Outside Witness Testimony from: Society for Industrial and Applied Mathematics (SIAM)

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Submitted to the Subcommittee on Commerce, Justice, Science, and Related Agencies Committee on Appropriations, United States Senate

Testimony on the Fiscal Year 2026 Appropriations for the National Science Foundation

Summary: This written testimony is submitted on behalf of the Society for Industrial and Applied Mathematics (SIAM) to ask you to support the National Science Foundation (NSF) in fiscal year (FY) 2026 by providing NSF with at least $9.9 billion. It is critical that we renew prioritization of research investments in FY 2026 and protect research from further cuts. Research funded by NSF is critical to ensuring that the U.S. maintains its leadership in science and technology amid a global R&D landscape that is becoming increasingly competitive. This includes strong funding for the Research and Related Activities Account (R&RA) that supports key applied mathematics and computational science programs in the Division of Mathematical Sciences and the Office of Advanced Cyberinfrastructure as well as the Directorate for STEM Education (EDU) that addresses fundamental challenges in mathematics and STEM education and workforce development. SIAM opposes the devastating cuts proposed in the budget request, which could lead to a massive rollback in our competitiveness, innovation, and future STEM workforce.

Full Statement: On behalf of SIAM, we submit this written testimony for the record to the Subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the U.S. House of Representatives.

SIAM has over 13,000 members, including applied and computational mathematicians, computer scientists, data scientists, numerical analysts, engineers, statisticians, and mathematics educators. They work in industrial and service organizations, universities, colleges, and government agencies and laboratories all over the world. In addition, SIAM has almost 500 institutional members, including colleges, universities, corporations, and research organizations. SIAM members come from many different disciplines but have a common interest in applying mathematics in partnership with computational science to solve real-world problems, which affect national security and industrial competitiveness.

We would like to emphasize that SIAM appreciates your Committee's recognition of the critical role of the National Science Foundation (NSF) and its support for mathematics, science, and engineering in enabling a strong U.S. economy, workforce, and society. We understand the difficult

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fiscal environment that we all face. However, we are deeply concerned about the potential for significant cuts to NSF in FY 2026, which will harm NSF's critical research, infrastructure, and workforce investments and damage our research ecosystem.

Today, we submit this testimony to ask you to reconfirm Congresses support of NSF in FY 2026 and beyond. ***In particular, we join with the research and higher education community and request that you provide NSF with at least $9.9 billion in funding for FY 2026.*** This level of funding would bring NSF back to its FY 2023 funding level after it already faced cuts in FY 2024 and FY 2025. NSF needs bold growth to protect U.S. competitiveness as countries such as China are rapidly increasing their science and engineering investments. At least $9.9 billion in funding is needed to ensure NSF can meet Congress's vision for the agency, launch new programs in priority areas such as artificial intelligence, quantum science, and biotechnology, invest in transformational breakthroughs to address resilience and security and catalyze energy innovation, and provide sustainable growth to the core research and education activities undergirding our science and technology ecosystem.

Through its critical Directorates, NSF serves a unique and critical function supporting all areas of science and engineering to further innovation and seed the knowledge and technologies for a strong future America. NSF provides essential federal support for applied mathematics and computational science, including more than 57 percent of all federal support for basic academic research in the mathematical sciences. Of particular importance to SIAM, NSF funding supports the development of new mathematical models and computational algorithms, which are critical to making substantial advances in such fields as neuroscience, energy technologies, genomics, and nanotechnology. In addition, new techniques developed in mathematics and computing research often have direct application in industry. Modern life as we know it – from search engines like Google to the design of modern aircraft, from financial markets to medical imaging – would not be possible without the techniques developed by mathematicians and computational scientists using NSF funding. NSF also supports mathematics education at all levels, ensuring that the next generation of the U.S. workforce is appropriately trained to participate in cutting-edge technological sectors and that students are attracted to careers in mathematics and computing.

SIAM supports NSF's efforts to expand its mission towards transforming innovation ecosystems with the Directorate for Technology, Innovation, and Partnerships (TIP) and encourages Congress to give NSF the resources it needs to fully carry out programs such as Regional Innovation Engines and enabling support for NSF priorities in artificial intelligence and other emerging technologies, security, and broadening participation. Even before the launch of the new TIP directorate and other new programs authorized in CHIPS and Science, NSF was unable to fund more than $2 billion worth of research proposals rated "very good or higher" each fiscal year.

The nation's investment in NSF has yielded numerous scientific advances that have contributed to economic growth nationwide. This work has been built on federal partnerships with universities that enable research. Proposals to cap facilities and administrative (F&A) costs would cripple this

partnership, deeply harming the research enterprise and our nation's ability to produce cutting-edge research. These costs support research security, shared computing resources, and other critical aspects of research. We urge the Committee to stop NSF from executing the harmful policy it has announced.

