

# OSTP to Launch Public Forum to Discuss Options for Improving Public Access to Results of Federally Funded Research

On Thursday, Dec. 10, OSTP will launch a public consultation on Public Access Policy. The Administration is seeking public input on access to publicly-funded research results, such as those that appear in academic and scholarly journal articles. Currently, the National Institutes of Health require that research funded by its grants be made available to the public online at no charge within 12 months of publication. The Administration is seeking views as to whether this policy should be extended to other science agencies and, if so, how it should be implemented.

The Office of Science and Technology Policy in the Executive Office of the President and the White House Open Government Initiative is launching a “Public Access Policy Forum” to invite public participation in thinking through what the Federal government’s policy should be with regard to public access to published federally-funded research results. To that end, OSTP will conduct an interactive, online discussion beginning Thursday, December 10. We will focus on three major areas of interest:

- Implementation (Dec. 10 to 20): Which Federal agencies are good candidates to adopt Public Access policies? What variables (field of science, proportion of research funded by public or private entities, etc.) should affect how public access is implemented at various agencies, including the maximum length of time between publication and public release?
- Features and Technology (Dec. 21 to Dec 31): In what format should the data be submitted in order to make it easy to search and retrieve information, 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?
- Management (Jan. 1 to Jan. 7): What are the best mechanisms to ensure compliance? What would be the best metrics of success? What are the best examples of usability in the private sector (both domestic and international)? Should those who access papers be given the opportunity to comment or provide feedback?

Each of these topics will form the basis of a blog posting that will appear at [www.whitehouse.gov/open](http://www.whitehouse.gov/open) and will be open for comment on the OSTP blog. We want your input! For full details, see the Federal Register notice.

*[Ed. Note: The title of this blog posted has been updated.]*

This entry was posted on Wednesday, December 9th, 2009 at 5:40 pm and is filed under News, OpenGov, Public Access Policy, Requests for Comment. You can follow any responses to this entry through the RSS 2.0 feed.

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## Responses to “OSTP to Launch Public Forum to Discuss Options for Improving Public Access to Results of Federally Funded Research”

+3 Stevan Harnad said on December 10, 2009 at 10:45 am:

It would be a great help to research progress in the US as well as worldwide if the US were to require not only NIH-funded research journal articles to be made freely accessible to all users online, but all federally funded research journal articles.

**BENEFITS:** The benefits of making all US publicly funded research publicly accessible online would not only be in the fact that all tax-payers (and not just those who can afford to subscribe to the journal in which it was published) will be able to read and use the research their taxes paid for, but, even more important, it will allow all researchers (and not just those whose institutions can afford to subscribe to the journal in which it was published) to read, use, apply and build upon all those research findings, again to the benefit of the public that funded them, and for the sake of the future research advances for the sake of which research is funded, conducted and published.

**WHICH RESEARCH?** Which federally funded research should be made publicly accessible online? Start with all research that is fully funded federally, in all scientific, technical and scholarly fields, and then work out agreements in the case of joint private funding. Most private funders will likewise want to ensure maximal usage and impact for the research they have funded. If they want it published at all, they will also want access to it to be maximized.

**TIMING OF DEPOSIT:** Allowable embargo time should be minimal, but, far more important, the requirement should be to deposit the final, peer-reviewed draft, immediately upon acceptance for publication, in the author’s institutional repository, without exception. 63% of journals already endorse making the deposit Open Access immediately. For the remaining 37%, the deposit can be made Closed Access, with only its metadata (authors, date, title, journal, abstract) accessible publicly during the allowable embargo. That way researchers can send the author a semi-automatic email eprint request for an individual copy to be used for research purposes. This will tide over research needs during any embargo.

**LOCUS OF DEPOSIT:** It is extremely important to require institutional instead of central deposit (which is what several funders require now, e.g., NIH requires central deposit in PubMedCentral, PMC). Institutional deposits can be easily and automatically harvested or imported into central collections and services like PMC (or Scirus or OAIster or Citeseer, or, for that matter, Google Scholar and Google).

The NIH requirement to deposit in PubMedCentral (PMC) is an extremely counterproductive handicap, needlessly slowing down the growth of public access for no good reason at all. Institutions (universities and research institutes) are the universal providers of all research output, funded and unfunded, across all fields. If funders mandate institutional deposit, they encourage and reinforce universalizing the adoption of institutional public access mandates across all their fundees’ institutions (and they gain a powerful ally in monitoring and ensuring compliance with the funder mandates).

But if funders instead require central deposit, they discourage and compete with universalizing the adoption and implementation of institutional public-access requirements. Nor is there any advantage whatsoever — functional, technical or practical — to requiring central rather than institutional deposit; it only creates needless obstacles to the universal adoption of public access and public access mandates for all research output.

**WHO DEPOSITS?** The current NIH public access policy allows the option of publishers doing the PMC deposits in place of NIH's fundees. This not only makes fundee compliance vaguer and compliance-monitoring more difficult, but it further locks in publisher embargoes (with less scope for authors providing individual access to researchers during the embargo) and it further discourages convergent institutional mandates (with the prospect of having to do multiple deposit for the same paper, institution-internal and institution-external). The ones responsible for ensuring that the deposit is made, immediately upon acceptance for publication, are the fundee and the fundee's institution, by monitoring the deposits in their own institutional repository. Publishers should be out of the loop.

**DEPOSIT WHAT?** There is no need at all to be draconian about the format of the deposit. The important thing is that the full, peer-reviewed final draft should be deposited in the fundee's (OAI-compliant) institutional repository immediately upon acceptance for publication. A preference can be expressed for XML format, but any format will do for now, until the practice of immediate Open Access deposit approaches global universality (at which time it will all converge on XML as a natural matter of course anyway).

It would be a needless handicap and deterrent to insist on any particular format today. (Doc or Docx will do, so will HTML or PDF or any of the open formats.) Don't complicate or discourage compliance by gratuitously insisting on more than necessary at the outset, and trust that as the practice of public access provision and usage grows, researchers will converge quite naturally on the optimal format. And remember that in the meanwhile the official published version will continue to be generated by publishers, purchased and stored by subscribing institutions, and preserved in deposit library archives. The public-access drafts are just supplements for the time being, not substitutes, deposited so that it is not only paying subscribers who can access and use federally funded research.)

