



INTERNATIONAL ASSOCIATION OF SCIENTIFIC, TECHNICAL & MEDICAL PUBLISHERS

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To:

Office of Science and Technology Policy  
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Washington, DC 20502, USA

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

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The International Association of Scientific, Technical and Medical Publishers ("STM") comprises over 100 members who publish journals and reference works, based in 26 countries. US-based publishers publish a significant fraction of the world's scholarly literature and are employing 30,000 – 40,000 highly skilled and well educated people in the US either directly or indirectly, and make a US\$ 3.5 billion contribution to the US balance of trade. STM publishers disseminate journal content, books and reference works, and databases, in a variety of forms including print and online, and in addition provide systems that enable access to individual articles and contributions (hereinafter: "Content") of a multitude of international scientific, medical and technical authors and scholars. This creative Content is available widely in electronic and in print form for access by individuals, whether through academic and corporate libraries or directly, for use in research, education, in industry the professions and business.

STM welcomes this opportunity to respond to the questions set out in the Request for Information on Public Access for Science and Technology Funding Agencies across the Federal Government by the Office of Science and Technology Policy.

STM wishes to contribute constructively to the debate by giving its general comments and specific replies to the raised questions.

STM's submission is composed of two parts:

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**A. STM's general comments**

**B. STM answers to the specific questions raised in the public consultation**

## **A. STM's general comments**

### **1. The role of STM Publishers and their added value in scholarly communication**

For nearly 350 years, scholarly and scientific publishers have played a critical role and function in science communication and society, and form an indispensable link in the process of creating, registering, certifying, formalizing, improving, disseminating, preserving and using scientific information. STM publishers have been helping to create, disseminate and (now) preserve the "body of knowledge". Today over 2,000 scientific and scholarly publishers worldwide (including large and small commercial, university presses and learned societies) manage the processing of some 2-3 million manuscripts submitted from researchers and finally produce annually in excess of 1.5 million peer-reviewed published journal articles in some 25,000 journals.

STM publishers are true partners with researchers in scholarly communication — publishers identify new areas of science (or changes in disciplines) which are under-served; launch new journals or adapt existing ones to meet these needs; and add value to those journals through innovative web-centered tools and services. On a daily basis, their publishing staff are engaged in:

- **substantive editing and interaction** with the research community;
- **improving quality** through organizing, managing, and financially and technologically supporting peer review;
- **easing researcher workloads and enhancing productivity** through web-based author, editor, and reviewer services like e-submission, e-refereeing, as well as rapid and efficient author-friendly production workflows;
- **enhancing readability** through substantive copy/technical editing and the preparation of illustrations or special graphics;
- **broadening accessibility** through commissioning material that emphasizes the scope and significance of research results to broad non-specialist audiences;
- **branding excellence** through underwriting and managing the creation, maintenance, and evolution of peer reviewed journals;
- **fostering dialog** through the creation of global forums that both reflect, and help shape, the development of emerging scientific fields and foster the interchange of ideas and the cross-fertilization of knowledge to the benefit of human health and welfare;

- **globalizing knowledge** by contributing to the development of international standards and protocols<sup>1</sup> that improve the accessibility of research and ensure seamless flow of information;
- **improving skills through** forums and training for researchers to improve their knowledge of, and skills in, the use of online research tools and techniques.

STM publishers are at the forefront of innovation and constantly engaged in supporting, adapting, maintaining and developing cutting-edge technological solutions that enhance the ways in which the research community and society at large produces, accesses, uses and shares scientific knowledge; how the research community works collaboratively to identify and solve the key challenges facing our world.

