Science Bytes

March 2, 2009 Volume 27

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

In this Issue:

For your Calendar:

NSTA Conferences 2008-2009

2009 National NSTA Conference

New Orleans, LA – March 19-22, 2009

Science Fair 2008 - 2009

Alaska Science and Engineering Fair

March 27-29, 2008 @ Begich Middle School - Anchorage

Looking for volunteers for the SF Board.

Science Olympiad 2008-09

April 4, 2009 @ Begich Middle School - Anchorage

2009 - Alaska Math & Science Conference

INQUIRY - The Bridge to Understanding

October 14-17, 2009 Juneau, AK

Earth-Moon Institute

July 27-31, 2009

Presented by the Lunar and Planetary Institute

Who: 5th – 8th grade in-service and pre-service teachers

What: A 35-hour institute, investigating the Moon

Where: at the Lunar and Planetary Institute in southeast Houston, with additional activities at Johnson Space Center

The Institute Will:

- Provide numerous hands-on standards-aligned classroom resources that allow you to bridge content from the Moon to the Earth and address science content TEKS: 2.7D, 4.6A, 5.6A, 5.12C, 6.5A, 6.5B, 6.13A, 7.13B, 8.12A, and multiple science process TEKS
- Provide tools to address student misconceptions
- Incorporate authentic inquiry experiences for your students
- Provide the opportunity to interact with lunar scientists
- Include a field trip to Johnson Space Center's lunar rock curation facility
- Offer certification to bring lunar samples into your classroom
- Include a lunar viewing evening with the local astronomical society and
- Provide professional development and TAGT Awareness credit hours

Topics include:

- Moon Phases and Eclipses
- Earth-Moon Comparisons
- Tides and Gravity
- Formation of the Moon
- Geology of the Moon
- Volcanism
- The Rock Cycle
- Plate Tectonics
- The Solar System

Institute registration is $150, and includes lunches. Participants receive professional development hours and numerous classroom resources. Registration is ongoing, and spaces are limited. Teachers working with underserved and underprivileged populations are encouraged to apply. For further information, go to http://www.lpi.usra.edu/education/workshops/earthMoonInst/ <https://mail.lpi.usra.edu/exchweb/bin/redir.asp?URL=http://www.lpi.usra.edu/education/workshops/earthMoonInst/> Or Contact:

Christine Shupla, Lunar and Planetary Institute
3600 Bay Area Boulevard, Houston, TX 77058
281-486-2135, shupla@lpi.usra.edu

2009 IGES Earth Day Photo Contest for Grades 5-8: Capture Your Changing World

Win a Digital Camera or Other Prizes; Photos must be snapped April 22-29.
Contest Web Site: www.strategies.org/EarthDayPhoto

Earth is a system of connected parts -- air, land, water and life. Each part is constantly changing, and affecting and being affected by the other parts. Of all the seasons, changes are especially noticeable during spring. Birds migrate across the sky as the weather warms. Creek waters rise as melted snow trickles down from distant mountains. Spring showers give life to plants and wildlife. And thunderstorms and tornadoes are spawned as warm and cold air clash.

During the week of Earth Day (April 22), U.S. students in grades 5-8 can be part of a unique national effort to capture our changing world. Anytime from Wednesday April 22 through Wednesday April 29, take a photograph of something that is changing in your local environment. It could be a change occurring in your backyard, outside your school, in a local park, or off in the distance toward the horizon.

Then, research and write an explanation of the photograph (400 words or less) that answers the following questions:

· What is the change taking place in your photograph?
· What part or parts of the Earth system may be causing the change?
· Was the change expected?
· How might the change impact surrounding areas, including people?
· How might this picture look different in the future?

Entries will be judged by Institute for Global Environmental Strategies (IGES) staff based on relevance to topic (depiction of change in the environment), uniqueness and overall appearance of the photo, and thoroughness of the written explanation.

