either the final, published version of a peerreviewed journal article or the final electronic manuscript of such an article in a publicly available digital repository. The role of the digital archive would be to provide long-term curation and access to this literature and to be interoperable with other digital archives, resources and institutions. There should be no restrictions placed on use of this literature or on who is able to use these federally funded information resources, and the embargo period, if there is one, should be as short as possible.

The NIH Public Access Policy is one approach that agencies could consider. NIH via the National Library of Medicine (NLM) has a long history of collecting, maintaining, preserving, and providing access to biomedical literature. NIH has carefully tracked usage of PubMed Central, the costs of implementation of their public access policy, and of its benefits to NIH and beyond. As one of the largest funders of research in the Government (\$30 billion in FY 2009 with additional stimulus funding), the number of articles arising from this funded research is approximately 80,000 per year. This number is likely far higher than that of other federal agencies; accordingly, it is possible that agencies will design public access policies that meet the unique needs of their mission and constituencies. In addition, NIH has written source code that is portable to other agencies. If agencies choose to utilize the PMC approach, the costs of implementation will be reduced. Overall, NIH spends several million dollars per year on ingesting 80,000 articles into PMC. This is a small amount compared to the agency's spending on research and to the value that is now available to the public. PMC's database is one part of a suite of valuable public resources that are accessed by more than 2 million users every day.

Other agencies can learn from NIH's experience and build on NIH's success, either through implementing a similar service or by designing a public access program that better meets the needs of that agency. For example, working with the Wellcome Trust and other United Kingdom research funders, UKPMC began operations in 2007. UKPMC shares journal content with PMC and the repositories are interoperable. Similarly, PubMed Central Canada is a joint project of the Canada Institute for Scientific and Technical Information (NRCCISTI), the Canadian Institutes of Health Research (CIHR), and the US National Library of Medicine (NLM). Finally, in 2009, the National Science Foundation (NSF) awarded the Sheridan Libraries of Johns Hopkins University \$20 million to build a data research infrastructure for the management of digital information created for teaching and research. Beginning with the life, earth, and social sciences, project members will develop a framework to more fully understand current data practices and develop a model for curation that allows ease of access both within and across disciplines. The Libraries also received \$300,000 for a feasibility study of developing, operating, and sustaining an open access repository of articles from NSF-sponsored research. These examples provide direction for other agencies as they explore how best to implement new public access policies relating to federally funded research.

Whatever path agencies choose in implementing a public access policy, consistency of requirements is important. It will be difficult for research and academic institutions to comply with policies that contain different mandates and requirements. Ensuring relative consistency across agency policies is one key element to ensuring a valuable return of investment and foster a culture where sharing of

these resources continues to promote the interests of science. Additional research and analysis can be found in the following studies.

- Houghton, J.W. Steele, C. and Sheehan, P.J. (2006). *Research Communication Costs in Australia, Emerging Opportunities and Benefits*, Department of Education, Science and Training, Canberra.
- Department of Trade and Industry (DTI) (2007). *Measuring economic impacts of investment in the research base and innovation: a new framework for measurement*, Department of Trade and Industry, London.
- Houghton, J.W et al, (2009). *Economic implications of alternative scholarly publishing models: exploring the costs and benefits*. JISC EI-ASPM Project. A report to the Joint Information Systems Committee (JISC). London: JISC. (<http://www.cfses.com/EIASPM>)

5. What features does a public access policy need to have to ensure compliance?

There are several key features that should be included in a public access policy. First, as mentioned previously, experience has shown that mandating deposit of articles or final, peer-reviewed electronic manuscripts arising from federally funded research is critically important. Second, NIH and other governments engaged in extensive education with the grantee community in order to explain the Policy, its components, and its benefits. Third, ease of compliance has proven to be an important factor in the success of the various policies. For example, NIH has worked with publishers, libraries, and others in designing deposit systems that ease the burden on the individual researcher, the institution, and publishers. Finally, consistency across federal agency policies is important. In working with research offices, centers, and others on campus who are responsible with the grantee for compliance, ARL has heard repeatedly that it is important that there be consistent approaches to public access policies to reduce the burden on institutions and grantees. Given the large number of grantees in each research institution, public access policies with standard components and expectations will be important to successful implementation.

6. What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

Public access with no limitations on use to the final, published article stemming from publicly funded research is preferred but is not always possible. NIH's experience is helpful in understanding the constraints an agency might face in providing access to the final, published article. NIH mandates the deposit of the final electronic manuscript of a peer-reviewed journal article upon acceptance for publication and that this manuscript be publicly available no later than one year after publication. During the years of congressional consideration of the NIH Policy, some publishers expressed concerns regarding copyright issues. To address these concerns, lawmakers included language to ensure that the NIH "implement the public access policy in a manner consistent with copyright law." (Division G, Title II, Section 218 of PL 110-161 [Consolidated Appropriations]). As a result, PMC only distributes the copy-edited, published version with the publisher's consent. Authors who deposit manuscripts in PMC retain the appropriate rights to do so thus are consistent with copyright law. Since the policy went into effect, more and more publishers are collaborating with NIH and are depositing the final, published version. They do this for several reasons: 1) a preference that readers use the publishers' version, 2) it provides a service to their authors, thus there is a competitive advantage, and 3) it may drive more users to their Web site for additional resources. Five hundred and eighty-one journals deposit full journal content to PMC, 178 deposit NIHfunded articles and Springer, Taylor & Francis, Wiley-Blackwell, ACS, APA, the BMJ Publishing Group, and Sage

deposit their OA/author-pay articles. These approaches have responded to publisher concerns by providing a window to protect subscriptions (e.g., access to the final, published version) while at the same time providing public access to federally research results. In addition, it is beneficial if the agency links to the final, published version if the final, published version is not made available to the agency.

7. At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

Open access journals, such as those of the Public Library of Science (PLOS), provide immediate, unrestricted reuse and free access to their peer-reviewed journals. Immediate, unrestricted use and free access supports the advancement of science and innovation and ideally would be the preferred approach in implementing public access policies at federal science and technology agencies, particularly given the speed with which science and technology discoveries are made.

This approach, however, could present economic difficulties for some publishers who currently operate under a different marketplace model, the subscription model. As a consequence, most public access policies call for public access to articles stemming from federally funded research following an embargo period of 6 months or less. This is seen with both public and private funders. A comprehensive list detailing these policies is available at the following:

<http://www.sherpa.ac.uk/juliet/>.

There is a range of embargo periods employed by journal publishers. Many make journal articles accessible at 12 months, a growing number at 6 months (over 90 journals published by Nature Publishing Group spanning many disciplines, for example), and others are more aggressive at 2 or 3 months. Since 2001, the American Society for Cell Biology has provided free access to all of the research articles in *Molecular Biology of the Cell* 2 months after publication. The articles are available on the journal's Web site and in PubMed Central (PMC). Embargo periods for a number of journals are available at the following: <http://www.highwire.stanford.edu/lists/freeart.dtl>.

Some non-open access publishers have expressed an unfounded concern that immediate access or shorter embargo periods will result in journal cancellations by libraries, as subscription revenue is the primary source of income for most journal publishers. Data has shown that libraries will not cancel subscriptions to journals with shorter embargo periods for several reasons. Researchers, students, and faculty require access to the literature as soon as possible; thus, any embargo constitutes too long of a delay, and journals include needed information and articles well beyond those funded by governments.

The embargo period should not relate to varying levels of access or fair use. Fair use is a key provision in the Copyright Act that is central to the ability of libraries, education institutions, high tech companies and others to achieve their mission and/or to bring new innovative products and services to the market. The federal government is making a policy determination of how, in the words of the RFI, "to leverage Federal investments to increase access to information that promises to stimulate scientific and technological innovation and competitiveness."

8. How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?

There is a long history of collaboration within the information infrastructure arena to make information accessible in an effective and useful manner. For example, with others, libraries have developed shared systems, standards, and preservation and access strategies to assist users in discovering needed information in all formats. This collaboration is very evident in the development of institutional repositories; many of the needed standards for interoperable, archived, and publicly accessible digital repositories are in place. And as public access policies have been implemented, strategies and standards evolved or developed as required. Another important criteria has been to work with open standards. With regards to submission format, most agencies and users support a variety of file types, such as MS Word, Excel, and more. Following deposit, some conversion may be required by the repository in order to utilize formats that permit searching, data and text mining, and linking, and today, scientific publishing uses XML. In addition, it will be important for the repositories to employ a common, standard document type definition, or DTD. Currently, there is broad community support and use of the National Library of Medicine's DTD. Finally, employing Digital Object Identifiers, or DOIs such as PMCID will be important. DOI is a system is for identifying and managing digital content objects and can provide current information, including location on the Internet.

9. Access demands not only availability, but also meaningful usability. How can the federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g., number of articles or visitors) should the Federal government measure success of its public access collections?

“Science, science policy and the greater public interest all benefit from a culture that is open and transparent as possible. Accordingly, the Federal government should be committed to fostering such an open environment. Office of Science and Technology Policy“ Core Principles for the Release of Scientific Research Results,” John H. Marburger, Director, OSTP, May 28, 2008.

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. Although our investments in cyberinfrastructure have greatly enhanced the exchange of research results and support greater collaboration among scientists around the globe and between scientific disciplines, barriers still remain. Reducing those barriers is essential for advancing scientific discovery, for sustaining economic growth, and spurring innovation in all sectors. The NIH Public Access Policy provides an excellent example of what can be achieved through the access to software and tools, and the linking of data, databases, journal literature, and researchers. Importantly, it is what users can do with these rich resources that promotes discovery and advances science. Extending this policy to other science and technology agencies would extend useful and effective access to new communities of users with differing interests and perspectives. It would empower these users and support enhanced collaboration across disciplines, nationally and internationally. The Policies must reflect the increasing nature of interdisciplinary, global science. Finally, extending this type of public access policies to other federal agencies will leverage collaborative investments underway, for example the Department of Energy's program to support breakthrough research and the work of the Departments of Housing and Urban Development and Transportation and the Environmental Protection Agency on sustainable communities. Key to the success of extending public access policies more broadly will be to provide unfettered access to research resources and permit the widest possible use within the law. Utilizing Creative Commons or similar licenses is preferred, and these are widely employed by individuals in all sectors. This will greatly assist in the ability to mine, manipulate, and integrate data and information in publicly accessible digital repositories.

As noted previously, the significant and growing use of PMC indicates the need and value for enhanced access to these federally funded research resources and also demonstrates how useful

researchers and others find these tools, software, and databases. Such usage is an important evaluation metric. Removing barriers to scientific communication will translate into new discoveries, including bringing commercial products to the marketplace at a faster pace and for example, as seen through the use of PMC, address pressing national and international health concerns. For more information, please contact Prue Adler, prue@arl.org.

From: Brian Hoal

Representing a small non-profit publisher in the niche field of economic geology, the one-size-fits-all flavor of the current debate is a concern. We have many unanswered questions but sense that there are forces at work that equate the timeliness and currency of medical research with much of the earth sciences where good research and observational fieldwork can have longevity lasting many decades if not centuries. Why this unseemly haste to deliver at a cost that may be measured in the demise of many, especially non-profit, publishers? Without a doubt, there are likely to be unintended (and negative) consequences that will affect continued production of print publications (a majority of our society membership actually favors print over electronic publications). I have also not read anywhere of the sway that a single federally-funded author might have in a multi-author paper, particularly where s/he is not the senior author. What is the threshold for placing this in the public domain? Who bears the cost? There are a number of considerations, some of which may well have been addressed by others and I would be curious to hear about the solutions and alternative business models. But strongly volunteer-driven groups like ours have a decision-making process that does not lend itself to turning on a dime - it does not seem unreasonable to expect that our Publications Board could meet in an orderly fashion without feeling that we're under the gun, set up the necessary task forces, and carefully consider the options. Our journal has been in operation for over a century and our society nearly that long. It would seem that a request for a much longer period of consideration than is being offered would address the fact that not all publications are equal, whether or not they are underpinned by research at the expense (some or all) of the government.

Thank you for the opportunity to comment.

I have read the letter by Youngsuk Chi and Michael Hansen of Elsevier and that by Kathryn J. Jones, Ph.D. President, American Association of Anatomists, opposing greater Open Access on the premise that the present system works well, that there is no crisis in scientific, technical, and medical publishing and that as stated in the Elsevier letter, "...Society depends on today's well-functioning system of STM communications that sustainably delivers extremely broad access and strong quality controls. STM publishers are custodians of this system today because of the

essential role that they play in the communication of scientific, technical and medical research results.”

As someone who has worked in a medical library, I definitely agree that we need (to borrow some wording from the Elsevier letter) a well-functioning system of STM communications that sustainably delivers extremely broad access and strong quality controls. But I will refer below to the moving, telling letter by the medical student Laura Janneck to make clear that Elsevier and other major players (not that there are many left, given Elsevier’s immensely powerful position in its field) and many of the medical and scientific societies that are also publishers have manifestly failed to conduct business in a way that keeps costs reasonable and in line with the rate of inflation that prevails in nearly every other part of the economy.

It is specious to state as Ms. Jones does, “...there is data to show that 96% of the journals in science, technology, and medicine (STM) are available online.” Of course, a huge amount of STM material is online. That is a given. The point is whether it is available at a reasonable cost to those caring for American citizens who are ill or injured and to all the American taxpayers, rich or poor, who are interested in science and medicine and who have the right to participate in the research process, their own medical care and public debates about health policy and to researchers who work at academic institutions that are now dropping huge numbers of journals because they have become prohibitively expensive. Patient care and health education are suffering. Health and education costs are spiraling at disproportionate rates. If this is not a crisis, what is?

And it is these same universities that provide much of the scientific infrastructure that enable groups like the AAA to have members in the first place, given that many of them were educated at and teach in such institutions.

Additionally, in these days of the e-Patient and citizen empowerment it is no longer tenable to argue, as does Ms. Jones, that “...Academic scientific literature, as it currently exists, is intended for and used by academics.

As most scholarly publications, AAA’s journals are rather esoteric—of significant value to researchers in particular areas of investigation, but not useful to the American public or, indeed, even to researchers in other areas of science.” The general public simply does not require this sort of elitist gate keeping of material they have paid for as taxpayers at many levels of its production on matters affecting their very lives and well being. It is not up to Ms Jones to decree from on high what can be read profitably by others. If you love someone who is ill with say, a neurodegenerative illness or a rare form of cancer, you can master all kinds of arcane materials. This is a democratic society, not an aristocracy run by an intellectual overlord class dishing out self-serving arguments to the great unwashed.

As for the supposed benefits of the copy editing and peer review procedures provided by the STM establishment researchers and readers of their work are said to enjoy now thanks to the many new channels of scientific communication via scientific social networking, editing software, Open Source content management systems and publishing platforms and journal management systems, the quality of copy editing will not suffer from Open Access and peer review will consist of a infinitely larger and more diverse pool of reviewers than the tiny cohort the STM establishment draws upon at this time to the detriment of comprehensive scrutiny by a wide array of reviewers.

The arguments of Elsevier and the AAA ring hollow in the light of this passage from Ms. Janneck, "...in the ever-changing world of medicine, published articles are necessary to keep up to date on the current standards of care for the diagnosis and treatment of disease. And while most medical schools attempt to provide access to as much of this literature as possible for their students, it is not uncommon for us to come across an article that we cannot access because our school does not have a subscription. The consequence of this is a gap in our knowledge, which can potentially translate down the line into inappropriate or inadequate care for our patients, and thus increased morbidity and mortality. These barriers become even steeper when one graduates and must rely on personal subscriptions to access medical journals. And the costs of these subscriptions, even to an individual physician, not only provides a disincentive to acquire the literature, but in some cases puts the literature financially out of reach.

I encourage the ongoing efforts of the government agencies and the academic community to continue their efforts to increase access to information and knowledge to the world. As a student and future physician, I know that this issue will affect me for the rest of my career, and I hope that I will not be limited in my pursuit of knowledge for the sake of my patients' care."

As to the idea of "taking" in the Elsevier letter, even Standard Oil and Microsoft had to face some form of government sanction or simply regulation once their actions became manifestly harmful to the common good. And that is what many members of the public have decided has been what the STM establishment has been engaged in in recent years. This is not the view of wacko leftists only but of responsible people who look at how research is funded, at the increasingly marginal value added of the STM publishers in the light of technological advances and paradigm shifts in scientific communication and say, "Hmm, tell me again why Open Access is not called for and in the public interest?" They read letters like those of the Elsevier executives and of Ms. Jones and say, "That dog won't hunt."

Thank you, OSTP, for providing this fascinating forum.

Hope Leman

To Whom It May Concern:

Thank you for the invitation to comment on the possible development of public access policies for federally funded research. This is an extremely important issue. I strongly support open access policies for the following reasons:

- * The Internet and digital repositories allows for new ways of

distributing information which should be employed to protect the public good, in this case access to information generally and access to federally funded research specifically.

* As the cost of scholarly and medical journals continues to rise much faster than inflation, many libraries can no longer afford them, thus limiting access to academic community as well as the general public. Even though I am responsible for one of the largest academic libraries in the U.S., with a \$16 million budget for collections annually, we consistently have to cancel titles due to inflation. This includes titles in the life sciences and medical sciences.

* As more and more electronic journals are licensed, the licensing conditions limit our ability to share information between libraries as we could under fair use in the copyright law with printed journals. Thus, public access through digital repositories is necessary to provide alternative access to those who cannot subscribe to this information or borrow it from other libraries.

* I believe that a six month period from time of publication to deposit is sufficient for publishers to be protected from any financial loss.

* Penn State supported the NIH legislation and adheres to its requirements willingly. I believe that public access to the published results of all federally funded research should be required of all federal agencies.

Regarding elements that should be in a national policy, I would stress the following:

* Material should be deposited within six months of publication, sooner if possible. As I said above, I believe that is sufficient time for a publisher to be protected from financial loss. Most faculty will want the journal as soon as it is issued if the library can afford to subscribe to it. I do not foresee that libraries will cancel just because the material would be available six months from publication, given research faculty demand for immediate access. Public access would be a safety net for those libraries and individuals, including independent researchers, who have no access to the journals.

* Digital repositories should be required to follow national standards that safeguard the preservation of the content and that provide for maximum access to information across repositories.

Again, thank you for the opportunity to comment on this very important issue.

Nancy L. Eaton
Dean of University Libraries and Scholarly Communications

TO WHOM IT MAY CONCERN

I write to support public access to all publically funded research. This is

absolutely essential for the future of the dissemination of academic work, not only in medicine and science, but in all areas of academic research, which are very rapidly being taken over for profit by global corporations. Moreover, these corporations are making billions of dollars by selling academic publications, usually without paying for it or paying only a pittance to authors. The corporation practices in this regard are already having serious consequences, to wit:

They are grabbing up the majority of publications that come from the collectivity of academics, grabbing up the entire supply or a huge part of it and selling off individual bits of it, which ultimately aggregate into millions and even billions of dollars gleaned off scholarly productions.

Further, not only are most of the big academic publishers getting our works free, they are taking away virtually all our traditional rights through the egregious demand that we transfer and assign copyright to them, otherwise they will not publish anything of ours.

