

USRA

EDUCATION & PUBLIC
OUTREACH

2005

Enrichment of Science, Technology, Engineering, and Mathematics Education – Programs and Initiatives

UN/IAF Workshop on Space Education &
Capacity Building for Sustainable Development

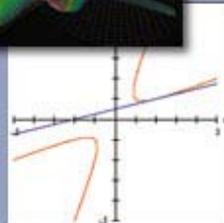
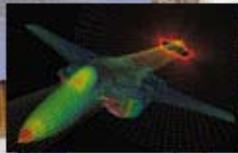
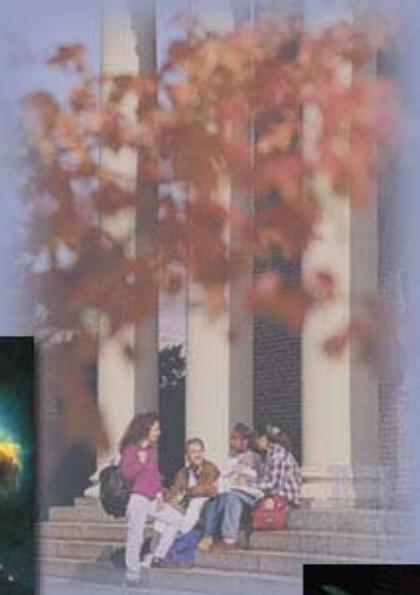
Kitakyushu, Japan 14-15 October 2005

Mr. Jeffery Cárdenas

Director, Education Programs Office

Universities Space Research Association www.usra.edu

cardenas@sop.usra.edu



The top of the slide features a dark blue background with a space theme. On the left, the letters 'USRA' are written in a large, white, sans-serif font. To the right of the text, there are several icons: a silhouette of a person looking through a telescope, a satellite in orbit, and a space shuttle launching with a large plume of fire and smoke. The overall aesthetic is futuristic and educational.

USRA

Presentation Outline

- ❖ **USRA Overview**
- ❖ **Education Mission & Capabilities**
- ❖ **Education Programs & Initiatives**
- ❖ **Summary**
- ❖ **Appendix of Programs/Projects**

USRA History and Charter

- ❖ **Created by U.S. National Academy of Sciences in 1969 at the request of the National Aeronautics & Space Administration, as a non-profit *educational* organization**

- ❖ **Chartered:**
 - *To be an entity through which universities and other research organizations cooperate with each other and with the government toward the **development of knowledge** associated with **space science and technology**;*
 - *To acquire, plan, construct and operate laboratories and other facilities for research, development and **education** associated with **space science and technology**.*

- ❖ **Technical Breadth and Depth**
 - Over 500 scientists, engineers, and technologists currently managing and pursuing research for the government through USRA-administered Programs, Projects, and Institutes.

USRA Organizational Overview

- ❖ **Since founding, grown to an organization of 97 university members (domestic & international)**
 - Council of Institutions
 - Board of Trustees
- ❖ **Programs and Initiatives implemented through the participation of the broad research and education communities**
 - USRA Director of University Relations
 - 10 Science Councils
 - 100 Members representing linkage to academia and industry

USRA Member Universities and Institutes



Alabama A&M University
 University of Alabama in Huntsville
 University of Alaska Fairbanks
 University of Arizona
 Arizona State University
 University of Arkansas
 Auburn University
 Baylor University
 Boston College
 Boston University
 Brandeis University
 University of British Columbia
 Brown University
 University at Buffalo, State University of New York
 University of California, Berkeley
 California Institute of Technology
 University of California, Los Angeles
 University of California, San Diego
 University of California, Santa Barbara
 Case Western Reserve University
 University of Central Florida
 University of Chicago
 College of William and Mary
 University of Cologne
 University of Colorado at Boulder
 Colorado School of Mines
 University of Connecticut
 Cornell University
 University of Delaware
 University of Denver
 University of Florida
 Florida State University
 George Mason University

George Washington University
 Georgetown University
 Georgia Institute of Technology
 Hampton University
 Harvard University
 University of Hawai'i at Manoa
 University of Houston
 University of Illinois at Urbana-Champaign
 Indiana University
 University of Iowa
 Iowa State University
 Johns Hopkins University
 University of Kansas
 Lehigh University
 University of Leicester
 Louisiana State University
 University of Maryland
 Massachusetts Institute of Technology
 University of Michigan
 Michigan Technological University
 University of Minnesota
 Mississippi State University
 University of Nebraska-Lincoln
 University of New Hampshire
 University of New Mexico
 New Mexico State University
 New Jersey Institute of Technology
 New York University
 North Carolina A&T State University
 North Carolina State University
 Northwestern University
 Ohio State University
 University of Oklahoma

