

Appendix B: FY2025 National Artificial Intelligence Research Institutes



THE NETWORKING & INFORMATION TECHNOLOGY R&D
PROGRAM AND THE
NATIONAL ARTIFICIAL INTELLIGENCE INITIATIVE OFFICE
**SUPPLEMENT TO THE
PRESIDENT'S FY2025 BUDGET**

A report by the
SUBCOMMITTEE ON NETWORKING & INFORMATION TECHNOLOGY
RESEARCH & DEVELOPMENT

and the
SUBCOMMITTEE ON MACHINE LEARNING & ARTIFICIAL
INTELLIGENCE

of the
NATIONAL SCIENCE & TECHNOLOGY COUNCIL

November 2024

About the National Science and Technology Council

The National Science and Technology Council (NSTC) is the principal means by which the Executive Branch coordinates science and technology policy across the diverse entities that make up the federal research and development enterprise. A primary objective of the NSTC is to ensure that science and technology policy decisions and programs are consistent with the President's stated goals. The NSTC prepares research and development strategies that are coordinated across federal agencies aimed at accomplishing multiple national goals. The work of the NSTC is organized under committees that oversee subcommittees and working groups focused on different aspects of science and technology. More information is available at <https://www.whitehouse.gov/ostp/nstc>.

About the Office of Science and Technology Policy

Congress established the White House Office of Science and Technology Policy (OSTP) in 1976 to advise the President and others within the Executive Office of the President on scientific, engineering, and technological aspects of the economy, national security, homeland security, health, foreign relations, and the environment. OSTP leads efforts across the federal government to develop and implement sound science and technology policies, plans, programs, and budgets, and it works with the private and philanthropic sectors; state, local, tribal, and territorial governments; the research and academic communities; and other nations toward this end. OSTP also assists the Office of Management and Budget with its annual review and analysis of federal R&D in budgets. OSTP's Senate-confirmed Director co-chairs the President's Council of Advisors on Science and Technology and the NSTC. (<https://www.whitehouse.gov/ostp>)

About the Subcommittee on Networking & Information Technology Research & Development

The Networking and Information Technology Research and Development (NITRD) Program has been the Nation's primary source of federally funded work on pioneering information technologies (IT) in computing, networking, and software since it was first established as the High Performance Computing and Communications program following passage of the High Performance Computing Act of 1991. The NITRD Subcommittee of the NSTC Committee on Science and Technology Enterprise guides the multiagency NITRD Program in its work to provide the R&D foundations for ensuring continued U.S. technological leadership and meeting the Nation's needs for advanced IT. The National Coordination Office (NCO) supports the NITRD Subcommittee and its Interagency Working Groups (IWGs). (<https://www.nitrd.gov/about/>)

About the Subcommittee on Machine Learning and Artificial Intelligence

The Machine Learning and Artificial Intelligence (MLAI) Subcommittee (MLAI-SC) monitors the state of the art in machine learning (ML) and artificial intelligence (AI) within the federal government, the private sector, and internationally to watch for the arrival of important technology milestones in the development of AI, to coordinate the use of and foster the sharing of knowledge and best practices about ML and AI by the federal government, and to consult in the development of federal MLAI R&D priorities. The MLAI-SC reports to the NSTC Committee on Technology and the Select Committee on AI.

About This Document

This section serves as the FY2025 annual report on the status of the AI Institutes as called for in the National Artificial Intelligence Initiative Act of 2020 (Public Law 116-283). The lead agencies, National Science Foundation and U.S. Department of Agriculture-National Institute of Food and Agriculture, together with other partners, have funded 25 AI institutes.

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1.0 National Artificial Intelligence Research Institutes

1.1 Introduction

Congress passed the National Artificial Intelligence Initiative Act (NAIIA) of 2020 (Public Law 116-283) to establish advances in AI that strengthen innovation across multiple sectors, such as health, education, manufacturing, agriculture, security, energy, and environment.

The NAIIA calls for the U.S. National Science Foundation (NSF) to lead federal agencies in providing investments to jump-start these innovations through National AI Research Institutes (“AI Institutes”). The investments address sector-specific or cross-cutting challenges (e.g., trustworthiness) relevant to the application of AI in those sectors or in AI systems broadly and has the potential to translate the research into products, applications, and services.