And most seriously from the point of view of public access, these publishers are also obstructing, even preventing proper dissemination of our work which, even though they are often getting it free off our backs, do not want anyone else to get it free. So, they charge inordinate fees to purchase our articles online. Some, if not all, are also even including in the so-called agreement to transfer rights to them a provision limiting, even in some cases barring us from posting our articles online.

At the same time, some of these publishers violate our own copyright in the rare cases when we manage to retain them.

Providing public access at the very least to publically funded research would be an important step towards limiting these scandalous, exploitative practices from spreading to every corner of academic publication.

Paul R. Brass
Professor Emeritus of Political Science and South Asian Studies
University of Washington
Seattle

Response to Office of Science and Technology Policy public consultation on Public Access Policy/ On behalf of the Royal Society of Chemistry, UK

From:
James Milne PhD
Editorial Director
RSC Publishing
Cambridge, UK

About RSC Publishing

RSC Publishing is one of the largest and most dynamic publishers of chemical science information in the world. We publish 30 international peer reviewed scholarly journals, approximately 80 scientific books per annum, two highly acclaimed magazines, and a number of successful databases.

Not-for-profit

We are a not-for-profit publisher wholly owned by the Royal Society of Chemistry. Our authors, readers and customers are truly international and our publishing activity dates back to 1841.

Any surplus derived from publishing is invested back into the international chemical science community through charitable activities, spanning education, training, conferences, science policy, and the promotion of the chemical sciences to the public.

Award-winning

RSC Publishing has been recognised by a number of prestigious awards, including the 2007 ALPSP/Charlesworth Award for Publishing Innovation for RSC Prospect - the project behind the pioneering introduction of enhanced HTML journal articles.

Authoritative

RSC Publishing is a member of ALPSP, the Association of Learned and Professional Society Publishers, and we adhere to the ALPSP principles of scholarly-friendly journal publishing practice. All research articles published by the RSC are peer reviewed. The journals are considered to be of the highest standards in their field, with an average impact factor of an impressive 4.7. Through the professional management of the publishing process, from submission through to publication, RSC content truly satisfies the pillars of scholarly publishing:

- Certification (validation of quality and integrity)
- Registration (recognition of achievement)
- Accessibility (unparalleled online access, worldwide)
- Archiving (reliable perpetual accessibility)
- Navigation (industry leading services to identify relevant content)

It is worth noting that, as a society publisher dedicated to advancing the chemical sciences, the RSC already provides delayed open access to all research content after two years. This provides the research community and the public with access to much of the content recently published in our archival journals, while preserving the economic model necessary to support the essential publishing activities listed above.

Professional

The publishing operation is based in Cambridge, UK, and employs around 230 people on the Science Park. These professional publishing staff engage in the preparation, peer review, selection, editing, production, marketing and distribution of information in the chemical sciences. Additional international publishing staff are based in Philadelphia, USA and Beijing, China.

Investing for the Research Good

As a Not For Profit organization, the RSC sustains its proven and established publishing activities through subscription revenue. This model also enables the RSC to invest in new highly valued services for the community, generally at no additional cost to the user.

By way of example, during 2009 RSC Publishing acquired ChemSpider, a structure centric community for chemists. ChemSpider provides access to millions of chemical structures and is considered to be one of the richest single sources of structure-based chemistry information worldwide. RSC Publishing provides free access to this service, as part of its publishing operations.

Response to OSTP Questions

Question 1: How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy?

The Publisher performs an essential role in the effective management of scientific publishing. This includes reliable and authoritative certification of submitted material, and the effective registration and dissemination of resulting papers. The Publisher invests significant costs throughout this process, including but not limited to: supporting the submission systems, managing the peer review process (including funding both internal and external editors), introducing value added services to accepted manuscripts (including copy editing, and electronic functionalities), and enhancing discoverability. Public Access appears to assume that the pre-publication activities remain intact and unaffected. Yet providing free access removes the cost/revenue balance required to sustain the essential peer review activities which are critical to the registration and certification of published content.

Question 2: What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

There is currently excellent access to high level chemistry research for relevant researchers, both as authors and as users of scientific literature. Public interest in this material is very limited. Providing public access to this chemistry content will result in negligible usage by the public, will provide no significant benefits to the authors of the paper, but will reduce the need for librarians to continue subscribing to this material. Breaking the established business model will ultimately have a detrimental effect on established society publishers, and for their journals, and hence for research in general.

To give an example. The following paper was the first chemistry research article to be made freely available on the RSC web site through our 'Open Science' programme. This research was funded by The Wellcome Trust's public access policy (where they provide funding to enable all papers supported by Wellcome Trust grants to be made freely available).

Title: Chemical genetics suggests a critical role for lysyl oxidase in zebrafish notochord morphogenesis

Link: <http://dx.doi.org/10.1039/b613673g>

While the paper is scientifically strong, the public interest in this article is almost zero. This raises an important question on the true public need to access such content, and hence the value of implementing a potentially costly and damaging public access policy for this field or research.

Question 3: Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

Users of peer reviewed chemistry research content are almost exclusively from academia or from research groups in relevant businesses. There is almost no interest in this content from the general public. (See example under Question 2).

Usage is primarily via the publisher's online platform, which is managed, maintained and developed through investments made possible from journal subscriptions.

Usage would not change significantly via a public access policy, though libraries may cancel subscriptions if the same material became freely available elsewhere.

Question 4: How best could Federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

Federal agencies should work with publishers to evaluate, on a subject by subject level, the actual interest and usefulness for the public to access and read peer reviewed papers. For chemistry, this is likely to be negligible, though such an assessment would confirm or correct this. With exceptionally low public interest in this content, investing federal funding to provide unnecessary access is questionable.

Question 5: What features does a public access policy need to have to ensure compliance?

Opening access to journal content is most likely to succeed if there is a systematic approach, involving publishers and funding agencies working in collaboration. The approach taken by the Wellcome Trust is a good example, whereby all research articles derived from their grants are made open access with immediate effect, with Wellcome funding this publishing activity in full.

Question 6: What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

There are two key versions of any paper; the author's accepted manuscript, and the final copy-edited and marked up paper. If appropriate funding is injected into the process, the final papers can be made available (ref. Wellcome Trust approach). Without funding to support the process, subscriptions to journals which fund the peer review and publishing process need to be sustained. As such, a 12 month embargo for the accepted manuscript to be made available is appropriate for the chemical sciences, though any embargo ought to be subject specific.

Question 7: At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g. final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

It is important to differentiate between different subject areas. For chemistry, a 12 month embargo is generally considered appropriate to preserve the successful and established business activities necessary to fulfill and maintain the certification and registration processes. For other subject areas, the appropriate embargo period may be shorter or longer than 12 months.

Question 8: How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?

To maximise the value of the public access policy, there is merit in the Federal Government investing in public accessibility to the authoritative articles as hosted on the publisher's site. The Wellcome Trust arrangement is an example of this approach.

Existing digital standards such as CrossRef and Portico, developed through collaboration amongst publishers, are well documented.

Question 9: Access demands not only availability, but also meaningful usability. How can the Federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g. number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access papers be given the opportunity to comment or provide feedback?

An integral part of any publisher's business is to make published content as usable and useful as possible. A good example of this is the added value functionality "RSC Project Prospect":

www.rsc.org/prospect. This level of service for both the authors and readers of peer reviewed chemistry research requires significant on-going investment; made possible by reinvesting subscription revenue from the individual journals. Without such investment, the dramatic advances in accessibility and functionality of scholarly literature would not have taken place; compare the print based environment of 2000 to the dynamic online environment today.

In addition to enhancing usability for researchers, there are opportunities to present material that makes research readily digestible to a wider audience. Learned societies such as the RSC make efforts to produce publicly accessible material derived from high-level research papers that may have a wider public interest. The RSC undertakes this through employing skilled scientists, and distributing the material via its magazines, websites and other science news channels. Example: A new fluorescent organic molecule that can detect explosive vapours; article disseminated through *Highlights in Chemical Science*.

While there are usage statistics available for peer reviewed journals, it is unlikely that these will, on their own, provide any meaningful measure of public access. It is therefore vital for the Federal government to take the lead and work with publishers and the community to establish targets and measurement mechanisms to evaluate success criteria for any public access policy. This should establish the genuine level of public access to the content, which articles (/subjects) are of most interest, and what benefits the public truly gain from such access.

Summary

Public Interest

There is very limited public interest in published scholarly research in the chemical sciences. This is due to the complexity and nature of research in this field.

Potential Impact of a Public Access Policy

Providing 'free access', notionally to encourage public access, will principally benefit librarians worldwide. The need for librarians to continue to subscribe to peer reviewed journals will diminish if a significant amount of published content is also available free of charge. Cancellations of subscriptions will reduce the funding stream necessary to support the peer review mechanism which is widely accepted as being essential to the authority of published articles.

Implementing a policy that reduces funding to support the peer review process will ultimately harm scholarly publishing, the progress of scientific research, and potentially the scientific record. Without authoritative peer review, which requires significant investment, the reliability and trust in published research will be adversely affected.

Possible Solution to Increase Access in a Sustainable Manner

The RSC, like most publishers, provides the option for research to be made 'Open Access' through the payment of a one-off fee. Adopting this mechanism would provide open access to the final archival version of the published paper, and allow an effective mechanism to continue to support the peer review and other value added services provided by publishers.

A systematic approach, as adopted by the Wellcome Trust, allows efficiencies to be achieved for all parties concerned while also satisfying the underlying objectives of the proposed policy.

It is crucial that the OSTP fully assess the effect any public access mandate may have on Publisher's ability to invest in the activities necessary to sustain the certification, registration, accessibility, archiving and navigation associated with successful and authoritative scientific publishing. Should the public access policy negatively impact these functions, the integrity of science publishing would also be impacted. This would prove counter-productive for the research community and the common good.

James Milne PhD

Editorial Director, RSC Publishing

Cambridge, UK
January 18th 2010

Dear Sir or Madam:

The Institute of Food Technologists appreciates the opportunity to comment on public access policies for science and technology funding agencies across the federal government. Founded in 1939, IFT is a not-for-profit scientific society with more than 18,500 individual members working in food science, technology and related professions. IFT is pleased to be invited to offer comment on the availability of knowledge of research through scientific and technical publications because IFT is committed to the free flow of scientific information. IFT serves its members, affiliated with academia, industry, and government, and all those interested in food science and technology by publishing three internationally renowned peer-reviewed journals and a technical magazine. As a publisher, IFT assembles more than 1000 preeminent food scientists, technologists, and engineers among our comprehensive pool of peer reviewers. Such an extensive resource of peer reviewers ensures that the research made available to the scientific community is important, comprehensive, and of high quality and integrity.

Two of IFT's peer-reviewed e-publications (*Journal of Food Science Education* and *Comprehensive Reviews in Food Science and Food Safety*) are currently freely available online. In addition, the *Journal of Food Science* is available to IFT members at a discounted subscription rate and to others on a per article download charge or through subscription. *Food Technology* magazine, published monthly, is available to IFT members in print and online. The online version of *Food Technology* is initially available free to the public for about one month, and then becomes accessible only to IFT members. To ensure that the public is informed of research findings, IFT, along with publishing partner Wiley-Blackwell, has a well-organized system to promote particularly newsworthy research through popular media and news releases.

IFT Comments on Public Access Policies

Based on our 60-plus year history of scientific publishing, IFT strongly believes that the current system for handling and releasing peer-reviewed research—federally-funded or otherwise—is not broken and does not need a federally-mandated open access policy. Specific points were presented in the OSTP Request for Information as justification for a statement on the need for increased public access to research resulting from federally funded projects. IFT offers below responses to these points; additional comments follow.

“(a) More timely, easier, and less costly access to scholarly publications resulting from federally funded research for commercial and noncommercial scientists has the potential to promote advances in science and technology, thereby enhancing the return on federal investment in research;”

This rationale assumes that there are scientists who are restricted in their access to research. To date, IFT is not aware of any definitive studies that validate this hypothesis. Surely implementation of a policy that would have the unintended consequence of irreparable harm to the peer review system would not be undertaken without sound scientific data to justify the action. The peer review system functions through scientific journals, many of which are supported through scientific societies by

subscriptions from individuals, libraries, and corporate entities. Mandatory release of research at the time a manuscript is accepted for publication would undermine subscriptions and result in loss of revenue for carrying out the peer review activity.

“(b) Creating an easily searchable permanent electronic archive of scholarly publications resulting from federally funded research has the potential to allow cross-referencing, continuous long-term access, and retrieval of information whose initial value may only be theoretical, but may eventually have important applications;”

The creation of such a searchable database should be readily attainable now with the information that federal agencies have on their funded projects. Principal investigators are required to submit references to all research published under a federal grant or contract (unless there are reasons of national security for not doing so). These reports and publications could easily be assembled now into a searchable database obviating the need to require further release of published materials.

“(c) Ensuring that the federal agencies that support this research can access the published results has the potential to promote improved cross-government coordination of government funding, and thus improved management of the federal research investments;”

As stated above, federal agencies now have all the data and can assemble such a searchable database. Requiring open access of a manuscript immediately after IFT Comments on Public Access Policies acceptance by a journal is not necessary to improve management of federally-funded research programs.

“(d) More timely, easier, and less costly access to scholarly publications resulting from federally funded research for educators and students, and ‘end users’ of research, such as clinicians, patients, farmers, engineers, and practitioners in virtually all sectors of the economy, has the potential to promote the diffusion of knowledge.”

As stated in (a) above, there has been no definitive study showing that those with interest in a particular research topic are now unnecessarily restricted in their access to the scientific data and results. Thus, there is no reason to hypothesize that such a government run database would enhance access or be more useful than current searchable databases.

Additional Comments:

Much of the discussion around the issue of public access was fueled by an NIH decision in February, 2005. In its “Policy on Enhancing Public Access to Archived Publications Resulting from NIH-funded Research,” NIH-funded researchers were requested to submit electronic versions of the author’s final manuscript upon acceptance for publication to PubMed Central to be released to the public as soon as possible and within 12 months of the publisher’s official date of final publication. IFT is not aware of any studies on the effectiveness of this voluntary open access model. Perhaps the most important quality that can be attributed to a research publication is whether or not it has been subjected to peer review. Peer review is carried out through the auspices of the publisher, and its associated costs are borne primarily through subscriptions. If the publisher is a professional scientific society, as IFT is, however, some expenses may be borne through member dues as a member service. In either case the costs associated with handling the manuscript including peer review and copy editing are real costs. Without some grace period prior to free access, the publisher will be forced to charge the authors page charges (which some publishers now do). Such a move is likely to delay publication of research results, an unintended consequence of a public access policy.

In conclusion, IFT is committed to the free flow of scientific information, as demonstrated in offering its two peer-reviewed e-publications free of charge. In addition, the *Journal of Food Science* prides itself on having an enviable impact factor rating and a receipt-to-final publication time frame of only

55 days. An assembly of more than 1000 scientists, with the most preeminent food scientists and engineers in the food science and technology profession, is included in the peer reviewer listing. In this way, IFT ensures IFT Comments on Public Access Policies that impactful research of high quality and integrity is available to the scientific community. IFT, along with its publishing partner Wiley-Blackwell, has a well organized system to promote this research through popular media and news releases. IFT believes that the current system for handling and releasing peer-reviewed research that is either federally funded or otherwise is not broken and does not need a federally-mandated open access policy. IFT looks forward to continuing to contribute to this important public debate and decision.

Sincerely,

Daryl B. Lund, Ph.D.

Editor-in-Chief, IFT Scientific Journals

I have read the interesting letter of James Milne of the Royal Society of Chemistry, and would like to comment on his statement here, "There is very limited public interest in published scholarly research in the chemical sciences. This is due to the complexity and nature of research in this field."

First of all, one of the purposes of Open Access is to generate interest in the sciences among the public and to kindle sparks in young minds. If there is little public interest in the published scholarly research in the chemical sciences (and on what evidence does Mr. Milne base that blanket statement?—the very success ChemSpider, the innovative project he mentions and that is flourishing with the admirable support of Mr. Milne's own RSC, suggests that there is indeed active interest in the chemical sciences by those who contribute to that project many of whom are not necessarily professional researchers) then could not the prevailing state of affairs in which much of that literature is locked up behind the walls of professional societies and by the STM behemoths be blamed for that? Mr. Milne blames the public for its supposed brainlessness. We have seen with the explosion in science blogging and the interest in such material by general readers that the tortured reasoning of Mr. Milne does not convince. He does not do the RSC credit by implying that stupidity and sloth reign outside of his privileged circle. Crowdsourcing is the very essence of projects like ChemSpider and they cannot thrive without access to the published scholarly research by one and all.

For instance, I grew up and live in Oregon. One of our local heroes is Linus Pauling. He grew up as the son of druggist in what was not exactly a scientific hub. But he was smart and fascinated by science. There are Paulings out there now and they do have brains and they could benefit from better access to the published scholarly research before they even get to graduate school-if they can afford to do ever get there. Many people have to work for years before they can afford higher education. But thanks to the Web they can educate themselves in the meantime-unless, of course, the arguments of people like Mr. Milne prevail.

And Linus Pauling attended Oregon State University-a land grant institution that has had drop huge numbers of scientific journals in recent years because they have become unaffordable. Of what value are journals if even those who do finally attend graduate school can't get easy access to them? This is not a healthy situation for science and education and for the intellectual development of the young.

Hope Leman

Dear Sir/Madam:

Access to the journal articles resulting from public funding is important and a good start to openness and transparency. Important policy decisions are often based on claims made in these scientific papers. It is important that the data used in those papers be made available in a timely way. Once the paper is published the electronic data set used to construct figures and tables and analysis should be electronically available.* My experience is that data is often not available even though NIH policy says that it should be. The National Academy also makes a strong case that data used in publications should be made available on the publication of the article.** The NIH could request/require that journals publishing publicly funded research adopt a policy that authors should sign an agreement that data will be made available on request. Funders and journal editors need to be in agreement that research data used in publication be made available in timely way. If data is not made available in a timely way, then any claims based on the data are, in effect, “trust me” science, or, in fact, not science at all.

Stan Young
Assistant Director of Bioinformatics
National Institute of Statistical Sciences

I would like to thank OSTP staff for their interest in the issue of access to federally funded research and for providing an online forum for public discussion. I am also grateful that the forum was extended, as I was unable to comment during the initial four weeks of the blog.

I am a Professor of Microbiology and Molecular Genetics at the University of Vermont (UVM). I run a research lab funded by three NIH grants, and I also teach undergraduate, graduate and medical students. I strongly support the NIH’s approach to ensuring public access to the biomedical literature, and I encourage OSTP to extend this framework to other federal research agencies.

The access problem is real and something that my colleagues and I experience on a daily basis. Although my lab does state-of-the-art, competitively funded research on infectious disease, we find that we must frequently “make do” without articles from the scientific literature that would help this research progress. This is due primarily to the cost of journal subscriptions; UVM’s budget of ~\$1.5 million for biological/biomedical journals is insufficient to meet the needs of our diverse faculty and staff. Journal prices have risen faster than library budgets for many years, and our libraries find

themselves in a constant struggle just to maintain the subscriptions we already have. My research has become increasingly multidisciplinary in recent years, and this has exacerbated my own problems with access: we now collaborate closely with chemists, and I have discovered that access to the chemistry literature is even more restricted than the biomedical literature.

