National Aeronautics and Space Administration

# “Explore and discover. Learn and teach. Build and share.

## It’s what NASA and teachers and parents do.”

**Barbara Morgan**, Educator Astronaut
Mission Specialist on STS-118

www.nasa.gov

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# NASA Celebrates Educators

NASA celebrates the innovative skills of educators who each day step into the universe of the classroom and venture into the unknown. We are honored to join with teachers at the frontiers of the imagination to push the boundaries of knowledge in the minds of our future scientists, engineers, and educators. The front of this poster illustrates this concept using images of Educator Astronaut and STS-118 Mission Specialist Barbara Morgan along with her inspirational quote. The reverse side of this poster contains information on NASA Education projects and resources for K-12 educators.

## Exploring New Frontiers

America is now charting a new course into the cosmos: to the Moon, Mars, and Beyond. For the past 50 years, NASA's journeys into air and space have enhanced humankind's understanding of the universe, advanced technology breakthroughs, increased air travel safety and security, and expanded the frontiers of scientific research. These accomplishments share a common root: Education.

Future generations and missions ultimately depend on the inspiration of our youngest and brightest students, and it is NASA that can ignite that yearning in our children to explore the universe.

The power in the intertwining of NASA and education lies in the unique embrace of the space program and our imaginations.

## About NASA Education

NASA has recently unveiled a new strategic education plan. Through a portfolio of investments, NASA aims to contribute to the development of the Science, Technology, Engineering, and Mathematics (STEM) workforce in disciplines needed to achieve NASA's strategic goals. This portfolio includes five program areas: higher education, minority university research and education, elementary and secondary education, informal education, and education technology and products.

NASA will also attract and retain students in STEM disciplines through a progression of educational opportunities for students, teachers, and faculty. Finally, the agency intends to build strategic partnerships and linkages between STEM formal and informal education providers that promote STEM literacy and awareness of NASA's mission.


**For more information about NASA Education, please visit: www.nasa.gov/education**



# NASA's Elementary & Secondary Education Program

NASA provides K-12 educators with tools, experiences, and opportunities to further their education and participate in unique NASA learning experiences to enhance their knowledge of STEM and inspire pursuit of STEM careers. These activities support the role of educational institutions, which provide the framework to unite students, families, and educators for educational improvement.

## Elementary and Secondary Education Projects

**Aerospace Education Services Project** serves the elementary and secondary education community by providing classroom demonstrations, faculty workshops, parent training, in-service training for teachers, and identification of appropriate classroom resources. NASA uses former teachers who are well-trained and well-equipped in STEM content.

**Education Flight Projects** provides opportunities for K-12 students to gain hands-on experience as payload investigators using NASA flight platforms such as the Space Shuttle, International Space Station, sounding rockets, and scientific balloons.

**Educator Astronaut Project** selected outstanding educators to become permanent members of the Astronaut Corps. It then uses the visibility and educational opportunities created by the activities of the Educator Astronauts to inspire greater K-12 STEM achievement, promote STEM careers, and elevate public esteem for the teaching profession. The project has also trained the top tier of Educator Astronaut applicants, called the Network of Educator Astronaut Teachers, to perform as NASA Education advocates by engaging their schools and communities in NASA education activities and informing them of NASA resources.

**Interdisciplinary National Science Project Incorporating Research and Education Experience (INSPIRE)** replaces NASA's Summer High School Apprenticeship Program. INSPIRE will maximize student participation and involvement in STEM, and enhance the STEM pipeline from middle to high school (grades 7-12) into the undergraduate level. This new concept is projected to start in 2007.

**NASA Explorer Schools** offers a three-year partnership between NASA and school teams, consisting of teachers and education administrators from diverse communities across the country. Focusing on underserved populations, the project is designed for education communities at the 4-9 grade levels to help middle schools improve teaching and learning in STEM education through significant structural (professional development, stipends, grants) and curricular support based on NASA's resources.

