



SCIENCE BYTES

NOVEMBER 3, 2009 VOLUME 12

This is an information exchange that is available to all teachers in the Anchorage School District. Please read and then DO it!

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NSTA Conferences 2009-2010

March 17-20, 2010 Philadelphia, PA

Science Olympiad

March 20, 2009 Teeland & Mat-Su Career and Tech HS

Alaska State Science & Engineering Fair

March 26-28, 2010 Begich Middle School

NASA Announces Waste Limitation Management and Recycling Design Challenge Grades 3-8

NASA is inviting students in grades 5-8 to participate in the Waste Limitation Management and Recycling Design Challenge. The challenge uses real-world scenarios that meet science and mathematics content standards. Students can participate in a formal, informal or home-school setting.

Teams of up to six students will design a water recycling system for the unique environment of the moon. Teams will then test their system on a simulated wastewater stream. Proposals and results are due **Feb. 1, 2010**.

The winning teams will be announced in May 2010. The top three teams will receive awards. The first place team will receive an expense-paid trip to NASA's

Kennedy Space Center in Florida. During the winning team's visit to Kennedy, students will gain firsthand knowledge about NASA's missions, receive behind-the-scenes tours of NASA's launch facilities, and learn about future aerospace and engineering careers.

For more information and contest rules, please visit <http://wlmr.nasa.gov/>.

On **Oct. 28, 2009**, Dr. Jay Garland will be hosting a webcast tutorial for educators on the WLMR design challenge from 4-5 pm EDT. The presentation will provide an overview of the contest objectives and schedule, demonstrate methods students will use to create and analyze the wastewater, and answer questions from the audience. The webcast can be accessed at <http://dln.nasa.gov>.

Also available online is the **Waste Limitation Management and Recycling Design Challenge Educator Guide**. This guide is a starting point for middle school students to research and answer the challenging questions of how to maintain human habitations on the moon and other planets in the solar system. The guide focuses specifically on the need for water recycling. The guide includes background information on topics relating to the moon, Earth's water cycle and water recycling. Several basic classroom activities on water recycling are also included.

The guide is available for downloading at http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/WLMR_Guide.html.

Questions about the Waste Limitation Management and Recycling Design Challenge should be directed to Jay Garland at jay.l.garland@nasa.gov.

Project Dragonfly: Application Open for Graduate Programs

OXFORD, Ohio - Miami University's Project Dragonfly is accepting applications now for its 2010 graduate field courses and master's programs offering international field and conservation studies in Africa, Asia and the Americas.

Each accepted applicant is awarded a tuition scholarship covering 2010 field course tuition, equivalent to \$3,100 in-state and \$7,100 out-of-state. Award recipients are responsible for travel and field costs.

The deadline to apply is Thursday, January 28, 2010.

Created by Dragonfly and the Cincinnati Zoo & Botanical Garden, Earth Expeditions graduate courses and the Global Field Program (GFP) Master's degree bring together graduate students, scientists, educators and community leaders at critical conservation field sites in Belize, Costa Rica, Baja, Trinidad, Mongolia, Thailand, Kenya and Namibia.

New in 2010 are courses in Borneo and the Amazon.

Earth Expeditions courses and the GFP Master's may be completed part-time from anywhere in the U.S. or

abroad and are open to educators and other professionals from all settings and disciplines, regardless of academic focus. For information and to apply, visit:

- Earth Expeditions <http://www.EarthExpeditions.org>
- Global Field Program <http://www.MastersGFP.org>

Interested applicants in the Cincinnati, Chicago and Seattle regions may want to visit <http://www.MyMasters.org> for information on Dragonfly's additional master's degrees, including the community-based Advanced Inquiry Program co-delivered with premier learning institutions in select U.S. cities.

Project Dragonfly reaches millions of people each year through inquiry-driven learning media, public exhibits and graduate programs worldwide. Dragonfly is housed at Miami University, a state university in Oxford, Ohio, established in 1809 and listed as one of the eight original Public Ivies.