In my role as an educator, I also sometimes find myself teaching my graduate and medical students what I have access to, rather than what they most need to know. For example, I was recently preparing a lecture on why there's such a difference in the incidence of coronary artery disease in women and men, and I was only able to access about two thirds of the articles I needed to provide them with all the available information. This is very frustrating as a teacher and does not serve students well.

There are various “workarounds” to the access problem that academics practice, such as emailing authors directly for manuscripts or asking colleagues at other institutions to download copies for them – practices that in some cases violate copyright law. Pay-per-view or interlibrary loan (ILL) are offered by publishers as alternative solutions to the access problem, but these are either prohibitively expensive (\$20-30/article for pay-per-view) or often slow to arrive (days for ILL). Most importantly, all of these workarounds miss a critical aspect of how scientists and educators use the scientific literature: we browse. It is often impossible to tell from looking at an abstract whether an article contains needed methodological detail or the perfect illustration to make a point to one's students.

Workarounds such as those described above are of no help in the very common situation where we don't know what we're looking for until we find it.

The access barriers that handicap research, teaching and public health are unacceptable to me as an academic and as a citizen, given the taxpayer investment that funds the research enterprise.

They are also unnecessary. I know this in part through my six years as Treasurer of the American Society of Cell Biology (2002-2008), publisher of the monthly research journal, *Molecular Biology of the Cell* (MBC). The ASCB has provided free access to all of the research articles in MBC, two months after publication, since 2001. The articles are available both on the journal's website and in PubMed Central. Despite an access policy that goes well beyond what the NIH Public Access Policy requires (i.e., MBC's embargo period is two months rather twelve; 100% of MBC's content is made freely available, not just the fraction supported by NIH funding; and the final peer-reviewed, edited and typeset version is made freely available, not just the author's manuscript), the journal remains a major source of net revenue for the Society.

Many other prestigious and financially successful journals also offer their content for free after periods of time ranging from zero to twelve months (1), providing the best possible data that reasonable access and financial sustainability are not mutually exclusive, even for journals that rely heavily on subscription income. The reason for this is simple: to remain competitive, I as a researcher must have immediate access to the literature that is relevant to my research. My research would suffer greatly if my library were to cancel subscriptions to journals I need based on the rationale that I would have free access to those journals 12, 6 or even 2 months later. Surveys of librarians have shown that free availability of content is not nearly as important a factor in subscription cancellations as usage (2).

To address three of the specific questions raised by the forum moderators:

IMPLEMENTATION: The NIH experience has clearly shown that a public access policy will not work unless it is a mandate. I agree with other contributors to this forum that uniform standards and processes should be adopted across agencies and that articles should be housed either in a central repository or within permanent, interoperable repositories within each agency. While the policy should allow an embargo period to protect publishers' interests, the longer the embargo, the less useful the policy becomes to those who lack access. The ASCB's experience with MBC suggests that embargo periods as short as two months are possible and there is plenty of evidence that six months is more than sufficient to protect publishers' interests. Thus, the embargo should be no longer than six months.

COMPLIANCE: Federal research grants are awarded to institutions, not individuals, and institutions typically ensure that their principal investigators are in compliance with relevant federal regulations before releasing funds to them. University administrators and faculty are both accustomed to this. An obvious time to check for compliance would be during progress reporting or at the time of competitive renewal of the grant. Investigators are highly motivated to list publications that have arisen as a result of the funding received, so checking compliance would be as simple as confirming that there are repository ID numbers associated with each publication listed in a progress report or competitive renewal. This could be done either by the institution or by the funding agency, depending on whether funding is awarded in one year installments and requires annual institutional sign-off (e.g., NIH) or is awarded for a multi-year period, in which case progress reporting usually occurs directly between the investigator and the agency (e.g., NSF).

For a mandate to be a mandate, there also has to be a mechanism of enforcing compliance. The most direct approach would be to delay or

deny future funding of non-compliant investigators and/or sanction their institutions, as currently happens when investigators ignore federal regulations on animal care or human subject research. A less heavy-handed approach, which I favor, would be to give each investigator three strikes, like points on a driver's license, before sanctions go into effect. This would be an effective way to educate investigators and encourage full compliance without being unnecessarily punitive. I'm confident that we investigators will learn to comply with new regulations very quickly when our future funding is at stake.

BURDEN ON THE INVESTIGATOR: Negotiating copyright agreements is unfamiliar territory for most scientists, and could represent a significant time sink. However, given the responsibility of institutions in assuring compliance with the NIH Public Access policy, many (including mine [3]) have put together information and boilerplate letters that makes this process simple and straightforward. If a widespread mandate were adopted, publishers would also have an incentive to make compliance as simple as possible for their authors, for fear of losing submissions.

In terms of manuscript deposition, it takes the average investigator less than 10 minutes (4) to upload a manuscript into PubMed Central via the NIH Manuscript Submission System (plus whatever amount of time he/she chooses to spend reviewing the formatted web version before it is posted online.) This is a truly insignificant amount of time compared to what goes into writing the grant, doing the research and preparing the manuscript for publication. I have deposited my own papers in PubMed Central, and I can attest to how simple and quick the process is. If the author submits to a journal that participates in PubMed Central (1), submission is automatic and proofing is not required. The burden on investigators will be minimal.

Again, I thank OSTP for providing us with the opportunity to contribute to this important discussion, and I encourage the Administration to expand the NIH Public Access Policy to all other federal science agencies.

(1) <http://www.ncbi.nlm.nih.gov/80/pmc/journals/>

(2) http://www.alpsp.org/ngen_public/article.asp?id=200&did=47&aid=157&st=&oaid=-1

(3) <http://www.uvm.edu/~ospuvvm/?Page=NIHPublicAccessPolicy.html>

(4) http://publicaccess.nih.gov/submit_process.htm

Gary Ward, PhD
Professor of Microbiology and Molecular Genetics
University of Vermont

To Whom It May Concern:

I appreciate the opportunity to comment on the possible extension of the NIH open access policy to all agencies receiving federal funding. I strongly support open access policies, especially for federally funded research in the fields of science, technology, and medicine. Open access to scholarship is a public good. This initiative would be a real show of support for the scientific community and for the primacy of scholarship over profit.

Sincerely,
Yasmin Mathew

Who should enact public access policies?

The agencies which are funding the research with an aim that the funded research would bring out public benefit should enact a public access policy by which the research results shall be made available to the public. The government should endorse the public access policy.

How should a public access policy be designed?

Timing.

The timing should be as soon as the peer-review is finished and before the manuscript is submitted for publication in a scholarly journal.

Version.

The author's peer-reviewed manuscript should be made public under the public access policy.

Mandatory v. Voluntary.

The policy should be mandatory. Voluntary may not work as it shall be a voluntary!

Other.

There should be the Public Access Policy for all the Publicly Funded Research or any other activities. Author pay model may be adopted by the publishers and if needed, Government should also fund for the publication along with the funding for research.

The comments made are of mine and do not represent the views or opinions of my employer organization (IARI/ICAR) or its staff.

Thanks & Regards
Sridhar

Office Address (for Postal Correspondence):
Sridhar Gutam, PhD, ARS
Scientist, Unit of Simulation and Informatics
Indian Agricultural Research Institute

Please find attached a response from the Association of Learned and Professional Society Publishers (ALPSP) to the Office of Science and Technology's consultation on Public Access Policy.

Yours truly,

Ian Russell
Chief Executive
Isabel Czech
Executive Director, North America

Office of Science and Technology Policy
consultation on Public Access Policy
Introduction

1. The Association of Learned and Professional Society Publishers (ALPSP) is the international organization for non-profit publishers and the world's largest association for scholarly and professional publishers. It is the only international trade association that represents scholarly and professional publishers across all disciplines of academic endeavor. ALPSP has a broad and diverse membership of over 350 organizations with around 60 of those based in the USA. We have members in 37 countries who collectively publish over half of the world's total active journals as well as books, databases and other products. ALPSP's mission is to connect, train and inform the scholarly and professional publishing community and to play an active part in shaping the future of academic and scholarly communication.

2. We therefore welcome the opportunity given by the Office of Science and Technology Policy to respond to the Public Access Policy public consultation.

3. We share President Obama's aspiration of maximizing the return on Federal investments in R&D; indeed scholarly publishers are embedded in the scholarly communities that they serve and play a key and vital role in disseminating research outputs and improving research efficiency. We are supportive of the widest possible dissemination of research outputs while realizing that the scholarly publishing process in totality must meet the needs of researchers (the primary users of this material) and be underpinned by viable and sustainable business models.

4. It is clear from many of the comments submitted to this consultation that the value added by scholarly publishers is recognized which is why many are calling for the final, publisher version of peer-reviewed articles (the 'Version of Record') to be subject to a public access policy. However, we are extremely concerned that those calling for these articles to be made freely available on the web with short embargoes, or no embargo at all, do not realize the likely deleterious impact on publishers of this course of action which will undermine the scholarly publishing process.

5. We understand that the Administration favors evidence-based policy and OSTP will be aware that there is a paucity of reliable research data regarding

public access to the scholarly literature. ALPSP supports the PEER project (Publishing and the Ecology of European Research; see <http://www.peerproject.eu/about/>) as one example of a cooperative research study involving a number of stakeholder groups that will provide much needed evidence on the situation in Europe. We encourage a similar study in the United States, again involving the various stakeholders, to inform OSTP policy in this area.

6. In responding to this consultation we have answered only those questions which are relevant to the ALPSP membership.

Question 1: How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy?

7. This question presupposes that there is peer-reviewed literature to subject to a public access policy so it is vital that any such policy does not undermine the scholarly publishing system that manages peer review via investment in the journals, editorial boards, editorial office management systems, etc.

8. Publishers play a critical role in the certification, validation and dissemination of research outputs. They organize and operate efficient and streamlined systems of peer review which, combined with the brands, quality standards and specialties of individual journals, provides a mechanism that ranks and sorts the scholarly literature. Publishers also provide a number of other value added services such as high quality production, reference checking and reference linking, and they play a crucial role in the ongoing stewardship of the “minutes of science”.

Question 2: What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

9. ALPSP feels strongly that publishers must be allowed to operate in a free market and to be in control of their own business models so that they can continue to innovate and to provide high quality services to the research community (scholarly journal publishing was among the first industries to embrace the internet and the world wide web). We do not believe that government should expropriate versions of scholarly material in which nongovernment-owned publishers have invested and added value. The system already works extremely well: the vast majority of research is available to researchers; most publishers make content available in large research or state funded libraries and include walk-in use (as well as authorized online use in some cases); many publishers already make their content freely available after suitable embargo periods on their own websites and publishing platforms; a number of “humanitarian” programs such as HINARI, INASP, AGORA, eIFL etc. provide free or almost free access to researchers in the developing world. All of this demonstrates the desire of publishers to make their content as accessible as possible to those who need the research content, within the context of a viable, sustainable and scalable business model.

Question 3: Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

10. The primary users of peer-reviewed publications are academics and researchers, and overwhelmingly the peer-reviewed journal literature is now accessed online. A 2008 survey (Cox, J. and Cox, L. (2008) Scholarly Publishing Practice Third Survey, ALPSP) indicated that 96% of the journals in science, technology and medicine (STM) and 87% of arts, humanities and social science (AHSS) journals were available online.

11. There is a paucity of evidence regarding demand by the public for access to the peer-reviewed literature. As publishers, who are in the business of matching products to markets, we would characterize the scientific research literature as a niche market, not a mass market. However, we encourage additional research to assess the level of demand and the purpose of access to the peer-reviewed literature by the public so that the most appropriate and cost-effective solutions can be found.

Question 4: How best could Federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

12. Federal agencies should work with publishers to (i) assess the demand for peer-reviewed papers among the public, bearing in mind that the requirement will vary greatly from one discipline of scholarly endeavor to another, and (ii) find appropriate methods of closing any access gaps by working cooperatively with all stakeholders including publishers, libraries and research communities.

13. We believe it is important to be able to understand the total usage of scholarly material and to this end online repositories such as PubMed Central should share detailed usage statistics to help assess the “increased return” as well as the extent to which the users (which will include researchers in academia, industry, government, IGOs and NGOs, those working in small businesses as well as the general public) of Federally funded repositories overlap with those using publishers’ sites.

Question 5: What features does a public access policy need to have to ensure compliance?

14. Evidence suggests that both users and authors want access to be to the publisher’s final Version of Record. In the online environment, we believe that publishers are best placed to be the custodians of this version of the article and that access should preferably be provided by a link to publisher websites.

15. Whatever the public access policy, compliance needs to be supported by a clear funding mechanism so that publishers are able to recover their investments in producing the Version of Record.

Question 6: What version of the paper should be made public under a public

access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

16. The options presented in this question are both limited and leading. We do not understand why the question ignores another obvious option – that the research output which should be made public is the research project report. This is the output that the funding body has paid for.

17. Federal research grants pay for research, not the publication of research. Research publications benefit from publisher added value; from technical processes such as copy editing, typesetting, reference linking, etc.; and, crucially, from the association with a journal's brand that helps guide users to trustworthy content and improves research efficiency. This value add has not been paid for by the funding body, except in the case of so-called "Gold Road" open-access payments.

18. At a system-wide scale, peer review of the journal literature is not a binary process – i.e., a mechanism through which a paper has either passed peer review or has not. Rather, the range in quality and specialty of journals provides an important, if coarse, ranking and filter on the literature. The same peer reviewers could well accept a manuscript for one journal but reject it for another either based on the quality standards of the journal, its subject coverage or niche, aims and scope etc. Readers therefore get a great deal of information about an article by its association with a particular journal before they even read a word; it gives an indication of what they are likely to find and this greatly aids research efficiency.

19. It is impossible to say as a general rule whether or to what extent different versions of an article may vary. They may not vary at all (e.g. if the author submits a perfect article that requires no editorial intervention); they may vary trivially (e.g. if the article just receives "house-style" editing); or they may vary profoundly (e.g. if an article needs intensive editing, is incomplete or incorrect, etc.). There is a continuum of editing levels, and without detailed version-to-version comparisons, you cannot tell whether an accepted article differs greatly from the published version or not. But all accepted versions, even those that have no editorial amendments, benefit from the journal "brand" conferred upon them and the status of being accepted for publication – a status that arises from the publisher's investments that we have referred to above.

Question 7: At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g. final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

20. We believe that publishers should determine the business models on which their publications operate and this should include whether the final peerreviewed

manuscript or final published article are made freely available on the open web, and if so, after what embargo period. The optimal embargo period will, undoubtedly, vary greatly from discipline to discipline (as evidenced by the wide variation in citation half-lives across different subject specialties, see <http://www.isiwebofknowledge.com/>).

21. One size does not fit all. Publishing is an activity that supports scholarly disciplines and these disciplines have very different mores; different kinds of funding mechanisms, different lengths of time to publication, different citation half-lives, etc. There is enormous variability within the physical and health sciences, mathematics, engineering, etc. and even more when the social sciences, humanities and arts are included.

Question 8: How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?

22. Although there is federal investment in the research itself, there is no “federal investment” in managing the peer review process, nor in launching, developing and promoting journals, nor in the added value that takes an article from Accepted Manuscript to Version of Record, nor in the postpublication stewardship of that Version of Record. We believe that the solutions to the issues that you highlight in the question will, and should, primarily emerge from the private sector (which includes, of course, a very large number of non-profit society publishers). Digital standards for interoperability and preservation are still emerging, but we would draw attention to initiatives like CrossRef (see <http://www.crossref.org/>) and Portico (<http://portico.org/>) as successful, efficient, industry-led examples of broadly adopted solutions.

23. It is important to note that the value added by publishers in addition to peer review (e.g. reference linking, search optimization etc.) have associated costs that still need to be met even if publishers themselves are driven out of the system. It is at best naive and at worst duplicitous, and thus wasteful of time and money that would be better off going to research, to replicate for publicly available content the work that publishers are already doing in this regard. Question 9: Access demands not only availability, but also meaningful usability. How can the Federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g. number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access papers be given the opportunity to comment or provide feedback?

24. Publishers invest time and money in making their content usable. We do not believe that crude metrics like the number of downloads or visitors will be

enlightening measures of success. To properly assess the impact of a public access policy we believe that the Federal government should assess who is accessing content and for what purpose, as well as determine how useful the content was to the user and the impact that the content had on the user's aims. As mentioned earlier, we call for detailed usage information from public repositories to be shared with publishers.

25. It should also be noted that many publishers provide public engagement services, where information that has appeared in the scientific literature is digested and reproduced in a friendly format for the non-specialist public user. Access to primary articles for the general public is unlikely to be of benefit in most cases.

Summary

26. In summary, ALPSP:

- Believes that publishers should be allowed to control their own business models without the government expropriation of value added by private organizations.
- Encourages additional research to assess the level of demand and purpose of access to the peer-reviewed literature by researchers and the public so that the most appropriate and cost-effective solution can be found.
- Suggests that the United States should instigate a large-scale, cooperative research study involving relevant stakeholders (akin to the PEER project in Europe) to gather evidence to inform OSTP policy in this area.
- Asserts that the system of peer-reviewed journals greatly assists research efficiency and suggests that Federal agencies work with publishers to find acceptable policies for public access that do not have a deleterious impact on publishers' ability to add this value.
- Publishers should determine if and when versions of the article to which they have added value should be made freely available and this will vary greatly depending on the needs of different research disciplines.

Ian Russell
Chief Executive

Isabel Czech
Executive Director, North America

Whom It May Concern:

I am pleased to attach a set of comments from the Society of Toxicology in response to your Request for Information on, Public Access Policies for Science and Technology Funding Agencies Across the Federal Government. If you need any additional information, please free to contact me using the information listed here.

Martha Lindauer
Communications/Media Manager
Society of Toxicology

Across the Federal Government

The Society of Toxicology is pleased to respond to the Office of Science and Technology's notice, *Public Access Policies for Science and Technology Funding Agencies Across the Federal Government*.

The Society of Toxicology (SOT) applauds the Office of Science and Technology Policy (OSTP) and the House Committee on Science and Technology for recognizing the importance of providing the public with access to research literature that is funded with taxpayer dollars. SOT has worked with Oxford Press, the publisher of its journal, *Toxicological Sciences (ToxSci)*, over the past several years to ensure that research that is published in this scientific journal undergoes rigorous technical review by experts in specialized fields prior to publication. *ToxSci* subscribes to the NIH model that you reference in your notice and considers that to be a workable system and one that ensures broad access to the results of publicly funded research. Under this model, *ToxSci* currently grants free public access to all articles published in the journal 12 months after printed publication. In addition, *ToxSci* has an open access submission option that allows authors to pay for an article to be available to the public upon acceptance. Authors are encouraged to deposit their accepted manuscripts in PubMed central and *ToxSci* transmits papers directly to the National Institutes of Health as a service to authors. For additional information about this, view http://publicaccess.nih.gov/submit_process_journals.htm.

In terms of the timing of providing public access of government funded research, SOT continues to believe that free public access to all articles published in any journal 12 months after printed publication is the appropriate timeframe to sustain revenues that support the efforts like those of the Society.

