



SCIENCE BYTES

FEBRUARY 13, 2008 VOLUME 9

In this Issue:

1. Student Travel Grant Opportunity
2. Newsletter of the AK DEED
3. Free Weekly Science Puzzlers
4. New Education Materials at NASA.gov
5. BioGENEious NW Regional Challenge
6. IGES Announces 2008 Thacher Scholar Award
7. Aerospace Career Video
8. Sixteen Opportunities for Teachers

Student Travel Grant Opportunity

The Gerald A. Soffen Memorial Fund is pleased to announce the first of two 2008 Travel Grant application opportunities for undergraduate and graduate students pursuing studies in fields of space science and engineering.

The Travel Grants, in the amount of \$500, enable student recipients to attend professional meetings to present their research. The first 2008 Travel Grant application deadline is April 1, 2008.

Jerry Soffen, a biologist by training, led a distinguished career in NASA, including serving as the Project Scientist for Viking and as an architect for the NASA Astrobiology Institute. The Travel Grant continues Jerry's dedication to educating and involving future generations in space science and engineering pursuits. The electronic application materials and instructions are located on the Soffen Fund website:

<http://nasa-academy.org/soffen/travelgrant/>

Questions regarding the application or application process may be sent to:

<mailto:travelgrant@nasa-academy.org>>travelgrant@nasa-academy.org

Michelle Minitti

Soffen Fund Committee

Newsletter of the Alaska Department of Education & Early Development

Web site www.eed.state.ak.us

<http://www.eed.state.ak.us/>

To see back editions, or to subscribe or unsubscribe to this newsletter, go to the following link:

www.eed.state.ak.us/DOE_News/InfoExch/

<http://www.eed.state.ak.us/DOE_News/InfoExch/> .

To unsubscribe, click on "subscribe now," then on option No. 2 and you will see an unsubscribe option.

Free Weekly Science Puzzlers

Each week, share with your students a FREE thought-provoking science puzzler, drawn from the award-winning Cogno science board games. You'll receive a weekly e-mail with a fully illustrated one-page puzzler about astronomy, forces & motion and/or life sciences, ready to be photocopied for students. The e-mail message includes the answer and explanation, allowing you to facilitate as much or as little discussion as you like. Recommended for grades 3-8. For information, samples, and to register, see www.cogno.com/puzzlers <<http://www.cogno.com/puzzlers>> .

Why free? Cogno's mission is to "inspire children to think critically and imaginatively." This mission is at the root of every effort we make, and these puzzlers are part of our effort to further our mission and help raise awareness for Cogno.

Thanks so much!

Jermaine Duffis

Content Development Associate

Cogno Products

201 S. Central Ave., Suite 311

St. Louis, MO 63105

314.721.9199 314.721.9299 Fax

www.cogno.com <<http://www.cogno.com/>>

New Education Materials Available at NASA.gov

The Educational Materials section of NASA's Web site offers classroom activities, educator guides, posters and other types of resources that are available for use in the classroom. Materials are listed by type, grade level and subject. The following items are now available for downloading.

Planetary Nebula NGC 2440 Lithograph -- Grades 11-12

The Planetary Nebula NGC 2440 Lithograph is now available in the Lithographs section of the Educational Materials area.

The front of the lithograph features an image of NGC 2440, a planetary nebula. Background information about the life cycle of stars is on the back of the lithograph. The lithograph includes a Level One Inquiry activity entitled In Search of ... Stellar Death, in which students learn to determine the end of the life cycles of different types of stars.

Download the Planetary Nebula NGC 2440 Lithograph from the following location:

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Planetary_Nebula_NGC_2440.html

Additional Video Learning Clips Added

The educational video clips listed below have been added to the Videos section of the NASA Educational Materials site. Click on the link below each list of video clips to access the videos online.

From the Living and Working in Space series, astronauts on the space shuttle compare living on Earth to living in space in these videos targeting students in grades K-4.

Titles in this series:

-- Gravity on Earth Versus Gravity in Space: What's the Difference?

