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Scientific Integrity Fast-Track Action Committee (SI-FTAC)
National Science and Technology Council
ScientificIntegrityRFI@ostp.eop.gov

April 1, 2022

Re: SI-FTAC RFI

To the members of the Scientific Integrity Fast-Track Action Committee:

Thank you for the opportunity to comment on the framework for assessment and improvement of agency scientific integrity policies and practices, as issued in the Request For Information (87 FR 12165). STM appreciated the opportunity to provide information in advance of the issuance of *Protecting the Integrity of Government Science* in January and welcomes the opportunity to provide additional information now in support of its implementation.

STM, which supports scholarly publishers in their mission to advance research worldwide, is eager to support efforts that improve scientific integrity, evidence-based policymaking, and trust in the scholarly process. Scientific and scholarly integrity is the foundation of progress across science, medicine, and scholarship and is a crucial contributor to better outcomes for the communities that STM and our member publishers serve. STM and our member publishers are committed to improvements and innovations in the communication of research reports and data, including through Open Science, that enhance research integrity, transparency, and impact.

It is in this context that we offer the following observations and perspectives. We also refer you to our submission of July 2021 in response to the previous RFI from the Scientific Integrity Task Force, which contains additional details on several of the recommendations we make here.

1. How scientific integrity policies at Federal agencies and other components of the Executive Branch can be developed or updated to address important and emergent issues of our time:

(1) Diversity, equity, inclusion, and accessibility

Scientific integrity policies should recognize and aim to address the potential for unintentional bias, by, for example, committing to monitor and report on representation in the research process. 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). Publishers also acknowledge that to proactively drive further change requires input from stakeholders across the research ecosystem. For our part, publishers have established industry-

wide initiatives such as the Joint Commitment on Diversity and Inclusion¹ and C4DISC² which are developing consensus-based standards and best practice (e.g. anonymising the names of both authors and reviewers; developing guidelines around the peer review of articles and data; creating policies to support authors with deadnames, etc.). Such practices could be productively used in scientific integrity policies with respect to evaluation of research and grant review. These efforts could also help improve participation in science by diverse communities.

As we pursue new opportunities to engage more individuals in scientific inquiry, care will need to be taken to ensure that new barriers are not put in place for full participation in the scientific community. Policies need to be carefully balanced to ensure that access is aligned with integrity, quality, and preservation for the long-term, with monitoring mechanisms in place to ensure that commitments can be reported upon and measured.

(2) New technologies

As noted in our previous submission, technology is developing faster than our understanding of its limitations and how best to apply it. Artificial Intelligence (AI) is one example. Although new tools and services are being created daily, the legal and social frameworks which ensure that they are used and applied with integrity are still nascent. STM discusses some of these issues in a [white paper on ethics in AI](#) which includes a chapter on risks related to bias.

To enable new technologies, it is critical that high quality data, and the integrity of the same, is considered alongside the quality and integrity of the technologies themselves. Publishers are specialists in selecting, creating, curating, and tagging high quality data and making it available for discovery and reuse. A framework for scientific integrity policies needs to consider not just the quality of processes and outputs, but also that of inputs to the system.

(3) Emerging modes of science

New modes of scientific inquiry are providing opportunities to improve scholarly practices, including with respect to transparency and integrity. Scientific integrity policies must be flexible enough to address any issues that might arise with integrity 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.

It will be critical to balance support for new models of scholarly practices with the need for integrity, quality, and equity. *Protecting the Integrity of Government Science* notes that “open science is an essential enabler of scientific integrity” by providing transparency that can improve the ability to detect

¹ <https://www.rsc.org/new-perspectives/talent/joint-commitment-for-action-inclusion-and-diversity-in-publishing/>

² <https://c4disc.org/>

policy violations. However, this is only possible if the information made available is discoverable, accurately tagged, and in context with information that helps users interpret and analyze it. Care needs to be taken to avoid blanket policies that fail to recognize, or worse, undermine, the investments necessary to provide the structures that enable high quality science with integrity.

(4) Coordination with related policy domains

As noted in our previous submission, Federal agencies should leverage and build on efforts already underway in scientific communities to promote responsible, trusted science. Many institutions and publishers offer training and resources directly related to ethical standards to researchers, peer reviewers and editors. In addition, most publishers have developed guidance and training for researchers on how to publish their research findings in a responsible way. These guidelines typically cover practices related to replicability and reproducibility, such as ensuring that data produced adheres to the FAIR principles (i.e., that data is Findable, Accessible, Interoperable, and Reproducible³). Most publishers ask authors to disclose conflicts of interest when submitting their articles for consideration and to confirm that they have followed the appropriate ethical guidelines. By coordinating with these actors and ensuring alignment with these policies, the Federal government could improve integrity across the scholarly ecosystem and also avoid overly burdensome practices.

Publishers continually invest in the systems and infrastructure linked to the reproduction and replication of research and promulgate policies that ensure 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](#)⁴) and especially the use of FAIR principles in sharing research data. To avoid duplicating effort and causing delays and friction, we recommend that Federal agencies align their scientific integrity policies with those already in place or being developed in the research and publishing community.

