SOUTH DAKOTA FACT SHEET

FY 2020 FAST FACTS

$19,570,000 Total NSF awards to South Dakota

$17,400,000 Invested in fundamental research in South Dakota

$2,170,000 Invested in STEM education in South Dakota

$683,000 Invested in South Dakota startups through NSF’s small business program

TOP NSF-FUNDED ACADEMIC INSTITUTIONS FOR FY 2020

$5,951,000 South Dakota School of Mines and Technology

$4,678,000 South Dakota State University

$1,477,000 University of South Dakota

NSF BY THE NUMBERS

The National Science Foundation (NSF) is an $8.5 billion independent federal agency created by Congress in 1950 to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense. NSF’s vital role is to support basic research and researchers who create knowledge that transforms the future.
Using a new unbiased screening approach, researchers at South Dakota State University are working to uncover human genes that help or inhibit the entry into cells of the virus that causes COVID-19. This work has the potential to identify host cell defense genes that inhibit viral entry, as well as define genes that contribute to antibody protection in immune cells. This information will provide the knowledge needed to develop new anti-viral strategies and to understand how environmental, genetic and cellular factors may influence an individual’s susceptibility to infection as well as the severity of the infection.

STEM EDUCATION

STEM WORKFORCE DEVELOPMENT | A goal of NSF’s Tribal Colleges and Universities Program is to increase the STEM instructional and research capacities of specific institutions of higher education that serve the nation’s indigenous students. Sisseton Wahpeton Community College has developed a new online journal, Native Science Report, that focuses on STEM education within tribal and native-serving colleges and universities. The publication will address the need for greater national awareness of STEM education programs within tribal colleges and, in addition, will promote greater communication among tribal college STEM faculty nationwide.

RESEARCH DRIVING WORKFORCE INNOVATION

FUTURE OF WORK | The South Dakota 2-Dimensional Materials for Biofilm Engineering, Science and Technology Center’s mission is to build competitive, collaborative research and education capacity focused on nanoscale, conformal, two-dimensional coatings that both promote and inhibit biofilm growth on materials with agricultural, biomedical and industrial applications. The project involves eight public and private universities, three tribal colleges, and the South Dakota Governor’s Office of Economic Development and supports research related to “biofilms,” STEM education and technology-based economic development. Bacterial biofilms (layers of bacteria that adhere to surfaces) are becoming increasingly valued for their potential ability to give advantageous properties to the surfaces they adhere to. Biofilm research at the center will be aimed at three technical thrust areas. Thrust Area-1 will design stress-resistant biofilms to protect metal surfaces from biocorrosion. Thrust Area-2 will develop infrastructure and expertise to evaluate nitrogen-fixing bacteria that colonize soybean roots and will use 2D materials to enable preferential attachment to ultimately increase bioavailable nitrogen in the soil. Thrust Area-3 aims to provide researchers in South Dakota with the resources to mine available data for useful biofilm-material relationships. The project will bring together a diverse team of individuals from many different scientific fields to conduct the research and will create a program to focus on the development and engagement of the university educational pipeline, from K-12 teachers to undergraduate students to faculty. This project will focus specifically on researchers and students originating from rural and Native American communities. The five-year project, funded for $20,000,000, was awarded through EPSCoR, NSF’s Established Program to Stimulate Competitive Research. EPSCoR was created to provide deliberate investments in science and engineering research and capacity-building in U.S. states and territories receiving a disproportionate share of NSF funds.

EPSCoR

- COMPETITIVE RESEARCH | South Dakota is one of 28 U.S. states or territories under NSF’s Established Program to Stimulate Competitive Research (EPSCoR). Over $9,010,000 in awards have been made to South Dakota academic institutions through EPSCoR in FY 2020. For more information, visit South Dakota’s EPSCoR state web page.

NCSES

- According to the National Center for Science and Engineering Statistics (NCSES), 41% of Science, Engineering, and Health doctorates conferred in South Dakota are made in Life sciences. Visit South Dakota’s science and engineering state profile to learn more!

- 3.61% of South Dakota’s workforce are employed in S&E occupations.

- 5.98% of South Dakota’s industries with high science, engineering, and technology occupations.

LEARN MORE

- NSF70 – In 2020, NSF commemorated its 70th anniversary and the 75th anniversary of the publication of Science - the Endless Frontier. Watch the highlight video for NSF’s seven decades of funding the best and brightest ideas that have transformed our lives and established the U.S. as a science and technology leader.

- NSF FACT SHEETS – NSF provides fact sheets about the agency and its bold investments in basic research. These fact sheets profile NSF investments in research across all fields of science and engineering, including quantum, artificial intelligence, and advanced manufacturing, and the NSF-supported research and computing infrastructure powering the U.S. response to COVID-19.

- CONNECT WITH NSF – For more information on NSF’s impact in your state, please contact NSF’s Office of Legislative and Public Affairs at congressionalteam@nsf.gov.