**MONITORING COMPLIANCE:** What are the best mechanisms to ensure compliance? To require deposit in the fundee's institutional repository immediately upon acceptance for publication. Fundees' institutions are already co-responsible for compliance with funders' application and fulfillment conditions, and already only too eager to help. They should be made responsible for ensuring timely compliance with the funder's deposit requirement. It can also be made part of the grant requirement that the funder must be notified immediately upon deposit by being sent the deposit's URL, so it can be linked or imported for the funder's records and/or harvested by the funder's designated central repository (e.g. PMC).

**METRICS OF SUCCESS:** Institutions already have an interest in monitoring the usage and impact of their research output, and their institutional repositories already have means for generating usage metrics and statistics (e.g., IRStats). In addition there are now central means of measuring usage and impact (free services such as Citeseer, Citebase, Publish-or-Perish, Google Scholar and Google Books, as well as fee-based ones such as SCOPUS and Thompson-Reuters Web of Science). These and other rich new metrics will be available to measure success once the deposit requirements are adopted, growing, and supplying the content from which these rich new online metrics are extracted. Which of the new metrics proves to be the "best" remains to be tested by systematically assessing their predictive power and their correlation with peer evaluations.

**COMMENT AND FEEDBACK:** Once the research content is openly accessible online, many rich new tagging, commenting and feedback mechanisms will grow quite naturally on top of them (and can also be provided by central harvesters and services commissioned by the funders themselves, if they wish, or the metrics can simply be harvested from other services for the funder's subset of their content).

**PRIVATE SECTOR USABILITY:** Metrics will not only make it possible for deposit rates, downloads, citations, and newer metrics and their growth to be measured and monitored, but it will also be possible to sort uptake metrics into those based on public access and usage, researcher access and usage, and industrial R&D and applications access and usage. But the urgent priority is first to provide the publicly accessible research content on which all these uptake measures will be based. The measures will evolve quite naturally once the content is globally available.  
<http://openaccess.eprints.org/index.php/archives/369-guid.html>

+2 aline soules said on December 10, 2009 at 3:21 pm:

While there are three phases to this process—Implementation, Features and Technology, and Management, there really is a fourth underlying aspect to this issue, namely Principle.

It took a long time to secure the NIH public access policy and since its inception, there has been at least one threat to its continued existence. My hope is that we are past that now and that the principle of public access to publicly-funded information will become an accepted part of our culture.

Based on that principle, all federal agencies, with a few exceptions for national security reasons are good candidates to adopt public access policies. The exceptions should be very few. Our nation has thrived because of its ability to leverage existing information to create new information and knowledge. The more information is available, the more potential for that leverage.

Steven Harnad has described in detail (Dec. 10 posting) excellent criteria and parameters for making such information public. It's not necessary for me to elaborate on his points any further, other than to declare my support and to add a comment about the content he references.

His comment focuses on peer-reviewed research articles; however, I would like to suggest that all research materials, regardless of format, should fall under the public access principle. This includes articles, reports, monographs, regardless of format. This could be text, video, audio, or some future format we don't yet envision. This policy should not be just about text and images, but about non-traditional ways of conveying peer-reviewed research data and information.

The NIH policy decision was a significant and important step forward in our nation's effort to share knowledge and foster intellectual and practical development. Let us expand that effort to engage as many agencies as possible.

Kevin Marvel said on December 10, 2009 at 9:19 pm:

I am concerned about the timing and rapid process outlined in this request for comment. It has taken us more than 500 years to move from handwritten manuscripts to the mature system of digital scientific publication we have today. To discuss such a complicated topic in less than thirty days total and during the holidays seems short-sighted to me, personally.

I strongly urge OSTP to slow this discussion down. The timing and the speed of the requested discussion are insufficient for a proper discussion of all the issues involved and it is not clear to me that an online forum like this is the proper vehicle for this discussion.

The fundamental issue is not about making government-funded research publicly available, but determining who shall pay for the peer-review process that validates and ensures the value of the fundamental work of government-funded researchers, who shall pay for the necessary tasks of enhancing the basic content produced by authors for usability and longevity in the online world, and who shall pay for the long-term archiving of the peer-reviewed, web-enabled content. The current system, involving scientific publishers, many of them not-for-profit organizations, allows the distribution of these costs across a wider range of sources than simply the government. In a mandated model, the government would bear all costs, including the necessary commitment to data migration and system upgrade as well as guaranteeing preservation and ensuring universal accessibility. This is a challenging, a very challenging task, solved in whole today by scientific publishers in the US and elsewhere.

My organization will attempt to participate meaningfully in this discussion, despite the short timescale mandated, while seeking a more expansive forum for a full discussion on this complicated issue, an issue rife with the potential for unintended consequences.

Kevin B. Marvel  
Executive Officer, American Astronomical Society

Katherine McCarter said on December 11, 2009 at 12:08 pm:

We completely support the comments made by Kevin Marvel. ESA is concerned that a topic this important, which has financial implications for many scientific societies, is being discussed in an informal forum and is being conducted during the busy holiday season. We urge OSTP to extend the comment period and provide other opportunities for comment and feedback. We look forward to participating in this important discussion.

Katherine McCarter  
Executive Director, Ecological Society of America

+1 Stevan Harnad said on December 13, 2009 at 12:35 am:

This is not the beginning of the open, public discussion of providing free online access to refereed research: It has been going on continuously since 1998 in the American Scientist Open Access Forum (and in several other Forums in the past half dozen years). Look at the archives of the discussion and you will see that every point has been raised — and answered — many, many times before.

It is time to mandate Open Access to federally funded research, not to keep filibustering it, while research access, usage and impact continue to be needlessly lost, year after year after year...

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

John Vig said on December 13, 2009 at 7:34 pm:

Stevan, you seem to be arguing against this blog. Are you saying that no further discussion is necessary? OSTP and those who have commented here obviously disagree.

+1 John Vig said on December 13, 2009 at 7:11 pm:

The IEEE is a not-for-profit publisher of 142 scientific/technical journals and magazines, and of about 1,000 conference proceedings. Although the IEEE is incorporated in the State of New York, 45% of its ~400,000 members reside outside the USA. Its Board of Directors and Director-elects include members residing in Poland, Korea, Peru, Canada, Croatia, Singapore and Panama. Expecting our Board to agree to an open access position by 20 December is, unfortunately, not feasible.