Oklahoma State University
 Old Dominion University
 Pennsylvania State University
 University of Pittsburgh
 Princeton University
 Purdue University
 Rensselaer Polytechnic Institute
 Rice University
 University of Rochester
 Rochester Institute of Technology
 Rockefeller University
 University of Sheffield
 University of Southern California
 Stanford University
 Stony Brook University, State University of New York
 Technion - Israel Institute of Technology
 Tel-Aviv University
 University of Tennessee
 Texas A&M University
 University of Texas at Austin
 University of Texas at Dallas
 University of Texas Medical Branch
 University of Toronto
 Utah State University
 Vanderbilt University
 University of Virginia
 Virginia Polytechnic Institute and State University
 University of Washington
 Washington University in St. Louis
 University of Wisconsin—Madison
 Yale University

USRA Institutes & Program Offices

DOE/Idaho National Laboratory

- ❖ Center for Space Nuclear Research

NASA Glenn Research Center

- ❖ National Center for Space Exploration Research on Fluids and Combustion (NCSER)

NASA Goddard Space Flight Center

- ❖ Cooperative Program in Space Sciences (CPSS)
- ❖ US Navy Astronomy Program
- ❖ National Center for Space, Earth, and Flight Science Education

NASA Headquarters

- ❖ NASA Institute for Advanced Concepts (NIAC) - Atlanta
- ❖ Center for Program/Project Management (CPMR)
- ❖ Earth Systems Science Education (ESSE)

NASA Ames Research Center

- ❖ Stratospheric Observatory For Infrared Astronomy (SOFIA)
- ❖ RIACS – Research Institute for Advanced Computer Science

NASA Marshall Space Flight Center

- ❖ NASA Faculty Fellowship Program
- ❖ NSSTC Astronomy Program
- ❖ Earth Systems Science Program
- ❖ Visiting Researcher Exchange & Outreach Program

NASA Jet Propulsion Laboratory

- ❖ Mars Flight Projects Intern Program

NASA Johnson Space Center

- ❖ Lunar Planetary Institute (LPI)
- ❖ Division of Space Life Sciences (DSLS)
- ❖ Space Operations/Education Programs (SOP)

NASA Langley Research Center

- ❖ Revolutionary Aerospace Systems Concepts – Academic Linkage (RASC-AL)

Education Mission & Approach

- ❖ Mandated as a bridge between the university research/education community and federal, state, and local government.
- ❖ Over 35 years of managing successful student research programs for U.S. Federal Government.
- ❖ Established structure of USRA Director EPO, Internal USRA Education Working Group, and Science and Engineering Education Council providing program coordination and integration
- ❖ Unique position of bringing scientific and technical *content* to research and education programs, projects, initiatives - utilizing researchers, managers, and educators through various *delivery* systems and mechanisms.
- ❖ Definition and implementation of *metrics* which support program evaluation and assessment of initiatives, providing both *formative and summative evaluation*.

Education - Strengths and Capabilities

❖ **USRA Education Strategic Plan comprised of...**

- 1) Robust, inclusive higher education-based science, technology, engineering, mathematics (STEM) research and education programs and projects;
- 2) Develop research and educational opportunities to fill the experiential learning need for diverse students and faculty populations – *education and training/development*;
- 3) Focus on pre- and in-service teacher training;
- 4) Develop educational programs for informal venues including libraries, science centers, museums, and communities.

❖ **Educational Partnerships, including...**

- NASA, DOE/Idaho National Laboratory, DOD Workforce Development/Space Education Initiatives, National Science Foundation (NSF), DOEd
- Smithsonian National Air and Space Museum
- National Space Grant Foundation and 52 Space Grant Consortium
- The Carnegie Institute
- IAF/Student Events & Outreach Committee (SEOC), ASEE, Society of Satellite Professionals Int'l, AIAA

Education/Public Outreach Initiatives

Robust, inclusive higher education-based science, technology, engineering, mathematics research and education programs and projects...

Related USRA Programs:

✓ **NASA Student Involvement Program (NSIP)**

A national program of competitions linking students in grades K-12 directly with NASA Vision for Space Exploration, Research, and Discovery. NSIP provides educators with instructional material and classroom-ready resources that support an investigation-based approach to science, math, technology, and geography education.