The NAIIA requires, among other provisions, that the AI Institutes be formed among multi-dimensional partnerships of public and private entities; address the ethical, societal, safety, and security implications of AI research and development (R&D); and support interdisciplinary R&D across multiple institutions of higher education, development of interdisciplinary education activities, and development of an AI workforce across all U.S. communities, including those that are historically underrepresented in Science and Technology (S&T).

The AI Institutes Virtual Organization¹ serves to connect and support the institutes in a variety of ways as they carry out a broad spectrum of research of critical importance to U.S. competitiveness, food security, public safety and education, and myriad other targets.

This Appendix serves as the FY2025 annual report on the status of the AI Institutes as called for in the National Artificial Intelligence Initiative Act of 2020. The lead agencies, NSF and U.S. Department of Agriculture National Institute of Food and Agriculture (USDA-NIFA), together with other partners, have funded 25 AI institutes. The following subsections provide an overview of the AI Institutes launched to date. [Table 2](#) in [Section 2.0](#) provides the actual, enacted, and requested investments by federal agencies for these AI Institutes for FYs 2023–2025.

1.2 National AI Research Institutes

The AI Institutes program is NSF’s flagship program for foundational and use-inspired AI research, and it is the U.S.’s largest AI research ecosystem funded through partnerships between federal agencies and nonprofit and industry leaders.

In 2023 and 2024, federal agencies invested an estimated \$118.5 million and \$69 million, respectively, into AI institutions under the AI Institutes program. In 2025, the investment is projected to be \$72.3 million. Following is a listing of the advanced, diverse, and crucial objectives being carried out by these institutions and programs.

Unless otherwise noted, the AI Institutes outlined below are funded by NSF.

¹ <https://aiinstitutes.org/>

1.2.1 AI Institute for Adult Learning and Online Education (ALOE)

Year Launched	2021		
Focus	<p>Led by the Georgia Research Alliance, this institute, also known as ALOE, will lead the country and the world in the development of novel AI theories and techniques for enhancing the quality of adult online education, making this mode of learning comparable to that of in-person education in STEM disciplines. Fundamental research in use-inspired AI is grounded in theories of human cognition and learning supported by evidence from large-scale data, evaluated on a large variety of testbeds, and derived from the scientific process of learning engineering. Together with partners in the technical college systems and educational technology sector, ALOE will advance online learning using virtual assistants to make education more available, affordable, achievable, and ultimately, more equitable.</p> <p>This institute is funded by a partnership between NSF and Accenture.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112532 .	Primary Organization	Georgia Research Alliance
Other Principal Organizations			
<ul style="list-style-type: none"> • Georgia Institute of Technology • Technical College System of Georgia • Harvard University • Georgia State University • University of North Carolina Greensboro 			
More information	https://aialoe.org/		

1.2.2 AI Institute for Advances in Optimization (AI4OPT)

Year Launched	2021		
Focus	<p>Led by the Georgia Institute of Technology, this institute will revolutionize decision-making on a large scale by fusing AI and mathematical optimization into intelligent systems that will achieve breakthroughs that neither field can achieve independently. The institute will create pathways from high school to undergraduate and graduate education and workforce development training for AI in engineering that will empower a generation of underrepresented students and teachers to join the AI revolution. It will also create a sustainable ecosystem for AI, combining education, research, entrepreneurship, and the public at large. The institute will demonstrate foundational advances on use cases in energy, resilience and sustainability, supply chains, and circuit design and control. It has innovative plans for workforce education and broadening participation, including substantial leadership from a collaborating minority-serving institution.</p> <p>This institute is funded by a partnership between NSF and Intel.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112533 .	Primary Organization	Georgia Institute of Technology
Other Principal Organizations			
<ul style="list-style-type: none"> • Clark Atlanta University • University of California, San Diego • The University of Texas at Arlington • University of California, Berkeley • University of Southern California 			
More information	https://www.ai4opt.org/		

