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Request for Information: Development of a 2025 National Artificial Intelligence Research and Development Strategic Plan

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General Comment

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Attachments

SUNY System Administration AI RFI



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To: NSF NCO / NITRD

From: Shadi Sandvik, Office of Research, Innovation and Economic Development, State University of New York

Date: May 13, 2025

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Re: Response to Request for Information on the Development of a 2025 National Artificial Intelligence (AI) Research and Development (R&D) Strategic Plan

On behalf of the State University System of New York (SUNY), the largest integrated system of public higher education in the United States with 64 campuses and nearly 370,000 students, I respectfully submit this statement input on the development of a 2025 National Artificial Intelligence (AI) Research and Development (R&D) Strategic Plan. This Request for Information reflects the profound impact and potential for transforming society through a centralized federal approach to AI R&D.

The State University of New York (SUNY) recognizes the critical need for forward-thinking strategy to harness the potential of Artificial Intelligence and ensure the United States and New York's workforce remains resilient and adaptable to the evolving landscape. The fundamental shift in data, computing, and human interaction brought about by the emergence of AI and machine learning (ML) systems will radically change higher education and, consequently, impact society more broadly.¹

Through partnerships with states, institutions of higher education, and industry, the federal government has the power to ensure the competitiveness of the United States in an arena of rapidly advancing international efforts in scientific exploration. As outlined in the SUNY Strategic Research Investment (STRIVE) Artificial Intelligence (AI) Strategic Plan and to increase our national competitiveness, we support federal R&D investments in

1. **Data privacy, quality, and security needs,**
2. **Fundamental and AI-enabled applied research,**
3. **AI infrastructure, and**
4. **Workforce development for AI-enabled jobs of the future.**

Data Privacy, Quality, and Security needs

As AI become more integrated into society, there are several challenges related to the expanded use of AI technology that must be addressed including: **securing sensitive data to ensure privacy of individuals or organizations, frameworks for data quality and data provenance, and data security for AI systems that are susceptible to a variety of attacks across the modeling process.** Focusing R&D on center-scale cybersecurity and privacy protecting projects would address these concerns.²

Fundamental and AI-enabled Applied Research

Funding for research in AI improves research on SUNY campuses improving both AI and AI-enabled applications. Conducting AI-focused research aimed at improving algorithms and optimizing hardware for AI-driven computations can improve processing speed leading to savings in energy usage, time to completion, and processing potential. R&D for AI also enhances AI-enabled research, such as analyzing data, improving and building predictive models and simulations, automating research processes, and other research-related work. Through improved research, scientists may be able to solve intractable problems of the modern human experience, including diseases, weather disasters, pollution, traffic congestion, and other social concerns.

While industry funding is important, strategic, federally funded R&D complements rather than substitutes for private investment. Economists estimate that each dollar invested in R&D can generate \$5 in benefits and could raise US annual productivity.³ Federal funding is also vital for research that industry does not typically support, including interdisciplinary studies and socio-technical frameworks that inform AI adoption and implementation. Relying solely on industry to fund AI R&D would stifle innovative research conducted by academic institutions. Industry often prioritizes applied research with immediate commercial benefits rather than exploratory or fundamental research, which requires long-term investment without guaranteed short-term returns. Industry research may not prioritize the same level of documentation, open data sharing, and reproducibility as academic research, limiting rapid advancement and adoption of novel research ideas. Research focusing on the ethical implications and societal impacts of AI without direct commercial applications does not always align with the profit-driven motives of industry funders. Interdisciplinary research spanning multiple disciplines and sectors, including rapidly advancing areas such as quantum information science, especially those without immediate commercial applications, may struggle to attract industry funding.

Investment in Infrastructure

We also support funding investments in infrastructure. We recommend the development of a **National Artificial Intelligence Research Resource (NAIRR)**, a concept for a shared national research infrastructure to connect U.S. researchers to responsible and trustworthy AI resources. NAIRR will make available the needed computational data, software, training, and educational resources to fuel AI research and discovery. Additionally, we support the Department of Energy's proposed **Frontiers in AI for Science, Security, and Technology (FASST)** initiative to leverage DOE's enabling infrastructure to deliver key assets for the national interest.

Investment in public infrastructure enables rapid growth in emerging technologies. In New York State, Empire AI demonstrates a bold partnership of New York's leading public and private universities coming together to establish a state-of-the-art artificial intelligence computing center, housed at SUNY's University at Buffalo, along with private foundations. Empire AI is already facilitating statewide innovation, research, and development of AI technologies. SUNY's affiliate, New York Center for Research, Economic Advancement, Technology, Engineering, and Science (NY CREATES) is state-of the art and the only publicly owned 300mm semiconductor microelectronic R&D prototyping facility. Soon it will be home to the only publicly owned High NA EUV tool enabling the focus on technologies that will dominate the next generation of AI computing units. Public infrastructure like this leading innovation hub enables research and industry connections spurring innovation and commercialization projects in AI and quantum computing.

Workforce Development for AI-enabled Jobs of the Future

As AI shapes almost every aspect of life in America, a federal AI R&D plan must include AI literacy education and workforce training. Public institutions educate America. Public universities, such as SUNY, educate about 70% of all U.S. undergraduates and play a crucial role in providing an accessible education. SUNY has roughly double the number of Pell recipients at our four University Centers alone compared to the entire Ivy League. SUNY enrolls about 370,000 students – more than the population of Orlando, Florida. SUNY community colleges alone educate approximately 19,225 graduates each year.

To prepare students for careers in AI, the federal government should prioritize spending on research evaluating AI literacy, technical skills training, industry certifications, and internships. Undergraduate students would engage in foundational and specialized AI courses, research opportunities, interdisciplinary learning, capstone projects, and career services. Graduate students would benefit from advanced coursework, research and development, thesis and dissertation work, professional development, networking opportunities, and postdoctoral fellowships. Across all levels, the curriculum would integrate ethics and social impact discussions, soft skills training, and lifelong learning opportunities to ensure a well-rounded education and practical training in AI.

By investing in these areas, the federal government, together with SUNY, can ensure that the United States remains at the forefront of AI innovation and development, fostering a resilient and adaptable workforce ready to tackle the challenges and opportunities of the future.

Respectfully submitted,

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¹ SUNY STRIVE Artificial Intelligence Strategic Plan. 2024. <https://www.suny.edu/media/suny/content-assets/documents/research/SUNY-STRIVE-Artificial-Intelligence-Strategic-Plan.pdf>

² SUNY STRIVE Artificial Intelligence Strategic Plan. 2024. <https://www.suny.edu/media/suny/content-assets/documents/research/SUNY-STRIVE-Artificial-Intelligence-Strategic-Plan.pdf>

³ Federal R&D Funding Is Even More Valuable Than Washington Thinks. James Pethokouis, January 28, 2025. <https://www.aei.org/economics/federal-rd-funding-is-even-more-valuable-than-washington-thinks/>