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Fireside Chat - Campbell Creek Science Center November 12: The Big Bang and Cosmology

What is the Big Bang and how does it explain the Universe? Where did the Universe come from, and what existed before it? And if there's an edge to the Universe, what's on the other side? Dr. Travis Rector, a professor in the physics and astronomy department at the University of Alaska Anchorage, will answer these questions and more. From the origins of the universe to the structure we understand today, he'll explain what we know, how we know it, and what mysteries remain about it. The program begins at 7:00 pm on Thursday November 12 at the BLM Campbell Creek Science Center (5600 Science Center Drive). Star gazing will follow if the skies are clear. Please call 267-1247 for more information.

from ANROE e-News week of 10/30/2009

Earth Science Teaching Materials

This year's theme is Understanding Climate, and NASA is offering a variety of multimedia products and educational resources designed to improve understanding of global climate change. Tides of Change: A five-part video series on the connection between ocean and climate will be posted during Earth Science Week at <http://climate.nasa.gov/esw> <<http://climate.nasa.gov/esw>>

- Episode 1: Remotely Sensing the Global Ocean
- Episode 2: Water, Water Everywhere
- Episode 3: The Ocean's Green Machines
- Episode 4: Salt of the Earth
- Episode 5: Shrinking Ice, Rising Seas

Episode 6: Keeping Up with Carbon
NASA has contributed several items included in an Earth Science Week educator kit. To order a kit, visit <http://www.earthsciweek.org/> <<http://www.earthsciweek.org/>> .

Bugscope and Virtual Microscope

Provides free interactive access to a scanning electron microscope so that students anywhere in the world can explore the microscopic world of insects. Kids can propose experiments, explore insect specimens at high magnification, and discuss what they see with scientists—all from a regular web browser over a standard broadband internet connection. The website offers tutorials, information on classroom integration, archives, and more.

The Virtual Microscope supports functionality from electron, light, and scanning probe microscopes, datasets for these instruments, training materials to learn more about microscopy, and other related tools. They have also adapted a high-resolution Digital SLR with a 5x magnifying macro lens to capture some specimens, as well as included some artistic renderings of microscopy data. <http://bugscope.beckman.illinois.edu/> <<http://bugscope.beckman.illinois.edu/>> <http://virtual.itg.uiuc.edu/> <<http://virtual.itg.uiuc.edu/>>

Teaching Physical Concepts in Oceanography - An Inquiry-Based Approach

The Oceanography Society (<http://www.tos.org/> <<http://www.tos.org/>>) has published a supplement to the journal Oceanography that provides hands-on activities with strong content support to teach physical concepts in oceanography. The activities have been successfully adapted to middle and high school. These key activity concepts include density, pressure, buoyancy, heat and temperature, and gravity waves. Background information followed by detailed descriptions and explanations of hands-on activities are provided. Downloadable pdf format available at:

http://www.tos.org/hands-on/teaching_phys_concepts.pdf <http://www.tos.org/hands-on/teaching_phys_concepts.pdf> Single printed copies are available upon request from info@tos.org <<mailto:info@tos.org>> .

NOAA Fisheries: Seeking teachers to pilot new curricula.

Activity topics include: (4th-5th Grades)- Sustainable Halibut Fishery Curriculum, Saving Salmon Curriculum (6th-8th Grades)-Sustainable Halibut Fishery Curriculum (9th-12th Grades)- Sustainable Groundfish Fishery, Killer Whale Recovery Using scientific papers/graphs, ESA salmon and the 4 Lower Snake River Dams. For a look at the curricula please contact:

NWR.education@noaa.gov

<<mailto:NWR.education@noaa.gov>> or Peggy Foreman at 206-930-8840

Big Green Grants

Registration deadline: December 31

Big Green Grants offer environmental resources and ideas for Earth Day, summer camp, and back-to-school activities for your school, club, troop, or community group, bundled together as an 8-part lesson plan. Groups can register your Big Green Help Earth Day event and become eligible to apply for a Green Grant.

<http://www.bghevent.com/grant/index.htm>

<<http://www.bghevent.com/grant/index.htm>>

Captain Planet Foundation Grants

Registration deadline: December 31

The Captain Planet Foundation provides grants to school and community groups to support hands-on environmental projects for youth in grades K-12. The objective of the foundation is to encourage innovative programs that empower youth around the world to work individually and collectively to solve environmental problems in their neighborhoods and communities. Deadlines for submitting grant applications are March 31, June 30, September 30, and December 31 of each year.

<http://www.captainplanetfdn.org/grants.html>

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Buzz Lightyear Mission Patch Design Challenge Deadline is November 6

After serving 15 galactic months on board the International Space Station (ISS), Disney Parks and the National Aeronautics and Space Administration (NASA) today announced they are celebrating Buzz Lightyear's historic space journey with a Mission Patch Design Challenge for children 6-12 years of age in the 50 United States and District of Columbia at www.DisneyParks.com/Buzz. The 12-inch action figure returned to Earth in September aboard NASA space shuttle Discovery mission STS-128.

For nearly 40 years, NASA astronauts have designed patches to symbolize their individual space missions and flight accomplishments. Carrying on this tradition, Disney Parks and NASA have launched a search for the most creative mission patch design to honor Buzz Lightyear as America's first and longest serving space ranger.