As the President and CEO of the IEEE, I request that the comment period be extended by one month, to 20 January 2010.

The IEEE too looks forward to participating in this important discussion.

-1 Stevan Harnad said on December 14, 2009 at 1:12 am:

Please see reply to Martin Frank, Executive Director of APS, who made the same request to extend the discussion Forum beyond OSTP's allotted time. The very same discussion has been going on for over five years now. Publishers never cease claiming that more time is needed. That is a filibuster. Moreover, this is a proposal to mandate that fundees make their publicly funded research freely accessible to the public. It is not a request for publishers' permission. And IEEE membership demography has absolutely nothing to do with it.

Edmond Murad said on December 11, 2009 at 1:54 pm:

I urge that open access be extended to publications that are the result of public funding (e.g. NSF, DoD, NASA). These publications often have limited access and are paid for by the taxpayers: (1) If they are published in journals of scientific societies, the publication charges are often \$200/page and access is limited to members of the societies; (2) if they are published by independent publishers (e.g. Elsevier or Springer) getting access to these publications usually costs \$30 or more per paper. In the first case the Government pays twice: first for paying for the research, and then by paying for the publication. In the second case the Government pays for the research, publication costs to the authors are minimal, but access is limited to subscribers for many many years. For someone not associated with an institution with a library subscription, it is virtually impossible to stay in touch with current research.

In my field I often have to read papers published 20 years ago and even though the research was sponsored by the Government, access is still limited, and getting an individual paper requires a payment.

A fair public policy would be that any publications resulting from research that is funded by the Government be made available to the public, say, six months after publication. That would insure that publishers get a return on their investments and authors have a limited control over the results of their research.

Albert Henderson said on December 11, 2009 at 3:11 pm:

The only major flaw in the public access proposals has to do with their narrow view.

Science policy and the quality of research suffer from the elusiveness of most scientific information. As the most influential and least costly ingredient of R&D, the world literature (i.e. outside government-funded studies) has received a lack of attention that can be termed "blind" if not "irresponsible."

Albert Henderson, former editor, PUBLISHING RESEARCH QUARTERLY

author "Undermining peer review," SOCIETY (J/F 2001)

- "Information science vs. science policy," SCIENCE (2000): 243

- "Information science and science policy," JOURNAL OF THE AMERICAN SOCIETY FOR INFORMATION SCIENCE (1999): 366-379

- "Incoherence of science policy," SOCIETY (S/O 1998): 34-43

Nelson Bank said on December 11, 2009 at 4:36 pm:

I'm setting up a small language school in Ciudad Juarez, Mexico. I hope to run experiments in the classroom on different methodologies for making language acquisition in a classroom setting easier for the student, and more effective.

I will finish an MA in Linguistics from University of Texas at El Paso on December 12, 2009, and will no longer have access to the databases and free journal publications from the university.

My little operation in Ciudad Juarez cannot support the \$10 or more fee for each journal article from some of the journal providers online. I need the information in language-acquisition journals.

John Lewis said on December 11, 2009 at 8:44 pm:

Of course all publications from government funded research should be available to the public. This is a no brainer. It is a product of the government and should not be limited to the wealthy.

The real question here is how much is it going to cost the government? I don't think anyone would be arguing against this policy if it could be implemented with no additional costs and with no loss in quality of the peer-review process. I don't have a direct answer to the cost question but have several points I think are worth considering. 1)It should be less to publish online than in print. 2)The government is already paying subscription costs for all federal research labs and for many academic institutions through overhead costs paid on grants or through direct costs to the researcher. 3)Commercial publisher can currently operate at a 25% profit margin, so there is room to negotiate with the industry. 4)The biomedical field has started to make it work, so there is an example for other fields to follow.

I disagree with Stevan Harnad's proposal about not requiring a centralized repository. In fact, I believe that all articles should be stored at PubMed Central (PMC), not just available through PMC. Currently, the full text of some PMC articles must be directly download from publishers who don't allow bulk downloads. Natural language recognition data mining projects with the goal of parsing data from all publications have very limited access to full text from these publishers. The only practical way to have access to all federal funded research for data mining projects like these is to have a single download point.

I hope not to be offended but the example provided by Nelson Bank brings up what I consider to be a separate issue. The products of the United States government should be available for free to the US public. The idea of making the publications available to the entire world is noble but not necessarily a requirement.

I think that eventually this open policy could be extended beyond publications and include laboratory notebooks and raw data though this is a much more complex issue and beyond the scope of the current debate.

Stevan Harnad said on December 13, 2009 at 12:50 am:

(1) The cost — of mandating that federal fundees must deposit in their institutional repositories the final, peer-reviewed draft all articles, immediately upon acceptance — is nil. (The institutions provide the repositories and also monitor and ensure compliance with the grant fulfillment conditions.)

(2) You can have as many central repositories as you like — as long as they harvest from the institutional repositories where the deposits are made, rather than competing with them by needlessly insisting on direct central deposit (as NIH does currently, with PubMedCentral). (Note that the locus of deposit is fundees' institutions (universities and research institutes) not the publisher's pay-to-view website.)

<http://openaccess.eprints.org/index.php?archives/369-guid.html>

(3) Researchers' desire to maximize the uptake, usage and impact of their work is not "noble": it is self-interested. And it is also in the best interests of their institutions, of their funders, of the public whose taxes pay for the research and for whose benefit it is conducted, and of research progress and productivity itself.

