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

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

Dear Sir:

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

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

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

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

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

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

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

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

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

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

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The Value of Openness in Scientific Problem Solving
Karim R. Lakhani, Lars Bo Jeppesen, Peter A. Lohse, Jill A. Panetta
Harvard Business School Working Paper No. 07-050
January 2007
<http://www.hbs.edu/research/facpubs/workingpapers/papers0607.html#07-050>

Statement by
David J. Lipman, M.D.
Director, National Center for Biotechnology Information
National Library of Medicine
National Institutes of Health
U.S. Department of Health and Human Services (HHS)
on
Public Access to Federally-Funded Research
before
Committee on Oversight and Governmental Reform
Subcommittee on Information Policy, Census and National Archives
United States House of Representatives
April 19, 2011
<http://www.hhs.gov/asl/testify/2010/07/t20100729c.html>

Michigan Economic Development Corporation
Michigan Invests in University Efforts to Build Business and Job Opportunities
October 256, 2011
<http://www.michiganadvantage.org/Press-Releases/Michigan-invests-in-university-efforts-to-build-business-and-job-opportunities/>

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

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

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

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

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

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Author Rights Model License Language
<https://authorrights.wordpress.com/>

“Model Language for Author Rights in Library Content Licenses”
Research Library Issues, no. 269 (April 2010): Special Issue on Strategies for Opening Up Content

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

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

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

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

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

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NDIIP

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

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

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

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

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

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

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

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

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

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

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

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

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

(8) What is the appropriate embargo period after publication before the public is granted free access to the full content of peer-reviewed scholarly publications resulting from federally funded research? Please describe the empirical basis for the recommended embargo period. Analyses that weigh public and private benefits and account for external market factors, such as competition, price changes, library budgets, and other factors, will

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

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

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

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

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

Yours,

A handwritten signature in black ink that reads "Paul N. Courant". The signature is written in a cursive style with a large, stylized initial 'P'.

Paul N. Courant