OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Compilation of E-Mailed Comments
for Public Access Policy Forum

Part 3

Find attached the Oberlin Group of Libraries response to your RFI on the Public Access Policy.
Thank you.

Jonathan Miller, PhD
Library Director
Olin Library
Rollins College

OSTP RFI Public Access Response from the Library Directors of the Oberlin Group of Libraries.

Thank you for giving us the opportunity to respond to this RFI. The open and transparent way in which the Office of Science and Technology Policy has conducted this process is a model for transparency in government information policy development. This bodes well for the future of access to the published results of federally funded research.

The Oberlin Group is a consortium representing 80 libraries of selective liberal arts colleges. The primary purposes of the consortium are to discuss library issues of common concern, share information on best practices in library operations and services, license electronic resources of interest to member institutions, cooperate in resource sharing, and establish communities of practice.

Liberal arts colleges are important components of our nation's scientific and scholarly productivity. Studies have shown that our institutions are highly effective in producing graduates who go on to obtain Ph.D. degrees and become productive researchers. The faculties we serve actively pursue research, much of it with government funding, and often working in partnership with talented undergraduates. Unfortunately, access to research information paid for with tax dollars is severely limited at our institutions – and indeed at most universities. Academic libraries simply cannot afford ready access to most of the research literature that their faculty and students need. The high cost of the limited subscriptions we can afford to the scholarly journals that traditionally publish federally funded research means that we are unable to devote our acquisition budgets to other important information resources. Open access to federally funded research, in both the natural and social sciences, from a wide array of federal agencies would substantially improve this situation. Indeed, the growth of PubMed Central as a result of the NIH Public Access Policy has already been of great benefit to the students, faculty, and communities we serve.

Research conducted by our faculty and students is very often interdisciplinary, reflecting the integrative learning fostered at liberal arts institutions. The research needs of faculty and students at liberal arts colleges can rarely be satisfied within the bounds of one federal agency's mission

or one academic discipline, which makes consistency of access to federally funded research particularly important to researchers at liberal arts colleges.

Our interest in open access to such research goes beyond the immediate needs of the faculty and students we serve. The American Association of Colleges and Universities notes that, "a liberal education helps students develop a sense of social responsibility, as well as strong and transferable intellectual and practical skills such as communication, analytical and problem-solving skills, and a demonstrated ability to apply knowledge and skills in real-world settings."[1] Liberal arts colleges seek to educate life long learners. Many of our graduates have ongoing needs for access to research information as private citizens, and those who are not affiliated with research universities face significant costs and challenges in gaining access to the information they need. Many of our member libraries also serve institutions embedded in small communities and have a particular responsibility to serve those local communities. We see the need for open access to federally funded research on a daily basis from consumers, independent researchers, small businesspeople, high school students, and citizens in general.

There are a number of practical policy issues associated with open access to federally funded research that are important to liberal arts college librarians and to the users we serve. We would emphasize above all that federal agency policies for researchers should be mandatory. It is well known that the voluntary NIH public access policy (implemented prior to the current mandatory policy) was not successful. We recognize that some publishers think an embargo period may be necessary to maintain the long- term viability of these scholarly publications. If an embargo is instituted, it should be no more than 6 months and should be consistently applied across agencies. We would prefer that the document version stored in the repository be the final published version. However, if necessary, the final peer reviewed manuscript is acceptable with a link to the published version. Materials in the repository should be made available under terms that enable free use with few restrictions, such as Creative Commons licensing. Finally, we want to emphasize the importance of consistency, in policy and practice, across agencies for both the authors and users of the deposited materials.

In closing, thank you again for the opportunity to respond to the RFI. We find ourselves at a moment of great change in technology, in higher education, and in the role of the federal government. Open access to the published results of federally funded research is possible in our digital age and can have a positive impact on education and on how citizens engage with their government and society.

Dear White House Office of Science and Technology Policy:

Attached are ASPB's comments in response to OSTP's request for comments on "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government."

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[1] Association of American Colleges and Universities Press Room. *What is Liberal Education?* <http://www.aacu.org/press_room/what_is_liberal_education.cfm> January 12, 2010

Thank you.

Nancy Winchester
Director of Publications
American Society of Plant Biologists

The American Society of Plant Biologists (ASPB) is a nonprofit scholarly membership society of ~5,000 plant scientists. It was founded in 1926 to promote the growth and development of plant biology and plant biologists and to foster and communicate research in plant biology. The Society welcomes the opportunity to respond to OSTP's Request for Public Comments on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government.

ASPB fosters research in plant biology through a variety of venues, primarily by publishing cutting-edge plant biology research in our two high-impact journals *Plant Physiology* and *The Plant Cell*. The revenues ASPB earns through reasonably priced subscriptions to these two publications—which are delivered monthly to nearly 2000 individuals and institutions—is largely reinvested in the peer review, editing, and production of scientific articles, as well as in the Society's many other activities in the realms of research, education, and public policy. In 2009, nearly 60% of our members—mostly research scientists at universities—and over a third of our authors lived and worked in the United States. A significant portion of our authors are supported in their research by the U.S. government, notably through grants from agencies including the NIH, DOE, NSF, and USDA, which together funded about 20% of the research studies reported in our journals. ASPB, like other science, technology, and math (STM) publishers, organizes and oversees the certification and validation of research results through its peer review process.

The Society further invests heavily in high quality production and sophisticated electronic search and retrieval functionality that, we believe, add great value to the reports we publish. And in light of the Society's mission, we go to great lengths to support the rapid dissemination of this value-added content. For example, in 2000, we were one of the first STM societies to make not only the peer-reviewed manuscript but the final published article—our version of record—free on our journal sites and at PubMed Central 12 months after publication. Further, we offer our authors the option to purchase immediate free access for their articles, and for *Plant Physiology* we currently extend free access to all corresponding authors who are members of the Society. We also make our content free upon publication to eligible institutions in developing nations who participate in the AGORA, OARE, and HINARE initiatives and to a handful of small minority serving institutions in this country who have requested access. For populations served by none of the above mechanisms, we make our articles available on an individual basis for only $10.

Clearly the Society is committed to the widespread distribution of the research content it publishes, and it has demonstrated that commitment through a variety of means that it has identified and deemed consistent with its underlying business model. We worry, though, that the revenues the Society depends on to continue its investment in the dissemination of information to the plant science community and the general public could be threatened by a one-size-fits-all public access mandate that requires the free distribution via a government-run database of the

articles we peer review and publish. We believe that private-sector publishers must be allowed to operate in a free market and
to determine and control their own business models appropriate to the disciplines they serve. Such protections ensure that we can continue to develop new initiatives and provide high-quality services to our various constituents.

Does this mean that ASPB rejects the notion that taxpayers should have access to the outputs of taxpayerfunded research and that the government should ensure access to such outputs? Not at all. In fact, the Society's actions over the past decade clearly demonstrate its commitment not only to rapid public access to peer reviewed research papers but also to the notion that whenever feasible the version of record should be the version to which that access is provided. But we believe any model adopted toward this end should serve *all* constituents. As already stated, ASPB, within the constraints of its own business model, has made its version of record available in a number of ways. However, if the government intends to proceed in developing its own public access policies, then the Society
echoes the recommendation articulated in the recently published report from the Scholarly Publishing
Roundtable (http://science.house.gov/press/PRArticle.aspx?NewsID=2710). In particular, the government should work in full, meaningful, and open consultation with all vested stakeholders to define measurable goals and to take into account key differences in publishing dynamics among subject disciplines, rather than trying to impose a unilateral "one-size-fits all" policy across disciplines. Allowing individual agencies to develop their own policies, suitable to the scholarly communities whose research endeavors they fund and in whose journals the research is published, is one approach that we strongly feel merits consideration.

In sum, ASPB reiterates its belief that the system of peer-reviewed STM journals greatly assists research efficiency and suggests that federal agencies work cooperatively with publishers to find acceptable policies for public access that do not impinge on publishers' ability to add important value to research reports. We appreciate the opportunity to comment and stand ready to assist in any way possible toward the development of policies that work for all vested stakeholders and that support the rapid dissemination of high-quality research content into the foreseeable future.

Sincerely,
Tuan-hua David Ho Gary Stacey
President, ASPB Chair, ASPB Public Affairs Committee
Washington University in St. Louis University of Missouri, Columbia

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Stony Brook University endorses the attached ARL Comments to the White House Inquiry on Public Access to Federally Funded Research.

Andrew White, PhD
Interim Dean and Director of Libraries
Director, Health Sciences Library

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, though 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 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?
Agencies could 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, 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*, D*epartment of Education, Science and Training, Canberra.*
• *Department of Trad*e 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 committted 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 cyber infrastructure 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.

Please see the attached document in response to the request for information on "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government." Please feel free to contact me with any questions.

Sincerely,
Diane Scott-Lichter, Publisher
American Association for Cancer Research

The American Association for Cancer Research (AACR) is pleased to respond to the Office of Science and Technology Policy•s request for comments on • Public Access Policies for Science and Technology Funding Agencies Across the Federal Government.‖ AACR, a not -for-profit association with nearly 30,000 members, is the oldest and largest scientific organization in the world dedicated to advancing cancer research. The programs and services of AACR foster the exchange of knowledge among scientists involved in cancer research. AACR publishes six peer-reviewed scientific journals and a magazine for the general public; convenes topical scientific think tanks, conferences, workshops, and an annual meeting; offers fellowships and grants; raises public awareness of the progress and cause for hope in cancer research; and advocates for federal research funding.

We applaud the administration for • exploring ways to leverage federal investments to increase access to information that promises to stimulate scientific and technological innovation and competitiveness.‖ The request for information focuses on leveraging f ederal investments to increase public access to scholarly publications resulting from research conducted by federal employees or funded by a federal agency. As mentioned above, communication of cancer research through publications is one of the ways AACR contributes to scientific innovation and advancement. The peer-reviewed, subscription-based journals published by AACR are available in print and online. Revenue generated by subscriptions supports AACR‘s publishing program and other association activities that are essential to progress in the fight against cancer.

AACR‘s Public Access Approach
AACR voluntarily makes *all* journal content freely available 12 months after publication through our journal sites, which are hosted by HighWire Press. Nearly 95% of *all* articles ever published by AACR are freely available and easily discoverable on these sites. User interest in content after the 12-month embargo is significant, as evidenced by our online usage data during the 24-month period after publication for journal articles published in 2007. Content under the 12-month embargo comprised 51% of article usage, while free content comprised 49% of usage during that period. After the articles are available for longer than 24 months, these percentages change to show that lifetime usage extends for many years. Indeed, of the more than 70,000 AACR journal articles accessed by readers in 2009, more than 64,000 were freely available—and the 2 articles accessed dated back to 1941, indicating that the content maintains its value to readers well beyond the 12-month embargo.
AACR‘s decision to make our content freely available after a 12-month embargo period was based on the particulars of our publications with the desire to both sustain them and contribute to the scientific endeavor. We join many other publishers in this regard – working together without government mandates, scientific publishers provide more access to scholarly content to more people than ever before.

Investment in Scholarly Publications
To offer and maintain the highest quality research information, AACR, like many other publishers, invests in the creation and dissemination of scientific content by the following activities:
selecting and managing editorial boards educating and informing authors about scientific practices and procedures embracing standards of scholarly communications that advance the industry (e.g., Digital Object Identifiers) practicing and promoting norms in communication that

benefit the research endeavor and society (e.g., investigating allegations of ethics violations and correcting the literature when appropriate, and developing policies for the presentation of images) evaluating and peer reviewing new submissions and revised manuscripts developing an online submission and peer-review system to accommodate various editorial workflows copyediting and proofreading manuscripts, drawing and enhancing artwork, and typesetting information for improved readability

adding XML coding in an industry standard DTD in order to format, link, and aid online searchability and reuse tagging content and forwarding it to abstracting and indexing services, such as the National Library of Medicine incorporating features and functionality that enhance the user experience and offer interoperability among online content archiving information for current and future use extending the reach and dissemination of information through various marketing and communication efforts (e.g., alerting systems, RSS feeds, press releases, newsletters, and meetings).

As a result of these value-added activities, no research article is published as it was originally submitted. These unique contributions strengthen the research literature and improve its accessibility – without direct taxpayer support. As an association publisher, we build our brand by constantly improving the quality and presentation of the science, and streamlining its dissemination while keeping costs low. AACR publications convey trust that the articles meet the journals' standards of excellence and represent the integrity of the literature.

PubMed Central
AACR currently provides its authors the service of meeting the NIH Public Access mandate by depositing accepted manuscripts to the PubMed Central (PMC) repository on their behalf for release after a 12-month embargo. We ensure that articles accepted for AACR publications are properly posted and report errors to the PMC staff. Our services in this regard are highly valued 3 by authors whose time is more productively spent conducting research. As part of our analysis of the interest in AACR content, we regularly review usage data provided by HighWire Press. This type of data is not easily obtainable from the PMC site. Because some users now go to the PMC instead of AACR's journal sites, we are unable to gather complete usage metrics. Analysis of usage data helps our editors, meeting committees, task forces, and working groups to identify and examine the most promising emerging areas of research so that the scientific community can quickly focus on potential breakthroughs. Additionally, publishers follow usage metrics because libraries make purchasing decisions based on them.

Recommendations
We would like to work with the Office of Science and Technology to ensure that government activities do not duplicate those of scientific publishers, diverting federal funding away from research itself. The current NIH Public Access Policy requires authors receiving federal funds to deposit their accepted manuscript versions to PMC, thereby creating the problem of having various versions of articles in multiple locations. A more efficient method would be to leverage the valuable work already done by publishers by developing cooperative linking to and mining of data from publishers' existing sites, where the final version of record is maintained.

We believe that the spirit of public access to research results can be achieved in a carefully considered new policy. The current NIH Public Access Policy does not provide for all scientific information supported by taxpayers to be made public. By calling for only those articles that have been peer-reviewed and accepted by publishers, the policy does not address a body of data that could provide new leads to researchers, warn against unfruitful lines of investigation, or pre-empt repetition of unsuccessful experiments. Instead, the NIH policy seizes a subset of information supported by taxpayers along with the value added through the investment of publishers and mandates a one-size-fits-all embargo for publications from a variety of scientific fields, with different frequencies of publications, and various types of articles.

In order to resolve these issues, AACR supports the America Competes Act enacted by Congress in 2007 for research funded by the National Science Foundation, and we suggest that this approach be applied more generally to NIH and other government-funded research as well. This model makes taxpayer-funded information available via final project reports, citations to published research documents, and summaries of research project outcomes. It is a more comprehensive approach and provides information about the *entire* body of funded research. These summaries could also be presented in a style and format that is more understandable and useful to the lay public than primary research articles. NIH's website directed toward the public, MedLinePlus, could be further developed with information gained through these summaries.
Synergistic Partnerships
Collaboration between the federal government and private sector industries that takes advantage of existing and future technology could improve the effectiveness of research dissemination. This must begin with thorough, objective analyses of open-access experiments, assessing the evidence of benefit while considering the risk of destabilizing the publishing system upon which researchers and society depend for scientific integrity, dissemination of information, collaboration, and employment. Harnessing the power of the federal government and the capabilities of the private publishing sector will significantly improve our potential for realizing our shared goals of preventing and eliminating disease, spurring innovation, and promoting economic growth. Thank you for the opportunity to provide comments on this important topic. We look forward to working with the Office of Science and Technology Policy and other stakeholders to further consider public access.
Sincerely,
Diane Scott-Lichter
Publisher

Public Access Policies for Science and Technology Funding Agencies
Across the Federal Government

   I appreciate the opportunity to respond to the request for comments
by the OSTP regarding enhancing public access to federally funded
research. I am responding as researcher (10 NIH grants), author (16
peer reviewed publications), Librarian (35 years) and as a member of
the public. In each of these capacities, I have encountered
significant barriers in my attempts to access to federally funded

research results. Increasing access to federally funded research is absolutely essential to the discovery and effective utilization of new knowledge.

Many of the questions that are listed are essentially addressed in the models developed by the NIH, National Library of Medicine and by many institutions through the development of Institutional Repositories. However, there are several questions that I would like to address and my comments 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? I would like to address the role the libraries. The traditional role of libraries has been to provide support for authors and investigators at their institutions. However, libraries can provide the essential support necessary assure enhanced access to research results and limiting any additional publication burdens for authors. Librarians understand the issues and requirements of providing access. NIH includes support for libraries in its indirect costs and these funds could be directed to support for disseminating research results. Finally, this is a significant opportunity for libraries to extend services and be integrated into the research activities of their institutions.

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 question of versions is a red-herring. There are no problems in managing or accessing multiple versions of publications. Libraries have easily provided access to multiple editions of textbooks for generations. The Physics publication site arXiv.org offers access to hundreds of thousands of pre-prints and it is extremely successful.

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 as soon as

they are available. The Physics community has been very success with its pre-print server arXiv.org. Embargos frustrate the ability of authors to be read and the ability of the public to have access to the results of research that the public has funded.

Libraries have much to contribute to resolving the challenges that are outlined in the questions that have been posed by the OSTP. A significant outcome of this discussion would be a clear statement to libraries to respond to the challenges and the opportunities presented by federal commitment to enhance the public's access to scholarly communication.