**Science Engineering Mathematics and Aerospace Academy** reaches K-12 minority students that are traditionally underrepresented in careers involving STEM. Students meet during school, after school or on Saturday mornings and during the summer to engage in hands-on, interactive learning sessions that are specifically designed for each grade level.

**For more information about NASA's Elementary and Secondary Education Program, please visit: http://education.nasa.gov/divisions/eleandsec/overview/index.html**

# Four Easy Ways to Obtain NASA Materials

The NASA Office of Education works collaboratively with NASA's mission directorates to promote education as an integral component of every major NASA research and development mission. These efforts result in innovative and informative educational materials that engage student interest in science, technology, engineering, and mathematics. NASA makes these resources available in four convenient ways:

- Access educational resources online from NASA's Web site. http://www.nasa.gov/education/materials
- Visit a NASA Educator Resource Center (ERC). http://www.nasa.gov/education/ercn
- Order select materials through OfficeMax. http://www.nasa.gov/education/officemax
- Purchase materials from the Central Operation of Resources for Educators (CORE). http://www.nasa.gov/education/core

**The NASA Web Site** NASA.gov serves as the gateway for information on missions, research, programs, and services offered by NASA. The educational sections provide educators access to curriculum support materials and resources produced through collaborations with NASA's mission directorates. Materials may be downloaded and printed from the following locations:

-Educator Guides, Classroom Activities, Posters, Lithographs, Brochures and Bookmarks
http://www.nasa.gov/education/materials
-Themed Collections of Online Resources
http://www.nasa.gov/audience/foreducators/topnav/ schedule/extrathemes/index.html
-Classroom Subject Matter Topics
http://www.nasa.gov/audience/foreducators/topnav/subjects/about/index.html
-NASA Education Express Mailing List Sign up for announcements about NASA products and activities.
http://www.nasa.gov/education/express

**NASA's ERC Network**
The NASA ERCs are located throughout the United States, the U.S. Virgin Islands, and Puerto Rico. ERCs offer information about NASA and its educational resources and services. Personnel provide inservice and preservice training using NASA curriculum support materials. ERC team members also collaborate with educational organizations to foster systemic initiatives at local, state, and regional levels. http://www.nasa.gov/education/ercn

**OfficeMax**
NASA and OfficeMax have partnered to provide educators a print-on-demand service to acquire NASA curriculum support materials. Using the Internet, educators can search an online database of NASA materials, preview them, order online, and pick them up at the nearest OfficeMax–all for a nominal fee. If educators reside more than 50 miles from an OfficeMax, the materials can be shipped to them for an additional postage charge. http://www.nasa.gov/education/officemax

**CORE**
CORE serves as the worldwide distribution center for NASA-produced multimedia materials. For a minimal charge, CORE will provide curriculum support materials to educators who are not able to visit one of the NASA ERCs, or who are looking for large quantities of materials. Through CORE's online catalog, educators can use the mail-order service to purchase NASA education materials, such as classroom modules by subject area, DVDs, and CD-ROMs. Closed-captioned and audio-descriptive versions of many materials are available. More information on CORE, including the online catalog, is available at the following location: http://www.nasa.gov/education/core

# For Educators on NASA.gov

The NASA Web site www.nasa.gov is the gateway to NASA news, mission highlights, agency information, and educational resources. Five sections are dedicated to educators including news, opportunities, and resources designed especially for the education community.

**Educational Materials**–NASA produces curriculum support materials that enhance student interest in science, technology, engineering, and mathematics. Online versions of these materials include bookmarks, classroom activities, educator guides, lithographs, and project brochures.

**Classroom Resources by Subject**–Numerous classroom support materials are available for educators from NASA. Visit the Classroom Subjects section to locate NASA-related information arranged by topics. Browse pages about NASA careers, Earth science, history, life science, mathematics, physical science, space science, and technology.

**Educational Features**–Weekly articles in the Features sections highlight NASA's involvement with educators, students, educational projects, and the education community. Visit K-4, 5-8, 9-12, Postsecondary, and Informal sections for articles written specifically for each audience. Related online resources and information are highlighted within the articles.