✓ **Texas High School Aerospace Scholars (HAS) Program**

A year-long educational experience affording U.S. high school students the opportunity to interact with engineers and scientists at the NASA Johnson Space Center. Students are encouraged to study mathematics, science, engineering, or computer science while interacting with mentors, teachers, scientists and engineers.

✓ **Revolutionary Aerospace Systems Concepts-Academic Linkage (RASC-AL)**

Annual NASA Forum that provides a venue for undergraduate/graduate teams to develop and present research design projects, in order to develop aerospace systems concepts and the associated technology requirements enabling NASA's Vision for Space Exploration.

Education/Public Outreach Initiatives - cont.

Engage minority and underrepresented students, educators, and researchers in research and education programs and initiatives...

Related USRA Programs:

- ✓ **Students for Achievements in Careers and Education (SPACE)**

Provides job opportunities for high school students from diverse backgrounds to work at NASA during their senior year, as well as providing economic support to stay in school and complete their high school education.

- ✓ **Texas Expedition Aerospace Scholars (TEAS) Program**

A pilot program with a goal to inspire a new and continuing awareness of STEM careers among under-represented high school communities in the rural and border regions of Texas.

- ✓ **Education and Training Cooperative (ETC)**

A two-year program providing students with an opportunity to 'learn and earn' while pursuing an Associate's Degree and working at NASA.

Education/Public Outreach Initiatives - cont.

Provide pre-service and in-service STEM teacher training and development...

Related USRA Programs:

✓ **Middle School Aerospace Scholars (MAS) Program**

Provide 8th grade teachers the opportunity to participate in a one-week summer workshop at NASA Johnson Space Center, followed by a series of distance learning events at their own schools. During the workshop, teachers learn to integrate NASA instructional materials into their own curriculum.

✓ **SOFIA Airborne Ambassadors – *Education Partnerships at 41,000 Feet***

Selection of approximately 200 educators each year to participate in one or more research flights. Educator training will provide hands-on, minds-on classroom activities that educators can take back to their schools and communities.

✓ **College and University Earth System Science Education for the 21st Century (ESSE 21)**

Collaborative education program offering small grants to engage an interdisciplinary community of faculty and scientists in the development of courses, curricula, and degree programs, and in the sharing of learning resources focused on the fundamental understanding and application of Earth System principles.

Recent Education Activities

- ❖ **DOE/ Idaho National Laboratory - Center for Space Nuclear Research (CSNR)** - Provides nuclear systems research experience to the future aerospace workforce, through experience-based curricula, tailored to deliver nuclear systems engineering education and research opportunities.
- ❖ **NASA/USRA Center for Program/Project Management Research (CPMR)** - Virtual center designed to engage universities in world-class research that addresses internationally significant problems in the discipline of Program/Project Management, for researchers, educators, and students (through Student Council).
- ❖ **National Center for Space, Earth, and Flight Science Education** – Develops and delivers educational programs and resources focused on Earth and space science, technology, and engineering utilizing a national network.
- ❖ **JPL Mars Flight Projects Intern Program** – Placement of science graduate students in U.S. Mars Flight Program Teams as Student Intern.

Summary

- ✓ **Responsibility to research, development, and education associated with space science and technology.**
- ✓ **Commitment to leading/fostering education programs and initiatives for all.**
- ✓ **Education programs, projects, and initiatives are based on methodology & approach utilizing..**
 - **Range and diversity of academic membership and participants – K-12 to postgraduate**
 - **Integration of *content, delivery, and assessment***
 - **Relations with public/private sponsors and partners**
- ✓ **Invitation to collaborate and partner in developing and implementing education initiatives**