I appreciate the opportunity to contribute to this discussion.
Wayne J. Peay, FMLA, FACMI
Emeritus Librarian
Spencer S. Eccles Health Sciences Library
University of Utah

Please find attached comments from the Council on Undergraduate Research in response to the OSTP Comment Request Notice on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government.

If you have any questions or cannot read the attached the attached document, please contact me at 202-349-2304 or jcastagna@wpllc.net.

Jennifer Castagna
Vice President
Washington Partners, LLC

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

Attached is a response to the request for information issued December 9, 2009 regarding public access policies for science and technology funding agencies.

Sincerely,
Jeanne E. Boyle
Associate University Librarian for Planning and Organizational Research
Rutgers University Libraries

The Rutgers University Libraries 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.

We appreciate the attention that the Office of Science and Technology Policy is giving to this important issue as well as this opportunity to comment. We support increased public access to scholarly publications resulting from federally funded research, and we fully support the innovative efforts of NIH to ensure public access and encourage OSTP to extend the successful NIH framework to all other science and technology agencies. We know well that the Internet gives us the opportunity to interact with the results of research in fantastic new ways. Now is the time to update national policies so that we are able to take advantage of all the benefits of doing research in a digital world.

The government spends billions of taxpayer dollars to fund research, and the taxpaying public has a right to access and use the results of that research. Research is done to generate discoveries and developments that advance the public good, including work important to the welfare of all individuals in such critical areas as health and the environment. The public also cares about ensuring that the process of research dissemination and use is as efficient as possible to deliver the best return on our investment.

The Rutgers University Libraries provide scholarly resources and services in support of more than 63,000 faculty, students, and staff at Rutgers University and, as a state institution, to numerous independent scholars, alumni, and citizens who use our resources daily. We are also a focus for researchers in the New Jersey pharmaceutical and other industries at a time when shrinking budgets result in closing of hospital libraries and reduced services by pharmaceutical libraries. We are dedicated to the stewardship of scholarly information and the delivery of information services. We select and organize for use purchased and freely available information from outside the university and provide resources created at Rutgers to others through our institutional repository and open access journals that we publish. The university received $268.4 million in federal grants and contracts in FY2009 and has received over $27 million of recovery act grants.

Lack of open access to federally funded research is a real issue for academic libraries and the universities they support. Currently, the only way we can provide access to this information is to subscribe to journals, and the cost of doing so is increasingly prohibitive. The current model of commercial journal publishing is neither stable nor sustainable and is designed to maximize short term profit at the expense of public and long term access to research results. Library collections budgets have not fared well in the past decade. Price increases for scientific and technology journals, whether in print or e-journal format purchased individually or in large databases, have increased in cost at a rate more in line with health care costs than the CPI. No academic library has been able to absorb these price increases fully, and state academic university libraries, in particular, have also experienced a series of annual budget reductions during the past decade. Rutgers University Libraries has canceled well over a thousand journal titles as well as greatly reduced expenditures for the arts and humanities and social sciences in general to cope with the budget situation and to compensate for the purchase of enormously important science and technology publications. In the near future, we will have to rely increasingly on information resources that are available through open access as our subscription base dwindles.

Many of our students search the Internet and find a citation to an article that is perfect for their research, only to have to settle for a less relevant substitute because either the library cannot

subscribe or the student individually cannot afford the prices that publishers charge for each article.

Our faculty researchers are somewhat less stymied because they can sometimes contact colleagues at other universities for scholarly research materials we cannot provide. Researchers' time is so valuable, however, that having to search out research materials in a hit or miss manner rather than in the orderly way in which we could deliver it is wasteful. A researcher at a top pharmaceutical firm was recently unable to have her library request research materials from us because her library has eliminated interlibrary services. Her alternative was to make an expensive trip to one of the Rutgers libraries.

These are just a few examples of how access to the results of publicly funded research is neither equitable nor efficient. We need to democratize access to publicly funded research by revising our national policy. A successful national public access policy should include these elements: 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 six months of publication. Articles should be housed in permanent, interoperable digital archives.

Rapid access to the author's final manuscript is desirable, but eventual public access to the final published version should be mandatory. 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. The scholars and researchers of today stand on the shoulders of those who went before. However, our environment is now dramatically changed. There is more information yet less access, steeper competition but more expense. A new public access policy that includes the requirements we suggest will give us access to more research material. The work of the students, faculty, and other scholars that we serve will benefit in the quality and timeliness of their work. The leading edge of research inquiry and the results that follow will be moved forward more rapidly and more efficiently. In addition, the federally funded work done at Rutgers will be available to researchers and scholars elsewhere more quickly and more easily.

The Rutgers University Libraries facilitate implementation with the NIH Policy by offering deposit through our institutional repository. We assist researchers with understanding their publishing agreements and accept documents that we transport through our repository to NIH on behalf of individual researchers. This collaboration has been enormously worthwhile since it has helped us populate our institutional repository with the results of important publicly funded research and given us experience that will help us collaborate on development of the interoperable repositories that we hope will be required in the new policy. We have read with interest and support the recommendations of the Scholarly Publishing Roundtable, the American Library Association and the Association of College and Research Libraries, the Scholarly Publishing and Academic Resources Coalition (SPARC), and the Association of Research Libraries.

In closing, thank you again for facilitating such a robust discussion of this important new opportunity. We encourage you to follow through on expanding the NIH public access policy to cover all other federal science and technology agencies.

Submitted by,
Marianne I. Gaunt
University Librarian and Vice President for Information Services
Jeanne Boyle
Associate University Librarian for Planning and Organizational Research
Mary Fetzer
Interim Associate University Librarian for Research and Instructional Services
Robert G. Sewell
Associate University Librarian for Collection Development and Management

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Attached is American Institute of Physics response to Office of Science and Technology Policy Request for Information on Public Access Policies of Science and Technology Funding Agencies Across the Federal Government.

Regards,
H. Frederick Dylla
Executive Director & CEO
American Institute of Physics

American Institute of Physics response to Office of Science and Technology Policy Request for Information on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government

On behalf of the American Institute of Physics (AIP), a 501(c)(3) organization, I am writing in response to the December 9, 2009 Federal Register notice soliciting comments on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government. The letter expresses strong support for your efforts to promote a transparent, open federal government and urges you to continue engaging scientific publishers like AIP in the process of drafting public access policies.

As one of the world's largest publishers of physics journals, AIP plays a direct role in advancing research & development in the United States. We maintain a database with more than two million articles from nearly 200 scholarly journals owned by dozens of learned societies—a body of scientific knowledge that we continuously improve and make available to any reader in the world 24 hours a day. Our activities extend well beyond publishing. AIP is also an umbrella organization that represents 10 scientific societies whose membership includes approximately 137,000 scientists, engineers, and educators. Created in 1931, to advance and diffuse the knowledge of physics and its application to human welfare, AIP reinvests its journal revenue back into this community in the form of scholarships, grants, educational outreach, public information, and technological improvements to publishing.

As a publisher, AIP is very concerned about improper public access policies that could potentially threaten the future of scientific and engineering organizations that advance national interests. We believe that a balance may be struck between improving access and sustaining the scholarly publishing industry and the values that it brings to American society. That balance has its underpinnings in certain shared principles such as the importance of peer review, the recognition of economic realities based on adaptable and viable business models, the need to ensure secure archiving and preservation of scholarly information, and the desirability of broad access. One way to achieve this balance is to engage in a sensible, flexible, and cautious approach to drafting public access policies—an approach that engages all affected parties, including federal agencies, scientists, university administrators, librarians, publishers, and the public.

The early fruits of this approach can be found in the January 12, 2010 report issued by the Scholarly Publishing Roundtable, a group convened by the House Committee.

American Institute of Physics response to Office of Science and Technology Policy Request for Information on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government

On behalf of the American Institute of Physics (AIP), a 501(c)(3) organization, I am writing in response to the December 9, 2009 Federal Register notice soliciting comments on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government. The letter expresses strong support for your efforts to promote a transparent, open federal government and urges you to continue engaging scientific publishers like AIP in the process of drafting public access policies.

As one of the world's largest publishers of physics journals, AIP plays a direct role in advancing research & development in the United States. We maintain a database with more than two million articles from nearly 200 scholarly journals owned by dozens of learned societies—a body of scientific knowledge that we continuously improve and make available to any reader in the world 24 hours a day. Our activities extend well beyond publishing. AIP is also an umbrella organization that represents 10 scientific societies whose membership includes approximately 137,000 scientists, engineers, and educators. Created in 1931, to advance and diffuse the knowledge of physics and its application to human welfare, AIP reinvests its journal revenue back into this community in the form of scholarships, grants, educational outreach, public information, and technological improvements to publishing.

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The early fruits of this approach can be found in the January 12, 2010 report issued by the Scholarly Publishing Roundtable, a group convened by the House Committee on Science and Technology to address the broad issues of public access. The report does not recommend any specific regulatory or legislative solution, but instead advocates flexibility for the quickly evolving publishing enterprise and urges that the collaboration of all stakeholders be involved as solutions are developed and implemented.

Results of the Scholarly Publishing Roundtable
Because of my experience as the executive director and CEO of AIP, I was honored to participate in the Roundtable discussions that led to the recent report. The Roundtable made a number of recommendations involving public access policies—calling on OSTP, for instance, to establish its own public access committee to advise it on these issues and, going forward, to monitor the impacts of public access policies.

The report's core recommendation was that each federal agency should develop its own policy for achieving "free public access to the results of the research that it funds as soon as possible after those results have been published in a peer-reviewed journal." To accomplish this, the report calls for agencies to work with OSTP and all other governmental and non-governmental stakeholders to develop their own public access policies.

AIP strongly supports the view that seeking a single, uniform policy or mandate is the wrong approach. One overarching government-wide policy would not accommodate the specific needs of any given agency, the rapidly changing nature of scholarly publishing, or the unique considerations of the various fields of science and the journals that serve them. For example, while the Roundtable recommends that each federal agency should establish a period of embargo between a work's first publication and the date when that article is made available without charge to the public, the Report clarifies that the length of this embargo should be agency and discipline-specific. It should also reflect an appropriate balance between a commitment to public access and the maintenance and orderly evolution of functions among established journals.

AIP also supports the finding of the Roundtable that the Version of Record (VoR) is the version to which free access should be provided. ("If the VoR is not included in a public access database, the article version or reference that is included should contain links back to the VoR on the publisher's site.") This recommendation preserves the integrity of the scholarly record as maintained and preserved by journals and their publishers.

Finally, the report makes the important point that public access policies should foster innovation in the archiving and use of scholarly information. Such innovation can best be done by promoting interoperability among various databases and publication platforms, which cannot be achieved by mandate, but only through collaboration among all parties. Based on my experience with this group, I emphasize the effectiveness of the Roundtable model as a means of gathering parties from all sides of the issue, finding common ground and consensus, and laying the groundwork for finding practical solutions to the challenges of public access.

That is why AIP strongly supports the collaborative process exemplified by the Scholarly Publishing Roundtable. We ask that you consider what effects any public access policy

would have on the scientific publishing industry by explicitly including representatives from our industry in your process. The consultative process begun by the Roundtable needs to continue into the future.

Thank you for the opportunity to comment on the development of an Open Government Directive. Please feel free to contact me for any additional information or discussion.

Sincerely,

H. Frederick Dylla

Executive Director & CEO

American Institute of Physics

I support expanding open access policies for federally funded research across all funding agencies, following the NIH model. As an academic science and engineering librarian, I see first-hand the benefits of having broad access to current research for students and researchers alike. As a public university, our budget has been deeply impacted by the current recession, which means that our library has to reduce our purchases of expensive scientific journals. This unfortunately impacts student education -- students who are attending a university funded with public tax dollars, who need access to research that is also funded by public monies in order to stay up-to-date in their field, cannot get access to that same research because of the high prices charged by commercial scientific publishers. Open access means that more information would be available regardless of economic situation through the medium that people use the most to do research -- the Web.

I am also a contributor to Wikipedia and other Wikimedia Foundation projects. Wikipedia is currently the fifth largest website and the largest single reference work in the world, accessed by millions of people every day to get information about all topics, including current scientific and technical issues. Wikipedia's mission is to provide technically accurate, up-to-date information that is well-referenced so all readers can also find out more about the topics they are interested in. However, many Wikipedia contributors and readers do not have access to the expensive and exclusive university libraries that are currently required to access most technical and scientific information. Instead, they rely on the resources currently available on the Web. Requiring that the results of federally funded research be made available online means that a vast world of up-to-date, reliable and important information would become available for use by Wikipedia and other projects that seek to make technical knowledge accessible to the public. As John Willinsky writes in the journal "First Monday" (itself open access), increasing the availability of open access research citations would increase the quality and educational value of Wikipedia (First Monday, v. 12(3), 5 March 2007).

All federal open access policies should require the following to make them of most use to scientists, students, researchers and internet users:
* Public access should be a requirement across all funding agencies, and agency policies should be coordinated to make them compatible with one another.

* All articles that result from federal funding should be made freely accessible
within no more than six months of publication (ideally less), and housed in widely
publicized archives that ensure permanent public search and retrieval. These
archives should be coordinated with currently available databases of
federally-funded information as well, such as DOE's Information Bridge.
* Articles should be posted in a standard, non-proprietary digital format, such as
XML, in addition to pdf or other common formats; both pre- and post- prints should
be allowed for deposit. Continued project funding should depend on compliance with
these requirements. And all articles should allow full use rights, to make the work
more accessible through a variety of innovative uses.

Thank you for accepting comments on this very important issue, which impacts the
lives of students, researchers, and librarians worldwide.

Phoebe Ayers
Reference Librarian, Electrical Engineering and Computer Science
Physical Sciences and Engineering Library
University of California, Davis

Please see the attached comments from AAAS on public access policies for science and
technology funding agencies across the federal government. Feel free to contact me
if you have any questions.
Best,
Erin Heath
Senior Program Associate
Center for Science, Technology and Congress
American Association for the Advancement of Science

Hello,

Please find the attached comments from the Massachusetts Institute of Technology. Please let
me know if you have any questions.

Thank you,
Claude R. Canizares

Vice President for Research & Associate Provost
Bruno Rossi Professor of Physics

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

Comment for Office of Science and Technology Policy responding to the request for comments on public access policies for science and technology funding agencies across the federal government--
Implementation, Technology, Management

We applaud the Office of Science and Technology Policy (OSTP) for establishing the Public Access Forum and seeking formal comments on how to improve access to the trove of scientific data produced by federally funded or required projects. Digital Antiquity, the organization that we represent participated in the forum portion with a posting on 20 December. Our concern expressed in the comment regarded the importance of including federally-generated archaeological data as one of the kinds of data for which improved access should be considered. We hope to ensure that the public access initiative extends beyond federal agencies that produce research as their primary product. The majority of archaeological research in the United States is performed pursuant to federal projects and undertakings that have other primary objectives, such as water management, natural resource extraction, improvements of the communications, energy and transportation infrastructures, or the conduct of military exercises. However, the archaeological data and research from these projects are essential for improving our understanding of American archaeology and the past human behaviors and cultures of the Americas that can be derived through the appropriate analysis of these data. We emphasize this concern in our comment here, along with other considerations of how access to the research data can be improved. Our comments are organized according to the three general areas that OSTP used in soliciting comments: implementation, features and technology, and management.

Digital Antiquity (http://digitalantiquity.org) is a new organization dedicated to establishing an on-line digital repository of archaeological data and documents. Its primary goals are to expand dramatically access to the digital records of archaeological investigations and to ensure their long term preservation. Based at Arizona State University (where it is sponsored jointly by the School for Human Evolution and Social Change and the Arizona State University Libraries), Digital Antiquity is multi-institutional organization operating collaboratively with the University of Arkansas, Pennsylvania State University, the SRI Foundation, the University of York's Archaeology Data Service, and Washington State University.

Implementation: We wish to ensure that any federal policy and

administrative actions developed out of this initiative to improve public access to scientific data include archaeological data that are produced by federal agencies for the management and protection of archaeological resources for which they are responsible or that are impacted by undertakings that involve federal agencies. We would welcome the opportunity to discuss this matter in more detail and at greater length with OSTP representatives.

Federal agencies annually produce, or require the production of, most of the archaeological research and associated data in the United States. The data from these individual research efforts can be substantial and have addressed important anthropological and historical issues, such as the development of agriculture; the actions ancient human societies took in the face of changing climate; and, interactions among different ethnic groups during ancient times and the historic period. However, the mass of archaeological data from this large overall research effort are not effectively shared, integrated, or utilized by other scientists and scholars.

United States government agencies reported producing or requiring the production of 86,000 archaeological overviews or record searches, 103,000 archaeological field studies, and 518 archaeological excavations during 2008 (http://www.nps.gov/archeology/SRC/index.htm, accessed 18 December 2009). In addition to the National Science Foundation and the National Endowment for the Humanities, nearly three dozen federal agencies conduct or require archaeological research. Agencies with the largest archaeological programs or that fund large amounts of archaeological research include: the Forest Service, the Bureau of Land Management, the National Park Service, the Corps of Engineers, the Bureau of Reclamation, the Federal Highway Administration, the Department of Energy, and the Department of Defense services (see The Goals and Accomplishments of the Federal Archeology Program: The Secretary of the Interior's Report to Congress on the Federal Archeology Program, 1998-2003 for a description of the Federal Archeological Program; http://www.nps.gov/archeology/SRC/index.htm, accessed 18 December 2009).