The Society also encourages OSTP to include in its efforts careful consideration of a business model for sustaining journals and the scientific initiatives that are supported from these resources. A subscription-based system eliminates burdens on individual authors, pays for robust peer-review, and allows not-for-profit publishers to use any remaining profits in support of science worldwide, which could include scholarships, scientific meetings, grants, educational outreach, advocacy for research funding, free dissemination of information for the public and improvements in scientific publishing. Not-for-profit scientific publishers are an integral part of broader scholarly communities that support scientists, researchers and clinicians. SOT works with scholarly communities to ensure that these communities are sustained and extended, that the science is advanced, and that research meets the highest standards. Likewise, U.S. federal funding of science and technology is so pervasive that mandating public or open access will have a near universal financial impact on authors, their institutions, commercial and non-profit publishers, and even the federal government involved in these fields. Publishers incur considerable staff, capital and operational costs to manage the peer review system and to meet the standards of excellence of hundreds of peer reviewers and journal editors. Publishers also invest in complex systems that allow editors to manage the peer review process, track document flow and balance workload among the peer reviewers in leading research centers around the world. SOT, like many other societies, depends on subscriptions derived from scientific publications like *ToxSci*. The journal revenues are re-invested to support science

scholarships, scientific meetings, grants, educational outreach, and advocacy for research funding, which all help to build for the future of toxicology.

SOT also believes that there is room for many publishing models and is dedicated to working with our publishing colleagues to set high standards. SOT is also committed to working with authors, peer-reviewers and the editors for the development of robust online and electronic tools that help improve the efficiency of their important electronic endeavors.

Thank you again for the opportunity to respond to this important matter.

Sincerely,



Cheryl Lyn Walker
SOT President

Hi--As a librarian, I have daily exposure to the expensive world of medical literature. I strongly encourage open access as soon as possible so that taxpayers who support the research will have an easier time in reaching it. Right now, for-profit publishers own much of the medical information that we use, and it is exceedingly expensive. Every year our libraries must again eliminate journals because we simply can't afford the higher costs of biomedical literature. The biggest checkbooks win, but human health is compromised. There must be a better way.

Barb Bartkowiak, Reference Librarian
Marshfield Clinic GE Magnin Medical Library

I commend the OSTP and the U.S. Government on seeking comments on how to improve public access and transparency to government information in the form of the results of government-funded research.

My comments have to do with the misleading assumption behind the OSTP process that articles reviewed, accepted, edited or published by third parties are government information. They are not. They contain valuable views, produced at the publisher's expense, of what the government, through its funded research, said about its research results. Articles published by third parties incorporate expert and independent opinions about what the government funded and are not government generated information per se.

Information in the form of independent views of government information is as important for the public to have as the transparency of government itself. We have seen how making such information free on the Internet has threatened the viability of the entire U.S. newspaper industry. Not only is the quantity and quality of news reporting about the government threatened,

but the associated job losses are not particularly good for the U.S. economy.

The U.S. publishing industry that produces much of the world's best research journals employs a significant number of Americans and generates large export revenue for the U.S. economy. For many U.S. publishers, the majority of subscription income comes from outside the U.S. Undermining this economic activity by mandated, often unfunded, online postings (for the whole world, not just the American public) of the results of a publisher's investment in reviewing, accepting and branding articles must, by any sensible economic reasoning, harm the industry. The harm will extend not only to the many American learned societies and companies that are the publishers, but to their employees who jobs will be lost and to the public who will eventually lose an invaluable independent voice that reviews and evaluates the results of government research funding.

Marc H. Brodsky is a physicist, retired from a career in research and management in the U.S. Army, IBM and the American Institute of Physics. He still consults on publishing issues related to intellectual property.

These comments are submitted on behalf of Dr. John C. Lorenz, President of the American Association of Petroleum Geologists.

Thank you for this opportunity to provide input to the Office of Science and Technology Policy (OSTP) on improving open access to the results of federally-funded research. I am writing to you on behalf of the American Association of Petroleum Geologists (AAPG), a not-for-profit scientific and professional association with more than 35,000 members in 116 countries. As the world's largest geological association, AAPG's purpose is to foster scientific research and to advance the science of geology, particularly as it relates to petroleum, natural gas, other subsurface fluids, mineral resources, and the environment.

To accomplish this mission, the association publishes a monthly peer-reviewed journal, the Bulletin, special geological books, and other materials. Its Division of Environmental Geology also publishes a peer-reviewed journal, Environmental Geology. AAPG seeks to provide geologic information to the public and finds merit in the cross disciplinary research the federal government seeks to stimulate by broadening public access to the results of federal research. However, we believe that reaching these goals must be done in a manner that does not erode the scientific quality of published research, or destroy the business model that sustains this process in a not-for-profit organization such as ours. It should also recognize the differences between scientific disciplines and their scientific communities, and that the model that works for one may not work for another.

Numerous and significant challenges remain to be overcome. These include:

1. The need to evolve a sustainable business model in non-profit science publishing if the proposed open access rules are adopted. NIH has pioneered a model for its community. We have not yet had time to determine whether this model is applicable to our scientific disciplines, nor whether this model is the best one available. Developing new business models and evaluating their outcomes

should be part of the process, and encouraged by the federal government.

2. Determining the proper embargo length before public release of a published paper, based on the scientific discipline.
3. Proper handling of proprietary data used in the course of federal research, a frequent occurrence in geological research. How would disclosure requirements affect these data sources? Could there be a chilling effect on the public-private partnerships necessary to conduct collaborative federal research?
4. Where does the burden of compliance rest? Federal research funds typically are granted to individual researchers or universities, however a first review of the open access proposal seems to shift a level of compliance onto not-for-profit publishers who were not party to the original funded research. These issues, and many others, touch every member of the research enterprise from researcher and scientist, academic and research institution, to funding agency and science publisher. The effects of changes to current practice are unknown. However, our first concerns are whether providing open access to certain AAPG publications might negatively affect membership in AAPG or whether the burdens of the proposed open access requirement might cause AAPG to stop publishing research that requires open access.

Let us move forward cautiously to obtain input from the broader publishing community so that we realize the promised benefits of broadened access to federal research results without unwittingly undermining the process that produces those results. AAPG wishes to engage constructively in this dialog and hopes that the discussion period will be extended to promote a more thorough discussion.

Sincerely,
John C. Lorenz
President

The Physiological Society endorses the press release made by STM and copied below:
STM responds to U. S. Scholarly Publishing Roundtable Report and Recommendations

STM applauds the efforts of the Scholarly Publishing Roundtable (set up last year by the US House of Representatives Committee on Science and Technology in collaboration with the White House Office of Science and Technology Policy [OSTP]) in seeking to establish broad stakeholder agreement and for involving leading researchers and incorporating their research in the Roundtable deliberations.

STM supports the general principles that the Roundtable has generated: the critical need for peer review, the importance of sustainable business models, the goal of widening access, and the move to improved utility and interoperability. We also strongly support the recommendation that OSTP establish a public advisory committee on which interested parties, including STM publishers are represented.

STM takes issue, however, with some of the other recommendations and

goals expressed in the Report. Firstly, while STM supports US agencies in the development of public access policies to the results of research funded by those agencies, we do not agree that the scholarly articles arising from publisher investment and value add fall under this category. Government research grants currently cover the cost of the research only.

Government research grants do not cover the costs of publication.

Secondly, while welcoming the consultation and collaboration that has occurred with our industry, STM believes the goal of US agencies in establishing a "global publishing system" is redundant and wasteful and ignores the essentially international nature of STM publishing, which has, without any government assistance anywhere in the world, enabled more access to more people than at any time in history.

Thirdly, if there is to be no compensation for the use of journal mediated content, STM supports the need for embargo periods. There is, however, no evidence whatsoever to support the recommendation that embargo periods of 0 to 12 months could be adopted for "many sciences" without problem. STM is leading a three year experiment part-funded by the European Commission (the PEER Project) to find out the effects of various embargo periods on journals. We strongly encourage such an evidence-based policy investigation in the US as well.

Finally, while STM supports the recommendation that the final published article should be given primacy (the so called VoR or Version of Record) over the proliferation of other imperfect earlier versions, it is through this final version - and the creation and maintenance of their authoritative journals - that STM publishers provide significant added value; to make final published articles (VoRs) free immediately upon publication must involve some mechanism of financial compensation.

Dr. Michael Collis
Chief Executive
The Physiological Society

As a private citizen and also, in my role as the Lead Librarian at the Applied Science Library at the U.S. Department of Energy's Savannah River National Laboratory (Aiken, SC), I wholeheartedly support all research done with the support of government grant funds should be made available to the public on-line at no charge within 12 months of publication.

The advance of scientific and technical research is vital to this nation's continuing leadership in a global economy and access to government-sponsored research is essential to our country's continuing advancement in research and development.

I look forward to hearing that public access is mandated after 12 months for government-sponsored research studies/reports.

Best regards,
Susan Isaacs-Bright

Attached please find comments from the Medical Library Association (MLA) in response to OSTP's request for comments for expanding public access policies across the Federal government. If we can provide additional information, please don't hesitate to contact Mary Langman.

Mary M. Langman, Coordinator
Information Issues and Policy
Medical Library Association

Comments of the Medical Library Association

Re: OSTP Request for Comments for Expanding Public Access Policies across the Federal Government

The Medical Library Association (MLA) is pleased to provide comments on the following aspects of expanding public access to peer reviewed publications arising from federal research.

1. How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer-reviewed papers arising from federal funds now, and how might this change under a public access policy?

Libraries and librarians presently acquire, organize, promote, and make readily available for their patrons (health care providers, allied health professionals, medical faculty, and the public) the content of journals and databases—both online and in print. Librarians carefully assess their patrons' needs, along with their institutions' available budgets, and negotiate with publishers to license or subscribe to individual titles, journal packages, and databases. Librarians also design online systems to provide ready access to these resources, while educating their patrons about available resources and how best to use them to satisfy needs.

Over the past decade, library acquisition budgets have been strained to maintain their journal collections, as subscription prices for STM (science, technology, medicine) titles have increased far in excess of general inflation. It is true that more content will be freely available with expanded public access policies. This will allow libraries to provide their users with improved service and access to a broader universe of peer-reviewed papers. Under the NIH Public Access Policy where new articles are embargoed for public release for up to 12 months, medical libraries have still been pressured to maintain paid subscriptions in order to have access to the most current research; public access has not led to widespread cancellation of subscriptions, but it has increased access to content. We would expect similar experiences in other fields of science to which public access policies might be extended. Some libraries in non-research institutions may be able to eliminate some current subscriptions and acquire requested recent articles through interlibrary loan networks, publisher pay-per-view services, or commercial providers. A study concerning the length of an embargo period should be initiated to determine what works best for both users and publishers.

The Federal Government provides funding for research that is summarized in the published scientific literature. It also supports well-regarded and highly utilized repositories including PubMed and other NCBI databases to organize access to journal articles reporting on this research. Through policies such as the NIH Public Access Policy, the Federal government has also created a mechanism for Federal grant-funded research to be made freely available to the scientific and consumer world after a delay of up to 12 months after publication. The Federal government also develops, hosts and maintains the repository (NIH's PubMed Central) for this information, while overseeing implementation and compliance tracking for the NIH Public Access Policy. The government also has a role in providing the public with access to scientific information that results from Federally funded research, and does this through a number of Federal libraries and information centers that are part of science agencies. These organizations can play a role in implementing public access policies, though additional resources may be necessary. These costs could be minimized if those organizations take advantage of systems and procedures developed for implementation of the NIH Public Access Policy.

2. What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature and the public?

Having each Federal agency operate under distinct rules for this process would create a bureaucratic nightmare for authors, publishers, and librarians and would likely inhibit compliance. MLA recommends a policy approach that is common to all agencies and is relatively simple for the author/grantee to understand and follow. Ideally, a series of linked databases or repositories associated with different subject disciplines that correspond to each agency covered under the plan should be developed. Resulting material could be made available under a unified searching mechanism, which would access a variety of subject-specific repositories. Policy consistency and uniformity of access mechanisms are highly recommended. The NIH Public Access Policy could be used as a model, utilizing application of its rules, standards, and techniques to the other agencies' policies. Experience to-date with the NIH Public Access Policy has demonstrated that it effectively balances the concerns of various stakeholders and can be designed in ways to facilitate compliance.

3. Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible and for what purpose?

As relates to Federally funded biomedical research, users of peer-reviewed publications include not only faculty, staff, researchers, and students of institutions of higher education, but also practitioners in medical institutions and the general public. Users access these papers through the Web if the content is freely available, through their institutional libraries (either online or in person), or through personal subscriptions. Current barriers to access are lack of access to library resources for unaffiliated users, and/or high subscription costs and limited collections for those affiliated with institutions that provide libraries. If papers were made more openly accessible via a public archive, greater access to and use of information would result. Thus, expansion of the public access policy would make these research papers more readily available to all of the users specified above, with researchers, educators and clinicians using these papers to support their investigations and practice of health care, and the general public using this information to answer their clinical queries. As stated in the 2009 MLA/AAHSL statement, "The NIH Public Access Policy Advances Sciences and Promotes Healthy People," "...*patient access to up-to-date quality medical information plays a key role in*

positive health outcomes and helps reduce health care costs.”

[http://www.mlanet.org/government/gov_pdf/2009-jan_nih%20plcy_stmnt.pdf]

4. What features does a public access policy need to have to ensure compliance?

MLA recommends that the policy design emphasize simplicity and uniformity with other policies. We also recommend incorporating those features that are effective in implementing the NIH Public Access Policy. It would be easier to ensure compliance if publishers handled the submission of grant-funded research papers to the governmental repository for the grantees. This would minimize the bureaucratic compliance burden currently experienced by authors, research administration departments, and librarians. We recognize that this might be difficult to implement, but a minimum, policies should not prevent publishers from depositing on behalf of authors. We also recommend formation of a working group similar to the NIH Public Access Working Group, [see: http://www.nlm.nih.gov/od/bor/workgroup_charge.html] to serve in an advisory capacity and make suggestions regarding optimal strategies for implementing any new policy.

5. What version of the paper should be made public under a public access policy (e.g., the author’s peer-reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

Ideally, the final published version should be made publicly available to eliminate confusion in dealing with and citing different versions and to prevent the problem of possible errors associated with earlier versions. This approach is best in terms of supporting research and good clinical care. This practice would prevent errors from being perpetuated as subsequent papers are derived from the original, and could possibly save lives by ensuring access to the final published version. It might be possible to improve compliance rates and reduce the burden on authors by requiring or encouraging publishers to submit the final published version on behalf of the author to a repository under the jurisdiction of the specific Federal agency that funded the research. This would also ensure that Federal libraries (and agency information centers) have a copy of the final published article that is best suited for preservation and long-term archiving. However, the desirability of access to the final published version must be balanced against the terms and conditions under which users may access and make use of the deposited manuscript. Publishers are often reluctant to grant broad rights for secondary use of their copyrighted material or to provide access to it in a free, public repository. In such situations, access to the author’s peer reviewed manuscript, as with the NIH public access policy, may be preferable.

6. At what point in time should peer-reviewed papers be made public via a public access policy relate to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

While timely access to information can contribute to improved research, clinical care, and personal health, MLA recognizes the desire of publishers for some period of exclusivity. We also believe there is value in having consistent policies across agencies to assist those depositing material and those accessing it. MLA recommends up to a 12-month embargo period before making peer reviewed papers available to the public, as articulated in the MLA/AAHSL statement, “The NIH Public Access Policy Advances Science and Promotes Healthy People”

[http://www.mlanet.org/government/gov_pdf/2009-jan_nih%20plcy_stmnt.pdf].

Founded in 1898, MLA is a nonprofit, educational organization of more than 3,900 individual and institutional members in the health sciences information field, committed to educating health information professionals, supporting health information research, promoting access to the world's health sciences information, and working to ensure that the best health information is available to all.

For more information, contact Mary Langman, Coordinator, Information Issues and Policy, Medical Library Association, langman@mlahq.org.

Attached please find a response to the OSTP RFI on Public Access to the Results of Federally Funded Research from SPARC (The Scholarly Publishing and Academic Resources Coalition).

Thank you very much for the opportunity to comment on this important issue.

Heather Joseph
Executive Director, SPARC

Introduction

SPARC (the Scholarly Publishing and Academic Resources Coalition), along with SPARC Europe and SPARC Japan, is an international alliance of more than 800 academic and research libraries that promotes expanded sharing of scholarship in the networked digital environment. SPARC believes that faster and wider sharing of outputs of the research process increases the impact of research, fuels the advancement of knowledge, and increases the return on research investments.

SPARC was formed to act on the library community's desire to ensure that the promise of the Internet to dramatically improve scholarly communication, particularly in the journals marketplace, was realized. It has been an innovative leader in the rapidly expanding international movement to make scholarly communication more responsive to the needs of researchers, students, the academic enterprise, funders, and the public. Its pragmatic agenda focuses on collaborating with other stakeholders to stimulate the emergence of new scholarly communication norms, practices, and policies that leverage the networked digital environment to support research and expand the dissemination of research findings.

SPARC thanks the Office of Science and Technology Policy for convening a robust, open discussion on the importance of ensuring broad public access to the results of federally funded research. We share the Administration's view that enhancing access to this information will promote advances in science and technology, encourage innovation and discovery, and enhance the diffusion of knowledge throughout our society. We fully support the expansion of the current National Institutes of Health (NIH) Public Access Policy to all other federal agencies that conduct scientific research, in order to create a freely accessible, permanent digital archive of the results of our nation's investment in scientific research.

Why Public Access?

The U.S government funds tens of billions of dollars in basic and applied research each year, with the goals of speeding the pace of scientific discovery, fueling innovation, and – ultimately – improving the public good. Because U.S. taxpayers underwrite this research, they have a right to expect that its dissemination and use will be maximized, and – in particular – that they themselves will have ready access to it. With the recent investment of more than \$15 billion in additional funding for scientific research provided by the American Recovery and Reinvestment Act, it is more important than ever to ensure that the investment of this money, and the subsequent reporting on the return on its investment, is as transparent and accessible as possible to the American public.

While the results of this research appear in many forms, articles that report on the results of federally funded research in academic journals are a particularly important subset. With nearly 80,000 papers resulting each year from NIH funding alone,³ these articles represent a significant potential resource for the American public.

However, the reality today is that these articles are not readily accessible to the broad community of stakeholders who may want to read and use them. Currently, the only way to access these articles is to purchase them through subscription or pay-per-view programs run by publishers. For many, access is prohibited by the cost of such programs. Journal subscriptions can cost thousands of dollars each year, with some reaching upward of \$20,000,⁴ and it is common for access to a single article to cost upwards of \$30 through pay-per-view programs.

Networked technology presents us with an unprecedented opportunity to reduce (or eliminate) these access barriers. The Internet can deliver research information today at little to no marginal cost to every researcher, student, teacher, entrepreneur, health care worker, farmer, business owner or any other member of public who may have an interest in reading and applying it in their work and daily lives. In addition to ensuring rapid and widespread access to this information, we must ensure that these articles can also be more fully used in the digital environment. Simply enabling researchers to read an article is not enough. Given the enormous growth in the number of research articles and terabytes of associated data that are generated each year, researchers need to be able to apply new tools to fully unlock the value contained in this information. They need to be able to use new technologies to identify connections and to make links to articles – and to digital data supporting the articles – in order to enable new research paths and discoveries. They need to be able to data- and text-mine to uncover new contextual relationships that might exist among seemingly disparate elements in these articles.

