Education Opportunities at NASA Glenn Research Center

Daria J. Jones, SGT, Inc. Education Programs Office

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Education Goals
Strengthening NASA and the Nation’s Future workforce
Attracting and retaining students in STEM disciplines
Engaging Americans in NASA’s mission

Outcome 1: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA’s strategic goals, through a portfolio of investments.

Outcome 2: Attract and retain students in STEM disciplines through a progression of educational opportunities for students, teachers and faculty.

Outcome 3: Build strategic partnerships and linkages between STEM formal and informal education providers that promote STEM literacy and awareness of NASA’s mission.

Principles/Criteria
Relevance NASA Content Diversity Evaluation Continuity Partnership/Sustainability

Cultivate Diversity of Workforce Disciplines and Practitioners
Elementary/Secondary Education
Informal Education
Higher Education

Employ Educate Engage Inspire

NASA Education Strategic Framework
The NASA Science Engineering Mathematics and Aerospace Academy, or SEMAA, is a national, innovative project designed to increase participation and retention of historically underrepresented K-12 youth in the fields of science, technology, engineering and mathematics, or STEM.

SEMAA is located at community colleges; Historically Black Colleges and Universities, or HBCUs; Hispanic Serving Institutions, or HISs; Tribal Colleges and Universities, or TCUs; high schools, middle schools and elementary schools; and science centers/museums in urban and rural cities throughout the United States.
The N.A.S.A. Project is a 6-week summer program for students attending Cleveland Metropolitan and Lorain County Schools who are current sixth and seventh graders. The program is designed to capture students’ interest in science and mathematics. Located in an urban setting, the N.A.S.A. Project seeks to target students who have a cumulative GPA between 2.0 and 3.0, demonstrating a deficiency in the areas of mathematics and science, and requiring a gentle push to reach their academic and life potential. The program is also designed to help prepare students for the Ohio Achievement Test by providing a weekly Scholastic Challenge Contest.
Exploring is a worksite-based program. It is part of Learning for Life's career education program for young men and women who are 14 (and have completed the eighth grade) through 20 years old. Exploring programs are based on five areas of emphasis: career opportunities, life skills, service learning, character education, and leadership experience.

NASA Glenn Research Center collaborates with the Boy Scouts of America to provide the Glenn Explorer program. Activity groups led by Glenn volunteers who serve as Exploring Advisors, meet one weekday evening a week from October through April to work on group projects.

The Explorers Program consists of Aeronautics Activities, Computer Technology, Human Space Flight and Balloon Satellite Technology.

GRC received from the Boy Scouts of America the William H. Spurgeon III Award, the highest recognition for individuals and organizations contributing significant leadership to the Exploring Program.
Shadowing

The High School Shadowing Program provides high school students with a career exploration experience for 1 day or up to 1 week.

Shadowing provides high school students with an opportunity to explore career possibilities in a research and development environment while under the guidance of a GRC scientist, engineer, technician, or administrative professional that serves as the student’s mentor. Students are provided with information about various careers, career paths, and GRC educational resources and programs.
INSPIRE provides students from the 9th grade through the freshman year of college with online resources; NASA related activities and educational modules; and participation in video teleconferences with the centers.

Opportunities to participate in various experiences such as a one-day VIP tour and workshop at a center for students and a parent/guardian for 9th graders (rising 10th grade student). Transportation, lodging and meals are provided.

A two-week collegiate experience at participating college or university for 10th graders (rising 11th grade student).

An eight-week paid internship at a center for 11th graders (rising 12th grade student). All transportation, meals, lodging, and chaperones are provided. Students will participate in structured after work and weekend educational and cultural activities.

An eight-week paid internship at a center after high school graduation for 12th graders (rising college freshmen).
Glenn Core Competencies

Communications
Architectures & Subsystems

Power and Energy
Conversion Systems

Aeropropulsion
Systems

1. Test and Evaluation for Atmospheric, Space and Gravitational Environments
2. Interdisciplinary Bioengineering for Human Systems
3. Fluids, Combustion and Reacting Systems Including Gravity Dependence
4. In-Space Propulsion including Nuclear Systems

Supporting Competencies: Systems Analysis, Materials & Structures, and Instrumentation & Controls
This is an educational program that provides an 8-week paid internship during the summer months for current high school sophomores and juniors who are interested in science, technology, engineering, math and professional administration.