STM publishers:

- **drive innovation** by experimenting with new content, functionality, and design as well as and developing and investing in new tools to aid discovery and dissemination like data mining and visualization tools, semantic web applications, user-friendly navigation aids, flexible displays, and Web 2.0 applications, like blogging around articles, shared bookmarking, and other forms of online collaboration
- **enable discovery** through podcasts, RSS feeds, customized citation and table-of-contents alerting services, web platforms with sophisticated functionality and design geared to aid and enhance discovery through user-friendly navigation, graphics, taxonomy, personalization, search, browse, analysis, retrieval, and linking tools that provide scientists with seamless and instant access to essential research in a globally standardized format, that facilitate understanding of the relevance of new research tools and technologies, and make content more accessible to general and specialist search engines
- **enrich content** by inserting tags to create online links to related information, XML coding for web dissemination and layout, visual enhancement, reference linking, and indexing

Such investments of time, high level skills and infrastructure require significant financial investment by STM publishers. Yet, when the costs to publish and compared with those to do research, publication is barely 1-2% of the research costs.

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<sup>1</sup> Crossref; <http://www.crossref.org> ; ORCID (Open Researcher Contribution Identification Initiative) <http://science.thomsonreuters.com/orcid/>

## 2. **STM publishers enhance access**

Since early 1990s, STM publishers have invested heavily in the migration from print based products into electronic, digital versions, with the result that 96% of scientific, technical and medical journals<sup>2</sup> and 87% journals in arts, humanities and social sciences are available electronically, fully searchable, and accessible on the world wide web.

At the same time a variety of new business and access models are evolving (and continue to do so), which share these points in common. They are (i) based on principles of sustainability, (ii) voluntarily collaborative and (iii) market driven. Each of the models has its own characteristics, serves a specific need and audience, and offers user flexibility (for particular target audiences or communities including e.g. visually impaired users). Examples range from pay per view/download; article rentals (e.g. as provided by Deep Dyve); funder-, institutional- or author-paid access, site and user-based licensing, and delayed access. The STM industry is experimenting in the field of business models (such as open access), and engaged in evaluative projects such as PEER<sup>3</sup> to generate evidence based data for future policy making.

All those ongoing initiatives and developments have helped to improve researchers' productivity, resulting in falling costs per journal and article for libraries (e.g. UK)<sup>4</sup> and improved access to specialists and society including the less developed world (Research4life)<sup>5</sup>. Today more people than ever before have access to scientific information.

## 3. **STM public access policy considerations**

STM supports the view that government should be guided by "the principles of transparency, participation and collaboration" as noted in the Open Government Directive. We agree that "Collaboration improves the effectiveness of Government by encouraging partnerships and cooperation within the Federal Government, across levels of government, and between the Government and private Institutions".

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<sup>2</sup> Cox, J. and Cox. L. (2008) Scholarly Publishing Practice: Academic Journals Publisher's Policies and Practices in Online Publishing: Third Survey (ALPSP)

<sup>3</sup> <http://www.peerproject.eu>

<sup>4</sup> RIN (2009) E Journals: their use, value and impact.

<http://www.rin.ac.uk/our-work/communicating-and-disseminating-research/e-journals-their-use-value-and-impact>

<sup>5</sup> Research4life: [http://www.research4life.org/Pages/R4L\\_homepage.aspx](http://www.research4life.org/Pages/R4L_homepage.aspx)

STM publishers not only support these principles, but “live and breathe them”. Governments contribute significant funds for research, researchers and their institutions provide the facilities and knowledge to support and perform research and informal communications and STM publishers help create the vehicles for, and then manage, the added value system of scholarly communication as described above. STM journals and books put research into context and assists in its validation.

If speed, broad accessibility and transparency is the Federal government’s primary goal, then it should immediately make public the research reports that it receives as a condition of grantmaking. This is the approach taken in the America Competes Act which directs the National Science Foundation (NSF) to provide meaningful public access to the results of NSF-funded research in a way that does not undermine copyright protections in private-sector journal articles.

Specifically, this approach allows access to all final project reports and citations of published research documents publicly available via the Internet<sup>6</sup>. Furthermore, it ensures that public access policies do not undermine the peer-reviewed scientific journals in which scientists publish<sup>7</sup>. The STM publishing community is strongly supportive of this approach, with publishers having indicated the desire to engage in a collaborative public-private partnership by providing journal abstracts and developing links from citations on government sites to the peer-reviewed published journal article hosted on the publisher’s website.