-- Living Aboard a Space Shuttle, a Home Away From Home

-- A Day Aboard the Space Shuttle

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Gravity_on_Earth_Versus.html

Gravity_on_Earth_Versus.html

Designed for students in grades 5-8, the Assignment Spacelab series shows how the unique microgravity environment of Earth orbit is used for scientific experiments and how the rules of scientific experimentation and safety that apply to research on Earth also apply to astronauts in space. Titles in this series:

-- Why Controlled Experiments Are Important on Earth and in Space

-- The Process of Forming a Hypothesis

-- Using the General Purpose Work Station in Space

-- Identifying, Labeling, and Measuring for Experiment Safety

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Why_Controlled_Experiments.html

Targeting students in grades 9-12, the Flight Testing Newton's Laws NASA Education Series shows how Newton's three laws of motion and advanced mathematics apply to the real world of flight testing an aircraft. Titles in this series:

-- Introduction to Newton's Three Laws, Lesson 1

-- The Law of Inertia: Newton's First Law

-- Force Equals Mass Times Acceleration: Newton's Second Law

-- The Law of Action and Reaction: Newton's Third Law

-- Weight and Balance, Lesson 2

-- Lift and Rate of Change of Momentum, Lesson 3

-- Drag, Lesson 4

-- Thrust, Lesson 5

-- Take Off, Lesson 6

-- Climb and Descent, Lesson 7

-- Cruise, Lesson 8

-- Landing, Lesson 9

-- The Landing: Approach

-- The Landing: Flare

-- The Landing: Rollout

-- The Landing: Summary

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Introduction_to_Newtons_Laws.html

Introduction_to_Newtons_Laws.html

Relive the first moon landing with Flight of Apollo 11 (The Eagle Has Landed) series of video clips. For students in grades 5-12, this series uses footage and photos from the 1969 adventure to give an overview of the historic event. Titles in this series:

-- Historical Quotations About Space Exploration

-- July 11, 1969: Apollo 11 Lifts Off

-- Lunar Module in Space

-- Astronauts Work Aboard the Lunar Module

-- Destination: The Moon

-- Astronauts Armstrong and Aldrin Arrive on the Moon

-- Leaving the Moon, Eagle Heads for Columbia

-- Mission Ends Safety, Astronauts Head for Debriefing

-- Mission Complete: Review and Evaluation

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Historical_Quotations.html

Historical_Quotations.html

BioGENEious NW Regional Challenge Seeks Alaskan Entrants

Dear Alaska Science and Engineering Fair:

The Northwest Association for Biomedical Research has agreed to help coordinate the 2008 sanofi-aventis North-

west Regional BioGENEius Challenge. We are currently seeking Alaskan HS students interested in bio related research. Please view the attached document for more information. You can also visit the website at: <http://biotechinstitute.org/programs/NorthwestRegionalBioGENEiusChallenge.html>

Please advertise his event to your students, especially those interested in Science Fairs. The event will take place this year on Saturday, April 19 in Seattle, WA. All state winners will receive \$400 in travel reimbursement and Regional winners will win an all expense paid trip to attend the National Conference and a chance to win cash prizes and international recognition.

I look forward to learning how to best promote this opportunity among your participants. Any information you can provide is most welcome.

Best Regards,

Evelyn Laminack

Coordinator of Student Programs

Northwest Association for Biomedical Research

ph 206-957-3337 x 304

fx 206-282-2214

elaminack@nwabr.org

www.nwabr.org <<http://www.nwabr.org>>

"Promoting the understanding of biomedical research and its ethical conduct."

IGES Announces 2008 Thacher Scholars Award

\$3,500 in Prizes Available; Entries Must Be Received by April 4, 2008

Arlington, Va.-In an effort to engage the next generation of Earth scientists, the Institute for Global Environmental Strategies (IGES) is now accepting entries for the 2008 Thacher Scholars Award, to be given to secondary school students demonstrating the best use of geospatial tools or data to study our home planet.