The top three winners will receive a digital camera, digital photo frame and digital photo keychain, respectively. The top 10 winners will receive their photograph in a special frame commemorating Earth Day 2009, and their photographs and accompanying descriptions will be featured along with selected honorable mentions on the IGES Web site, www.strategies.org.

Entries must be received by email or postmarked by May 9, 2009. Winners will be announced on the IGES Web site around June 2, 2009. For submission instructions, entry form, and suggestions for using this activity in the classroom, please visit: www.strategies.org/EarthDayPhoto

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East High Robotics Team Off to Championship

I am pleased to announce that the East High Robotics Team won the 1st Alaska High School FIRST Technology Challenge championship this weekend!! Our robot dominated the competition winning all 4 qualifying rounds (seeding us 1st for the elimination rounds), the quarterfinal round (by a close 1 point!!) and the final round.

In addition, our team won the INSPIRE award - FIRST's highest honor. The FIRST Tech Challenge Inspire Award is a peer- and formal-judged award that honors the team that performs well in all categories and is viewed by other teams as the most desirable alliance partner and by judges as best exemplifying all components of the FIRST Tech Challenge philosophy.

The mission of FIRST (For the Inspiration and Recognition of Science and Technology) is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

As a result of our accomplishments this weekend in Fairbanks, we have earned an invitation to the World FIRST championship in Atlanta, Georgia April 15 - 17. Now we need to work on fund-raising magic to get our team to the East Coast.

They are pretty darned excited! Team 3360 aka The East Robotics Team consists of: Lance Gatter, Ian Knapp, Dustin Mendoza, Sarah Mondl, and David Osgood.

Thanks
~Heather Roach
National Board Certified Teacher of Chemistry
East High Science Club & Robotics Team Sponsor

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from Newsletter of the Alaska Department of Education & Early Development

Dimond High Science Teacher Receives National Honor

Dimond High School educator Jennifer Childress is a recipient of a 2009 Siemens award for advanced placement teachers.

"This award recognizes your dedication and exemplary teaching to your students and to the advanced placement program," wrote Siemens' Diane Tsukamaki in a letter to Childress this week. "We believe that teachers like you embody the best of American education."

Childress teaches both physics and engineering at Dimond in Anchorage and has been with the Anchorage

School District for six years. As one of just 50 educators selected nationally, she will receive a $1,000 award. Childress said she hopes to use the money for an educational trip to China this summer.

Physicist to Present Public Lecture in Fairbanks

Nobel Prize-winning physicist Murray Gell-Mann will present a free public lecture, "A Crude Look at the Whole," Wednesday, March 4, at 6 p.m. in the Wood Center at the University of Alaska Fairbanks.

Gell-Mann is known for his work leading to the discovery of quarks, the smallest form of matter and the building blocks for protons and neutrons.

Gell-Mann will speak on how specialized studies can be complemented by examining the entirety of a project and not simply a collection of pieces. His talk will engage those interested in thinking about how we research and discuss the Arctic and our world as it experiences change.

Gell-Mann is a distinguished fellow at the Santa Fe Institute, a board member of the Wildlife Conservation Society, a Buddhist scholar, and a linguist. He is the author of "The Quark and the Jaguar, Adventures in the Simple and the Complex."

March Fireside Chats - Campbell Creek Science Center

March 12: Killer Asteroids! Are Astronomers Crying Wolf?

Discoveries of near-Earth asteroids are on the rise and so are reports of potential collisions with Earth. How do we know what we know about the orbits of these asteroids? How do scientists determine the probabilities of impact? And why do these "killer asteroid" scares always evaporate after further study? Dr. Andy Puckett, a postdoctoral researcher in astronomy at the University of Alaska Anchorage, will give you the low-down. The free program begins at 7:00 pm on Thursday March 12 at the BLM Campbell Creek Science Center (5600 Science Center Drive). For more information, please call 267-1247.

March 18: CSI Meets Indiana JonesTM CSI. Cold Case.

