Science Bytes

February 2, 2010 Volume 23

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:

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

Improve Your Knowledge of Physical Science

Grades 3-9 teachers—improve and refresh your content knowledge through two NSTA online short courses, **Light** and **Force and Motion**. Under the guidance of Dr. Matt Bobrowsky, each week participants will meet virtually to strengthen their physical science concepts through synchronous learning. Follow up discussions are continued in an online forum, along with self-paced completion of corresponding course materials (SciPack, SciGuide, e-Book, and Journal articles), all contributing towards boosting your knowledge of the subject.

Upcoming Short Courses:

Force and Motion-Beginning Monday, February 1, 2010, and continuing through the following four consecutive Mondays: 2/1, 2/8, 2/22, 3/1, 3/8. The course is held from 8:00 p.m. to 9:30 p.m. Eastern Time.

Light-Beginning Wednesday, February 3, 2010, and continuing through the following four consecutive Wednesdays, 2/3, 2/10, 2/17, 2/24 and 3/3. The course is held from 8:00 p.m. to 9:30 p.m. Eastern Time.
Participants are eligible to earn two graduate professional development credits from the University of Idaho. For more details and to register, visit the NSTA Learning Center or email ptingler@nsta.org.

Inquiry in Action - from American Chemical Society

This resource is from the Education Division at the American Chemical Society. Currently, we're trying to spread the word about a new online resource we've developed which provides free physical science activities, molecular model animations, and more for elementary and middle school science teachers. We're wondering if you can help us connect with the teachers we hope that this resource will serve.

The website (www.inquiryinaction.org) is based on a book that we published, and each activity from the book, as well as the entire 470 page book, can be viewed in full text and is available for free download in PDF format. Molecular animations and videos can also be downloaded in Windows Media or Quicktime format.

"*Free physical science activities online. At inquiryinaction.org, you can view and download free inquiry-based physical science activities that support national science content standards. Each activity, as well as the entire 470 page book, is available for free download in PDF format. The website also has a chemistry background section, complete with molecular model animations and videos, and information on upcoming workshops based on the book. http://inquiryinaction.org*"

The Astrobiology Summer Science Experience for Teachers (ASSET)

ASSET, is being held July 18-24, 2010, at San Francisco State University. ASSET will feature presentations by leading astrobiology researchers from the SETI Institute, NASA and the California Academy of Sciences. Scientists will share the latest in astrobiology research on the origin of life on Earth, the extreme conditions in which life exists, Mars exploration, the formation of planetary systems around sun-like stars, and the search

for life in the universe.

The 6-day workshop features a combination of cutting-edge science, inquiry-based teaching and learning, and leadership skills development to support teachers and teacher trainers.

Participants receive the entire Voyages Through Time curriculum and complementary astrobiology materials, developed by NASA's Astrobiology Institute, for use in their classrooms.

Applications are due **Feb. 12, 2010**. For more information, visit http://www.seti.org/epo/ASSET.

If you have any questions about this opportunity, please contact Pamela Harman at 650-960-4523 or pharman@seti.org.

Impressive Solar Eclipse Image

http://www.wired.com/wiredscience/2010/01/solar-eclipse-images-show-dazzling-corona-detail/ <http://www.wired.com/wiredscience/2010/01/solar-eclipse-images-show-dazzling-corona-detail/>

This is a really cool image of a solar eclipse!

Angie Slingluff
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APU Outdoor Programs Offering Wilderness Medicine Courses

WILDERNESS FIRST RESPONDER or WILDERNESS EMT Module

When: May 9th thru May 13th, 2010
Where: Alaska Pacific University – Anchorage, Alaska
What: Wilderness First Responder DLP (distance learning project) Course or WEMT certification for individuals with a current EMT.
Cost: $450 before 4/1/10; $500 after – APU STUDENT RATE

$625 before 4/1/10; $675 after – PUBLIC RATE

WILDERNESS FIRST RESPONDER RECERTIFICATION or WILDERNESS FIRST AID

When: May 15th & 16th, 2010
Where: Alaska Pacific University – Anchorage, Alaska
What: Wilderness First Responder DLP Recertification (distance learning project) Course or obtain a WFA certification
Cost: $200 – APU STUDENT RATE; registration closes April 16th

$250 – PUBLIC RATE; registration closes April 16th

Read on for more information…

Instruction and certification is provided by the Wilderness Medicine Training Center, and Alaska Pacific University Outdoor Programs is sponsoring the courses on the APU campus in Anchorage, AK. Courses will be a Distance Learning Project. Each DLP course has three components: a didactic distance learning component, on-line testing, and an on-site practical session. WFR, WEMT, and WFA are nationally recognized certifications accepted by Outward Bound, NOLS, American Camp Association, and all state and federal guide licensing agencies.

Tent platforms are available on campus for camping. Space is limited so please reserve early if you are interested. The cost is $3.00 per day. The registration packet contains information on additional local accommodations as well as directions to get to the APU campus using public transportation or by car.

For more information on the course and to receive a registration packet, contact:
Brent Gorman
Coordinator, Outdoor Programs
Alaska Pacific University
bgorman@alaskapacific.edu<www.harvardfop.com>
(907) 564-8292

For more information on the Wilderness Medical Training Center, go to:
http://www.wildmedcenter.com/home.html

Eyes in the Sky II Seeks Grade 9 - 12 Science Teachers

Eyes in the Sky II is a long-term professional development program that prepares high school science teachers to use NASA data and visualizations along with other geospatial information technologies. Throughout the program, teachers and students investigate both global and local environmental issues. The program includes four parts: 1) a 12-week online Web course, consisting of three 4-week modules; 2) a 7-day face-to-face summer workshop held onsite at a NASA research center; 3) one year of classroom implementation, ending with a virtual student showcase; and 4) an ambassador program for providing professional development for other teachers in participants' schools or districts.

