NATIONAL SCIENCE FOUNDATION CENTERS

NSF supports a variety of centers programs that contribute to the Foundation's mission and vision. Centers exploit opportunities in science, engineering, and technology in which the complexity of the research program or the resources needed to solve the problem require the advantages of scope, scale, duration, equipment, facilities, and students. Centers are a principal means by which NSF fosters interdisciplinary research.

NSF Centers

Dollars in Millions

	Program Initiation	Number of Centers in FY 2023	FY 2023 Base Plan[1]	FY 2024 (TBD)	FY 2025 Request	Change over FY 2023 Base Plan Amount	Change over FY 2023 Base Plan Percent
Artificial Intelligence Research Institutes	2020	20	$51.83	-	$61.86	$10.03	16.2%
Biology Integration Institutes	2020	14	35.20	-	45.20	10.00	22.1%
Centers for Analysis & Synthesis	1995	2	2.50	-	9.50	7.00	73.7%
Centers for Chemical Innovation	1998	9	27.70	-	27.70	-	0.0%
Engineering Research Centers	1985	17	68.70	-	79.11	10.41	13.2%
Materials Centers	1994	20	56.80	-	60.00	3.20	5.3%
NSF Regional Innovation Engines	2023	0	-	-	205.00	205.00	N/A
Quantum Leap Challenge Institutes[2]	2020	5	21.85	-	17.00	-4.85	-28.5%
Science & Technology Centers	1987	14	74.59	-	72.91	-1.68	-2.3%
Spectrum Innovation Initiative Centers	2021	1	17.00	-	17.00	-	0.0%

[1]For comparability with FY 2025, the FY 2023 levels do not include shares of Mission Support Services that were funded through the R&RA and EDU directorates and offices in these fiscal years.

[2]Since FY 2020, funding for the Quantum Leap Challenge Institutes has been a vital part of NSF's overall $50+ million investment in multidisciplinary centers for quantum research and education. The FY 2023 Base Plan level is higher reflecting the forward funding of future award increments. Also see the Engineering Research Center and Science and Technology Centers narrative below and the MPS narrative for additional information on quantum center activities.

About NSF Centers Programs

Artificial Intelligence Research Institutes – multi-directorate

The FY 2025 Request of $61.86 million will support up to 25 National AI Research Institutes. To date NSF has awarded 20 AI Institutes, five AI Institutes in FY 2020, nine in FY 2021 and six in FY 2023. In addition, five AI Institutes (two awarded in FY 2020, two in FY 2021, and one in FY 2023) are wholly funded by the U.S. Department of Agriculture National Institute of Food and Agriculture (USDA NIFA). In FY 2024, NSF and its partners will also begin evaluating the initial AI institutes that were awarded in FY 2020 for possible renewal, as they will be nearing the end of their original five-year award. Each institute is funded at up to $4.0 million per year for up to five years.

In alignment with the White House *Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence* issued in October 2023,[1] NSF plans to award up to two additional AI Institutes in FY 2024, and up to three AI Institutes in FY 2025. The latest solicitation issued in FY 2023 for awards in FY 2024 and FY 2025 continued the collaboration with the DoD Office of the

[1] www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/

Undersecretary of Defense for Research and Engineering, the National Institute of Standards and Technology, and the Intel Corporation; and added new partnerships with Capital One Financial Corporation and Simons Foundation.

The National AI Research Institutes program, a multisector collaboration among government, industry, and academia, supports multidisciplinary advances on challenges in both foundational and use-inspired AI research. Each funded institute has three missions: (1) to advance fundamental knowledge of AI; (2) to advance use-inspired work on using AI to solve real-world problems of importance to the U.S. economy; and (3) to grow the U.S. AI workforce and build pathways for students from diverse backgrounds. They serve as nexus points for academic, government, and industry interaction, and integrate research with the development of the next-generation AI workforce. A key motivation for the program is to maintain and grow U.S. leadership and competitiveness in AI at a time when other nations are making significant investments in the field.

The National AI Research Institutes program is led by CISE and includes contributions from all NSF directorates along with external partners, including federal agencies and industry. Each year, the program solicits proposals that respond to one of a given set of themes. Some of these themes have included Foundations of Machine Learning; Trustworthy AI; AI-Driven Innovation in Agriculture and the Food System; AI-Augmented Learning; AI for Accelerating Molecular Synthesis and Manufacturing; Human-AI Interaction and Collaboration; AI and Advanced Cyberinfrastructure; Advances in AI and Computer and Network Systems; and others.

