



**Virginia Space Grant Consortium**  
**Testimony to Committee on Education and the Workforce**  
**U.S. House of Representatives**

**Contact:** Mary Sandy, Director, 757-766-5210, [msandy@odu.edu](mailto:msandy@odu.edu)  
Chris Carter, Deputy Director, [cxcarter@odu.edu](mailto:cxcarter@odu.edu)

The Virginia Space Grant Consortium (VSGC) is a coalition of five Virginia colleges and universities, the Virginia Community College System, NASA, state educational agencies, and other institutions that provide science, technology, engineering, and math (STEM) education, workforce development, outreach, and research. The VSGC is part of NASA's National Space Grant College and Fellowship Program and acts as an umbrella organization coordinating and developing projects statewide and nationally.

VSGC offers a progression of middle school through secondary school and higher education programs to engage and sustain students in STEM. The Consortium works at the nexus between NASA's priorities and state needs and goals to provide programs that impact students and faculty at all levels contributing to the economic growth of the Commonwealth. For all precollege programs, VSGC recruits students from every district in Virginia and all opportunities are offered free of cost to participants. More than 12,000 students have participated in precollege STEM opportunities in the past decade. The programs align with the Virginia Department of Education's *Profile of a Virginia Graduate* and 95% of participants have been retained in STEM fields. VSGC has also awarded more than \$7.2 million in scholarships and fellowships to 1,733 Virginia higher education students.

VSGC has extensive experience in the development and management of national programs aligned with NASA and state goals. Director Mary Sandy has more than 34 years of experience in managing higher and precollege education and outreach programs as well as workforce development programs for NASA, VSGC, the Commonwealth of Virginia, the National Academies and through funded projects by NSF, FAA, USAF, USDOE, NIST and others. VSGC has managed several internship programs including a nationwide internship program for NASA, a statewide industry internship program and other internship programs which together have placed more than 6,500 students in paid and mentored internship experiences. VSGC has also sponsored more than 200 students for NASA and other federal lab internship opportunities.

In partnership with Consortium members and business and industry, VSGC has developed higher education and workforce development programs in emerging high-tech fields such as cybersecurity, unmanned aircraft systems (UAS), and small satellites. Many student-led and faculty-mentored student flight projects in areas such as cubesats, sounding rocket missions, microgravity experiments, space station experiments, research balloon payloads, airborne experiments, and design projects have been offered in partnership with higher education intuitions and school divisions.

The following two-page fact sheet summarizes some of VSGC outcomes and impacts as a catalyst for STEM education and workforce development.



The Virginia Space Grant Consortium (VSGC) serves as a catalyst for the enhancement of STEM and aerospace-related education, workforce development and research in the Commonwealth to foster an improved quality of life. Part of NASA's Space Grant program, the VSGC acts as an umbrella organization, coordinating and developing quality STEM high technology, educational, workforce development and research efforts throughout the Commonwealth.

Each seed NASA Space Grant dollar in Virginia has been leveraged by more than \$5 of other funding in recent years. VSGC has worked with over 500 non-member program partners from private and public sectors.

## VSGC PROGRAMS INCLUDE:

- Undergraduate Research Scholarships
- Graduate Research Fellowships
- Internships at NASA Centers and Industry
- Student-Led Flight Projects Including Cubesats, High-Altitude Balloon Launches, Airborne and Rocket Programs
- UAS, Small Satellite, and Cybersecurity programs.
- Faculty Research and Curriculum Enhancement Support
- Precollege Student Programs:
  - ›Online Courses for Credit
  - ›Summer Academies Hosted by NASA Centers and Education Partners
  - ›STEM Exploratory Saturday Programs
- Geospatial Professional Development for Precollege and Higher Education Faculty
- Precollege Teacher Professional Development in STEM and Using NASA Resources
- Informal Education and Public Outreach

## RECOGNITION IN 2016

- Programs That Work Award from Virginia Math Science Coalition for Building Leaders for Advancing Science and Technology (BLAST) program

## RECOGNITION IN 2015

- Programs That Work Award from Virginia Math Science Coalition for Technology Exploratory Saturdays
- Programs That Work Award from Virginia Math Science Coalition for Virginia Space Coast Scholars program
- Distinguished Geospatial Education Partner Award from the National GeoTECH Center for Geospatial Technician Education Through Virginia's Community Colleges (GeoTEd)

## RECOGNITION IN 2014

- Programs That Work Award from Virginia Math Science Coalition for Virginia Aerospace Science and Technology Scholars (VASTS)
- NASA Group Achievement Award for Langley Aerospace Research Summer Scholars (LARSS) Program
- NASA Robert H. Goddard Award for Virginia Space Coast Scholars (VSCS) program

VSGC strives to increase diversity in the STEM pipeline through participation of underrepresented minorities, females, and people with disabilities.

