VA_FY17_Year 3_APD

Virginia Space Grant Consortium
Lead Institution: Virginia Space Grant Consortium
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Lines of Business (LOBs): NASA Internships, Fellowships, and Scholarships; Stem Engagement; Institutional Engagement; Educator Professional Development

A. PROGRAM DESCRIPTION

The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA's interest as implemented by alignment with the Mission Directorates and the state's interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The Virginia Space Grant Consortium (VSGC) is a Designated Consortium funded at a level of $760,000 for fiscal year 2017.

B. PROGRAM GOALS

VSGC Goal 1 - Conduct quality scholarship and fellowship programs including a bridge program for freshman and sophomore students, research awards for undergraduate and graduate students, community college STEM scholarships and teacher education STEM scholarships. 1.A: Each academic year, award students in all four categories with scholarships and fellowships. Students will be competitively selected by review panels consisting of representatives from member institutions. **1.B:** Award at least the minimum amount required by NASA in scholarship and fellowships to at least 60 students each academic year. **1.C:** Each academic year, provide a percentage of awards to underrepresented minority and female students that is consistent with the diversity target as established by NASA (currently 24.6%). **1.D:** At least 90% of students receiving research awards will attend and present at the annual VSGC Student Research Conference. **1.E:** Longitudinally track 100% of all students receiving significant awards to identify their next step in academia or the workforce. **1.F:** At least 60% of students receiving significant awards will be employed by NASA, an aerospace contractor, higher education or other educational institutions. **1.G:** At least 45% of undergraduate students receiving significant support from VSGC will move on to advanced education in NASA-related disciplines.

VSGC Goal 2 - Offer quality higher education programs including internship programs in partnership with our member institutions and partners. 2.A: Each academic year, provide paid internships for at least four students at NASA Centers or with industry partners. **2.B:** Conduct at least one higher education project in partnership with Virginia's community colleges. **2.C:** Each year, conduct at least two higher education projects in partnership with VSGC member institutions.

VSGC Goal 3 - Promote diversity in all programs and activities by encouraging participation by underrepresented minority and female students and faculty. 3.A: Each year, conduct at least one outreach event in partnership with Hampton University (HBCU) to promote programs and opportunities to students and faculty. **3.B:** Each year, conduct at least one outreach event in partnership with a non-member minority institution to promote programs and opportunities to students and faculty. **3.C:** Each academic year, provide a percentage of student awards to underrepresented minority and female students that meets or exceeds the diversity target as established by NASA (currently 24.6% for underrepresented minorities and 40% females). **3.D:** Provide at least one STEM program each year for special needs faculty or students. **3.E:** Undertake at least one collaborative program with a non-member minority serving institution.

VSGC Goal 4 – Undertake programs that foster research capabilities at our member institutions and serve as a catalyst for linking university researchers to NASA and other opportunities. 4.A: Conduct a New Investigator award program each year targeting tenure track faculty who are within the first five years of their academic career. At least five awards will be given annually and the research will have NASA relevance. **4.B:** Disseminate at least 20 research opportunity announcements to statewide networks each year. **4.C**: Facilitate at least five meetings with university researchers and NASA personnel, as appropriate, resulting in at least two collaborative proposals being submitted. **4.D:** Support at least two experiential student research, mission and design programs each year.

Goal 5 – Provide quality precollege educational opportunities including professional development for precollege and pre-service educators and student-focused programs for students throughout the precollege pipeline. 5.A: VSGC will provide professional development in STEM and using NASA resources to at least 40 teachers each year. **5.B**: VSGC will reach over 100 students by conducting selected student-focused programs and activities promoting participation in STEM and related careers. **5.C**: At least 75% of precollege educators participating in more than two days of professional development will use NASA resources in their classroom following the workshop. **5.D:** At least 60% of precollege educators receiving NASA resources or participating in VSGC-led short duration activities will use NASA resources in their classroom. **5.E:** At least 50% of all precollege students participating in VSGC-sponsored programs will express an interest in STEM careers.