Voluntary efforts such as *PatientINFORM*<sup>8</sup> should also be supported by government to enable specialized information to be more useful for non-specialized users.

Any Federal government mandate requiring the deposit of manuscripts accepted for publication in scholarly journals into Federal repositories violates fundamental principles of copyright on which today’s scholarly communication is based and we cannot recommend it. However, if the Federal government elects to consider such a course of action (or perhaps other less centralized repository approaches), then government should determine in negotiations with publishers in what fashion such access could be provided (central repository vs distributed access on publisher sites) and the relevant fees that might be necessary to compensate publishers for the use of their copyrighted works and the significant value publishers add to peer-reviewed articles

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<sup>6</sup> America Competes Act, Section 7010

<sup>7</sup> *ibid.*, Section 1009

<sup>8</sup> patientINFORM (Access+Interpretation = Understanding + Empowerment) <http://www.patientinform.com/>

**B. STM answers to the specific questions raised in the public consultation**

***Question 1:***

*How do authors, primary and secondary publishers, libraries, universities, and the federal government contribute to the development and dissemination of peer reviewed papers arising from federal funds now, and how might this change under a public access policy?*

The current scholarly scientific communication system is a well developed, established and balanced "ecosystem" where each stakeholder (authors, researchers, primary and secondary publishers, libraries, universities, federal government) performs a certain task in the development and dissemination of peer-reviewed papers. STM publishers form an indispensable link in the process of scientific communication. STM publishers contribute and add value to scholarly communication in many ways through tools, services and innovation (please refer to section A. above for more details). STM peer-reviewed journals represent the main dissemination vehicle in this process and they are generally independent of the sources of research funding that support the scientists.

Any Federal Access policy should foster publishers' ability to continue providing essential services to scholarly communications that have been identified and described in our response under the *General Comments* section A.1.

***Question 2:***

*What characteristics of a public access policy would best accommodate the needs and interests of authors, primary and secondary publishers, libraries, universities, the federal government, users of scientific literature, and the public?*

The immediate public posting of the investigator's project reports (and data) that are funded and required by Federal grants as well as the creation and posting of interpretive material designed to make research-specific and technical aspects of those reports accessible to broad non-specialist audiences should be the basis of any Federal public access policy. Such a policy would respect the free market in which STM publishers operate today and foster further development of new value added services and solutions as well as innovative business models to expand access in a sustainable way. As background for its policy-making deliberations, we

recommend the Office of Science and Technology Policy carefully consider the public access policy approach taken in the America Competes Act (see *General Comments*, section A.3).

Other business models which would provide for access to the published literature, or versions of articles, should be developed under voluntarily negotiated agreements with publishers consistent with individual business models (which vary from publisher to publisher, and in some cases from journal to journal even within the same publishing house).

**Question 3:**

*Who are the users of peer-reviewed publications arising from federal research? How do they access and use these papers now, and how might they if these papers were more accessible? Would others use these papers if they were more accessible, and for what purpose?*

The vast majority of users of scholarly communication arising from research funded by the Federal government are specialists in the discipline or sub-discipline of the author(s). Those specialists are, or have been employed in academia, industry, private labs and by governments. They included emeritus and retired researchers, scholars, teachers and PhD students. In addition, interested consumers come from the general public and vary depending on the subject area. No matter how topical the subject area, it has been our experience that high-level and highly-specialized research has limited immediate utility to members of the general public.

For this reason, the use of scholarly material by the general public varies tremendously from one subject to another. It is greatest in the area of clinical research. This interest has resulted in individual publishers developing public access programmes of their own for clinical papers and STM and PSP<sup>9</sup> developing the interpretive public access service known as *PatientINFORM* – a free online service that provides patients and their caregivers access to some of the most up-to-date, reliable and important research available about the diagnosis and treatment of specific diseases along with interpretative material to enhance its accessibility.

Evidence indicates that access is far from the most significant problems facing users of scholarly communication<sup>10</sup>. There are many different ways in which users can access peer-reviewed information.

