

NASA EPSCoR Program

NASA's Experimental Program to Stimulate Competitive Research (NASA EPSCoR), authorized by Congress in 1993, encourages partnerships between government, higher education, and industry to improve states' infrastructure, capabilities, and national competitiveness in research and development related to aerospace industries and NASA.

NASA EPSCoR awards support both the development of research and technology as well as the capabilities of faculty and graduate students. Idaho receives \$125,000 in core funding annually to engage faculty and graduate students in aerospace-related research activities with NASA scientists and engineers. In addition, researchers can compete for three-year research grants of up to \$750,000. Dr. Joseph D. Law, Associate Dean for Undergraduates, is Idaho's NASA EPSCoR director. Dr. Law also serves as the Director of the NASA Idaho Space Grant Consortium.

Idaho NASA EPSCoR programs promote research and economic development in Idaho, including workforce development in NASA-related fields. Idaho NASA EPSCoR works in concert with the NASA Idaho Space Grant Consortium to provide educational opportunities for underrepresented students, including first-generation college students from rural areas. All Idaho NASA EPSCoR research projects are designed to increase and enhance the state's workforce in science and technology fields by providing hands-on research experience to students and faculty. Gaining valuable research expertise positions Idaho-based researchers to compete nationally in areas of strategic importance to NASA's mission.



Students performing measurements of snowpack levels at 11,500 feet during "snow school" at the Center for Snow and Avalanche Studies research watershed as part of the EPSCoR-funded project, *Remote Sensing of the Cryosphere: Calibration and Validation*. The students and the EPSCoR-funded research team performed the measurements during satellite overflights in collaboration with the U.S. Army Cold Regions Research and Engineering Laboratory. This research is piloting and testing techniques for estimating snow properties to vastly improve forecasting of water resources, floods, and avalanches.

Accomplishments

In addition to the core funding for the Idaho NASA EPSCoR program, Idaho has competed and won six awards from the National NASA EPSCoR major research competition, which supports three-year, interdisciplinary, multi-institutional research projects. Idaho NASA EPSCoR researchers are:

- Developing technologies to treat biological contaminants on the surfaces of Mars-bound spacecraft, with the NASA Jet Propulsion Laboratory.
- Developing miniaturized propulsion systems for the growing market of nanosatellites, with the Jet Propulsion Laboratory.
- Working to understand the molecular details of cellular sensory reception and bone homeostasis and building Idaho's education capacity in the area of bone loss, with NASA's Ames Research Center and Johnson Space Center.
- Improving estimates of snow-water equivalency from microwave remote sensing, with the Jet Propulsion Laboratory and NASA's Goddard Space Flight Center.

- Investigating the potential for microorganisms residing on Mars-based spacecraft to inhabit Mars and pose planetary protection challenges, with the Jet Propulsion Laboratory.
- Piloting the use of three dimensional imaging using LiDAR scans to perform aircraft inspection and create 3-D models to provide both a baseline and evidence of new damage or stress to an aircraft. This capability could have a huge impact on safety in the airline industry and for NASA's missions.

Other program benefits include patents, publications, presentations, and advanced degrees. Collaborative studies with industry contribute to Idaho economic development. Workforce development through the education of diverse students in STEM fields is a primary goal. Over the past five years alone, NASA Idaho EPSCoR contributed to building the skills and enabling the success of 43 faculty/researchers and 73 undergraduate and graduate students. 10 of those students were from underrepresented populations.

Consequences of Reduced Funding

The relatively small investment in the NASA EPSCoR program provides a level of funding for researchers and students in Idaho that translates into more research dollars in the future. Cuts in the funding of the National NASA EPSCoR program usually result in increased competition among more researchers in more states and for less money.

A reduction in funding will mean fewer aerospace-related projects in Idaho, less leveraging of outside funding, and fewer publications, patents, and advanced degrees awarded.

Request: The request is for \$18 million in FY 2015 funding, the same as the FY 2014 appropriation.

Account: Commerce, Justice, Science; NASA; Education; EPSCoR

For more information, please contact:

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