<u>Biology Integration Institutes – BIO</u>
The FY 2025 Request of $45.20 million is expected to support up to 18 Biology Integration Institutes (BII) – an addition of 4 institutes to the existing 14 .

The BII program supports collaborative teams of researchers investigating frontier questions about life that span multiple disciplines within and beyond the biological sciences. The goal is to foster creative integration of diverse fields using innovative experimental, theoretical, and modeling approaches to discover underlying principles operating across multiple levels of life; from molecules to cells, organisms, species, and ecosystems. Each institute has unique research themes centered around a compelling biological question poised for breakthroughs by collaboration across biological disciplines. The themes address fundamental and use-inspired research that serves to advance discovery and understanding in the life sciences and expand capabilities in biotechnology to modify and utilize living systems. Outcomes from BII awards will foster innovation and applications that benefit U.S. security and health, mitigate the impacts of climate change, and spur economic growth.

BII awards support team-science and training environments that are fully integrated with the research theme and conducive to addressing complex science challenges, leveraging new ideas, expertise and infrastructure, and exploration of new modes of collaboration, which will prepare the next generation of biological scientists to pursue multidisciplinary research throughout their careers. Typically, BII awards bring together multiple organizations to leverage interdisciplinary talent and infrastructure, and to broaden participation of undergraduate and graduate students from underrepresented groups in the life sciences. In this way, BII awards build a diverse and inclusive workforce that can address the challenges of climate change and emerging infectious diseases, and that fulfill the needs of an expanding U.S. bioeconomy.

Centers for Analysis and Synthesis - BIO

The FY 2025 Request of $9.50 million for Centers for Analysis and Synthesis is expected to provide continuing support ($5.0 million) for a center in environmental science and eco-forecasting, awarded in FY 2022. The Center will develop the teams, concepts, resources, and expertise to enable inclusive, effective, and coordinated efforts to answer broad scientific questions that emerge at interfaces between biological and environmental sciences, including climate change, land use change, biodiversity loss, and ecosystem services. The center will leverage data being provided by the National Ecological Observatory Network (NEON), Long-Term Ecological Research (LTER) and other environmental observatories and databases to support community efforts in ecological modeling to develop a national capability for eco-forecasting. A new funding competition for BIO's Center for Analysis and Synthesis in molecular and cellular biosciences, which occurred in 2024, is ramping up for a total of $3.0 million for FY25. Its goal is to achieve a comprehensive understanding of cell biology that relates molecular structure, function, and interactions to cellular properties in ways that predict the emergent behavior of cells in a dynamic environment. The Center aims to provide a catalytic role to advance the integrated knowledge of the workings of cells, metabolism, information processing, growth, senescence, proliferation and differentiation by analysis and synthesis of diverse molecular and cellular data. It also catalyzes a culture of data sharing, standards development, and reuse for this subdiscipline of biology. In FY 2024, the initial stages of a competition for a Center for Analysis and Synthesis in integrative organismal systems and organismal resilience began. The resulting award is planned to begin in FY 2025 with an initial year funding of $2.0 million.

Centers for Chemical Innovation - MPS

The FY 2025 Request of $27.70 million will fund up to seven Phase II Centers for Chemical Innovation (CCI). This includes up to six continuing centers and one new center. Each Phase II center is slated to be funded at $4.0 million per year (five-year awards with potential for renewal up to a total of ten years). An eighth center will sunset in FY 2025.

CCIs are developed through a two-phase process. Phase I CCIs conduct research, pilot broader impact activities, and complete key center development activities before submitting their Phase II proposal. CCIs focus on major, long-term fundamental chemical research challenges. CCIs are agile, collaborative entities that respond rapidly to emerging opportunities by integrating research with innovation, higher education, broadening participation, and informal science communication. The themes of the CCIs are varied and include Administration priorities such as clean energy technologies, climate solutions, AI, QIS, biotechnology, advanced manufacturing, and plastics recycling. CCIs are also actively engaged in knowledge transfer to industry and the commercialization of their discoveries and new technologies.

