STM response to NSF Strategic Plan January 2026

Submitted in the electronic form, which only allowed text responses to the four questions and one response to a question about the organization. Each form response is listed on a separate page in this document. Responses were limited to 10,000 characters, and STM's responses were easily within the limit.

Strategic Plan:

https://www.nsf.gov/about/performance/strategic-plan/nsf-fy-2026-2030

RFI:

https://www.nsf.gov/od/updates/nsf-seeks-public-input-on-its-fy-2026-2030-nsf-strategic-plan

Form:

https://nexight.questionpro.com/a/TakeSurvey?tt=r39oVWJVJjcECHrPeIW9eQ%3D%3D

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1. Opportunities to help enable progress toward NSF's objectives and strategies

Partnerships with publishers

NSF's partnership strategy and Goal 1 objectives on transformative research create a strong opportunity to deepen structured collaboration with the scholarly communications community to ensure that NSF-funded outputs are credible, interoperable, and findable as part of a connected research record. STM welcomes the opportunity to engage further with NSF to support Gold Standard Science and improve the impact of NSF-funded research.

America's scientific leadership depends on many players, notably including STM's broad membership: without a trustworthy, reliable, validated knowledge base scientific advancement and discovery would not be possible. Through the dissemination of American research discoveries, STM members are key participants in both expanding scientific knowledge and translating it into real-world impact. Our more than 150 members collectively publish 66% of all journal articles globally, tens of thousands of reference works, and comprise the bulk of the $25 billion global publishing industry. Our members employ and bring together more than one million American scientists, engineers, researchers, medical experts, publishing employees, editors, reviewers, and other professionals to advance science, discovery, and innovation.

STM publishers are core infrastructure providers in the "complex machine" of the U.S. scientific enterprise, sitting at the nexus between researchers, funders, institutions, industry, and the public. Publishers invest in peer review systems, editorial oversight, metadata standards, and persistent identifier frameworks that enable rigorous vetting of research and seamless linking for discovery. The infrastructure ensures that validated, high-quality reports on research findings can be found and used. Peer review, editorial oversight, and publication ethics ensures a reliable and trustworthy record that researchers and the public can use with confidence. These functions, deployed in public-private partnerships for federally funded research, are critical complements to federal funding and program design. Without a robust and sustainable publishing layer, federal research investments would not have the same impact, reproducibility, or translation to innovation.

Modifying policy to ensure continued impact and support for dissemination

To continue powering the American scientific enterprise, the scholarly communication ecosystem must be protected and prioritized. Given that science communication is such a critical link between the research itself and its impact on society and the innovation economy, there must be an explicit and ongoing commitment to continued investments in its creation and preservation. The most efficient and effective way to do so is in partnership with publishers, in a healthy marketplace bolstered by competition, as well as copyright and IP protections and enforcement.

To protect and strengthen the public-private partnership that underpins research dissemination, NSF should apply funding and flexibility in ways that support varied and sustainable publishing models and maintain researcher choice. NSF can further reduce administrative burden and improve integrity by allowing grantees to meet public access requirements through persistent links to the Version of Record (VoR). STM also recommends that NSF explicitly recognize the importance

of authoritative version control and provenance as scientific communication practices evolve alongside increased use of automation and AI. Publisher-maintained VoRs provide stable, curated, and corrigible research objects that preserve relationships among articles, data, software, and subsequent updates or corrections. These characteristics are increasingly essential for responsible AI training, text- and data-mining, and large-scale analytics. Allowing compliance via persistent links to the VoR, together with full funding for publication, enables NSF to support openness while ensuring that downstream human and machine use of research outputs relies on validated and transparently governed content.

As the White House Office of Science and Technology Policy (OSTP) reviews its approach to government-wide public access policies, including changes to the guidance in the "Nelson memo," so should NSF consider how it might introduce more funding and flexibility into its approach consistent with the new objectives. Objective 3.2's focus on streamlining policies and leveraging automation to reduce administrative burden can be extended to harmonize public access requirements, metadata expectations, and reporting with the systems of scientific publishing, reducing duplicative workflows for researchers, institutions, and publishers while improving compliance. NSF has an opportunity to leverage investments made by publishers in these systems, rather than investing in duplicative workflows.

Distinctions between articles and other "resources"

NSF-funded research may result in a wide-range of information products and be reported on in peer-reviewed articles, all of seem to be included in the term "resources" that appears throughout the Strategic Plan. However, there are significant legal and rights differences between copyrighted content and data, and between such information and software and code. STM urges NSF to clarify with respect to these differences and reinforce its commitment to protecting copyrighted works and intellectual property in a manner that drives innovation and impact. As NSF notes in the recently issued revisions to the PAPPG, policies that ensure researchers can utilize intellectual property and copyright to the full extent "provide incentives for development and dissemination of inventions, software and publications that can enhance their usefulness, accessibility, and upkeep."

