STM Advancing trusted research

April 24, 2023

STM response to Request for Information on the NIH Plan to Enhance Public Access to the Results of NIH-Supported Research (NOT-OD-23-091)

Thank you for the opportunity to comment on the "NIH Plan to Enhance Public Access to the Results of NIH-Supported Research" (NIH Public Access Plan), as issued in the Request for Information **NOT-OD-23-091**). STM is pleased that NIH is pursuing a robust stakeholder engagement process, as it did for the development of the NIH Policy on Data Management and Sharing (to which STM submitted significant comments). STM hopes that the comments made by stakeholders in the current process will be fully considered in the development of the final policy and its implementation. STM further hopes that we, and our members, will continue to be consulted on the various ways that NIH policy may impact scholarly communications.

STM stands for advancing open and trusted research, where researchers and the rest of society can rely on information that is credible, accessible, linked, and searchable in perpetuity. We therefore share with NIH the goal of increasing access to publications and data, not just for federally funded research, but for all research. More broadly, STM and our members are supportive of the goals of NIH in funding research and development. We therefore hope that STM and its members will have the opportunity to work with NIH to support researchers to advance biomedical research and public health, as well as promote quality, trust in science, equity, and the sustainability of the scholarly communications ecosystem.

Publishers have led and responded to the interest in open science by investing heavily in open science over the last 25 years, broadening and expanding the public's ability to understand and access the work of scientists and scholars. Many of the products necessary for open science were created and maintained by publishers, including online infrastructure, as well as preprinting, archiving, linking, and data management, and we continue to support and grow those efforts today. Our members have also invested in new models and approaches to providing access, including experimentation with a variety of business models to support quality, sustainability, and equity.

These experiences have demonstrated that there is not one best route to providing access. A mixed ecosystem is likely to persist for some time, even as publishers, institutions, and funders move to support open science. That said, STM believes that knowledge-creation, discovery, and sharing is best enabled when the final articles resulting from all stages of the peer-review and publication process are immediately openly available to all. The Version of Record (VoR) is the most thoroughly vetted version of the research publication, having been through all stages of the peer-review and publication process. The VoR is the authoritative version for researchers and the public, and it is more cited, used, and garners more attention than other versions of an

article.[1] For example, the VoR can link bi-directionally to research objects like data and code, has the latest updates on corrections, and sits on the publisher's platform where it can be integrated with other relevant content, allowing the public to better put this information into context. For these reasons, we urge NIH to ensure researchers have the option to make the VoR Open Access upon publication through a fully-funded Gold Open Access route. Our members would be happy to work together with you to provide the guidance and funding necessary for researchers to make this choice.

Regardless of the route to publication and public access, reliable funding needs to be made available to the researcher and their research institution, together with appropriate and enduring support and guidance on the use of funds and the options for providing access. In order to ensure equity for all researchers, such funding and guidance needs to be provided alongside other guidance for researchers, and in a manner that ensures author choice for whatever journals they choose to advance their research and impact. This funding also needs to be provided on an equal basis so that researchers who choose to publish in journals that are supported by APCs are not disadvantaged in the resources available for their research, student support, and other critical needs. All researchers must have options to meet their funder obligations, regardless of the journal they choose or the agreements their institution has with individual journals. Publishers have a wealth of experience in supporting policymakers and researchers with practical aspects of policy implementation and could work with the NIH to co-create relevant guidance.

Current global efforts to expand open access indicate that direct support for publishing (which includes APC-supported Open Access, Read and Publish Agreements, and other evolving models) provides the most sustainable path to open access. Immediate access to a version of the article funded under subscription models has not proven to work at scale, even if it may temporarily work for some publishers or disciplines, or as a transitional model. While efforts to provide immediate access to articles funded by subscription journal publishers appear cost free to the researcher and funder, they are reliant on subscriptions to support the significant investments publishers make that ensure the quality, discoverability and accessibility of research in perpetuity. Subscription-supported investments include effectively managing the editorial and peer review processes and applying innovative technology to validate the rigor of the research we publish. Subscriptions are put at risk by the immediate availability of a large body of free accepted manuscripts, as demonstrated by widely used resources, such as Unsub.org, that encourage institutions to cancel subscriptions for materials that can be freely accessed. Nor is immediate access to articles funded by subscription journal publishers cost-free for funders and institutions, as it causes additional, and duplicative, costs for the dissemination and long-term curation of research outcomes. Without sustainable funding – for a diversity of models for access -- fewer resources are available to ensure the quality and integrity of the scientific record, undermining the ability of scholarly communication to support

[1] Researchers prefer the Version of Record, as outlined in a survey undertaken by Springer Nature (https://www.springernature.com/gp/open-research/version-of-record).

public trust in science and a dampening effect on innovation, job growth, and scientific progress. New barriers to access could also be created if important journals that serve critical research communities cease publication.