Goal 6 - Conduct Informal Science Education programs in partnership with informal education members and partners. 6.A: Sponsor at least one program each year with the Virginia Air and Space Center or the Science Museum of Virginia. VSGC will consider other appropriate informal science education opportunities as funding and partnerships permit with the goal of providing at least one other activity per year if funding and resources permit.

Goal 7 - Serve as an effective steward of Consortium resources and a strong partner for STEM programs. 7.A: Effectively leverage NASA Space Grant resources. **7.B:** Network with other Space Grants and Space Grant organizations. **7.C:** Network with NASA Headquarters and NASA Centers for program implementation. **7.D:** Build and sustain effective strategic partnerships, including relationships with state and federal legislators and officials.

C. PROGRAM/PROJECT BENEFITS TO PROGRAM AREAS

Jesse Pruden, a non-traditional aged student from Paul D. Camp Community College pursuing an Associate Degree in Industrial Technology, was selected to participate in the 2017 STEM Takes Flight NASA Research Experience Program. He worked with NASA Research Directorate researcher Lynn Curtis on developing Unified CAD drawings of NASA Langley's building 1247 complex. The summer program provided Jesse with valuable experience and allowed him to network with both NASA civil servants and NASA contractors. As a result of his exceptional experience and performance, Jesse was hired as a permanent employee with NASA Contractor Jacobs Technology. Jesse has served as a role model himself to some of the younger student researchers sharing his story about his career path, his family, and his desire to take on a new direction. He is always ready to share his experience as a testimonial to the doors that can be opened by entering the NASA and VSGC pipeline.

Sentara Healthcare is one of the many registered companies in the VSGC's Commonwealth STEM Industry Internship Program (CSIIP). Daniel Bowden, Sentara's Chief Information Security Officer, was introduced to the CSIIP team through VSGC's role with the Hampton Roads Cybersecurity Alliance. Bowden was so impressed with CSIIP and the direct access to exceptional undergraduate students that Sentara placed 16 undergraduate interns during FY17. Bowden continues to share his positive experience with the CSIIP team at conferences, events, and on employer panels while encouraging other employers and students to take advantage of this opportunity. The students have provided very positive feedback regarding their experience at Sentara. John DePalma, ODU Cybersecurity undergraduate student and Sentara intern stated, "*The internship has been an awesome experience! I have learned so much while I have been here and become very confident in many of the roles of a security analyst. The CISO, Dan, does not want us to be referred to as interns but as Jr. Security Analysts. Working at Sentara has been the best experience of my scholastic life and a huge positive impact on my skill-set and knowledge-base.*" Sentara has informed the students that they can continue as interns as long as they are interested with the ultimate goal of hiring them upon graduation. Two ODU students, DePalma and Nathaniel Espinosa were hired for permanent positions by Sentara following their internships.

VSGC supported several projects related to the rare 2017 solar eclipse. VSGC funded the University of Virginia (UVA) with $22,000 for an experiment in central Virginia to make comprehensive observations in the atmospheric boundary layer as part of the National Space Grant Eclipse project. A faculty-led team of seven students deployed radiosonde balloons, tethered balloons, and unmanned aircraft systems (UAS) quadcopters to collect various data sets including infrared imagery, surface temperature and boundary layer height. More than 10,000 infrared images were collected and many sets of data before, during, and after the eclipse. Virginia Tech (VT) was supported with $24,000 to deploy multiple low-cost receiver nodes on the ground and aboard balloon payloads to monitor beacons from the existing amateur radio satellites as well as the NOAA weather satellites. The data was post-processed to analyze changes in the ionosphere resulting from the eclipse event. Twelve students and three faculty conducted eclipse observations at sites in Oregon, Kansas, and South Carolina. To prepare precollege teachers with training and resources to provide effective instruction about the solar eclipse, VSGC sponsored UVA with $14,000 to lead a series of half-day workshops for teachers throughout Virginia. The workshops helped teachers learn about the eclipse, learn how to view it safely, and learn about the phases of the Moon. A total of six workshops were conducted reaching 240 teachers. UVA also partnered

with faculty from George Mason University and James Madison University to provide instruction. VSGC also funded a student at UVA with $3,900 to continue further deeper analysis of the data collected by their team during the eclipse.