Where the Strategic Plan and the new PAPPG use terms like "resources" or "research products" in a broad, undifferentiated way, it risks sweeping in copyrighted publications, proprietary databases, and intellectual property as if they were unprotected raw data or otherwise simple outputs of a research process. Publications in particular are often works on by authors with support beyond the NSF funding and the publishers' work and investments are usually outside of the scope of the grant. STM recommends that NSF take care to highlight the important differences between types of content and product to ensure that the rights are respected in both policy and practice.

Measuring impact flexibly

STM is concerned that the measure in objective 1.1 that looks only at the number of resources in NSF's public access repositories risks overlooking the many legitimate, high-quality

communication channels and publisher platforms through which NSF-funded research is disseminated, such as society journals, specialized platforms, and multi-format outputs. A more flexible public access approach—one that recognizes compliant access via multiple routes and platforms—would better respect disciplinary norms, sustain innovation in publishing, and give researchers and institutions choices that fit their needs while still meeting NSF's openness goals. STM's members have significant experience measuring impact and alignment with Gold Standard Science and would be happy to have further dialogue on applying these lessons to NSF. The Strategic Learning Goals, especially those asking how NSF can measure and assess outcomes and impacts of its investments, offer an opportunity to pilot more nuanced assessment frameworks that consider how research is used, translated, and trusted rather than relying predominantly on citation- or repository-based indicators.

Further, STM welcomes NSF's emphasis on impact and expanding participation in the scientific enterprise. STM encourages NSF to evaluate public access policies not only in terms of openness, but also in terms of who is able to participate sustainably under different implementation models. Prescriptive dissemination requirements can have disproportionate effects on early-career researchers, those at less-resourced institutions, and disciplines served primarily by smaller society or nonprofit publishers. Flexible, multi-route public access policies better support participation across the full diversity of NSF-funded communities, enabling researchers to disseminate work in venues aligned with disciplinary norms while still meeting openness objectives.

Publishing resilience to support NSF goals

As NSF advances its objectives with respect to research communication and impact, STM encourages explicit consideration of system resilience and risk management as core success criteria. The U.S. research enterprise increasingly faces risks from misconduct, unreliable dissemination venues, fragmented version control, and emerging AI-driven manipulation of scholarly outputs. Publisher platforms play a critical role in mitigating these risks by providing durable infrastructure, coordinated preservation, and oversight across the research lifecycle. An approach that values redundancy, a wide-range of dissemination routes, and long-term stewardship will better protect the integrity and continuity of the NSF-funded research record than models that concentrate access through a single technical or institutional channel. Appropriately funded and flexible public access policies can help NSF mitigate these risks.

2. How NSF might foster partnerships with a wide range of organizations

Wide range of publishing organizations available for partnerships

Consistent with NSF's proposed crosscutting partnership strategy and Goal 1, NSF could establish a structured advisory forum or working group with publishers and other scholarly infrastructure providers to co-design interoperable approaches for persistent identifiers, metadata standards, and linking between articles, data, software, and other research objects. Such a partnership would build on commitments in the Strategic Plan and NSF's Public Access Plan 2.0.

STM recommends that NSF create and formalize ongoing, iterative consultation with publishers to support the dissemination and impact of NSF-funded research. An agenda could include co-development of sustainable funding and compliance models that avoid over-dependence on a single route and ensure opportunities for all researchers to participate in the scientific dialogue. A flexible policy framework that accommodates multiple business models and dissemination pathways would allow NSF to advance openness while mitigating unintended consequences for researchers in less-resourced institutions or disruptions in the scholarly communication ecosystem.

Such approaches would also align with Goal 2 on empowering STEM talent to align dissemination practices with NSF's workforce and participation objectives. Flexibility in how access is delivered across these programs would help tailor solutions to different communities and geographies, rather than imposing a one-size-fits-all approach. Collaboration and partnership could help deliver on NSF's strategy and objectives while minimizing burdens on researchers and the publishing ecosystem.

3. Data or evidence NSF should consider for evaluating progress and measuring success

Appropriate metrics

STM welcomes NSF's learning-agenda focus on identifying "data and methods to measure and track outcomes and impacts of NSF investments" and encourages NSF to adopt portfolios of indicators that include usage, policy and guideline citations, clinical or technological application, and educational incorporation, alongside traditional bibliometrics. STM would be happy to partner with NSF to discuss how to achieve such outcomes.

Metrics that emphasize counts of deposits in designated repositories or patents citing NSF support, while useful, could underrepresent impact in fields where patents or repository deposits are not primary outputs, and STM recommends complementing these with indicators reflecting qualitative influence, cross-disciplinary reach, and contributions to standards, datasets, and software. A flexible public access and assessment framework that recognizes different legitimate dissemination routes and output types would enable NSF to track impact more accurately across disciplines and career stages. Counting works on publisher platforms, rather than in a public access repository, could help ensure the accuracy of such impact metrics.