Flexibility is key to ensuring equity, academic freedom, and ensuring that researchers have the opportunity to best advance their discoveries to support innovation and public health. NIH should continue to allow the accepted manuscript to be shared sustainably, while also encouraging and enabling researchers to choose the VoR where appropriate. Critically, there should also be flexibility in licensing, allowing authors to provide articles under licenses and through agreements that best enable them to publish articles that best serve their research and impact. The draft plan indicates that NIH will provide guidance on how to "retain sufficient rights" to comply with the NIH public access policy, and we urge NIH to focus steps to ensure that researchers can supply a copy of any paper reporting on NIH-funded research to NIH for public availability. Requiring that researchers obtain additional rights risks creating inequities in publication opportunities for NIH-supported investigators, particularly in conjunction with an immediate access requirement. This is because some journals will need exclusive rights to support sustainable business models and continue investments needed for quality, preservation, discoverability, innovation, and impact. These risks can be mitigated by ensuring there is sufficient and enduring funding for Gold Open Access, which also can support the ability of researchers to share articles with the licensing option of their choice. STM therefore recommends that NIH retain the current policy of recommending that researchers ensure their publishing agreements include the right to provide a copy of the final peer-reviewed manuscript to the NIH upon acceptance for Journal publication, for public archiving in PubMed Central, which has served the public and NLM well.

Providing flexibility needs to go hand-in-hand with providing support for compliance. In order to minimize researcher burden, promote equity, and ultimately ensure the success of the NIH policy, this support should not just be financial, but should also include guidance for researchers and institutions as well as collaboration with publishers and research offices. The new NIH policy has the potential to significantly increase the amount of time and effort spent by researchers and institutions on implementation, and researchers will be looking to both publishers and their compliance offices to take on some of the responsibility. Therefore, collaboration and dialogue is key. There is likely to be a diversity of approaches and a mixed ecosystem that develops, and STM recommends that NIH provide flexibility and guidance that allows for diverse approaches to succeed.

This current response is focused on the publication side of the new policy, as STM submitted responses to each of the RFI opportunities for the NIH Data Management and Sharing Policy, as well as on the NLM Strategic Plan, to which we refer you for more details on our thoughts regarding data sharing and open science more broadly. The deliberative process and education of the research community provided for in the implementation of NIH's Data Management and Sharing Policy could be a valuable model for implementation of the new publication policy. In particular, the research community has been well served by the prominent guidance on planning and budgeting and the explicit acknowledgement throughout that data sharing has

real costs that need to be addressed in the proposal. Similar planning and budgeting will be needed for publications as well.

STM and our member publishers have invested significantly in a system of scholarly communication that enables the sharing of the latest discoveries and innovations, supports public trust in science and public health, enables interoperability through standards and infrastructure (metadata, persistent identifiers, etc), and ensures articles and data related to research are findable, accessible, and reusable. Publishers continue to invest and innovate to meet the changing needs of the communities that they serve, and to take advantage of the latest technologies to help research outcomes reach audiences as effectively as possible. STM supports an environment where publishers, in collaboration with NIH and the broad stakeholder communities funded and engaged in research related to NIH-funded projects, can continue to drive quality, integrity, and innovation in scholarly communication. In response to the prompts provided in the RFI, below we expand on some of the ideas mentioned above. It is our hope that this response will lead to further dialogue and engagement.

1. How to best ensure equity in publication opportunities for NIH-supported investigators.

Changing access requirements within the scientific ecosystem are likely to solve inequities from a reader aspect, but concerted and collaborative action will be necessary to ensure sustainability and equity across the ecosystem. Agencies can minimize the risk of creating new inequities, especially for scientists from traditionally marginalized communities, as well as early career researchers, by ensuring that these researchers and institutions have the funding support necessary for their research to flourish and choose the publishing option that best suits their needs. Publishers are doing their part by supporting new approaches, including Read and Publish Agreements, that provide opportunities for all to participate and access scholarly communication. Ultimately, a financially sustainable scientific publishing system is critical to advance trusted and impactful science, and attention to these issues can ensure that this is achieved.