**Program Benefits:**
- 8-week paid summer internship
- Hands-on experience
- Mentoring and networking
- Learn about NASA missions
- Exposure to careers at NASA
- Enrichment activities and professional development
LERCIP College
Lewis’ Education and Research Collaborative Internship

LERCIP provides 10-week summer internships opportunities for students pursuing degrees in engineering, science, mathematics and other aerospace-related disciplines, as well as majors that lend support to NASA's mission such as business and public administration, finance and accounting. These mentor-guided internships provide hands-on, real-life, career-related experiences that challenge, inspire, and provide practical application that complements and expands upon students’ academic education. The program provides the student opportunity to engage in authentic NASA-related, mission-based R&D activities. Students spend their summer at GRC working and learning in a professional environment using NASA research facilities and resources. LERCIP educational component where students attend and participate in a variety of planned activities from professional development workshops to presenting at the Student Research Symposium.

Program Benefits:

- 10-week paid NASA summer internship experience;
- Participation in scheduled enrichment activities and
- Exposure to NASA Career fields.
This is an educational program that provides internships for teachers interested in expanding their knowledge in the area of science, technology, engineering, and mathematics. Internships of a 10-week duration are available during the summer months at the NASA Glenn Research Center, Cleveland, OH. The internships are offered under the auspices of Lewis' Educational and Research Collaborative Internship Program (LERCIP), a collaborative undertaking by the Educational Programs Office at the Glenn Research Center and the Ohio Aerospace Institute (OAI). Teachers will work with a GRC mentor to complete identified assignments.

Internships are available only to U.S. citizens who are employed in the U.S. as full-time teachers as secondary school teachers.
The Motivating Undergraduates in Science and Technology Project, or MUST, funded by NASA, is a joint partnership between the Hispanic College Fund, the United Negro College Fund Special Programs and the Society for Hispanic Professional Engineers.

MUST awards scholarships and internships to undergraduates pursuing degrees in science, technology, engineering and mathematics, or STEM, fields. The MUST Project is open to all students and is particularly focused on engaging students from underserved and underrepresented groups to enter STEM fields.

Each year, the MUST Project will support approximately 100 undergraduate students with a one-year competitive scholarship of up to one-half of tuition, not to exceed $10,000. Students who maintain the required minimum grade point average will be eligible for a paid internship at a NASA center. Additionally, students will benefit year-round from tutoring, lecture series and mentoring from STEM faculty and peers.
The NASA Academy for Space Exploration is an intensive resident summer institute of higher learning for college juniors, seniors or first year graduate students. The program is designed to guide the future leaders of the United States space programs by exposing them to many facets of NASA and other sectors of the aerospace industry.

NASA Academy provides immersive and integrated multidisciplinary exposure and training for students with various backgrounds and career aspirations. The academic curriculum balances opportunities for direct contact with advanced science and engineering research and development and an awareness of the complex managerial, political, financial, social, and human issues faced by the past, present, and future aerospace programs.

http://academy.grc.nasa.gov/
The NASA Undergraduate Student Research Project, or USRP, offers internship opportunities for undergraduate science and engineering students at all 10 NASA centers and additional partner facilities. These mentor-guided internships provide hands-on, real-life, career-related experiences that challenge, inspire, and provide practical application that complements and expands upon students' academic education.

Three internship sessions are offered: a 15-week spring session, a 10-week summer session and a 15-week autumn session. Eligible applicants must be classified as sophomores, juniors or seniors by the start of their internship. The students must be U.S. citizens with academic majors or course concentration in engineering, mathematics, computer science, or physical and life sciences.

http://usrp.usra.edu/
The FIRST robotics competitions are exciting national engineering and robotics competitions. In the high school competition, teams have 6 weeks to build a 100 lb. robot.

NASA Glenn Research Center supports the middle school FIRST LEGO League competition by providing registration scholarships and training for participating schools.

NASA provides team registration scholarships and technical support mentors. Since the spring of 2002, NASA Glenn Research Center has been a sponsor of the Buckeye Regional, one of twenty-six FIRST regional competitions in the country.
Network of Educator Astronaut Teachers

Each summer achieving teachers from around the country have the opportunity to attend a one week workshop at NASA Glenn Research Center as part of the NEAT Project.

NEAT was founded in 2003 as a result of the overwhelming response to the Educator Astronaut program. While only three applicants were selected as astronaut candidates, 200 finalists received superior marks on their applications and became members of NEAT. These enthusiastic teachers share their knowledge about NASA research in their classrooms and communities.
Contact Information

**Glenn Educational Programs Office**
Jo Ann Charleston - Chief  
Phone: (216) 433-2957  
E-mail: Jo.A.Charleston@nasa.gov

**Glenn University Programs Office**
M. David Kankam  
University Affairs Officer  
Phone: (216) 433-6143  
E-mail: Mark.D.Kankam@nasa.gov

http://education.grc.nasa.gov