We're all familiar with television programs that figure out whodunit through careful crime scene analysis. But how do police officers know what to look for? How do they interpret the results? For some types of information, anthropology plays a big role. Join us as Alaska's State Archaeologist Dave McMahan explains the role anthropology plays in training law enforcement officials and helping solve crimes. The free program begins at 7:00 pm on Wednesday March 18 at the BLM Campbell Creek Science Center (5600 Science Center Drive). For more information, please call 267-1247.

March 25: Something's Rotten in our Forests! Tree Diseases Demystified

Have you ever wondered about rot, decay, and destruction in your local forest? Then this is talk is for you! Find out what's happening to our bark beetle-killed forests, why our alders are dying, what our common tree diseases look like, and more. Lori Trummer, pathologist with the USDA Forest Service, will share her latest findings about the diseases affecting the trees in south-central and interior Alaska. The free program begins at 7:00 pm on Wednesday March 25 at the BLM Campbell Creek Science Center (5600 Science Center Drive). For more information, please call 267-1247.

NASA's Digital Learning Network

NASA's Digital Learning Network presents a series of videoconferences to assist educators in staying current on NASA education resources and related products.

During each event, product producers, authors and experts will demonstrate their materials designed to optimize awareness and understanding of science concepts. Instructional objectives, accessing the materials and primary contacts for the materials will also be discussed. During the videoconferences, participants will be able to submit questions to the presenter that will be addressed during the presentation. The following topics will be covered:

Kepler Mission: March 25, 2009, 4-5 p.m. EST

The Kepler mission will seek evidence for Earth-size planets in orbit around sun-like stars. For the first time NASA will be able to search the galaxy for Earth-size or smaller planets. With this cutting-edge capability, Kepler may help to answer one of the most enduring questions humans have asked throughout history: Are there others like us in the universe?

Meteorology: An Educators Resource Guide for Inquiry-Based Learning: April 29, 2009, 4-5 p.m. EST

Meteorology is one of the oldest observational sciences in human history and perhaps the most relevant to a broad segment of society. Learn how the first early meteorologists used this knowledge for their success and survival. This educator guide covers weather patterns, climate and measurement tools.

NASA Explores Virtual Worlds: May 27, 2009, 4-5 p.m. EST

Virtual immersive environments are increasing in popularity in modern America. Explore the virtual world that NASA education is building in Second Life and learn how to become an active citizen of this world.

For more information about these videoconferences and to sign up online, visit http://dln.nasa.gov/dln/content/webcast/. Questions about these events should be directed to Caryn Long at caryn.long@nasa.gov .

NASA Celebrating Sun-Earth Day on March 20, 2009.

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. For Sun-Earth Day 2009, NASA will engage a worldwide audience in the celebration of the International Year of Astronomy, with an emphasis on daytime astronomy. Tremendous strides have been made as satellites and ground-based observatories attentively monitor the sun to understand the processes that govern the sun's influence on the solar system. NASA will offer a series of coordinated events to promote and highlight the sun and its connection to Earth and other planets. The events will support the spirit of international collaboration.

Over the past eight years, the NASA Sun-Earth Connection Education Forum has sponsored and coordinated education and public outreach events to highlight NASA Sun-Earth Connection research and discoveries. The Forum's strategy involves using celestial events, such as total solar eclipses and the Transit of Venus, as well as Sun-Earth Day during the March equinox, to engage K-12 schools and the public in space science activities, demonstrations, and interactions with space scientists.

Students in upper-elementary, middle and high school are also invited to participate in Solar Week taking place March 9-13, 2009. Solar Week provides a week of series of Web-based educational classroom activities and games that focus on the Sun-Earth connection. Solar Week is ideal for students studying the solar system, the stars and astronomy in general. An interactive message board is available where classrooms can pose questions of leading solar scientists.