To promote publishing equity, NIH needs to make appropriate and enduring funding available to the researcher and their research institution, together with appropriate and enduring support and guidance on the use of funds and the options for providing access. In order to ensure equity for all researchers, such funding and guidance needs to be provided alongside other guidance for researchers, and in a manner that ensures author choice for whatever journals they choose to advance their research and impact. This funding also needs to be provided on an equal basis so that researchers who choose to publish in journals that are supported by APCs are not disadvantaged in the resources available for their research, student support, and other critical needs. Finally, NIH should provide clear and prominent guidance on planning and budgeting and the explicit acknowledgement throughout the guidance that publication has real costs that need to be addressed in the proposal, as it has with the NIH Data Sharing and Management requirements.

Agreements with institutions or funders like Read and Publish Agreements or other pooled payment agreements have the potential to reduce inequality by making OA publishing available to all researchers. Publishers are actively working to develop and promote these models, which can reduce inequity for researchers at participating institutions and also can help increase compliance with policy and reduce administrative burdens. We have received reports of the success of such efforts, thanks to the real-world experiment of growth of transformative agreements around the world.[2]

Another aspect of equity in publishing opportunities relates to the promotion of equity and diversity in the research enterprise. Support for diverse publishing outlets is critical to such efforts, although to proactively drive further change requires input from stakeholders across the research ecosystem. One way in which publishers encourage equity and diversity in the research enterprise is by providing an objective space in which work can be assessed by peers (though our impartial oversight of an independent peer review process). More specifically, in recent years publishers have established industry-wide initiatives such as the Joint Commitment on Diversity and Inclusion[3] and C4DISC[4] which are developing consensus-based standards and best practice (e.g., developing guidelines around the peer review of articles and data; creating policies to support authors with deadnames; etc.).

Finally, publishers support and invest in various initiatives to enable researchers to participate in the scholarly dialogue. This includes support for educational efforts and funding programs that expand participation to underrepresented groups and ensure quality and integrity. For example, Research4Life, a UN-publisher partnership, supports researcher skill development, provides Research Lifecycle Training Webinars, and enhances the ability of LMIC researchers to publish with participating publishers. Many publishers support and partner with AuthorAID, a global network that provides free resources and training, including in article writing, for researchers in low- and middle-income countries. Publishers offer various funding programs to support the participation of less-well-resourced researchers, including discounts and waivers, both individually and through collective approaches like Research4Life. Publishers also work with other stakeholders to provide resources to identify trusted outlets to present their work (e.g., Think. Check. Submit. (thinkchecksubmit.org) a cross-industry initiative) and promote integrity in scholarly research and its publication through the Committee on Publication Ethics (COPE, www.publicationethics.org) and other efforts.

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[2] For example, our member Taylor & Francis notes that the top 10 most published subject areas under their transformative agreements in the past two years have been in humanities, arts, and social sciences, which have traditionally been less likely than those in the physical and biomedical sciences to choose OA. For additional data, see the STM Open Access Dashboard www.stm-assoc.org/oa-dashboard/.

[3] https://www.rsc.org/new-perspectives/talent/joint-commitment-for-action-inclusion-and-diversity-in-publishing/

[4] https://c4disc.org/

2. Steps for improving equity in access and accessibility of publications.

Publishers invest significantly in efforts to provide access, accessible formats, and accessible modes of dissemination for publications. It is important to note that for access and accessibility to be provided, first the publications and infrastructures must be created and disseminated. Therefore, it is a necessary precondition to improve equity in access and accessibility of publication that NIH work to ensure the viability of a robust ecosystem of scholarly communications that drives innovation, supports quality and integrity, and ensures appropriate infrastructure to enable accessibility to diverse users.

As alluded to in the introduction to this response, steps to improve access and accessibility could be broken down into three requirements: 1) sufficient, enduring, and appropriate funding, 2) encouragement and education of researchers to budget for and choose open science, and 3) flexibility for researchers and organizations to enable diverse modes of communication.