1.2.3 AI Institute for Agent-based Cyber Threat Intelligence and Operation (ACTION)

Year Launched	2023		
Focus	<p>Led by the University of California, Santa Barbara, this institute will develop novel approaches that leverage AI to anticipate and take corrective actions against cyberthreats that target the security and privacy of computer networks and their users. The team of researchers will work with experts in security operations to develop a revolutionary approach to cybersecurity, in which AI-enabled intelligent security agents cooperate with humans across the cyberdefense life cycle to jointly improve the resilience of security of computer systems over time.</p> <p>This institute is funded by a partnership between NSF, DHS-S&T, and IBM.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2229876 .	Primary Organization	University of California, Santa Barbara
Other Principal Organizations			
<ul style="list-style-type: none"> Georgia Tech Research Corporation 	<ul style="list-style-type: none"> Rutgers University 	<ul style="list-style-type: none"> University of Virginia 	
<ul style="list-style-type: none"> Multi-Campus University of California Berkeley Award 	<ul style="list-style-type: none"> University of Chicago 	<ul style="list-style-type: none"> University of Washington 	
<ul style="list-style-type: none"> Norfolk State University 	<ul style="list-style-type: none"> University of Illinois Chicago 		
<ul style="list-style-type: none"> Purdue University 	<ul style="list-style-type: none"> University of Illinois Urbana-Champaign 		
More information	https://action.ucsb.edu/		

1.2.4 AI Institute for Agricultural AI for Transforming Workforce and Decision Support (AgAID)

Year Launched	2021				
Focus	<p>Led by Washington State University, this institute, also known as AgAID, will integrate AI methods into agriculture operations for prediction, decision support, and robotics-enabled agriculture to address complex agricultural challenges. The AgAID Institute uses a unique adopt-adapt-amplify approach to develop and deliver AI solutions to agriculture that address pressing challenges related to labor, water, weather and climate change. The institute involves farmers, workers, managers and policy makers in the development of these solutions, as well as in AI training and education, which promotes equity by increasing the technological skill levels of the next-generation agricultural workforce.</p> <p>This institute is funded by USDA-NIFA.</p>				
Funding (in millions)	FY2023	FY2024	FY2025	Primary Organization	Washington State University
	8.0	4.0	0		
Other Principal Organizations					
<ul style="list-style-type: none"> Carnegie Mellon University 	<ul style="list-style-type: none"> Kansas State University 	<ul style="list-style-type: none"> University of Virginia 			
<ul style="list-style-type: none"> Heritage University 	<ul style="list-style-type: none"> Oregon State University 	<ul style="list-style-type: none"> Wenatchee Valley College 			
<ul style="list-style-type: none"> Innov8.Ag 	<ul style="list-style-type: none"> University of California, Merced 				
More information	https://agaid.org				
Note: For the FY columns, FY 2023 refers to actual budget, FY2024 refers to planned budget, and FY2025 refers to budget request.					

1.2.5 AI Institute for Artificial and Natural Intelligence (ARNI)

Year Launched	2023		
Focus	<p>Led by Columbia University, this institute will draw together top researchers across the country to focus on a national priority: connecting the major progress made in AI systems to the revolution in our understanding of the brain. ARNI will meet the urgent need for new paradigms of interdisciplinary research between neuroscience, cognitive science and AI. This will accelerate progress in all three fields and broaden the transformative impact on society in the next decade.</p> <p>This institute is funded by a partnership between NSF and OUSD(R&E).</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2229929 .	Primary Organization	Columbia University
Other Principal Organizations			
<ul style="list-style-type: none"> • Baylor College of Medicine 		<ul style="list-style-type: none"> • Harvard University 	<ul style="list-style-type: none"> • University of Pennsylvania
<ul style="list-style-type: none"> • City University of New York Graduate Center 		<ul style="list-style-type: none"> • New York Hall of Science 	<ul style="list-style-type: none"> • Yale University
<ul style="list-style-type: none"> • Hunter College 		<ul style="list-style-type: none"> • Tuskegee University 	
More information	https://www.engineering.columbia.edu/news/columbia-university-artificial-and-natural-intelligence-nsf-ai-institute		

