NASA West Virginia Space Grant Consortium NASA WV EPSCoR

Report to the Board of Directors

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Charleston, WV

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National Aeronautics and
Space Administration

INSPIRE - ENGAGE - EDUCATE - EMPLOY

The Next Generation of Explorers

Vision & Mission

Vision

We immerse the public in NASA's work, enhance STEM literacy, and inspire the next generation to explore.

Mission

We engage the nation in NASA's mission

Focus Areas

Create **unique opportunities** for students and the public to contribute to NASA's work in exploration and discovery.

Build a **diverse future STEM workforce** by engaging students in authentic learning **experiences** with NASA's people, content and facilities.

Strengthen **public understanding** by enabling **powerful connections** to NASA's mission and work.

NASA's Missions and Values

Vision: We reach for new heights and reveal the unknown for the benefit of humankind

Mission: Drive advances in science, technology, aeronautics, and space exploration to enhance knowledge, education, innovation, economic vitality and stewardship of Earth

Core Values: We share a set of core values—safety, integrity, teamwork, excellence—and they are evident in all that we do

NASA Space Grant Objectives

1. Establish and maintain a national network of universities.
2. Encourage cooperative programs among universities, aerospace industry, and Federal, state, and local governments.
3. Encourage interdisciplinary education, research, and public service programs related to aerospace.
4. Recruit and train U.S. citizens, especially women, underrepresented minorities, and persons with disabilities.
5. Promote a strong science, mathematics, and technology education base from elementary through secondary levels.

NASA EPSCoR
National Objectives

- Focus on building the core strength needed to develop competitive research and technology development methods and activities for the solution of scientific and technical problems of importance to NASA.

- Contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the jurisdiction.

NASA WV EPSCoR Objectives

- To contribute to and to advance NASA's vision and strategies as outlined in various NASA documents, 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.

Membership and Organization of WVSGC

- Academic Affiliates: WVU, Marshall, WVU IT, WV State, WV Wesleyan, Fairmont State, Shepherd, West Liberty, Bethany, Bluefield State, Wheeling Jesuit, Glenville State, and Community and Technical System of WV
- Non-Academic Affiliates: NASA IV & V Facility, The Clay Center for the Arts and Sciences, WVHTCF, Polyhedron Learning Media, NRAO Green Bank, TechConnectWV
- Engineering and Educational Consultant: Dr. Anne Cavalier

Membership and Organization of WVSGC

Welcome to the Board
Representing West Liberty University
(Replacing Dr. Robert Kreisberg)