On March 20, 2009, at 1:00 p.m. EST, join a panel of scientists for a live Sun-Earth Day Webcast. During the webcast, scientists Eric Christian, Nicky Fox, Terry Kucera and Sten Odenwald will share discoveries about the sun, while students monitor the sun and prepare their own space weather forecast. Students from Houston will demonstrate their own sundials. New and exciting images and visualizations will be shared during the program.

For more information and educational resources, including posters, fliers, postcards and an educator kit, visit the Sun-Earth Day Web site at http://sunearthday.nasa.gov/2009/index.php.

Questions about the Sun-Earth Day events should be e-mailed to Ms. Elaine Lewis at Elaine.M.Lewis@nasa.gov.

Ward's Natural Science An Earth Science Partner

Ward's Natural Science, an Earth Science Week partner, provides a wide range of geoscience education materials, from classroom and field equipment to lab activities designed specifically for teaching Earth science.

Earth science materials available through Ward's include geology apparatus and collections, fossil reproductions and specimens, meteorology equipment, lab activities, models, rock and mineral specimens, books, charts, maps, posters, audio-visual materials, and computer software. A supporter of education for nearly 150 years, Ward's offers additional information and a free newsletter at http://www.wardsci.com.

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from NASA Earth & Space Science Education E-news March 2009

Project Budburst 2009 Field Campaign Begins March 2

Project BudBurst will officially launch the 2009 national field campaign for students, families and other volunteers on March 2. The project is designed to engage the public in the collection of important climate change data based on the timing of leafing and flowering of trees and flowers. In 2008, thousands of people of all ages participated by taking careful observations of the phenological events such as the first flower, first leaf, and seed or fruit dispersal of a diversity of tree and flower species, including weeds and ornamentals. New Web site features include field guides to phenophases, updated plant species Identification Guides, real-time mapping with Google Maps, new classroom resources, photo sharing of plant observations and more.

Project BudBurst is co-managed by the University Cooperation for Atmospheric Research, Chicago Botanic Gardens, and the University of Montana. For more information, please visit the Project BudBurst Web site at http://www.budburst.org/

NASA'S Explore! Ice Worlds Offers Free Webcast For Informal Educators (March 4)

"Explore! Ice Worlds" (http://www.lpi.usra.edu/education/explore/ice/activities) is a suite of activities designed for children ages 8 to 13 in celebration of the International Polar Year. Developed

by the Lunar and Planetary Institute and funded by NASA, the activities are intended for the informal learning environments, including libraries, after-school programs, and museums. All activities are tied to National Science Education Standards and use inexpensive, easy-to-find materials.

A free four-hour webcast training in using these activities will be held on Wednesday, March 4, 2009 at 1:00 EST. The session includes discussion with a NASA polar scientist and demonstrations of the activities. Participants completing the training receive a certificate for four professional development hours and are eligible for drawings for Earth and space resources. Register with Katy Buckaloo at buckaloo@lpi.usra.edu / 281-486-2106.

Globe at Night Campaign (March 16-28)

2008 marked a monumental shift in human history when the number of people living in cities exceeded half the people on Earth. Because of the ambient light of urban landscapes, many city dwellers have never seen a sky full of stars. The GLOBE at Night Campaign is an international star-hunting project for students, teachers, and the general public. This year it will take place March 16-28, the two weeks when the Orion constellation is most visible around the world with naked eyes. Students find their latitude and longitude, find Orion at night and match their observations to a magnitude chart. After, students report their observations online and can compare their observations with those from around the world. The 2008 campaign received measurements from 62 countries and the final data sets are now available on the Web site. For more information, visit http://www.globe.gov/GaN

No Boundaries National Competition for High School Students

Entry Deadline: May 15, 2009

NASA has teamed with USA TODAY Education to create the "No Boundaries" project and national student competition. This project is designed to help students explore careers in science, technology, engineering and mathematics. The No Boundaries Web site has a Teacher Toolkit and step-by-step instructions for teachers to implement the project in their classrooms. Students research and develop projects (podcast, Web site, newspaper, songs, artwork, etc.) marketing NASA STEM careers to teens and are encouraged to enter their projects in the No Boundaries National Competition. The contest deadline is May 15, 2009. For more information go to: http://www.noboundaries-stemcareers.com/.