Several CCIs are studying various aspects of sustainability and clean energy technologies: the Center for Sustainable Nanotechnology (CSN) is examining how technologically important nanoparticles found in batteries interact with biological systems and how those nanoparticles can be redesigned to be environmentally benign; the Center for Synthetic Organic Electrochemistry (CSOE) is developing new electrosynthesis reactions that are safer, more energy-efficient, and generate less waste; and the Center for the Chemistry of Molecularly Optimized Networks (MONET) works on the discovery and understanding of polymer networks and how those materials can provide sustainable plastics with improved performance. Both MONET and the Center for Computer-Assisted Synthesis (C-CAS) are exploring the frontiers of data science, machine learning and AI applications to chemistry.

Each year, CCIs include more than 70 participating academic institutions, 60 non-academic partner organizations, 130 Senior Personnel, 90 Postdoctoral Associates, 250 Graduate Students, and 90 Undergraduate Students.

Engineering Research Centers - ENG

The FY 2025 Request is $79.11 million to support 16 NSF Engineering Research Centers (ERC) that conduct convergent engineering research to tackle high-impact challenges with the potential to benefit U.S. security, prosperity, and quality of life. ERCs advance clean energy and climate change mitigation, biotechnology, quantum technology, microelectronics and semiconductors, advanced manufacturing, health technology, advanced wireless, artificial intelligence, and other national priorities. NSF investment includes support for four 4th Generation ERCs to be initiated in FY 2024 (Class of 2024) that will implement strategies for effective team formation and engagement with stakeholder communities to maximize their impacts.

All NSF ERCs combine the intellectual curiosity of university research focused on discovery with real-world engineered systems and technology opportunities through partnerships with industry. Each ERC has interacting foundational components that go beyond the research project, including engineering workforce development at all participant stages, a culture of diversity and inclusion where all participants gain mutual benefit, and value creation within an innovation ecosystem that will outlast the lifetime of the ERC.

Since the program began in 1985, products of ERC innovation include more than 2,600 inventions disclosures, more than 46,000 publications, over 2,300 patent applications filed, more than 925 patents awarded, and 1,400 licenses, as well as more than 240 spinoff companies. ERCs also have a successful track record for educating a technology-enabled workforce with hands-on, real-world experience. On average, NSF ERCs graduate more than 130 Bachelor's, 123 Master's, and 150 Doctoral degree students each year. Over that time, the centers have also impacted, on average, over 2,500 K-12 teachers and students annually. NSF ERCs are also effective at broadening participation from underrepresented groups. For example, across currently active ERCs, women comprise approximately 36 percent of those involved in center activities, in comparison to the national average across engineering of 24 percent. Also, the percentage of people from underrepresented racial and ethnic groups participating is more than double that of engineering's national average.

Materials Centers - MPS

The FY 2025 Request level of $60.0 million is expected to support 20 Materials Research Science and Engineering Centers (MRSEC). The triennial MRSEC competition that began in June FY 2022 ended in FY 2023. Funding in FY 2025 will continue support of 11 centers established in FY 2020 and 9 new centers established in the FY 2023 competition.

MRSECs function as hubs for solving complex grand-challenge materials problems requiring broad multidisciplinary expertise within the physical sciences and engineering to understand materials phenomena, exploit materials properties, and to create and discover new materials. Research in materials science is inherently interdisciplinary and the MRSEC program is a prime example of convergent research encompassing physics, chemistry, mathematics, biology, materials science, and engineering. Through collaborative efforts involving academics, industry, national laboratories experts, and international and educational partners, MRSECs advance materials research and education in the United States, and in many cases are international leaders. MRSECs have served as partners with more than 50 MSIs and develop new pathways for underrepresented groups, aiming to educate and train a diverse materials workforce across the U.S.

MRSECs have six major coordinated components: (1) interdisciplinary research groups, (2) education and outreach, (3) industrial and international outreach/partnerships, (4) diversity and broadening participation – serving as a major partner with Minority-Serving Institutions in MPS/DMR Partnerships in Research and Education in Materials (PREM) program, (5) the Materials Research Facilities Network—providing access to more than 1,250 state-of-the art equipment instrumentation to materials researchers across the Nation—and (6) the seed program, which enables MRSECs to rapidly react to and move into new high-risk and potentially transformative areas not yet fully explored.