Dr. Karen Kettler

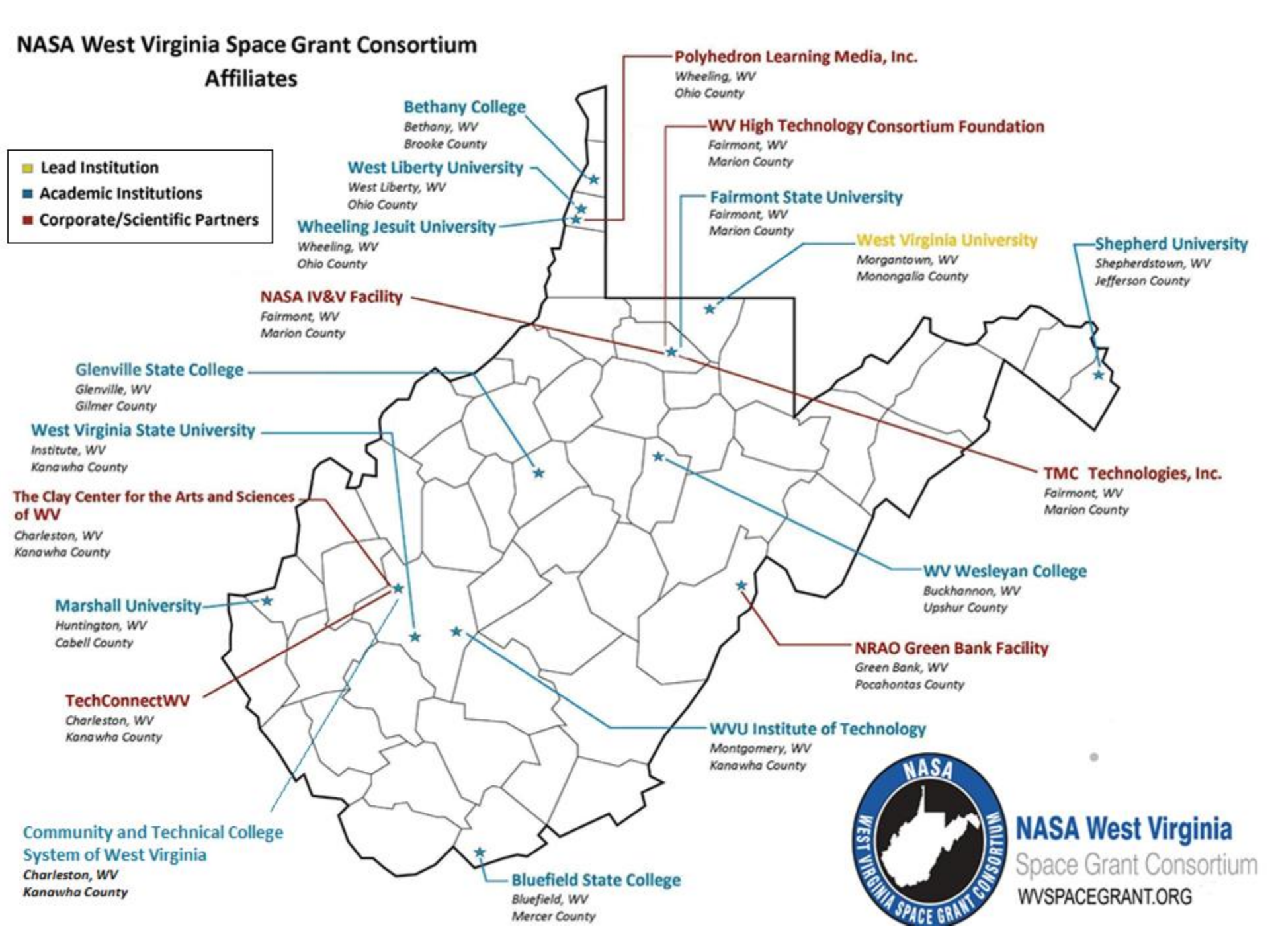
Interim Dean, College of Sciences

Membership in NASA WV EPSCoR Committee

- The NASA WV EPSCoR Committee consists of the WVSGC Board of Directors, and

- Two representatives from WV EPSCoR Program (Dr. Jan Taylor and Dr. John Maher)

NASA West Virginia Space Grant Consortium Affiliates



NASA West Virginia Space Grant Consortium
WVSPACEGRANT.ORG

NASA WVSGC
Menu of Programs

Research Infrastructure Programs

1. Research Initiation Grants: *To conduct research of interest to NASA in collaboration with a NASA scientist* ($20,000 NASA, 2:1 CS)
2. Joint University-Industry Research Opportunity Program: *To work on a collaborative research project with high tech companies in WV ($20,000 NASA, 1:1 CS)*
3. Graduate Research Fellowship: *Provides funding for graduate students working on a thesis or dissertation with faculty from member institutions ($12,000 NASA, 1:1 CS)*

NASA WVSGC
Menu of Programs

Research Infrastructure Programs (Continued)

4. NASA Undergraduate Research Fellowship: *Provides support for undergraduate students to get involved in a research project under the supervision of their academic advisor ($5,000 NASA, no CS)*
5. Student Internship Program (SIP) at NASA and High Tech Companies in WV: *Ten-week summer research internships at NASA field centers and high tech companies in West Virginia*

NASA WVSGC
Menu of Programs

Education Programs

1. College Course Development Grant Program: *College level development and offering of new courses in STEM fields ($5,000 NASA, 1:1 CS)*

2. K-12 Professional and Curriculum Development Program: *Pre-College STEM professional and curriculum development ($5,000 NASA, 1:1 CS)*

NASA WVSGC
Menu of Programs

Extension and Public Outreach

1. Extension and Public Outreach Program: *Supports outreach activities such as conferences that promote the understanding, education, development, and utilization of space. Seminars that encourage interdisciplinary training and research in aerospace-related fields ($5,000 NASA, 1:1 CS)*

NASA WV EPSCoR Components

NASA EPSCoR has two Components:

- Research Infrastructure Development (RID) Program: Awards of $125,000 per year for each successful jurisdiction