Weather Puzzle Game on Space Place Web Site

Weather can be puzzling. What's it going to do next? The new weather picture "Slyder" puzzles on The Space Place Web site are easier to solve. Users can pick easy, medium, or hard levels of difficulty to challenge logical- and spatial-reasoning muscles and to reveal dramatic ground-and space-based images of Earth and space weather phenomena. Each image is identified and credited. Whether you solve the chosen puzzle or not, you will be no doubt find abundant weather enlightenment. http://spaceplace.nasa.gov/en/kids/goes/slyder

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from ANROE electronic Newsletter

Alaska CoastWatch Manual

The Center for Alaskan Coastal Studies offers a downloadable Alaska CoastWatch manual and other online resources for identification of Alaskan seaweeds and fishes, in the teacher and community resource sections on their website.
http://www.akcoastalstudies.org/teacherresources.htm
<http://www.akcoastalstudies.org/teacherresources.htm>

April 12-18: National Environmental Education Week

Promotes understanding and protection of the natural world by actively engaging K-12 students and educators of all subjects in an inspired week of environmental learning and service before Earth Day. This year's EE Week theme is Be Water Wise! Registered partners have access to a wide variety of free environmental education resources, including a school water auditing tool and water quality monitoring resources. http://www.eeweek.org/
<http://www.eeweek.org/>

Local Kids Win FIRST LEGO League State Championship

The Beetles, a team of five local students, won the Alaska State FIRST LEGO League Championship at Dimond High School on January 17. The team is made up of Girdwood School students Nick Crews, Max Durtschi, Annika Flynn and Gillean Szweda-Mittelstadt, and IDEA homeschool student Christopher Scott.

FIRST LEGO League is a “global program created to get kids excited about science and technology”, according to the FLL website at http://firstlegoleague.org/community/fll/welcome.aspx. FLL teams compete on several levels: they build a robot that is to (hopefully) complete 17 assigned missions within a time frame of 2.5 minutes, they research and solve real-world problems, and then they find some creative way to present their research. Every year FLL bases the competition on a different theme. This year the theme

was climate change, while past years have had the students researching energy, the oceans, and nanotechnology.

The Beetles chose to research spruce bark beetles as their local problem caused by climate change. They came up with several examples of solutions they found being used in Germany and England, as well as coming up with some creative solutions of their own. They presented their findings in a skit about the Beatles on the Ed Sullivan show.

By winning the State Championship, the Beetles have qualified to compete at the FLL World Festival in Atlanta, GA on April 15-18. At the World Festival, the Beetles will be competing with 80 other winning teams from the United States and 30 foreign countries. The event promises to be very intense and really fun.
Check out their webpage:
http://www.wonderbuild.com/beetles/.
Article submitted by Beetles coach - Barbara Crews.

International Summer School for Young Physicists

Application deadlines are fast approaching for free summer science camps for students and teachers with a keen interest in modern physics (all expenses paid within Canada) at Canada's Perimeter Institute for Theoretical Physics. Please note that:

For your students - the application deadline for the "International Summer School for Young Physicists" is Thursday, March 19, 2009
For your teachers - the application deadline for the "Einstein Plus Teachers' Workshop" is Tuesday, March 31, 2009

We hope you will share this information with other students and teachers by:

1. Forwarding this email to interested students and groups;
2. Printing and hanging the downloadable poster that is available here;
3. Adding the following short description to your blogs, websites or any newsletters you may be involved in:

Canada's Perimeter Institute for Theoretical Physics (PI), is now accepting applications for their free summer science camps for students and teachers with a keen interest in modern physics. All expenses are paid within Canada. For detailed information regarding these camps please visit http://www.issyp.ca and http://www.einsteinplus.ca.