D. PROGRAM ACCOMPLISHMENTS

VSGC actively works with its members and many external partners to accomplish Consortium goals. NASA's funding investment is heavily leveraged by non-Space Grant funding from federal and state agencies and other nongovernmental sources. This funding enhanced the VSGC's ability to staff and run a wide range of programs in concert with NASA goals.

NASA Internships, Fellowships, and Scholarships:

(Goal 1.A and 1.B) - For the 2018-19 academic year, VSGC competitively awarded 80 scholarships and fellowships through four different programs to students attending member institutions. VSGC exceeded the diversity target by awarding 46% of all direct awards to minorities and 40% to female students. A total of $204,000 went to 34 students for Graduate Research Fellowships and $80,000 went to 14 students for Undergraduate Research Scholarships. A total of $25,000 was awarded to 25 sophomore and junior students majoring in STEM through the Undergraduate STEM Bridge scholarship program and $10,000 was awarded to five community college students majoring in STEM. VSGC will also support three student internships .at NASA Centers through the NASA's One-Stop Shop Initiative.

Higher Education Projects:

(Goal 1.D) -VSGC coordinates an annual Student Research Conference at which research scholars and fellows present their research. Old Dominion University is hosting the 2018 conference and sponsoring a luncheon in honor of the awardees. Graduate Fellows present 15-minute oral presentations while Undergraduate Scholars present posters. The event is attended by faculty and NASA personnel, industry representatives, and state legislators. Attending and presenting at the Research Conference is a requirement of all awardees. About 180 people attend the event.

(Goal 2.A, 2.B, and 2.C) - The VSGC-led Commonwealth Industry Internship Program (CSIIP) program continues to address the increasing demand for skilled STEM workers in Virginia by linking undergraduate STEM students to paid internship positions with companies throughout Virginia. CSIIP operates with support from the Commonwealth of Virginia, in partnership with Virginia Regional Technology Councils and in collaboration with Virginia companies and Virginia higher education institutions. CSIIP provides spring, summer and fall internship positions for undergraduates and recent graduates. Companies make the selections and employ the interns. A total of 195 companies offering paid internships are currently registered with CSIIP. Nearly 900 student applicants are currently in the applicant pool. In summer 2017 through spring 2018, 108 students were placed with companies, and other employers are interviewing candidates for additional possible spring placements.

(Goal 2.A, 2.B, and 2.C) – Through a Memorandum of Understanding between VSGC and the Virginia Community College System (VCCS) and in partnership with NASA Langley Research Center and NASA Wallops Flight Facility, the highly successful NASA research experiences for community college students implemented as part of our competitive Space Grant Community College award – STEM Takes Flight at Virginia's Community Colleges (STF), has been sustained

for two additional years, 2017-2018. VSGC supported ten community college students for summer research experiences at NASA Langley. These additional ten students were supported with VSGC funds of $50,000. The VCCS funded an additional 13 students with funding in the amount of $65,000. The VCCS also provided funding for a field trip to NASA Wallops Flight Facility in the amount of $1,700.

(Goal 2.A) – VSGC provided a $5,000 fellowship to a Virginia Tech student to support participation as an exchange student at the University of Paris during spring semester 2018. VSGC and the University of Paris are collaborating on a cubesat project funded by the European Space Agency. VSGC is providing ground stations for data downlink under a Technical Assistance Agreement through the US Department of State. The Virginia Tech student will work with University of Paris partners to refine the data downlink process.