Now through Nov. 6, children and parents can go online and download materials to design a custom Buzz mission patch. Kids can choose design templates and artwork inspired by previous NASA badges as well as NASA and Disney Parks creative elements and other fun add-ons. Along with their patch, children must also submit a brief essay (up to 100 words) discussing the inspiration for their design. The winner, parent and two guests

will receive a three day, two night vacation to Walt Disney World Resort in Lake Buena Vista, Fla. as well as a VIP tour of the Kennedy Space Center in Cape Canaveral, Fla.

The Mission Patch Design Challenge commemorates Buzz Lightyear's achievement and builds on NASA's educational goals of encouraging students to pursue studies in science, technology, engineering and mathematics (STEM) subjects. As part of the Buzz Lightyear Mission Patch Design Challenge, children will get the opportunity to learn about the requirements of space flight and the science surrounding NASA programs, helping to create a strong understanding about the importance of space exploration.

"Now that Buzz Lightyear is back home, we are truly excited for the next phase – designing a real NASA mission patch to recognize his historic accomplishment," said Disney's Duncan Wardle, Vice President, Disney Destinations. "Disney Parks and NASA feel it's only fitting that Buzz's biggest and true fans are given the opportunity to design a one-of-a-kind mission patch to celebrate his dream-come-true. We have no doubt the submissions will be unique and creative – if anything, a very hard decision to make!"

How to Enter :

Children and parents can visit

www.DisneyParks.com/Buzz for official Mission Patch Design Challenge rules, templates, examples of elements required for each design as well as judging criteria. Entrants shall:

- Download and print mission patch templates (with the help of parents).
- Using various elements, design a Mission Patch to commemorate Buzz Lightyear's time in space aboard the ISS.
- Write a brief description of the design (up to 100 words).
- Submit artwork and design description (with the help of parents).
- Entries may be submitted via e-mail or mail to specific address.

Entries will be judged based on originality, creative execution, appropriateness of theme and clarity of expression of idea. For additional information on the Disney Parks and NASA Mission Patch Design Challenge or to enter, guests may visit www.DisneyParks.com/Buzz.

SeaNET - Networking Site

If you are interested in promoting Alaskan marine and climate change literacy, join SeaNET, a new listserv and networking site for scientists, educators, science communicators, and Alaskan coastal community members. The Alaska Center for Ocean Sciences Education Excellence (COSEE) has launched SeaNET and will provide regular postings of Caught in the News Net, a

round-up of Alaska ocean climate change news, resources, and calendar items related to science outreach and educational and professional training opportunities. Members of the networking site can create and participate in forums and sub-groups. To join the listserve, contact Marilyn Sigman, msigman@alaska.edu <<mailto:msigman@alaska.edu>> , or go to <http://oceanseanet.ning.com> <<http://oceanseanet.ning.com/>> to join the networking site. COSEE-Alaska is a National Science Foundation-funded program with a focus on outreach and education about Alaska ocean climate change from perspectives of science and Alaskan Native knowledge. More information and links to educational resources are available at <http://www.coseealaska.net> <<http://www.coseealaska.net/>> .

Apollo Space Program Virtual Conference for Educators

Join NASA and the Smithsonian National Air and Space Museum for the Apollo Space Program Virtual Conference for Educators, a FREE online conference taking place on **Nov. 10, 2009**, from 11 a.m. to 5 p.m. EST.

Forty years ago the Apollo Space Program met President Kennedy's goal of landing a man on the moon, one of the most significant achievements of the 20th Century. Join experts as they present the challenges of the Apollo program and examine the remarkable technologies that made the moon landings possible.

Participate in interactive discussions that highlight the Apollo program and its impact on American and world history and our lives today. Explore ways to teach your students how to use primary source materials.

The online conference includes sessions of general interest and sessions for secondary teachers with ties to the NASA History Advanced Placement and Human Geography Advanced Placement projects.

Are you new to virtual conferencing? A virtual or online conference is similar to other professional conferences, only you access it online. Registration is free and open to everyone. All of the conference sessions are recorded and archived so they may be played at any time.

The 8th Annual
Rock and Mineral Show

Presented by the
Chugach Gem and Mineral Society
in conjunction with the
Alaska Miners Association

Friday, Saturday, Sunday
November 6, 7, and 8, 2009
Fri. 5-9 pm, Sat. 10-5, Sun. 11-4

Sheraton Anchorage Hotel
401 E. 6th Avenue
Anchorage, AK

for information call Sharon at the AMA
907-563-9229

FREE ADMISSION