



National Science Foundation

FOR FY2022,
THE U OF I SYSTEM
REQUESTS
\$10 BILLION FOR NSF

FY2022 PBR = TBD
FY2021 = \$8.487B
FY2020 = \$8.28B
FY2019 = \$8.075B
FY2018 = \$7.767B
FY2017 = \$7.472B
FY2016 = \$7.464B
FY2015 = \$7.344B

Appropriations Bill:

Commerce, Justice, Science,
and Related Agencies

Agency: National Science
Foundation

NSF R&D EXPENDITURES, FY2020

URBANA: \$127.6 MILLION | UIC: \$21.6 MILLION

*Source: FY2020 NSF HERD Survey

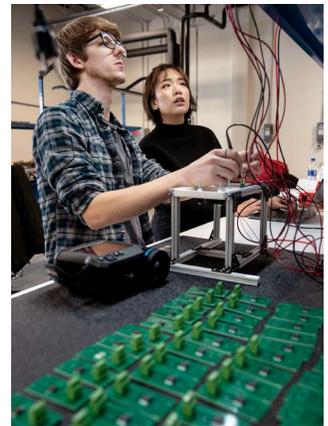
The U of I System has a longstanding and successful partnership with the National Science Foundation (NSF), the only federal agency charged with funding fundamental research and education across all scientific and engineering disciplines. NSF is the cornerstone of America's basic research enterprise.

NSF-Supported Projects at Urbana-Champaign

Urbana 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 was **selected** to lead 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.
- 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.
- NSF **awarded** \$15.5M to four universities in Illinois, including UIUC and UIC, to create an institute to **bring powerful mathematical ideas to bear** on key contemporary scientific and technological challenges.



FOSTERING ENTREPRENEURSHIP & ADVANCING COMMERCIAL APPLICATIONS

- **Innovation Corps (I-Corps)**: Since the Illinois I-Corps Site was established in 2013, 220 teams have participated in this entrepreneurial program and have raised close to \$92M in external funding. In 2016, NSF announced a \$3.5M Midwest I-Corps node, and UIUC plays a central role.
- **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 2001-2019, NSF awarded 109 SBIR/STTR awards to EnterpriseWorks companies for a total of more than \$27.9M. Several NSF-funded startup companies have gone on to raise hundreds of millions of dollars in venture capital and private investments.



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Faculty Career Development

UIUC has 15 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.

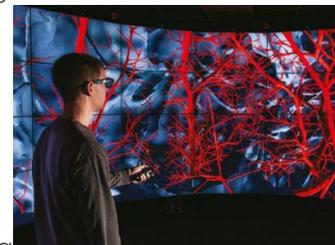


NSF-Supported Projects at UIC

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 NSF — 18 in the 2020 funding cycle — designed to help rising U.S. researchers and scholars establish long-term leadership through the integration of research and education.

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 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.

In 2017, UIC **received** a four-year, \$1.44M grant from NSF to discover new 2D materials to be used to **manufacture better and cheaper batteries**.