The full value of our nations' collective investment in scientific research can only be realized if we allow these articles to be freely accessed, used, and built upon. Around the world, there has been a growing recognition that increasing access to research results has great potential to increase the social and economic return on investment in that research. As a result, national agencies, private funders, and discipline-specific research funders are increasingly implementing public access policies. They commonly cite the increased opportunities for new business development, faster R&D growth, enhancement of national research assessment programs, and ensuring competitiveness in the global research community that such policies create as drivers for implementing them.

2 See <http://www.recovery.gov>

3 National Institutes of Health Web site (<http://publicaccess.nih.gov/FAQ.htm#f4>).

4 The 2008 annual subscription price for the journal *Brain Research* was \$21,744. (<http://www.arl.org/sparc/students>)

(“The Right to Research”)

The U.S. should take full advantage of this opportunity, as well. All agencies that conduct scientific research on behalf of the public should be required to ensure that articles reporting on results of all non-classified research they conduct be made available via the Internet for the public to access and to use in a timely manner. This is particularly urgent in scientific disciplines where new research in biomedicine, environmental sciences, agriculture, energy, economics, education and similar areas can have an immediate and dramatic impact on the public good. One criteria for determining which agencies are good candidates to enact public access requirements could be the level of scientific research that they fund on an annual basis. Agencies (or departments) with extramural research budgets that exceed a certain amount could be required to enact such policies. SPARC is supportive of legislation currently before the Senate (the Federal Research Public Access Act of 2009, S.1373), which suggests \$100m or more as a benchmark. S.1373 proposes that eleven federal agencies implement such policies, including: Department of Agriculture, Department of Commerce, Department of Defense, Department of Education, Department of Energy, Department of Health and Human Services (including the CDC), Department of Transportation, the EPA, NASA, USGS and the NSF. SPARC’s responses to specific questions raised in the RFI follow.

1. How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer-reviewed papers arising from federal funds now, and how might this change under a public access policy?

The process of formally communicating scientific research results through peerreviewed papers has been a long-standing practice in the scholarly community. The process depends on collaboration among stakeholders in the academy at each step and generally tracks the following path:

- Research is initiated (by federal government, private funders, universities)
- Research is conducted (researchers/authors)
- Results are communicated through journal article authorship (researchers/authors)
- Validity of the research is certified by peer review (conducted by researchers supported by universities or federal government, often organized by publishers)
- Articles are edited, formatted, tagged, and organized for publication (publishers)
- Results are disseminated (by publishers, but also increasingly by authors, universities, federal government)
- Results are archived/preserved (libraries, universities, federal government)

The roles associated with this process have been undergoing significant changes as technology has evolved. A good summary of these functions, along with data as to the total annual cost of each function and information about who currently supports the costs, is available in a the Research Information Network’s report, “Activities, Costs and Funding Flows in the Scholarly Communications System” (<http://www.rin.ac.uk/our-work/communicating-and-disseminating-research/activities-costs-and-funding-flowsscholarly-commu>).

This is particularly true for publishing activities such as the distribution of articles, which was simply too expensive for individuals to consider doing in a print-based world. However, the Internet now allows anyone with access to a computer to do these things easily, quickly and at an extremely low marginal cost – providing an opportunity to reduce some of the friction in the scholarly communication system. This has not gone unnoticed by industry analysts, who have noted the imperative for these types of changes – which can result in economic efficiencies – to continue:

“We would expect governments (and taxpayers) to examine the fact that they are essentially funding the same purchase three times: governments and taxpayers fund most academic research, pay the salaries of the academics who undertake the peer review process and fund the libraries that buy the output, without receiving a penny in exchange from the publishers for producing and reviewing the content... We do not see this as sustainable in the long term, given pressure on university and government budgets.”

Scientists conduct (and the government funds) research so new ideas can be generated, discoveries can be uncovered, and our collective understanding of the world and our interactions with it can be enhanced. Scientists consider the communication of the results of their research to be an essential, inextricable component of doing this work. It is only through sharing results that scientific inquiry moves forward. Research funders and universities share this core mission – the advancement and conveyance of knowledge. SPARC believes that while some of the details of stakeholder roles may change under a comprehensive public access policy, the essential structure of the research process will remain sound. Scientists and scholars regularly self-organize into communities of practice and expertise for the purposes of peer review and credentialing. These are a part of the culture of science, and will continue. Peer review, in particular, should be allowed to evolve as technology provides avenues for improvement and innovation in how it might be conducted. Organizations such as publishers, libraries, and aggregators whose operations depend on the results of federally funded research will rightly need to adapt and innovate as federal access policies are implemented and evolve. As with any significant systemic change, some stakeholders might find the demand for the service that they currently provide reduced, and evolve accordingly.

These organizations may also find that this change increases their opportunity to provide new services and products, as was the case when scholarly publishing made the transition from print to electronic formats. A public access policy that enables greater accessibility and usability of research articles will provide broad new opportunities for innovation. With more information available in digital repositories, there will be a growing call for services that locate, organize, and correlate information (among many other things) for end users. The expertise that publishers and librarians have cultivated will be in high demand for the creation and deployment of such new services.

2. What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

There are a number of successful public access policies that have been successfully implemented around the world. These have been developed after extensive public consultations, and share the goal of maximizing the opportunities that the Internet provides us for conducting and communicating research in a manner that balances the needs of all stakeholders. The framework that has emerged within these policies is simple and straightforward, and includes a number of homogeneous characteristics that should be included in any policy that the U.S. government adopts:

- Permanent, interoperable, digital archives should be created or leveraged to house digital research results.
- All articles that result (in whole or in part) from federally funded research and have been accepted for publication in a peer-reviewed journal should be required to be deposited into these archives.
- The version of the article may be either the author’s final manuscript or the final published version, if permitted by the copyright holder.

- The articles must be made freely accessible on the Internet as soon as practical, but not later than six months after publication in a journal. (The majority of policies currently in use employ a six-month embargo period.)
- The archive must provide for public search and retrieval and full use rights (such as data mining) to these articles.
- Funded researchers must ensure that they retain sufficient rights to comply with the policy when signing publication agreements.
- Compliance with the policy should be a consideration for future funding for researchers.
- The archive should be utilized by the agency to more efficiently manage and understand its research portfolios, monitor scientific productivity, and help set research priorities.
- Funders must provide the public with regular reporting on the extent of author compliance with the policy, and consider non-compliance by funding recipients as a factor in evaluating further grants.

These components reflect a careful effort to ensure that the interests of those who contribute to the funding, creation, and utility of this information be balanced with those of the intended end-users – and ultimate beneficiaries – of publicly funded research, and should be a part of any public access policy implemented by the U.S. government.

See the ROARMAP (Registry of Open Access Repository Material Archiving Policies) at <http://www.eprints.org/openaccess/policysignup/>

3. Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

Currently, the primary way to access articles reporting on the results of federally funded research is to subscribe to the scientific journals in which they appear. Libraries at academic institutions represent the largest subscription base for these journals. But, because there are thousands of journals – many of which cost thousands of dollars per year to subscribe to –no institution, no matter how well-funded, can afford to subscribe to all of the publications their campus patrons request access to. Access to research information is a particular problem at smaller universities, liberal arts colleges, and community colleges, where budget constraints make subscribing to any significant number of journals an impossibility. Yet, there is growing recognition of the importance of the role that these institutions play in preparing an educated workforce for today’s knowledge economy, evidenced in part by continued large enrollment increases.¹ Providing access to even just the subset of articles that result from federal funds would represent a dramatic improvement in access for these institutions.

Members of the public (including physicians, business owners, entrepreneurs, teachers, and others) who are not affiliated with an academic institution must either try and subscribe to journals or purchase articles on an individual basis, which often costs more than \$30 per article. This represents a significant barrier to access for many individuals as well as organizations. The implementation of a federal public access policy would provide a means to open up this layer of information in a timely fashion to those constituencies who currently find the costs prohibitive. In biomedicine and other health-related disciplines, we have seen a real demand from the public for accurate, up-to-date information. In a recent study, the Pew Research Center noted that 113 million Americans accessed

¹See, for example, “The Community College Enrollment Boom,” *Inside Higher Ed*, at <http://www.insidehighered.com/news/2008/08/22/growth>

information about health related issues via the Internet in one year. Just as critically, more than half then took that information to a health care provider for further discussion and action.² Though some have argued that peer-reviewed articles are not appropriate for use by the general public, this behavior demonstrates a high rate of willingness to enlist expert help in interpreting and applying this information. There is also an unmet demand for articles in all disciplines by entrepreneurs and small business owners, who depend on cutting-edge information to help them innovate and build competitive services and products. As an example, a 2009 U.K survey of small and medium enterprises (SME's) by the Publishing Research Consortium (PRC) reported that 73% say they have difficulty getting access to peer-reviewed journal articles.³

In interviews conducted along with the survey, a pharmaceutical company described how it might find 60 to 100 articles of potential relevance to a small project from a PubMed search. Its client would not be prepared to pay \$30 each for all these (i.e. \$1800 to 3000), and the company could not afford to absorb the expense, so they had to select a few to purchase, try to find copies via other routes, or do without. The company could not have known what they missed by being limited in this way, but expressed their belief that it resulted in a lower value in service.¹¹ In an age when we are racing to develop alternative energy sources, green technologies, and sustainable agriculture practices, it is almost unthinkable that we would continue to inhibit access to the results of publicly funded research. Active researchers and scientists are not immune from the effect of these access barriers. Dr. Sophia Colamarino, a neuroscience researcher whose area of concentration is adult neural stem cells and brain development and regeneration, recounted her recent experience at the annual meeting of the Genetic Alliance in July 2009.⁴¹² Dr. Colamarino, now VP of Research for Autism Speaks, the nation's largest Autism advocacy and research funding organization, noted that – upon accepting a new position as Science Director for Cure Autism Now – she was dismayed to find herself cut off from the robust access to research journals she had enjoyed while conducting research at the Salk Institute. She noted, “On Friday, I worked at Salk, and had access to this material. On Monday, just because I changed positions I literally found myself cut off.” It was a rude awakening, but not an uncommon one.

She further noted, “As science expands into other sectors of our society there are now many of us who do research jobs without being in a research center, and we are potentially the ones who are most affected by lack of access. Being able to function within the science research community IS my job (e.g. keeping abreast of the literature, being conversant about the newest research advances, and making funding decisions based on this knowledge); yet I don't have access to the material I need to do it.” Graduate students often note the difficulty they experience in trying to stay abreast of recent developments in their fields upon leaving school – realizing that once they graduate their library card expires and, with it, their access to much of the recent literature. Under a public access policy, articles reporting on federally funded research would be available in digital form in searchable repositories, so that they may also be *used* in entirely new ways. The ability to link, combine, text-mine, or even data-mine these new databases creates rich new opportunities for connections and discoveries to be made – and to potentially be made by an entirely new set of users.

²See “Online Health Search,” <http://www.pewinternet.org/Reports/2006/Online-Health-Search-2006.aspx>

³See page 13, “Access by UK small and medium-sized enterprises to professional and academic information,” Mark Ware Consulting LTD, August 2009

⁴ See <http://www.geneticalliance.org/conference09>

4. How best could federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

Because of the cumulative nature of research – it gains in value only when used – the value of our collective investment in research can only be maximized by sharing and using findings as broadly as possible. In a 2005 report on scientific publishing, the International Organization for Economic Cooperation and Development put it quite succinctly:

“Governments would boost innovation and get a better return on their investment in publicly funded research by making research findings more widely available... And by doing so, they would maximize social returns on public investments.”

Establishing a policy that ensures fast, digital access to the papers reporting on the results of all federally funded research is a critical first step in making this a reality. To effectively measure the return on our investment in research, both the costs and benefits must be accounted for. The current NIH Public Access Policy provides one example of what these costs might reasonably look like. The NIH has estimated that its costs to run PubMed Central (PMC) at 100% capacity are ~\$4.5 million year – an amount dwarfed by its annual \$30 billion operating budget.⁵13 This means NIH leverages a tiny fraction of its budget to ensure broad public access to all of the published results of its funded research. NIH’s investment in this resource has created an opportunity for other agencies to adopt, incorporate elements of, or learn from the NIH’s implementation of their Public Access Policy. To put this into perspective, compare this \$4.5 million to the ~\$30 million NIH spends each year on publication fees and other page charges, which are paid out of grants to investigators.⁶

Different agencies will have different levels of article output. With 80,000 articles/year, NIH generates the largest amount of output in terms of research articles published as a result of agency funding. Agencies with a smaller aggregate output may want to consider alternatives to establishing their own repositories. These alternatives might include:

- Using PubMed Central as their repository
- Partnering with other agencies to achieve economic efficiencies in creating a shared repository
- Using the freely available source code for PubMed Central to establish a repository, and save on the costs NIH has incurred to develop and refine it; or
- Partnering with one of the over 1,400 academic and research institutions that have already established robust online digital repositories for scholarly and research content.⁷

While it is important for agencies to have flexibility in choosing the location as well as the management strategy for their digital repositories, in order to control systemic costs, it is crucial that policy requirements be closely coordinated to ensure that academic institutions (which will largely bear the responsibility of ensuring compliance) are not overburdened by multiple policies with multiple implementation

⁵See “Analysis of comments and implementation of the NIH Public Access Policy,” http://publicaccess.nih.gov/analysis_of_comments_nih_public_access_policy.pdf

⁶See “Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research,” footnote#8. <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-022.html>

⁷See The Directory of Open Access Repositories, at <http://www.openoar.org>
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requirements. On the benefit side, the potential return on an agency's investment in ensuring broad public access can be measured in both social and economic benefits. Models and metrics for gauging the relative return on opening up access to the results of national R&D investments are currently in use, and should be considered. Examples include:

- Houghton, J.W. Steele, C. and Sheehan, P.J. (2006). *Research Communication Costs in Australia, Emerging Opportunities and Benefits*, Department of Education, Science and Training, Canberra.
- Department of Trade and Industry (DTI) (2007). *Measuring economic impacts of investment in the research base and innovation: a new framework for measurement*, Department of Trade and Industry, London.
- Houghton, J.W et al, (2009). *Economic implications of alternative scholarly publishing models: exploring the costs and benefits*. JISC EI-ASPM Project. A report to the Joint Information Systems Committee (JISC). London : JISC. (<http://www.cfses.com/EIASPM>)

5. What features does a public access policy need to have to ensure compliance?

Experience from public and private funders who have successfully implemented public access policies has shown that, in order for a policy to fully succeed, it must – first and foremost – be a requirement, not a recommendation. The NIH has published statistics that quite compellingly illustrate their experience with low researcher compliance under a voluntary public access program, and the subsequent dramatic increase once the policy became mandatory.⁸

Ensuring researcher awareness is a key issue. Funders, working in close collaboration with academic institutions, have had good success in increasing compliance rates when they provide regular, clear messages about expectations through communications channels to which researchers currently pay attention – including campus grant networks, reminder notices for regular progress reports, grant summaries, year-end reports, and similar venues.⁹

Perhaps just as important as requiring compliance is making it as easy as possible for researchers to comply with a policy. The mechanisms that researchers are asked to use to comply should be as closely integrated into their normal workflow as possible. For example, article submission formats should reflect what is in broad use in the community. If possible, a single, common user interface should be presented to users when they are asked to deposit manuscripts into federal repositories – for example. To have the greatest chance of success, federal public access policy requirements should be standard across all agencies. Because the vast majority of federal research recipients are actually academic institutions, they will bear the primary responsibility for ensuring compliance. Offices of sponsored research, grant offices, and academic departments should not be overburdened by multiple policies with multiple implementation requirements.

6. What version of the paper should be made public under a public access policy (e.g., the author's peer-reviewed manuscript or the final published version)?

Access to the final published version of an article is preferable, so long as full use of the article is permitted. If this is not possible, access to the author's peer-reviewed manuscript is an acceptable substitute. In this case, articles should be clearly identified as author manuscripts, and should include

⁸ 16 See <http://www.nihms.nih.gov/stats/>

⁹ 17 See “Implementing the NIH Public Access Policy is as Easy as A, B, C,” from the University of Texas at Austin, for an example - http://www.utexas.edu/research/osp/open_access/index.html

a link to the final published article. Agencies should also follow the practice established by NIH and other funders of encouraging publishers to replace the author's peer-reviewed manuscript with the published edition if they choose to. Requiring access to the author's final manuscript is a common practice for research funders with public access policies.¹⁰ The practice evolved as a mechanism to protect subscriptions and help journal publishers earn a return on their investment in the copyediting, formatting and other value-added services that they may put into the final published version.

While some have raised concerns that the author's manuscript may contain errors or omissions that are only corrected during the copyediting process, the reality is that many journal publishers already routinely provide access to the author's manuscript on their own Web site prior to the journal's publication. (Such programs are called "Publish Ahead of Print" or "Papers in Press"). These programs have been in routine use for years, and are touted as a benefit to scholarly society members as well as to the wider scientific community. Some examples of publishers in a wide variety of disciplines who do this include:

- The American Diabetes Association
(<http://care.diabetesjournals.org/papbyrecent.shtml>)
- The American Geophysical Union
(<http://www.agu.org/contents/journals/ViewPapersInPress.do?journalCode=GL>)
- The American Speech-Language-Hearing Association
(<http://jslhr.asha.org/papbyrecent.dtl>)
- The Society for Environmental Toxicology and Chemistry
(<http://www.setacjournals.org/perlserv/?request=get-toc-aop&issn=1552-8618>)

As scholarly communication practices and norms evolve in a digital environment, the definition and importance of what constitutes a final article will evolve, as well. Many disciplines are already experimenting with post-publication comments and peer review practices, making the publication process more of an ongoing, rather than a periodic, one. The standards used to connect these comments, as well as subsequent alterations to an article, will provide further mechanisms to help scientists and the public effectively navigate versioning issues.