Each year, MRSECs produce over 150 Ph.Ds. in STEM fields, mentor nearly 400 Research Experiences for Undergraduate students and 60 Research Experiences for Teachers participants, and impact over one million students and their parents through outreach activities such as summer camps, K-12 science curriculum development, K-12 in-school science demonstrations, development and deployment of science kits, and partnering with the Nation's top museums to create STEM-related exhibits that impact the public. Since 1994, the program has created nearly 200 startups and annually produces about 50 awarded patents and 50 patent licensures. MRSECs engage and assist more than 500 other individuals from industry, national laboratories, and international partners per year in advancing fundamental materials research that can be translated into the marketplace.

NSF Regional Innovation Engines – TIP

The FY 2025 Request level of $205.0 million will support up to 13 NSF Regional Innovation Engines (NSF Engines) in FY 2025. The NSF Engines program constitutes a bold new initiative that aims to catalyze regional innovation ecosystems throughout the United States and spur economic growth and job creation by bringing together the science and technology research enterprise with regional-level resources, experts, and populations to accelerate key technologies and address pressing societal, geostrategic, and national challenges. NSF is investing in use-inspired research, entrepreneurship, and workforce development to nurture and grow new regional industries. This initiative, the single largest *broad* investment in place-based research, innovation, and workforce development in generations, will help the U.S. remains in the vanguard of competitiveness well into the mid-21st century.

In particular, the NSF Engines will aim to advance use-inspired, solutions-oriented research and innovation in a range of key technologies such as advanced manufacturing, advanced wireless, AI, biotechnology, QIS, and semiconductors, as well as in a diverse set of societal, geostrategic, and national challenges, such as food and agriculture, critical infrastructure, and water management. They will bring together multiple disciplines, institutions, and sectors, including organizations and industries that have not previously engaged with NSF. They will balance technical and geographic (i.e., local, and regional challenges, capabilities, and perspectives) innovation as well as individual, organizational, and geographic diversity; incentivize partnerships between NSF, other federal agencies, academia, industry, nonprofits, state, local, and tribal governments, civil society, and communities of practice; and serve as hubs for NSF's broader portfolios of investment in their respective areas of focus.

The bold nature of this effort is reflected in the program's goals, as described above; the nature and types of partnerships expected; the outputs that are being tracked and assessed (notably an emphasis on technology and workforce capabilities, transcending publications and conference proceedings);

the level of post-award oversight; the unprecedented budgets of the NSF Engines; and the duration of NSF funding for the NSF Engines. Notably, each NSF Engines is funded at a level of up to $160 million over up to ten years, subject to progress relative to performance milestones and availability of funds.

Quantum Leap Challenge Institutes – MPS
The FY 2025 Request level of $17.0 million will support five Quantum Leap Challenge Institutes (QLCI). Each Institute addresses a major research challenge in Quantum Information Science and Engineering (QISE), including quantum sensing, computing, networking, simulation, and applications in biology. Total award sizes for each institute are $25.0 million over five years. In FY 2025, NSF will continue the Expand QISE thrust begun in FY 2022, which focuses on enhancing the participation of academic institutions that are not yet strongly engaged in quantum activities and promoting the inclusion of members of groups currently underrepresented in the field.

Quantum information science and engineering uses profound aspects of quantum physics such as superposition, interference, and entanglement to develop revolutionary approaches for information processing. Application areas include quantum computation, quantum communication, quantum simulation and quantum sensing. These rapidly developing fields have seen several discoveries and breakthroughs. However, many foundational and technological challenges must be overcome before the full potential of QISE can be realized. The QLCI's program goal is to support timely and bold research agendas aimed at making breakthroughs on one of these clearly identified and compelling challenges within a five-year period. QLCIs are expected to: engage an intellectually diverse community in the pursuit of identified challenges; develop cohesive, collaborative, and national-scale approaches to research in quantum information science and engineering; and enable the development of a well-trained workforce with strong cross-disciplinary skill sets needed for quantum information science and engineering.

The QLCI program, along with other NSF centers related to quantum research and education, collectively address Section 302 of the 2018 National Quantum Initiative Act. In addition, all the institutes funded under the QLCI program address topics that have been identified by the NSTC Subcommittee on Quantum Information Science as being critical to the U.S. investment in QIS, the program exercises a key role in the NSF response to this need.