Appropriate and enduring funding is fundamental to achieve the open science goals outlined in the draft NIH plan and in the August OSTP memo and make sure that NIH's revised policy can promote equity in access. This is because the sustainability of publishing is a precondition to the availability, utility, and accessibility functions of scholarly communications.

Encouragement and education of researchers is also key, as they will ultimately be responsible for ensuring that the articles that they write are available to the public. Experience with funder requirements and compliance around the world indicates that researchers are often confused about grant requirements, including on how and when to provide access to publications, and a significant percentage of researchers erroneously believe that it is an inappropriate use of grant funds to pay for publication.[5] STM's members' experience with guidance and education indicates that such efforts can make a big difference in researchers willingness to choose open access and compliance with funder and other requirements.

Flexibility is needed to promote diversity in publication, ensure author choice, and support access to publishing in ways that work for researchers. As noted earlier, different publishers may offer distinct approaches to provide access, each of which may be appropriate to the communities they serve, and each of which should be allowed as a method for researchers to ensure access to any article they author that reports on NIH-funded research. A diversity of publication outlets, enabled by flexible approaches to implementation of the NIH policy, supports diversity in research.

Publishers invest significantly to ensure that articles are accessible in various human and machine-readable formats and are available to those with diverse needs. Many publishers have invested in technology and infrastructure to build towards, meet, or exceed Section 508 accessibility and have created a diverse ecosystem of accessible resources available to diverse

[5] E.g., nearly 1 in 6 in the 2016 *Pay It Forward Report* and 1 in 5 in the 2019 *Taylor & Francis Researcher Survey*

audiences with or without assistive technologies.[6] Some of our members were leaders in developing braille resources in multiple languages, screen reading technology implementation, and other innovations. These additional infrastructure and formatting investments are enabled by sustainable business models.

STM also notes various initiatives that we or our members have promoted to ensure access and accessibility for diverse audiences. These include Research4Life which provides access to researchers in Low- and Middle- Income countries; efforts to share plain language summaries to broaden the accessibility of cutting-edge research to non-experts;[7] and investments in the promotion of articles to the media and through social media channels.

Finally, STM notes that equity in access requires that publications that are made available are accurate and trustworthy. STM and its members invest significantly in ensuring research integrity and the quality and reliability of the scholarly record. For example, STM Solutions recently launched the Research Integrity Hub (https://www.stm-assoc.org/stm-integrity-hub/), a robust and holistic set of tools to safeguard the integrity of science through a combination of shared data and experiences and by harnessing technological innovation. Individual publishers are working individually and in partnership with other organizations to prevent misconduct and ensure the integrity of the system. Safeguarding research integrity can only be done through collaboration with all stakeholders in the scholarly ecosystem, and in an environment where continued investments can be made.

3. Methods for monitoring evolving costs and impacts on affected communities.

STM's members compete in a dynamic environment that drives them to provide the widest possible access to the articles that they publish at the lowest possible cost to the research and user communities. Costs and revenue streams can vary significantly from one publisher to another, and even from one journal to another, depending on many factors such as audience, circulation/reach, ranking, number of articles published, field/specialty, and distribution method. These differences need to be considered when evaluating the market dynamics and taking a broad average of dissimilar journals is not recommended.

More broadly, it is important to consider the changing dynamics of how scholarly publication is supported when attempting to monitor trends. Historically, publishers' costs have been spread across those that consume the research (readers / subscribers) of which there are many. The NIH plan may move associated costs to other payers, of which there are fewer. The cost burden will therefore increase for some (e.g., research-intensive universities) while many others will no

[6] E.g., Elsevier (https://www.elsevier.com/about/accessibility) and Taylor and Francis (https://taylorandfrancis.com/about/corporate-responsibility/accessibility-at-taylor-francis/).
[7] E.g., Optica's Spotlight on Optics (https://opg.optica.org/spotlight/about.cfm) and Taylor and Francis Plain Language Summaries (https://authorservices.taylorandfrancis.com/publishing-your-research/writing-your-paper/how-to-write-a-plain-language-summary/)

longer contribute to the costs (e.g., commercial industries, which traditionally subscribe to journals without publishing extensively in them).

When considering the budget for supporting public access to high-quality, peer-reviewed articles reporting on NIH-funded research, it is important to look beyond a single aspect of pricing (i.e., APCs) and consider the total investment in scholarly communications, which includes subscriptions, APCs, transformative agreements, and other inputs. The cost and pricing structures are very different for different disciplines – medicine, physical sciences, social sciences, and humanities – and for different types of journals based on selectivity, services, technology, and other features.

