

Re: FR Doc. 2011–28623

Dear Sir or Madam,

We are writing to respond to OSTP's November 3, 2011 "Request for Information" (RFI) regarding "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research."

As a not-for-profit scholarly publisher as well as professional society, one of the goals of the American Institute of Aeronautics and Astronautics (AIAA) is to expand and enhance access to the latest breakthroughs in aerospace engineering research and development. The main purpose of AIAA's scholarly journals is to publish articles that analyze and interpret original, fundamental and applied research to make such information available to the global aerospace research community.

AIAA's institutional mission is to address the professional needs and interests of the past, current, and future aerospace workforce and to advance the state of aerospace science, engineering, technology, operations, and policy to benefit our global society." This mission has roots in the depths of the Great Depression when two distinct communities committed themselves to the pursuit of scientific and engineering excellence. The American Rocket Society (ARS) was originally a group of writers and editors convinced that spaceflight and exploration were achievable. They sought to expand the acceptance of this belief and fostered and conducted direct experimentation in rocket engineering. The Institute of the Aeronautical Sciences (IAS) sought to foster the exchange of the latest ideas and research in the field of aeronautics. The establishment of libraries and rich repositories of technical content became a pursuit of both societies and this was passed along to AIAA, the product of the merger of the ARS and IAS in the 1960s. In the pursuit of this decades-long goal and through the private investment of its own resources and the generous support of the aerospace community at large, AIAA has created complete journal archives dating back to 1930, ebook archives including all titles (with the authors' consent) back to 1960, and conference paper archives back to 1963.

AIAA and its publishing program advance the state of the arts of aerospace engineering and contribute to the success of the U.S. aerospace industry. According to the Aerospace Industries Association's "2011 Year-End Review and Forecast" the U.S. aerospace industry remains "one of the most significant contributors to the national economy." The industry as whole is projected to have annual sales of over \$218 billion in 2011. This will be the eighth consecutive year of growth. "In 2011, the industry contributed \$87 billion in export sales to the domestic economy. The industry's positive trade balance of \$57.4 billion places aerospace in the lead, representing the largest positive trade balance of any manufacturing industry." Furthermore, this industry supports more jobs through exports than any other industry (according to the U.S. Department of Commerce) and directly employs about 500,000 workers in scientific and technical jobs across the nation. AIAA and its publications directly serve the intellectual and research core of this workforce."<sup>1</sup>

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<sup>1</sup> Aerospace Industries Association. "2011 Year-End Review and Forecast" [http://www.aiaa-aerospace.org/assets/YE\\_Analysis.pdf](http://www.aiaa-aerospace.org/assets/YE_Analysis.pdf).

As a learned society and not-for-profit publisher AIAA shares the federal government's mission to expand access to publications that describe and interpret federally funded research, ensure the long-term stewardship of these publications and archives, and support innovation, economic development, and the next-generation workforce derived from and supported by scholarly discovery.

Like all publishers, AIAA has been investing significantly in support of expanding accessibility, improving interoperability, and fuelling innovation in preparation of offering public access. AIAA's investments have already created comprehensive digital archives of its published content, and AIAA is now making an additional investment of over \$410,000 in the current fiscal year in a new platform to offer the latest and continually evolving web capabilities. Researchers will have access to the most complete digital resource in the field of aerospace engineering with faster and more robust delivery of scholarly information. AIAA is committed to invest more than \$185,000 annually to maintain and develop new ways to present data and scientific articles and engage and educate the next generation of aerospace engineer.

AIAA's activities that support peer review, ensure the continued integrity and reliability of the scholarly record, prepare this content to make it accessible to users worldwide and preserve the scholarly record for future generations do not come without costs and ongoing investment. (AIAA's costs exceed \$1500 per article.) These critical value-enhancing functions would be undermined by access policies that do not take these costs into account. In considering policies that could potentially expand public access to research results, it is critically important that any new policy does not damage the private, especially not-for-profit institutions, on which the Federal Government and its scientific researchers depend.

AIAA joins with other publishers in calling for a federal agency public access policy that is sustainable in the long-term and maximizes benefits to researchers and the public at large; will function as a balanced public-private partnership to enhance access and interoperability; adequately protect fundamental intellectual property rights; and respect proprietary contributions of added-value to ensure sustained private investment in innovation. This approach meets the needs of the scientific community by relying on evidence-based assessments and providing access to taxpayer-funded research results through both public and private channels.