7. At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer-reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

Ideally, peer-reviewed research papers should be made publicly available as soon as they are published, to ensure maximum impact and maximum improvements to the public good. However, recognizing that immediate public access could have a negative impact on non-open access publishers that are dependent on subscription revenue, an embargo period of up to six months is an acceptable compromise with the public interest. The idea that embargo periods might vary in response to the version of the articles provided is a potentially very interesting mechanism that might be used to ensure that ultimately – after an embargo period of no more than a year, for example – articles under a public access policy are truly "Open Access." True Open Access is to say that articles can not only be read, but also downloaded, searched, linked, mined etc. as

¹⁰See, for examples, <http://www.sherpa.ac.uk/juliet/>

called for by the Budapest Open Access Initiative.¹¹ An embargo period of six months or less is the norm in public access policies being implemented in a growing number of countries worldwide, by both private and public funders. Some notable examples include: The Australian Research Council, Arthritis Research Campaign, British Heart Foundation, Canadian Institutes for Health Research, Canadian Breast Cancer Research Alliance, Canadian Cancer Society, Department of Health UK, The European Research Council, the Austrian Science Fund, Genome Canada, The Higher Education Authority (Ireland), JISC (UK), Principo de Asturias (Spain), the Science Foundation of Ireland, and the Swedish Research Council.¹²

Six-month embargo periods are also currently in use by journal publishers. All 90 journals published by the Nature Publishing Group in a variety of disciplines (many in partnership with scholarly societies) have a policy permitting a six-month embargo period.¹³ These include journals in a broad range of disciplines, including Nanotechnology, Physics, Photonics, Materials, and Chemistry. Dozens of other journals with a six-month or shorter embargo period are listed on the Web site of HighWire Press.¹⁴ Titles with a six-month or shorter embargo include large, well-known publications such as the *Journal of the American Medical Association*, *Proceedings of the National Academy of Sciences*, and the *New England Journal of Medicine*, as well as more discipline-specific, society-based publications such as the *Journal of Neuroscience*, the *American Journal of Pathology*, *Diabetes Care*, and others. The primary concern for subscription-dependent publishers is cancellation by libraries, which represent roughly 80% of their revenue. However, to date, journal publishers have reported no evidence to suggest that policies with embargo periods of six months or less have a negative effect on the health of their publishing programs. Additionally, predictive studies, including a report by a prominent publishing trade group, the Association of Learned and Professional Society Publishers (ALPSP), have outlined the conditions that would have to exist in order for libraries to cancel journal subscriptions, as related to availability of material in a publicly accessible archive:

1. First, an extremely short embargo period is necessary. 82% of librarians surveyed noted the embargo period would need to be three months or less before they would consider it a factor in cancellation decisions.
2. Second, the final publisher's version would need to be available. Librarians reported that the raw manuscript, or preprint, is not a substitute for the journal. And, only 9% saw access to an author's final manuscript as an adequate substitute for the final manuscript.
3. Third, comprehensiveness counts; 75% of librarians indicated the archive would have to contain over 90% of a given journal's content before it became a factor in possible cancellation.¹⁵

8. How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for

¹¹Online at <http://www.soros.org/openaccess/read.shtml>

¹²Also detailed at <http://www.sherpa.ac.uk/juliet/>

¹³See the NPG author license policy at http://www.nature.com/authors/editorial_policies/license.html

¹⁴At <http://highwire.stanford.edu/lists/freeart.dtl>

¹⁵Summary and Conclusions of the study may be found at http://www.alpssp.org/ngen_public/article.asp?id=200&did=47&aid=157&st=&oaid=-1

archiving and interoperability to maximize public benefit? How are these anticipated to change?

To facilitate the widest possible compliance, standards for archiving and interoperability need to be enacted on multiple levels – the technical, repository, article and data/article component levels. On the article level, submission formats should reflect what is in broad use in the community (i.e., common formats like Word, LaTeX, etc.). However, to ensure that articles are ultimately in a format that allows rich searching, linking, text mining, etc. they should be converted to a standardized mark-up language designed to facilitate these functions. XML is the current standard in scientific publishing.¹⁶ To further enhance the usability of the information contained in these articles, a common, standard document type definition (DTD) should be adopted. The National Library of Medicine (NLM) DTD is currently in broad use in the scholarly publishing community – by stakeholders ranging from the Library of Congress and British Library to the HighWire Press – and should be given serious consideration as a standard.¹⁷ The evolution of Digital Object Identifiers (DOIs) has created the capacity to ensure standards for searching and linking at an even more granular level. DOIs have become an industry-accepted standard mechanism to facilitate the persistent identification, location, management, and linking of electronic articles and manuscripts, as well for components of these articles (images, graphs, etc.) DOI names can be used for any form of management of any data, whether commercial or non-commercial. The system is managed by the International DOI Foundation, an open membership consortium including both commercial and non-commercial partners that has recently been accepted for standardization within ISO.¹⁸ Standards for digital repositories to interoperate also must be enacted. Currently, the Open Archives Initiative (OAI) offers an established and successful set of standards for metadata harvesting (OAI-MH) as well as object reuse and exchange (OAI-ORE). These should be considered as a basis for any standards adopted by federal repositories.¹⁹

Another set of important considerations in ensuring true interoperability are legal standards. The terms of use that are associated with articles are just as critical to their downstream utility as any technical component. Authors and end users must have the rights to make full use of these articles in order for them to achieve their full value. Creative Commons offers a set of licenses that should be considered to standardized terms of use. As with any standards, these can – and should – evolve over time. A key strength of all of the standards proposed here is that they are open standards, which are widely supported by the user community, and are regularly updated in direct response to the community's demonstrated needs.

9. Access demands not only availability, but also meaningful usability. How can the federal government make its collections of peer- reviewed papers more useful to the American public?

This question speaks to the heart of the motivation to enact a public access policy. We have entered a new era in which the conduct and reporting of science is fully digital. The amount of data that is collected during the research process is growing exponentially; even the small percentage of data represented by peer-reviewed digital articles is vast. It's impossible to expect that a person – or even a group of people – will be able to fully process the mountains of new information created each day in a meaningful, complete way. Computers are now just as important a category of endusers of this material as people are.

¹⁶See <http://www.w3.org/XML/>

¹⁷Online at <http://dtd.nlm.nih.gov/>

¹⁸See <http://www.doi.org/>

¹⁹See <http://www.openarchives.org/>

As we realize the increasing value of interdisciplinary research, the ability to move from a word or gene or chart or micrograph noted in an article in one discipline to a word or structure in a seemingly disparate discipline based on textual or semantic clues that only advanced computational programs can provide becomes critical. The ability to digest huge amounts of information and uncovering broad trends in mountains of scientific articles that are no longer locked away holds tremendous promise – as does the possibility of parsing these articles into their smallest possible components, and finding connections among their tiniest elements. This kind of work is only enabled if these articles are available in an open, standard and accessible manner.

As a result of the NIH Public Access Policy, biomedical researchers can move from references to gene sequences embedded in the text of an article to the gene sequences themselves in the Genbank database. In this same way, researchers at NOAA or the EPA should be enabled to make links from research articles to data sets on climate change, for example, and to apply data mining techniques, modeling programs, and the like to accelerate understanding in crucial arenas that directly impact the public good. This means ensuring not only that anyone can access articles to read at anytime, from any place, but also that they have the ability and the rights required to use them in new and innovative ways. The rights of end users to read, download, copy, link, crawl, data-mine, or reuse for any other lawful purpose – must be clearly spelled out as part of any federal policy. As noted above, Creative Commons provides licenses that enable such reuse rights, and should be considered.

We can only begin to imagine the possible uses and applications that the scientific community – and the public – might envision and construct to truly unlock the value of the results of federally funded research. A comprehensive policy to ensure that they have the ability to begin to do so is a goal that we should collectively work towards making a reality as soon as humanly possible.

Conclusion

Once again, SPARC deeply appreciates the time and effort that the Office of Science and Technology Policy (OSTP) has taken to lead this discussion on the important topic of ensuring public access to the results of federally funded research. SPARC fully supports the expeditious expansion of the current NIH public access policy to all other federal agencies that conduct scientific research, in order to create a freely accessible, permanent digital archive of the results of our nation's investment in scientific research. Our members look forward to providing any additional information that might be useful to OSTP, and to participating constructively as this process moves forward. To discuss in deeper detail, please feel free to contact Heather Joseph, Executive Director.

Respectfully submitted,
Heather Joseph
Executive Director, SPARC

David Carlson
Dean of Library Affairs, Southern Illinois University at Carbondale
Chair, SPARC Steering Committee

Ray English
Azariah Smith Root Director of Libraries, Oberlin College
Chair Emeritus, SPARC Steering Committee

I am completely in support of public access to publicly funded research. When this effort began with the NIH initiative, I had difficulty understanding why this was controversial. Now, as we discuss the general concept of providing such public access, I am still at a loss to understand the reluctance on this issue. The rationale seem so straightforward to me and can be summarized as follows:

1. Public funded means each taxpayer in the U.S. has paid for this research. Those taxpayers, having paid, should be able to access the results of their investment.
2. Funding for this research is granted from the fundamental principle of contribution to the public good. If this research is supported for the purpose of the public good, the public should then benefit. The public cannot benefit if the research is restricted to a very few.

This should not be about greed, but altruism, the bedrock of government and service to the people. Public access to publicly funded research embodies that altruism and principles that make the United States a unique country with commitment to the best for its citizens.

Please support this public access. It is critical for any publicly funded issue that is being researched, from our health to our environment to our overall well-being.

Aline Soules
Cal State East Bay

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

Thank you for the opportunity to comment on the important issue of public access to tax-funded research information. Your well-publicized and thoughtful request for comment is greatly appreciated by all those in the research and scholarly communication communities.

The widespread adoption of technologies that enable broad dissemination of research results while at the same time maintaining and preserving digital content long term has been a boon to society. Over the past decade new models have emerged in scholarly publishing that take advantage of these new capacities and demonstrate their benefit. These models have also demonstrated that open public access can be provided while still sustaining the critical enterprise of peer review and value-added publishing.

The most important recent development has been the successful public

access policy framework developed and implemented by NIH, paving the way for adoption of this framework by other federal agencies. This model incorporates both publications designed for open access from the outset and those published in a more traditional subscription based mode, and has proven that both models can thrive while at the same time assuring that research results become freely accessible after a sensible (i.e., not overlong) embargo period.

Libraries have long been able to make research information available to all who needed it. Now, although we have the technologies to readily discover and share research publications, libraries are severely limited by the terms of licensing agreements. We can now only make research information readily available to our own communities – important but relatively small communities. This is a far more restrictive world of research access than is desirable, excluding most of the tax-paying population. It is hard to imagine that the goal of federal funding of research is to keep the results locked up in this way.

The NIH policy breaks through these barriers in a sensible, balanced manner that benefits society and assures the health of the system of scholarly communication. Extending this policy to a network of federal agencies is the logical next step. The key elements of the policy include: a short, sensible embargo period; secure, permanent, interoperable digital archiving; standard formats of article presentation; access to an author's final manuscript if access to the publisher's version cannot be facilitated; permanent public search, retrieval and use. This policy can and should be extended to all federal agencies. It should be articulated and implemented in a consistent manner across these agencies so that authors, publishers, universities and others do not need to incur the costs of managing multiple, complex work streams and documentation. Inter-agency coordination will be critical to successful implementation.

At my institution, we have found the implementation of the NIH policy to be a reasonable, effective process. NIH has now paved the way for all federal agencies.

I urge you to follow this well considered discussion and comment process with an aggressive, coordinated implementation across federal agencies. Thank you again for the opportunity to comment.

Sincerely,
Carol A. Mandel
Dean, Division of Libraries, Archives, and University Press
New York University

With apologies, we realized that our original version, dated 1/19/09 and submitted on 1/19/09 at 11:09pm was not the final one.

On behalf of 2010 IEEE President Pedro Ray, please find attached IEEE's revised response to the Request for Comment on Public Access as described in the Federal Register dated 9 December 2009. The date of this version is 1/20/2010. Please be sure to post this version.

Best regards,
Matthew S. Loeb, CAE
Staff Executive
IEEE

IEEE, with 400,000 members, is the world's largest learned society advancing innovation and technological excellence for the benefit of humanity. As a means toward this mission, IEEE delivers convenient, timely, and affordable access to scholarly and professional publications, and enables wide dissemination of research results and technical advances through 144 highly cited publications, over 1000 conferences, more than 1300 technology standards, and numerous professional and educational activities. More than 80 million articles are downloaded annually from IEEE's digital library, IEEE Xplore. IEEE endorses the principle of providing public access and enhancing dissemination of federally funded research results in ways that serve to strengthen science and engineering, encourage innovation, and serve the greater interests of society. At the same time, IEEE deems it essential to a) preserve the scholarly value of the original work (including the identification of a trusted "version of record" that cannot be altered by the author or anyone else, and ensuring that post-publication commentators are named and identified), and b) pay for the value added to the work by not-for-profit learned societies and commercial publishers who make sizeable financial investments in managing the peer review process, editing, publishing, dissemination, and maintaining an ever-growing archive in perpetuity.

The NIH has implemented a public access model that has received considerable attention. This model has been offered as a possible approach for an expanded federal public access policy in the OSTP's Request for Public Information. IEEE believes that the current NIH model is consistent with the needs of that agency. However, with no data yet to quantify the success of this model against its stated goals, it remains unclear whether the NIH approach, motivated to large extent by the understandable desire of patients to get timely access to new potential treatments, poses the best solution for public access in all areas of science, engineering, computing and technology, let alone art and literature. There are alternatives that warrant consideration, and IEEE recommends that OSTP carefully review a full spectrum of approaches to public access. An evaluation of the current practices of other federal research agencies such as NSF, NIST and DARPA, should be part of this review.

IEEE has provided responses to the nine (9) questions posed by OSTP in its *Request For Public Comment* as a supplemental document to this letter. From a systems perspective, it is clear that the best public access model cannot be determined solely by using criteria such as who paid for the underlying research or who holds the copyright to the published work. There are other issues that need to be considered when assessing a public access model(s), such as:

- Ensuring the efficient and effective dissemination of federally funded research results to interested users.
- Preserving peer review, which both defines and ensures the scientific and

technological standards of publication quality.

- Understanding the economic implications of various public access models, including the impact on the federal budget.
- Giving proper weight to issues of public-private cooperation and the implications of OMB Circular A-76 concerning reliance on the private sector for commercial services to support a public access model.
- Protecting against the potential for abuse or misuse of scientific and technical information.

IEEE applauds OSTP for issuing this request for public information, and sees it as a good first step in a deliberative process designed to produce such a policy. IEEE also commends the House Science and Technology Committee for convening the Scholarly Publishing Roundtable, whose report we believe offers a reasonable and balanced approach to addressing the issues of public access. IEEE is prepared to work with OSTP and other federal agencies to improve the dissemination of federally funded research and to support the development of an effective public access policy. As the next step in the policy-making process, IEEE recommends that the President convene the major stakeholders, including representatives of learned societies like IEEE, for the purposes of adopting a systemic view and framework that can be used to evaluate the various public access models and options against the stated public policy goals.

Sincerely
Pedro Ray
2010 IEEE President

IEEE Response to OSTP Questions

1. How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer-reviewed papers arising from federal funds now, and how might this change under a public access policy?

Presently, authors do the primary work that leads to the creation of a peer-reviewed paper. They sometimes post their own papers on an author or institutional website before or after acceptance to a journal. Publishers pay for and facilitate peer review, editing of manuscripts into a final version, packaging of the content in a digital format and dissemination of the information online or in paper. In most cases, publishers charge the reader or the reader's institution. Universities often play the role of organizers of institutional archives and, through their libraries, provide access to published material to their constituents. The federal government pays for a portion of the research that leads to peer-reviewed articles and subsidizes some publication charges through the usual grant mechanism.

Authors will still do the primary work that leads to the creation of a peer-reviewed paper. They will be required to post a version of papers resulting from federal funding on their own website, an institutional website, or a government managed website. Publishers will still pay for peer review and other editing and dissemination costs. Universities will continue to play the role of organizers of institutional archives and, through their libraries, provide access to published material to their constituents. The federal government will continue to pay for a portion of the research that leads to peer-reviewed articles.

2. What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature,

and the public?

Peer review must continue to be available, free of government influence and management. Each paper should be available in a single final authoritative version. This version must be unable to be altered by the author or anyone else. Authors should have the freedom to choose where to publish and readers should have the freedom to choose where to read. These freedoms mean that the marketplace of ideas, not government policy and government management, will determine the perception of quality of journals and published research.

3. Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

Others responding have adequately addressed these questions.

4. How best could federal agencies enhance public access to the peer reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

Federal agencies should cooperate with owners of content repositories (e.g., the not-for-profit learned society and commercial publishers) to enable public access to the articles funded by federal monies. For example, government funding could be invested to enable the not-for-profit learned society and commercial publishers to improve users' ability to search and discover published content by appropriately tagging content according to Public Access Policy.

5. What features does a public access policy need to have to ensure compliance?

Any public access policy should place the ultimate burden of compliance on the author(s). Authors should easily be able to accomplish compliance, preferably through the use of a simple automated process with all applicable communication protocols, and document formats being standardized and open. Authors should not be penalized for inadvertent noncompliance.

6. What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

The public access version should be the final approved manuscript for publication. This version must not be able to be changed by anyone, including the author.

7. At what point in time should peer reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

Unlike the NIH model, motivated by the understandable desire of patients to get timely access to new potential treatments, access to engineering, science and other types of information is not as urgent. Therefore, a period as short as is required by

NIH may not be appropriate. Delayed public access of 12 months (or potentially more depending on the public access model implemented) can provide enough time for organizations to recover their up-front investments without compromising the value of the information. The requirements for levels of access should be the same.

8. How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?

Government should work with current owners of content repositories (e.g., not-for-profit learned societies, commercial publishers, universities) to enable public access to the articles funded by federal monies. Government investing in the development of its own content repository makes little sense from an economic perspective. The cost and time required would be significant and not necessarily viewed as prudent, especially in the current economic times. Government could far more easily leverage the expertise of not-for-profit learned societies, commercial publishers and universities in operating large repositories of scientific papers by, for example, providing funds to enable the publishers to appropriately tag content under a Public Access Policy and thus ensure transition from closed to open status within a single hosting platform.

9. Access demands not only availability, but also meaningful usability. How can the federal government make its collections of peer reviewed papers more useful to the American public? By what metrics (e.g. number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access comment or provide feedback?

Others responding have adequately addressed these questions.

Please accept this letter from SSR regarding the OSTP call for Public Access regarding access to Federally Funded Research.

Cheers,
John H. Nilson, PhD
Edward R. Meyer Distinguished Professor
Director, School of Molecular Biosciences

The Society for the Study of Reproduction (SSR), with over 2200 members from academia, industry, and governmental agencies, joins FASEB and its other member societies in supporting the recently announced Office of Science and Technology Policy's (OSTP) goal of improving public access to federally funded research appearing in academic and scholarly journal articles. Indeed, the official journal of SSR, *Biology of Reproduction*, has taken significant steps, prior to the OSTP launch of a public consultation on Public Access Policy, to ensure that manuscripts

published in the Journal are freely available to the public in manuscript form within two weeks of acceptance. Further, the final, fully redacted version of each article becomes freely available to the public after an embargo period of 12 months. SSR also causes articles reporting federally funded research to be deposited, coincident with final publication, in PubMed Central; these articles are released free to the public after an embargo of 12 months. Authors may also elect to pay an Authors' Choice Open Access fee to have their articles made freely available immediately upon final publication on the Journal's home site. We believe that these approaches meet the OSTP goal of ensuring that federally funded research papers in academic and scholarly journals are readily available to the general public. At the same time, our embargo period of 12 months ensures that SSR, through its publication business model, has the resources to guarantee a peer review process that provides an essential gateway for providing valuable criticism to authors, establishes standards that ensure that published manuscripts meet the highest standards of scientific research, and presents data that are reliable, repeatable, and withstand the test of time. The well being of society across the globe (physically, socially, and mentally) demands a systematic process that distinguishes between reliable and unreliable research. Scientific societies and their official organs of publication that adhere to the strictest standards of peer review provide this gateway; it is essential that any change to improving public access to federally funded research enhance rather than negate the ultimate value of peer review.