1.2.6 AI Institute for Artificial Intelligence and Fundamental Interactions (IAIFI)

Year Launched	2020		
Focus	<p>Led by the Massachusetts Institute of Technology, this institute will, among other things, work to build AI methods that incorporate basic physics principles, making data-analysis choices more targeted. They'll explore the synergies between physics concepts and AI to improve basic understanding of AI techniques and how the techniques can help improve things such as neural network architectures—the basic building blocks of advanced machine learning. Building physics concepts into AI techniques will also assist physicists in performing difficult and sometimes intractable calculations, which in turn will serve as a framework for discovery. Since new insights often emerge from deviations in data, when things don't look as expected, AI methods that are fine-tuned to look at physical systems will be able to quickly identify these outliers—potentially speeding the process of discovery.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2019786 .	Primary Organization	Massachusetts Institute of Technology
Other Principal Organizations			
<ul style="list-style-type: none"> • Harvard University 		<ul style="list-style-type: none"> • Northeastern University 	<ul style="list-style-type: none"> • Tufts University
More information	https://iaifi.org/		

1.2.7 AI Institute for Climate-Land Interactions, Mitigation, Adaptation, Tradeoffs, and Economy (AI-CLIMATE)

Year Launched	2023				
Focus	<p>Led by the University of Minnesota Twin Cities, this institute aims to advance foundational AI by incorporating knowledge from agriculture and forestry sciences and leveraging these unique, new AI methods to curb climate effects while lifting rural economies. By creating a new scientific discipline and innovative ecosystem intersecting AI and climate-smart agriculture and forestry, our researchers and practitioners will discover and invent compelling AI-powered knowledge and solutions. Examples include AI-enhanced estimation methods of greenhouse gases and specialized field-to-market decision support tools. A key goal is to lower the cost of and improve accounting for carbon in farms and forests to empower carbon markets and inform decision making. The institute will also expand and diversify rural and urban AI workforces.</p> <p>This institute is funded by USDA-NIFA.</p>				
Funding (in millions)	FY2023	FY2024	FY2025	Primary Organization	University of Minnesota Twin Cities
	8.0	0	4.0		
Other Principal Organizations					
• Cornell University		• Delaware State University		• North Carolina State University	
• Colorado State University Global		• Purdue University		• International Soil Reference and Information Center	
More information	https://twin-cities.umn.edu/news-events/u-m-lead-new-ai-institute-focusing-climate-smart-agriculture-and-forestry				
Note: For the FY columns, FY2023 refers to actual budget, FY2024 refers to planned budget, and FY2025 refers to budget request.					

1.2.8 AI Institute for Collaborative Assistance and Responsive Interaction for Networked Groups (AI-CARING)

Year Launched	2021				
Focus	<p>Led by the Georgia Institute of Technology, this institute, also known as AI-CARING, will seek to create a vibrant, fully developed discipline focused on personalized, longitudinal (over months and years) collaborative AI systems that learn individual models of human behavior and how they change over time and use that knowledge to better collaborate and communicate in caregiving environments. The collaborative AI Partners in Care developed as part of this institute will help support a growing population of older adults sustain independence, improve quality of life, and increase effectiveness of care coordination across the care network.</p> <p>This institute is funded by a partnership between NSF, Amazon, and Google.</p>				
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112633			Primary Organization	Georgia Institute of Technology
Other Principal Organizations					
• Carnegie Mellon University		• Oregon Health & Science University		• Oregon State University	
More information	https://ai-caring.org/				

1.2.9 AI Institute in Dynamic Systems (Dynamics AI)

Year Launched	2021		
Focus	<p>Led by the University of Washington, this institute will enable innovative research and education in fundamental AI and machine learning theory, algorithms and applications specifically for safe, real-time learning and control of complex dynamic systems. The core motivation for this institute is to integrate physics-based models with AI and machine learning approaches, leading the way towards data-enabled ethical, efficient, and explainable solutions for real-time sensing, prediction, and decision-making challenges across science and engineering.</p> <p>This institute is funded by a partnership between NSF and DHS.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112085 .	Primary Organization	University of Washington
Other Principal Organizations			
	• Boise State University	• Montana State University	• University of Alaska
	• Columbia University	• Portland State University	• University of Hawaii
	• Harvard University	• Seattle University	• University of Nevada, Reno
More information	https://dynamicsai.org/		