(Goal 2.C) – VSGC is supporting the VT RockSat-X 2018 team which has 10 students spanning all four academic years and multiple engineering and science disciplines. The team was provided with $4,500 to design and manufacture a sounding rocket payload to be launched from NASA Wallops Flight Facility. The payload will consist of a platform to launch small satellites designed by high-school students into space to participate in our sub-orbital flight. The team is working with students from Blacksburg High School, who are designing their own science and technological experiments. Funds from VSGC will cover launch fees and hardware for students.

(Goal 2.C) – VSGC is supporting an undergraduate team from VT to participate in the Intercollegiate Rocket Engineering Competition for the 2017/18 Academic Year. The team will be developing a sounding rocket with a CubeSat-style payload to launch to an altitude of 10,000 feet at Spaceport America in Las Cruces in June 2018. VSGC is contributing $5,000 to help fund research and prototyping costs, construction of launch vehicle and payload systems, and competition fees. A total of 39 students and 3 faculty will participate in the project.

(Goal 2.C) – VSGC is sponsoring the inVenTs High-Power Rocketry Team at VT during the 2017/18 academic year in order to allow the team the opportunity to participate in NASA's Space Grant Midwest High Power Rocket Competition. The interdisciplinary undergraduate team of students is working to build a dual-deploy high-power rocket with a roll-control component and radio-based communication system to reach an altitude of at least 3000 feet. The VSGC is contributing $5000 to help fund the design, build, test launch, and competition fees. A total of 21 students and 2 faculty members will participate in the project.

(Goal 2.A, 2.B, and 2.C) – VSGC supported several higher education projects through a competitive Innovative STEM Projects program. ODU was funded $7,000 for the "Supporting STEM through Undergraduate Research Experiences in Physics" project that provided authentic research experiences to selected undergraduate students during the summer of 2017. A primary goal of the project was to increase persistence in STEM fields by engaging students in the research enterprise during their tenure as undergraduates. The program was open to all physics majors and minors. A total of seven students participated and each was paired with a faculty advisor.

(Goal 2.C) – VSGC supported ODU with $8,985 for the Unmanned Aircraft Vehicles (UAV) for Coastal Resource Management project. This project applied commercial off-the-shelf UAV technology for mapping coastal hazards and resources. UAV and related GPS and image

instrument operation and flight protocols were developed for two applications (coastal storm damage assessment and mapping submerged aquatic vegetation.) Workflows for UAV image analysis and products were developed to create value-added information (rapid damage assessment information, maps of SAV extent). Two faculty and one student participated in the project to date. The complete workflow and data will be packaged into an exercise for students to use in semester course or future short course or workshops as open educational material.

(Goal 2.C) - VSGC, in partnership with Colorado Space Grant Consortium, offers the annual RockOn! workshop hosted by NASA Wallops Flight Facility each summer. RockOn! is a workshop for faculty and students in which participant teams learn to build a small sounding rocket payload from kits and launch it on a sounding rocket. VSGC provided $3,000 in funding to support one student-led team from ODU to participate in the RockSat-C program. VSGC is also supporting VT with $5,000 for a RockSat X project. VSGC also provides onsite logistical support for the RockOn! workshop.

(Goal 2.A and 2.B) – VSGC sponsored the Engineering Early Advantage Program for Women (EEAP) at Old Dominion University (ODU). EEAP is a summer residential experience for female engineering majors prior to their freshman year in college. VSGC has supported this project since its inception in 2001 and provided $10,000 to support the 12 student stipends and some other program costs. EEAP consists of four weeks of academic- and career-enhancing activities in a unique engineering setting. Participants work on projects in partnership with faculty and graduate students and several industry partners support the program by providing tours and resources. Longitudinal tracking shows the effectiveness of this program in retaining female students in engineering.

