

Virginia Space Grant Consortium Commonwealth STEM Industry Internship Program Longitudinal Tracking Data

Program Description: The Virginia Space Grant Consortium's Commonwealth STEM Industry Internship Program (CSIIP), which began in FY2012-13, offers a *no-cost*, centralized, online system that connects Virginia companies offering paid STEM internship opportunities with Virginia undergraduate STEM college students pursuing STEM internships. CSIIP enables Virginia companies to select and hire spring, summer, and fall interns from a large pool of pre-qualified college and university STEM students throughout Virginia.

Funded by the Commonwealth of Virginia and managed by Virginia Space Grant Consortium, CSIIP is partnered with 19 organizations including all ten Virginia Technology Councils, Commonwealth Center for Advanced Manufacturing, Virginia Society for Human Resource Management, Virginia Bio, New College Institute, The Institute for Advanced Learning and Research, Virginia Manufacturers Association, Southern Virginia Higher Education Center, American Council of Engineering Companies, and The Virginia Chamber. Over 150 companies are registered. CSIIP also works in collaboration with all Virginia's accredited colleges, community colleges and universities to provide the most expansive network of intern candidates possible.

Students provide one comprehensive application that can be reviewed by companies throughout the state. The online system provides a comprehensive search tool companies can use to find the right candidates, whether by major, skills, college or distance. CSIIP staff can also assist companies in identifying intern candidates that meet specific requirements.

Through FY15, we have provided 178 internship experiences with 119 respondents to our survey through FY14. We are currently surveying students who participated in the FY15 program. The website is <http://csiip.org>.

Longitudinal Tracking: Our tracking system is primarily interested in what CSIIP participants do immediately after completing the degree in which they were enrolled while participating in the CSIIP program. For the purposes of this report, this is referred to as the student's next step. An overview of the key data by the numbers for individuals participating between summer 2013 and fall 2014:

- Next Steps – 119 former participants with 49 (41.2%) responding to survey – other data came from other connections. Note: All students were STEM undergraduate majors at the time of their participation in CSIIP.
 - 4 have pursued advanced degrees in STEM after their CSIIP involvement (8% of respondents/3% of 119 former participants)

- 15 are employed in a STEM position in industry (31% of respondents/13% of former participants)
- 4 are either unknown or went on to non-STEM futures (8% of respondents/3 % of 119 former participants)
- 97 still enrolled in current degree program (81% of the 119 former participants)

Additional Data:

- Survey Responses
 - 119 former participants in the tracking system
 - 49 have responded to date
 - 41.2% Total response rate to the survey
 - 42.9% response rate from program year 2013
 - 40.0% response rate from program year 2014
- Other Connections
 - 96 social media profiles/webpages on 51 participants
 - 37 LinkedIn Profiles
 - 14 Facebook Profiles
 - Others include Twitter, Google+, Gravatar, Pinterest, MySpace, personal websites
- Comments - 17 program impact comments submitted.

Virginia Space Grant Consortium

Virginia Aerospace Science and Technology Scholars Program

Longitudinal Tracking Data

Program Description: Virginia Aerospace Science and Technology Scholars (VASTS) began in 2008 as a partnership between NASA Langley Research Center and Virginia Space Grant Consortium. Funding is provided by the Commonwealth, NASA and industry sponsors. With a focus on experiential and inquiry-based learning, VASTS aims to prepare students to enter the modern STEM workforce by helping them to develop their analytical and critical thinking skills, technical writing skills, and soft skills necessary to be successful in the 21st century workplace. The program is open to high school juniors statewide and is free to participants who can earn 4 dual-enrolled college credits through Thomas Nelson Community College.

Through a semester-long online course and one-week Summer Academy experience at NASA Langley, students are provided an introduction to aerospace science and technology concepts that are not covered by the traditional classroom curriculum. VASTS Longitudinal Tracking has resulted in 383 students reporting their career progress out of 1082 total students that were involved in both the online course and the VASTS Summer Academy between the 2008 and 2014 program years, representing a 35.3% overall response rate. An additional 180 students from the VASTS 2015 program year will be entering college in the fall of 2016 and will be queried for their career paths at that time.

Longitudinal Tracking: The following data was collected regarding the next steps in the careers of VASTS alumni respondents:

College Majors

- **95% of alumni respondents are currently pursuing or have completed STEM undergraduate majors**
- Top 10 majors reported by surveyed alumni:
 - Aerospace Engineering (23%)
 - General Engineering (9%)
 - Mechanical Engineering (9%)
 - Physics (9%)
 - Computer Science (5%)
 - Computer Engineering (3%)
 - Electrical Engineering (3%)
 - Biology (3%)
 - Biomedical Engineering (2%)
 - Systems Engineering (2%)

