

Introduction and Perspective

The comments and recommendations contained herein are in response to an RFI issued by the Office of Science and Technology Policy (OSTP) on November 3rd 2011 and published November 4th in the Federal Register 68518-68520, "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research."

I am responding as a relatively new small business owner with a current business plan of providing Aerospace engineering services to government agencies, commercial industry, academic institutions, and non-profit institutions. Supported by over 30 years experience working for a large company in the Aerospace industry, I have been competing, in particular, to perform studies on innovative advanced concepts and technology. This business focus which is particularly sensitive to access to research results has made me personally aware of the topic of this RFI. Prior to the issue of this RFI, I was not aware of previous OSTP public consultations (2009 and 2010) or a report issued by the Scholarly Publishing Roundtable (Jan 2010) but had wondered on numerous occasions if public access was perceived as a concern and if a path to express my experiences existed. So, I welcome the opportunity to respond to this RFI.

Comments on Current Public Access to Scholarly Publications Resulting from Federally Funded Research

There are two aspects of current public access to scholarly publications that I wish to comment on, affordability and timeliness, but before I address those I would first offer a general comment. The scope and quality of research results available through today's internet access is truly remarkable and has almost certainly not yet reached its full potential. This access is undoubtedly contributing to the advance of both science and engineering. I would like to make special note of NASA's Technical Reports Server (NTRS) as representing an honest attempt to make available NASA funded work. Also of note is Wikipedia whose numerous technical and scientific entries frequently have pdf versions of peer-reviewed articles contained in the list of references.

Having said that I would like to comment first on the cost of obtaining electronic copies of peer-reviewed scientific and technical papers from the sources that are of primary interest to me in my aerospace endeavors. Below is a table showing my primary sources, a typical cost per paper, and a brief description of the sources' breadth of publications and/or primary publication of interest.

Publishing Source	Typical Cost per Paper	Brief Description of Offerings
Elsevier ScienceDirect	\$31.50	full-text scientific database offering journal articles and book chapters from more than 2,500 peer-reviewed journals including Acta Astronautica, Planetary and Space Science, and Icarus
American Institute of Aeronautics and Astronautics (AIAA)	\$25	9 journals plus proceedings
Springer	\$34.95	33 journals in astronomy, 272 journals in physics including Celestial Mechanics and Dynamical Astronomy
American Institute of Physics	\$28	15 journals

While the cost of an individual paper or two would not seem an undue financial burden to bear for either a casual or professionally interested reader. However, it has been my experience that 10-15 papers may be needed when researching a topic. This quantity is needed to understand where the current published state-of-the-art is and what research areas have already been explored. Several irrelevant papers may be acquired since abstracts must be used to judge the relevance and significance of the contents. In a typical year I may research 5-6 distinct topics. Using an average paper cost of \$30, my yearly expense to obtain research results can easily reach \$3000. This is a non-reimbursable expense for any contracts awarded as a result of the information obtained but is often required to fulfill proposal requirements to

discuss the impact and relevance of the proposed work. As you are probably aware, individuals employed at corporations, academic institutions, and research institutions can usually obtain the same papers at discounted or no direct cost if their employer or associated library has obtained an institutional or corporate subscription. This is a distinct advantage for those individuals over the general public.

The second aspect of current public access to scholarly publications that I wish to comment on regards the timeliness of the availability of the information. Most government funded studies I am familiar with require a final report of the results to be delivered at the conclusion of the study and usually require the results to be presented at conferences or published in professional journals. There can be a significant time lag between the conclusion of a study and the publication of the results in a peer-reviewed forum. This time lag can easily one year or more. The time lag is understandable, the peer-review process does require some time and the chosen conference's date or journal publication date will generally be asynchronous with the conclusion of the research. While understandable the time lag is no less consequential to those without access to the final report or not in close association with the principal investigator. Typically the next phase of funding will have already been competed before the prior phase's results have been published.

Recommendations

I generally endorse the Scholarly Publishing Roundtable's core recommendation:

"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."

And their additional recommendation that:

"Agencies should establish specific embargo periods between publication and public access. An embargo period of between zero (for open access journals) and twelve months currently reflects such a balance for many science disciplines. For other fields a longer embargo period may be necessary."

However, per my timeliness discussion above, I would modify the Scholarly Publishing Roundtable's recommendations as follows:

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 the research study has been completed and the results delivered to the funding agency in a final report.

Agencies should establish specific embargo periods between research conclusion/final report delivery and public access. An embargo period of between zero and four months prior to the next related solicitation should be established.

Recognizing that the final report has not been as thoroughly peer-reviewed and cannot benefit from possible post-study analyses, funding agencies could establish separate longer embargo periods between publication and public access for conferences and professional journals.

The Scholarly Publishing Roundtable's Report pointed out the size of revenues from scholarly journal publishing, approximately \$3 billion in 2008 in the U.S. market. While the publishing firms and professional societies in this market do provide a valuable service and add value, their product relies on federally funded research paid for by taxpayers. The federal government should examine the current pricing structure of the existing players in the market and determine if they are realizing a reasonable (on the order of 15% for many federal contracts) but not excessive profit. As noted in the Roundtable Report, Open Access (OA) publishers do not depend on subscription revenue because their costs are recovered up front through other revenue streams, such as publication fees, advertising revenue, sponsorships,

institutional subsidies, grants, or some combination of these. With revenue secured beforehand, these business models permit free access to and liberal reuse of published content. Such publishers may choose not to obtain rights or to retain only those rights necessary to assure the integrity and preservation of content.

In conclusion, I believe a combination of a policy of research Final Report accessibility that is rigorously applied and a restructuring of pricing practices of the publishing industry of federally funded research will result in much improved accessibility for the general public. This potentially opens up access to those who can use the new knowledge transformatively, to readers from education and the general public who seek knowledge for many purposes, and to officials and other analysts who might wish to track and assess the effectiveness of the investment of public resources. These benefits will serve to grow our economy and maximize the benefits of the monetary investment made on behalf of the U.S. taxpayer.

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