Eligible tools and data include satellite remote sensing, aerial photography, geographic information systems (GIS), and the Global Positioning System (GPS). Entries can be submitted by individuals or teams, either by hard copy or by emailed PDF.

Entries must be received by April 4, 2008.

U.S. students in grades 9-12, including U.S. citizens attending schools in foreign countries, are eligible to receive cash awards in the amount of \$2,000 for first place, \$1,000 for second place and \$500 for third place. For each winning student or team, a teacher or designated adult "coach" will receive a \$200 gift card to Amazon.com.

Entries must not exceed 20 pages, and will be judged by IGES staff based on their scientific and technical accuracy; creativity and originality; quality of presen-

tation; thoroughness of research, methods and procedures; and demonstration of knowledge gained.

Winners will be announced by May 9, 2008.

The Thacher Scholars Award was founded in honor of former IGES board member Peter S. Thacher, an internationally recognized leader in promoting the use of satellite remote sensing. During a distinguished career, he served as deputy director of the United Nations Environment Program, as an advisor to NASA and, at the time of his death in 1999, as president of the Earth Council Foundation-U.S. Geospatial technologies have numerous uses in science research, ranging from climate prediction to archaeology. They can improve human understanding of the Earth system, including interactions among the atmosphere, biosphere, geosphere and hydrosphere. And they can improve quality of life by supporting weather prediction, natural hazards monitoring, transportation, land-use planning, agriculture, coastal management, and public health and emergency response.

For more information on the Thacher Scholars Award, including contest rules, judging rubrics, questions to help guide student projects, and a list of related resources, please visit:

<http://www.strategies.org/ThacherScholars>
CONTACT

Dan Stillman

Institute for Global Environmental Strategies

(703) 312-7138 (Phone)

(703) 312-8657 (FAX)

Email: dan_stillman@strategies.org

Aerospace Career Video

This link takes you to a really good 8 1/2 minute video about aerospace careers. 2 female and one male talk about their careers. Thadd talks about struggling with math and science in high school and now he's an aerospace engineer who writes programs for controlling UAVs.

<http://www.aia-aerospace.org/launch/resources/video.cfm>
Angie Slingluff

Aviation and Space Education Coordinator

FAA Alaska Region AAL-30

907 271-5228

Sixteen Opportunities for Teachers

Opportunity #1

Two-day summer workshop for teachers at UAF.

Understanding the Role of Permafrost in a Rapidly Warming Climate (K-12 Teachers) June25-27. Follow link for more information.

<http://www.nicop.org/courses.html>

Opportunity #2

The Lunar and Planetary Institute invites you to participate in: Floods and Flows: Exploring Mars Geology on Earth

A NASA-sponsored field-based workshop, 13-19 July 2008 for intermediate grade level science teachers (other educators are invited)

Spend the week with planetary scientists visiting the site of Ancient Glacial Lake Missoula and tracing its flood waters through Montana, Idaho, and into Washington. Examine the geologic evidence for catastrophic flooding, as well as for past volcanism in this region. From these field experiences and accompanying classroom activities, participants will build an understanding of surface processes on Earth, including water flow, volcanism, glaciation, and sedimentation. Attendees will extend their understanding to interpret what the features on the surface of Mars suggest about past environments and history of the red planet.

The experience will be divided between the field and lab, where participants work with classroom-tested, hands-on inquiry based activities and resources that can be used to enhance Earth and space science teaching in the classroom. Participants receive lesson plans, supporting resources, and presentations. A limited number of grants are available to cover registration.

Join us for hands-on, real-world experience to enhance your teaching about Earth and space science — and the connections between these exciting fields of research!

For more information about costs and logistics, and to apply for the experience, please visit:<http://www.lpi.usra.edu/education/fieldtrips/2008/>
<<http://www.lpi.usra.edu/education/fieldtrips/2008/>>

Applications are due April 7, 2008 Participants will be notified of their acceptance by April 15, 2008.