Examples range from:

- pay per view/download

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<sup>9</sup> Professional and Scholarly Publishing Division of the American Association of Publishers

<sup>10</sup>RIN study on access <http://www.publishingresearch.net/documents/SMEAccessCompanionReport.pdf>

- article rentals (e.g. as provided by Deep Dyve)
- funder-, institutional- or author-paid access
- site and user-based licensing
- free delayed access.

“Cost-free” peer reviewed publications would undermine a significant portion of the funding that goes to create them in the first place since STM publishers offset some of the costs they incur to develop peer-reviewed publications through subscriptions to corporations who use this material to augment their R&D efforts. Such access would eliminate or substantially reduce funds currently used by publishers to support the scholarly communication process.

**Question 4:**

*How best could federal agencies enhance public access to the peer-reviewed papers that arise from their research funds? What measures could agencies use to gauge whether there is increased return on federal investment gained by expanded access?*

The immediate public posting of the investigator’s project reports (and data) that are funded and required by Federal grants as well as the creation and posting of interpretive material designed to make research-specific and technical aspects of those reports accessible to broad non-specialist audiences should be the basis of any Federal public access policy. Such a policy would respect the free market in which STM publishers operate today and foster further development of new value added services and solutions as well as innovative business models to expand access in a sustainable way. As background for its policy-making deliberations, we recommend the Office of Science and Technology Policy carefully consider the public access policy approach taken in the America Competes Act (see *General Comments*, section A.3).

Whether government repositories which duplicate already-existing efforts of publishers who disseminate scholarly publications in a responsible and sustainable manner will meaningfully expand or merely shift access to scholarly communication remains to be seen. It is unclear how the Federal government would know whether there has been an increased return on its investment. Before the implementation of any public access policy we recommend that the Federal government first acquire reliable baseline data. We recommend the investigation of citations and patents as useful measures.

**Question 5:**

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

Realistic administrative requirements are an essential requirement to ensure a viable, sustainable public access policy. This is why STM recommends that any Federal public access policy require the immediate public posting of the investigator's project reports (and data) that are required by Federal grants as well as the creation and posting of interpretive material designed to make the more technical aspects of research reports accessible to broad non-specialist audiences. These acts would provide the fastest and most broadly accessible material possible to the public. By not negatively impacting private sector journal publishing, they would also ensure publishers' incentives to continue to invest in providing the highest quality journal articles about the latest research.

**Question 6:**

*What version of the paper should be made public under a public access policy (e.g., the author's peer reviewed manuscript or the final published version)? What are the relative advantages and disadvantages to different versions of a scientific paper?*

The government should sponsor the free and immediate availability of the investigator's project reports (and data) that it requires for grant awardees. These reports should be accompanied by interpretive material designed to make the more research-specific and technical aspects of research reports accessible to broad non-specialist audiences.

In STM's view the making available of journal articles (of whatever version) should be consistent with copyright principles, should be voluntary and should acknowledge the value-add by the publisher via financial compensation.

The consideration of any public access policy requires a careful assessment of the effect that multiple versions of the same article will have on readers. This development might not only confuse readers and undermine their confidence in the reliability of scientific information, but also may lead to the generation of "information cemeteries" which do not contribute to the progress of knowledge-building or support the information demand and need of the broader public audience.

**Question 7:**

*At what point in time should peer-reviewed papers be made public via a public access policy relative to the date a publisher releases the final version? Are there empirical data to support an optimal length of time? Should the delay period be the same or vary for levels of access (e.g., final peer reviewed manuscript or final published article, access under fair use versus alternative license), for federal agencies and scientific disciplines?*

Any Federal government policy or mandate requiring the deposit of manuscripts accepted for publication in Federal repositories violates the fundamental principles of copyright on which today's scholarly communication is based. In STM's view such a mandate might possibly harm the current STM publishing industry and disrupt the innovative and ongoing efforts of publishers to develop and enhance business models and access in a responsible and sustainable way.