1.2.10 AI Institute for Edge Computing Leveraging Next-Generation Networks (Athena)

Year Launched	2021		
Focus	<p>Led by Duke University, this institute, also known as Athena, will focus on developing edge computing with groundbreaking AI functionality while keeping complexity and costs under control. Bringing together a world-class, multidisciplinary team of scientists, engineers, statisticians, legal scholars and psychologists from seven universities, it will transform the design, operation and service of future systems from mobile devices to networks. It is committed to educating and developing the workforce, cultivating a diverse next generation of edge computing and network leaders whose core values are driven by ethics and fairness in AI. As a nexus point for the community, this institute will spearhead collaboration and knowledge transfer, translating emerging technical capabilities to new business models and entrepreneurial opportunities.</p> <p>This institute is funded by a partnership between NSF and DHS.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112562 .	Primary Organization	Duke University
Other Principal Organizations			
	• Arizona State University	• University of Illinois Chicago	• University of Wisconsin-Madison
	• Massachusetts Institute of Technology	• University of Illinois Urbana-Champaign	• Yale University
	• North Carolina A&T	• University of Michigan	
	• Princeton University	• University of Washington	
More information	https://athena.duke.edu/		

1.2.11 AI Institute for Engaged Learning (ENGAGE AI)

Year Launched	2021		
Focus	Led by North Carolina State University, this institute will advance natural language processing, computer vision and machine learning to engage learners in AI-driven narrative-centered learning environments. Rich AI-driven virtual agents and powerful multimodal sensing capabilities will support learners and yield transformative advances in STEM teaching and learning. The institute will serve as a nexus for in-school and out-of-school STEM education innovation, empowering and engaging diverse learners and stakeholders to ensure that AI-driven learning environments are ethically designed to promote equity and inclusion.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112635 .	Primary Organization	North Carolina State University
Other Principal Organizations			
<ul style="list-style-type: none"> Digital Promise Global 		<ul style="list-style-type: none"> The University of North Carolina at Chapel Hill 	
<ul style="list-style-type: none"> Indiana University 		<ul style="list-style-type: none"> Vanderbilt University 	
More information	https://www.aiengage.org/		

1.2.12 AI Institute for Exceptional Education (AI4ExceptionalEd)

Year Launched	2023		
Focus	Led by the University at Buffalo, this institute will work toward universal speech and language screening for children. The framework, the AI screener, will analyze video and audio streams of children during classroom interactions and assess the need for evidence-based interventions tailored to individual needs of students. The institute will serve children in need of ability-based speech and language services, advance foundational AI technologies and enhance understanding of childhood speech and language development. The AI Institute for Exceptional Education was previously announced in January 2023. This institute is funded by a partnership between NSF and ED-IES.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2229873 .	Primary Organization	University at Buffalo
Other Principal Organizations			
<ul style="list-style-type: none"> Cornell University 		<ul style="list-style-type: none"> University of Nevada, Reno 	
<ul style="list-style-type: none"> Pennsylvania State University 		<ul style="list-style-type: none"> University of Oregon 	
<ul style="list-style-type: none"> Stanford University 		<ul style="list-style-type: none"> The University of Texas at El Paso 	
<ul style="list-style-type: none"> University of Washington 			
More information	https://www.buffalo.edu/ai4exceptionaled.html		

1.2.13 AI Institute for Foundations of Machine Learning (IFML)

Year Launched	2020		
Focus	Led by the University of Texas at Austin this Institute will dedicate research efforts to addressing fundamental challenges and applications in machine learning that will underpin the development of safer and more reliable AI applications such as self-driving cars and many others. A key challenge is to build new, more efficient deep learning algorithms that can account for constantly evolving data and can incorporate changing contexts—in much the same way your BRAIN is able to react and adjust course when it anticipates a hazard while driving. There are still many fundamental mysteries that remain when it comes to understanding exactly how these deep learning neural networks function. The team will work toward new theories that rigorously explain how algorithms successfully achieve optimal solutions in practice despite conventional statistical methods suggesting that they should not. New theories are also needed to produce reliable algorithms suitable for use in mission-critical and safety-critical applications. The institute will tackle these challenges among many others.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2019844 .	Primary Organization	The University of Texas at Austin
Other Principal Organizations			
• Texas Advanced Computing Center		• University of Washington	
• The University of Texas at Austin, Dell Medical School		• Wichita State University	
More information	https://www.ifml.institute/		