That said, APC prices are virtually always transparent.[8] Our members are committed to the maximum possible transparency around pricing, in accordance with regulation and antitrust concerns, and note that APCs may vary across journal titles based on a variety of factors. Our members are also committed to ensuring that every researcher – regardless of geographic location, discipline or personal circumstance has relevant and realistic options available to them to publish their work, so that no researcher is left without a voice, regardless of funding source. Consistent with this commitment publishers have developed Read and Publish Agreements with institutions and maintain active waiver and discount programs to serve researchers.

STM is not aware of any other NIH efforts to monitor expenses for specific research services or outputs and cautions that any efforts to look at trends in publishing must be carefully interpreted in the context of an evolving and dynamic ecosystem. Those who monitor APC prices and perform market analysis are aware that any trends in this data always need to be contextualized with respect to other trends in publishing (e.g., the growth in the sharing of research outputs) and revenue (e.g., subscription rates and transformative agreements) and with respect with efforts to ensure equity in publication opportunities (e.g., provision of waivers and discounts).

A diverse, financially sustainable, and robust publishing system which provides authors with broad choice is the most effective way to ensure fair and competitive pricing and address any cost concerns. Hard price caps will likely drive existing industry trends toward publisher consolidation and volume-based models which could compromise integrity, quality, and author choice. The research enterprise, and the impact of NIH-funded research on innovation and public health, is best served by diversity that is enabled by flexibility and full support for open access publishing options.

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[8] APC price lists are generally public, and transparently shared. Some examples include American Chemical Society: (https://acsopenscience.org/researchers/oa-pricing/), American Physical Society (https://journals.aps.org/authors/apcs), Elsevier (https://www.elsevier.com/about/policies/pricing), Springer Nature (https://www.springernature.com/gp/open-research/journals-books/journals), Wiley (https://authorservices.wiley.com/author-resources/Journal-Authors/open-access/article-publication-charges.html), The Public Library of Science (PLoS) (https://plos.org/publish/fees/).

In addition, care must be taken with respect to interventions that seek to ensure fees and policies remain reasonable and equitable, as they may lead to unintended consequences or constitute anti-competitive market interference under antitrust laws. As STM and others have recommended in other contexts, NIH should seek legal advice regarding competition law and any undue influence on industry market pricing. Finally, we underline that the goals of the NIH policy are best achieved though NIH efforts to ensure that researchers are budgeting appropriately for publications.

4. Early input on considerations to increase findability and transparency of research.

We divide our response into two sections, as the concepts and needs of findability and transparency, while interrelated, are also quite distinct.

a. Findability (including persistent identifiers (PIDs), metadata, and other infrastructure).

STM and its member publishers would welcome collaboration with NIH to support approaches to findability that leverage and build on existing standards, technologies, infrastructure, and protocols. Publishers have committed to and invested significantly in ensuring the findability of articles and research data. Our experience suggests that additional efforts to support the use and development of persistent identifiers throughout the research ecosystem would bear additional fruit, including identifiers for articles and research data as well for funding agencies, grant awards, facilities, and the like.

Where possible, NIH should leverage existing standards and systems, as supported by publishers, institutions, and other stakeholders. The primary existing PID and metadata structure, enabled through organizations including CrossRef and DataCite, should be adopted and adapted as necessary to minimize disruption, promote compliance, and prevent unnecessary duplication of effort and investment in the scholarly communications system.

Publishers already invest heavily in creating persistent identifiers and machine-readable metadata that promote greater visibility of research findings and data, and these help to promote trust, reliability, and transparency for the scientific system. Cross publisher and industry initiatives around PIDs include researcher (ORCID), institutional (Ringgold), and funder (Open Registry of Funders) PIDS embedded in our content workflows as standard across the majority of the scholarly communication ecosystem. Embedding standards supports our infrastructure development to build better links between interrelated research outputs and improve visibility from funding through to publication. In general, PIDs used or recommended by NIH should be those used by the community, as those can be validated and maintained. Where NIH needs additional or bespoke PIDs, efforts need to be made to ensure they map well to other PIDs that are already well embedded in the ecosystem.

