

National EPSCoR Overview

The NASA EPSCoR program is directed at those jurisdictions that have not in the past participated equably in competitive aerospace and aerospace-related research activities. Twenty-five states, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, and Guam currently participate. Five federal agencies conduct EPSCoR programs, including NASA.

The **NASA EPSCoR Objectives** are to:

- Contribute to and promote the development of research infrastructure in EPSCoR jurisdictions in areas of strategic importance to the NASA mission.
- Improve the capabilities of the jurisdictions to gain support from sources outside the NASA EPSCoR program.
- Develop partnerships between NASA research assets, industry, and EPSCoR jurisdictions' academic institutions.
- Contribute to the overall research infrastructure, science and technology capabilities, higher education, and/or economic development of the jurisdiction.

The four main components of NASA EPSCoR are:

- EPSCoR Research Infrastructure Development awards, or RID. This component enables jurisdictions to build and strengthen relationships with NASA researchers. Awards are \$125,000 per year per jurisdiction, pending funding availability.
- EPSCoR Research Awards solicits topic-specific proposals addressing high-priority NASA research and technology development needs. Awards are up to \$750,000 for a three-year performance period.
- EPSCoR International Space Station, or ISS, Flight Opportunity Awards. Awards are up to \$100,000 for a three-year performance period.
- EPSCoR Rapid Response Research or R3. These awards provide a streamlined method to quickly address research issues important to NASA. Awards are up to \$100,000 for a one-year performance period.

NASA WEST VIRGINIA EPSCoR

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West Virginia Established Program to Stimulate Competitive Research (EPSCoR)

To contribute to the state of West Virginia's efforts at research infrastructure development particularly in the high-technology sector, and improved level of STEM education.

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What is NASA WV EPSCoR?

The Established Program to Stimulate Competitive Research, or EPSCoR, builds partnerships between government, higher education and industry, designed to effect lasting improvements in a state's or region's research infrastructure, R&D capacity and hence, its national R&D competitiveness. In addition to the research and technology development, this program enables faculty development and provides support for higher education students.

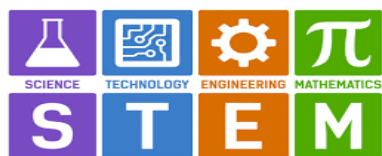
The goal of NASA EPSCoR is to provide seed funding that will enable jurisdictions to develop an academic research enterprise directed toward long-term, self-sustaining, nationally competitive capabilities in aerospace and aerospace-related research. The NASA WV EPSCoR Program is housed in the Benjamin M. Statler College of Engineering and Mineral Resources on the Evansdale Campus of West Virginia University (WVU) in Morgantown, WV.

Program Goals

- To contribute to and to advance NASA's vision and mission, specifically in terms of STEM research and workforce development;
- To contribute to the state of West Virginia's efforts at research infrastructure development particularly in the high-technology sector, and improved level of STEM education; and
- To increase the participation of underrepresented groups in all our programs

NASA EPSCoR in West Virginia consists of two major components: **Research (Implementation) Award** and the **Research Infrastructure Development (RID)**, which consists of Research Seed Grants, Travel Grants and Capacity Building Programs.

NASA WV EPSCoR supports a variety of activities related to strengthening the research capabilities of faculty in STEM disciplines in West Virginia by sponsoring programs that promote faculty mentorship roles from West Virginia University (WVU) or Marshall University (MU) alongside faculty from smaller universities and colleges in the state.



The **Research Seed Grants Program** is designed to support faculty at all WV colleges and universities in their efforts to

initiate research activities, conduct pilot experiments, or demonstrate new concepts that might lead to significant scientific projects in the future. Each applicant may request up to \$10,000 of NASA WV EPSCoR funds to be supplemented with at least a one-to-one cost share from the applicant's home institution from non-federal sources.



Graduate student from Marshall University, Bekah Shupe, pictured above collecting samples to understand how plant communities will respond to ongoing and future global environmental change. This research was made possible through an EPSCoR Seed grant to Dr. Kyle Palmquist.

Travel Grants are provided through the NASA WV EPSCoR Program in order to support researchers at West Virginia colleges and universities to travel to NASA field centers or NASA headquarters to meet and initiate collaborative projects with NASA scientists. Applicants can also request funds to invite prominent researchers to their campus to participate in research colloquia or to discuss collaborations. Each applicant may request up to \$1,000 of NASA WV EPSCoR funds to be supplemented with at least a one-to-one cost share from the applicant's home institution.

Capacity Building Programs have been created to help with the mission of building and expanding research capacity in our jurisdiction, NASA funds have been allocated to support the following activities:

- Grant writing workshop for faculty and researchers in West Virginia.
- Science policy advocacy workshop to generate new ideas for supporting STEM research and education in the state and hence making an impact on the scientific research climate in West Virginia

Impact of NASA EPSCoR in WV

Our programs have been effective in building research capability at WV institutions of higher education. In the past five years, over 106 publications and presentations have been generated by our researchers, seven new or revised courses have been created, and over \$2.1 million has been secured by our researchers after the completion of their Seed Grant supported by NASA EPSCoR. Funding has helped in providing students with STEM opportunities that would not otherwise have been available. In 2020, fifteen students (7 graduates, 8 undergraduate) were involved in active research under the NASA WV EPSCoR program. The NASA funding has also had a positive impact in the research career of many professors.

At **Bluefield State College**, funding from the NASA WV EPSCoR has given opportunities to train undergraduate students in NASA related biomedical research. Students have been presenting their findings at national and local conferences and many have been matriculating in graduate and professional schools. Dr. Tesfaye Belay has presented the results of his research at various forums such as the American Society for Gravitational and Space Research (ASGSR).

At **Marshall University**, Dr. Rosalynn Quiñones, Assistant Professor, Chemistry Department, credits NASA WV EPSCoR seed funding for her research advancements. In 2019, she published an article in the Journal of Chemical Education, currently mentoring five Marshall University female students, proposed and received an NSF grant in the amount of \$399,999. (award # NSF-MRI 1828358)



1st generation college student, Sara Moreno, majoring in Forensic Chemistry at Marshall University is working in Dr. Rosalynn Quiñones' lab on the research "Quantification of Cannabis in Infused Consumer Products and their Residues on Skin"