**Online Resources**–Visitors can learn about NASA's network of Educator Resource Centers (ERCs), educational product distribution, multimedia, educational projects, and services.

**Educational News**–NASA news releases highlight NASA's missions, discoveries, and educational activities. The news area for educators provides information about NASA's involvement with schools, NASA-sponsored competitions, announcements of partnerships, opportunities to team with NASA, and other education-related topics.

**Act Now**–Connect with NASA through educational workshops, webcasts, contests, current events, opportunities for pre-college and higher education audiences, educational materials, challenges, and many other NASA-related activities. Check the Act Now area often to learn how educators and students can interact with NASA.

**NASA Education TV Schedule and Monthly Topics**–NASA broadcasts educational programs specifically designed for students and educators. One week each month, NASA shows select programming related to a highlighted topic. The Education TV schedule links to an online list of related NASA educational resources.

**EXPRESS Mailing List**–Sign up for the NASA education mailing list to receive e-mail messages about NASA educational materials, activities, projects, and events.

**A-Z Index**–Educators can access specific topics by clicking on the first letter of the topic they are interested in. Choose from NASA educational resources, programs, projects, multimedia, NASA history, mission information, and more.

**Contacts**–If you have questions about NASA's educational resources and opportunities, the Contacts section has information about how to contact NASA educational representatives at NASA's regional centers.

**Visit NASA pages for educators at the following locations:**

| | |
|---|---|
| • For Educators K-4 | http://www.nasa.gov/audience/foreducators/k-4/features |
| • For Educators 5-8 | http://www.nasa.gov/audience/foreducators/5-8/features |
| • For Educators 9-12 | http://www.nasa.gov/audience/foreducators/9-12/features |
| • For Educators Postsecondary | http://www.nasa.gov/audience/foreducators/postsecondary/features |
| • For Educators Informal | http://www.nasa.gov/audience/foreducators/informal/features |

# NASA's Educator Resource Center Network (ERCN)

The purpose of a NASA Educator Resource Center (ERC) is to help teachers learn about and use NASA's educational resources. Personnel at ERCs located throughout the United States work with teachers to find out what they need and to share NASA's expertise. The ERCs provide educators with demonstrations of educational technologies such as NASA educational Web sites and NASA Television. ERCs provide inservice and preservice training utilizing NASA instructional products. Educators also have the opportunity to preview, copy, and receive NASA instructional products.

The Field Center ERCs are located on or near NASA centers and service educators from states within their geographical region.

**Alaska, Northern California (southernmost counties of Inyo, Kings, Monterey, Tulare), Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming**

**NASA Ames Research Center**
Educator Resource Center
Mail Stop 226-8
Moffett Field, CA 94035-1000
Phone: (650) 604-5544
FAX: (650) 604-0978
http://www.nasa.gov/centers/ames/education

**Arizona, Southern California (northernmost counties of Kern, San Bernardino, San Luis Obispo)**

**NASA Dryden Flight Research Center**
Educator Resource Center
38256 Sierra Highway, Suite A
Palmdale, CA 93550
Phone: (661) 276-2445
FAX: (661) 265-9548
http://www.nasa.gov/centers/dryden/education

**California**

**NASA Jet Propulsion Laboratory**
JPL Educator Resource Center
Village at Indian Hill
1460 East Holt Ave., Suite 20
Pomona, CA 91767
Phone: (909) 397-4420
FAX: (909) 397-4470
http://education.jpl.nasa.gov/erc.html

**Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin**

**NASA Glenn Research Center**
Educator Resource Center
21000 Brookpark Road, MS 7-4
Cleveland, OH 44135-3191
Phone: (216) 433-5579
FAX: (216) 433-3344
http://www.nasa.gov/centers/glenn/education

**Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont**

**NASA Goddard Space Flight Center**
Educator Resource Center
Mail Code 130.3
Greenbelt, MD 20771
Phone: (301) 286-8570
FAX: (301) 286-1781
http://www.gsfc.nasa.gov/vc/erc.html