Opportunity #3

Two new multimedia items have been added to the NASA.gov Web site. These resources can be used to supplement your class's participation in the Engineering Design Challenge: Lunar Plant Growth Chamber.

Plant Growth Chamber Photo Gallery

Follow the growth of cinnamon basil seeds on the International Space Station with a gallery of images documenting the experiment from its very beginning. The gallery features images of astronaut Clayton Anderson's 20-day in-orbit experiment, including close-up views of the plants' growth. Students participating in the NASA Engineering Design Challenge: Lunar Plant Growth Chamber can compare the growth of the plants on the

space station with the growth of plants in their own growth chambers.

<http://www.nasa.gov/audience/foreducators/plant-growth-gallery-index.html>

Growing the Future: Plants in Space Video

Watch as the crew of space shuttle mission STS-118 explains plant growth chambers they are delivering to the International Space Station. To help NASA, the astronauts invite students to participate in the plant growth chamber experiment. In the U.S. lab of the International Space Station, Expedition 15 Flight Engineer Clayton Anderson prepares the plant growth chambers for a 20-day plant growth experiment. Viewers observe how the tiny plants grew before the experiments were returned to Earth on shuttle mission STS-120.

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Growing_the_Future_Plants_in_Space.html

Opportunity #4

Teacher Scholarships Available for Summer Teacher Trainings in Denali

Application Deadline: February 24

Application Information: Alaska Geographic Institute Scholarship Page

Contact Information: courses@murieslc.org, (907) 683-1269, or (888) 688-1269

The Murie Science and Learning Center is awarding scholarships to teachers for accredited trainings and seminars this summer in Denali National Park. These small-group field courses use Denali as their classroom and will explore science, research, and educational MSLC Teacher Trainings opportunities. Most courses are three days in length. Participants stay at a remote field camp and explore the park by vehicle and hiking excursions. Professional development credit (1-3 credits) is made available through the University of Alaska. For information about the courses and application process please visit the Murie Science and Learning Center or Alaska Geographic. The application deadline is February 24, 2008.

The Murie Science and Learning Center provides research, discovery, and learning opportunities within northern Alaska national parks to promote appreciation and caring for our national and cultural heritage.

Alaska Geographic (formerly known as the Alaska Natural History Institute) offers accredited Field Seminars and Teacher Trainings through the MSLC as the original location of its now-statewide Institute.

Opportunity #5

GET READY FOR 2008 SUN-EARTH DAY! (MARCH 20)

Sun-Earth Day is comprised of a series of programs and events that occur throughout the year culminating with a celebration on or near the spring equinox. The 2008 Sun-Earth Day will be March 20. Register now to receive a monthly update about Sun-Earth Day events and resources at

<http://sunearthday.nasa.gov/registration/login.php>. For more information and multimedia resources designed for formal and informal education, visit <http://sunearthday.nasa.gov/2008/index.php>.

Opportunity #6

ANTARCTIC QUEST CHALLENGE FOR GRADES 5-14 March - May 2008

NASA Quest Challenges are free Web-based, interactive explorations designed to engage students in authentic scientific and engineering processes related to issues encountered daily by NASA personnel.

In this challenge, students become scientists and propose Antarctic research using a new tool called LIMA – Landsat Image Mosaic of Antarctica. Students will develop a research question and debate the value of studying the chosen Antarctic feature. Registration is expected to begin in March 2008.

LIMA is the first true-color high-resolution satellite view of the Antarctic continent enabling everyone to see Antarctica as it appears in real life. This new view of Antarctica is revolutionizing Antarctica research by providing landscape-scale views and data on the entire continent that were not previously available. The LIMA web site is designed as part of the International Polar Year to familiarize people with Antarctica, to explore the richness of its features, to learn about why Antarctica matters to us all, and to explain and demonstrate how scientists use satellite imagery to study the continent. For more information, visit:

<http://quest.nasa.gov/challenges/lima/about.html>. LIMA was developed by NASA, US Geological Survey and the British Antarctic Survey, with support from NSF.