2. Criteria for evaluating scientific integrity policies:

Evaluation of scientific integrity is notoriously difficult, as it is difficult to measure integrity but easier to call out failures. As noted in our previous submission, there are mechanisms being used by institutions to detect or deter potential violations of scientific integrity policies before they occur, that the Federal government may wish to review, endorse, or implement as practice within their scientific integrity policies. These include technological tools and human systems to detect anomalies in data or image manipulation; rules and reporting requirements to avoid conflicts of interest; and Open Science practices that can help identify problems with methodology or data provenance. Our members would be willing to share our insights with the government on the implementation of such tools and practices

³ see <https://www.force11.org/group/fairgroup/fairprinciples>

⁴ www.stm-researchdata.org

or to have further discussions with the committee on how best to approach these issues, consistent with community standards and practices.

3. How to ensure iterative improvement of Federal scientific integrity policies and practices

While the Federal government is a unique setting, issues related to scientific integrity are not unique to Federal agencies and other components of the Executive Branch. The issues raised in *Protecting the Integrity of Government Science* are issues that are being addressed elsewhere in scientific communities on an ongoing basis. The Federal government has an opportunity to coordinate and collaborate with others through a regular exchange of lessons learned, participation in or convening of multistakeholder conversations on scientific integrity practices and experience, and regular landscape analysis across science.

Scientific integrity is a shared responsibility of institutions, employers (including the government), publishers, and the researchers themselves. Federal scientific integrity policies are a critical part of ensuring integrity in government science, but also operate in a broader context to promote and ensure the improvement of science. A [report](#) from an Federally-funded workshop outlines roles and responsibilities for various stakeholders to “Keep the Pool Clean” in response to research misconduct;⁵ similar roles are needed for coordination to promote scientific integrity in the first place as well. Such ongoing collaboration can also promote iterative improvements in policies.

4. How to ensure the long-term viability of Federal scientific integrity policies, practices, and culture:

Robust, clear, and flexible policies, recurrent monitoring and evaluation mechanisms, and a predictable decision-making environment are key approaches to ensure the long-term viability of scientific integrity policies. Federal agencies should make sure that their scientific integrity policies are well-known, not only within the agency, but also to external stakeholders and the communities of practice within the relevant scholarly domain.

Experience with scientific integrity in publishing has demonstrated that ongoing training is necessary to ensure compliance with policies as well as responsible research practices. Many institutions and publishers offer training and resources directly related to ethical standards to researchers, peer reviewers and editors. In addition, most publishers have developed guidance and training for researchers on how to publish their research findings in a responsible way. Details on these and other initiatives were provided in our previous submission. Aligning federal practices with those in the

⁵ Collaborative Working Group from the conference “Keeping the Pool Clean: Prevention and Management of Misconduct Related Retractions”. RePAIR consensus guidelines: Responsibilities of Publishers, Agencies, Institutions, and Researchers in protecting the integrity of the research record. *Res Integr Peer Rev* 3, 15 (2018). <https://doi.org/10.1186/s41073-018-0055-1>



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research and publishing sector could not only help improve their success but also ensure their long-term viability through mutual reinforcement.

Public education can also help to ensure that there is public support of government science and an understanding that it is being performed with integrity and without interference. As noted in our previous submission, publishers significantly invest in tools and systems to detect and report on the suppression or distortion of findings and results, as well as the promotion of public understanding of the strengths and limitations of scientific reports. We would welcome opportunities to partner with the government on initiatives to advance public understanding of science, that could contribute to more appropriate engagement with evidence-based policy from the public. We and our members have supported organizations like Sense about Science⁶ to promote such understanding and engagement of a democratic citizenry in the understanding of science, which we believe help overcome some of the public's concerns about scientific integrity within the government. There may be opportunities to highlight the difference between peer-reviewed, edited, and vetted information shared on publisher platforms and the unvalidated information often shared on other platforms, including those shared on social media.

Finally, as we noted in our previous submission, the most important action that Federal agencies can take to ensure the viability of scientific integrity policies is to ensure quality and integrity of articles and research data currently being made available in the scholarly ecosystem. This means providing support and encouragement for the systems and services that currently exist for providing quality and integrity in scholarly communication for all engaged in 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. The quality assurance processes managed by publishers and represented by the scholarly record is marked by the constant iterative testing and validation of research findings, which is relied upon by scientists and scholars to make advances. These investments and services must be preserved to enable scientific integrity both within and outside of the US government. As independent bodies, and in many cases as the leaders in specific fields, publishers provide trusted information to users, and maintain the high standards of quality and reliability of scientific articles and related data. A sustainable system of scholarly communication, including ensuring a healthy and well-functioning publishing marketplace, is therefore essential for promoting scientific integrity in the government and beyond.

Publishers stand ready to continue to partner with the Federal government to promote scientific integrity through dialogue and collaboration, as well as through the publication of high-quality, peer-reviewed articles that report on research that is conducted by government scientists, funded by Federal agencies, and/or relied upon by Federal policymakers. We look forward to continuing to work together to enhance not only scientific integrity but public trust in science.

Very truly yours,

⁶ <https://senseaboutscienceusa.org/>



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Caroline Sutton
CEO

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.