1.2.14 AI Institute for Future Agricultural Resilience, Management, and Sustainability (AIFARMS)

Year Launched	2020			
Focus	Led by the University of Illinois Urbana-Champaign, this institute will advance AI research in computer vision, machine learning, soft object manipulation, and intuitive human-robot interaction to solve major agricultural challenges including labor shortages, efficiency and welfare in animal agriculture, environmental resilience of crops, and the need to safeguard soil health. The Institute features a new joint Computer Science + Agriculture degree and global clearinghouse to foster collaboration in AI-driven agriculture research. This institute is funded by USDA-NIFA.			
Funding (in millions)	FY2023	FY2024	FY2025	Primary Organization
	8.0	0	0	University of Illinois Urbana-Champaign
Other Principal Organizations				
• Donald Danforth Plant Science Center		• Tuskegee University		
• Michigan State University		• University of Chicago		
More information	https://aifarms.illinois.edu/			
Note: For the FY columns, FY2023 refers to actual budget, FY2024 refers to planned budget, and FY2025 refers to budget request.				

1.2.15 AI Institute for Future Edge Networks and Distributed Intelligence (AI-EDGE)

Year Launched	2021		
Focus	<p>Led by The Ohio State University, this institute, also known as AI-EDGE, will leverage the synergies between networking and AI to design future generations of wireless edge networks that are highly efficient, reliable, robust and secure. New AI tools and techniques will be developed to ensure that these networks are self-healing and self-optimized. Collaboration over these adaptive networks will help solve long-standing distributed AI challenges making AI more efficient, interactive, and privacy preserving for applications in sectors such as intelligent transportation, remote health care, distributed robotics and smart aerospace. It will create a research, education, knowledge transfer and workforce development environment that will help establish U.S. leadership in next-generation edge networks and distributed AI for many decades to come.</p> <p>This institute is funded by a partnership between NSF and DHS-S&T.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112471 .	Primary Organization	The Ohio State University
Other Principal Organizations			
	• Carnegie Mellon University	• University of Illinois Urbana-Champaign	• University of Washington
	• Northeastern University	• University of Massachusetts Amherst	• University of Wisconsin-Madison
	• Purdue University	• University of Michigan	
	• University of Illinois Chicago	• The University of Texas at Austin	
More information	https://aiedge.osu.edu/		

1.2.16 AI Institute for Inclusive Intelligent Technologies for Education (INVITE)

Year Launched	2023		
Focus	<p>Led by the University of Illinois Urbana-Champaign, this institute seeks to fundamentally reframe how educational technologies interact with learners by developing AI tools and approaches to support three crucial noncognitive skills known to underlie effective learning: persistence, academic resilience and collaboration. The institute's use-inspired research will focus on how children communicate STEM content, how they learn to persist through challenging work, and how teachers support and promote noncognitive skill development. The resultant AI-based tools will be integrated into classrooms to empower teachers to support learners in more developmentally appropriate ways.</p> <p>This institute is funded by a partnership between NSF and ED-IES.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2229612 .	Primary Organization	University of Illinois Urbana-Champaign
Other Principal Organizations			
	• Balance Studios	• University of Florida	• University of Southern California
	• Educational Testing Service	• University of Michigan	• Wright State University
	• Temple University	• University of Oregon	
More information	https://invite.illinois.edu/		

1.2.17 AI Institute for Intelligent Cyberinfrastructure with Computational Learning in the Environment (ICICLE)

Year Launched	2021		
Focus	Led by The Ohio State University, this institute will build the next generation of cyberinfrastructure that will make AI easy for scientists to use and promote its further democratization. This institute aims to transform the AI landscape of today by bringing in scientists from multidisciplinary backgrounds to create a robust, trustworthy, and transparent national cyberinfrastructure that is ready to "plug-and-play" in areas of societal importance such as "smart food sheds," precision agriculture, and animal ecology. The Institute will develop a new generation of the workforce with sustained diversity and inclusion at all levels.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112606 .	Primary Organization	The Ohio State University
Other Principal Organizations			
<ul style="list-style-type: none"> Case Western Reserve University 	<ul style="list-style-type: none"> Rensselaer Polytechnic Institute 	<ul style="list-style-type: none"> University of California, San Diego 	
<ul style="list-style-type: none"> International Center for Food Ontology Operability Data and Semantics 	<ul style="list-style-type: none"> San Diego Supercomputer Center Ohio Supercomputer Center 	<ul style="list-style-type: none"> University of Delaware 	
<ul style="list-style-type: none"> Indiana University 	<ul style="list-style-type: none"> Texas Advanced Computing Center 	<ul style="list-style-type: none"> University of Utah 	
<ul style="list-style-type: none"> Iowa State University 	<ul style="list-style-type: none"> University of California, Davis 	<ul style="list-style-type: none"> University of Wisconsin-Madison 	