Mary Kennedy said on December 30, 2009 at 9:33 pm:

Unfortunately, the cost of mandating that federal fundees must deposit in their institutional repositories is not nil. That is a myth. The cost of figuring out how to do the depositing, reformatting, which is too often required, and taking the steps to deposit are all born by as direct costs by the principal investigators. As a principal investigator myself, I usually am the one saddled with these tasks since NIH grants (where I have been funded) have been so badly slashed that they do not support appropriate administrative support. The burden of extra web work, formatting woes, etc. are felt as very expensive loss of time by highly trained scientists who are not trained in web languages. Such inefficiency slows the progress of science noticeably over time. To keep this cost down, it is imperative to choose widely used formats like pdf as archive formats, and to eliminate restrictions on how archived manuscripts are laid out. **IT DOES NOT MAKE SENSE TO IMAGINE THAT THERE IS NO COST WHEN ADDITIONAL TASKS ARE PUSHED BACK TO PRINCIPAL INVESTIGATORS.**

+1 tony begg said on December 12, 2009 at 2:19 am:

I am a working scientist (mostly statistical modeling) in a small firm that analyzes retail data. I use publications in various fields for my work - from weather forecasting, dna sequencing, natural language processing, species estimation etc, - wherever the appropriate statistics is being done. There has been an alarming trend in recent years. More and more scientific publications are behind what my colleagues and I call "the green door". We may access them for a fee (say from \$12 to \$40). The problem is that apart from an abstract the publications are opaque. We cannot read them to see whether they are truly relevant and it is like taking a shot in the dark. Of course, we are wary of wasting our firm's money. So we tend to spend a lot of time looking for related publications that are available for free. This is very wasteful of time, and dissipates our energies. A system whereby we could subscribe for a non-exorbitant fee to some library that had all the publications would be better. Publishers would still be remunerated. If I find this increasingly frustrating I imagine I am not alone. The NIH have taken a lead and the access they provide to their publications is invaluable. I am not sure the issue is necessarily government/publicly funded research. It is the increasing commercialization of scientific research publications, and the lack of accessible public libraries that carry a wide range of publications. I think, if my experience is any measure, that this must be seriously impacting the advancement of science in the U.S. If this is off-comment, I apologise, but I was asked to participate, and this is an issue that has become increasingly frustrating to me over the past 5 years.

+2 Dave Neuswanger said on December 12, 2009 at 1:12 pm:

I am an aquatic ecologist working as a fishery management supervisor for a state natural resource agency. In the fields of aquatic ecology and fishery management, most scientific research has at least a partial federal (or provincial, in the case of Canada) funding component; and results are published in numerous technical journals that few of my colleagues can afford to subscribe to. Generally speaking, professional societies (e.g., American Fisheries Society) fund the editorial review and publication of such research by using member fees and subscriptions. Because this information is published in so many different and expensive journals, neither the general public NOR MOST PROFESSIONAL MANAGERS have ready access. Most folks seem to agree the general public should have access to published results of any government-sponsored research (federal, state, or provincial). But equally important is the need for professional managers who APPLY science (e.g., fishery managers who set fish harvest regulations and propose habitat protection legislation on the basis of aquatic ecosystem research) to have access to the latest developments so that management decisions can be made using best available knowledge. After 30 years as a professional state-agency fishery manager, it is my experience that state resource management policies and practices can lag behind advances in scientific understanding by literally decades. This inefficiency could be corrected to some extent by making the peer-reviewed and published results of scientific research readily accessible to everyone. There is a slight down-side to this, because even intelligent lay persons not trained in a particular scientific discipline can easily misunderstand and sometimes deliberately misrepresent the results of published work because of the jargon and complicated statistical analyses characteristic of most scientific publications. (Absurd denial of climate warming by ideologically-driven non-scientists is one example.) In my opinion, however, that is a minor problem compared to the fact that professional managers of aquatic ecosystems are not keeping abreast of the science that would help us make good decisions on behalf of the public we serve. And if we HAD ready access to the peer-reviewed literature, we would be empowered to answer the challenging questions of a better-informed public. Therefore, I advocate open access to the peer-reviewed and published scientific literature (not in DRAFT form, but completed), preferably no later than one year after publication. That may be possible ONLY if federal and provincial governments will partially subsidize the costs of editorial review and publication currently born by professional societies who would lose income from journal subscription fees. Thank you for the opportunity to contribute to this important discussion.

Stevan Harnad said on December 13, 2009 at 10:39 am:

- (1) No, mandating public online access to published research is not like mandating public access to confidential patent information because published research is already published, and mandating public online access merely maximizes access to that already-published content.
- (2) About 63% of journals (including most of the top journals in every field) already formally endorse immediate open access self-archiving of the final, peer-reviewed draft in the author's institutional repository immediately upon acceptance for publication:  
<http://romeo.eprints.org/stats.php>
- (3) For the remaining 37%, they can still be immediately deposited anyway, and if the author wishes, access to the deposit can be set as Closed Access (only metadata visible), with the institutional repository's semi-automatic email-eprint-request Button supplying individual copies to individual requesters for research purposes until the publisher embargo expires (or publisher embargoes become obsolete).  
<http://openaccess.eprints.org/index.php?archives/274-guid.html>
- (4) Apart from the above, some have suggested explicitly negotiating an "author's addendum" with the publisher that formally reserves an open-access self-archiving right (plus certain re-use rights). (The author's addendum is welcome if and when the author wishes to negotiate it with the publisher, and that negotiation is successful. But it is certainly not necessary, and should only be mandated [along with with an opt-out option] if immediate deposit [with no opt-out option] is mandated along side it.) <http://openaccess.eprints.org/index.php?archives/494-guid.html>
- (5) Note also that physicists (in Arxiv) and computer scientists (in institutional websites, harvested by CiteSeerX) have been making their drafts — before and after peer review — freely accessible online for two decades now, with next to no take-down notices from publishers across all those years, simply because this usage is so important to research and researchers that no publisher would dare to risk antagonizing its authors, referees and readers by trying to contest it. The de facto practice of open access self-archiving and the mounting global demand for it have in fact been the driving force behind publishers' increasingly endorsing it their formal policies.
- (6) Hence the real problem is not publisher approval but fundee practice: The real reason open access mandates are needed in order to ensure that all fundees make their published findings publicly accessible to all users and not just journal subscribers. Mandates not only make it clear to authors that public access is practicable, and a priority, but it also allays their groundless legal misunderstanding (like those raised here).

Stevan Harnad said on December 13, 2009 at 10:42 am:

Apologies, this was intended as a reply to Benjamin Goldschmidt below, not to Dave Neuswanger. Apologies for clicking the wrong Reply button!

-1 Benjamin Goldschmidt said on December 12, 2009 at 4:13 pm:

I have a question for my government before I delve into the aspects of "Improving Public Access to Results of Federally Funded Research".