Respectfully yours,

John H. Nilson, Ph.D.
President

Asgerally Fazleabas, Ph.D.
Past President

Douglas M. Stocco, Ph.D.
Past President

Dear Office of Science and Technology Policy:

I encourage the OSTP to generalize the NIH policy on open-access for federally funded research to include research funded through other federal agencies. This is a hugely important step in ensuring public access to taxpayer-funded research.

Sincerely,

Kevin Hawkins

Dear Sir/Madam,

On behalf of the 88 university, college, community college, law and medical libraries that are members of OhioLINK, I thank the White House Office of Science and Technology Policy (OSTP) for inviting input on the development of policies to deliver public access to the published results of taxpayer-funded research. I strongly urge you to adopt policies that provide:

- . Public access to the published results of federally funded research

across all agencies.

- . Free access within zero to six months of publication to articles that result from federal funding.
- . Housing of these articles in permanent, interoperable digital archives.
- . Access either to the author's final manuscript or to the final published version.
- . Presentation of the articles in a standard digital format that allows them to be fully read and used. XML is the current preferred standard. PDF is not sufficient as it is proprietary and does support not granular-level linking, etc.
- . Permanent public search, retrieval, and full use rights -- such as the rights to data and text mining, etc.
- . A single policy across all agencies to avoid unnecessary overhead and costs.

OhioLINK (Ohio Library and Information Network) was created over 17 years ago as an initiative of the Ohio Board of Regents to help Ohio's higher education system gain more access to the exploding amount of scientific research information necessary to be globally competitive. This remains a difficult task at which we have only been partially successful. We will not succeed on our own in providing access to the expanding quantity of scientific research that will stimulate and enable further research and development create a robust 21st century economy in Ohio.

Ohio's current state economy makes it more difficult, if not impossible, for higher education libraries to fund access to scholarly research information. To illustrate this difficulty, consider that 75% of Ohio academic libraries have no budget increase in 2010 and about 50% will see a decrease. Over this decade annual library budgets have increased annually, on average, about 3% while scholarly journal prices have risen 7-9% annually, on average. We have mitigated some of this impact through group purchasing practices but we cannot keep up.

However, as citizens whose federal tax dollars underwrite this research which we are attempting to provide to our scholars and researchers, we have a right to expect the most recent scientific advancements in all areas are made available to us. As teachers, students, researchers, and librarians in the Ohio higher education system, let alone entrepreneurs, small business owners, health care workers, and other active public citizens, access to up-to-date research information ensures that we can contribute as effectively as possible to our local knowledge economies, and to our national innovation and competitiveness efforts.

Scientific research information, a crucial component of our nation's investment in science, should be shared in cost-effective ways that take advantage of the Internet, stimulate further discovery and innovation, and advance the translation of this knowledge into public benefits. Open online access to research will ensure maximum discovery, use and

re-use of available research -- making possible an unprecedented variety of potential connections and discoveries. In so doing it will improve the lives and welfare of people in the U.S. and around the world.

We strongly support the comments submitted by SPARC (the Scholarly Publishing and Academic Resources Coalition). We will not reiterate and duplicate them here but strongly echo the importance and validity of the points made in the SPARC response.

We thank the White House OSTP for facilitating the discussion of this important topic and encourage you to expand the NIH public access policy to cover all other federal science agencies.

Sincerely,

Tom Sanville, Executive Director
OhioLINK

General Comments from the Open Access Scholarly Publishers Association, OASPA to The Office of Science and Technology Policy, the Federal Government, the United States of America.

In response to the OSTP's request for public comment on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government

Background

This comment is submitted on behalf of the Open Access Scholarly Publishers Association, OASPA. OASPA is a membership organization for scholarly publishers engaged in Open Access scholarly journal publishing (see www.oaspa.org). Our membership includes recognized non-profit organizations such as the Public Library of Science (PLOS), University Presses such as Utrecht University Library, Igitur, for-profit publishers such as BioMed Central and the Hindawi Publishing Corporation, as well as smaller publishing organizations and a large number of scholar publishers (scholars or small groups of scholars who are self-publishing a journal). Our membership also includes mixed model publishers such as Oxford University Press, SAGE Publications, and the BMJ Group, who manage portfolios that include both open access journals as well as subscription-based journals. Our members are based in the United States as well as many other countries, but all publish manuscripts produced by American researchers, many of whom have received federal funding from the United States Government.

OASPA has not had an opportunity to submit comments during the earlier phases of this discussion, but is pleased to offer our general comments on the nine aspects of public access that have been addressed. These comments reflect OASPA's general position in relation to public access to research. This position is strictly in relationship to open access journals publishing. We recognize that some of our members may wish to submit comments on these questions in relation to their subscription journal programs, either independently or through other associations.

Free re-use is as important as free access

OASPA defines an open access journal as a journal that provides immediate access to original research at no cost and is free from access barriers (i.e. no subscription or need to register), and

grants users re-use rights, at least for non-commercial purposes, and ideally for all commercial purposes as well. Our members must comply with this definition as well as to a Code of Conduct that covers ethical and practical issues (see <http://www.oaspa.org/conduct.php>) of publishing. OASPA believes this definition can offer a standard for recognizing serious open access publishers that provide maximum benefit to the scientific community and tax payers. As an example, we have learned that Harvard University, a co-founder of the Compact for Open Access Publishing Equity (http://hul.harvard.edu/news/2009_0914_compact.html), has adopted the OASPA criteria as a basis for considering whether a publisher's publication fee will be covered by its central funds. One of the key motivations of Open Access publishing is to maximize the potential impact of any piece of published research by removing any barrier to access or reuse of that work. The best way to achieve that is to attach a Creative Commons Attribution license to each and every publication. Among other things, the use of a CCAL assures that researchers and institutions are free to post the final published version of that work in any repository, archive, etc., removing concerns about the circulation of multiple versions of a particular article. Moreover, from an Open Access publishing perspective, archives and repositories also provide additional channels for disseminating authors' work and encouraging re-use, leading to greater impact.

The role of open access publishers is to support dissemination

OASPA members meet the demands of the scholarly community by providing outlets for publications and managing these publications. From an open access publisher perspective, our role is to provide a valuable service to our clients (scholarly authors) in part by ensuring appropriate peer review, a clean layout, typesetting and XML mark-up to facilitate various publishing and archiving standards, disseminating that article to the greatest extent possible in order to achieve maximum impact for the author, enhancing an author's visibility, and preservation of the work. The activities involved in the publishing system have been mapped by Bo-Christer Björk and colleagues at <http://www.oacs.shh.fi/>; this same model provided the basis for the JISC Report: Economic Implications of Alternative Scholarly Publishing Models; <http://www.jisc.ac.uk/publications/documents/economicpublishingmodelsfinalreport.aspx>). To assist authors in complying with policies such as that of the NIH is part of our role as this contributes to the broadest possible dissemination, as well as the preservation, of scholarly research outputs.

Recommendation: Free access policies should be grounded in article publishing in journals

Publishing articles in journals remains the key means of disseminating, registering and validating findings for scholars in most fields (the Arts & Humanities might be an exception. See e.g.: <http://www.earlham.edu/~peters/writing/apa.htm>). As noted in a January 4 blog post by Michael Clarke (<http://scholarlykitchen.sspnet.org/2010/01/04/why-hasnt-scientific-publishing-been-disrupted-already/>), publishing in journals also remains the primary vehicle for validation, filtration and designation. We would agree with Clarke that although technological advances have altered scholarly publishing in many ways, the tradition of publishing scientific articles in journals has not been seriously disrupted and is unlikely to become so for some time. This is evidenced by the growing number of open access journals published by scholars themselves. As such, free access policies should be aligned with scholarly journal publishing rather than seeking an alternative publishing system. Publishing in open access journals is not incompatible with depositing work in repositories and archives. Publishing and archiving are *complimentary* activities that fulfill *different* roles in the scholarly communication system.

Recommendation: Free access policies should support open access publishing

We would encourage any public access policy to include publishing research in open access journals as one outlet for complying with public access demands.

To support publication in open access journals one must recognize that publishing activities do require resources. Some OASPA members charge publication fees (or article processing fees) to cover the costs of managing the publication of articles in their OA journals. Other members are able to offer free publication to authors because of their own volunteer efforts or external support from institutions. In the case of university libraries that provide publishing platforms to independent journal editorial teams, funding and other resources can derive from a variety of sources. We highly encourage funders and policy-makers to explicitly allow grant monies to be used to cover open access publication charges. Moreover, we encourage policy-makers to provide extra funding to institutions covered by federal funding to establish central funds for those researchers who are not currently working under a specific grant that would cover such open access charges. The policies developed by the Wellcome Trust in the UK, for example, include the provision of funds for researchers wishing to publish in open-access journals (<http://www.wellcome.ac.uk/About-us/Policy/Spotlight-issues/Open-access/Policy/index.htm>).

Recommendations related to compliance

Should a public access policy provide for funding to cover open access charges, OASPA would encourage the adoption of formal guidelines regarding the nature of the publication and the publisher. As noted above, OASPA hopes that its membership criteria can be used as a baseline for making such an evaluation. Such a measure helps to ensure that authors publish with reputable publishers who strive to take advantage of the dissemination opportunities afforded by open access to achieve the greatest possible impact.

Open access is moving much more slowly within the Social Sciences, Arts and Humanities than in fields such as Biology and Medicine. OASPA would argue that a policy to support publishing in open access journals should be applied to *all* fields of research.

As noted above, OASPA favors Creative Commons Licensing (either CC-BY or CC-BY-NC) and would highly encourage any public access policy to provide funding for open access publication charges, and to require the use of a Creative Commons License or similar license. Again, this assures that researchers and institutions are clear about their rights and are free to post the final published version of a work in any repository, archive, etc., and avoids the dissemination of multiple versions of an article.

Where national archives or subject archives such as PubMed Central (PMC) exist, most open access publishers are happy to assist authors or deposit published articles on their behalf. It should be noted, however, that smaller publishers can encounter financial difficulties in complying with archiving policies as that of PMC, for example, which requires an XML-DTD that by and large only professional typesetters are able to deliver. Preparation of files in XML generally incurs a significant cost to most publishers.

Working with publishers, as well as publishers' associations, can greatly assist with levels of compliance. Groups like OASPA can provide input on mechanisms and suggested policies on the one hand, and on the other hand disseminate requirements of different funders and governments to their members.

Recommendations on coordination of policy

OASPA would suggest that common policies - at least at the level of a particular discipline - affecting researchers receiving federal funding would enable publishers to best support researchers in complying with those policies. Coordination at a Federal level can provide for common practices. Simplicity and consistency of policies and recommended practices will also encourage compliance. Should a policy on public access to research in the United States include provision for open access publication fees, OASPA would suggest that an agency working with processing these fees examine the mechanisms by which such payments would be approved and paid for both under current

conditions as well as in light of possible expansion of open access publishing activity in the future. These issues, however, have not been fully explored.

OASPA is currently working through a sub-committee on financing of open access publications to write a white paper on guidelines for publishers who handle open access publication fees. We are also looking to engage with funders and university institutions who manage central funding to identify appropriate and manageable mechanisms for handling these fees within an overall system to meet both present and future needs. We would invite any US agency involved in this area to join our discussions.

We applaud the Obama administration for consulting broadly with the scholarly communications community to develop policies that align aims and current practices.

With respect, on behalf of OASPA,

Caroline Sutton

President, OASPA

Dear Diane, Robynn & Rick,

On 15-Dec-09, at 10:35 AM, Heather Joseph (SPARC) wrote to me:

- > A submission from you through the written submission channel would
- > be hugely appreciated, too. Maybe
- > you've already done that. It's the chance to give a more detailed
- > response to the set of questions that are asked.

The points that emerge most frequently, from different angles each time, are:

(1) All Federal funding agencies should mandate Open Access (OA) self-archiving (deposit in an OA repository) for all federally funded research, in all fields. There is no field of research that does not benefit from free access to all potential users, rather than just those who can afford subscription access.

(2) The version that should be self-archived is the author's peer-reviewed, revised, accepted final draft of all peer-reviewed journal articles resulting from the federally funded research. (That is the version with the fewest publisher restrictions and it is also what is needed by all users who do not have paid access to the publisher's PDF.) Insisting on the publisher's PDF merely makes it more difficult to reach consensus and compliance on mandating OA at all.

(3) The time at which the final draft must be self-archived is immediately upon acceptance for publication: Earlier (unrefereed) would be unfair to the author, later would be unfair to would-be users, and to research progress:

<http://openaccess.eprints.org/index.php?/archives/494-guid.html>

(4) Preferably, access to the deposit should also be made Open Access

immediately upon deposit, but if it is easier to reach consensus on adopting a mandate that allows an embargo interval, a Closed Access embargo period (preferably no more than 6 months) can be allowed (63% of journals already endorse making the deposit Open Access immediately) <http://romeo.eprints.org/stats.php>

(5) The mandate should be to preferentially deposit in the fundee's own OAI-compliant institutional repository <http://roar.eprints.org/> But if the fundee's institution does not yet have an institutional repository (or the fundee does not have an institution) the deposit can be in DEPOT <http://depot.edina.ac.uk/> or another central repository created for that purpose

(6) It would be a great and counterproductive strategic mistake to instead require central deposit, because that would put the federal OA mandates, covering federally funded research in competition with institutional OA mandates covering the rest of US research output, funded and unfunded, across all disciplines: Institutions are the universal providers of all research, funded and unfunded, so the federal OA mandates should facilitate and reinforce institutional OA mandates rather than require authors to deposit multiply, institutionally and institution-externally. Institutions can then also provide the all-important monitoring and insurance of their faculty's fulfillment of the federal funder's deposit requirement: <http://openaccess.eprints.org/index.php?/archives/369-guid.html>

(7) The right way to get the deposit into a central service (like PubMed Central) is to harvest them, automatically, or to require that the export them, automatically -- but not to require that the deposit must be made directly in a central repository. No functionality whatsoever is lost by institutional deposit and central harvesting, whereas a great deal of potential Open Access content is lost by needlessly requiring divergent central deposit rather than convergent institutional deposit.: <http://openaccess.eprints.org/index.php?/archives/673-guid.html>

(8) During any Closed Access embargo period, research usage needs can still be fulfilled by the author, with the help of the institutional repository's semi-automatic "email eprint request" Button (for the 37% of deposits that might not be made OA immediately upon deposit). This does not provide OA during the embargo interval, but it does provide "Almost-OA," and is sufficient to tide over user needs during the embargo: <http://openaccess.eprints.org/index.php?/archives/274-guid.html>

(9) Providing Open Access to research data is also desirable, but more complicated (especially as regards timing and length of the fundee's exclusive exploitation right), so the journal-article self-archiving mandate should not be handicapped with the complications of data-archiving; they are different matters. (The same is true of software, as well as books.)

(10) The federal OA mandate should also avoid getting bogged down in issues about re-use rights or copyright reform. For now, providing free, permanent, web-wide access (preferably immediately upon acceptance for publication) is an urgently needed and invaluable benefit for users and for research progress. Re-use rights (remix, republication) are not nearly as urgent or necessary, and will come as a natural matter of course after free access is mandated. Please resist handicapping the prospects of achieving consensus and compliance on mandating free access by insisting on re-use rights if the latter create any delay or difficulty in agreeing on mandate adoption.

(11) Publishing in an Open Access journal is an alternative way of providing OA, but it cannot be mandated (because the mandate applies to fundees, not to publishers), most of the top journals are not OA (whereas almost all the top journals endorse immediate, unembargoed OA self-archiving by their authors). There is no need to commit scarce federal research money to paying for OA journal publishing charges while subscriptions are still paying for the costs of publication. All that needs to be done to provide OA to all those articles published in subscription journals is to mandate that they be self-archived. Please do not conflate OA itself -- which just means online access free for all -- with OA journal publishing. Once OA self-archiving is universally mandated by funders and institutions, OA publishing will follow as a natural matter of course. But the urgent and long-overdue need now is for OA itself.

Best wishes,

Stevan Harnad
American Scientist Open Access Forum

Office of Science and Technology Policy Members:

I write in support of increased federally mandated access to research that is funded by the federal government. It only makes sense that research the public supports be freely available to them. As the head of a major university library, I know too well the need for such access. The internet has opened possibilities and raised expectations in ways that will compel us to greater and greater freedom of access. Expanding the current NIH Public Access Policy is a natural and important step in that process and I fully endorse it. Thank you for all your efforts on behalf of researcher everywhere.

Patricia A. Steele
Dean of Libraries
University of Maryland, College Park

Please support expanded public access. Thank you.

Robert Cagna
Dunbar, WV

Greetings--

I write in complete support of providing public access to federally-funded research.

Points:

1. Allowing the public to view federally-funded research should be mandatory. The volunteer approach was tried and failed.
2. Access to research 6 months after publication provides adequate safeguards for commercial or academic publishers.
3. Academic research efforts and general public knowledge will both be well served by instituting this legislation.

In addition, as written in the Federal Register,

Increasing public access to scholarly publications resulting from federally funded research may enhance the return on federal investment in research in the following ways:

(a) More timely, easier, and less costly access to scholarly publications resulting from federally funded research for commercial and noncommercial scientists has the potential to promote advances in science and technology, thereby enhancing the return on federal investment in research;

(b) Creating an easily searchable permanent electronic archive of scholarly publications resulting from federally funded research has the potential to allow cross-referencing, continuous long-term access, and retrieval of information whose initial value may only be theoretical, but may eventually have important applications;

(c) Ensuring that the federal agencies that support this research can access the published results has the potential to promote improved cross-government coordination of government funding, and thus improved management of the federal research investments;

(d) More timely, easier, and less costly access to scholarly publications resulting from federally funded research for educators and students, and "end users" of research, such as clinicians, patients, farmers, engineers, and practitioners in virtually all sectors of the economy, has the potential to promote the diffusion of knowledge.

Thank you.

W. Lee Hisle

Vice-President for Information Services and Librarian of the College

To the Office of Science and Technology Policy:

Thank you for additional time for comments. More importantly, thank you for initiating this public discussion about so important an issue as open access to taxpayer-funded research. I was exceptionally proud of our country the day the NIH public access policy went into effect, and I am hopeful that a similar mandate will be extended to all branches of the federal government that issue research grants.

I support open access to taxpayer-funded research for a number of reasons:

First, it's an issue of fairness. I would guess that taxpayers invest more money in the research/publication cycle than any other single entity. Universities and research institutions provide infrastructure and salaries, researchers invest time and talent, and publishers collate and dissemination the published results of the research. All of that requires financial investment. But taxpayers contribute billions and billions of dollars up front, and without our contribution research in the United States would be severely crippled. Opponents of public access will try, but I do not believe it possible to construct a fair and reasonable objection to the principle that taxpayers who fund research should have access to the published findings of that research.

Secondly, taxpayers have a right to expect a return on our investment in federally funded research, specifically improvements in the life, health and overall wellbeing of society. Common sense suggests that the *faster* new knowledge can be disseminated, the more quickly society will see benefits. Common sense also suggests that the more *broadly* new knowledge can be shared, the richer and more varied the return on investment. Open public access, without question, provides faster and broader dissemination of research findings than any subscription-based system can do.