The America COMPETES Act, which established a public access policy for research funded by the National Science Foundation (NSF), provides a constructive model that can be replicated in a timely manner at other federal agencies. This is to be contrasted with the NIH policy, which has the potential to significantly damage a well-functioning scientific discovery and innovation system of communication, reduce economic benefits and employment, and undermine intellectual property. Each of these models should be carefully analyzed to be sure its long-term impact on all stakeholders is fully understood.

All scholarly publishers strongly support the view that the Federal Government should be guided by "principles of transparency, participation and collaboration" as noted in the Transparency and Open Government Memorandum and Open Government Directive. AIAA stands ready to work in collaboration with all partners to ensure the continued success, vibrancy, and innovation of the U.S. scientific community.

In addition to the general suggestions above, we would like to comment specifically on some of the questions outlined in OSTP's November 3 Federal Register Notice requesting public comment.

Respectfully submitted,

Dr. Michael B. Bragg, AIAA Vice President of Publications

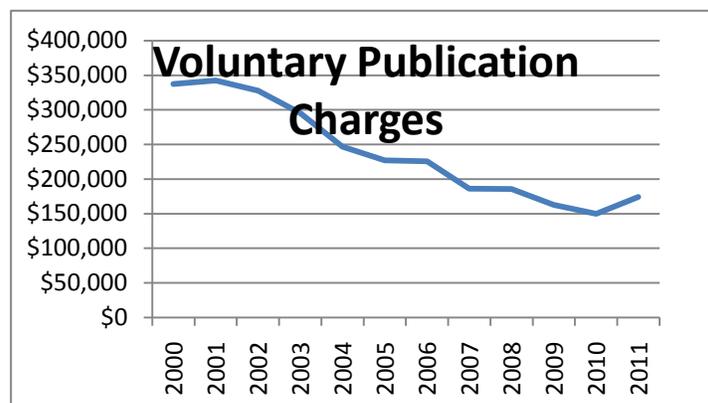
Ms. Carol A. Cash, AIAA Vice President of Public Policy

Mr. Rodger S. Williams, AIAA Managing Director of Technical Publications

**(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?**

There are many options to broaden access to materials that analyze and interpret research for scientists and the public that are already underway, driven by the common mission of scholarly publishers. Development of recognized standards for data and meta-data to make research more readily searchable and discoverable; clearly indicate the published article as a version of record, thus enhancing the confidence with which scientists but more importantly a lay-users use the content ; and clearly identify and disambiguate the identity of the authors and researchers involved. Publishers and groups and vendors that support publishing are already working in partnership to develop this toolset through initiatives like CrossRef, CrossMark, ORCID and ResearcherID. These represent additional investments and eventually new expenses to be recouped when implemented.

The federal agencies should make funds available to support payment for open access to published articles to cover the real costs not borne by the research grant. In discussions with aerospace engineers who receive federal research monies, often those monies are exhausted well before the research is mature enough for publication, or access to the funds expires before the article has been completed, reviewed, revised, and published. Possibly related to this, AIAA's success in collecting voluntary publications charges has declined 48% between 2000 and 2011 with an average 5% annual decline, as calls for open and public access grew in popularity. Several private research funders already do this (Howard Hughes Medical Institute, The Wellcome Trust, Max-Planck Institutes) and leading research universities are creating funding mechanisms through the Compact for Open-Access Publishing Equity<sup>2</sup>. To minimize the financial burden public access will present to publishers, any new federal policies should ensure a publication fee reserved until the article is accepted and published. If not published the researcher would forfeit those remaining funds or these are not allocated until an acceptance letter is provided by a registered or recognized publisher appropriate to the researcher's field of study.



<sup>2</sup> <http://www.oacomact.org/>

The federal policies should explore the licensing of content from publishers to make available to specific audiences similar to what is available now as a government purpose license. Publishers already license content to customers of many kinds, and often customize those licenses to meet specific or specialized user needs and have the ability to ensure the availability of their content with existing infrastructure. AIAA has used this model successfully in its book publishing program with service academies and other Department of Defense research and educational entities for many years. Likewise AIAA, unlike some publishers, does not require the surrender of copyright from any of its authors and have special options for government employees and government contractors:

**Copyright Form D:** I prepared this work as part of my official duties as an employee of a Government contractor.

[*Note:* If Copyright Form D is signed, the notice will read as follows: "Copyright © 20XX by the American Institute of Aeronautics and Astronautics, Inc. The U.S. Government has a royalty-free license to exercise all rights under the copyright claimed herein for Governmental purposes. All other rights are reserved by the copyright owner."]

