

# PUBLIC SUBMISSION

<b>Received:</b> May 29, 2025 <b>Tracking No.</b> mba-6192-t7g0 <b>Comments Due:</b> May 28, 2025 <b>Submission Type:</b> API
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**Docket:** NSF-2025-OGC-0001  
NITRD\_FRDOC\_0001

**Comment On:** NSF-2025-OGC-0001-0001  
Request for Information: Development of a 2025 National Artificial Intelligence Research and Development Strategic Plan

**Document:** NSF-2025-OGC-0001-DRAFT-0324  
Comment on FR Doc # 2025-07332

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## Submitter Information

**Organization:** American Association for the Advancement of Science

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## General Comment

See attached file(s)

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## Attachments

NSF-OSTP-AI-RD-RFI DRAFT\_5-29-2025

NSF-OSTP-AI-RD-RFI-AAAS\_5-29-2025



May 29, 2024

To: The National Science Foundation's NITRD National Coordination Office

Thank you for the opportunity to submit comments to the Request for Information (RFI) seeking input on updating the [2023 National AI R&D Strategic Plan](#) (Docket ID No. NSF-2025-OGC-0001). As one of the world's largest general scientific societies, the American Association for the Advancement of Science (AAAS) has advanced scientific excellence and addressed the intersection of science, engineering, technology and society for the span of our over 175-year history. As publisher of the *Science* family of journals, we also have significant experience as a provider of high-quality, scientific and technical content that could be used as training data – a pillar of AI development.

America has benefited from decades-long leadership in research and development (R&D) that has resulted in cutting-edge, transformative technologies. However, this leadership is not guaranteed, and with many other countries and economies competing, the United States risks ceding this leadership without the appropriate investments. We appreciate NSF and the White House Office of Science and Technology Policy's recognition of the important role the federal government serves in advancing R&D and the opportunity that artificial intelligence (AI) can serve in propelling scientific discovery.

However, as numerous groups reflecting all sectors of the research enterprise have noted, significant reductions to many areas of science across all federal agencies will only serve in slowing down progress and S&T advancement. Approaches to AI that rely on using large amounts of free, unverified information – as opposed to high-quality, vetted and transparently sourced content – risk stymying research progress and eroding public trust.

**Overall R&D Priorities.** AAAS continues to support the overall goals outlined in the [2023 National AI R&D Strategic Plan](#). An R&D Strategic Plan that follows the key themes outlined below can continue to serve as a critical framework for augmenting advancements in AI and other complementary science and technology fields required.

- Make long-term investments in fundamental and responsible AI research focused on creating and using AI systems in a way that is ethical, safe, and beneficial to society.
- Develop effective methods of human-AI collaboration
- Understand and address the ethical, legal, and societal implications of AI
- Ensure the safety and security of AI systems
- Develop shared public datasets and educational modules for AI training and testing
- Measure and evaluate AI systems through standards and benchmarks
- Better understand the national AI R&D workforce needs
- Expand public-private partnerships to accelerate AI advances
- Establish a principled approach to international collaboration on AI research

Although AI has tremendous potential to improve data-driven processes and augment human work across many sectors of society including the research laboratory, it is well documented that AI can pose threats of error, unfair bias, privacy and intellectual property violations, environmental impacts and more. AAAS interests include strengthening and securing the integrity of the research record. For decades, our journals and programs have led discussions on ethics, integrity, responsibility, and societal impacts of emerging research fields. Our comments will focus on these themes, in particular managing risks and ethics; pursuing a multidisciplinary approach; supporting public-private partnerships; and strengthening research integrity.

**Managing Risks and Ethics.** The potential for AI technologies to advance data-driven analyses and enhance human work is remarkable, touching every sector in our society. However, some AI technologies pose significant risks, especially when deployed in high-impact settings. Mapping and understanding such risks are important pillars of the AI research and development agenda to maximize the likelihood that AI can be used in a responsible and rights-respecting manner and reap the full benefits of these technologies.