Much of the archaeological research in the United States results from environmental or historic preservation reviews required by federal statutes, such as the National Historic Preservation Act, the Archaeological Resources Protection Act, or the National Environmental Policy Act. The research typically is organized in relatively small projects focused on specific areas where some kind of environmental impact is expected. Research involves checking these areas to see if archaeological resources exist there, and if they do, conducting

historical and scientific research to determine the significance of the resource. If significant resources are identified and the project cannot be relocated to avoid further disturbance of them, additional research to recover the data that will be destroyed by the planned project is conducted.

Federal agencies already have the legal responsibility (e.g., under federal regulation 36 C.F.R. 79) to require curation of digital data in a form that will be accessible and survive in perpetuity. Yet, despite federal mandates requiring preservation and access to digital archaeological data and collections, the vast majority of data from federal research are difficult or impossible to access. Enforcement of the existing mandates would encourage widespread professional participation. Of course, enforcement presumes repositories that are capable of meeting the existing data access and curation requirements.

Much of the archaeological research data produced by or for federal agencies over the past century exists in technical, sometimes lengthy, limited-distribution reports scattered in offices across the nation. Some of the data that underlie these reports are encoded in computer cards, magnetic tapes and floppy disks degrading in archives, book shelves, file cabinets, or desk drawers, while the technology to retrieve them and the human knowledge to make them meaningful rapidly disappears (Michener et al. 1997).

Rather than systematically archiving computerized information and making it available electronically so that it is useable, museums and other repositories typically treat the media on which the data are recorded as artifacts - storing them in boxes on shelves. Childs and Kagan (2008) report that only a few of the 180 archaeological repositories that responded to their recent survey charge a fee to upload digital data from the collections and records they curated to computers for preservation and access. This implies that the repositories recognized the seriousness of this activity and costs inherent in uploading and providing access, but that they are not able to provide digital access and preservation. Along with Childs and Kagan, we are concerned that the default preservation treatment for digital data used by almost all of the repositories that responded to their survey preserves the digital media, but leaves the data on the media actually inaccessible. Moreover, as computer software and hardware change and as the bits on the magnetic and optical media gradually, but inevitably "rot," the data will be completely unavailable for future research.

We believe that the agencies conducting or requiring archaeological research should ensure that the results of this research, publications, technical and popular reports, and data of various sorts, should be made

more easily accessible. We understand, however, that simply requiring agencies to do something is not very helpful, if these agencies do not have readily accessible means of complying. To that end, we believe the creation of trusted repositories as well as software designed to allow for the successful digital archiving of these materials is crucially important.

Features and Technology: Today, archaeologists in public agencies, private sector consulting firms, and academic settings spend a great deal of time searching for and acquiring relevant archaeological datasets and reports. Once found, more time is required to hunt for key data in volume after volume of hard copy reports that sometimes extend to more than a thousand pages.

The ability to reanalyze existing data can make present-day investigations more productive. Easy and complete access to existing data also reduces the likelihood of costly and unnecessary redundant projects. The ability to identify and integrate existing data that are comparable with new data sets being analyzed provides the opportunity for comparative investigations that have the potential for expanding and extending the scope of knowledge creation.

One example of how money could be saved if easier and wider access to existing archaeological data were available is found in a recent investigation in New Mexico. SRI, a private sector consulting firm, conducted archaeological investigations as part of a federal undertaking in the Loco Hills, a 460 square mile area in southeastern New Mexico. The firm carried out a field survey of 75,000 acres to identify and evaluate archaeological sites within the area and assess the impacts of proposed energy extraction activities to significant archaeological resources. In assessing the results of their field survey, it was learned that about 12,000 of these acres were areas that had been previously archaeologically surveyed. The reason for the re-survey was that the information on what had been surveyed previously was only available in files at the New Mexico State Historic Preservation Office. The state office is years behind in placing information about already investigated area on their statewide GIS. Oil and gas companies, such as the one that funded the Loco Hills investigation as part of their environmental review requirements, find it easier to resurvey plots than to send someone to Santa Fe and go through the paper records. If we estimate the average cost per acre for an archaeological survey at $100, the re-survey of the already investigated portion of the Loco Hills project cost about $1.2M. If such unnecessarily redundant studies occur in 50 other situations, roughly $60M is wasted conducting archaeological field investigations that are not needed. By contrast, entire budget of NSF's archaeology program is only $7.5M annually. This example suggests

that improving the availability and ease of access to archaeological data for environmental compliance activities alone would accrue savings that could fund the bulk of American academic archaeology for 8 years.

In recent years, the National Science Foundation has funded the development of a prototype digital repository for archaeological data, known as the Digital Archaeological Record (tDAR). The digital repository software is being refined and expanded as a part of the Digital Antiquity implementation. Digital Antiquity's repository will encompass digital documents and data derived from ongoing archaeological research, as well as legacy data and documents collected through more than a century of archaeological research in the Americas. The information resources preserved and made available by tDAR will be documented by detailed metadata submitted by the user before uploading the data and documents. Metadata may be associated generally with a project or specifically with an individual information resource (such as a database, document or spreadsheet). In addition to technical and other bookkeeping data, these metadata provide spatial, temporal, and other keyword information that will facilitate other users' discovery of relevant datasets and documents. They also include detailed information about authorship and other sorts of credit that must (as a requirement of the tDAR user agreement) accompany any use of information downloaded from the repository.

For databases and spreadsheets, the metadata include column-by-column descriptions documenting the observations being made including, "coding sheets" that will decode numerical values or string abbreviations associated with the appropriate labels of nominal categories.

tDAR now accommodates databases, spreadsheets, and documents in a limited number of formats. While the digital files are maintained as submitted, they are also-whenever necessary-transformed into a format that can be sustained in the very long term (e.g. translation of Word files into a more sustainable PDF/A format). Planned development includes the expansion of the data and document formats accepted, as well as the inclusion of images, GIS, CAD, LiDAR and 3D scans, and other remote sensing data.

The inclusion of these more exotic forms of data awaits the completion of another component of the Digital Antiquity project, development of "best practices" guidelines for the creation and preparation of metadata descriptions and standards for different sorts of archaeological digital data. These guidelines build on the well-developed guideline series published by the Archaeology Data Services (ADS) in the United Kingdom http://ads.ahds.ac.uk/project/goodguides/g2gp.html.   Julian Richards, Director of ADS, and Fred Limp of the University of Arkansas are leading

the preparation of these guidelines.

Individual repository data sets and documents will be assigned persistent URIs that will provide permanent, citable web addresses. When content is revised, earlier content will be automatically versioned, so that the exact content as of a given date always can be retrieved. Sensitive information, such as site locations, can be restricted to qualified individuals. Investigators also can mark content (notably for ongoing projects) as "private" for a defined period, prior to a public release.

The development of tDAR, an easily accessible archive of digital archaeological data, offers the potential for more efficient and effective background research of past archaeological work, saving time and money for public archaeological management and preservation efforts, as well as for scholarly research. This online archive also will permit broad, comprehensive upgrading of digital data as new platforms for data storage and retrieval develop.

Management: To achieve this potential, we must transform archaeological practice so that the digital archiving of data and the description of metadata necessary to make it meaningful for general searching and access become a standard part of all archaeological project workflows.

Federal agencies can and should play an important role in facilitating this transformation. Agencies with land and resource managing responsibilities (such as, the Forest Service, Bureau of Land Management, Fish and Wildlife Service, National Park Service, Defense Department services, and Tennessee Valley Authority) and agencies with development or licensing responsibilities (for example, the Federal Highway Administration, the Environmental Protection Agency, the Federal Energy Regulatory Commission, and the Corps of Engineers) either fund or require tens of thousands of archaeological investigations annually (see the first section of this comment for references). By including among the requirements in scopes of work for these investigations the digital archiving of documents, data, images, and other products agencies can have a widespread, immediate, and lasting effect on American archaeological research.

Agencies like the Advisory Council on Historic Preservation, the Council on Environmental Quality, and state agencies responsible for archaeological and historic resources in each state (the State Historic Preservation offices established by the National Historic Preservation Act and partially funded by federal grants) also can influence archaeological practice by requiring that final reports of these public

archaeology investigations demonstrate that the digital archiving of the results of the studies has been accomplished before approving any final report, which often is a project requirement.

As noted in the first section of this comment, Federal agencies already have the legal responsibility (e.g., under federal regulation 36 C.F.R. 79) to require curation of digital data in a form that will be accessible and survive in perpetuity. A new policy that promotes wider access to government data will underscore this responsibility. Emphasis will support efforts by archaeologists within the federal agencies to procure funding to support the digital archiving activity.

New policy development, led by OSTP, opening access to federal archaeological data presents an exciting opportunity for advancing knowledge through improved and wider-ranging comparative analysis of archaeological data and easier synthesis of these data. Already developing within the discipline of American archaeology, are mechanisms (such as Digital Antiquity and tDAR) for federal agencies and other public institutions to satisfy their legal mandates and professional responsibilities to provide access to the digital records of archaeological research and to effect long term curation using professional archival practices. These mechanisms will not only store data, but will provide the tools required by archaeologists to identify and access those data. It is anticipated that these mechanisms will enable private sector consulting archaeology firms, public agencies, and academic archaeologists to work much more effectively. It will enormously increase the accessibility - and impact - of the important work that the consulting firms and agencies do in managing, preserving, and protecting America's archaeological record.

 Indeed, widespread digital access to archaeological data of the sort envisioned using tDAR has the potential to transform the practice of archaeology by enabling synthetic and comparative research on a scale heretofore impossible. The moment is right for this initiative. To succeed, however, cooperation and coordination throughout the discipline is needed. Those of us involved in Digital Antiquity look forward to working with OSTP and other organizations through mutually beneficial partnerships to achieve the potential that the is possible.

Francis P. McManamon, Ph.D.   Executive Director, Digital Antiquity
Sander van der Leeuw, Ph.D.   Chair, Board of Directors, Digital Antiquity
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The American Society for Investigative Pathology (ASIP) publishes The American Journal of Pathology (AJP) and co-publishes The Journal of Molecular Diagnostics (JMD) with the Association for Molecular Pathology (AMP). AJP has been published for over 100 years and was commercially
managed until 1992, at which point ASIP assumed the role of self-publisher. JMD was founded in 1998 as a self-published journal, which was a joint venture between ASIP and AMP. We have the experience of successfully managing both journals during revolutionary change, including the commercialization of the internet, web-based journal distribution, online Continuing Medical Education associated with the journals, electronically managed peer review, digital file-based production workflows, programming language changes from SGML and HTML to the NLM-DTD, and user-driven features and functionality only possible through the development of electronic tools and internet accessibility.

As a small biomedical society, ASIP faced significant challenges to continue self-publishing two high-profile pathology journals through this turbulent period. We have 6 staff members working full-time for the journals to manage peer-review and production, and 5 executive staff members contributing a combined total of 2.3 FTEs to manage the day-to-day business and strategic planning for the journals' access and visibility, content and user value, and financial viability. AJP has been the #1 or #2 journal in Pathology (according to ISI rankings) for all of the years ASIP has self-published it. JMD has climbed steadily up the ISI rankings since 2000 and is now #14 in Pathology among 69 journals. We believe our journals are run efficiently and effectively

and their institutional pricing is reasonable. In fact, for the past three years, the journal prices have not been raised, in part to rule out price as a factor in analyzing subscription renewals. Yet subscription renewals declined precipitously in recent years; a period of time coincident with the free access embargo policy of AJP being reduced from 12 months to 6 months. As a consequence, ASIP moved its free access embargo on AJP from 6 months to 12 months in 2009 (the embargo for JMD was and remains 12 months), on both the official journal site on HighWire Press and on the PubMed Central archive.

ASIP shares the concerns and recommendations expressed by our peers in their comments submitted to OSTP. Specifically, we approve of the comments provided to you by the Association of American Publishers, the D.C. Principles Coalition for Free Access to Science, the Association of Learned and Scholarly Society Publishers, and the Federation of American Societies for Experimental Biology. We urge OSTP to fully consider the detailed explanations of important factors thoughtfully outlined by AAP, the Coalition, ALPSP and FASEB in response to OSTP's request for comments.

In reading the nine sets of questions asked by OSTP, ASIP leadership observed that every question assumed a bias toward making peer-reviewed full-text articles open sooner and to worldwide audiences, without what we feel is due consideration for whether that meets the objective of

'maximizing the return on Federal investments made in R & D.' ASIP fully supports this objective, but believes the Federal government is taking a narrow and short-sighted approach to maximizing their return by focusing squarely on free access to peer-reviewed scholarly publications to a

degree that publishers of all types have cautioned will upset the business balance of scholarly publishing now and forever.

As stated in the introduction to the RFI, 'the Administration is exploring ways to leverage Federal investments to increase access to information that promises to stimulate scientific and technological

innovation and competitiveness.' In the series of questions asked by OSTP, we find no connection that will produce evidence of how worldwide access to full-text articles generated by publishers will help the U.S. achieve greater competitiveness and innovation - the fundamental goal of the Administration. The Federal government would be hard-pressed to show how subscription-based access to peer-reviewed scientific literature has truly restricted innovation or how making articles based on NIH-funded research free worldwide helps the U.S. achieve greater competitiveness and innovation. Currently, 56% of published articles in our journals

come from U.S. authors and 70% of our readership is from outside the U.S. This data indicates the U.S. carries a higher relative burden of research funding that benefits the rest of the world. Finally, with generous voluntary changes in access policies by almost every publisher (commercial or society) over the past 10 years, patients and patients' families are getting access to the subscription-based peer-reviewed scientific literature they need. ASIP, along with many publishers, provides special free access of full-text to any patient (or family member) who requires materials for their personal educational use. If OSTP remains concerned about this issue, perhaps patient access exceptions should be dealt with separately, instead of under sweeping regulation with many other consequences.

As this Administration attempts to sincerely address fundamental and pressing concerns, ASIP asks the question we think OSTP needs to answer - what scientific content has the most merit for reaching the goals of innovation and competitiveness and are there technical ways to access that content without upsetting the balance of scholarly publishing? Pathology stands at the crossroads of basic research and clinical translation and we read with great interest a recent article by Daniel Castro of the Information Technology and Innovation Foundation, entitled The Role of Information Technology in Medical Research (http://itif.org/files/2009-it-medical-research.pdf). In his article,
Mr. Castro defines the key elements of biomedical advances as data sources, such as GenBank and caBIG, and data search tools, such as BLAST and Entrez (at NCBI). Mr. Castro rightly refers to the usefulness of publications as merely derivatives of the data. The author describes in some detail the substantial and growing investment in database and search tool development across NIH institutes. Specifically, he notes that NCBI was established by Congress in 1988 to create a national repository for molecular biology information and supports its mission by developing the information systems and software applications needed to store and analyze molecular biology and genetic information. ASIP believes NCBI's greatest contributions to this Administration's goals of innovation and competitiveness would be made by maintaining their focus and funding on these core activities; not on redundant publication and archiving of full-text articles.

Among many conclusions, Mr. Castro makes the following (quoted) points:
-         The United Kingdom is uniquely positioned to benefit from advancements in health informatics research because it is significantly ahead of the United States in its transition to electronic health records among primary care providers.

-         The United States currently lacks the capacity being developed by the NHS (in the UK) to turn its existing or future electronic health records into a usable database for medical research.

-         To address this deficiency, future efforts in the United States to speed adoption of electronic health records systems should include functional requirements to allow the secondary use of medical data for research.

-         Continued funding is necessary to develop the

technical infrastructure and data standards needed to improve data sharing between existing systems.

- The goal should be to develop a national data-sharing infrastructure to support health informatics research, rather than to create isolated, project-specific research databases.

- Many current or proposed projects focus on adding an additional layer of reporting requirements to health care providers to gain access to important patient data rather than simply making all patient data accessible for research.

- A mechanism is needed to allow relevant medical data to be shared for authorized medical research in a timely and efficient manner.

- Safeguards must be in place to protect patient privacy, but these individual protections must be balanced against the potential benefits from research.

- NIH has acknowledged that state and federal laws, including the HIPAA Privacy Rule, may interfere with data sharing.

These points should shock and stimulate a serious call to action by this Administration to focus its efforts in the right areas and not be distracted by policies that detract resources from these concerns. The issues that need urgent attention are not resolved by expanding policies that fund and enable Federal agencies to duplicate the publication of full-text peer-reviewed scientific literature that is already publicly available, if not free.

Finally, ASIP challenges 'free access' publishers, like the Public Library of Science, to prove the viability of their business models without outside grant sources or substantial membership revenues, which are unattainable for most professional societies. Conversely, ASIP would welcome OSTP's private, comprehensive review of our journal operations to more accurately gauge the effects of the NIH policy on a typical scholarly society. We would also welcome inclusion of our members in high-level discussions of how to transition more medical research into clinical success stories and commensurate innovation and competitiveness.