www.usra.edu



APPENDIXES

USRA



USRA EDUCATION PROGRAMS

	K-6	Middle School	High School	Undergraduate	Graduate	Teachers	Professors	Researchers	Science	Mathematics	Engineering	Research	Public Outreach	Disadvantaged	Minorities
Cooperative Program in Space Sciences (CPSS)															
Summer Student Research Opportunities (SSRO)				•	•										
USRA scientist-led teacher workshops, posters, interactive lesson plans, etc.	•	•	•	•		•	•	•	•	•	•	•	•	•	•
Lab for High-Energy Astrophysics (LHEA)					•		•	•	•				•	•	
Center for Space Nuclear Research (2005)															
Projects in Nuclear Science and Engineering Systems			•	•	•		•	•	•		•	•	•	•	•
Division of Space Life Sciences															
Student/Teacher Workshops and Seminars	•	•	•	•		•			•				•	•	•
NASA Space Radiation Summer School					•			•	•			•			
Aerospace Medicine Grand Rounds & Continuing Education					•			•	•			•	•		
Space Operations/Education Programs Office (EPO)															
Student Programs for Achievements in Careers and Education (SPACE)			•										•	•	•
Education and Training Cooperative (ETC)				•									•	•	•
History Research Project (HRP)					•			•					•		
Middle School Aersospace Scholars (MAS) Program						•			•	•	•		•	•	•
High School Aerospace Scholars (HAS) Program			•			•			•	•	•		•	•	•
Texas Expedition Aerospace Scholars (TEAS) Program			•	•	•	•	•		•	•	•		•	•	•
NASA Student Involvement Program (NSIP)	•	•	•			•			•	•	•		•	•	•
Revolutionary Aerospace Systems Concepts-Academic Linkage (RASC-AL)				•	•		•		•	•	•		•	•	•
JPL Mars Flight Projects Intern Program				•	•				•		•	•	•	•	•



USRA EDUCATION PROGRAMS

	K-6	Middle School	High School	Undergraduate	Graduate	Teachers	Professors	Researchers	Science	Mathematics	Engineering	Research	Public Outreach	Disadvantaged	Minorities
Earth System Science Education (ESSE)															
College and University Earth System Science Education for the 21st Century (ESSE 21)			•	•	•	•	•	•	•			•	•	•	•
Journal of Earth System Science Education (JESSE)			•	•	•	•	•	•	•			•	•		
Earth Picture of the Day	•	•	•	•		•	•	•	•	•	•	•	•	•	•
Earth System Science in Huntsville															
Earth System Science Program (ESSP)	•	•	•	•	•	•	•	•	•			•	•		•
Visiting Researcher and Exchange Outreach Program (VREO)			•	•	•	•	•	•	•	•	•	•	•	•	•
Technology Development and Aerospace Environments Program (TDAE)			•	•	•		•	•	•		•	•	•		
Lunar and Planetary Institute (LPI)															
Explore! Fun with Science	•	•				•			•	•	•	•	•	•	•
South Central Organization of Researchers and Educators (SCORE)	•	•	•	•		•	•	•	•	•	•	•	•	•	•
Family Space Day	•					•			•				•		
Education Products and Services	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Sky Tellers: A Resource for Smaller Community and School Planetariums	•	•	•			•	•		•	•		•			•
LPI Summer Intern Program				•	•	•		•	•	•	•		•		
National Center for Space Exploration Research in Fluids and Combustion															
NCMR K-12 Educational Outreach	•	•	•			•			•	•	•		•	•	•
Teachers Guide, Publications & Exhibits	•	•	•			•			•	•	•		•	•	•
DIME High School Competition			•			•			•	•	•				
Microgravity Demonstrator	•	•	•			•			•	•	•		•	•	•
Internship & Sabbatical Program			•	•		•			•	•	•				
Workshops	•	•	•			•			•	•	•			•	•
Girl Scout Programs	•	•	•										•	•	•

USRA



USRA EDUCATION PROGRAMS

	K-6	Middle School	High School	Undergraduate	Graduate	Teachers	Professors	Researchers	Science	Mathematics	Engineering	Research	Public Outreach	Disadvantaged	Minorities
National Center for Space, Earth, and Flight Science Education (NC-SEFSE)															
Journey Through the Universe	•	•	•			•			•	•	•		•	•	•
Voyage - A Journey Through Our Solar System													•		
Messenger- Teacher Fellowship						•			•		•				
Family Science Night													•		
Teachable Moments in the News	•	•	•						•						
NASA Institute for Advanced Concepts (NIAC)															
NIAC Student Visions of the Future Program				•					•	•	•	•		•	•
NASA Faculty Fellowship Program (NFFP)															
NASA Research opportunities for higher education faculty							•	•	•	•	•	•		•	•
Research Institute for Advanced Computer Science (RIACS)															
Summer Student Research Program					•								•	•	
Visiting Scientists/Student Activities							•	•							
Seminars & Workshops									•		•	•	•		
Research Institute for Advanced Computer Science (RIACS)															
RIACS/Ames Summer Student Research Program (SSRP)				•	•				•	•	•	•		•	•
Stratospheric Observatory for Infrared Astronomy (SOFIA)															
Airborne Astronomy Ambassadors	•	•	•	•		•			•	•	•		•	•	•
Education Partners Program	•	•	•			•			•	•	•			•	•
Science & Literacy Program						•			•	•	•		•	•	•
SOFIA Visiting Educators						•			•	•	•			•	•
Web Site & Exhibits	•	•	•	•		•			•	•	•		•	•	•
Total Element Breakdown	20	20	28	22	19	30	17	18	42	29	33	21	38	32	33