- Research Program: Awards of up to $750,000 for a three-year period of performance

NASA WV EPSCoR
Menu of RID Programs

1. Research Seed Grant Program: *Small seed grants to prepare for larger research efforts and proposals ($10,000 NASA, 1:1 CS)*
2. Travel Grant Program: *To travel to NASA Centers to meet with NASA scientist to discuss and initiate research collaboration including participation in the annual Technical Interchange Meetings at NASA Centers (up to $1,000 NASA, 2:1 CS)*

NASA WV EPSCoR
Menu of RID Programs

3. Other Capacity Building Programs

- Grant writing workshop for faculty and researchers in West Virginia
- Organize a 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.
- Contribute in areas of strategic importance to NASA missions

On-Going Projects

1. Fast Traversing Autonomous Rover for Mars Sample Collection (NASA EPSCoR Research Program)

Science-PI: Dr. Yu Gu, Assistant Professor, WVU

Co-I: Drs. Jason Gross and Victor Fragoso, WVU

Co-I: Dr. Ali Agha Mohammadi, NASA JPL

Budget Amount: NASA $750,000, Cost Share: $375,000

Total: $1,125,000

On-Going Projects

2. 3D Printed Titanium Dioxide Foams Under Extreme Environment Exposure at Low-Earth Orbit (ISS Flight Opportunity)

Science-PI: Dr. Costas Sierros

Co-I: Dr. John Kuhlman

Amount Awarded: NASA $100,000

On-Going Projects

3. Undergraduate Student Instrument Project (USIP) Student Flight Research Opportunity (SFRO)

Science-PI: Dr. John Kuhlman

Amount Awarded: NASA $211,828

Other Proposals and Collaborations

1. New Proposal for Collaboration Between WVSGC and the NASA IV & V Program with two components:

- Outreach (SFDC) and various student opportunities
- IV & V Research and student fellowships

Other Proposals and Collaborations

2. NASA EPSCoR Research Program

- From Large to Small Scales and Back: Integrating Observations, Modeling, and Laboratory Experiments of Heliophysics Weichao Tu, Paul Cassak, Earl Scime, Adam Kobelski, Fang Fang, WVU Physics Department
- Total requested from NASA is $750,000 for three years
- Cost share of $465,340 from non-Federal sources

Upcoming Proposal

New Four-Year Proposal for NASA Space Grant

- NASA will issue the RFP in June, 2019
- Requested amount is unknown at this time
- Cost share of 1:1 for all items other than student fellowships will be required

New Initiative
EMPOWERS

Establishing Mentoring Pipeline of Women through Education and Research in STEM ("EMPOWERS")

Organizational Purpose: The purpose of the organization is to engage in and create programs in education, research, and community activities to support and enrich women's participation in science, technology, engineering, and mathematics (STEM) disciplines in the state of West Virginia.

New Initiative: EMPOWERS (Continued)

- Participating Organizations: WVSGC, the Clay Center for the Arts and Sciences of WV, Center for the Advancement of Science, Technology, Engineering and Mathematics (CASTEM), National Center for Women and Information Technology, WVUIT, 4-H Youth Development Program, West Virginia University, and Lesley Rosier-Tabor (STEM educator)

New Initiative: ThinSat

- ThinSat regional opportunity to launch to the ISS
- Collaboration between the five states served by NASA Langley Research Center (Virginia, South Carolina, North Carolina, Kentucky, West Virginia)
- First meeting was held on November 17, 2017 at the NASA IV&V Facility, Fairmont, WV
- Launch is scheduled on April 17, 2019

Space Grant Appropriation Request for FY 2020

- "The recommendation provides $120 million for NASA's Office of STEM Engagement, of which no less than $50 million shall be allocated to the National Space Grant College and Fellowship Program. The Committee allocates no more than 10% to an administrative fee for each program in the NASA Office of STEM Engagement. The Space Grant balance of no less than $45 million shall be allocated annually to jurisdiction consortia as base funding so that they may competitively distribute the funds to meet local, regional, and national needs."

NASA EPSCoR

- FY 2019 appropriation: $21 M
- FY 2020 request: $28 M

- President's budget:
  - FY 2019: Zero
  - FY 2020: Zero

NASA West Virginia Space Grant Consortium
NASA WV EPSCoR

Questions and Discussions

www.wvspacegrant.org