**Eastern Shores of Virginia and Maryland**

**GSFC/Wallops Flight Facility**
Visitor Center/RERC
Building J-17
Wallops Island, VA 23337
Phone: (757) 824-2297
FAX: (757) 824-1776
http://www.wff.nasa.gov/vc/erc.htm

**Colorado, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas**

Educator Resource Center for
**NASA Johnson Space Center**
Space Center Houston
1601 NASA Parkway
Houston, TX 77058
Phone: (281) 244-2129
FAX: (281) 483-9638
http://www.nasa.gov/centers/johnson/education

**Florida, Georgia, Puerto Rico, U.S. Virgin Islands**

**NASA Kennedy Space Center**
Educator Resource Center
Mail Code ERC
J.F. Kennedy Space Center, FL 32899
Phone: (321) 867-4090
FAX: (321) 867-7242
http://education.ksc.nasa.gov/erc/erc.htm



# NASA's Educator Resource Center Network (continued)

**Kentucky, North Carolina, South Carolina, Virginia, West Virginia**

NASA Educator Resource Center for
**NASA Langley Research Center**
Virginia Air and Space Center
600 Settlers Landing Road
Hampton, VA 23669-4033
Phone: (757) 727-0900, ext. 713
FAX: (757) 727-0898
http://www.vasc.org/erc/index.html

**Alabama, Arkansas, Iowa, Louisiana, Missouri, Tennessee**

**NASA Marshall Space Flight Center**
U.S. Space & Rocket Center
Educator Resource CenterTranquility Base
Huntsville, AL 35805-3399
Phone: (256) 544-5812
FAX: (256) 544-5820
http://erc.msfc.nasa.gov

**Mississippi**

**NASA Stennis Space Center**
Educator Resource Center
Building 1200, Room 208A
Stennis Space Center, MS 39529-6000
Phone: (228) 688-1348
(800) 237-1821 Opt.#2
FAX: (228) 688-7528

http://www.nasa.gov/centers/stennis.education/index.html

## Regional Educator Resource Centers

The Educator Resource Centers by State listing on the NASA Education website includes the ERCs located at Field Centers along with others that are located in planetariums, museums, on college or university campuses, or other nonprofit organizations. These ERCs often have partnerships with their state's education department or regional educational organizations. They also may be part of a resource center that offers educational resources in addition to NASA related ones. Most states have one ERC, but a few have more than one.

**Please visit http://education.nasa.gov/about/contacts/Educator_Resource_Center_Network.html for more information.**

**Office of Education**

# NASA AEROSPACE EDUCATION SERVICES PROJECT STATE CONTACTS

**The NASA Aerospace Education Services Project (AESP) Specialists engage students in activities which promote study in science, technology, engineering, and mathematics so that they may consider those fields as a future career. Implementing partnerships with existing NASA Explorer Schools, state curriculum initiatives, internal and external stakeholders, research opportunities and Educator Astronauts are also of primary importance for AESP.**