Public access government mandates have significant costs to the U.S. economy and the scientific enterprise. Publishing contributes to the U.S. economy by providing jobs and creating commercial relationship between private employers. AIAA, located in Northern Virginia, employs, 90 full-time employees with 13 full-time employees dedicated to its publishing operations. Publications generated revenues of \$7.1million or 30% of the Institute's overall revenue in fiscal 2011. AIAA's publishing vendors provide full- and part-time employment in Virginia, Ohio, Pennsylvania, California, New York, Texas, Oklahoma, and Kansas.

NIH's PubMedCentral (PMC) data indicates 2/3 of its users are from overseas, undermining critical export opportunities for an \$8 billion publishing industry that employs 50,000 Americans. This is the equivalent of pro bono U.S. information sharing and support of global competitors for organizations that rely on the developments, conclusions, and analysis contained in the scholarly literature. Some of the global competitors are undermining the financial viability of critical use industries.

U.S authorship for AIAA's journals stands at 37% with European and Asian authors contributing 53% of the papers. The leading economies of Asia and the E.U. are making competition with the U.S. in aerospace a top priority. While AIAA is open to membership and journal submissions from all nations, AIAA does play a significant role in supporting an industry critical to U.S. exports and international leadership. China is widely reported to provide monetary incentives to its researchers who have papers accepted by leading Western peer-reviewed journals. It is not unreasonable to expect them also to provide ample monetary support for publication fees. The natural competition among papers for limited publication slots will become more intense in the face of rising peer review costs, when cost recovery options become constrained.

**(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?**

Federal public access policies need to be accompanied and supported by policies and enforcement procedures to ensure copyrighted materials are protected from unauthorized dissemination and piracy. Copyright is an essential ingredient in promoting creativity, innovation, and the continued integrity and reliability of the scholarly record. The current enforcement of IP protection is still weak and presents (both for- and not-for-profit) publishers with ongoing challenges. When resources are stretched publishers are often forced to put a lower priority on policing the violation of their IP rights or spend slim budget dollars on third-party services. These services merely provide detection of suspected violations and the issuance of cease-and-desist notices, but in no way ensure a permanent solution to this problem. Further consumption of limited resources may be entailed if staff and legal resources (even court costs) needs to be involved in enforcement. Some of the investments referenced earlier primarily versions of record and author disambiguation may mitigate abuse, but are not panaceas and are being created by publishing industry initiatives. There is evidence that the NIH policy undermines IP and enables piracy. Not only is PMC undermining an important U.S. export market,<sup>3</sup> but PMC copies of copyrighted material appear on rogue sites, contributing to millions of dollars in annual losses to U.S. publishers.

**(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?**

Centralized, government-controlled stewardship of publications carries significant downsides and few upsides. Long-term stewardship of content carries significant costs that are already being borne by publishers. In an era of dwindling federal resources, central federal repositories are duplicative and an unnecessary expense and recurring burden that may not be viable for long-term stewardship. Furthermore in the current environment where there are myriad calls for the shrinking of the size of government and the reduction the federal deficit this effort will run counter to the current political mood. The current congress remains unable to find modest savings whereas this effort will add additional expenses and risk damage to a viable profit-making industry contributing revenues and creating jobs for the U.S. economy. In fact the U.S. research enterprise does not find accessibility to published research housed in publisher created repositories to be an obstacle. According to Ithaka S+R's 2009 faculty survey "free accessibility online has remained the lowest priority for scholars across

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<sup>3</sup> See question 1

disciplines in their selection of a journal for publication; in fact, prioritization of free availability fell substantially between 2003 and 2006.”<sup>4</sup>

Publishers, in fact, unify the content from various federal funders and avoid funding inconsistencies from department to department, protect access from the risk of partisan-motivated cuts, and place the research in the broadest research context (alongside content not federally funded) possible.

The publishing industry is already doing a good job of promoting interoperability, search, development of analytic tools, and other scientific and commercial opportunities. There is no reason to doubt that they will continue providing innovative products and services, unless their financial livelihood is undermined by harmful policies. Whereas Government stewardship does not ensure interoperability and has been evidenced by continued challenges on national security intelligence sharing and other examples, Overall there is a poor track record among agencies ensuring interoperability even on critical matters.

**(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?**

As initially outlined AIAA has maintained the archives for the aerospace engineering research community: it is part of its organizational DNA and regardless of public access mandates this mission will continue. AIAA is enhancing its partnership with internet search engines and abstracting services already. It is in the early days of exploring data repository archives with leading research universities that will be linked to the published research.