(Goal 2.A and 2.C) – Since the first two STEM Takes Flight (STF) faculty professional development workshop were so successful and impactful to participants, VSGC contributed personnel time and funding to support a third workshop in 2017. NASA Wallops hosted the workshop for Virginia's community college faculty and also contributed significant personnel time and resources.

The STF workshop is a 2.5-day professional development hands-on institute for 20 community college STEM faculty. This residential workshop focused on the integration of STEM in the NASA workplace and helping faculty in educating students on the importance of teamwork, technical skills, and problem solving. Briefings and tours highlighted the suborbital and orbital missions and launches conducted at NASA Wallops and around the world. The importance of the collaborative work of engineers, scientists, technicians, safety and range control personnel was demonstrated. The participants experienced two case studies on team work, troubleshooting and real-time decision making. Upon completion of a post-workshop survey, participants received an $800 stipend. VSGC will continue this program in 2018.

(Goal 2.C) –VSGC established and leads the Small Sat Virginia Initiative whose mission is to synergize collaborative programs and projects among the partners to promote scientific and technological advances, workforce development and economic growth in Virginias small satellite sector. Small Sat Virginia is a 31-member collaboration of education institutions, NASA, and industry. NASA Langley and NASA Wallops are partners as well as many industry collaborators

including Virginia Commercial Space Flight Authority/Mid-Atlantic Regional Space Port (MARS), National Institute of Aerospace, The American Institute of Aeronautics and Astronautics and the American Astronautical Society, Aerojet Rocketdyne, Cubic Aerospace, HawkEye 360, and more. As the project and funding expands, VSGC will continue to add companies and non-Consortium member universities.

(Goal 2.C) - VSGC provided the cash prizes to the first, second and third place winners at Virginia Tech's annual Office of Geographic Information Systems and Remote Sensing Symposium. Higher education students participated in poster competitions to develop informative graphics and posters on issues related to lidar, geospatial data and other remotely sensed data. Awardees were selected by a panel of subject-matter experts.

(Goal 2.C) – VSGC provided $5,000 in support to students at UVA to work on a project titled, Materials Testing Experiments at the International Space Station. The faculty-mentored project's goal is to generate scientific data on the effect of space environment on solar paints, thin coatings that can be applied to various structures for electrical power generation. The material selected for the solar paint development is hybrid organic-inorganic perovskites which have demonstrated the highest power conversion efficiency and the fastest rate of efficiency improvement in the history of all photovoltaic materials.

Research Infrastructure Projects:

(Goal 4.A) - The New Investigator Program (NIP) is designed to strengthen Virginia's research infrastructure by providing startup funding to VSGC university personnel who are conducting research that is directly aligned with NASA's mission. NIP is open researchers within their first five years as faculty. Five faculty members from VSGC-member institutions received an award of $10,000 each for their research project. The funding is matched for recipients by their university.

(Goal 4.A) - VSGC supported several projects through a competitive Innovative STEM Projects program. One of these projects was a research infrastructure project awarded to ODU. An engineering professor and an undergraduate student partnered to study the descent dynamics of model rockets. This information and research will support more effective implementation of model rocketry at the precollege and undergraduate level. VSGC awarded the team $7,000 in funding.

Precollege Projects:

(Goal 5.B) - The Virginia Aerospace Science and Technology Scholars (VASTS) program is an interactive online STEM learning experience, highlighted by a seven-day residential summer academy at NASA Langley Research Center. High school juniors and seniors selected to participate in the program are immersed in NASA-related research through interaction with scientists, engineers and technologists. Top performing students in the online course are selected to attend one of three residential summer academies hosted by Langley. A total of 479 students are participating in the online course and 180 will attend the three summer academies. The program is a partnership between the VSGC and NASA Langley with sponsorship from the Commonwealth of Virginia. VASTS is modeled after the NASA-award winning Texas Aerospace Scholars program developed by NASA Johnson Space Center.