To date there is no data on the mid to long-term effects of large-scale archiving of peer-reviewed manuscripts under differing embargo periods on the health and viability of the journals concerned. It is clear that different disciplines consume information at different rates and one-size-fits-all policies (i.e. a single uniform embargo period) will not work. In order to learn what the effect of such policies might be *before* they are implemented, the European Commission (EC) is currently funding a study<sup>11</sup> on the effects of the large-scale, systematic depositing of final peer reviewed manuscripts on reader access, author visibility, and journal viability, as well as on the broader research environment. STM applauds this evidence-based approach to policy-making and recommends a similar approach to policy development in the USA.

In the UK, the Research Councils UK (RCUK) have established public access policies which either stipulate that "publisher copyright and licensing policies be respected by authors" or offer compensation. We illustrate the range and variety of each UK agencies policies in the table below and urge the Federal government to take such a nuanced approach if it is to adopt any public access policy.

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<sup>11</sup> The PEER (Publishing and the Ecology of European Research) project currently funded under the European Commission's eContentplus program. The project is a collaboration between publishers, repositories and researchers and will last from 2008 to 2011. See <http://www.peerproject.eu/reports> for more information.

Agency	Policy	Implementation
<b>Arts and Humanities Research Council (AHRC)</b>	"The AHRC requires that funded researchers: ensure deposit of a copy of any resultant articles published in journals or conference proceedings in appropriate repository <b>wherever possible</b> , ensure deposit of the bibliographical metadata relating to such articles, including a link to the publisher's website, at or around the time of publication.."	"Full implementation of these requirements must be undertaken such <b>that current copyright and licensing policies</b> , for example, embargo periods and provisions limiting the use of deposited content to non-commercial purposes, are <b>respected by authors.</b> "
<b>Biotechnology and Biological Sciences Research Council (BBSRC)</b>	"BBSRC will require a copy of any resulting published journal article or conference proceedings to be deposited, <b>at the earliest opportunity</b> , in an appropriate e-print repository, wherever such a repository is available."	"Full implementation of these requirements requires that <b>current copyright and licensing policies</b> , such as embargo periods, are maintained by publishers and <b>respected by authors.</b> "
<b>Engineering and Physical Sciences Research Council (EPSRC)</b>	"EPSRC Council agreed at its December meeting to mandate open access publication, but that academics should be able to choose whether they use the so-called <b>green option</b> (i.e., self-archiving in an on-line repository) or to use <b>the gold option</b> (i.e., pay-to-publish in an open access journal)."	"academics should be able to choose whether they use the so-called green option (i.e., self-archiving in an on-line repository) or to use the gold option (i.e., pay-to-publish in an open access journal). <b>Publication fees are an eligible cost on EPSRC research grants.</b> "
<b>Economic and Social Research Council (ESRC)</b>	"...it is mandatory at the <b>earliest opportunity to:</b> • deposit a copy of any resultant articles published in journals or conference proceedings, in the ESRC Social Sciences Repository"	"Researchers funded by the ESRC must deposit all outputs from any of their research funded by the ESRC, in the ESRC Social SciencesRepository, <b>except where this is restricted by publisher policy on licensing and/or copyright.</b> " " <b>Publishers' policies on copyright and licensing must be respected by authors/depositors.</b> These may include, but are not restricted to, embargo periods or restrictions on deposited content for non-commercial purposes. To identify which version of a document should be deposited with the repository, the <b>author should refer to the copyright agreement which they have made with the publisher.</b> "
<b>Medical Research Council (MRC)</b>	"The MRC's Open Access Policy requires electronic copies of any research papers that have been accepted for publication in a peer-reviewed journal, and are supported in whole or in part by MRC funding, to be deposited into PubMed Central (PMC) or UK PMC, to be made freely available as soon as possible and in any event within six months of the journal publisher's official date of final publication."	" <b>The MRC will pay any necessary charges levied by publishers who offer Open Access options</b> , providing these have been included under Directly Incurred Costs on grant proposals and where these costs fall within the period of the grant."
<b>Natural Environment Research Council (NERC)</b>	"From 1 October 2006 NERC requires that, for new funding awards, an electronic copy of any published peer-reviewed paper, supported in whole or in part by NERC-funding, is deposited at the <b>earliest opportunity</b> in an e-print repository"	"Full implementation of these requirements requires that <b>current copyright and licensing policies, such as embargo periods, are maintained by publishers and respected by authors.</b> " "...The <b>version of the paper</b> deposited will <b>depend upon publishers' policies</b> on deposit in repositories. It is in NERC's interest to ensure that the Learned Societies remain as key members of its research community and NERC, along with the other research councils, will work with the societies to look at ways that they can adapt to and exploit new models of publication"
<b>Science and Technology Facilities Council (STFC)</b>	"Authors should at the earliest opportunity: ▪ Personally deposit, or otherwise ensure the deposit of, a copy of articles published in journals or conference proceedings in an appropriate e-print repository."	"Which <b>version of the article</b> should be deposited <b>depends upon publishers agreements with their authors.</b> The Council recognises that full implementation of these requirements requires that <b>current copyright and licensing policies</b> , such as embargo periods or provisions limiting the use of deposited content to non-commercial purposes, are <b>respected by authors.</b> "