Researcher burdens

STM supports NSF's objective to reduce administrative burden. The more complex and numerous grant regulations are, the more costly they are to implement. Such burdens take valuable funding and time away from the research and research communication that a grant is designed to support. Studies estimate that grantors spend more than 10% of their funding on grant administration, and that grantees spend an additional ~9% on administration (see Eric Katz. "We Know Almost Nothing About the Costs of Grant Administration." Government Executive, April 17, 2020. https://www.govexec.com/management/2020/04/we-know-almost-nothing-about-costs-grant-administration/164440). According to data compiled by the Council on Governmental Relations (COGR), in the past decade, there have been 168 new regulatory requirements that impact a university's cost to perform research while potentially increasing faculty burden to address these additional regulations (Council on Governmental Relations. "Changes in Federal Research Requirements: 1991." https://www.cogr.edu/changes-federal-research-requirements-1991). A 2018 Federal Demonstration Project (FDP) survey found that researchers spend 44% of their research time on administrative tasks (Demonstration Partnership. "Faculty Workload Survey: Primary Report." April 2018. https://thefdp.org/wp-content/uploads/FDP-FWS-2018-Primary-Report.pdf). The percentage has likely gone up even more due to the increasing regulatory burdens, as outlined in a recent National Academies report, which also makes recommendations for simplifying policies (National Academies of Sciences, Engineering, and Medicine. Simplifying Research Regulations and Policies: Optimizing American Science. Washington, DC: The National Academies Press, 2025. https://doi.org/10.17226/29231).

One way to reduce burdens is with respect to the publication requirements in NSF's Public Access Plan 2.0. Leveraging the interoperability of existing systems and publisher platforms, rather than

requiring burdensome reformatting and deposit, could be a start. Publishers have invested extensively in metadata standards, persistent identifiers, compliance reporting, and automated linkages that already support discovery, access, and monitoring. Leveraging these capabilities through interoperable approaches would reduce duplication for researchers and institutions while allowing NSF to advance its policy goals without displacing functioning, trusted infrastructure. Of course, publishers investments in the information infrastructure would need to be supported with appropriate funding and policy flexibility.

NSF should systematically collect and analyze evidence on the burden and breadth of participation implications of different public access implementation choices—including effects of funding and licensing models on early-career researchers, smaller or under-resourced institutions, and diverse disciplines—consistent with concerns raised in NSF's Public Access Plan 2.0 and in STM's prior responses to NIH and NSF requests for information. Evaluating how flexible versus prescriptive access models affect participation and outcomes will help NSF refine its policies to support both openness and fairness.

4. Other information that would assist NSF in achieving the goals and objectives

STM encourages NSF to explicitly recognize in Goal 3 and the Learning Agenda that sustainable public access and open science require: (1) sufficient and predictable funding for dissemination and infrastructure, (2) training and support so researchers can plan for compliance and open practices, and (3) policy flexibility that allows multiple compliant routes to public access rather than privileging a single business model. Such flexibility would make it easier to adapt to disciplinary differences, technological change, and emerging evidence about what works, while preserving the resilience of the publishing ecosystem and the broad spectrum of scholarly society, commercial, and nonprofit participants.

To fully reflect Gold Standard Science, NSF's strategic goals and measures should explicitly incorporate dimensions of research integrity, trust, and quality assurance, acknowledging the role of peer review, editorial oversight, and publication ethics in maintaining a reliable and trustworthy record that NSF, researchers, and the public can use with confidence. Recognizing these system-level functions will help ensure that openness is pursued in a way that strengthens, rather than inadvertently undermines, research quality and trust. Such recognition must include an understanding of the costs associated with ensuring trust and accuracy in the scholarly record and provide appropriate funding for the same in grants and other funding mechanisms. NSF should also explicitly recognize the ongoing costs of preservation, curation, and correction associated with public access. Maintaining a trustworthy corpus of research requires sustained investment beyond the life of individual grants, including editorial oversight, archiving, updating, and retraction management. Acknowledging these costs in policy design and funding mechanisms will help ensure that openness is pursued in ways that strengthen, rather than erode, the long-term integrity and usability of NSF-funded research outputs.

Finally, STM respectfully recommends that NSF maintain and deepen structured, transparent engagement with publishers and other key stakeholders on strategic issues including public access, research assessment, AI in research workflows, and modernization of grant and reporting systems, thereby ensuring that implementation of the Strategic Plan is evidence-informed, operationally feasible, and supportive of a diverse, resilient scholarly communication ecosystem. NSF may be interested in exploring dialogue with STM and its members regarding time-limited pilot initiatives aligned with NSF's Strategic Learning Goals that might leverage publisher's expertise and infrastructure. Collaborative pilots focused on interoperable public access implementation, impact measurement, AI governance, or reporting automation could generate actionable evidence on effectiveness, burden, and researcher experience. Such partnerships would enable NSF to test and refine policy approaches in an evidence-informed manner while drawing on existing, widely used scholarly communication systems. A flexible, partnership-driven approach to public access will be best placed to deliver on NSF's goals for excellence, equity, and impact across the full range of research communities it serves.

Please provide your affiliation or other context that will help NSF understand your response

About STM

At STM we support our members in their mission to advance trusted research worldwide. Our more than 150 members collectively publish 66% of all journal articles and tens of thousands of monographs and reference works. They also support researchers and the research enterprise, and US-based scientific societies devoted to their scientific, medical, and scholarly disciplines represent our largest category of members.

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.

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.