1.2.18 AI Institute for Learning-Enabled Optimization at Scale (TILOS)

Year Launched	2021		
Focus	Led by the University of California San Diego, in collaboration with five other universities across the nation, this institute, also known as TILOS, aims to “make impossible optimizations possible” by addressing the fundamental challenges of scale and complexity. Learning-enabled optimization will be applied in several technical focus areas vital to the nation’s health and prosperity, including semiconductor chip design, robotics and networks. The research agenda is accompanied by plans for workforce development and broadening participation at all academic levels, from middle school to advanced research levels, including community outreach efforts to promote AI. This institute is funded by a partnership between NSF and Intel.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2112665 .	Primary Organization	University of California, San Diego
Other Principal Organizations			
<ul style="list-style-type: none"> Massachusetts Institution of Technology 	<ul style="list-style-type: none"> University of Pennsylvania 	<ul style="list-style-type: none"> Yale University 	
<ul style="list-style-type: none"> National University 	<ul style="list-style-type: none"> The University of Texas at Austin 		
More information	https://tilos.ai/		

1.2.19 AI Institute for Molecular Discovery, Synthetic Strategy, and Manufacturing (Molecule Maker Lab Institute or MMLI)

Year Launched	2020		
Focus	Led by the University of Illinois Urbana-Champaign, this institute will develop new AI-enabled tools to accelerate automated chemical synthesis and advance the discovery and manufacture of novel materials and bioactive compounds. The Institute also serves as a training ground for the next generation of scientists with combined expertise in AI, chemistry, and bioengineering.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2019897 .	Primary Organization	University of Illinois Urbana-Champaign
Other Principal Organizations			
• Colorado State University Global		• Pennsylvania State University	
• Georgia Institute of Technology		• Rochester Institute of Technology	
• Indiana University		• University of California, Santa Barbara	
More information	https://moleculemaker.org/		

1.2.20 AI Institute for Next-Generation Food Systems (AIFS)

Year Launched	2020			
Focus	Led by the University of California, Davis, this institute will integrate a holistic view of the food system with AI and bioinformatics to understand biological data and processes, addressing issues of molecular breeding to optimize traits for yield, crop quality, and pest or disease resistance, agricultural production, food processing and distribution, and nutrition. Major emphasis is on inclusive education and outreach approaches to build a diverse, next-generation workforce. This institute is funded by USDA-NIFA.			
Funding (in millions)	FY2023	FY2024	FY2025	Primary Organization
	8.0	0	0	University of California, Davis
Other Principal Organizations				
• Cornell University		• University of California, Berkeley		
• Duke University		• University of Illinois Urbana-Champaign		
• University of California, Agriculture and Natural Resources				
More information	https://aifs.ucdavis.edu/			
Note: For the FY columns, FY2023 refers to actual budget, FY2024 refers to planned budget, and FY2025 refers to budget request.				

1.2.21 AI Institute for Research in Trustworthy AI in Weather, Climate, and Coastal Oceanography (AI2ES)

Year Launched	2020		
Focus	Led by the University of Oklahoma, this institute will work to improve the accuracy and reliability—or trustworthiness—of AI techniques that underpin crucial weather models and predictions. The institute will conduct fundamental research into better understanding how AI algorithms transform raw data from extremely large and varied data sets into actionable guidance and predictions; this research will help scientists better communicate to the public the associated levels of accuracy and reliability. The institute will also offer AI training certificates to help cultivate an AI-trained workforce.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2019758 .	Primary Organization	The University of Oklahoma
Other Principal Organizations			
	• Central Michigan University	• North Carolina State University	• University of Washington
	• Colorado State University Global	• Texas A&M University-Corpus Christi	• University Corporation for Atmospheric Research
	• Del Mar College	• University at Albany	
More information	https://www.ai2es.org/		