AAAS is emphasizing the importance of continuing to invest in emerging research in the field of AI ethics and societal impacts to better understand the ethical, legal, societal, environmental, and security implications of AI today and in the future. Furthermore, investing in impact assessments, testing, evaluation (including red teaming to stress test AI models), validation, verification, measuring, monitoring, and auditing AI performance, and more can improve mitigating AI risk and inform standard setting.

**Multidisciplinary Approach.** Modern science is increasingly characterized by multidisciplinary teams of researchers. Teams that work across disciplines are often shown to publish more frequently, with greater scientific influence, and can be effective at producing more novel innovations. This is also critical for what is known as convergent research, in which existing disciplines combine to produce promising new fields, as is the case in synthetic biology. The nexus between disciplines is fertile ground for creative thinking. The AI R&D Strategic Plan should reflect research that is multidisciplinary, involves public-private partnerships, and considers the implications across all communities.

**Public-Private Partnerships.** Any AI research at scale will necessarily involve technology companies since a larger fraction of [AI research investment](#) is conducted by industry than academia, and some university AI research is funded in part by industry (Source: [Stanford HAI AI Index Report 2024](#)). Thus, the National Science Foundation's Technology Research and Development (NITRD) National Coordination Office (NCO) has an opportunity to impact the way research is conducted by considering best practices for the protocol it sets for those public-private partnerships and the standards for NSF grantees to partner with industry. The National Artificial Intelligence Research Resource (NAIRR) Pilot is a good example of a partnership structure that engages industry in spurring AI innovation and strengthening workforce development while implementing ethical design and use of AI technology. The NAIRR should be made permanent.

**Research Integrity.** We are at a crossroads in AI development where U.S. leadership could prioritize training AI systems on overwhelming amounts of freely available, unverified, unreliable information. Instead, we think it should prioritize investment in workflows that continue to build curated, contextualized, and reproducible knowledge. Such high-quality information – in the form of both data collected and articles that explain that data's relation to new findings – is needed to train AI models to

generate accurate, verifiable outputs. Trustworthy outputs are in turn critical for innovation that can be sustained.

When considering updating a strategic plan for AI R&D, we recommend that the government address the outputs of federal research results. Balancing public access to federally funded research while prioritizing the accuracy, integrity, and security of research results is work that publishers of scholarly content have considered for years. At the *Science* family of Journals, we have increased our investments in research integrity for every paper we publish, working in ways scientists have appreciated, and through process updates we have communicated to the public, for transparency. We continue to work to improve the quality of content we publish through AI tools that detect errors and manipulation of data, and we have begun to explore licensing deals with AI companies to boost the reliability of these companies' output. AI companies that believe content creators should receive attribution for their work – and that are focused on content quality – are good partners for such efforts. This creates a more informed relationship between readers, AI researchers, and content creators.

We suggest the government invest in pilot programs to test different approaches to licensing select, high-quality content, to evaluate resultant applications to advance scientific knowledge. These programs should progress in controlled environments that allow for the protection of safety, privacy, and confidentiality, in a range of settings. AI-generated outputs that are not tested for accuracy, safety, and privacy could threaten to undermine future applications of AI models.

With this in mind, we encourage OSTP to partner with NSF, the National Institute of Standards and Technology, and the U.S. Department of Energy to hold roundtable discussions with relevant stakeholder groups to address how to strengthen and support research integrity of the results of AI R&D. These discussions should cover issues such as transparency, stewardship and accuracy of data, privacy protection, and standards to strengthen and advance the use of AI in conducting scientific research. These elements are critical for ensuring that we advance a high-quality and trustworthy AI R&D enterprise.

AAAS affirms that this document is approved for public dissemination. The document contains no business-proprietary or confidential information. Document contents may be reused by the government in developing the 2025 National AI R&D Strategic Plan and associated documents without attribution.

Sincerely,

Sudip S. Parikh  
Chief Executive Officer and  
Executive Publisher, *Science* Family of Journals  
American Association for the Advancement of Science