| NASA Center AESP Offices: | State Contacts: |
|---|---|
| Aerospace Education Services Program<br>**NASA Ames Research Center**<br>Building 253, Room 100<br>M/S 253-2<br>Moffett Field, CA 94035-1000<br>(650) 604-6077<br>(650) 604-3445 (fax) | **Alaska, Washington, Montana**<br>Brian Hawkins; *brian.hawkins@aesp.nasa.okstate.edu*<br>**Hawaii, Northern California**<br>TBD<br>**Nevada, Wyoming, Utah**<br>Steve Biles; *steve.biles@aesp.nasa.okstate.edu*<br>**Oregon, Montana, Idaho**<br>Tony Leavitt; *tony.leavitt@aesp.nasa.okstate.edu* |
| Aerospace Education Services Program<br>**NASA Dryden Flight Research Center**<br>38256 Sierra Hwy., Suite A<br>Palmdale, CA 93550<br>(661) 276-2359<br>(661) 276-3088 (fax) | **Arizona, Southern California**<br>Beth White; *beth.white@ aesp.nasa.okstate.edu* |
| Aerospace Education Services Program<br>**NASA Glenn Research Center**<br>21000 Brookpark Road, MS 7-4<br>Cleveland, OH 44135-3191<br>(216) 433-5572<br>(216) 433-5924 (fax) | **Illinois, Indiana, Minnesota**<br>Marge Marcy; *marge.marcy@aesp.nasa.okstate.edu*<br>**Michigan, Ohio, Wisconsin**<br>Jim Fitzgerald; *jim.fitzgerald@aesp.nasa.okstate.edu* |
| Aerospace Education Services Program<br>**NASA Goddard Space Flight Center**<br>Code 130.3 Building 28, Room N144<br>Greenbelt, MD 20771-0001<br>(301) 286-4495<br>(301) 286-1655 (fax) | **New Jersey, New Hampshire**<br>Tom Estill; *tom.estill@aesp.nasa.okstate.edu*<br>**Massachusetts, Connecticut, Rhode Island**<br>Richard Varner; *richard.varner@aesp.nasa.okstate.edu*<br>**Maine, Vermont**<br>Peggy Maher; *margaret.maher@aesp.nasa.okstate.edu*<br>**Pennsylvania, District of Columbia**<br>Dynae Fullwood; *dyane.fullwood@aesp.nasa.okstate.edu*<br>**New York, Delaware**<br>Sonya Lawrence -Williams; *sonya.lawrence@aesp.nasa.okstate.edu* |
| Aerospace Education Services Program<br>**NASA Johnson Space Center**<br>Mail Code AE2<br>2101 NASA Parkway<br>Houston, TX 77058-3696<br>(281) 483-8619<br>(281) 483-3789 (fax) | **Colorado, North Dakota**<br>Lisa Ogle-Brown; *lisa.ogle@aesp.nasa.okstate.edu*<br>**South Dakota, Nebraska**<br>Angelo Casaburri; *angelo.casaburri@aesp.nasa.okstate.edu*<br>**Kansas, Oklahoma**<br>Mike McGlone; *mike.mcglone@aesp.nasa.okstate.edu*<br>**Texas, New Mexico**<br>Jennifer Becerra; *jennifer.becerra@aesp.nasa.okstate.edu* |
| Aerospace Education Services Program<br>**NASA Kennedy Space Center**<br>Mail Code OSU<br>Kennedy Space Center, FL 32899-0001<br>(321) 867-3957<br>(321) 867-7242 (fax) | **Florida, Puerto Rico**<br>Les Gold; *les.gold@aesp.nasa.okstate.edu*<br>**Georgia, Virgin Islands**<br>Jim Gerard; *jim.gerard@aesp.nasa.okstate.edu* |
| Aerospace Education Services Program<br>**NASA Langley Research Center**<br>17 Langley Boulevard MS 400<br>Hampton, VA 23681-0001<br>(757) 864-3302<br>(757) 864-3788 (fax) | **West Virginia, Virginia**<br>Rudo Kashiri; *rudo.kashiri@aesp.nasa.okstate.edu*<br>**North Carolina, Kentucky, All States as needed**<br>Norman Robinson; *norman.robinson@ aesp.nasa.okstate.edu*<br>**North Carolina, South Carolina**<br>Warren Edwards; *warren.edwards@aesp.nasa.okstate.edu* |
| Aerospace Education Services Program<br>**NASA Marshall Space Flight Center**<br>Mail Code: HS30<br>Marshall Space Flight Center, AL 35812-0001<br>(256) 961-1342<br>(256) 961-1521 (fax) | **Alabama, Tennessee, Louisiana**<br>Wil Robertson; *wil.robertson@aesp.nasa.okstate.edu*<br>**Iowa, Missouri, Arkansas**<br>John Weis; *john.weis@aesp.nasa.okstate.edu* |
| Aerospace Education Services Program<br>**NASA Stennis Space Center**<br>Building 1200<br>Stennis Space Center, MS 39529-6000<br>(228) 688-3965<br>(228) 688-3377 (fax) | **Mississippi**<br>Steve Culivan; *steve.culivan@aesp.nasa.okstate.edu* |