**(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?**

Federal policies should focus on the research, its results, and the original reporting thereof. Publishers are the entities that invest in the peer-reviewed literature. U.S. federally funded research agencies should provide public access to a final research report, rather than the peer-reviewed journal article. This solution would allow standardization of information reported, rapid and broad dissemination of the government-funded materials even before publication of a peer-reviewed article, and the preservation of IP rights. The NSF policy referenced above provides a much better model. A report repository with links to relevant published content such as the peer-reviewed article (clearly identified as a version of record) and the source references through DOIs would be the foundation of a rich research environment ready for further exploitation by other researchers. The application of independent indexes, semantic tagging, and the retroactive application of DOIs to older resources will only enhance the research value.

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<sup>4</sup> Roger C. Schonfeld and Ross Housewright, “Faculty Survey 2009: Key Strategic Insights for Libraries, Publishers, and Societies,” April 7, 2010, Ithaka S+R.

This research environment would be fertile ground for the development of standardized templates for certain kinds of reports and to facilitate various kinds of aggregate meta-analysis. The critical mass of this resource could lead to the development of additional resources perhaps including lay summaries and analyses broadening interest in STEM and cultivating a new generation of scientists, engineers, and mathematicians identified as critical to U.S. global competition, by “Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future.”

In the event accessibility barriers still exist, licenses as mentioned previously or a waiver program for demonstrated needs based users, students, other public development uses could be explored. However some means for sale to private corporations that may capitalize on the content for profit-based motives should remain open to publishers as it would to patent holders.

**(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?**

This question itself is fundamentally flawed: often these types of publications are called peer-reviewed but not all meet the same level of intellectual scrutiny as journal peer review. Abuse or inadvertent use of this terminology for some book and conference proceeding content would devalue genuine peer-reviewed content and damage the standing of publishers and researchers alike in public opinion; and even misguide the less attuned public.

Beyond the initial concern, public access for other types of content should not be pursued as it would only further erode the resource and means to capture a return on investments only publishers make. These others forms of publication require similar support infrastructures. For conference proceeding in particular, these often organized and published by mission-driven, not-for profit organizations, which need some means of cost recovery. Conference proceeding help defray the cost of the conference where intellectual exchange occurs in real-time. This income also enables student and retiree participation at reduced costs furthering the active life of researchers and fostering a new generation of STEM participants.

For books, where fewer and fewer not-for-profits are publishing, publishers often conceive the project, commission the content, and invest heavily in its development. This greater degree of editorial intervention produces a much smaller ROI. The erosion of value by requiring some chapters if not the whole work be made available for free will limit the publishing opportunity and drive more small publishers out the book business and promote more industry consolidation.

Books serve as a critical bridge between high-level research as in journals and the more tutorial and explanatory nature needed by students and other newcomers to the field. In fact the lay-users that public access aims to serve may require more books to help understand the original research. With no revenue model there is no incentive for publishers to commission and publish these works, stifling innovation at that level. Likewise with e-books just now emerging as a mature product for the STEM market, free electronic access to portions of that content will limited its further development and the costly investment necessary to build upon this success will be unattractive to publishers.

As with any kind of content published by a nongovernmental entity at its own initiative, government-mandated access to books, proceedings, or other such materials is an expropriation of the private property of both publishers and authors who earn a royalty, and there would be downward pressure on royalties for authors--already a modest incentive at best in STEM publishing.

**(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?**

In short there are no “appropriate” embargo periods, and the research in different disciplines (and even subfields) has different life spans. For example, articles published in the APA’s 37 journals have a long half-life and lifetime usage of about 4.5 and 19.5 years, respectively,<sup>5</sup> while in mathematics journal articles published in 2009 were as likely to cite articles published before 1998 as after them, and only 10% of the citations were from the previous three years.<sup>6</sup> For aerospace engineering, the aggregate cited half-life is greater than 10 years and the aggregate citing half-life is 9.7.<sup>7</sup> Broad categories for the bases of embargo periods will be unacceptable. At best a formula tied to the citation half-life is the only equitable approach to be considered, but any embargo period is a dramatic shortening of the period of copyright protection afforded all publishers, and likely to significantly impact publishers’ ability to add value and innovate.

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<sup>5</sup>See page 5 of letter from PSP and DC Principles in response to previous OSTP RFI

<sup>6</sup> See page 28 of the final report of a February 2011 MSRI Workshop on Mathematics Journals.

<sup>7</sup>Journal Citation Report 2010. <http://admin-apps.webofknowledge.com/JCR/JCR?RQ=RECORD&rank=1&category=ENGINEERING,+AEROSPACE>