Specifically, STM recommends that NIH support the use of community-adopted PIDs through the grant application process (e.g., ORCIDs for researchers, organization IDs for the

institutions(s) affiliated with each researcher, and Funder IDs for the distinct funders of the grant). While organization IDs are not as well-established or robust as researcher IDs (with ORCID), there are several emerging options for organizations, and NIH should consider recommending one of the following PIDs to ensure harmonization and avoid unnecessary duplication in the scholarly record: Ringgold (a global organization identifier system); ISNI (ISO standard name identifier system); ROR (the Research Organization Registry); and Crossref's Funder Registry; along with ORCID. NIH should also ensure there are metadata fields for all of these.

In addition, publishers have invested significantly in discoverability, search engine optimization, and other efforts to make sure that published articles can be found and used to advance scientific research. To support the findability of both articles and research data, NIH should also engage with and implement community-based standards and infrastructure initiatives that link and promote access to the best available versions of articles and research data. These include open protocols like Scholix, a multi-stakeholder initiative to link scholarly literature and research data, and services like CHORUS, that helps the public find and access articles reporting on federally-funded research. Initiatives such as seamlessaccess.org, a service designed to help foster a more streamlined online access experience by leveraging an existing single-sign-on infrastructure, and GetFTR, a tool that streamlines access to journal articles on discovery tools and collaboration networks, are also available to enable and accelerate access. STM would welcome additional dialogue to discover which existing initiatives could best be utilized to support findability and access to articles and research data related to NIH-funded research, and to collaboratively develop solutions where services or infrastructures do not already exist.

b. Transparency (including reproducibility and trust in science)

Findability is necessary to promote transparency, but it is not sufficient to enable it. Transparency needs to be fostered through education and the research culture and enabled by infrastructure. Publishers continually invest in such systems and infrastructure and promulgate policies that encourage open sharing to promote trust. This includes efforts to promote trust and transparency through the sharing of research data (e.g, STM's Research Data initiative[9]) and especially the use of FAIR (Findable, Accessible, Interoperable, and Reproducible) principles in sharing research data. Innovations in open peer review, the broadening of publishable articles to include negative results, the introduction of registered reports, and other efforts to make publication and the publication process more transparent have the potential to improve public trust in science and the utility of research. Many of our members have signed on to Transparency and Openness Promotion (TOP) Guidelines and engaged with other initiatives to drive transparency.

STM recommends that NIH leverage existing resources to promote transparency and avoid creating duplicative resources. For example, NIH can point to existing resources to support

[9] www.stm-researchdata.org

researchers in making their research outputs more transparent. Some potential examples include a manifesto for reproducible science designed to optimize key elements of the scientific process and "STAR Methods: Structured, Transparent, Accessible Reporting," designed to provide a structure for experimental methods that increases reproducibility. Existing, robust infrastructure should be considered before recommending or developing new systems.

We note that new modes of scientific inquiry are providing opportunities to improve scholarly practices, including with respect to transparency and integrity, but these may also carry risks that are not fully understood at this time. NIH's policies must be flexible enough to address any issues that might arise in these new modes of scholarship, as well as provide support for new and existing infrastructure and services that can help provide the review and analysis needed to ensure quality and integrity of both new and existing systems.

Finally, we note that the most important action that NIH can take to ensure transparency, quality and integrity in scholarly communication is to support and encourage the systems and services that currently provide these benefits for the research enterprise. These include, but are not limited to, market incentives that encourage the development of high-quality publication outlets for scholarly communication such as those produced by STM's members.

About STM

At STM we support our members in their mission to advance trusted research worldwide. Our more than 140 members collectively publish 66% of all journal articles and tens of thousands of monographs and reference works. As academic and professional publishers, learned societies, university presses, start-ups and established players, we work together to serve society by developing standards and technology to ensure research is of high quality, trustworthy and easy to access. We promote the contribution that publishers make to innovation, openness and the sharing of knowledge and embrace change to support the growth and sustainability of the research ecosystem. As a common good, we provide data and analysis for all involved in the global activity of research.

The majority of our members are small businesses and not-for-profit organizations, who represent tens of thousands of publishing employees, editors, reviewers, researchers, authors, readers, and other professionals across the United States and world who regularly contribute to the advancement of science, learning, culture and innovation throughout the nation. They comprise the bulk of a $25 billion publishing industry that contributes significantly to the U.S. economy and enhances the U.S. balance of trade.