Science and Technology Centers: Integrative Partnerships – multi-directorate
The FY 2025 Request level of $72.91 million will support 14 Science and Technology Centers (STC) and the administrative costs associated with program management and oversight. These include STCs from the FY 2016, FY 2021, and FY 2023 cohorts. Currently, STC awards are for five years, with possible renewal for an additional five years, or ten years total. For the 2016 and 2021 cohorts, award sizes are approximately $5.0 million per year with ramp down in years nine and ten. The 2023 cohort consists of centers with budgets of up to $6.0 million per year.

The STC program advances interdisciplinary discovery and innovation in science and engineering through the integration of cutting-edge research, excellence in education, targeted knowledge transfer, and the development of a diverse workforce. STCs help place the U.S. at the vanguard of science and engineering discovery by pursuing exceptionally innovative, complex research and education projects that require large-scale, long-term awards. STCs focus on creating new scientific paradigms, establishing entirely new scientific disciplines, and developing transformative technologies that have the potential for broad scientific or societal impact. In FY 2022, NSF initiated a study by the Science and Technology Policy Institute to examine the contributions STCs make to science and society. Preliminary results are anticipated to be available by the end of 2024.

Spectrum Innovation Initiative: National Center for Wireless Spectrum Research (SII-Center) – MPS
The FY 2025 Request level of $17.0 million funds the continuing operations of the SII-Center program. See the Spectrum Innovation Initiative narrative in the NSF-Wide chapter for more information.

Estimates for Centers Participation in 2023

	Number of Participating Institutions[1]	Number of Partners[2]	NSF Base Plan ($ in millions)	Leveraged Support ($ in millions)[3]	Number of Participants[4]
Artificial Intelligence Research Institutes	258	468	$51.83	$41	NA
Biology Integration Institutes	833	139	$35.20	N/A	4,441
Centers for Analysis & Synthesis	120	50	$2.50	N/A	325
Centers for Chemical Innovation	74	70	$27.70	$10	659
Engineering Research Centers	623	243	$68.70	$80	3,235
Materials Centers	156	147	$56.80	$22	3,100
NSF Regional Innovation Engines	N/A	N/A	-	N/A	N/A
Quantum Leap Challenge Institutes	89	79	$21.85	N/A	696
Science & Technology Centers	243	259	$74.59	$40	2,651
Spectrum Innovation Initiative Centers	29	49	$17.00	$1	772

[1] Academic institutions participating in activities at the centers.

[2] Number of non-academic participants, including industry, states, and other federal agencies at the centers.

[3] Estimated of funding for centers from sources other than NSF.

[4] Estimated number of people who use center resources, not just persons directly support by NSF.