(Goal 5.A) - VSGC supported the annual professional development conference hosted by the Virginia Association of Science Teachers (VAST) in fall 2017. This conference is attended by over 600 science teachers and administrators from Virginia. VSGC supported a keynote presentation by Callan Bentley, the Virginia Community College Chancellor's Commonwealth Professor of Geology and faculty member at Northern Virginia Community College. VSGC also exhibited and presented Space Grant programs and opportunities at the conference.

(Goal 5.B) - VSGC coordinated four STEM Exploratory Saturday programs for middle school grade students and parents through the Greater Peninsula Governor's STEM Academy (GPGSA) in partnership with Thomas Nelson Community College, NASA Langley, Canon Virginia, and ECPI. All four partners hosted a Saturday event and provided speakers and career planning information. Newport News Shipbuilding was also a partner and provided instruction for several student sessions. More than 275 students and 250 parents attended the Saturday series.

(Goal 5.B) - VSGC created and offers the Building Leaders for Advancing Science and Technology (BLAST) program for ninth- and tenth-graders statewide. Supported with funding from the Commonwealth of Virginia, the program provided hands-on STEM activities at ODU, University of Virginia (UVA), and Virginia Tech for 320 students. BLAST provides a free three-day, on-campus residential summer program designed to bring STEM alive through a series of innovative, hands-on experiences facilitated by university faculty, students and staff. VSGC offered two BLAST sessions in conjunction with SCHEV for students who participated in their GEAR Up Virginia project. The Gear Up BLAST sessions were hosted by ODU and UVA and provided 132 students hands-on STEM activities and exposure to life on a college campus. A total of 452 students participated in BLAST in summer 2017.

(Goal 5.B) - With funding from the Commonwealth of Virginia, the VSGC established the Virginia Space Coast Scholars (VSCS) program. VSCS is designed to inspire high school sophomores that possess latent science and technical skills to participate in a dynamic online STEM learning experience. VSCS is an informal online learning experience highlighted by a seven-day residential summer academy at NASA Wallops Flight Facility for qualifying students. A total of 300 students are currently participating in the online modules and 120 students will attend the three Academies.

(Goal 5.B) - Virginia Earth System Science Scholars (VESSS) engages students in real world investigations of the Earth and its highly dynamic systems through the use of the latest NASA and NOAA research and data. VESSS provides a one-semester online course for high school juniors and seniors. High performing students are invited to a one-week residential summer academy at NASA Langley. A total of 180 students are participating in the program and 96 students will attend two academies. College credit is available through Thomas Nelson Community College (TNCC) at no cost to students for both the online course and the summer academy. The program is a partnership with the VSGC, NASA Langley, Hampton University, and TNCC. Partial funding is provided through a NASA MUREP Grant to Hampton University to help underwrite online course delivery. The bulk of funding is provided by the Commonwealth of Virginia.

Informal Education Projects:

(Goal 6.A) - With funding through the VSGC Innovative Projects program, the VSGC supported the Virginia Air and Space Center with $8,625 to partner with Newport News Public Schools to provide embodied learning experiences to over 300 underprivileged students. VASC will bring the students to the Center and work with groups individually to tailor the experience to include a SMALLab program, a scavenger hunt, and/or an IMAX movie all anchored to the Virginia Standards of Learning guidelines and STEM content.

(Goal 6.A) - With funding through the VSGC Innovative Projects program, the VSGC supported the Science Museum of Virginia in Richmond with $5,915 to produce a Dome screen immersive educational film called The Cosmic Climate Cookbook. This film is about planetary habitability and Earth's changing climate. VSGC funds were used to hire a professional voiceover actress and buy additional production needs such as music and high-resolution stock video.Funds were also used for producers to travel to the Virginia Association of Science Teachers conference in November 2017 to show the production. It is anticipated that this showing will reach at least 300 teachers and 15,000 students. Other partners include George Mason University's Center for Climate Change Communication, NOAA Office of Education, and the StudioCenter in Richmond.

