

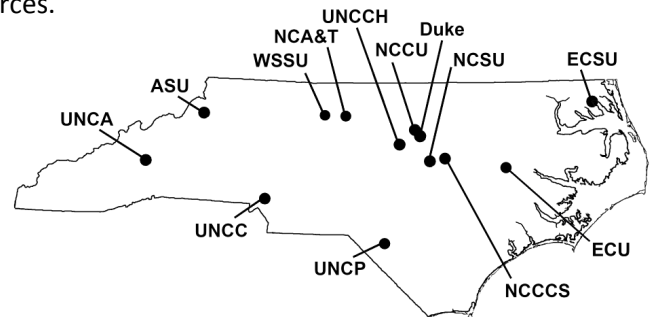
www.ncspacegrant.org

DEVELOPING NORTH CAROLINA'S FUTURE AEROSPACE AND AVIATION WORKFORCE

NC Space Grant is an active member in a national grassroots network of **university-based consortia** that significantly contribute to America's critical **science, technology, engineering and mathematics (STEM) workforce**. Established by **Congress and implemented by NASA**, the National Space Grant College and Fellowship Program contributes to the nation's science enterprise by funding higher education research, precollege and informal education, and public service projects through a **national network of 52 Space Grant Consortia**.

NC Space Grant **partners with industry, non-profit, and state government agencies** to support STEM education in North Carolina. Since 1991, NCSG has managed and provided over \$14 million in support to North Carolina citizens. In FY 2012, NC Space Grant used **NASA funding (\$575,000) supplemented by resources from the NC General Assembly, industry**

and non-profit partners to support students and faculty throughout the state in five program areas: Fellowship/Scholarship, Research, Course Development, K-12 Education, and Informal Education. For every dollar that NC Space Grant receives from NASA, more than \$1.05 is matched from other sources.



NC Space Grant's 13 academic Affiliates, which include 12 universities and the NC Community College System, enroll over 490,000 students. Four Affiliates are classified as Historically Black Colleges and Universities.



NC Space Grant Contributions to NASA Education Outcomes

Higher Education Student Participation:

- Competitively awarded 56 fellowships, scholarships, internships to graduate, undergraduate and community college students
- Engaged 192 students in NASA-related research and higher education activities under the supervision of a faculty/scientist mentor
- Of the 248 supported students, 27% were female and 23% were underrepresented minorities

Higher Education Faculty Participation:

- 4 faculty awarded research seed funding
- 22 faculty provided support to develop interdisciplinary courses and/or engage student groups in collaborative research activities
- 2 courses developed (1 new, 1 revised)

K-12 Education:

- 8 professional development workshops/activities
- 154 educator participants (71 middle school teachers, 21 high school teachers, 11 preservice teachers, 51 informal educators)

Informal Education:

- 105 hands-on student/public programs
- 7,505 student participants (2,098 middle school, 5,407 high school)
- 5,126 public at large participants

Data Source: FY2012 NASA Annual Performance Data Report

www.ncspacegrant.org
911 Oval Drive, Engineering Bldg III
NCSU Campus Box 7515
Raleigh, NC 27695
919.515.4240



PROGRAM HIGHLIGHTS

HIGHER EDUCATION: MITCHELL COMMUNITY COLLEGE (MCC) ROCKET TEAM

Since 2009, NCSG has provided support for Mitchell Community College (MCC) to participate in the NASA University Student Launch Initiative. As representatives of the first community college in the nation to qualify for the initiative, the team has gained national recognition for the quality of its programs supporting the team. For the past two years, MCC has competed in NASA's Level 2 Challenge, the RockSat-C program. The MCC team will launch a payload on a two-stage sounding rocket in summer 2014 at NASA's Wallops Flight Facility in Virginia.

Mitchell's rocketry program is definitely connecting life to learning. We're preparing students for great careers by giving them opportunities to do hands-on design guided by science. The team also gives students from different program areas opportunities to collaborate and solve real-world problems.—Dr. Tim Brewer, President, Mitchell Community College



K-12 EDUCATION: LORD CORPORATION TEACHER EXTERNSHIP PROGRAM



NCSG provided funds to the LORD Corporation to leverage support in the development of a robust STEM workforce in North Carolina by enabling high school teachers to **develop relevant and motivating curriculum based on real-world aerospace-related externships** during the summer of 2013. LORD competitively chose two NC STEM high school teachers to spend four weeks as LORD externs. Teachers were treated as LORD engineers and **worked alongside scientists on projects** that are relevant to current work at LORD. Furthermore, each extern developed curriculum for modules and courses at their respective high schools for implementation during the 2013/14 school year.

During my time as a LORD extern I worked with two-part polymer adhesives and developed a 3-week project-based-learning project for my honors Chemistry and Engineering Design II courses. My students will get to experience being a chemical and materials engineer during their time in my class. I am very excited about being able to give my students this real-world STEM experience.—Evelyn Baldwin, Chemistry Teacher at NCSU's STEM Early College High School.

INFORMAL EDUCATION: STUDENT SPACEFLIGHT EXPERIMENT PROJECT WITH GUILFORD COUNTY SCHOOLS

NC Space Grant provides leveraged support for the **Guilford County Schools (GCS)** to participate in the Student Spaceflight Experiment Program (SSEP), a partnership between the National Center for Earth and Space Science Education and NanoRacks, LLC. Participation in SSEP has allowed GCS to cultivate and reward STEM teachers who **prepare and inspire** students. It has also helped **direct inquiry-based learning in real science and encourage middle and high school students to develop critical thinking and communication skills** through the planning, proposal, experimentation and presentation components of the SSEP program.

Since 2011, **three middle/high school teams have had their experiments flown in space:** Mendenhall Middle (Brine shrimp experiment, STS-134, 10/11); Johnson Street Global Studies (Mold growth experiment, SpaceX-1, 10/12); and STEM Early College at NC A&T State University (Geotropism experiment, Orb-D1, 9/13). A team from Mendenhall Middle was recently selected to fly their 'artificial ear' experiment onboard Orb-2 to the International Space Station in May 2014.