Sincerely yours,
Mark E. Sobel, MD, PhD
Executive Officer

Priscilla Markwood, CAE
Director of Scientific Affairs, Communications and Society Services
American Society for Investigative Pathology

I have submitted the comments shown below to the Public Access Blog but would also like to bring them to your attention on behalf of Joanne G. Angle, Executive Director of the Association for Research in Vision and Ophthalmology (ARVO).

On behalf of the over 12,000 members of the non-profit Association for Research in Vision and Ophthalmology (ARVO) I offer our comments to the OSTP about the Scholarly Publishing Roundtable's Report and the President's mandate for transparency, openness and collaboration in research. ARVO's members are research clinicians and scientists whose focus is to identify methods, practices and devices that will promote eye and vision health and alleviate related diseases by fostering research and publication and dissemination of biomedical and medical research. As such ARVO publishes over 800 peer-reviewed research articles annually and over 6,000 abstracts
of research from its Annual Meeting. Any revenues recognized by its publications are invested in further education of scientists through national and international meetings and dissemination of the information conveyed.

ARVO supports the broad concepts of the Roundtable in terms of the critical role that peer-review plays in maintaining the high quality and editorial integrity of the scientific endeavors of authors and the paramount importance of sustained archives and preservation of data. However, ARVO suggests that there are other alternatives for doing so than the Roundtable suggests. The purpose of an archive is to maintain all articles of record and most publishers are committed to this practice by participating in such programs as LOCKSS, CLOCKSS, arXiv, OCLC, among others.

The Roundtable suggests that federally supported content only be submitted to and archived by federal agencies. This is a costly, incomplete and duplicative solution when publishers participate in the abovementioned programs and are electronically hosted at one of the world's largest scientific sites, such as HighWire Press. It is also crucial that the version (or article) of record (VoR) referred to in the Recommendations be defined by the publisher and that other resources link to that VoR on the publishers' site provided that the site is a "trusted resource" as defined by recognized experts in the field.

Regarding access to articles of record, most publishers have a free and open access policy for articles ranging from 3 months to 12 months after publication of the article of record, as does ARVO. Many publishers have also provided all historical content for their journals at little or no cost to readers, researchers and the public.

ARVO and HighWire have adopted the NLM DTD as a recognized method of ensuring interoperability among sites and encourage others to do so. This interoperability does come with responsibilities: to maintain the scientific integrity of the articles which the authors have entrusted to the journals being paramount. We have serious concerns about the suggested "creative reuse" and the significant potential misuse of content and for copyright infringement, historically a fundamental legal right of authors and publishers.

ARVO supports the Roundtable's recommendations to establish full and open consultation with all stakeholders, as well as with OSTP, to develop appropriate access policies and establish embargo periods that reflect a balance for the scientific discipline. Consideration should be given to the Immediacy Index and the Cited Half-Life of the content in that discipline. With longer half-lives, such as ARVO's journals (over 6 years), the value of the research leading to clinical applications and quality of life and health improvements should be examined and respected.

Establishment of an Advisory Committee to assess growth and changes in scholarly publishing, provide discussion forums for all stakeholders, and an independent evaluation of best practices and policies affecting all is an essential component to this proposal.

Thank you for the opportunity to comment and to participate in this process. ARVO looks forward to continued discussions and participation as a stakeholder representing research scientists around the world.

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I write on behalf of Harvard University in response to the White House Office of Science and Technology Policy request for information "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government." In summary, I strongly support White House action to require and enhance public access to government-funded research. I provide our general recommendations, as well as more detailed responses to several of the nine particular questions that were called out in the RFI below. However, I emphasize that decisions on many of the detailed issues under discussion here and in the other responses to the RFI are secondary to the general principle of requiring public access.
I endorse the view that every federal agency funding non-classified research should require free online access ("public access") to the peer-reviewed results of that research as soon as possible after its publication. There are three simple yet powerful reasons to take such a step. First, taxpayers deserve access to the results of taxpayer-funded research. Second, public access makes research as visible and useful as it can be, maximizing the return on the public's enormous investment in the research. Third, public access accelerates research and all the benefits that depend on research, from public health to economic development.

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

While legislation on public access, which I support, is currently pending in Congress, the executive branch can uniquely take direct action to provide for public access, and can nimbly respond as new technologies and conventions are adopted through applications of the fruits of research keeping new policies current. Even Harvard University, whose library is the largest academic library in the world, is not immune to the access crisis that motivates much of the campaign for public-access policies. In fact, the Harvard library system has gone through a series of serials reviews with substantial cancellations, and further cancellations will undoubtedly occur in the future.

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

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 public access policy will not reduce the need for publishers or the services they perform. It will just prevent the fruits of our large public investment in research from being locked up by publishers that provide access only to paying customers. The NIH policy, for example, does not bypass publishers or peer review. It provides public access to peer-reviewed articles accepted for publication by independent (i.e. private-sector or non-governmental) publishers. Other research-funding agencies in the federal government should follow the NIH policy in this regard.

If publishers believe they cannot afford to allow copies of their articles to be released under a public-access policy, they need not publish federally funded researchers. To date, however, it appears that no publishers have made that decision in response to the NIH policy. Hence, federally funded authors remain free to submit their work to the journals of their choice. Moreover, public access gives authors a much larger audience and much greater impact.

1.   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 public access policy should (1) be mandatory, not voluntary, (2) use the shortest practical embargo period, no longer than six months, (3) apply to the final version of the author's peer-reviewed manuscript, as opposed to the published version, unless the publisher consents to provide public access to the published version, (4) require deposit of the manuscript in a suitable open repository immediately upon acceptance for publication, where it would remain "dark" until the embargo period expired, and (5) avoid copyright problems by requiring federal grantees, when publishing articles based on federally funded research, to retain the right to give the relevant agency a non-exclusive license to distribute a public-access copy of his or her peer-reviewed manuscript.

There are two compromises here to support publishers: (1) the embargo period or delay before the government releases its public-access copy, and (2) the use of the author's manuscript rather than the published edition. For the length of the embargo period, publishers will have the exclusive right to distribute the peer-reviewed text, and for the full term of copyright they will have the exclusive right to distribute the published edition of that text, sometimes called the "version of record" (copy-edited, formatted, paginated, and so on). Of course publishers remain free to allow other kinds of distribution as well, for example, by allowing authors to "self-archive" their articles without delay.

These are compromises because there is a strong public interest in immediate or un-delayed access to the results of publicly-funded research, and a strong public interest in access to the final, published edition of the researchers' results. For more on both, see Questions 6 and 7 below.

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?

Public access helps professional researchers as well as lay readers. It helps professional researchers who don't have access to the same literature through their institutions and it helps lay readers who generally don't have any access at all. (Public libraries rarely subscribe to peer-reviewed research journals.)

It doesn't matter whether many lay readers, or few, are able to read peer-reviewed research literature or have reason to do so. But even if there are many, the primary beneficiaries of a public-access policy will be professional researchers, who constitute the intended audience for this literature and who depend on access to it for their own work.

If the United States extends a public-access mandate across the federal government, then lay citizens with no interest in reading this literature for themselves will benefit indirectly because researchers will benefit directly.

Just last month, the Research Information Network released a report showing that researchers can discover new research more easily than they can access or retrieve it, and that access barriers slow their research, hinder collaboration, and "may well affect the quality and integrity of work produced...."

<http://www.rin.ac.uk/our-work/using-and-accessing-information-resources/overcoming-barriers-access-research-information>

That is the primary problem for which public access is the solution.

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 policy should require public access to the final version of the author's peer-reviewed manuscript. This makes the publisher the sole distributor of the published version, unless of course the publisher has consented to allow author-initiated self-archiving or some other form of distribution. The NIH allows willing publishers to substitute the final published edition for the author's peer-reviewed manuscript in the government repository.

The published edition contains the final (often copy-edited) version of the language. It also contains authoritative pagination. For these reasons, the published edition is preferable for citing a paper or quoting from it. However, for the purposes of advancing research, it is sufficient for

researchers to have access to the peer-reviewed manuscript. Allowing publishers to be the exclusive distributors of the published editions will help protect their business models, and will not harm research; hence, it is an attractive compromise.

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 embargo period (time between publication and public-access) should be as short as possible. Because the public has a strong interest in immediate access, any delay is a compromise, and we should not compromise the public interest any more than absolutely necessary.

The NIH policy allows a 12-month embargo. However, I recommend a maximum six-month embargo, not only for other agencies but for the NIH itself. This is also the position taken by FRPAA. The NIH is the only medical funder in the world with an open access policy allowing an embargo longer than six months. Every other agency without exception caps the embargo at six months: the Arthritis Research Campaign (UK), British Heart Foundation, Canadian Breast Cancer Research Alliance, Canadian Health Services Research Foundation, Canadian Institutes of Health Research, European Research Council, Cancer Research UK, Chief Scientist Office of the Scottish Executive Health Department, Department of Health (UK), Fonds de la recherche en santé du Québec (Canada), Fund to Promote Scientific Research (Austria), Genome Canada, Howard Hughes Medical Institute, Joint Information Systems Committee (UK), Michael Smith Foundation for Health Research (Canada), National Cancer Institute of Canada, National Institute for Health Research (UK), Vetenskapsrådet (Swedish Research Council, Sweden), and the Wellcome Trust (UK).

When the European Research Council adopted its public-access mandate (December 2007), it adopted a six month embargo but added: "The ERC is keenly aware of the desirability to shorten the period between publication and open access beyond the currently accepted standard of 6 months."
<http://erc.europa.eu/pdf/ScC_Guidelines_Open_Access_revised_Dec07_FINAL.pdf>

When the European Heads of Research Councils (EuroHORCs) --representing all the major funding agencies in 24 European countries-- recommended that its members adopt public-access mandates (April 2008), it also recommended that they "reduce embargo time to not more than six months and later to zero."
<http://www.eurohorcs.org/SiteCollectionDocuments/EUROHORCs_Recommendations_OpenA ccess_200805.pdf>

When the Canadian Library Association recommended that Canadian libraries support public-access policies (May 2008), it wrote, "If delay or embargo periods are permitted to accommodate publisher concerns, these should be considered temporary, to provide publishers with an opportunity to adjust, and a review period should be built in, with a view to decreasing or eliminating any delay or embargo period."
<http://www.cla.ca/AM/Template.cfm?Section=Position_Statements&Template=/CM/ContentDi splay.cfm&ContentID=5306>

If embargo periods should be no longer than necessary, then how long is necessary? This is a difficult question, chiefly because it is difficult to choose the most appropriate criteria. Publishers have often suggested that public-access policies should use embargo periods no

shorter than those that publishers voluntarily adopt for themselves. This, at least, is the wrong criterion. Either it presupposes that publishers are already trying to minimize their embargo periods, or it presupposes that funding agencies have the same interests as publishers. Both are untrue.

I am not ready to propose the exact length of the shortest necessary embargo. But I urge that the decision be made in light of this principle: the public interest in shortening delays and the private interests in lengthening delays must each give up something. The public interest bends by allowing some delay (any delay). If we allow publishers the same delays they voluntarily adopt for themselves, then there is no compromise; we simply subordinate the public interest to private interests.

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?

Among the metrics for measuring success, I can propose these: the compliance rate (how many articles that the policy intends to open up have actually been opened up); the number of downloads from the public-access repositories; and the number of citations to the public-access articles. As we use different metrics, we must accept that we will never have an adequate control group: a set of articles on similar topics, of similar quality, for which there is no public access. Publishers sometimes cite downloads from public-access repositories as evidence of harm to them. But downloads are not cancellations, and so far publishers have not shown that increased downloads from public-access repositories correlates with increased cancellations. I recommend that increased downloads be regarded as a sign of success, among other signs. It is a sign of meeting previously unmet demand.

Sincerely,
Steven E. Hyman
Provost

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Dear Sir/Madam:

Attached please find the official comment of the American Psychological
Association (APA) to the OSTP request for comment on the 12/31/08
Federal Register notice entitled, "Public Access Policies for Science
and Technology Funding Agencies Across the Federal Government." Thank you for this
opportunity to contribute our association's experience-based recommendations to this important
matter.

Sincerely,
Ellen G. Garrison, Ph.D. | Senior Policy Advisor
Executive Office

The Ecological Society of America (ESA) is the nation's premier society of professional ecologists. In keeping with its goal of promoting the science of ecology, the Society has, since 1920, published ecological research in journals widely available to the public in libraries and universities. ESA shares the Administration's commitment to a scientifically informed public but cautions that US Public Access policy be crafted carefully so that it will not have a devastating impact on the efforts of scientific societies and nonprofit publishers to sustain scientific research and knowledge dissemination. ESA publishes four of the world's most highly cited journals in ecology and environmental science. Subscription revenue from these journals is crucial to ESA's publishing program. Without it, the Society could not continue to provide the peer-review and editorial services needed to produce high-quality scientific publications. Furthermore, subscription revenue helps to support other Society services, including scientific conferences, education programs, and the distribution of science information resources to policymakers and the public. ESA already offers a great deal of open access content:

☐ The *Bulletin of the Ecological Society of America*
☐ *Issues in Ecology*, a publication series presenting the scientific consensus on prominent environmental issues
☐ A featured article in each issue of the four peer-reviewed journals that ESA publishes
☐ All special issues of *Frontiers in Ecology and the* Environment, *Ecology*, and *Ecological Applications*
☐ The "Reports" section of *Ecology* and the "Communications" section of *Ecological Applications*, both of which contain concise papers on groundbreaking research
☐ *Ecological Archives*, which contains all appendices and supplemental material associated with papers published in the journals, including data sets, methodological and analytical detail, and computer code.

In addition, ESA grants authors permission to post papers on their personal or home institution's websites. The Society also permits liberal use of ESA publications for educational purposes. ESA continues to build its base of open content materials, but maintains that full open-access publishing would not generate the revenue necessary to maintain the high quality for which its publications are renowned. Full open access would provide little incentive for libraries and individuals to continue their subscriptions. The author-pays model, the most commonly cited alternative to subscriptions, has not been shown to cover the costs of publication at a price that is acceptable to authors. Further, this model greatly disadvantages students and other researchers without large grants, including those from less wealthy institutions and nations.
The public access policy of the National Institutes of Health requires that research findings be made available to the public within 12 months of publication. This policy is well suited to fields such as medicine and genetics, wherein the relevance of research declines rapidly with time and publications have a relatively short "half-life." In contrast, ecological research often examines changes that occur over long spans of time; findings frequently have a citation half-life of more than a decade. Papers published in ESA journals may be just as relevant in several years as they

are today, which means that a 12-month delay will do little to mitigate the financial losses that would result from full open access. Furthermore, for journals in fields such as medicine and genetics, much of the revenue comes from advertising, whereas journals in other fields, such as ecology must rely more heavily on subscriptions.

While duly acknowledging the benefits of public access to research findings, ESA urges the Administration to consider open access in terms of its impact on the overall publication process. Robust, peer-reviewed research publications are central to maintaining America's leadership in the sciences, and they are critical tools for policymakers, academics, business leaders, and other stakeholders addressing many of today's most pressing challenges. The public would be ill-served by a policy that impairs the ability of nonprofit scientific societies to publish high-quality journals.
Sincerely,
Katherine S. McCarter
Executive Director and Publisher

Dear Colleagues:

I write as President of the Botanical Society of America, a non-profit scientific society with nearly 3300 members worldwide, and I am pleased to respond to your 9 December 2009 request for public comments on Public Access Policies for Science and Technology Funding Agencies Across the Federal Government.

The BSA, founded in 1893, supports and disseminates botanical research through the *American Journal of Botany*, our newsletter the *Plant Science Bulletin*, and annual scientific meetings. In publishing the journal, we also help to support the development of plant scientists, both in the United States of America and abroad. Both the wide dissemination of research and the professional development of scientists are vital to our mission as a not-for-profit scientific society dedicated to ensuring the health of plant science. These are values we share with many other not-for-profit scientific societies.

As a non-profit scientific society publisher, we are committed to sharing research as broadly as possible. Our research is currently free to scientists from all developing nations through programs sponsored by the World Health Organization and the United Nations: Access to Global Online Research in Agriculture (AGORA); the Access to Research Initiative (HINARI); and Online Access to Research in the Environment (OARE). All articles published in the *American Journal of Botany* are freely accessible through our web site (www.amjbot.org) 12 months after publication. Authors and funding agencies can also provide access to papers accepted for publication as soon as they are available for online publication by paying a modest fee. Our policies also ensure that authors can distribute their published papers and use them freely in teaching without additional charge.

To make these things possible, the Botanical Society of America has invested heavily in electronic systems producing digital versions of the *American Journal of Botany*. These processes have significantly improved the time from submission of research to the date of

publication. Access to research published in the *American Journal of Botany* via the HighWire Press platform is considered the top of the industry.

