University of Illinois System

NATIONAL SCIENCE FOUNDATION (NSF)

FOR FY2024, THE U OF I SYSTEM REQUESTS $11.9 BILLION FOR NSF.

NSF	
FY2024 PBR	= $11.3B
FY2023	= $9.539B
FY2022	= $8.838B
FY2021	= $8.487B

Appropriations Bill: Commerce, Justice, Science, and Related Agencies

Agency: National Science Foundation

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NSF R&D EXPENDITURES, FY2022	
University of Illinois Chicago	$23.8 Million
University of Illinois Urbana-Champaign	$117.7 Million

*Source: FY2022 NSF HERD Survey

The U of I System has a longstanding and successful partnership with the National Science Foundation (NSF), the only federal agency charged with funding fundamental research and education across all scientific and engineering disciplines. NSF is the cornerstone of America's basic research enterprise.

NSF-SUPPORTED PROJECTS AT UIUC

UIUC routinely leads the nation in NSF awards.

Research to Address Grand Challenges of Our Time

- POETS, a UIUC-led Engineering Research Center (ERC), addresses thermal and electrical challenges surrounding mobile electronics and vehicle design.
- UIUC leads a $25M NSF Quantum Leap Challenge Institute on hybrid quantum architectures and network.
- I-MRSEC, a $15.6M UIUC-led Materials Research Science and Engineering Center (MRSEC), performs fundamental, innovative materials research and supports interdisciplinary education and training of students.
- NSF selected UIUC to create a $15M Institute for Geospatial Understanding through an Integrative Discovery Environment (I-GUIDE) to better understand the risks and impacts of climate change and disasters.
- The NSF awarded a five-year, $12.5M grant to a UIUC collaborative research team for Genomics and Eco-Evolution of Multi-Scale Symbioses, a Biology Integration Institute.
- The NSF's Innovative High-Performance Computing program awarded $10M to UIUC's National Center for Supercomputing Applications to deploy and operate Delta, an advanced computing and data resource that will shape the future of technology and practice in advanced research computing.

Fostering Entrepreneurship & Advancing Commercial Applications

- Innovation Corps (I-Corps): The Illinois I-Corps Site (2013 - 2022) has played a key part of the Illinois innovation ecosystem with over 250 teams having participated in this commercialization program and raising close to $140M in external funding after participating in the program. UIUC played a leadership role in the $3.5M Midwest I-Corps node (2016-2021) which led to the recently launched $5M Great Lakes regional I-Corps Hub.
- Industry/University Cooperative Research Centers (I/UCRCs): UIUC participates in university research to meet industry needs that transfer research results and technological advances to the U.S. marketplace.

- The NSF Small Business Innovation Research (SBIR) and Small Business Technology

Transfer (STTR) program is critical to UIUC's Research Park, particularly its tech incubator EnterpriseWorks. From 2003-2021, NSF awarded 105 SBIR/STTR awards to EnterpriseWorks companies for a total of more than $29.1M. Several NSF-funded startup companies have gone on to raise hundreds of millions of dollars in venture capital and private investments.

Faculty Career Development

UIUC has 104 active Faculty Early Career Development (CAREER) awards, which provide funding to launch research programs for promising early-career faculty.

- Researchers are leading an Engineering Frontiers and Multidisciplinary Activities project that applies the science of teamwork to spark research collaborations across disciplines and institutions. The project seeks innovation by engaging a variety of scholars and researchers from the American Indian Higher Education Council, the Hispanic Association of Colleges and Universities, and the National Association for Equal Opportunity in Higher Education.

Education and Graduate Training

- With the support of an NSF Research Traineeship (NRT) grant, UIUC is beginning a PhD level certificate program that combines materials and data science.
- Also through an NRT grant, UIUC has launched the Miniature Brain Machinery (MBM) Program, which combines cognitive and behavior studies with brain cell and tissue biology studies to train the next generation of STEM workforce in advancing discovery.

NSF-SUPPORTED PROJECTS AT UIC

NSF-supported projects at UIC range from large multi-scale initiatives to individual research grants.

UIC faculty have also received a significant number of CAREER awards from the NSF designed to help rising U.S. researchers and scholars establish long-term leadership through the integration of research and education. They currently have 26 active CAREER awards.

NSF supports big data and visualization research at the Electronic Visualization Laboratory (EVL), which is home to CAVE2, a renowned interdisciplinary research laboratory that pioneered the development of the CAVE virtual-reality system.

The Learning Sciences Research Institute (LSRI), a campus-wide, multidisciplinary unit focused on improving instruction and learning, has several faculty who have been successfully funded by NSF in areas of STEM education. Two current and one recently completed project are focused on developing the capacity of teachers to engage in instruction and assessment aligned with the vision of multi-dimensional science proficiency represented in the Framework for K-12 Science Education and the Next Generation Science Standards. The three projects span grades 3-12 and involve collaborations with teachers from the Chicago Public Schools and surrounding districts. In addition to developing teacher capacity to design high-quality instruction aligned with the standards, two of the projects include development of free resources designed to support classroom formative assessment practices, which are being widely disseminated via a technology portal.

Researchers affiliated with LSRI are leading a five-year, $4.7M project funded by NSF to develop and implement a professional development program for K-8 math educators that spans across three levels — teacher, school and district.

UIC is one of six institutions that is splitting an $8.8M NSF grant to develop theories, research methods and tools to help expand and tailor the field of STEM education to support Black students.

Through a $4M NSF grant, UIC will be home to the world's first analytical, aberration-corrected and monochromated transmission electron microscope with a magnetic field-free objective lens.

UIC has a $2.5M NSF grant to improve undergraduate STEM engagement in environmental sciences, physiology and chemistry using the study of the Monarch butterfly.

A UIC researcher received a $14.1M, five-year grant to expand the experimental capabilities at NSF's Chemistry and Materials Center for Advanced Radiation Sources, one of the world's leading facilities for the study of the crystallography of small molecules and liquid surfaces and interfaces.