Centers Supported by NSF in FY 2023

Center	Institution	State
Artificial Intelligence Research Institutes		
Artificial Intelligence for Environmental Sciences (AI2ES)	U of Oklahoma	OK
Institute for Foundations of Machine Learning	U of Texas at Austin	TX
Institute for Student-AI Teaming	U of Colorado at Boulder	CO
Molecule Maker Lab Institute (MMLI): An AI Institute for Molecular Discovery, Synthetic Strategy, and Mfg.	U of Illinois Urbana-Champaign	IL
AI Research Institute for Fundamental Interactions	MIT	MA
AI Institute for Collaborative Assistance and Responsive Interaction for Networked Groups (AI-CARING)	Georgia Tech Research Corp.	GA
AI Institute for Learning-enabled Optimization at Scale (TILOS)	U of California-San Diego	CA
AI Institute for Advances in Optimization	Georgia Tech Research Corp.	GA
AI Institute for Intelligent CyberInfrastructure with Computational Learning in the Environment (ICICLE)	Ohio State University	OH
AI Institute for Future Edge Networks and Distributed Intelligence (AI-EDGE)	Ohio State University	OH
AI Institute for Edge Computing Leveraging Next Generation Networks (Athena)	Duke University	NC
AI Institute in Dynamic Systems	University of Washington	WA
AI Institute for Engaged Learning	North Carolina State University	NC
AI Institute for Adult Learning and Online Education	Georgia Research Alliance	GA
AI Institute for Inclusive Intelligent Technologies for Education (INVITE)	U of Illinois Urbana-Champaign	IL
AI Institute for Transforming Education for Children with Speech and Language Processing Challenges	SUNY at Buffalo	NY
AI Institute for Artificial Cyber Threat Intelligence and Operation	U of California-Santa Barbara	CA
AI Institute for Societal Decision Making (AI-SDM)	Carnegia-Mellon University	PA
Institute for Trustworthy AI in Law and Society (TRAILS)	U of Maryland, College Park	MD
AI Institute for Artificial and Natural Intelligence	Columbia University	NY
Biology Integration Institutes		
Behavioral Plasticity Research Institute (BPRI)	Baylor College of Medicine	TX
Emergent Ecosystem Responses through Genes-to-Systems Institute (EMERGE)	Ohio State University	OH
Advancing Spectral biology in Changing Environments to understand Diversity (ASCEND)	University of Minnesota-Twin Cities	MN
Genomics and Eco-evolution of Multi-scale Symbioses Institute (GEMS)	University of Illinois at Urbana-Champaign	IL
Host-Virus Evolutionary Dynamics Institute (HVEDI)	University of Arkansas	AR
Mechanisms of Cellular Evolution	Arizona State University	AZ
New Roots for Restoration	Donald Danforth Plant Sci. Ctr.	MO
Uncovering mechanisms of amphibian resilience to global	University of Pittsburgh	PA

change from molecules to landscapes		
Emergent Mechanisms in Biology of Robustness, Integrations & Organization (EMBRIO)	Purdue University	IN
Regional OneHealth Aerobiome Discovery Network	Colorado State University	CO
Institute for Symbiotic Interactions, Teaching, and Education in the Face of a Changing Climate (INSITE)	U of California – Merced	CA
Life without water: protecting macromolecules, cells, and organisms during desiccation and rehydration across kingdoms of life	Carnegie Institution of Washington	WA
Discovering the mechanisms and evolution of aging differences between females and males (IISAGE)	University of Alabama at Birmingham	AL
Predicting the global host-virus network from molecular foundations	Georgetown University	DC
Centers for Analysis and Synthesis[2]		
Socio-Environmental Synthesis Center (SESYNC)	U of Maryland	MD
Enviro. Data Science Innovation and Inclusion Lab (ESIIL)	U of Colorado at Boulder	CO
Centers for Chemical Innovation (Phase II awards only)[3]		
NSF Center for Sustainable Nanotechnology (CSN)	U of Wisconsin	WI
NSF Center for Sustainable Polymers (CSP)	U of Minnesota	MN
NSF Center for Aerosol Impacts on the Chemistry of the Environment (CAICE)	U of California-San Diego	CA
NSF Center for Selective C-H Functionalization (CCHF)	Emory	GA
NSF Center for Genomically Encoded Materials (CGEM)	U of California-Berkeley	CA
NSF Center for Synthetic Organic Electrochemistry (CSOE)	U of Utah	UT
NSF Center for the Chemistry of Molecularly Optimized Networks (MONET)	Duke University	NC
The Center for Computer Aided Synthesis (C-CAS)	U of Notre Dame	IN
The NSF Center for the Mechanical Control of Chemistry (CMCC)	Texas A&M U	TX
Engineering Research Centers		
Advanced Self-Powered Systems of Integrated Sensors and Technologies (ASSIST)	North Carolina State	NC
Bio-mediated and Bio-inspired Geotechnics (CBBG)	Arizona State	AZ
Engineering Research Center for Innovative and Strategic Transformation of Alkane Resources (CISTAR)	Purdue	IN
Engineering Research Center for Precise Advanced Technologies and Health Systems for Underserved Populations (PATHS-UP)	Texas A&M	TX
Nanomanufacturing Systems for Mobile Computing and Mobile Energy Technologies (NASCENT)	U of Texas	TX
Nanosystems Engineering Research Center for Directed	Boston College	MA

[2] SESYNC is operating on no-cost extensions. No funds were obligated for the centers in FY 2022.
[3] Smaller, developmental Phase I awards do not meet the criteria as formal NSF Centers and so are not captured here.