A federal mandate that required immediate open access to papers published in the *American Journal of Botany* would damage our ability to publish the highest quality research in plant science. Even a mandate that required open access after 6 months poses significant risks to us and to many other non-profit scientific society publishers. Such mandates would require invention of entirely new models of scientific publishing if the results of scientific research are to be made widely available in easily searchable forms that ensure long-term archival access. Professional librarians recognize that non-profit scientific society publishers publish excellent journals at relatively low cost, make the contents of those journals freely available after periods that allow them to recoup their expenses, and foster the development of new generations of scientists. A federal mandate requiring open access to published articles less than 12 months after they have appeared threatens those valuable contributions, unless such mandates are accompanied by significant new federal funding to agencies funding scientific research.

While there is much to recommend the public archiving model adopted by the National Institutes of Health, it may not be appropriate for other fields of scientific research. A model that works well for biomedical science may not work well for physics, chemistry, mathematics, engineering, or environmental biology. Each of these fields has different traditions, different professional society organizations, and different publishing models. A single model will not serve them all.

The *American Journal of Botany* does not charge authors for publication. Although authors have the option of paying a fee allowing immediate access, it is rarely used. Both the funding of botanical research and the immediacy of its results are very different from those of biomedical fields. Many prominent scientists pursue significant parts of their research without the benefit of federal funding, and those who do receive federal funding typically receive smaller awards than our colleagues in biomedical fields. Moreover, research findings in plant sciences are often referred to for several decades after first being reported, and new advances rarely depend on access to results published in the last six months. Assuming that a publishing model appropriate for biomedical research also applies to research in the plant sciences would undermine our ability to disseminate the results of botanical research and to support the training of new scientists.

On behalf of the Botanical Society of America, I am pleased to endorse your efforts to ensure the broadest possible access to the results of scientific research. The Botanical Society of America and many of our non-profit scientific society colleagues have already adopted policies designed to further that goal. We look forward to working with you and your colleagues in various federal science-funding agencies as you develop policies intended to consolidate these advances.

Thank you for your time and consideration.

Sincerely yours,
Kent E. Holsinger, President
Botanical Society of America

I appreciate having the opportunity to provide input concerning the issue of public access to information resulting from taxpayer-funded research. I fully support providing public access to information resulting from taxpayer-funded research, not just research funded by NIH but also

by the other federal agencies that would be covered by the Federal Research Public Access Act if it becomes law.   Many comments have already been made about the advantages of public access to scientific information, so I'll just add a few of my thoughts on this issue.

The subscription-based system of scholarly communication is an inefficient system with many barriers to accessing information, access to information under this system is very expensive and unnecessarily complex, and the system limits information access for many researchers and the public throughout the world. Currently, a large portion of the information generated through NIH-funded research during the 38 years that I've been an academic health sciences librarian is contained in journals owned by a small number of publishing conglomerates (most of which are not even in the US). These conglomerates determine if and when we can access the information and how much we have to pay to do so. I find this unacceptable.

The PubMed Central repository provides:

*   Long-term preservation of journal articles in a standard format

*   Easy accessibility to NIH-funded research results, not only for
researchers, but for clinicians, educators, students, and the public

*   Interoperability - integration of articles with other information
resources, such as sequence databases

*   More efficient NIH portfolio tracking and analysis

Regardless of what publishing models exist now or will be developed in the future, the requirement of the NIH Public Access Policy that articles be made publicly available in PubMed Central within 12 months of publication will ensure that information is available as needed.

Also, I just finished reading the Report and Recommendations from the Scholarly Publishing Roundtable, a group which was convened by the Committee on Science and Technology of the US House of Representatives. I think that basically this report just supports the status quo and voluntary cooperation between the stakeholders. Some things that particularly concern me are the following recommendations:

*   that agencies establish specific embargo periods for the release of journal articles (why should there be embargo periods for information which was generated by tax-supported research?)

*   that "every effort" should be made to have the Version of Record as the version of an article to which free access is provided (I think the VoR should be freely available), and

*   that agencies extend the reach of their public access policies through voluntary collaborations with non-governmental stakeholders (voluntary collaborations haven't worked well in the past - why would the future be any different?). I think the report does little to promote any significant changes or improvements in the current system of scholarly communication.

Mary L. Ryan
UAMS Library Director

The American Astronomical Society (AAS) is the major association for professional astronomers in the United States, with over 7500 members. One of its primary functions is the publication of the key North American scientific journals dedicated to the dissemination of peer-reviewed research in astronomy and astrophysics, the Astrophysical Journal and the Astronomical Journal. In the 1990s, these journals exerted a leadership role in the transition to electronic publishing. As a society of research and higher education professionals, we have made a concerted effort to conduct our scholarly publishing enterprise with sensitivity to and balance among the need for prompt access to new results with a low barrier, the pressures on the budgets of technical libraries, and the challenges of obtaining grant and institutional funding to support author fees. We have struck this balance in several ways:
• Very low subscription costs to individuals for electronic content.
• Acceptable institutional subscription rates, appropriate for a not-for-profit scholarly publisher.
• Nearly even distribution of revenue between institutional subscriptions and author charges.
• Limited proprietary period before full public access is granted.
• Granting of rights to authors for use of their published material to meet professional needs and institutional obligations.

This approach has allowed the Society to maintain the integrity of its editorial and peer review processes, critical for the maintenance of quality and integrity in the dissemination of scientific results. We are unaware of substantial dissatisfaction among professionals or the general public with the modes we currently use for disseminating astronomical information.

In this context, the AAS offers comment in response to the OSTP request for information. We acknowledge the potential benefits of increasing public access to scholarly publications and as a publisher, will cooperate with the policies emplaced by the agencies that fund astronomy research. We strongly support the approach that all stakeholders be engaged in the formulation of such policies. Further, we endorse the recommendation of the Scholarly Publishing Roundtable that embargo periods be established between publication and public access that are discipline-specific. Our Society strives to maintain an adaptable business model, but an abrupt devaluation of subscriptions has consequences for researchers and for their funding.

Maintaining a proprietary period for published articles, however limited, is an acknowledgement of the value and importance of subscriptions for maintenance of quality editing and peer review.
These points are crucial. The matter of the length of the proprietary period and the importance of all forms of quality assurance are addressed in the RFI (questions 6 and 7). Question 7 asks at what point in time peer-reviewed papers should be made public via a public access policy. Our

view is that the appropriate length of time varies from discipline to discipline. The length of time that large-scale repositories of digital journals have existed is not long enough compared with reasonable embargo times for there to be sufficient data to draw a meaningful objective conclusion, in our opinion. The proprietary period for AAS journals is currently 24 months; it could probably be reduced to 12
months without significant loss of perceived value in subscriptions, but this is a judgment on the Society's part and is not based on analysis of any particular data. A mandate to convert all AAS journals to full open access with no subscription revenue could be successfully accommodated only through the cooperation of the agencies that support astronomy research in revising their current approach to funding publication of results. The quality controls that modern publishing procedures provide are fundamental to good scholarship. On the question (6) of which version of the paper should be made public –

The AAS strongly recommends that the version of record – that is, the accepted manuscript after copyediting – is the version that should be made available.
If the public, now and in the future, is truly to benefit from these particular scholarly assets, they must be able to access articles that have been fully subjected to all the quality assurances that guarantee good scholarship. The version of record for AAS journals is the *digital* version, not the print or the digital surrogate of the print. Modern scholarly articles are complex. A significant fraction of AAS journal articles contain digital-only (online-only) materials that our editors, reviewers, and authors deem to be essential to the communication of research results. A PDF depository would provide incomplete articles, and that would not serve the public in the long term, nor would it satisfy the aims of the administration's open government initiative.

We urge the OSTP to ensure that any repositories that the US government endorses for the purpose of public access be capable of delivering complex digital research reports.
Sincerely yours,
John P. Huchra
President, AAS

Kevin B. Marvel
Executive Officer, AAS

Chris Biemesderfer
AAS Director of Publishing Chair

Richard F. Green
AAS Publications Board

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 crossdisciplinary 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

Thank you for the opportunity to submit comments on Public Access to Federally Funded Research, and many thanks to OSTP for its interest in this topic and the time it is taking to explore all sides of the issue. As a research librarian I personally support enhanced access to federally funded
research because such policies are integrally tied to and support the mission of higher education and scholarly communication in general, and more specifically the mission of the University of Colorado at Boulder. For the University, extending public access policies to federally funded research to
other science and technology agencies enables scientist here and beyond, including citizen scientists, to build upon existing information and research and to approach research issues with new perspectives; particularly during these times of fiscal restraint, it allows our faculty and students
to have access to essential resources previously unavailable, without regard to geography or fiscal wherewithal; and for the general public (whom we serve here at the University), such policies would guarantee equal access to information resources for personal and professional use (resources that have already been funded by the public).

The policies under discussion here should be based on:

.   Retention of peer review as related to high impact scholarship and
editorial integrity;

.   Adaptable and flexible business models for scholarly communication
and public access;

.   Broad public access to scholarly publications;

.   A bias for archiving and preservation to ensure sustained
publishing methods;

.   Interoperability among all access/delivery systems to ensure use
and reuse of scholarly publications;

In order to move to a robust policy environment regarding enhanced access to federally funded research, I suggest that the Obama Administration should issue an Executive Order (while working with congressional leaders on a legislative approach), mandating that all grantees who receive federal funds from an agency be required to deposit the final published version of each peer-reviewed journal article (or electronic manuscript of the article) in a publicly accessible digital repository. As a result of the Executive Order, all federal agencies would be expected to:

.   Work with OSTP to develop their public access policies;

.   Establish embargo periods between 0 and 6 months from the date
when articles are published, to the date when they are made publicly
accessible (consistent with existing policies in Canada, the European Union
and the United Kingdom);

.   Develop robust standards for the structure of full text (standard
mark-up language, e.g. XML), metadata, navigation tools, etc. to achieve
robust interoperability and reuse across the deposited scholarly record;

.   Address version control regarding deposited articles as related to
version-of-record;

.   Establish protocols for interagency collaboration re public
access, and collaboration with publishers, universities (and their
libraries) and other entities that steward and provide access to the results
of funded research;

.   Encourage innovative research on the use of scholarly
publications;

.   Address long-term digital preservation of scholarly publications
as related to the agency's public access repository;

.   Work with other agencies to share the cost of policy and
repository development;

.   Work with OSTP to establish mechanisms to monitor and evaluate
agency policies, procedures and practices re public access to federally
funded research;

.   Work with OSTP to develop a meaningful feed-back mechanism with
the scholarly community once policies are developed in order to stay abreast
of the changing nature of scholarly communication;

In closing, I would like to thank OSTP again for facilitating the discussion
on this timely and critical issue; moreover, here's hoping that OSTP will
follow-through on expanding the successful NIH public access policy to cover
all other federal science agencies.

Thank you for your consideration.
James F. Williams, II.
Dean of Libraries
University of Colorado at Boulder

Introduction

IOP Publishing is a leading international scientific publisher and one of the largest publishers of physics and related content. We are a not-for-profit organisation wholly owned by the Institute of Physics, a learned society and professional body for physics in the UK. Any surplus from the publishing activity is invested back into the physics community through the society's charitable work devoted to increasing the practice, understanding and application of physics. The Institute's publishing activity dates back to 1874 and is a vital tool supporting a leading communicator of physics-related science to all audiences, from specialists through to government and the general public.

IOP Publishing published 65 international peer reviewed journal titles in 2009, over half of which were produced in partnership with 20 other eminent learned societies and organisations worldwide. We also publish 3 magazines and a number of websites dedicated to supporting the society's aim to disseminate information to different audiences and provide both a valuable information source and an international forum within which community members can share and exchange their views (see http://publishing.iop.org/communities/). Many of our journals are amongst the most highly cited in their fields and over 10% of our journal Impact Factors in 2008 were over 5 and 20% were over 3. The range of journals covers a wide variety of business models, from the traditional subscription model to fully open access.

As a society publisher we have been at the forefront of responding to the researchers' requirements in electronic dissemination with *Classical and Quantum Gravity* being the first physics journal with full text to be available via the web and *New Journal of Physics* launched in 1998 as the first open access, general physics journal. On the majority of our titles we already offer free access to all the new journal content for a period of 30 days from online publication and many of our fast track communication articles are freely available to read. Our authors, referees and readers are international and we provide a constructive, fair peer review process for the communities we work with either by directly managing the peer review process within the publishing office or by supporting our partners. The journals are highly respected and we invest a great deal of time and effort to ensure that the high standards are maintained, both in the peer review process and in the production of the final version of the article.

IOP Publishing headquarters is based in Bristol, UK and employs around 250 people. We also have staff based in Philadelphia, Washington D.C., Beijing, Tokyo, Moscow, St Petersburg, Munich and Berlin. In the USA we employ 24 staff across the two offices.
IOP Publishing Response to OSTP

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 current system which has taken many years to develop is an established and balanced system in which each contribution from author, publisher, university, library, and funder plays

its part. The key roles undertaken by the publisher on behalf of the scholarly community, traditionally and more than ever in the electronic era, are:

☐ *Registration*: establishing the author's precedence and ownership of an idea
☐ *Dissemination*: communicating the findings to its intended audience
☐ *Certification*: ensuring quality control through peer review and rewarding authors
☐ *Archival record*: preserving a fixed version of the paper for future reference and citation; and maintaining it dynamically when appropriate.

The ecosystem works well. We would be concerned that a general public access policy without prior research into the effects of change could be detrimental to science. If scientists as well as the public can access formal published articles (as opposed to research findings) with no payment by anyone, then scholarly publishers will no longer have funds to perform their roles in the processes required of them by those scientists. The very survival of journals would be threatened, to everyone's ultimate disadvantage.

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?
We believe that the requirements of those who want to read our material are already met by existing means of distribution and licensing. For ten years IOP Publishing has offered free access to much of its published content for 30 days from publication. We have seen no evidence of the content being used by anyone outside the scholarly research community.

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 the peer-reviewed publications are almost exclusively from academia or from within scientific research groups in industry. Access is generally through the publisher's website. In our case almost all researchers who need access to IOP published articles for their work have such access, through arrangements facilitated by their libraries. We do not believe that others, for example in the general public, would use the papers if they were publicly accessible. Let us stress there is nothing confidential or restricted in the content we publish. The information is all "free" in the sense of freedom of scientific information (in French, *libere*). But it cannot be free IOP Publishing of charge (*gratuit*). Opening it all up publicly would undermine and quickly terminate its scholarly role, without any benefit to the public.

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?
Currently in Europe the PEER project (Publishing and the Ecology of European Research, http://www.peerproject.eu/) is aiming to answer this question in an evidence-based manner. IOP Publishing is participating. The project will show, inter alia, the extent to which the public takes advantage of the open availability of research articles, and the effects of such availability on the scholarly ecosystem.

Question 5. What features does a public access policy need to have to ensure compliance?
We do not think a public access policy is required, but if there were to be one there needs to be a very clear funding mechanism to enable publishers to recover the costs for producing the version of record so that they can perform their functions as listed above.

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?
We do not think a public access policy is required but if one is considered then it should not be to the archival version of the paper, for the reasons already given – that is, that such access would quickly make journals non-viable. Suggestions that an earlier version could be made available are currently being tested, for example in the PEER project. Of course other outputs from research such as the investigator's reports to the funding agency might be publicly available.

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 releasers 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?
Currently in Europe the PEER project is aiming to answer this question in an evidence-based manner. IOP Publishing is participating. The project will show, inter alia, the extent to which the public takes advantage of the open availability of research articles, and the effects of such availability on the scholarly ecosystem.

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 maximise public benefit? How are these anticipated to change?
We do not think a public access policy is required, but if there were to be one there needs to be a very clear funding mechanism to enable publishers to recover the costs for producing the version of record so that they can perform their functions as listed above. If peer-reviewed papers were to be made publicly available we suggest they should remain on publishers' sites and linking arrangements be put in place. Publishers could make appropriate arrangements with government for their use.

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?

It is clear that papers intended for a scholarly audience are seldom readily understood by the non-specialist. In some circumstances publishers produce additional explanatory information in press information, magazines and websites. It must be noted that this adds further costs. In relation to metrics, we have already referred to the PEER project which seeks evidence on potential public access.

Summary
In our experience access is not an issue. We already have near universal access for those who want access. There seems to be no demand from the general public to access our material. But if government were to mandate free of charge access, those who currently pay might cease to pay which would undermine the publishers' revenue source and ultimately the viability of the journals and the peer review process itself. In our view meaningful public information and usability might be better achieved through the deposit of the investigator's project reports and data rather than the final paper. Let us finally note that "freedom" of information, which is rightly prized among many
freedoms in the American constitution, in the sense of liberty, is not the same as free-of-charge. *Libere* is not the same as *gratuit*. A newspaper that one can freely read and quote in a free society may reasonably charge a purchase price. We believe passionately in the "free" availability and exchange of scientific information, in the sense that it must not be constrained by censorship. Our own journals are read in almost every country of the world including many whose politics we do not share. But we know that formal published material cannot be given away without its costs being met, or it will cease to exist.