College Selections

- **63% of VASTS alumni respondents report attending undergraduate schools in Virginia.**
- **63% of VASTS alumni respondents are still in college and are in STEM majors.**
 - These students attended the VASTS Summer Academy in 2011, 2012, 2013, or 2014.
- Top 10 undergraduate schools reported by respondents covering all program years:
 - Virginia Tech (22%)
 - University of Virginia (22%)
 - Virginia Commonwealth University (4%)
 - College of William and Mary (3%)
 - Purdue University (2%)
 - Embry-Riddle Aeronautical University (2%)
 - George Mason University (2%)
 - James Madison University (2%)
 - United States Air Force Academy (2%)
 - Georgia Institute of Technology (2%)

Post College Careers

- Students who took part in the VASTS Summer Academy in the 2008, 2009, or 2010 program years have begun to transition into graduate schools or the workforce.
 - Repeated longitudinal tracking surveys received “update” data from 37% of students in these program years
 - **93% of these re-surveyed students have reported that they have transitioned to a STEM graduate school major or STEM career.**

Examples of employers that have been reported:

- Apple
- CACI/BIT Systems
- Capitol One
- Dominion Power
- Eastern Virginia Medical School
- Fairfax County Public Schools
- Federal Aviation Administration
- Google
- Laserfiche
- MEP Design Firm
- MicroStrategy
- NASA
- NASA Jet Propulsion Laboratory
- Newell Rubbermaid
- Owens and Minor International

- The Wilderness Society
- United Launch Alliance
- United States Air Force
- United States Marine Corps
- United States Navy
- US Geological Survey, Center for Integrated Data Analytics
- Winchester Community Mental Health Center

Examples of job titles that have been reported:

- Aerospace Engineer
- Cyber Operations Officer
- Data Scientist
- Energy and Climate Change Policy Fellow
- Engineer
- Global Data Analyst and Program Coordinator
- Mac+ Specialist and Technician / Advisor
- Materials Engineer
- Nuclear Engineer
- OpEx Engineer
- Physics Teacher
- Pilot
- Propulsion Stress Analyst
- Research Assistant
- Satellite Vehicle Operations Officer
- Scientist
- Software Development Specialist
- Software Engineer
- Software Test Engineer

Virginia Space Grant Consortium Scholarships, Fellowships and Research Internships Longitudinal Tracking

The Virginia Space Grant Consortium (VSGC) provides four scholarship and fellowship programs to competitively award students attending Consortium member institutions. VSGC also provides stipends to support students participating in research internships as NASA Centers and other STEM research organizations. Each year, an estimated \$350,000 is awarded directly to students through these programs. Funding is provided by NASA with matching funding provided through the State Council of Higher Education.

Overview of VSGC Student Award Programs

The **Undergraduate STEM Research Scholarship Program** provides awards of up to \$8,500 to rising juniors and seniors who are enrolled full-time in a program of study in STEM and have a specific faculty-mentored research project with NASA relevance.

The **Graduate Research STEM Fellowship Program** provides fellowships of \$6,000 (\$1,000 must be used for research-related travel or supplies) in add-on support to graduate students to supplement and enhance basic research support. Applicants must be enrolled STEM and have a specific faculty-mentored research project that has NASA or aerospace relevance. Fellowships may be renewed for a second year.

The **STEM Bridge Scholarship Program** provides scholarships of \$1,000 to sophomore students majoring in STEM and interested in conducting undergraduate research of interest to NASA. Students must be from any federally recognized minority group and enrolled full-time in a STEM program. The award is renewable for one year with the expectation that the student submit a research proposal to the Undergraduate STEM Research Scholarship program.

The **Community College STEM Scholarship** provides a one-year, non-renewable award of \$2,000 for students enrolled full time at one of Virginia's Community Colleges. Students must be majoring in STEM field and be interested in pursuing a career that supports NASA's mission including careers in the aerospace sector.

Stipends and sometimes travel costs for NASA and Other Research Internships are provided for several students each year.

Longitudinal Tracking

Students in the programs referenced above are tracked per NASA guidelines. VSGC tracks all awardees to their next step in their academic or career path after they received VSGC funding. VSGC also categorizes this next step depending on where and what the student does when taking this next step. From Academic years 2005-06 to 2014-15, VSGC has provided awards to 627 unique students. **Ninety-eight percent of survey respondents are either pursuing STEM studies or working in STEM fields.** The tracking data is summarized below and the percentages are based on the number of survey responses:

- 523 students have responded to the longitudinal tracking survey (83% of total awarded)
- 140 students are still enrolled at the same academic level as when supported by VSGC (27%)

- 179 students graduated and are pursuing an advanced STEM degree (34%)
- 18 students have graduated and are seeking STEM employment (3%)
- 39 students are employed in STEM (aerospace contractor) (8%)
- 62 students are employed in STEM (non-aerospace position) (12%)
- 16 students are employed by a NASA Center or NASA Jet Propulsion Laboratory (3%)
- 32 students are employed in K12 STEM academic field (6%)
- 27 students are employed in other STEM academic field (5%)
- 10 students are no longer in STEM academic programs or careers (2%)