Multiscale Assembly of Cellular Metamaterials with Nanoscale Precision (CELL-MET)		
Nanotechnology Enabled-Water Treatment System	Rice	TX
NSF Engineering Research Center for Cell Manufacturing Technologies (CMaT)	Georgia Institute of Tech	GA
Optimization for Electro-thermal Systems (POETS)	U of Illinois	IL
NSF Engineering Center for Quantum Networks (CQN)	U of Arizona	AZ
NSF Engineering Research Center for the Internet of Things for Precision Agriculture (IoT4Ag)	U of Pennsylvania	PA
NSF Engineering Research Center for Advancing Sustainability Through Powered Infrastructure for Roadway Electrification (ASPIRE)	Utah State University	UT
NSF Engineering Research Center for Adv Tech for Preservation of Biological Systems (ATP-Bio)	U of Minnesota	MN
NSF Engineering Research Center for Precision		
Microbiome Engineering (PreMiEr)	Duke University	NC
NSF Engineering Res. Center for Smart Streetscapes (CS3)		
NSF Engineering Research Center for Advancing	Columbia University	NY
Sustainable and Distributed Fertilizer Production		
(CASFER)	Texas Tech University	TX
NSF Engineering Research Center for Hybrid Autonomous Manufacturing Moving from Evolution to Revolution		
(ERC-HAMMER)	Ohio State University	OH
Materials Centers		
Brandeis Bioinspired Soft Materials Center	Brandeis	MA
Center for Advanced Materials and Manufacturing	U of Tennessee	TN
Center for Complex and Active Materials	U of California-Irvine	CA
Center for Dynamics and Control of Materials	U of Texas at Austin	TX
Center for Emergent Materials	Ohio State University	OH
Center for Hybrid, Active and Responsive Materials	U of Delaware	DE
Center for Materials Innovations at Michigan	U of Michigan	MI
Center for Multifunctional Materials	Northwestern	IL
Center for Nanoscale Science	Pennsylvania State	PA
Chicago Materials Research Centers	U of Chicago	IL
Columbia Center for Precision Assembly of Superstratic and Superatomic Solids	Columbia	NY
Harvard Materials Research Center	Harvard	MA
Illinois Materials Research Center	U of Illinois at U/C	IL
Laboratory for Research on the Structure of Matter	U of Pennsylvania	PA
Materials Research Science and Engineering Ctr at UCSB	U of California-Santa Barbara	CA
Materials Research Science and Engineering Center	U of California-San Diego	CA
Materials Research Science and Engineering Center	U of Minnesota	MN
Princeton Center for Complex Materials	Princeton	NJ
UW Molecular Engineering Materials Center	U of Washington	WA

Wisconsin Materials Research Center	U of Wisconsin	WI
Quantum Leap Challenge Institutes		
Quantum Systems through Entangled Science and Engineering	U of Colorado Boulder	CO
Hybrid Quantum Architectures and Networks	U of Illinois-Urbana Champaign	IL
Challenge Institute for Quantum Computation	U of California-Berkeley	CA
Quantum Sensing for Biophysics and Bioengineering	U of Chicago	IL
Robust Quantum Simulation	U of Maryland-College Park	MD
Science and Technology Centers		
Biology with X-Ray Free Electron Lasers	SUNY Buffalo	NY
Center for Brains, Minds, and Machines: The Science and the Technology of Intelligence	Massachusetts Institute of Tech	MA
Center for Bright Beams	Cornell	NY
Center for Cellular Construction	U of California-San Francisco	CA
Center for Chemical Currencies of a Microbial Planet	Woods Hole Ocean. Inst	MA
Center for Engineering MechanoBiology	U of Pennsylvania	PA
Center for Integrated Quantum Materials	Harvard	MA
Center for Integration of Modern Optoelectronic Materials on Demand	U of Washington	WA
Center for Learning the Earth with Artificial Intelligence and Physics	Columbia U	NY
Center for OLDest Ice Exploration	Oregon State U	OR
Center for Research on Programmable Plant Systems	Cornell	NY
Center for Science of Information	Purdue	IN
S&T Center on Real-Time Functional Imaging	University of Colorado	CO
S&T Technologies for Phosphorus Sustainability Center	North Carolina State U	NC
Spectrum Innovation Initiative		
Spectrum X – An NSF Spectrum Innovation Center	University of Notre Dame	IN