BEFORE THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

IN THE MATTER OF PUBLIC ACCESS POLICIES FOR SCIENCE AND TECHNOLOGY FUNDING AGENCIES ACROSS THE FEDERAL GOVERNMENT

Docket No. E9-29322

COMMENTS OF NETCOALITION

NetCoalition serves as the public policy voice of some of the world's most innovative Internet companies, including Amazon.com, Ask.com, Bloomberg, eBay, Google, Wikipedia, and Yahoo!. NetCoalition welcomes the opportunity to respond to the Office of Science and Technology Policy's December 9, 2009, request for comment on public access policies for science and technology funding agencies. NetCoalition strongly supports the Administration's objective of enhancing the public's access to scholarly publications resulting from research funded by federal agencies. It appreciates the Administration's dedication to maximizing the return on federal investments in research and development. It agrees that increasing access to the results of government-funded research will stimulate scientific and technological innovation and competitiveness.

NetCoalition has long supported public access to the results of federally funded research. It urged Congressional adoption ofthe public access policy ofthe National Institutes

ofHealth (Nlli), and it opposed legislative efforts to undermine that policy. Similarly, NetCoalition endorsed enactment ofS. 1373, the Federal Research Public Access Act of2009 (FRPAA). In an August 12, 2009 letter to Senators Lieberman and Cornyn, we stated:

> It is the mission ofNetCoalition companies to help their users locate and access the information they need. FRPAA furthers this mission by placing valuable publicly funded research in an online location where search engines operated by NetCoalition members can index and link to it. FRPAA thus simultaneously assists the broad dissemination of important scientific information and promotes the growth of the Internet.

Below we respond to some of the questions contained in the December 9,2009

Request for Public Comment:

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?
Search engines operated by NetCoalition members index and link to peer-reviewed papers hosted on publicly accessible websites. Since its adoption, the NIHpolicy has increased the number ofsuch papers. Expanding public access to research papers funded by other federal agencies will significantly increase the number of research papers available to be indexed by NetCoalition members. While specialists will know many of the websites that will host research papers in their own field, general purpose search engines operated by NetCoalition members probably will be the primary means used by specialists to find papers in related fields. Moreover, the general public will almost certainly rely on our search engines to locate relevant research papers.
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 companies in NetCoalition are secondary publishers, users of scientific literature, and members of the public. Our needs and interests would be best accommodated by a public access policy with the following characteristics: If a research paper accepted for publication in a peer-reviewed journal results from research supported in whole or in part by the federal government, the author must submit to the federal government the final published version of the research paper;

• 	The submission ofthe paper must occur as soon as the paper is deemed ready for publication by a peer-reviewed journal;

• 	The paper must be submitted in a standardized, fully searchable digital format;

• 	The paper must be stored in an interoperable digital repository operated or approved by the federal government;

• 	The repository must make the paper publicly accessible for free via the Internet immediately upon publication ofthe paper in the peer-reviewed journal; and

• 	The repository must allow linking, full text searching, data-mining, and digital downloading ofthe paper.

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?

Historically, the users of peer-reviewed publications have primarily been people affiliated with institutions that subscribed to the peer-reviewed publications, such as universities, government agencies, and large corporations. Access has begun to increase because of the emergence of open access peer-reviewed journals, the public access policies of NIH and other funding entities in the U.S. and abroad, and researchers posting their papers on their personal and organizational websites, but the audience is still unnecessarily limited. For example, while large technology companies often subscribe to peer reviewed journals directly relevant to their research and development, because of budget constraints, they usually do not subscribe to all journals of potential interest in related fields. Engineers and scientists in these companies are forced to conduct research with partial blinders on, seeing only what is directly before them and missing the potential interdisciplinary connections and the broader context that full access can provide. Access to papers resulting from Federally-funded research would give these engineers and scientists a wider, more interdisciplinary perspective, which in turn could accelerate innovation in unexpected directions. Additionally, the Information Revolution has democratized research to an unprecedented degree. An individual with a laptop and a broadband connection has the capability of developing software solutions to extremely complex problems, provided that he has access to data and know-how developed by others. These software solutions can lead to the birth of new companies, or can hasten the rate of product-development by existing companies. Public access to the results of government-funded research would dramatically increase the set of building blocks for these independent developers.

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?

4. Federal agencies should condition the grant of research funds on the grantee providing the federal government with a non-exclusive license to distribute the peer-reviewed paper developed with those funds over the Internet upon the paper's publication. The license to the federal government should include the right to sublicense the paper to search engine first and secondary publishers. The grant agreement should also contain a requirement that the grantee deposit a searchable digital copy of the paper with a repository operated or approved by the funding agency.

5. What features does a public access policy need to have to ensure compliance? Compliance will be ensured ifa grant agreement includes a non-exclusive license to the agency, as well as a requirement that the grantee provide the agency with a digital copy ofthe paper. The low compliance rate that the Nlli experienced when it had a voluntary public access policy in place for three years offers ample evidence that a only a mandatory requirement will lead to true public access.

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?

Ideally, public access policies should mandate the public availability of the final published version of research papers rather than the peer-reviewed manuscript accepted for publication. This would ensure uniformity for purposes of citation and reference. Even though the publisher is not a party to the grant agreement between the funding agency and the grantee, the funding agency could still use the grant agreement mechanism to obtain a non-exclusive license to any copyrightable expression the publisher might add to the paper. The funding agency could require the grantee: a) to publish the paper only in an open access journal; or b) to condition the assignment of the copyright to the publisher on the publisher providing the funding agency with a nonexclusive license to disseminate the paper. Additionally, the funding agency could require the grantee to condition the assignment of the copyright to the publisher on the publisher providing the grantee with a copy of the final published version of the paper in a searchable digital format as soon as the paper has been published.

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 research paper should become publicly accessible upon publication by a peer-reviewed journal. There should be no embargo period. Because a given issue of a peer-reviewed journal likely will include material not subject to a public access policy *(e.g.,* articles that did not result from federal funding, book reviews, and editorials), institutions will still subscribe to peer-reviewed journals even if the federally funded research papers are available upon publication. Moreover, to the extent that some institutions may subsequently cancel some of their journal subscriptions, publishers need to adapt to the digital environment. Journal publishers have received literally hundreds of billions of dollars of subsidies in the form of free content created at taxpayer expense. In the past, these subsidies may have been warranted because of the high costs of printing and distribution borne by the publishers. Digital technology and the Internet have brought these costs down, thereby obviating the need for the subsidy.

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 discussed in response to question 2 above, the papers should be submitted to the funding agencies in a standardized, fully searchable digital format appropriate to the scientific publishing arena. The papers should be stored in a permanent, open digital repositories operated or approved by the federal government, which should make the papers publicly accessible for free via the Internet upon publication of the papers in the peer-reviewed journal. These repositories must be also fully interoperable, allowing seamless linking, search, data mining, and retrieval of articles stored in them. Solid standards for encouraging interoperability such as the Open Archives Initiatives (OAI) protocols should be considered.

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?

As discussed above, the paper should be stored in a repository operated or approved by the federal government, which should make the paper publicly accessible for free via the Internet upon publication of the paper in the peer-reviewed journal. The repository should allow full text search and digital download of the paper. The availability of these papers in digital formats creates a new resource that all stakeholders, regardless of their location or affiliation, can access and utilize in new ways. The ability to access and read this layer of information that had previously limited availability provides significant added value, but the ability to actually use it in new ways adds even more value. If articles are made openly available in standard digital formats, it will encourage the application of new text mining, data mining, and computation techniques, opening up rich new pathways for searching, locating, and contextualizing the information they contain, greatly facilitating the prospect of new discoveries and innovation in all sectors.
Markham C. Erickson Holch & Erickson LLP and Executive Director NetCoalition

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I strongly endorse the submitted comments of the Scholarly Publishing and Academic Resources Coalition (http://bit.ly/7S4sg1).

In further considering this matter, the Office of Science and Technology Policy may find the following open access Digital Scholarship publications to be helpful:

1. Open Access Bibliography: Liberating Scholarly Literature with E-Prints and Open Access Journals (http://bit.ly/5dwH8o)

2. Institutional Repository Bibliography (http://bit.ly/B0Xsf)

3. Electronic Theses and Dissertations Bibliography (http://bit.ly/1eyLv5)

4. Scholarly Electronic Publishing Bibliography (http://bit.ly/GdDqp), especially sections 7 and 9.

Thank you for this opportunity to comment.
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Best Regards,
Charles

Charles W. Bailey, Jr.
Publisher, Digital Scholarship

As one involved in the open-access policy discussions at Harvard this year, I write to endorse the comment submitted earlier today by Harvard University. I reproduce it here. At the end, I add a few additional points of my own.

---------- (Beginning of Harvard comment)
We write on behalf of Harvard University in response to the White House Office of Science and Technology Policy request for information "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government." In summary, we strongly support White House action to require and enhance public access to government-funded research. We provide our general recommendations, as well as more detailed responses to several of the nine particular questions that were called out in the RFI below. However, we emphasize that decisions on many of the detailed issues under discussion here and in the other responses to the RFI are secondary to the general principle of requiring public access.

We endorse the view that every federal agency funding non-classified research should require free online access ("public access") to the peer-reviewed results of that research as soon as possible after its publication. There are three simple yet powerful reasons to take such a step. First, taxpayers deserve access to the results of taxpayer-funded research. Second, public access makes research as visible and useful as it can be, maximizing the return on the public's enormous investment in the research. Third, public access accelerates research and all the benefits that depend on research, from public health to economic development.

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

While legislation on public access, which we support, is currently pending in Congress, the executive branch can uniquely take direct action to provide for public access, and can nimbly respond as new technologies and conventions are adopted through applications of the fruits of research keeping new policies current.

Even Harvard University, whose library is the largest academic library in the world, is not immune to the access crisis that motivates much of the campaign for public-access policies. In fact, the Harvard library system has gone through a series of serials reviews with substantial cancellations, and further cancellations will undoubtedly occur in the future.

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

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 public access policy will not reduce the need for publishers or the services they perform. It will just prevent the fruits of our large public investment in research from being locked up by publishers that provide access only to paying customers. The NIH policy, for example, does not bypass publishers or peer review. It provides public access to peer-reviewed articles accepted for publication by independent (i.e. private-sector or non-governmental) publishers. Other research-funding agencies in the federal government should follow the NIH policy in this regard.

If publishers believe they cannot afford to allow copies of their articles to be released under a public-access policy, they need not publish federally funded researchers. To date, however, it appears that no publishers have made that decision in response to the NIH policy. Hence, federally funded authors remain free to submit their work to the journals of their choice. Moreover, public access gives authors a much larger audience and much greater impact.

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 public access policy should (1) be mandatory, not voluntary, (2) use the shortest practical embargo period, no longer than six months, (3) apply to the final version of the author's peer-reviewed manuscript, as opposed to the published version, unless the publisher consents to provide public access to the published version, (4) require deposit of the manuscript in a suitable open repository immediately upon acceptance for publication, where it would remain "dark" until the embargo period expired, and (5) avoid copyright problems by requiring federal grantees, when publishing articles based on federally funded research, to retain the right to give the relevant agency a non-exclusive license to distribute a public-access copy of his or her peer-reviewed manuscript.

There are two compromises here to support publishers: (1) the embargo period or delay before the government releases its public-access copy, and (2) the use of the author's manuscript rather than the published edition. For the length of the embargo period, publishers will have the exclusive right to distribute the peer-reviewed text, and for the full term of copyright they will have the exclusive right to distribute the published edition of that text, sometimes called the "version of record" (copy-edited, formatted, paginated, and so on). Of course publishers remain free to allow other kinds of distribution as well, for example, by allowing authors to "self-archive" their articles without delay.

These are compromises because there is a strong public interest in immediate or undelayed access to the results of publicly-funded research, and a strong public interest in access to the final, published edition of the researchers' results. For more on both, see Questions 6 and 7 below.

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?

Public access helps professional researchers as well as lay readers. It helps professional researchers who don't have access to the same literature through their institutions and it helps lay readers who generally don't have any access at all. (Public libraries rarely subscribe to peer-reviewed research journals.)
It doesn't matter whether many lay readers, or few, are able to read peer-reviewed research literature or have reason to do so. But even if there are many, the primary beneficiaries of a public-access policy will be professional researchers, who constitute the intended audience for this literature and who depend on access to it for their own work.

If the United States extends a public-access mandate across the federal government, then lay citizens with no interest in reading this literature for themselves will benefit indirectly because researchers will benefit directly.
Just last month, the Research Information Network released a report showing that researchers can discover new research more easily than they can access or retrieve it, and that access barriers slow their research, hinder collaboration, and "may well affect the quality and integrity of work produced...."

http://www.rin.ac.uk/our-work/using-and-accessing-information-resources/overcoming-barriers-access-research-information

That is the primary problem for which public access is the solution.

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 policy should require public access to the final version of the author's peer-reviewed manuscript. This makes the publisher the sole distributor of the published version, unless of course the publisher has consented to allow author-initiated self-archiving or some other form of distribution. The NIH allows willing publishers to substitute the final published edition for the author's peer-reviewed manuscript in the government repository.

The published edition contains the final (often copy-edited) version of the language. It also contains authoritative pagination. For these reasons, the published edition is preferable for citing a paper or quoting from it. However, for the purposes of advancing research, it is sufficient for researchers to have access to the peer-reviewed manuscript. Allowing publishers to be the exclusive distributors of the published editions will help protect their business models, and will not harm research; hence, it is an attractive compromise.

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 embargo period (time between publication and public-access) should be as short as possible. Because the public has a strong interest in immediate access, any delay is a compromise, and we should not compromise the public interest any more than absolutely necessary.

The NIH policy allows a 12-month embargo. However, we recommend a maximum six-month embargo, not only for other agencies but for the NIH itself. This is also the position taken by FRPAA. The NIH is the only medical funder in the world with an open access policy allowing an embargo longer than six months. Every other agency without exception caps the embargo at six months: the Arthritis Research Campaign (UK), British Heart Foundation, Canadian Breast Cancer Research Alliance, Canadian Health Services Research Foundation, Canadian Institutes of Health Research, European Research Council, Cancer Research UK, Chief Scientist Office of the Scottish Executive Health Department, Department of Health (UK), Fonds de la recherche en santé du Québec (Canada), Fund to Promote Scientific Research

(Austria), Genome Canada, Howard Hughes Medical Institute, Joint Information Systems Committee (UK), Michael Smith Foundation for Health Research (Canada), National Cancer Institute of Canada, National Institute for Health Research (UK), Vetenskapsrådet (Swedish Research Council, Sweden), and the Wellcome Trust (UK).

When the European Research Council adopted its public-access mandate (December 2007), it adopted a six month embargo but added: "The ERC is keenly aware of the desirability to shorten the period between publication and open access beyond the currently accepted standard of 6 months."

http://erc.europa.eu/pdf/ScC_Guidelines_Open_Access_revised_Dec07_FINAL.pdf

When the European Heads of Research Councils (EuroHORCs) --representing all the major funding agencies in 24 European countries-- recommended that its members adopt public-access mandates (April 2008), it also recommended that they "reduce embargo time to not more than six months and later to zero."

http://www.eurohorcs.org/SiteCollectionDocuments/EUROHORCs_Recommendations_OpenAccess_200805.pdf

When the Canadian Library Association recommended that Canadian libraries support public-access policies (May 2008), it wrote, "If delay or embargo periods are permitted to accommodate publisher concerns, these should be considered temporary, to provide publishers with an opportunity to adjust, and a review period should be built in, with a view to decreasing or eliminating any delay or embargo period."

http://www.cla.ca/AM/Template.cfm?Section=Position_Statements&Template=/CM/ContentDisplay.cfm&ContentID=5306

If embargo periods should be no longer than necessary, then how long is necessary? This is a difficult question, chiefly because it is difficult to choose the most appropriate criteria. Publishers have often suggested that public-access policies should use embargo periods no shorter than those that publishers voluntarily adopt for themselves. This, at least, is the wrong criterion. Either it presupposes that publishers are already trying to minimize their embargo periods, or it presupposes that funding agencies have the same interests as publishers. Both are untrue.

We are not ready to propose the exact length of the shortest necessary embargo. But we urge that the decision be made in light of this principle: the public interest in shortening delays and the private interests in lengthening delays must each give up something. The public interest bends by allowing some delay (any delay). If we allow publishers the same delays they voluntarily adopt for themselves, then there is no compromise; we simply subordinate the public interest to private interests.

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?

Among the metrics for measuring success, we can propose these: the compliance rate (how many articles that the policy intends to open up have actually been opened up); the number of downloads from the public-access repositories; and the number of citations to the public-access articles. As we use different metrics, we must accept that we will never have an adequate control group: a set of articles on similar topics, of similar quality, for which there is no public access.

Publishers sometimes cite downloads from public-access repositories as evidence of harm to them. But downloads are not cancellations, and so far publishers have not shown that increased downloads from public-access repositories correlates with increased cancellations. We recommend that increased downloads be regarded as a sign of success, among other signs. It is a sign of meeting previously unmet demand.

---------- (End of Harvard comment)

Here are a few additional points.

1. Federal funding agencies should allow grantees to use grant funds to pay reasonable publication fees at fee-based open-access journals. This is the policy at the NIH, for example. Or in the alternative, the agencies could offer to allocate auxiliary funds to pay reasonable fees of this kind.

