



# NSF & INDIANA

## FAST FACTS

**\$171,448,000**

Total NSF awards to Indiana in FY19

**\$156,677,000**

Amount invested in fundamental research in Indiana in FY19

**\$14,771,000**

Amount invested in STEM education in Indiana in FY19

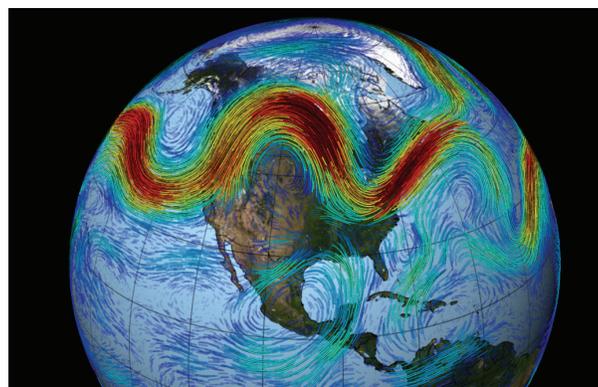
**\$4,010,000**

Amount invested in Indianan startups through NSF's small business program in FY19

In Fiscal Year (FY) 2019, the **National Science Foundation made \$171,448,000 in awards to Indiana** in support of fundamental research, advanced technical education, entrepreneurial training, STEM teacher training, long-term ecological monitoring, small business development, major research instrumentation and more.

## DID YOU KNOW?

**DISCOVERY** | Monitoring drinking water contamination is vitally important to inform consumers about water safety, to identify source water problems, and to facilitate discussion of public health and the environment. NSF-funded researchers at the **University of Notre Dame** are developing a framework for reliable and timely detection of drinking water contamination. By focusing on communities that use private wells for drinking water, the project engages the community to participate, through public participatory scientific research, also referred to as citizen science, in data gathering. The researchers have also developed new inference models using approaches from machine learning and statistics to improve accuracy, reliability, trustworthiness, and value of the data, gathered through public participation. By leveraging these advances in data analytics and exploring the technological and social dimensions of public participation, researchers and citizens help to answer a public health question: Is the drinking water in the community safe?



Jetstream, built by the Indiana University Pervasive Technology Institute (PTI), adds cloud-based, on-demand computing and data analysis resources to the national cyberinfrastructure. IU is expected to receive a total of about \$13.7 million from NSF for Jetstream.

**Image Credit:** Indiana University Bloomington

**STEM WORKFORCE DEVELOPMENT** | NSF's CyberCorps<sup>®</sup>: Scholarship for Service program is a scholarship program designed to recruit and train the next generation of information technology professionals, industry control system security professionals and security managers to meet the needs of the cybersecurity mission for federal, state, local, and tribal governments. All scholarship recipients must work after graduation for a federal, state, local, or tribal government organization in a position related to cybersecurity for a period equal to the length of the scholarship. **Purdue University Northwest in collaboration with Ivy Tech**, has established the Purdue Northwest Cyber Defenders Program to recruit, prepare and support students -- allowing Ivy Tech students a seamless pathway to continue their higher education at Purdue University Northwest's cybersecurity program. Recruiting students and exposing them to real-world cybersecurity research and practices will motivate them to develop practical expertise in this critical field and allow them to leverage their experience as they enter the government workforce.

**SCIENCE & ENGINEERING INDICATORS** | **3.61% of the Indiana workforce is employed in S&E occupations**, as of 2017, and 7.35% of Indiana business establishments are industries with high employment in science, engineering and technology occupations.<sup>†</sup>

**ENGINEERING RESEARCH CENTER (ERC) FOR INNOVATIVE AND STRATEGIC TRANSFORMATION OF ALKANE RESOURCES (CISTAR)** | The United States' proven reserves of natural gas have nearly doubled in the past 15 years as a result of technologies to extract gas from shale formations. A sizable fraction of these reserves are located in remote areas. Currently, the infrastructure and economics are not favorable for transporting the light hydrocarbon (LHC) alkane constituents (methane, ethane, propane and butanes) of this "stranded" gas to centralized plants, where they can be processed to valuable liquid fuels and chemical intermediates. The NSF CISTAR ERC at **Purdue University** aims to provide basic research understanding in the areas of catalysis, separations and process design needed to develop small, modular, local, and highly networked processing plants that will convert LHCs from remote shale resources to liquid chemicals and transportation fuels, thereby economically utilizing resources that would otherwise be underutilized. The CISTAR Innovation Ecosystem brings together the key industrial partners and non-industrial stakeholders, such as government agencies, regulators, NGOs, and consumers, to commercialize the center's research discoveries and to maximize benefits to society.

## TOP 3 NSF-FUNDED ACADEMIC INSTITUTIONS FOR FY19

**\$70,360,000**

Purdue University

**\$57,246,000**

Indiana University

**\$34,805,000**

University of Notre Dame

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nsf.gov/transform.pdf

<sup>†</sup> National Science Board, National Science Foundation. 2020. Science and Engineering Indicators 2020: The State of U.S. Science and Engineering. NSB-2020-1. Alexandria, VA. Available at <https://ncses.nsf.gov/pubs/nsb20201/>.