(Goal 7.D) - The Director and staff annually brief Virginia Congressional and state legislators as part of Aerospace Day at the General Assembly. VSGC also works with state officials and legislators to assist with STEM and aerospace policy advocacy. The Director serves on the Governor's Aerospace Advisory Council. The Director is also a member of, and co-facilitates with the NASA Langley Center Director, the Informal Aerospace Working Group of about a dozen aerospace sector leaders including the NASA Wallops Flight Facility Director, the Directors of the Mid-Atlantic Regional Spaceport, National Institute of Aerospace and the Virginia Department of Aviation as well as industry representation. VSGC is a member of the Virginia Aerospace Business Association and also the Wallops Island Regional Alliance.

E. PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE GOALS

- **Diversity**: VSGC exceeded the diversity target by awarding 46% of all direct awards to minorities and 40% to female students.

- **Minority Serving Institution Collaborations**: VSGC partnered with Hampton University (HBCU) on a successful grant proposal to NASA's MIRO program. Now in its third year, the project titled, Virginia Earth System Science through NASA, helps to support the VSGC to offer the VESS online course. VSGC continues to seek partnerships with HBCU's and other institutions in priority areas such as cybersecurity, geospatial technology, unmanned systems, big-data, cubesats, and other projects.

- **Office of Education Annual Performance Indicators**:
    - API 2.4.1: ED-17-1 ___104____
    - API 2.4.2: ED-17-2 ___540____

- API 2.4.4: ED-17-4 VSGC supported the Virginia Air and Space Center to partner with Newport News Public Schools to provide embodied learning experiences to over 300 underprivileged students. VSGC supported the Science Museum of Virginia in Richmond to produce a Dome screen immersive educational film called The Cosmic Climate Cookbook. This film reached 300 teachers and 15,000 students.
- API 2.4.5: ED-17-5 ___1986_

F. IMPROVEMENTS MADE IN THE PAST YEAR

In addition to the space grant funding, VSGC submitted five proposals for external funding. Two were awarded, two are still pending, and one was declined. We currently have five budget amendments to support aviation and aerospace-related education and workforce development programs being considered by Virginia legislators for the FY19 state budget. VSGC was asked by the Virginia Joint Commission on Technology and Science to lead these initiatives. Three would expand BLAST, CSIIP, and VASTS to reach more students. One would create an Aviation and Aerospace Information Portal to link students, parents, and educators to statewide programs and resources. One would provide flight training scholarships for high school students in Virginia.

G. CURRENT AND PROJECTED CHALLENGES

VSGC is concerned with developing mechanisms to sustain support for programs that were established with Space Grant competitive funding programs. The STEM Takes Flight program—for community college students and faculty, and the inSTEP program—for preservice teachers, were established with competitive grants with a two-year cycle. An additional current challenge is that existing Space Grant resources do not fully cover staffing and administrative support needs for a highly active Consortium with statewide engagement.

H. PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

VSGC members and partners play critical roles in project development and implementation. All 14 members are active in working with the VSGC to meet Consortium goals. In some cases, VSGC provides funding directly to member institutions for projects and the member institution has the lead. In other projects, VSGC staff may take the lead for project coordination working closely with partners for project execution. **VSGC Affiliate Members include: Academic Higher Education:** College of William and Mary, Hampton University, Old Dominion University, University of Virginia, Virginia Tech. **NASA:** NASA Langley Research Center, NASA Goddard Space Flight Center's Wallops Flight Facility. **State Agency:** State Council of High Education for Virginia (state agency for higher education), Virginia Community College System (higher education), Virginia Department of Education (state agency), Virginia's Center for Innovative Technology (statewide nonprofit that creates technology-based economic development strategies to accelerate innovation and the next generation of technology and technology companies). **Informal Education:** Science Museum of Virginia, MathScience Innovation Center and Virginia Air and Space Center.