Such a policy would not only support federally-funded researchers who choose to publish in fee-based open-access journals. It would also support the journals. As we increase the volume of research delivered through open-access repositories (sometimes called "green OA"), we should also increase our support for the delivery of research through peer-reviewed open-access journals (sometimes called "gold OA").

It's too early to tell whether publisher fears are justified that rising levels of green OA will threaten the subscriptions of peer-reviewed, non-OA journals. In fact, today there is counter-evidence from physics, the field with the highest levels and longest history of green OA. The details are laid out in the comment submitted to the OSTP from Enabling Open

Scholarship.
http://www.ostp.gov/galleries/Public%20Access%20Forum/Response+from+Enabling+Open+Scholarship+%28EOS%29.pdf

But if other fields turn out to differ from physics in this respect, and rising levels of green OA do eventually threaten journal subscriptions, then we will need a new generation of peer-reviewed OA journals. That will ensure the survival of peer review providers and do so in a form that is entirely compatible with the growth of green OA. That is why support for gold OA should be part of any systematic policy to support green OA.

2. The eight public and private funding agencies in the UKPMC Funders Group, like more than 40 other funding agencies worldwide, require public access to peer-reviewed manuscripts based on research they fund. But they go one step further: when they pay any part of the cost of publishing an article, then they require the public-access copy of the article to use an open license or equivalent. They require the removal of both price barriers and permission barriers to the article's full use and re-use.
http://www.wellcome.ac.uk/About-us/Policy/Spotlight-issues/Open-access/Guides-and-FAQ/WTX041316.htm

In the language sometimes used in the open-access movement, these eight funders require both "gratis open access" and "libre open access" when they pay part of the cost of publishing an article, whether the journal publishing the article is open access or subscription-based.

I urge the administration to adopt the same useful policy for U.S. funding agencies.

3. Some publishers argue that the NIH public-access policy "takes" their articles or forces them to "surrender" their articles. This is mistaken.
 When NIH-funded authors want to publish their results, they disclose that their work was funded by the NIH and is subject to the NIH policy requiring public access to a certain version on a certain timetable. In effect, they ask a publisher two questions rather than just one: "Will you publish this paper?" and "Will you publish it under these terms?" It's a business proposition which publishers remain free to take or leave. Formerly, authors had little or no bargaining power to retain the right to authorize open access to their work. With the NIH now behind authors, publishers almost always accommodate them. This is not to expropriate publisher property, but to equalize bargaining power and strike a better deal for authors, readers, and the public.

Moreover, of course, when NIH-funded researchers comply with the NIH policy, they retain a key right and transfer only the remainder, at most, to publishers. Any claim by publishers that these are "their" articles,

without qualification, is untrue and misleading. The deceptive "taking" rhetoric should not deter the administration from spreading a public-access requirement across the federal government.

Thank you for this opportunity to comment.

Peter Suber
Berkman Fellow, Harvard University
Research Professor of Philosophy, Earlham College
Senior Researcher, SPARC
Open Access Project Director, Public Knowledge

On behalf of the Software & Information Industry Association (SIIA), thank you for the opportunity to comment on the Notice published on December 10, 2009 regarding Public Access Policies for Science and Technology Funding Agencies Across the Federal Government. SIIA is the principal trade association of the software and digital information industries, representing approximately 500 leading companies that develop and market software and electronic content. Our members include leading technology companies that provide the backbone of the Internet, as well as electronic publishers whose investments provide the public with a wide variety of information products and services covering nearly every subject matter imaginable, including publishers of peer-reviewed scientific literature. These industries produce significant knowledge-based, value-added jobs to our economy and our nation's innovation base. SIIA has a long history of supporting effective e-government, dating back to the turn of the century when we worked closely with Congress and the Administration in support of the EGovernment Act of 2001. From the affirmation that the Government's information is a national asset, to the objective to harness new technologies to rapidly disclose information and engage citizens, SIIA strongly supports the President's commitment to openness, transparency and collaboration.

In particular, SIIA strongly supports government policies and initiatives aimed at disseminating the results of publicly-funded research. We believe that such policies—if implemented correctly—would be consistent with the protections afforded to America's copyright owners. However, it is essential that these policies and initiatives be limited to the *direct* results of publicly-funded research and not extend to value-added information products and services merely because they contain the research results. The peer reviewed journals that private-sector publishers, professional societies, university presses and commercial publishers publish are examples of such value-added products, rather than examples of Government information.

The Government should not adopt policies and initiatives aimed at creating government mandates requiring that journal articles published by the private sector, and therefore are protected under U.S. and international copyright laws and treaties, be made freely available in digital form. Such a broad application would most certainly run counter to the protections afforded to copyright owners of journal articles under U.S. copyright law and various international treaties. When similar dramatic changes to copyright policy have been made in the past, they were accomplished through amendments to the copyright law—not through

executive action. As you know, Congress is presently considering legislation on these important and complex policy issues. To adopt an executive mandate in this area—rather than taking the proper route of amending the U.S. Copyright Act—is inappropriate because it would undermine congressional authority on U.S. Copyright Law.

As you seek to maximize return on Federal investments made in R&D, and to leverage those investments to stimulate scientific and technological innovation and competitiveness, we hope that you will recognize this considerable distinction between Government—public—information and the value-added works that result from the substantial investment and contribution made by the private sector. Scientific, technical and medical (STM) publishers and their employees contribute positively to our nation's economy—a fact that should also be weighed against the purported public benefit of forcing journal publishers to share their works freely without compensation.

Nonprofit and commercial publishers invest hundreds of millions of dollars every year in the peer review, editing, publishing, disseminating and archiving of scholarly journal articles. There are over 1,000 STM publishers that employ some 30,000 people and indirectly support an additional 20,000 workers in the United States. These U.S.-based employers publish approximately 45 percent of all peer-reviewed research papers worldwide. Approximately 50 percent of U.S. STM journal publishers' revenue base comes from foreign subscriptions, or approximately $1.5 - 2.0 billion per year, making this a very strong U.S. export industry. The private sector publishing industry—including both for-profit and not-for-profit publishers—has set the high-quality standard for STM information that exists today. Recently, many subscriptions to STM journals have evolved from a basic subscription to a hardcopy journal to ongoing access to a database of current and archived articles maintained by the publisher. Regardless of the form of access, subscription and access fees are critical to pay the cost of the peer review, editing and quality control process. A broad policy mandating free public access to final published, copyrighted journal articles arising from research funded by agencies of the U.S. Government would severely compromise the ability of STM publishers—particularly the smaller not-for-profit publishers—to retain subscribers or charge fees per article. This approach would be a taking of private sector investment and it would present serious risk of job loss and solid economic contribution by this sector.

Such a policy that eliminates journal publishers' ability to recoup their investment would likely force publishers to begin levying substantial author fees to recover the cost of publication, or to simply stop publishing entirely. Either of these alternatives would undermine the critical STM peer review and publishing model that is so effective today, and the industry as a whole. Under the former scenario, a shift to a predominantly author-fee based system, the objectivity of journal publishers would be compromised by a significant reliance on author fees. Under the latter scenario, a decline of small publishers, authors and researches would experience an overall deterioration in the peer review, editing and quality control process provided by a competitive publishing process.

SIIA fully agrees that taxpayers should have access to the direct outputs of taxpayer funded research, and that the Government should ensure access to such outputs. Specifically, SIIA offers the following recommendations to help disseminate the results of publicly-funded research and to expand public access to the journal articles arising from this research. First, SIIA supports

the access model created by the America COMPETES Act (Public Law 110-69). The America COMPETES Act directs the National Science Foundation (NSF) to provide meaningful public access to the results of NSF-funded research in a way that does not undermine copyright protections in private-sector journal articles. Specifically, this model provides for making short summaries of research results and final project reports of federally funded research publicly available via the Internet. SIIA and the STM publishing community are strongly supportive of this approach. Publishers have even indicated a willingness to further public knowledge of these research results by expressing the desire to engage in a collaborative public-private partnership to provide journal abstracts and develop links on a Government website from journal article citations to the peer reviewed published journal article hosted on the publisher's website.

This approach adheres to the President's pledge in his Transparency and Open Government memorandum to "take appropriate action, consistent with law and policy, to disclose information rapidly in forms that the public can readily find and use." Expanding the NSF public access provisions across federal agencies will help establish a government-wide transparency framework that will ensure that research dollars are consistently accounted for. Taxpayers will also gain access to the health, science and technical research results they have funded in formats that they can more easily understand. Additionally, adopting a comprehensive public access policy according to the NSF model will enhance public access to a wide range of government-funded research and government collaboration with the private sector by maintaining copyright protection for private sector works explaining such research results. This approach is also consistent with another priority of the President to promote innovation and protect intellectual property rights.

Second, SIIA supports Government policies to disseminate and make available preprints, the author's manuscripts that are submitted to journals for peer review and consideration to be published. It is not widely recognized, but the articles that get published in the Country's top journals are only a fraction of those completed and submitted by researchers for peer review and consideration to be published. Therefore, a policy that focuses on the published, peer reviewed versions is not only threatening to the continued effectiveness of the peer review and journal publishing process that has proven so valuable to the research community here and abroad, but it will also yield smaller percentage of the manuscripts about the research performed with funding contributions by the Federal Government.

Third, SIIA supports constructive engagement by all key parties as undertaken in the Scholarly Publishing Roundtable established by the House Science and Technology Committee. The Roundtable enabled key stakeholders to explore approaches to access and preservation of federally funded research information that addresses the needs of all interested parties. We believe that it is only through such a collaborative process that effective policies can be developed, implemented and monitored over time.

With regard to the Report recently issued by the Roundtable, SIIA concurs with the five critical principles that must be preserved as solutions are considered and implemented: (1) peer review, (2) sustainability, (3) improved access and functionality, (4) preservation, and (5) improved interoperability. SIIA also agrees with the conclusion that flexibility and a cautious approach are

critical to this process, and that this is not an area where a "one-size fits-all" policy could be effectively implemented.

On the critical issue of interoperability, SIIA agrees with the report that there must be collaboration among and between agencies and stakeholders to develop robust standards for the structure of full text and metadata, navigation tools, and other applications to achieve interoperability across the literature—taking international standards into account where possible. The Roundtable identified this conclusion in its discussion of key principles: Our growing awareness of the possibilities of creative interoperation and reuse surprised us in the common discovery that we all feel strongly about a future environment as one in which scholarly and scientific information, in order to be accessible in a meaningful way, must allow readers the greatest freedom, consistent with a thoughtful application of IPR by rights holders, to make what they judge to be the most productive use of it.

SIIA concurs with the conclusion of the report that improved scholarship and access can best be done by promoting interoperability among various databases and publication platforms, in cases where there is collaboration among key parties, rather than specific mandates. Finally, SIIA supported the initial National Institute of Health policy that sought voluntary participation by publishers to make their final copyrighted works publicly available on the Internet, and we support a voluntary approach as a broad Government policy. Further SIIA supports continued exploration by the funding agencies and the Office of Science and Technology Policy of various approaches to incentivize publishers if a voluntary approach does not generate substantial levels of participation. Again, thank you for the opportunity to participate in the public consultation on Public Access Policy. We look forward to continuing to work with you and the agencies throughout the process of developing and implementing public access policies that are effective and appropriate. If you have additional questions based on these comments or would like to discuss further, please do not hesitate to contact David LeDuc, SIIA Senior Director for Public Policy.

Sincerely yours,
Ken Wasch
President

Scholarly Publishing Roundtable. 2010. *"Report and Recommendations from the Scholarly Publishing Roundtable*." Page 10.
http://www.aau.edu/WorkArea/DownloadAsset.aspx?id=10044

AAUP RESPONSE TO THE OSTP'S REQUEST FOR PUBLIC COMMENT
I. Background to the AAUP Comments
The Association of American University Presses (AAUP) has 133 largely U.S.- based members, with representation in 42 states, the District of Columbia, and Puerto Rico. All are non-profit scholarly publishers who collectively publish more than 10,000 scholarly books and 800 journals each year. Most member presses are affiliated with research universities, but some are entities of scholarly societies and research institutes. AAUP members publish on subjects and in fields

covering the entire spectrum of scholarly research, not just science and technology; some of those journals contain articles based upon federally funded research. These publishers utilize a variety of business models including subscription sales and subsidized open access.

The AAUP supports the Administration's goal of increasing public access to the results of research funded by federal science and technology agencies, and we appreciate having been given this opportunity to comment. We would like to make two general comments before responding to the specific questions posed in the Federal Register Notice.

First, we endorse the shared principles and many of the recommendations in the January 2010 report of the Scholarly Publishing Roundtable appointed by the House Committee on Science and Technology. That report's principal recommendation, that "Each federal research funding agency should expeditiously but carefully develop and implement an explicit public access policy that brings about free public access to the results of the research that it funds as soon as possible after those results have been published in a peer-reviewed journal," is followed by eight further recommendations and five principles to be observed. These further recommendations are designed to ensure that the goal of free public access is met in a way that respects the interests of all stakeholders in the system of scholarly communication, and that maximizes the public good to be derived from meeting that goal. The Roundtable report does an admirable job of explaining the importance of each of the further recommendations and so we list them here.

1. Agencies should work in full and open cooperation with all stakeholders, as well as with OSTP, to develop their public access policies.
2. Agencies should establish specific embargo periods between publication and public access.
3. Policies should be guided by the need to foster interoperability.
4. Every effort should be made to have the version of record (VoR) as the version to which free access is provided.
5. Government agencies should extend the reach of their public access policies through voluntary collaborations with nongovernmental stakeholders.
6. Policies should foster innovation in the research and educational use of scholarly publications.
7. Government public access policies should address the need to resolve the challenges of long-term digital preservation.
1. OSTP should establish a public access advisory committee.

We believe these further recommendations are part and parcel of the principal recommendation and must be considered along with it. Second, we note that the Roundtable's principal recommendation is broader than the one posted in the OSTP Federal Register Notice. The Roundtable's recommendation applies to all federal funding agencies; the Federal Register Notice speaks only of research funded by federal science and technology agencies. As a practical matter, however, some science and technology agencies, like the Department of Agriculture, the Department of Energy, and the Department of Health and Human Services, also fund research in the social sciences and humanities that would be covered by either an all agency or a STM-specific public access policy. We are also aware that other federal agencies of the Executive Branch have started to develop public access policies of their own, often with no stakeholder consultation or involvement.

Finally, although the explicit focus in discussions of public access to publications arising from federally funded research has focused on journal literature, we note that books and other texts may also sometimes result from federally funded research. Given these circumstances, it would seem prudent and wise for all federal funding agencies to develop policies in accordance with a coherent set of guidelines. We believe the principles and recommendations of the Roundtable report provide such guidelines. The Roundtable report notes the variations in both funding patterns and scholarly practice within different fields in the sciences. Those variations are even more extreme in the social sciences and humanities, which tend in general to be much more poorly funded than the sciences, may require substantially greater non-federal investment to publish, and may require much longer embargo periods, or alternative routes to free public access, if they are to recover their publishing costs from sales and subscriptions.

Therefore we think it vital that the Roundtable's further recommendations, with their emphasis on consultation, cooperation, interoperability, authority, preservation, and long-term sustainability be followed. AAUP members—university presses, scholarly associations, and research institutes—publish a significant number of the scholarly journals in the humanities and social sciences. Because of their stewardship responsibilities these publishers are particularly attuned to the costs to be managed in the exploration of options for expanding free public access. We believe that the AAUP community, many of whom have been experimenting with open access models, can be a valuable resource in future discussions of public access to journal articles based upon federally funded scholarly research.

II. Comments in 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?
Participants now contribute to the development and dissemination of peer reviewed papers arising from scientific research as follows:

a. The US government funds some research costs (researcher time, lab costs).
b. Universities subsidize these and privately funded research efforts in kind
through maintenance of infrastructure to support and oversee the researchers.
c. Researchers write, review, and edit papers prior to publication either on their own time, on grant-funded time, or on university time.
d. Publishers (commercial and not-for-profit) support journal editors and editorial boards to manage the editorial and peer-review processes through which the best of the papers are accepted for publication. Each journal has a specific subject area of focus, editorial approach, and reputation to uphold. The brand name of a journal, along with the names of the editors and the publisher, serve as markers or filters for consumers and researchers. These confirm that the research and scholarship are well-executed and worthy.
e. Publishers also design, edit, and produce online and print editions of the papers in journal form. They most often recoup costs through sales of journal subscriptions worldwide. Some publishers recoup their costs through a combination of advertising sales, institutional subsidies, and author fee structures.

e. Universities, some corporate and public libraries, and some individuals purchase subscriptions to the published journals and provide access to their affiliated researchers, faculty, students, and other patrons.

Under a free public access policy, the ability of publishers to recoup the costs of peer review, editing, design and composition of content, and publicizing the content to the audience for the work, could essentially disappear. It would be vital to find other means of covering the costs incurred in validating the quality of the author's work and making it accessible. Some journal publishers have been experimenting with new models of funding (author fees, university fees, foundation funding, etc) but there has not yet emerged a model that is proven to be truly self-sustaining.