Education Program Descriptions

Cooperative Program in Space Sciences (CPSS)

- **Summer Student Research Opportunities (SSRO)**
Undergraduate and graduate students are matched with civil service and contractor scientists at GSFC who agree to develop research-related projects, serve as mentors, and typically fund one or more students.
- **USRA Scientist-Led Education & Outreach Activities at GSFC Space Sciences Directorate**
Email query response rotation, teacher workshops, Internet and electronic resources. Examples include 5 science learning centers, Imagine the Universe Web Site, and Astronomy Picture of the Day.
- **Lab for High-Energy Astrophysics (LHEA)**
Education and public outreach activities as part of Office of Space Science mission – part of national OSS forums/themes and Broker/Facilitator activities.

Division of Space Life Sciences (DSLS)

- **NASA Space Radiation Summer School**
Graduate and post-doctoral research at NASA Space Radiation Laboratory
- **Student /Teacher Workshops and Lunch Seminars**
- **Aerospace Medicine Grand Rounds & Continuing Education**
Host periodic seminar component of NASA/UTMB Aerospace Medicine Residency Program, with real-time broadcasts to UTMB, NASA Headquarters, NASA JSC, NASA KSC, the USAF School of Aerospace Medicine, the US Army School of Aviation Medicine, and the Gagarin Cosmonaut Training Center in Star City.

Education Program Descriptions – cont.

Education Programs Office (EPO)

- **Students for Achievements in Careers and Education (SPACE)**
Provides job opportunities for high school students from diverse backgrounds to work at JSC during their senior year, as well as provide economic support to stay in school and complete their high school education.
- **Education and Training Cooperative (ETC)**
A two-year program providing students with an opportunity to ‘learn and earn’ while pursuing an Associate’s Degree and working at NASA.
- **History Research Project (HRP)**
Provides Research Trainees the opportunity to assist archivists to record the history of human space flight, and to make the results accessible to the public and government agencies. (Part of ETC Cooperative.)
- **Middle School Aerospace Scholars (MAS) Program**
Funded by the State of Texas, the Middle School Aerospace Scholars program gives Texas 8th grade teachers the opportunity to participate in a one-week summer workshop at Johnson Space Center followed by a series of distance learning events at their own schools. During the workshop, teachers learn to integrate NASA instructional materials into their own curriculum.
- **High School Aerospace Scholars (HAS) Program**
A year-long educational experience affording approximately 250 high school students an opportunity to interact with engineers and scientists at the NASA Johnson Space Center. Students are encouraged to study mathematics, science, engineering, or computer science while interacting with mentors, teachers, scientists and engineers.
- **Texas Expedition Aerospace Scholars (TEAS) Program**
A pilot program with a goal to inspire a new and continuing awareness of STEM careers among under-represented high school communities in the rural and border regions of Texas.

Education Program Descriptions – cont.

Education Programs Office (EPO) (cont'd)

- **NASA Student Involvement Program (NSIP)**

A national program of competitions linking students in grades K-12 directly with NASA's diverse and exciting mission of exploration, research, and discovery. NSIP provides educators with instructional material and classroom-ready resources that support an inquiry-based approach to science, math, technology, and geography education.

- **Revolutionary Aerospace Systems Concepts-Academic Linkage (RASC-AL)**

Annual LaRC Forum that provides a venue for undergraduate and graduate teams to develop and present research design projects, in order to develop aerospace systems concepts and the associated technology requirements enabling future NASA missions.

Earth System Science Education (ESSE)

- **College and University Earth System Science Education for the 21st Century (ESSE 21)**

Collaborative education program offering small grants to engage an interdisciplinary community of faculty and scientists in the development of courses, curricula, and degree programs, and in the sharing of learning resources focused on the fundamental understanding and application of Earth System principles.

- **Journal of Earth System Science Education (JESSE)**

Peer-reviewed electronic journal aiming to publish Earth System science education articles and learning resources. Supported by NSF National Science Digital Library Program.

- **Earth Picture of the Day**

A daily picture related to Earth System Science, with captions and web links.

Education Program Descriptions – cont.