1.2.22 AI Institute for Resilient Agriculture (AIIRA)

Year Launched	2021		
Focus	Led by Iowa State University, this institute, also known as AIIRA, will transform agriculture through innovative AI-driven digital twins that model plants at an unprecedented scale. This approach is enabled by advances in computational theory, AI algorithms, and tools for crop improvement and production for resiliency to climate change. In addition, AIIRA will promote the study of cyber-agricultural systems at the intersection of plant science, agronomics, and AI; power education and workforce development through formal and informal educational activities, focusing on Native American bidirectional engagement and farmer programs; and drive knowledge transfer through partnerships with industry, producers, and federal and state agencies. This institute is funded by USDA-NIFA.		
Funding (in millions)	FY2023 8.0	FY2024 4.0	FY2025 0
	Primary Organization		Iowa State University
Other Principal Organizations			
	• Carnegie Mellon University	• New York University	• University of Missouri
	• George Mason University	• University of Arizona	• University of Nebraska-Lincoln
	• Iowa Soybean Association		
More information	https://aiira.iastate.edu/		
Note: For the FY columns, FY2023 refers to actual budget, FY2024 refers to planned budget, and FY2025 refers to budget request.			

1.2.23 AI Institute for Societal Decision Making (AI-SDM)

Year Launched	2023		
Focus	Led by Carnegie Mellon University, this institute seeks to create human-centric AI for decision making to bolster effective response in uncertain, dynamic and resource-constrained scenarios like disaster management and public health. By bringing together an interdisciplinary team of AI and social science researchers, AI-SDM will enable emergency managers, public health officials, first responders, community workers and the public to make decisions that are data driven, robust, agile, resource efficient and trustworthy. The vision of the institute will be realized via development of AI theory and methods, translational research, training and outreach, enabled by partnerships with diverse universities, government organizations, corporate partners, community colleges, public libraries and high schools.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2229881 .	Primary Organization	Carnegie Mellon University
Other Principal Organizations			
	• Boston Children’s Hospital	• MITRE Corporation VA	• Texas A&M University
	• Harvard University	• Navajo Technical University	• University of Washington
	• Howard University	• Pennsylvania State University	
More information	https://www.cmu.edu/news/stories/archives/2023/may/carnegie-mellon-leads-nsf-ai-institute-for-societal-decision-making		

1.2.24 AI Institute for Student-AI Teaming (iSAT)

Year Launched	2020		
Focus	Led by the University of Colorado Boulder, this institute will focus research on developing “AI partners” that will facilitate collaborative learning by interacting naturally through speech, gesture, gaze, and facial expression in classrooms. With growing classroom sizes and online learning, it becomes increasingly difficult for teachers to offer individualized instruction. AI partners, however, will be trained to assist by recognizing facial expressions and gestures to gauge interest and engagement as well as inferring from group discussions which students might feel excluded from conversations.		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2019805 .	Primary Organization	University of Colorado Boulder
Other Principal Organizations			
	• Arizona State University	• Georgia Institute of Technology	• University of Illinois Urbana-Champaign
	• Brandeis University	• University of California, Berkeley	• University of Wisconsin-Madison
	• Colorado State University Global	• University of California, Santa Cruz	• Worcester Polytechnic Institute
More information	https://www.colorado.edu/research/ai-institute/		

1.2.25 AI Institute for Trustworthy AI in Law and Society (TRAILS)

Year Launched	2023		
Focus	<p>Led by the University of Maryland, this institute, also known as TRAILS, aims to transform the practice of AI from one driven primarily by technological innovation to one driven with attention to ethics, human rights, and support for communities whose voices have been marginalized into mainstream AI. TRAILS will be the first Institute of its kind to integrate participatory design, technology, and governance of AI systems and technologies and will focus on investigating what trust in AI looks like, whether current technical solutions for AI can be trusted, and which policy models can effectively sustain AI trustworthiness.</p> <p>This institute is funded by a partnership between NSF and NIST.</p>		
Funding	For information on funding, please see https://www.nsf.gov/awardsearch/showAward?AWD_ID=2229885 .	Primary Organization	University of Maryland
Other Principal Organizations			
<ul style="list-style-type: none"> • Cornell University • The George Washington University • Morgan State University 			
More information	https://www.trails.umd.edu/		