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?
All participants would be well served by a framework of law, regulation, and collaboration that will encourage the greatest number of the high quality articles to be distributed to the widest audience at the lowest cost. The path for progressing to wider access to the science scholarship based on federally funded research will likely, and should, be evolutionary. We support the recommendations of the Scholarly Publishing Roundtable report of January 2010 for proposing to embrace the views of all stakeholders as we move toward improving access while upholding the quality, certification, and distribution aspects of the current scholarly publishing enterprise. Current copyright laws encourage creativity, innovation, and entrepreneurship that stimulate investments in dissemination and we believe these should be kept in place.

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?
The users of peer-reviewed papers are primarily scholars and scientists affiliated with colleges and universities. Most of them now have online access to these journals through their libraries' subscriptions. Unaffiliated scholars and other readers can access peer-reviewed papers through libraries or through the journal publishers by subscribing or purchasing individual papers. Most journal subscriptions are available for sale at lower prices for individuals, or for per-article fees. The majority of researchers have the access that they require to further their own investigations and mentor their students. However, some independent users may not currently have access to research they may find useful, either because of cost-barriers that would be removed by free public-access policies, or because the scholarly articles are not written to be accessible to lay audiences.

It is impossible to predict the specific benefits that would accrue from expanded free public access to this literature. Many people believe there could be some benefits such as: better access to medical information, more innovation, improved public education, a better-informed electorate, etc. Each agency should research this question separately as the benefits and costs of free public access are likely to differ depending on the discipline, leading to different solutions to varying unmet needs.

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?

The first question of how best the agencies might enhance public access to the peer-reviewed papers arising from their funding is likely to be answered differently in different fields. We recommend that federal agencies work with publishers, libraries, and scholars to research this question. The second question here, of how agencies might gauge the value of their public access policies, is an important one. As a first step, we think it would be useful to learn from the PubMed Central experience. The NIH public access policy has been in place for nearly two years. Might the PubMed Central usage statistics be published? What has been the NIH federal investment in free public access, and what has been the return on this investment? The measurement tools in use at NIH may be helpful in framing the discussion within the other agencies.

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

All participants in the scholarly communications process are most likely to comply once there are clear rules. To help ensure compliance, any policy enacted should allow submission of the files in a format in which publishers already are creating and storing their content. Compliance will be easiest and most complete if file submission is an extension of a pre-existing process.

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 version of record—that is, the author's final published article—is considered by the overwhelming majority of users the most high-value version. However, there is certainly value in making data sets and technical and grant reports resulting from agency funded research freely available. A public access policy in which federal funding agencies and publishers collaborated, with the agency providing free access to reports and data sets and publishers providing links to paid or, after an appropriate length of time, free access to the finished article makes a great deal of sense and would have wide support. Such a policy is already in effect, with the active and enthusiastic participation of many publishers, at the National Science Foundation.

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?

There is no simple, one-size-fits-all solution to the embargo question; it varies, and varies widely, by discipline and specialty. In a few fast-moving fields in the sciences, research is outdated within six months; in some scientific fields, as in the humanities and social sciences, the citation half-life—that is, the length of time after publication in which half of an article's citations appear in other publications—can extend for years.

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 articles arising from federal investment have been made publicly available by publishers, traditionally in paper and increasingly in electronic form. Publishers have invested and continue to invest in discovery, retrieval, and linking tools, and in electronic archiving, both on their own and with other enterprises. It would be fruitful to investigate questions about file formats and discoverability with researchers, publishers of various sizes, and librarians. As is made clear in the Roundtable report, U.S. agencies should also pay mind to the great deal of work already being done within the broader international scholarly communications community to develop consistent standards. Finally, in developing standards for data and file submission, agencies should consider, along with archiving and interoperability requirements, that requirements should be simple and affordable to enable and encourage compliance. Individual researchers, or small non-profit publishers, are responsible for many of the journals in niche fields.

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?

Measuring the degree to which public access is making a difference is an important question. An evaluation plan should be completed prior to starting the kind of massive project a public access database would entail. Detailing the mission, goals, and objectives of the database would serve as the foundation for any kind of metrics to determine whether or not free public access was meeting expectations. Output measures (e.g., number of visitors or number of downloads) will reveal only part of the picture. Outcomes, while considerably more difficult to measure, would reveal how the content is being used and whether or not it has made a difference in people's lives, whether it be that the discipline has advanced more rapidly than it would have without public access or that an individual, armed with new knowledge, was better able to contribute to the public good.

Providing a forum for feedback and comments may be expected by users of this prospective massive database (or interoperable databases). Monitoring and moderating such feedback and comments could, however, add to the costs of managing the database(s). We believe that the need for and purpose of this type of feature should be assessed by each agency, and the relevant community of researchers, publishers, and librarians, in order to ensure that any such tool is designed to meet the demonstrated need.

FROM: Nancy L. Baker
         University Librarian, University of Iowa

RE: **Comments of the University of Iowa {Libraries} Concerning "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government"** Submitted to the Office of Science and Technology Policy

We appreciate the opportunity to comment on "Public Access Policies for Science and Technology Funding Agencies Across the Federal Government" and regret that circumstances related to the timing of the request and local calendars have not allowed for more extensive input. As a member of the organization, The University of Iowa {Libraries} are in full agreement with the points made by the Association of Research Libraries in its January 15th statement and will focus in comments below on a few key points we would like to emphasize.

We believe that public access to federally funded research results will make a vital contribution to the efficiency and effectiveness of scientific and other research on our campus. The benefits will of course extend far beyond this campus, and will enhance the mission of higher education as well as having enormous public benefits beyond higher education.

Whether by Executive Order or through a legislative approach, we support the proposition that 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. This digital archive would provide long-term curation and access to the material deposited and should be interoperable with other digital archives. It should be as free as possible of restrictions on use and be available to all who wish to make use of it, with a short embargo period. As the NIH experience has shown, deposit should be mandatory, not voluntary.

Below are brief comments on each of the questions raised.

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?

This is a complex question since the roles of all of these players is evolving rapidly whether or not the OSTP proposal becomes operational. In general university libraries are becoming more active through institutional repositories and their own publishing efforts in the dissemination of scholarly articles. Obviously higher education institutions contribute an enormous amount of scholarly work through federally funded research, and this seems unlikely to change as a result of a public access policy. The role of faculty in the peer review process and as members of editorial boards also seems unlikely to change dramatically. We also believe that publishers will continue to play an important role and that subscriptions by libraries to scholarly journals will not be directly affected by such a policy. The primary advantage of such a policy will be an enabling one, allowing wider access to the secondary literature, and permitting broader

collaboration across institutional boundaries, as well as providing significant benefits to the public.

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 mandatory deposit. Deposit should be made to trusted repositories with long-term, verifiable commitment to preservation. Ideally the published version should be deposited, but the final peer reviewed version is acceptable as a second choice. Full rights to make use of the deposited articles is essential, as is as short an embargo period as possible (six months ideally and no longer than twelve).

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 would include faculty, researchers and students at institutions like the University of Iowa, but the user community would extend far beyond to academics at other institutions, the general public, and researchers in private enterprise. The purpose of such use would range from education to intensive research into both theoretical and applied scientific questions. At present access to much of this literature is limited to a small number of relatively well-funded institutions, which are themselves increasingly unable to afford access to the full range of material. There are hundreds more that can afford little or no access. Such a policy would dramatically increase access, and it seems evident that the public which is funding this research with its tax dollars has the right to see what the results of that research are. As noted above, any embargo longer than six months would unacceptably limit most access at research universities, so that subscriptions to the primary journals where such research is published would continue to be in high demand.

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?

In general mandating deposit of a final or near final version of peer reviewed articles in a publicly available repository, with minimal embargo, would best enhance public access. As noted, there should be a commitment to long-term curation and few or no restrictions on use. The NIH model is one that could be applied to other federal agencies. While there are legitimate reasons why agencies supporting disciplines that differ from the health sciences and from one another might need to customize the repository model they use, it will be important to ensure some level of consistency in requirements in order to avoid wasted effort in managing the deposits by grantees. Measures to gauge success can include the obvious, such as usage levels in comparison with those for subscription usage, citation measures, and development of research capacity and successful grant applications from institutions outside the usual group.

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

Mandatory deposit with a minimal embargo is an essential feature. It would be desirable to see as consistent approach across agencies as possible. Help in bringing researchers affected up to speed on the requirements as well as making it as easy as possible through systems and procedures to comply are also important features.

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?

Access to the final, published article is the ideal, but may be impractical. Deposit of the author's final, peer reviewed and copy edited version is an acceptable substitute. There are obvious disadvantages in terms of citation, for example, to versions other than the publisher's, but the advantages of some access (over none) outweigh them. Since there are advantages to the publisher for his version to be the one made available, it may be possible to allow for its deposit, as the NIH experience has demonstrated.

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?

Immediate public access provides the maximum public benefit, but is obviously impractical given publishers' concerns about economic viability. Embargo periods vary widely, from one or two months to twelve. Six months seems a reasonable compromise. For ease in understanding and compliance with the policy, the delay should ideally be the same across agencies and not vary.

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?

Submission format should conform to the formats in general use by researchers in the work the produce. Existing and emerging standards, preferably open standards, such as those in use by PubMedCentral should be adopted as appropriate.

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?

Access with as few restrictions as possible, in accordance with legal requirements, would make the collections of papers most useful to the public. Clearly ensuring prompt deposit and subsequent availability of the papers is an important element for success. Metrics such as usage, and the affiliations of users (to the extent this can be measured in accordance with privacy), would provide a useful indicator of success. So would growth of interdisciplinary usage across agencies, leading perhaps to proposals that take advantage of this kind of cross-pollinization.

The American Society of Hematology (ASH) appreciates this opportunity to respond to the Office of Science and Technology Policy's December 9, 2009 request for public comments on Public Access Policies for Science and Technology Funding Agencies across the Federal Government.

ASH represents over 16,000 scientists and clinicians committed to the study and treatment of blood and blood-related diseases. These diseases include malignant hematologic disorders such as leukemia and lymphoma, non-malignant conditions including anemia and hemophilia, and congenital disorders such as sickle cell anemia and thalassemia. ASH members are active participants in federal programs, recipients of federal grants, and contributors to the federal government's research accomplishments. The Society publishes the premier scientific journal in hematology, *Blood*, and is committed to a collaborative relationship with the government to assure that important research findings are published and disseminated by print and electronic means to the public through rigorous independent peer review.

ASH fully supports the goal of increasing access to research publications. In fact, ASH supports free access to *Blood* on the broadest possible basis. Although ASH cannot adopt or support a publishing model that is not economically sustainable over the long run, certain sections of the journal are always free on-line: abstracts and tables of contents, *Inside* Blood commentaries, "How I treat" articles, and five research articles every issue. *Blood* maintains a 12-month embargo for current articles, but content older than 12 months is free to all on-line. In addition, ASH and many other not-for-profit publishers allow free immediate access to selected articles with important public health or clinical significance and distribute free articles to scientists working in many third world nations. As a result, more scientific papers are available now to more people than at any time in history.

While federal funds may support – in whole or in part – the research reported in journal articles, it is extremely important to realize that the federal government does not pay for the very important processes that lead to the publication of that research. ASH and many other not-for profit scientific societies provide important services that are necessary to ensure the publication of accurate scientific information: peer review, copyediting, formatting, printing for distribution, and publishing on-line. These services represent a substantial private sector investment that results in prompt access to research results and the reliable archiving of articles at no additional cost to the public. Mandating a specific time for public release of manuscripts could be detrimental to not-for-profit scientific societies like ASH and jeopardize the crucial processes that are necessary to ensure that publications provide accurate scientific information.

Below please find responses to several of the specific questions posed in the December 9 notice that are relevant to the ASH 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?
Authors submit manuscripts for peer review. For *Blood*, and many other high quality scientific journals, the costs associated with peer review are borne by the publisher. Important question to be addressed when considering change under a public access policy is will authors be able to pay for expanded access and how will a public access policy impact limited research dollars? In other words, if a new federal policy on public access were adopted that changed publisher business models because of its impact on subscriptions and advertising, who would pay for peer review and does it make sense to use scant research funding on peer review when it is currently paid for through the existing system?

Publishers like ASH contribute to the dissemination of peer reviewed papers arising from federal funds in several ways. ASH plays a critical role in managing the scientific record by coordinating the peer review process, which serves as a quality control mechanism. In addition to establishing standards of excellence respected by readers, peer review also provides valuable critiques that enable authors to refine and improve their work. Publishers provide a number of essential services ranging from editorial processes that lead to and include the actual dissemination of scientific information. As noted above, currently, ASH always makes certain sections of its journal free on-line. *Blood* maintains a 12-month embargo for current articles, but content older than 12 months is free to all on-line. In addition, ASH and many other not-for-profit publishers allow free immediate access to selected articles with important public health or clinical significance and distribute free articles to scientists working in many third world nations. In addition, since 2006, ASH has participated in the PMC(NIH Portfolio) Archive program. The NIH Portfolio program works as follows: Participating publishers submit to NIH the final version of NIH funded research articles upon publication. NIH has internal use only of the articles during the journal's embargo period, which can be no longer than 12 months. During the embargo period, NIH can link to the journal Web site to provide access to NIH-funded research articles. Following the embargo period, NIH can provide links to the journal and can also distribute the articles directly through its PMC Web site.

Critical questions that must be addressed when considering a new public access policy include: What will be the impact on scientific journal business models? What will be the impact on peer review? What will be the impact of expanded access on federal influence on research? What will be the impact of expanded access on federal funding of research?

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?
Any government public access policy must preserve the viability of peer review and ensure the integrity of the scientific record. Various journals currently use different strategies to recover the costs of these operations: some charge subscription or access fees to readers; some charge article processing fees to authors; some are subsidized by scholarly societies, research institutions, or funding agencies; and many use a hybrid model combining various funding streams in their business models. Even without a government mandate, many not-for-profit publishers currently provide free access to their journals either immediately upon publication or after some period.

The specifics of the access policy vary according to how the journal recovers costs. It is critical that any federal public access policy take into account the notion that one size does not fit all.

As noted above, ASH participates in the NIH Portfolio program to provide enhanced public access. While the NIH Portfolio program is not ideal from the publisher perspective because it has costs in implementing, ASH strongly believes it provides a better alternative for *Blood* and *Blood* authors than the NIH Public Access Policy.

Advantages of the NIH Portfolio program include:
- NIH obtains 100 percent compliance in its Public Access Policy by participating journals because the journals submit to NIH the final version of all NIH funded research articles upon publication on behalf of their authors.
- Authors of participating journals do not have to submit their manuscripts to NIH through the NIH Public Access Policy, but are counted as compliant because the participating journals submit for them.
- NIH also has the ability to create a stable archive of peer-reviewed research publication resulting from NIH-funded research and a secure searchable compendium of these peer reviewed research publications that NIH can use to manage research portfolios and set research priorities.
- The program protects the integrity of journal articles by allowing the journal to submit the final article.
- The program also maintains journal business models by protecting the embargo period and the peer review system.
- The program allows expanded free access of science to researchers and the public.

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?
Much of what ASH publishes in *Blood* is basic research. The primary audience for basic research is other scientists engaged in similar work. Clinicians also read *Blood* for clinical applications of research. ASH is not aware of any unmet demand for access to *Blood*. Membership in ASH includes a subscription to the journal. Researchers and clinicians who are not members of ASH are affiliated with either academic instiutions or hospitals that have subscriptions. On a rare occasion, ASH will hear from patients seeking information about their conditions. ASH gladly provides them with complimentary access to articles with a bearing upon their illness. Consequently, it is not clear to ASH who does not have access to *Blood* already.

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?
ASH respectfully recommends that first federal agencies explore the question of access and the extent of any problem. As noted above, ASH believes no one solution will fit all problems and it would be best to work cooperatively with all stakeholders in addressing specific issues. Again, while the NIH Portfolio program is not ideal from the publisher perspective because it has costs in implementing, ASH strongly believes it provides a better alternative for *Blood* and *Blood* authors than the NIH Public Access Policy and could serve as one paradigm.

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?

The final published version is the article of record. Providing access to any other version than the final version would serve to confuse the scientific record. For Blood, ASH publishes on-line the accepted version of the article in our First Edition publication. The First Edition articles are citable and are highly regarded by authors and readers. The final version of the article—the article of record--is published in print and online seven weeks after acceptance.

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 by 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?

As indicated above, ASH believes one size does not fit all. The NIH Portfolio program allows for a 12-month embargo, which works for most not-for-profit publishers. The decision was made recognizing the important role journals play in the validation and dissemination of scientific information and that a shorter period might jeopardize the ability of the journals to sustain the peer review process should subscription revenues decline if the embargo period were reduced. However, different fields of science have different patterns of usage and citation. There appears to be no uniform optimal embargo period across all scientific disciplines. While a 12 month embargo might work for most journals in the research areas funded by the National Institutes of Health, it is unlikely that the same is true for research funded by other federal agencies. Again, ASH appreciates the opportunity to submit these comments and the Society would be pleased to provide additional information about its public access policy and further discuss this issue.