## MEMBERS:

- College of William and Mary
- Hampton University
- Old Dominion University
- University of Virginia
- Virginia Tech
- NASA Langley Research Center
- NASA Goddard Space Flight Center's Wallops Flight Facility
- State Council of Higher Education for Virginia
- Virginia Community College System
- Virginia Department of Education
- MathScience Innovation Center
- Science Museum of Virginia
- Virginia Air and Space Center
- Center for Innovative Technology





# VSGC IMPACTS AND OUTCOMES

-More than \$7.2M in scholarship and fellowship funding to 1,733 students attending universities and community colleges in Virginia. More than \$6.5M of this funding directly supports STEM and aerospace-related research.

-VSGC has placed more than 6,500 students in paid internships with NASA, industry, or other federal labs including through the Commonwealth STEM Industry Internship Program (CSIIP) and the Langley Aerospace Research Student Scholars (LARSS) Program. Both CSIIP and LARSS are managed by VSGC.

-95% of VSGC-supported higher education students are pursuing STEM studies or employed in STEM careers.

-STEM Exploratory Saturdays and STEM Academies have impacted more than 4,300 middle school students and informed more than 2,300 parents about STEM and college preparation.

-More than \$338,000 in scholarships to students attending Virginia's community colleges.

-New Investigator Program has provided \$330,000 in seed funding to support 33 early career faculty to conduct STEM research of interest to NASA.

-Many student-led student flight projects including high altitude ballooning, cubesat, airborne, UAS and rocketry programs.

-VSGC manages a national design competition for the National Academies and the FAA seeking innovative solutions to air transportation problems.

-VSGC manages Graduate Research Awards for the Airport Cooperative Research Program of the National Academies.

-Building Leaders for Advancing Science and Technology (BLAST), a free residential program, has engaged 1,400 middle school students from under served regions of Virginia in innovative hands-on experiences at member universities.

-Virginia Aerospace Science and Technology Scholars (VASTS) has engaged nearly 4,500 high school juniors and seniors statewide, at no cost to the students, in an online course and Summer Academy programs at NASA Langley offering college credit; 95% of Academy participants have reported pursuing college degrees in STEM disciplines.

-Virginia Space Coast Scholars (VSCS) has inspired at least 1,600 high school sophomores through an online STEM learning experience and Summer Academy at NASA Wallops.

-Virginia Earth System Science Scholars (VESSS) has provided more than 200 Virginia high school juniors and seniors a free, engaging, online, earth system and environmental science course and residential summer academies at NASA Langley. Students can earn up to four college credits.

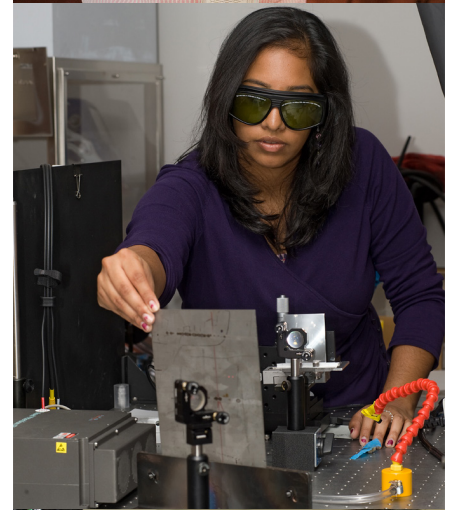
-VSGC has provided national leadership in Global Climate Change Education through NASA ESTEEM (Earth Systems, Technology, and Energy Education for MUREP-Minority University Research and Education Project), also in partnership with NSF and NOAA.

-VSGC leads a statewide NSF-funded project in partnership with Virginia's community colleges to support faculty professional development and curriculum in Unmanned Aircraft Systems (UAS).

-Teacher professional development in effective teaching of STEM has been provided to more than 30,000 K-12 educators.

-Dozens of informal education programs with museum, non-profit, and media partners have impacted thousands of participants.

-VSGC provided cybersecurity educational programs and resources through a grant from the National Institute of Standards and Technology.



**600 Butler Farm Road  
Suite 2200  
Hampton, VA 23666  
Phone: 757-766-5210  
[www.vsgc.odu.edu](http://www.vsgc.odu.edu)  
[vsgc@odu.edu](mailto:vsgc@odu.edu)**