

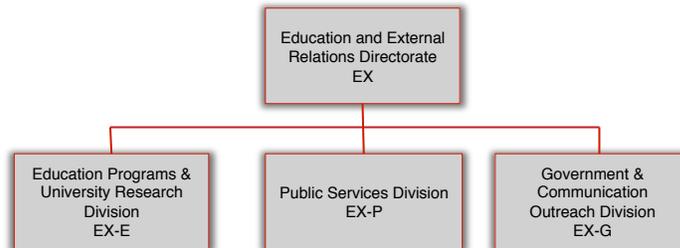


Kennedy’s Education and External Relations Organization is...

A highly skilled staff of civil servants and contractors using a combination of strategic planning, education programs, and event planning to develop and promote Center activities, inspire students, and build strong relationships with our community and its leaders.



Education and External Relations Organizational Structure



Education Programs and University Outreach (EX-E)



- Reaches a wide range of students and educators, from grade school through higher education
- Uses educational workshops, products, tools, and develops partnerships with educational institutions
- Supports both NASA-wide and KSC-specific programs

Overall goal – inspire engage, and educate through enriching programs, internships, and partnerships

Public Services (EX-P)

- Reaches tourists, VIPs, special guests and others visiting KSC
- Ensures visitors have a pleasant, positive experience
- Provides event planning and protocol expertise for special activities and launch guest operations
- Manages the KSC Visitor Complex contract

Overall goal - deliver official NASA messages to target audiences via unique avenues



Government and Communication Outreach (EX-G)



- Provides liaison between KSC and key federal, state, and local stakeholders
- Facilitates tours, launch-viewing opportunities and overall access to KSC for elected officials
- Creates highly targeted communication products designed to reach specific audiences
- Maintains the KSC Speaker's Bureau

Overall goal - create and maintain strong relationships with elected officials and strategic communications



NASA's Education Goals

- ➔ To strengthen NASA and the Nation's future workforce
- ➔ To attract and retain students in science, technology, engineering and mathematics
- ➔ To engage Americans in NASA's mission



EDUCATE TO INNOVATE



Less than one-half of students are demonstrating solid academic performance in science.

2009 National Assessment of Educational Progress





Goal 1:
Strengthen
NASA and
the Nation's
Workforce



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Higher Education Projects

One Stop Shopping Initiative (OSSI) Student On-Line Application

- New application system from the Office of Education that allows applicants to apply to multiple opportunities at one time with one application instead of having to go through multiple systems to apply for internships.
- The system is used by ALL NASA Centers
- <http://intern.nasa.gov>
- Note: A limited number of internships will be offered during 2012 summer while NASA restructures its programs

Opportunities for High School Students

John F. Kennedy Space Center

- **INSPIRE-** a multi-tiered year-round program designed for students in 9th-12th grade who are interested in STEM
 - Explorers
 - Collegiate Experience
 - Residential Internship
 - Collegiate Internship

Agency Projects

MSP (MUREP Small Projects)

➤ **Recent Awardees**

- **New Mexico State University** – is developing a set of critical resources incorporating NASA content for use in traditional and distance learning for an introductory astronomy course.
- **Universidad del Turabo, Universidad Interamericana, and Universidad Politécnica** Three Hispanic-Serving Institutions in Puerto Rico are collaborate with Michigan Technological University to develop Systems Engineering-based multidisciplinary capstone design courses in a minimum of twelve engineering programs, incorporating NASA-sponsored research and projects. This project leverages expertise from an existing NASA Exploration Systems Mission Directorate-funded senior design course developed by Michigan Technological University. The project addresses a key NASA need for engineering graduates with design knowledge and experience using a systems engineering approach.
- **North Carolina Agricultural and Technical State University** – will develop, implement, evaluate and disseminate innovative pedagogical concepts for integrating the associated NASA STEM content in ten courses in the undergraduate curriculum.



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Agency Projects

MSP Funding Opportunities, cont.

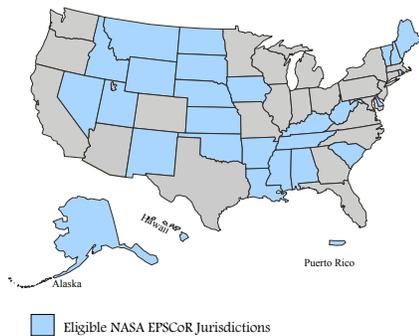
- **Florida Agricultural and Mechanical University** – provides monthly virtual conferences to students at MSIs nationwide to increase the participation of underserved or underrepresented students in NASA-sponsored technical competitions. The virtual conference format features live video presentations from technical speakers, powerpoint presentations, Q&A sessions, chat/networking lounges, a discussion board, exhibit booths, and the ability to view archived content. www.nasamici.com
- **Navajo Technical College** – NTC has developed a new 4 year digital manufacturing curriculum, allowing them to grow from a 2 year college to a 4 year college. NTC has received approval to offer a Baccalaureate of Applied Science in Information Technology which includes the Digital Manufacturing track.