Earth System Science Program in Huntsville

- **Earth System Science Program (ESSP)**
Work with NASA/MSFC scientists to host various topical workshops; occasionally host student researchers. Also work with NSSTC scientists in support of the Globe Program.
- **Visiting Researcher and Exchange Outreach Program (VREO)**
Hosts student researchers and conduct topical workshops focused on research activities; occasionally education-based themes.
- **Technology Development and Aerospace Environments Program (TDAE)**
Work with NASA/MSFC engineers to host various topical workshops; develop capability and success story materials; occasionally host student researchers.

Lunar Planetary Institute (LPI)

- **Explore! Fun with Science**
Explore! is a cooperative project designed to bring space science materials and hands-on activities into informal education venues. Explore! Fun with Science is presented to librarians, teachers, home school associations and youth leaders through sponsored day long workshops.
- **South Central Organization of Researchers and Educators (SCORE) – NASA Broker/Facilitator**
Focuses on a specific geographical region, to create and nurture partnerships between space scientists and educators to carry out highly leveraged E/PO activities; facilitate the development and dissemination of Space Science E/PO products and materials.

Education Program Descriptions – cont.

Lunar Planetary Institute (LPI) (cont'd)

- **Education Products and Services**

The LPI produces a wide array of education products to serve the science education community and the general public. These products include thematic slide sets, CD- ROMS, and scientific instruments as well as printed material. The LPI serves the K-12 teachers/students and the community at large through efforts that include seminars, speakers bureau, workshops, curriculum materials and research of imagery and other resources for the media and film industry.

- **Sky Tellers: A Resource for Smaller Community and School Planetariums**

Based on Native American culture, a space science and astronomy resource designed for small planetariums, museums, libraries, classrooms, youth groups, and home school settings. The myths and their accompanying scientific explanations are presented in audio CD format, as told by Native American Master Story tellers and prominent Earth/space scientists.

- **LPI Summer Intern Program**

The LPI/JSC Summer Intern Program places undergraduates/graduates with researchers in planetary and terrestrial studies as mentors in order to help focus career goals and encourage the development of planetary scientists.

National Center for Space Research in Fluids and Combustion (NCSER)

- **NCMR K-12 Educational Outreach**

K-12 educational products, briefings, posters, brochures, student glove box

- **Teachers Workshops, Guides, Publications & Exhibits**

- **Dropping In a Microgravity Environment (DIME) High School Competition**

- **Internship & Sabbatical Program**

Education Program Descriptions – cont.

National Center for Space, Earth, and Flight Science Education (NC-SEFSE)

- **Journey Through the Universe** takes STEM education to underserved communities. The District of Columbia is designated the national test-bed, supplying 800 presentations given by space science researchers and educators reach 36,000 students in 250 schools, and 8,000 families across 10 communities.
- **Voyage:** A Journey through the Solar System is a space science exhibition program that includes permanent placement of a scale model Solar System on the National Mall in Washington, DC and sites around the world.
- **The Messenger Program** – is a national teacher training and community-based resource dissemination initiative based on the NASA MESSENGER spacecraft mission to the planet Mercury.
- **Family Science Night at the Smithsonian’s National Air and Space Museum** provides families a behind the scenes educational commentary in an after hours tour of the museum.
- **Teachable Moments in the News** provides a free, online quarterly newsletter for teachers to use in building classroom lessons around current space events.

NASA Institute for Advanced Concepts (NIAC)

- **NIAC Student Visions of the Future Program**
Undergraduate and student teams are selected to develop visionary advanced concepts.

NASA Summer Faculty Research Opportunities (NSFRO)

Provide faculty, who have limited NASA research experience, an opportunity to engage in research at one of the participating NASA Centers or the Jet Propulsion Laboratory (JPL).

Education Program Descriptions – cont.

Research Institute for Advanced Computer Science (RIACS)

- **Summer Student Research Program**
Students are selected for a 10-week visit during the summer for identified technical areas.
- **Visiting Scientist/Student Activities**
- **Seminars and Workshops**

Stratospheric Observatory for Infrared Astronomy (SOFIA)

- **Airborne Astronomy Ambassadors**
Once SOFIA is fully operational, approximately 200 educators will be selected each year to participate in one or more research flights. Training will prepare educators for the flights, during which they will work alongside scientists as they conduct astronomical research. Educator training will provide hands-on, minds-on classroom activities that educators can take back to their schools and communities. And, SOFIA Airborne Ambassadors will be prepared to share their experiences with other teachers and the public.
- **Education Partners Program**
Program-affiliated volunteers partnered with local teachers
- **Science & Literacy Program**
- **SOFIA Visiting Educators**
- **Web Site & Exhibits**