1. What does the government/society/public hope to gain by making government funded research free to access? (I'm only trying to ask this seemingly obvious question only because with any policy there needs to be a "reason" for doing it, whether or not it is a "good" policy to enact simply because when problems come up, (which they inevitably do with any policy), those who enact it need to remember their initial reasoning for doing so and what they hoped to accomplish to make certain that they are still on the road to doing whatever it is they hoped to do without adversely affecting society in a negative way.)

My answers to the above question (hopefully similar to what others would think, but I encourage responses to see if my thinking is in line with others): With all public government funded research being openly given in a usable free format to society it should in theory help to expand research horizons and the free distribution of information, much like the internet has. In addition, doing this would also help any industry access this publicly funded information for company gain which in theory could generate more money inside the United States by increasing innovation and invention within our country. However, there are a few issues with enacting this sort of policy as well. Obviously, any publisher that does not want to go the way of newspapers would definitely see a large problem with this. This isn't to say that this is necessarily a bad thing since the above policy would probably increase scientific innovation, however, there is one realization that should be put into perspective. Many universities have subscriptions to thousands of journals across the country currently which are extremely expensive to obtain universal usage at their respective colleges. I happen to know because I am a student at the University of Missouri-Columbia. So, my question now becomes, who is

this policy targeted at? Scientists? Students? University researchers? The primary benefit that I can see would be from those people who do not already have access to these papers, which would include most in industry, and it would help slightly with those who are at a university who may not have access to a particular journal due to limited funding. Many of the journal papers I would like to read are from SPIE, however, my university does not carry this particular access so I tend to look elsewhere for my articles. All in all, I think enacting this sort of policy would be nice, but I think the government needs to realize that doing this is not going to be as great of a boon to the scientific community at large as it may think. I'm only saying that typically taking out a large amount of money from any industry "could be" disastrous, if the policy will be enacted it needs to be balanced with what the possible gains may be which in this case would be substantial to myself and industry, but perhaps wouldn't be that much of a boon to those in upper echelon universities that can already afford complete access anyway.

On to my government's questions:

1. Which Federal agencies are good candidates to adopt Public Access policies? What variables (field of science, proportion of research funded by public or private entities, etc.) should affect how public access is implemented at various agencies, including the maximum length of time between publication and public release?

All of the agencies that give funding to projects should adopt public access policies because if I as a taxpayer am paying for it to be researched I do have a right, no matter how small the funding percentage is, to view this content and see what my tax dollars went to purchase. This in my opinion is a fundamental right. The free flow of information is paramount to a society's stature in the world. The variables that should affect this are none. As for what length of time should be given between publication and public release, it should be exactly the time that it takes to produce one journal issue in whatever particular journal it is. The reason for this is that in any type of research it is important to get the most up to date information possible when doing your own research. Even a single month without up to date research can badly destroy your chances of being in the spotlight in the scientific community. Scientific progress moves that fast. Therefore, my compromise to the publishers is this: Publish the work in one issue and keep it under copyright until the next issue. The public deserves to know what is out there, but the public also does not need to know "this very second" that this information is out there, only that within a reasonable amount of time it will be available to them. In addition, for students and professors that do not need that up to date information, a single issue's time would be perfect for simply doing background research on a topic and would help significantly to increase overall awareness of these projects in the respective scientific fields.

2. In what format should the data be submitted in order to make it easy to search and retrieve information, 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.

In terms of formats, there are many formats in existence and forcing a particular format on any publisher could be difficult and counterproductive in a long term sense since it favors on industry (such as PDF... acrobat) over others. However, I think the government could "suggest" a series of formats to the publishers that they only have to pick and choose one of the formats to publish in. The most standard formats that I get papers in are .doc, .pdf, and .html. All of these file formats are available free of charge to access from any computer (.doc can be opened by openoffice which is a free office editor). It would be "nice" if .pdf was supported in each of these journals as this format is completely compatible with most e-reader devices (such as the amazon kindle) that are quickly changing the face of research in every field by allowing for the quick and easy reading and storage of thousands of scientific documents in a single electronic format. I personally have a Kindle which helps me immensely in reading scientific documents and most importantly to refer back to them when I need to very specific piece of information for my research. PDF is most likely going to be the format of scientific research due to its widespread use and availability. However, I must point out that if this format is chosen it must be a completely not password protected format (one can restrict access on PDFs) that is completely open if this format is chosen as the "free" publication format, otherwise this choice would be of limited use.

3. What are the best mechanisms to ensure compliance? What would be the best metrics of success? What are the best examples of usability in the private sector (both domestic and international)? Should those who access papers be given the opportunity to comment or provide feedback?

The best mechanism to ensure compliance is to open a forum for scientists who can report access or a denial thereof from publishers. This would ensure that any publisher that does not comply would instantly be seen as being out of order by those in the scientific community.

The metrics of success would be cost reduction at first. Many universities wouldn't have to pay as much for access and in the scientific community you would see more innovation and more competition (which leads to greater innovation) due to free access. In addition, many scientists would then prefer to publish in the free format since more people will read it, leading to more citations, leading to essentially more funding since the papers will be more of an impact. Those factors would be your "metrics of success". As for the innovation of new products from scientists, this is hard to really measure physically until the age of it happening is long gone. We'll have to wait and see what history thinks of this particular policy.

The best example of usability would be that in the private sector many of those scientists could save their company money by not having to do experiments that others have tried and failed.

As for if those who read papers should be able to provide feedback, sure. Feedback is always great, and in fact, if those pre-published manuscripts were available publicly, our society could have a peer reviewed journal reviewed by thousands of scientists, and not just by a volunteer professor that does it only as a prestige thing. More people reviewing content is equivalent to saying more theories will be correct and more theories will be "checked" more importantly. To give an example, if I write a paper and my english teacher checks it, it might be "B" material. If I write a paper and my english teacher, my roommate, and the people at the student success center check it, it will be "A" material.

I hope this has been informative to all and that I can soon access free papers in e-reader format because that would be awesome and a great success to science everywhere.

+4 Stevan Harnad said on December 13, 2009 at 1:02 am:

Seems to miss the point. The target of the OSTP policy is the federal grant fundee (not publishers). The best mechanism to ensure compliance (with the requirement to provide public access to the fundee's peer-reviewed research) is to make deposit in the fundee's institutional repository an explicit part of the grant's fulfillment conditions, with compliance monitored and ensured by the fundee's institution. The purpose is to maximize research access, uptake and impact.