Core programs of the NSF have stagnated in recent years and should be supported. These foundational investments underpin advances across many science and engineering challenges. NSF plays an essential role in advancing critical technologies where the U.S. is facing major competition from China such as artificial intelligence and strategic computing. NSF environment and energy funding supports grid resilience, wildfires, extreme heat, earth systems modeling, and many other areas of national importance. Social science investments underpin cybersecurity, artificial intelligence, infrastructure planning, decision making, and many other areas. Cuts to research set us backwards when we need to be massively scaling up to stay competitive.

SIAM urges strong investment in the Research and Related Activities account (RRA) to enable robust funding for the Division of Mathematical Sciences (DMS), the Office of Advanced Cyberinfrastructure (OAC), and other core programs and crosscutting initiatives for essential mathematical and computational science research, workforce development programs, and early career researcher support.

NSF Division of Mathematical Sciences
The NSF Division of Mathematical Sciences (DMS) in the Directorate for Mathematical and Physical Sciences (MPS) provides core support for all mathematical sciences. DMS also funds national mathematical science research institutes; infrastructure, including workshops, conferences, and equipment; and postdoctoral, graduate, and undergraduate training. The activities supported by DMS and performed by SIAM members, such as modeling, analysis, algorithms, and simulation, underpin advancements across science and engineering and provide new ways of obtaining insight into the nature of complex phenomena, such as the power grid, software for national security applications, and the human body.

Sustained investment in DMS is critical because of the foundational and cross-cutting role that mathematics and computational science play in sustaining the nation's economic competitiveness, national security, and health. DMS has taken a leadership role in promoting partnerships with other agencies and foundations to leverage federal funding for maximum impact. For example, DMS has recently launched new programs in Digital Twins with the Air Force, NIH Office of the Director, and the Food and Drug Administration (FDA). In addition, DMS funding supports a broad array of activities in artificial intelligence, modeling, analysis, algorithms, and simulation that underpin advancements across science and engineering. New investments in quantum science are also under consideration to better engage the mathematical sciences community in quantum research as quantum computing matures towards applications and readiness for programming. Agencies such as the Department of Defense (DOD) and National Institutes of Health (NIH) depend on the NSF-supported applied math and computational sciences

ecosystem to fulfill their missions as they build on NSF-funded modeling, algorithm, and simulation breakthroughs and leverage the workforce trained using NSF support.

NSF Office of Advanced Cyberinfrastructure
Work in applied mathematics and computational science is critical to enabling effective use of the rapid advances in information technology and cyberinfrastructure. Programs in the NSF Office of Advanced Cyberinfrastructure (OAC) in the Directorate for Computer and Information Science and Engineering (CISE) focus on providing research communities access to advanced computing capabilities to convert data to knowledge and increase our understanding through computational simulation and prediction. SIAM endorses OAC's effort to create the NAIRR pilot as well as OAC's broader role advancing high performance computing to meet critical national security needs, fully leverage computing technology for economic competitiveness and scientific discovery, and positioning the U.S. for sustained technical leadership. The full NAIRR has potential to transform and dramatically scale AI innovations, but must be paired with robust research and workforce funding to reach its full impact and enable a robust ecosystem.

Supporting the Pipeline of Mathematicians and Scientists
SIAM supports EDU and its programs like *Improving Undergraduate STEM Education* (IUSE) and *Graduate Research Fellowships*, which are key to advancing STEM professional development and developing the next generation of mathematicians, scientists, and engineers. EDU also plays a critical role developing a STEM literate citizenry through its K-12 focused investments. SIAM notes that mathematical education is foundational to STEM learning across disciplines, and NSF should continue to fund development of mathematical and computational skills. SIAM supports *CAREER* awards and other workforce programs crucial to early career faculty professional development. NSF must invest in domestic talent to remain global leaders in innovation while the country continues to welcome the best and brightest talent from abroad. NSF broadening participation programs build workforce capacity and help expand the U.S. STEM talent base. We ask Congress to reject cuts to NSF broadening participation programs.

Conclusion
We would like to thank you again for your support of NSF that enables the research and education communities it supports, including thousands of SIAM members, to undertake activities that contribute to U.S. health, security, and economic strength. Congress needs to protect research from further cuts and provide NSF with sustained growth to maintain our competitive edge in science and technology. We ask that you provide robust support of these critical programs in FY 2026 and put us on track to dramatically scale emerging technology investments as bipartisan majorities have emphasized are critical to our national security and competitiveness. We appreciate the opportunity to provide testimony to the Committee on behalf of SIAM.

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