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Agency Projects

NASA Experimental Program to Stimulate Competitive Research (EPSCoR)



- Establishes partnerships with government, higher education and industry that are designed to effect lasting improvements in a state's or region's research infrastructure, R&D capacity and hence, its national R&D competitiveness.
- In addition to the research and technology development, the awards enable faculty development and higher education student support.
- NASA awarded \$16.8 million in 2010 alone to colleges and universities nationwide to conduct research and technology development in areas of importance to the agency's mission.

Example of EPSCoR Project

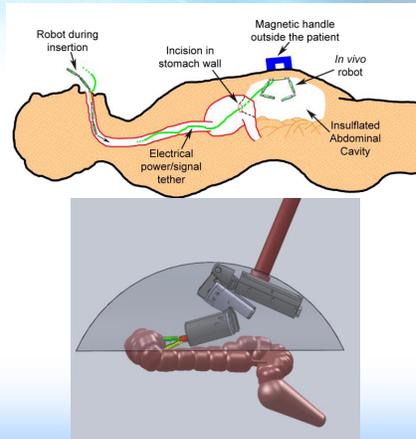
NEBRASKA

University of Nebraska

Research: Design, simulate, and test miniature in vivo robots to support surgery during long-duration space missions. The project explores the use of a new technique called Natural Orifice Transluminal Endoscopic Surgery.

Potential Impact: Small robots could be an important component of a medical system used in future planetary missions and medical industry.

Miniature In Vivo Surgical Robotics for Long-Term Space Flight



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Funded by MSP

STEM Forum – July 19-20, 2011

- Eleven Minority Serving Institutions brought a total of 375 students to GRC for an education forum with hands-on activities.
 - KSC co-sponsored the event
- Students spent a day at the Great Lakes Science Center and participated in a panel discussion with NASA leaders
- The Cleveland Public Library led a discussion on the book “ We Beat the Street: How Friendship Led to Success”
- Two astronauts spoke to the group about their specific missions and took questions from the students
- Hands-on Workshops
 - Students participated in hands-on STEM educational activities and learned how they apply to NASA’s missions





Goal 2:
Attract and Retain Students in STEM Disciplines



Summer of Innovation



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Informal Education Projects

Kennedy Educate To Innovate

- To inspire and engage students towards STEM careers
- Emphasis on under-served and under-represented students
- Utilizes KSC's Civil Servant workforce including scientists and engineers
- Training workforce via Speakers Bureau and Education Office
- NASA Family Education Nights
- Partner with other Educate to Innovate initiatives (e.g., National Lab day, National STEM design competitions)
- Utilize social media to inform civil servant workforce and the public



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K-12 Education Projects

- Onsite Educator/Student Workshops
- Educator Resources (STEM curricula, lithographs, posters, DVDs with videos, PowerPoints, NASA Ed briefs)
- Digital Learning Network
- Offsite Classroom Workshops for Educators/Students





Resources Available

Schedule Student/Educator Workshops at the Exploration Station- Call 321-867-4090

Aerospace Education Services Project- Ed. specialists that will come to your school (GA, PR, FL, and USVI). 321-867-3957; <http://csats.psu.edu/aesp.htm>

Digital Learning Network- Free, interactive programs allow you and your students to learn more about our home planet and the universe beyond through video-conferencing and Web casts <http://dln.nasa.gov>

Speaker's Bureau- Request a NASA employee to talk to your students- 321-861-5216 KSC-Speakers-Bureau@mail.nasa.gov



Goal 3:
Engage
Americans
in NASA's
Mission





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Agency Projects

Lunabotics Competition

- Dates: May 21-26, 2012
- Location: Kennedy Space Center Visitor Complex
- The challenge is for university students to design and build a remote controlled or autonomous excavator, called a lunabot, that can collect and deposit a minimum of 10 kilograms of lunar simulant within 10 minutes. The complexities of the challenge include the abrasive characteristics of the lunar simulant, the weight and size limitations of the lunabot, and the ability to control the lunabot from a remote control center.
- The teams also submit a systems engineering paper, slide presentation, and an educational outreach report.
- For more information on the competition visit:
www.nasa.gov/lunabotics
- Registration deadline November 30, 2011 or 60 team

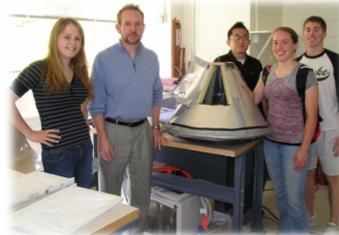


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Agency Projects

ESMD Space Grant Project

- Senior Design Projects
- Systems Engineering Paper Competition
- Industry Internships
- Faculty Fellows
- Senior Design Course Development
- Faculty Workshop





STEM = INNOVATION



We understand that without a strong workforce educated in science, technology, engineering and math our future options will be limited, potentially limiting and restricting discovery and innovation.



INCREASE STEM LITERACY SO ALL STUDENTS CAN:



- ⇒ Learn deeply and think critically in science, math, engineering, and technology
- ⇒ Help move American students from the middle of the pack to the top in the next decade
- ⇒ Expanding STEM education and career opportunities for underrepresented groups, including women and girls