In fact, the current, subscription-based distribution model actively inhibits the free and timely exchange of knowledge because it locks away the vast majority of taxpayer-funded research findings behind very costly subscription fees. You have no doubt seen data on soaring costs of subscriptions and on the forced cancellations that have resulted at even our most prestigious research institutions. The current system restricts the free and open access to new knowledge even as the Internet is making it easier than ever to share. Hybrid solutions like the one in place at the NIH, where publishers get a period of time to profit from their investment after which articles are opened to the public, seem fair to both publishers and taxpayers.

Thirdly, a public access dissemination system more closely reflects and supports the way many scholars are working today, particularly in the sciences. A whole world of possibility lies ahead—for example, data that is both open and interoperable, peer review that begins earlier in the research process and helps shape discovery in more timely ways, and research findings that get disseminated faster and more dynamically. Aligning federal research agencies with emerging practice seems sensible, and a public access policy will at least start us on a path to that larger goal by removing some barriers.

Fourthly, I would posit that the federal government should be concerned about the overall lack of access to research produced by American scholars, particularly the research funded by federal

agencies. Other countries (India and China in particular) are gaining the creative, innovative edge, and it is no coincidence that those countries have more robust open access practices than the U.S. has. The lack of access in this country is real. I am dean of libraries at a large Midwestern university with a healthy and growing budget for journals and other electronic resources. We purchase over 50,000 journal subscriptions a year. Despite our robust holdings, we pay \$10's of thousands of extra dollars in copyright fees each year to gain access to the research articles we don't have access to.

To limit that cost, we have tried tracking down authors to ask permission to use their articles and writing publishers for permission to use articles in course reserves. When those tactics don't work, we pay fees to the Copyright Clearance Center (CCC). Our fees to the CCC now top \$50,000 a year, and those fees will continue to rise because the number of journals continues to multiply. We can't buy everything our university needs. At universities where library budgets are more modest, the problem is even greater. Buying articles by the piece to supplement subscription purchases is a financially unsustainable practice, but the alternative is for us to simply say no to our students and faculty—to tell them that we cannot afford to give them access to all the material that is crucial to their studies and research.

About 80,000 scientific and medical articles a year result from NIH grants. Under the new NIH policy, any member of the public can access those 80,000 articles no more than one year after the articles are published, and much quicker in many cases. A 12-month embargo is arguably too long, but the policy still represents a giant leap forward in terms of public access to federally funded research. If the NIH policy were extended to other agencies of the federal government, the gain represented by the NIH policy would expand exponentially and into many other disciplines. How could that not be good for our nation?

I believe the components of a national public access policy should include the following:

- 1) All federal agencies that fund research should provide public access to the resulting research articles (barring matters of national security, of course)
- 2) Articles should be available to the public immediately, ideally, but no more than six months after publication
- 3) The posted article should be either the author's last manuscript version or the publisher's final version and the version should be noted in the database; if not the publisher's final version, there should be a link to it.
- 4) Articles should be posted in a standard digital format that allows full use (like XML), rather than in PDF, which looks nice but offers no flexibility of use (e.g., no data or text mining)
- 5) Articles should be housed in permanent, interoperable digital archives that are perpetually open to public search
- 6) Compliance across agencies should be standardized for efficiency and for clarity with authors who are posting content.

In sum, a policy designed to “deliver public access to the published results of taxpayer-funded research” would ensure that a valuable body of knowledge is available to all educational and research institutions in the U.S., to doctors and nurses who practice far from research hospitals, to patients and their families who want to work closely with their caregivers to manage illness and disease, to the isolated genius who is working on an invention, and to the citizen who just wants to be informed. The power of those possibilities takes your breath away.

It's the right thing to do. It's the fair thing to do. It's the smart thing to do. I hope you can ensure it gets done, and I so appreciate your efforts in this direction.

Many thanks for the opportunity to share my thoughts and convictions.

Lee C. Van Orsdel
Dean of University Libraries
Grand Valley State University
Allendale, Michigan

I support public access to publicly funded research. The public is entitled to reap the benefits of such research for free. Taxpayers paid for the research initially, so taxpayers should not have to pay to learn of the results.

Mary McLaren, Lexington, KY

From: Kevin Fisher, J.D., M. Sci.
Policy Director
AVAC: Global Advocacy for HIV Prevention

Attached please find the comments of AVAC to proposals to expand public access for federally funded research.

Dear OSTP:

Thank you for giving us the opportunity to provide comments to OSTP as it considers the policy of public access for publically funded research.

AVAC is a nonprofit public interest organization dedicated to accelerating ethical research and global delivery of vaccines and other HIV prevention options to fight the AIDS pandemic. We have long supported the current NIH Public Access Policy and believe it is an important tool in spurring innovation in health care. The policy facilitates more rapid public access to federally-funded research findings and is a critically important new step in developing cures and treatments for diseases such as HIV/AIDS. We believe that the best hope for the development of new HIV prevention tools such as an AIDS vaccine rests with the synergies, efficiencies and collaborations that are effected when government-funded research is widely available. We strongly support and encourage efforts by OSTP to extend NIH's public access policy to other science and technology agencies.

As you know, the NIH Public Access policy requires that all investigators funded by the NIH submit or have submitted for them to the National Library of Medicine's PubMed Central an electronic version of their final, peer-reviewed manuscripts upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication.

This consumer-centered measure is a long over-due means to enhance public health education; speed the translation of scientific advances into quality, affordable health care; and empower patients in their health care decisions. Given this significant investment of public funds, patients, academics, researchers and advocates deserve to have free, timely, and complete access to these articles and

should not have to pay thirty dollars or more for the privilege of viewing a single article. This is not an insignificant expense since a single health issue may involve citations to dozens of related individual articles. The taxpaying public is at a double disadvantage because academic or published researchers themselves do not always absorb the costs of subscriptions and may pass on related overhead again to taxpayers through their grant overhead. Since tax dollars underwrite this research, all Americans have a right to open access to the results of this critical biomedical information. Ensuring timely, free access to health-related information is crucial to empowering patients and in ensuring that they are as educated as possible about conditions affecting themselves and their families. Public access is also necessary for the community members on NIH committees to enable them to participate productively and directly in NIH planning and advisory roles. This participation is a critical part of the NIH's operations.

The traditional system for sharing research results is fundamentally imbalanced, restricting access to research – funded by tax dollars – to the institutions that can afford access. The NIH policy begins to restore balance to this system, by beginning to unlock the billions of dollars in research funded by the taxpayers each year, and make it available to the scientists, researchers, doctors, patients, and taxpayers who need it. Public access to the published results of federally-funded research should be a right across all agencies.

Thank you for taking the time to solicit and consider our views in this important issue. We very much look forward to the beneficial development of a public access policy for publically-funded research, and we look forward to working with you in the future.

Yours sincerely,
Mitchell Warren
Executive Director

The following comments are submitted on behalf of Northwestern University.
Sincerely,
Joseph T. Walsh

Vice President for Research
Northwestern University

NORTHWESTERN UNIVERSITY
Comments Submitted to the Office of Science and Technology Policy
Policy Forum on Public Access to Federally Funded Research

1. How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy?

Authors, universities, and federal government agencies are the primary producers of peer reviewed papers that arise from federally-funded research. Those authors who create and disseminate research have a high stake in being able to access and share the results of their works with colleagues across departmental, institutional, and international lines, especially those involved in interdisciplinary research, including, but not limited to biomedical, environmental, and health care. Universities contribute to the research process by employing the authors who produce research by

providing laboratory space, library resources, and research assistance. Equally important is the role of the federal agencies that fund research. Without the contribution of federal agencies, authors and universities would not be able to conduct the research that benefits the American public.

A public access policy is consistent with the mission and goals of libraries in general, and university libraries in particular.¹ Both publishers and libraries advance the research process by disseminating research results. Publisher and library goals, however, are in contrast. Whereas publishers seek to profit from disseminating research results, libraries on the other hand have the mission of providing free access to information. While the mission of all libraries is to maintain, disseminate, and help users navigate the world of information, university libraries, in particular, play the special role of maintaining, disseminating, and helping their students, faculty, and other users to access the results of scientific research. A public access policy furthers the mission of university libraries primarily by providing users access to federally funded research material within a reasonable embargo period. By extension, university libraries further the success of a public access policy by helping authors at their parent institutions with policy compliance through disseminating information about copyright management, for example. In addition, a public access policy supports the mission of many university libraries as they continue to take the lead in building digital and institutional repositories to preserve and showcase the works of their own researchers. Northwestern University Library shares the mission of all university libraries to provide access to research results to its constituencies and members of the public, thus its mission is consistent with a public access policy and supports its implementation.

A change to allow public access to federally funded research would strongly benefit authors, universities, and the federal agencies. Under a public access policy, authors would be able to access works in their fields that might be otherwise inaccessible due to the financial restrictions that may prohibit their institutions from paying annual subscription fees to the research papers published in commercially available journals. A researcher could access a final peer reviewed paper from his or her desktop regardless of whether his or her college or university library can pay the annual cost of the journal's subscription. Universities also stand to benefit under a public access policy as the works of their authors gain in visibility through open access. Even more importantly, federal agencies will meet their goals more effectively by providing tax payers access to information that they have themselves helped fund, and create better mechanisms of tracking federal research agendas. Even the commercial publishing industry stands to gain overall from a public access policy through spurring competition to provide better costs to information consumers.

2. What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?

Authors:

- Provide authors and publishers information on clear compliance procedure, including managing copyright in relationship to a public access mandate
- Implement a reasonable embargo that is consistent across Federal agencies

Users, and other members of the public:

- Provide users the ability to access and download papers for free
- Build a stable archive with long term preservation of content

- Allow interoperability with current digital repository systems
- Implement a reasonable embargo period that is consistent across Federal agencies

Universities and Libraries:

- Build a stable archive with long term preservation of content
- Allow interoperability with current digital repository systems
- Implement a reasonable embargo period that is consistent across Federal agencies
- Potential for cost-savings from inter library lending, which could be significant

Federal Government:

- Achieve its goal of accountability to the American public
- Build a stable archive with long term preservation of content
- Allow interoperability with current digital repository systems
- Implement a reasonable embargo period that is consistent across Federal agencies
- Implement metrics for rating success rate or return on the investment such as, usage statistics for article downloads, monitoring trends in expediting new scientific discoveries that benefit public interest

3. Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?

Any member of the American public, and members of other nations could potentially benefit from a public access policy: researchers from all types of colleges and universities, citizens such as educators, students, and physicians and other health care providers, patients seeking medical information, attorneys, environmental health workers, corporate scientists, and farmers, among many others. Access to research results published in peer reviewed publications is currently limited or unavailable to many of the above-mentioned categories of users, especially those without an institutional affiliation, or those at institutions that lack the financial means to pay high annual subscription fees. Information users who have affiliation with an institution of higher education or a public library could obtain research publications through inter-library lending, but many may not have access to such a service. Under a public access policy, anybody anywhere in the United States or in the world with an internet connection would be able to access a research paper within a given period of its publication.

4. How best could federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?

Federal agencies could create a central archive, similar in nature to PubMedCentral, for authors to deposit their final peer-reviewed publications. Agencies could implement usage statistics measures to gauge the number of article downloads for deposited papers, keeping track of highly accessed papers, authors, and research topics. Other measures to gauge the increased return on federal investment gained by expanded access may also include how expediting access to research

affects progress toward new scientific discoveries and or medical treatments. Cooperative sharing of genomic data via NIH's Genbank, for example, helped expedite sequencing of the SARS virus, thereby accelerating the development of diagnostic tests to identify the virus. ⁱⁱ

5. What features does a public access policy need to have to ensure compliance?

The current NIH Public Access Policy ensures compliance through potential delay or prevention of award funding. Stricter policy enforcement may include monitoring of deposit rates and periodic reminders sent to authors.

6. What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?

The final, peer-reviewed manuscript version of the paper should be made public under a public access policy. The advantage to this approach is that it allows the public to access the most definitive version of the research results, while still allowing the publisher to maintain a profit through publishing a value-added version of the paper. There are disadvantages to posting multiple versions of the paper while it is still going through peer review to a public archive, as that approach may cause confusion to an audience that is more interested in ascertaining final research results than seeing multiple versions of a paper during the editing process. Current practices of the NIH Public Access Mandate allow for the deposit of the final peer-reviewed published paper directly by the publisher or the final peer-reviewed manuscript by the author. ⁱⁱⁱ

7. At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?

The current NIH Public Access Policy mandates deposit of the final peer-review manuscript within 12 months of publication into PubMedCentral. While there are many arguments in favor of a shorter embargo period, we feel the most important issue is that the period be consistent across Federal agencies. If it is not, it will create numerous confusions and difficulties for authors, libraries and universities in the course of attempting to comply with the policy, and there will be a greater risk of non-compliance. ^{iv} While empirical data to support an optimal length of time may not be readily available, the NIH reports that the number of article deposits since the implementation of the NIH Public Access Mandate into law has increased. ^v

8. How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are

these anticipated to change?

Peer-reviewed papers arising from federal grants should be made publicly available by author or publisher deposit into a disciplinary digital repository accessible to the public. Papers should be submitted in pdf format to allow users to search and retrieve words or key concepts within a document quickly and easily. Digital standards for archiving and interoperability are continually under development. The Center for Research Libraries leads an effort to create assessment tools and metrics criteria for digital preservation that federal agencies considering building open repositories may consult.^{vi}

9. Access demands not only availability, but also meaningful usability. How can the federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g., number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access papers be given the opportunity to comment or provide feedback?

The federal government could make its collections of peer-reviewed papers more useful to the American public by creating open repositories allowing the user to view and download papers for free. Repositories should allow browsing by broad subject area, agency, audience, and also by natural language query searching. Metrics for measuring the success of its public access collections may include usage statistics for highly downloaded articles, authors, topic areas, and agency-funded publications.

ⁱ Association of Research Libraries Comments on NIH Revised Public Access Policy [<http://www.arl.org/bm~doc/mmmihround2.pdf>]

ⁱⁱ Association of Research Libraries, Public Access to the Published Results of Publicly Funded Research Will Benefit the Economy, Science, and Health [<http://www.arl.org/bm~doc/PATransitionOAWG.pdf>]

ⁱⁱⁱ National Institutes of Health Public Access Policy [http://publicaccess.nih.gov/submit_process.htm]

^{iv} ARL Comments on NIH Revised Public Access Policy [<http://www.arl.org/bm~doc/mmmihround2.pdf>]

^v <http://www.nihms.nih.gov/stats/index.shtml>

^{vi} Center for Research Libraries [<http://www.crl.edu/archiving-preservation/digital-archives/metrics-assessing-and-certifying>]

From: Doug Erwin

I write as President of the Paleontological Society (PS), fairly small scientific society that publishes two of the major journals in the field (Journal of Paleontology and Paleobiology). Like most scientists, I welcome the possibility of expanded public access to the results of scientific research. But as an officer of a society I am mindful of the fact that publications cost money, and any effort to enforce rapid public access is likely to have a detrimental impact on the continued existence of scientific societies such as the PS. As others have noted, journal publishers add considerable value to papers through peer-review, editorial oversight, copy-editing and formatting. Even in a paper-less world, there are still costs for markup, hosting and related services. Consequently, societies such as the PS have effectively been subsidizing much federal research for decades through these activities.

As a society we face declining subscription revenue, and last year about a third of the publications budget came from 'pay-per-view' access to our publications. Absent this funding, our journals are no longer viable. Federal support for paleontology is very low (NSF support for all historical aspects of geology is poor to non-existent). Thus while some research may be supported through federal monies, it is rare that the support is sufficient to fully fund the research. Much of the research also requires other grants, institutional support (a dwindling resource) and, often, personal funds. NSF grants are usually reduced through 'negotiation' with the program director, and funds for support of publications are often the first to be jettisoned. Consequently, page charges make a relatively minor contribution to the PS publications budget.

Many like to argue that the world is moving towards an open-access system, or that publications should be available 'free of cost'. Since the costs associated with valuable scientific publications are not going to disappear, this is more accurately described as a movement from a subscriber-pays system to an author-pays system. Researchers associated with NIH (although they may not realize it) have lots of funding to adjust to such a system. For more poorly supported fields such as paleontology, such an author-pays system is fraught with considerable risks, and has the potential for destroying primary outlets for publication in the form of society journals.

Thus, if public access is to be demanded by OSTP and the administration, it must be accompanied by a the explicit articulation of a business model that does not destroy scientific societies such as the PS, consequently reducing outlets for publication.

Dear White House Office of Science and Technology Policy:

Librarians, citizens, and scholars across the country support public access to federally funded research. Each year, despite our universities' intentions to create and disseminate new knowledge, the reach of that knowledge is more and more constrained. An embargo period is tolerable. Publishers' concerns about loss of market has not occurred - the evidence shows that even embargo periods shorter than the NIH's twelve month one do not result in reduced subscription rates. It is time to let the results of federally-funded research reach beyond the halls of academe to the tax-paying public that funded the research.

It is important that, should the legislation pass, agencies work together to make the process for each comparable to existing processes. Researchers working with multiple agencies will be less productive if they have to deal with idiosyncratic policies for each agency. The processes developed for the NIH are applicable across agencies and are open for use by any of them. Save researchers' time and taxpayers' money and adapt the existing processes.

Shirley K. Baker
Vice Chancellor for Scholarly Resources &
Dean of University Libraries
Washington University

Dear Sirs,

Having worked in publishing for over 20 years, both in the UK, and in the developing world, I endorse access to research information as a prerequisite to development. However I also recognise the need for adequate funding to support the quality control, technical development, archiving and dissemination aspects that ensure that scholarly information is adequately communicated. Currently US government agencies bodies provide funding for large amounts of research, but do not support all scholarly communication - much of which is undertaken as part of academic work, as part of business or other employment, and during the spare time of individuals.

Publishers rely on income streams that reward their ability to capture the best information and successfully get it to market in a form that satisfies the needs of consumers. this is true in both the Open Access (author-pays, and centrally funded) environment and also in the subscriber-pays toll-access environment. However were mandates to make the final article (i.e. in which both the authors, other researchers and the publisher invested heavily) free, then there must be an inevitable dropoff in income from subscribers. If that income is not compensated by other income streams such as author fees then the publisher will fail.

In its crudest form, the question is: if publishers are to continue to provide a service to authors and the scholarly communication community, how will they be funded? Will the grant bodies provide publication funding? The Wellcome Trust in the UK has recognised this and introduced grant funding, but there appears to be no mention of this within the US agencies. What about non-grant-funded articles (those that result from personal study or academic work) - should all academic institutions be required to develop author funding systems (as some are doing).

The demand for publicly-funded research to be made publicly-available is laudable, and can be achieved by requiring researchers to provide a summary of their research in a way that is accessible for public posting (for example on the NIH repository or elsewhere), leaving the publisher to negotiate with authors and add value to create a product which has sales value. In this way the public can access research that their taxes have paid for, but there remains opportunity for authors and publishers to continue a system which has served scholarly communication well for almost 300 years.

The Roundtable report advocates the Version of Record article being the one that should be made available - if this is to be implemented then are the US agencies willing to purchase these from publishers?

Pippa Smart

Research Communication and Publishing Consultant

PSP Consulting