**Question 8:**

*How should peer-reviewed papers arising from federal investment be made publicly available? In what format should the data be submitted in order to make it easy to search, find, and retrieve and to make it easy for others to link to it? Are there existing digital standards for archiving and interoperability to maximize public benefit? How are these anticipated to change?*

In STM's view, peer reviewed papers (any version) should only be made available to the public if the government is prepared to negotiate with publishers for their use, recognizing the significant value-add that publisher contributions make to scholarly communication. Immediate access to the final published article could be achieved through a range of pay to publish options that are available from a large number of publishers.

If these agreements are completed, we believe that the best way to maximize the usefulness of peer-reviewed papers is by posting of those papers on the publishers' platforms and linking them to final published version once it becomes available as well as from the interpretive material we recommend the federal government develop to broaden accessibility for the American public. Existing tools and services offered by publishers would immediately enhance the usability of those papers to the public.

Information deposited on publisher sites could then be accessible through federated search technologies that already exist today. This would eliminate the need for building, maintaining, and modifying (when technology changes) redundant and costly repositories/infrastructures by the Federal government; prevent any further diversion of government funds away from basic research; lessen the impact of government competition with the private sector; and protect the availability of this information from changes in Federal funding priorities.

We further recommend that any technical specifications for display formats be flexible enough to account for the richness of the formats employed by different subject disciplines as well as accommodate foreseeable technological changes that will require a revision of the standards. If implemented, this should be an area of ongoing attention.

**Question 9:**

*Access demands not only availability, but also meaningful usability. How can the federal government make its collections of peer-reviewed papers more useful to the American public? By what metrics (e.g., number of articles or visitors) should the Federal government measure success of its public access collections? What are the best examples of usability in the private sector (both domestic and international)? And, what makes them exceptional? Should those who access papers be given the opportunity to comment or provide feedback?*

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STM journal articles are tailor-made for specialists in the scientific discipline or sub-discipline of the author(s) and reflect those special requirements in their content and style. The use of scholarly scientific material by a non-specialist public, whose level of technical expertise can vary widely from one individual to another, requires the development of interpretative material that help readers to better understand the background, context and results of research. The federal government is well positioned to handle this task on a large scale.

Regardless of where publications are hosted, we recommend the federal government look to *PatientINFORM* as an example of the interpretive material that it create to enhance the public accessibility of research results. *PatientINFORM* is a free online service that provides patients and their caregivers access to some of the most up-to-date, reliable, and important research available about the diagnosis and treatment of specific diseases. It also gives members of the public the ability to find help interpreting that information and accessing additional materials. By making

it easier to understand research findings, *patientINFORM* empowers healthcare consumers to have improved discussions with their physicians and make informed decisions about care.

STM is actively involved in the management of *patientINFORM* and contributes financially to its development.

Respectfully submitted,  
For and on behalf of the International Association of STM Publishers

A handwritten signature in black ink, appearing to read "Michael Mabe", with a long horizontal flourish extending to the right.

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