Opportunity #7

2008 PENN STATE SCIENCE WORKSHOPS FOR EDUCATORS

Stipend Notification: March 21, 2008

Application Deadline: May 31, 2008

Choose from six different content area workshops, designed to meet classroom curriculum requirements. Grants provide all participants with a private room in the

newly-built Brill Hall, reimbursements for travel costs up to \$100, breakfast in the dining commons, and an allotment for lunches and dinners. In addition, tuition subsidies are available for all of the workshops on a competitive basis. Depending upon funding availability, additional tuition subsidies may be provided after March 21.

2008 Workshops:

--Exploring Renewable Energy Technologies and the Materials that Make it Happen (NEW)

--Earth's History: Interaction between life and the environment (NEW)

--Extreme Particle Astrophysics

--Evolution - How important is it to a good science education?

--Telescopes: The Tools of Astronomical Inquiry (NEW)

--Black Holes: Gravity's Fatal Attraction (NEW)

The workshops are an outreach program of NASA's Pennsylvania Space Grant Consortium, the Eberly College of Science, the College of Earth and Mineral Sciences, the Penn State Astrobiology Research Center, NASA Astrobiology Institute, the NSF-funded Penn State Materials Research Science and Engineering Center, and NASA. For more information and the on-line application, visit <http://teachscience.psu.edu>.

Opportunity #8

FLOODS AND FLOWS: EXPLORING MARS GEOLOGY ON EARTH – JULY 13-19

Applications due April 7

This NASA-sponsored field-based workshop is designed by the Lunar Planetary Institute primarily for middle school science teachers. Applications are also welcome from other educators, including pre-service teachers, informal educators, education specialists, early college instructors, and junior college instructors.

Participants will spend the week with planetary scientists visiting the site of Ancient Glacial Lake Missoula and tracing its flood waters through Montana, Idaho, and into Washington. From these field experiences and accompanying classroom activities, participants will build an understanding of surface processes on Earth, including water flow, volcanism, glaciation, and sedimentation. Attendees will extend their understanding to interpret what the features on the surface of Mars suggest about the past environments and history of the red planet.

A limited number of grants are available to cover the registration fee. Participants will be notified of their acceptance by April 15, 2008. For more information visit: <http://www.lpi.usra.edu/education/fieldtrips/2008/>.

Opportunity #9

2008 ANNUAL MEETING OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC

May 31-June 4, St. Louis

Education and outreach professionals will gather at the 2008 ASP meeting to discuss international, regional and local programs for the International Year of Astronomy in 2009. This special event celebrates the 400th anniversary of the astronomical telescope. If you are interested in planning activities in 2009, this meeting provides an opportunity to learn what organizations are proposing and to coordinate ideas with colleagues around the world. Workshops will demonstrate and develop techniques for reaching a wide range of audiences. For more information, visit

<http://www.astrosociety.org/events/meeting.html>.

Opportunity #10

GLOBE AT NIGHT CAMPAIGN

Feb. 25 – March 8, 2008

2008 marks a monumental shift in human history when more than half the people on Earth are expected to be living in cities. Because of the ambient light of urban landscapes, many city dwellers have never seen a sky full of stars. GLOBE at Night is designed to aid teaching about the impact of artificial lighting on local environments and the ongoing loss of a dark night sky as a natural resource for much of the world's population.

Participation is free and does not require any special training or instruction. The GLOBE at Night Web site will provide all the information needed to participate, including instruction guides for teachers, students and parents. For more information, go to:

<http://www.globe.gov/fsl/html/templ.cgi?glbatnt08&lang=en>

<<http://www.globe.gov/fsl/html/templ.cgi?glbatnt08&am p;lang=en>> .

Opportunity #11

MY NASA DATA SUMMER WORKSHOP 2008

June 22-27, 2008, Hampton, Va.