Benjamin Goldschmidt said on December 13, 2009 at 5:19 am:

Ah, I must have misunderstood the above topic then. I apologize for my haste. Though, I do have to ask then, isn't the government going to run into serious problems with publishers if it requires researchers to deposit results publicly since technically the publishers do "own the rights" in a loose sense whenever a paper is submitted and published to such a journal? I know that researchers cannot even use their own material in another journal, even if it's only a graphic or something similarly used to reinforce a similar idea that they invented if it has already been published in another journal, thus copyright. I'm confused as to how this could be allowed without involving publishers in some way. I mean, wouldn't doing

that be sort of like a researcher inventing a cure for cancer and then the government tells him/her that it has to be publicly disclosed because it was funded with public money therefore essentially making you lose any patent rights to it by its disclosure? I suppose one could argue that since it's publicly funded that it should be publicly available if anything good comes from it, such as the aforementioned cure, but there are several universities I believe that allow for innovation to be patented even if it is partially funded by federal grants.

Stevan Harnad said on December 13, 2009 at 10:45 am:

A reply to Benjamin Goldschmidt's second comment appears above, entered inadvertently as a reply to Dave Neuswanger. Apologies for clicking the wrong Reply button!

+1 Robert Hebner said on December 13, 2009 at 8:43 pm:

Obviously there is widespread support for open access to technical information whose creation was funded by the public. The key issue is in implementation. An early attempt in this direction was the National Technical Information Service, NTIS, which had chronic funding and management issues as it was a government agency under constant budget pressure. It must be recognized that while there will possibly be funding to start good ideas, sustainability is problematic as the amount of information continues to grow.

My modest proposal is rather than establish and fund a government program to provide the information, simply use the existing dissemination mechanisms, particularly those established and maintained by not-for-profit organizations. The one with which I am most familiar is IEEEExplore. This system has more than 2.5 million entries that are accessible worldwide. It began life as a dissemination mechanism for engineering publications but has agreements with parts of the physics community and private entity to distribute their publications also.

Let's be clear that there is a cost associated with the free dissemination of information. The information has to be generated, vetted, and entered into the data base. The search function must be maintained and updated as the technology changes. Redundancy is required for reliability. Security is critical. Populating the database with older relevant publications is important. Accounting for costs is critical to fairly allocate costs among users. Today the IEEE's cost for maintaining the systems is largely paid by users, with the preponderance likely borne by university libraries who subscribe to the electronic systems to provide critical research information. But all of this, as well as the infrastructure for continuous improvement, already exists, at least within the IEEE.

Most approaches envision open access as a new Federal program that inevitably will face the challenges that were faced by NTIA. It is likely that a better approach would be for the Federal government to team with not-for-profits, like the IEEE, who are in the business of making certain that technical information is available to everyone. The government could then provide the incremental cost of providing the information it wishes for free and the existing, experienced, established, not-for-profit dissemination systems would continue to grow and thrive with the government as a partner not a competitor. In addition, to being the fastest and least expensive way to establish a system, this would likely reduce the expenses of university libraries which would also benefit scholarly pursuits.

Note: This is a private suggestion that has not been discussed with , vetted by, or endorsed by the IEEE. Te IEEE was listed as a specific example as one of the leaders in providing access to technical information. It is not the sole example.

B Klein said on December 14, 2009 at 1:17 am:

Government funding agencies have the infrastructure in place to do the job. See [www.Science.gov](http://www.Science.gov), a gateway to government science information and research results. Currently in its fifth generation, Science.gov provides a search of over 40 scientific databases and 200 million pages of science information with just one query, and is a gateway to 1,950+ scientific Websites.

Science.gov is an interagency initiative of 18 U.S. government science organizations within 14 Federal Agencies. These agencies form the voluntary Science.gov Alliance which governs and pays for Science.gov.

Stevan Harnad said on December 14, 2009 at 1:01 am:

Neither IEEEExplore nor IEEE journals are OA, but IEEE is a Green publisher, endorsing immediate OA self-archiving, by its authors, in their institutional repositories. Hence what is needed for IEEE articles, as for articles published in all other journals, is that funders (and institutions) mandate that all researchers self-archive their articles. That is what OSTP (and FRPAA) are proposing. No new funds and no new software are needed. Just the mandate to self-archive.

Ralph Caruso said on December 14, 2009 at 6:47 am:

I used to be sponsor of government research in the nuclear safety field, and I believe that it is vitally important for all of this material to be publically available, within the bounds of classification and proprietary claims. The final reports and all of the technical supporting data needs to be made publicly available, and they should be free to the public. The organization that sponsors the research should be responsible for maintaining this data. It should not be contracted out, even to organizations like the IEEE, because those external organizations have cost structures that will require them to charge a fee for the data, and there is no reason for the people who have already paid for this data to pay for it again.

It is vitally important that the information that is available is more than just the final report. The recent Climategate scandal shows that unless the raw data and methods are open to scrutiny, otherwise well-meaning scientists can be tempted to put their fingers on the scale. I have seen this, myself, and I find it unconscionable, but if the research does not provide the expected results (quite an oxymoron, really , but true) the researcher will lose favor with the sponsoring organization. In order to ensure that the research is really honest, the data and the methods also need to be archived at the same time as the final reports.

Regarding the "peer-reviewed literature", and their request that reports and data be embargoed until publication, I have no sympathy for them whatsoever. Again, the Climategate scandal has revealed that the "peer-review" process can be manipulated, and when the stakes are high enough, the data WILL be manipulated to produce the desired outcome, and the peer-review process is not enough to prevent it. Only open publication of data, methods, and results will suffice. The "peer-reviewed literature" should be allowed the opportunity to die a dignified death. It has served its function, but like buggy whips, it is no longer necessary, and has actually been shown to have become a hindrance to the progress of science.

I think there will need to be some work done with the National Archives on retention of this material, because I think that the Archives has policies that data be de-acquisitioned after a certain amount of time. This MUST NOT BE ALLOWED TO HAPPEN. I can remember several experiments in nuclear safety that were performed during a time when our sensitivity to risk was quite different than now, and we will never be able to perform those experiments ever again. The data and reports from those experiments, and other like it, need to be retained FOREVER. This is why it needs to be done by the sponsoring govt organization. And those agencies need to budget for this data processing need. If there is a desire to get private industry involved in this matter, perhaps they could be contracted to scan and digitize all of the old reports that currently exist only on paper. BUT, that digitized content would still end up in the agency that sponsored it, available for free to the public.