Application Deadline April 9, 2008

NASA Langley Research Center will host a hands-on workshop designed for educators of grades 6-12. The workshop will focus on using NASA Earth system science data sets developed for the pre-college education community as part of the MY NASA DATA program. Participating teachers will explore topics in Earth system science (especially atmospheric science), educational application of data sets and hands-on classroom activities. They will attend lectures and tours led by scientists. Par-

ticipants will also explore how the data sets can be used to enhance their curriculum and how students can utilize these data for inquiry-based learning and research. A major component of the workshop will be to develop lessons incorporating one or more data sets.

For more information, go to:

<http://mynasadata.larc.nasa.gov/workshop.html>.

Opportunity #12

NASA UNVEILS COSMIC IMAGES BOOK IN BRAILLE FOR BLIND READERS

"Touch the Invisible Sky" is a 60-page book with color images of nebulae, stars, galaxies and some of the telescopes that captured the original pictures. Each image is embossed with lines, bumps and other textures. These raised patterns translate colors, shapes and other intricate details of the cosmic objects, allowing visually impaired people to experience them. Braille and large-print descriptions accompany each of the book's 28 photographs, making the book's design accessible to readers of all visual abilities.

The book contains spectacular images from the Hubble Space Telescope, Chandra X-ray Observatory, Spitzer Space Telescope and powerful ground-based telescopes. The celestial objects are presented as they appear through visible-light telescopes and different spectral regions invisible to the naked eye, from radio to infrared, visible, ultraviolet and X-ray light.

"Touch the Invisible Sky" was written by Noreen Grice of You Can Do Astronomy LLC and the Boston Museum of Science, with Simon Steel, Harvard-Smithsonian Center for Astrophysics, and Doris Daou, NASA Headquarters. It will be available to the public through a wide variety of sources, including NASA libraries, the National Federation of the Blind, Library of Congress repositories, schools for the blind, libraries, museums, science centers and Ozone Publishing. For more information:

<http://hubblesite.org/newscenter/archive/releases/2008/05/full>.

Opportunity #13

SPACE MATH PROBLEMS OF THE WEEK

<http://spacemath.gsfc.nasa.gov/>

Problem 116: The Comet Encke Tail Disruption Event (Grades: 8-10) On April 20, 2007 NASA's STEREO satellite captured a rare impact between a comet and the fast-moving gas in a solar coronal mass ejection. In this problem, students analyze a STEREO satellite image to determine the speed of the tail disruption event. [Skills:

time calculation; finding image scale; calculating speed from distance and time]

Problem 117: CME Kinetic Energy and Mass (Grades: 8-10) Coronal mass ejections (CMEs) are giant clouds of plasma released by the sun at millions of kilometers per hour. In this activity, students calculate the kinetic energy and mass of several CMEs to determine typical mass ranges and speeds. Students will use the formula for kinetic energy to fill-in the missing entries in a table. They will then use the completed table to answer some basic questions about CMEs. [Skills: time calculation; Evaluating a simple equation; solving for variables]

Problem 118: STEREO-An Application of the Parallax Effect (Grades: 8-10) The STEREO mission views the sun from two different locations in space. By combining this data, the parallax effect (the apparent motion of an object against a distant background, as a result of a shift in perspective) can be used to determine how far above the solar surface various active regions of solar storms and coronal mass ejections are located. Students use the Pythagorean Theorem, a bit of geometry, and some actual STEREO data to estimate the height of Active Region AR-978. [Skills: Pythagorean Theorem; square-root; solving for variables]

Opportunity #14

AAAS Leadership in Science Education Prize

The American Association for the Advancement of Science (AAAS) is now accepting nominations for the 2008 AAAS Leadership in Science Education Prize for High School Teachers. The \$1,000 prize honors a high school science teacher who has contributed to the AAAS goal of advancing science education by developing an innovative and effective strategy, activity, or program. For full details about the prize and to obtain the nomination and application forms, visit

http://www.aaas.org/aboutaaas/awards/hs_scied_leadershi p.

For more information, contact AAAS Project 2061's Lester Matlock at lmatlock@aaas.org. Deadline: March 2, 2008.

The American Geological Institute (AGI) and the AGI Foundation have announced creation of the Edward C. Roy, Jr. Award for Excellence in Earth Science Teaching. Given annually, this award recognizes one classroom teacher from kindergarten to eighth grade for leadership and innovation in Earth science education.

The winner will receive a \$2,500 prize and an additional grant of \$1,000 to enable the recipient to attend an AGI member society conference. To be eligible for this year's competition, applications must be postmarked by March 1.

This award is named in honor of Dr. Edward C. Roy, Jr., a past president of AGI, who was a strong and dedicated supporter of Earth science education. To learn more, visit

<http://www.agiweb.org/education/awards/ed-roy/>.

Opportunity #15

Journey through the Universe Program National Center for Earth and Space Science Education

Take your entire community—thousands of students, their teachers, their families, and the public—on a Journey through the Universe.

The National Center for Earth and Space Science Education offers the Journey through the Universe program to communities across the nation—to provide an authentic window on science as a human endeavor, using sustainable programming designed to both inspire...and educate.

Journey offers—

- Packages of lessons customizable to your standards of teaching and learning, and a diverse suite of training programs for your teachers.
- Scientists and engineers from across the nation visiting thousands of your students—one classroom at a time—providing an authentic and very personal window on the process of scientific discovery, and serving as role models and heroes to the next generation.
- Programs designed for family learning, engaging parents in the education of their children, and launching families on their own personal journeys of discovery.
- A framework for partnership between school districts, science centers, universities, civic and business organizations, and the public—all stakeholders in educational success at the local level.
- Programming designed for sustainability, with ownership by the community's Local Team.
- Customizable assessment of all programming.
- National resources provided on an ongoing basis.
- Pricing on a strictly cost recovery basis, and we can help you identify organizations in your area that might be interested in underwriting the program.

What the human race knows about our world and the greater Universe is used to inspire the next generation of scientists and engineers through interactions with the

current generation; give teachers the tools and training to conduct powerful lessons in the classroom that are deeply relevant to the science curriculum; and provide venues for family learning where parents and their children learn together.

Audiences: Journey programming is for grade K-12 students, their teachers, and their families, is fully customizable to your community's needs in space and Earth science education, and offers broad content. Programming can focus on a specific grade level(s), or be implemented K-12; and can be implemented across an entire school district, within one region of a district, or in rural areas across several school districts. It's your program, and you design it.

Contact: Dr. Harri Vanhala; 410-740-6241; hvanhala@usra.edu if you would like a 'test-bed- program on a small scale.

Take the journey! Visit:

<http://journeythroughtheuniverse.org>

Download a program overview at:

http://journeythroughtheuniverse.org/downloads/program_overview.pdf

Opportunity #16

National Parks Seek Teacher Rangers

National parks enrich the lives of many in this nation. They provide access to the powerful ideas, values, and meanings associated with the remarkable cultural, natural, and recreational heritage of the United States. The National Park Service (NPS) strives to provide opportunities for all Americans to connect to their national heritage through the national parks. However, these opportunities are lacking for some - often due to a variety of social and economic factors.

The Teacher to Ranger to Teacher (TRT) Program offers a solution, by linking National Park units with teachers from low income school districts. Under this program, selected teachers spend the summer working as park rangers, often living in the park. They perform various duties depending on their interests and the needs of the park, including developing and presenting interpretive programs for the general public, staffing the visitor center desk, developing curriculum-based materials for the park, or taking on special projects. Then, during the school year, these teacher-rangers bring the parks into the classroom by developing and presenting curriculum-based lesson plans that draw on their summer's experience. In April, during National Park Week, teacher-rangers wear their NPS uniforms to school, discuss their summer as a

park ranger, and engage students and other teachers in activities that relate to America's national parks. For additional information about the Teacher Ranger program go to <http://www.nps.gov/wupa/forteachers/trt.htm>.