Petr Frish said on December 14, 2009 at 7:29 am:

#### Implementation

##### Fields of Science

What variables should affect how public access is implemented.

Perhaps the single most important scientific research now being conducted is that on the human genome and its related use in cancer cures. Obviously, for the public good, all this information should be made public on a global scale. The greatest deterrent to public disclosure of this information is the incentive for quite substantial profits to be made once the cure is discovered and the results patented. Thus, the single most effective step which the government could take would be to first prohibit any patents on the human genome and any resulting cancer cures, regardless of whether research was publicly or privately funded. Only when this law is in place can requiring full public disclosure of research results be effective. As long as research can be patented, companies will not disclose potentially lucrative results.

If this position looks too extreme, consider two current examples where patents for federally-funded discoveries have resulted in windfalls for the companies, but prohibitive costs for patients and their insurers. The cost trickles down to all of us who use the U.S. health care system. Foltyn, patented for treatment of T-cell lymphoma, is being sold for \$30,000 per month. A new chemotherapy for colon cancer costs \$4,000 per month. (See references 1 and 2 below for details.) These are not cures; they simply extend life for a matter of months. Imagine the charge for an actual cure. Would all Americans have access to such a cure? Who would foot the bill? Would the company then be free to use the enormous profits for advertising and for "lobbying" Congress with campaign donations, as is presently the case, instead of investing in further research?

There are many problems with the current American health care system, but abolishing future patents on genome research and cancer cures would go along way toward reducing costs and ensuring a healthy population. Requiring the publication of the research results would have a world-wide impact that would be incalculable.

If we move instead in the opposite direction on both patents and disclosure, the negative impact would also be international. Simply imagine the shoe on the other foot: Another country's research laboratory makes the discovery and claims the patent, effectively holding the rest of the world hostage. What would be the response?

1.T-cells: Foltyn \$30,000-a-Month drug

<http://www.nytimes.com/2009/12/05/health/05drug.html>

Mr. Caruso (CEO) said the price of Foltyn was not out of line with that of other drugs for rare cancers. Patients, moreover, are likely to use the drug for only a couple of months because the tumor worsens so quickly, he said.

2.Some cancer treatment options can cost \$4,000/month

<http://www.msnbc.msn.com/id/23783216/>

3.Human Genome Project (HGP):Genomic research paid for by taxpayers provided the basis which will lead soon to the cure for cancer.

[http://www.ornl.gov/sci/techresources/Human\\_Genome/home.shtml](http://www.ornl.gov/sci/techresources/Human_Genome/home.shtml)

4. Intellectual Property (IP): Intellectual property, use and abuse

[http://www.shirky.com/writings/abuse\\_property.html](http://www.shirky.com/writings/abuse_property.html)

Helene Bosc said on December 14, 2009 at 3:16 pm:

In 1997, the US government gave a fabulous gift to all the biologists of the world : The database Medline (NIH) became free for all online. Thank you again for this!

Today it would be a great boon to research progress in the US and in the world if the US government made all federally funded research results free for all online too.

President Obama's principles and actions are congruent with the universal ones that we in France have expressed as three:

Liberté

On the web, science and scholarship know no borders. When the US frees access to its own publicly funded research online, that is a gift not only to US taxpayers but to the entire world.

Egalité

Research, freed not only in biomedical science but in all scholarly and scientific fields, and not only for researchers, but for all of humankind.

Fraternité

Nor is freeing access to research only a one-way act of charity: The rest of the world, developed and developing, will reciprocate, not only by freeing their own research too, but by building upon one another's research in the global, collaborative growth of human knowledge.

Harold Harrington said on December 14, 2009 at 11:01 pm:

My view is that any research directly or indirectly benefiting from public money (at any level of government) should be publicly available online. The current research publishing environment is yet another example of the citizens being drained of money to protect an obsolete implementation of a process. In this case it is the various private publishers of research results that charge for or otherwise restrict public access. Rather like "health" "insurers", but in this case further aggravated by work having been publicly funded.

The location of a repository(s) should be determined as part of implementation. A central government repository has the benefits of centralizing open access for simplified indexing and research. It keeps data from being placed behind private barriers that limit search engines or require payment. Given that the data will be public, it could be archived by organizations such as Google or other private and public sponsors. I can see no significant objections to requiring this centralization.

A single data format may be counterproductive. A dynamic variety of acceptable formats would provide less impact on producers.

One aspect of creating an electronic repository that should be addressed is the obsolescence of formats and particularly the storage medium. In creating the repository there must be provisions made to have tools in place to, at a minimum, periodically migrate data to a newer medium when supporting equipment becomes obsolescent. A similar program should be available as data formats fall into disuse, for the conversion of the data formats themselves.

I further believe that the published information must include sufficient details of the methodology and the implementation of experimental equipment and processes as well as raw and processed data. There are issues raised in this area in terms of the ability to later file patents. Perhaps the patent rules (which disparately need overhauling for many other reasons such as stopping software and business processes from being patented) could be modified to allow for this. There is, of course, a possible issue here of why are the researchers allowed to patent something we paid them to develop.

Longer term, the requirement to publish non-public research after a certain period of time (with real protection for patent rights and proprietary information). But I have no idea how that could be implemented.

Overall I believe that this effort will provide a significant benefit to the world. One of the great sources of new ideas is the guy playing around in the garage. Right now the guy in the garage can't reasonable access the sorts of information that would foster this activity. I have run into this situation quite a few times where costs simply prohibited me from researching an idea or reproducing experimental equipment for by one experimentation.

Some of the other posts talk about organizations needing time to see if they want to go along with this approach. Not their call. As I recollect, the Library of Congress requires a copy of essentially all the published books. How would this be different?

Petr Frish said on December 15, 2009 at 3:42 am:

Several people proposed that ALL federally funded research results should be free for all.

Moment of reflection shows that "ALL" has to be qualified.

For example, classified research, which is part of work of the national laboratories cannot and should not be published. As president Obama said well

in his Oslo speech, e concerns of national security and defense will remain with us for some time.

So, rather than to say 'ALL', we should focus on criteria which would determine "WHICH" areas should be made available on line, for free. One such area is international 'clean energy programs', such as ITER and 4-gen, in which USA participates.

Stevan Harnad said on December 15, 2009 at 9:45 am:

All published, peer-reviewed research.

Jim Harris said on December 18, 2009 at 10:29 am:

I would hope that those in charge of making decisions regarding free access will not be influenced by those parties who profit from proprietary access to federally funded research results and will instead base their decisions on what is in the best interests of the scientific community.

+2 Heather Morrison said on December 18, 2009 at 2:58 pm:

First of all, let me extend my congratulations to the U.S. government and people for pioneering in the areas of openness, with the NIH Public Access policy, and more recently, the open government initiative. This should be an inspiration to governments everywhere, including mine (Canada). I speak as a professional librarian, scholarly editor, and scholar in the area of scholarly communication.

Who should enact public access policies?

If public funding is accepted, then any published results of research should be made freely available to the public as soon as possible. Stipulating published results of research eliminates problem areas; classified research, for example, will not be published. ALL publicly funded research that is not classified should be publicly available; otherwise, it should not be publicly funded. The current version of FRPAA which limits public access to agencies with significant funding portfolios is a good practical approach.

How should a public access policy be designed?

1. Timing

The 12-month embargo period set by the early innovator in open access policy, NIH, was a very generous time period. More recently, an international standard is emerging around a maximum 6-month embargo, for example this is the period specified by the Canadian Institutes of Health Research. A fairly comprehensive list of policies can be found at ROARMAP. This embargo should be viewed as a temporary measure, to allow scholarly publishers time to adjust to an open access online environment. The remainder of this section explains why.

The international publishing community has had lots of time to adjust to an environment where free online access is optimal. Discussion about open access can be found in Learned Publishing, the journal of the Association of Learned and Professional Society Publishers (ALPSP), dating back for about a decade. This vehicle of the scholarly society publishers (Learned Publishing), has been freely available after a one-year embargo at the voluntary discretion of the society, for many years, and is still flourishing. ALPSP has been a good role model for member publishers, with a leading-edge author's agreement allowing authors to self-archive without restriction. Academic publishing is very different from many other businesses, in that the suppliers and customers are basically the same people (scholars and the librarians who serve the needs of scholars). A recent report by Mark Ware published by the International Association of Scientific, Medical and Technical Publishers (STM), quotes the proportion of revenue received by this group for scholarly journals from academic libraries at 68-75% (this does not account for non-academic libraries and revenue streams such as advertising which could actually benefit from public access. Combining advertising with free online access seems to work well for Google • ).

The scholarly publishing industry is indeed adjusting to the new environment, albeit in a somewhat uneven fashion. The number of fully open access, peer-reviewed scholarly journals in the world is currently over 4,000 (about 15% of the world's scholarly journals) according to the vetted Directory of Open Access Journals, which is consistently showing a net growth rate of 2 titles per day (Morrison, 2009).

In addition to these fully open access journals, many journals voluntarily make all their content freely available after a delay period. While I don't have exact numbers for the latter, the difference between the 4,000 titles in DOAJ and the over 23,000 freely accessible journals listed in the Electronic Journals Library gives a rough indication, i.e. at least 19,000 journals with free back access.

A brief review of the SHERPA RoMEO Publisher Copyright Policies and Self-Archiving website can illustrate both how publishers are adapting to the environment, and the environment that they are adapting to. In the search box, pull down the menu for funders, and you'll quickly see that the publishing community has a very great many open access mandate policies, of research funding agencies, and, increasingly, universities and departments as well, around the world. Search for a few journals or publishers, and have a look both at the self-archiving policies of most journals and publishers (providing for self-archiving is currently the norm), and the many green check marks indicating compliance with a variety of funders.

Libraries are very actively involved in assisting scholars and publishers with the transition to open access. In Canada, the Synergies project (libraries and publishers working together, with government funding) is helping scholarly journals in the humanities and social sciences to move online. Open access is not required, but is actively encouraged, as this is best for the dissemination of work of Canadian scholars.

Libraries around the world are working cooperatively with the physics scholars and publishers to transition the whole field of high energy physics to open access publishing through SCOAP3. Many libraries provide funding and/or other forms of support for open access publishing, and libraries are most willing to talk with publishers and journals about means of combining subscriptions and open access. Academic libraries work with and for the scholars, who need these journals both for reading and for career advancement; ensuring that scholars have the support that they need for scholarly communication is the essence of what we do.

2. Version. The author's final version after peer review should be specified in the policy. This is one area where different agencies might have good reasons for slightly different policies. The NIH, for example, has a mandate to preserve as well as make accessible the scholarly literature, and so has very specific requirements.

There are two advantages to requiring the author's final version: 1) this allows publishers a bit more leeway to make money through subscriptions to their final version, which is the version that reflects most of the work actually done by the publisher, and 2) an author's version may overcome some limitations of a publisher's PDF. For example, if the publisher uses locked-down or image-based PDFs, these works are not accessible to the print disabled, but the author's version may be both more accessible for the disabled, and more searchable for everyone.

3. Mandatory v. Voluntary. Public access policies should be mandatory. As illustrated by SHERPA RoMEO, when publishers must comply with public access policies to accommodate authors, they adjust.

4. Other. While the NIH provides a great role model with fair use after a delay period, the best service to scholarship is full libre open access (Morrison 2009A). That is, open access with no delay period and minimal or no restrictions on re-use. For example, when as a scholar I freely share my articles and charts with everyone, another author is free to re-use my charts, with appropriate attribution. For me, this is a gain (of a citation, exposure, mention at a conference), not at all a loss. The NIH was and is wise not to REQUIRE full open access, however it is beneficial to mention this as an ideal and encourage voluntary movement in this direction. To illustrate the appreciation the scholarly community has for this approach, consider that the U.S.-based PLoS ONE, a fully open access journal, although a very new journal, is already among the world's largest scholarly journals and on track to becoming THE largest in 2010. Advising scholarly publishers, whether commercial or not-for-profit organizations, to move to full open access (i.e., meet the needs of the constituency served) is not only good for the public interest, it is just plain good practical business advice too.

Thank you for the opportunity to comment.

Heather Morrison, MLIS

Associate Editor, Scholarly and Research Communication

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