Grade 9 to 12 science teachers will benefit from this program. Through participating, teachers will: 1) become proficient using NASA data and geospatial analysis tools; 2) receive a $1000 stipend for completing the online course and the 7-day summer workshop; 3) receive an additional $1000 stipend as compensation for delivering professional development as an Eyes in the Sky II Ambassador; 4) equip their students with geospatial technology skills that are in increasing demand in the workplace; and 5) obtain optional graduate credit through Northern Arizona University.

For more information about the Eyes in the Sky II program, including the online application visit http://serc.carleton.edu/eyesinthesky2/index.html <http://serc.carleton.edu/eyesinthesky2/index.html> . Ap-

plications are due by January 15, 2010. We expect this will be a popular program. As there are a limited number of openings available, first consideration will be given to early applicants.

If you have further questions, please contact Carla McAuliffe (Carla_McAuliffe@terc.edu) or Erin Bardar (Erin_Bardar@terc.edu).

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from Earth Science Week Update
American Geological Institute
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Earth Science Week to Be Part of Science Festival

AGI is proud to be an official partner of the inaugural USA Science and Engineering Festival to be held in October in Washington D.C. The event will follow closely on the heels of Earth Science Week, taking place October 10-16, 2010.

The festival, which will be the country's first national science festival, represents a collaboration of over 500 of the country's leading science and engineering organizations. The culmination of the festival will be a two-day expo on the National Mall on October 23-24, 2010, which will give children, teens and adults the opportunity to explore all facets of science and engineering through hundreds of fun, hands-on activities.

People across the Unites States are encouraged to hold satellite events in their communities the same weekend that hundreds of thousands of people celebrate science on the National Mall. For more information on all festival events and how you can get involved, visit http://www.usasciencefestival.org.

Energy Lab Program Open to Schools

American high schools and middle schools are now eligible to participate in the U.S. Department of Energy's Energy-Related Laboratory Equipment (ERLE) program. For over 30 years, this program has enabled colleges and universities to acquire hundreds of millions of dollars in high-quality surplus laboratory equipment from the department's National Laboratories.

The federal agency, an active Earth Science Week partner, invites schools to acquire equipment by reviewing the available equipment list at the ERLE website (http://erle.osti.gov/erle/) and completing an electronic application form. This new opportunity dovetails with the recent announcement of Earth Science Week 2010's theme: "Exploring Energy."

Prepare Now for Week of Environmental Education

National Environmental Education Week (EE Week), the nation's largest environmental education event, held April 11-17, 2010, inspires environmental learning and stewardship. EE Week connects educators with environmental resources to promote K-12 students' understanding of the environment.

In the United States, generating power consumes 3 percent of our water annually, and 13 percent of the energy produced each year is used to treat, transport, and heat water, according to the event organizer, the National Environmental Education Foundation.
Promoting conservation of both water and energy, EE Week's 2010 theme is "Be Water and Energy Wise."

EE Week provides lesson plans and classroom resources on the water-energy connection at http://www.eeweek.org/water_and_energy_wise/connection. Register for EE Week at http://www.eeweek.org/register to receive certificates of participation, free online resources, information on professional development and funding opportunities, and access to discounts on educational materials.

AAPG Offers Instructors Videos, Expert Speakers

With members ranging from professional geologists and corporate executives to students and academics, the American Association of Petroleum Geologists (AAPG) has plenty to offer Earth science educators. AAPG, a longtime AGI member society and Earth Science Week partner, aims to foster scientific research and promote the science of geology.

In addition to AGI's K-5 GeoSource and Earth Science Week sites, AAPG's K-12 Teaching Resources site at http://www.aapg.org/k12resources/ features the AAPG video library of more than 300 educational videos. AAPG's Youth Education Activities Committee is currently building and expanding this resource.

AAPG's Visiting Geoscientist program allows colleges and universities to arrange for a geoscientist to visit with a group of students for a full day or a half-day. Programs can include technical talks, a review of geoscience careers, and informal discussions. K-12 teachers also may request visits, though availability at the pre-college level is limited. To arrange a visit, go to http://www.aapg.org/education/vgp/.

Universities and geological societies can arrange similar visits through the Distinguished Lecturer program. For details, see http://www.aapg.org/education/dist_lect/.

Contest Recognizes Ideas For Energy, Conservation

Students throughout North America can win a trip to Washington D.C., $1,000 for their school, or other prizes by submitting their creative energy ideas to the ninth annual Igniting Creative Energy (ICE) Challenge.

The National Energy Foundation and Johnson Controls are inviting kindergarten through 12th-grade stu-

dents to submit innovative ideas to save energy and conserve the environment. Since 2002, more than 13,000 students have participated for a chance to win prizes.

This year, all qualifying submissions received before the early-bird deadline of January 30, 2010, will be eligible to win prizes that promote living in a sustainable manner. For more information on the ICE Challenge, see http://www.ignitingcreativeenergy.org.

For Geoscience, Check The Weather Channel

The Weather Channel, a longtime Earth Science Week partner, offers more than just up-to-date weather forecasts for over 77,000 locations worldwide. "The Weather Classroom" is an educational, half-hour television program on the channel that explores the science behind weather. For local airtimes, see http://www.weather.com/wxclass/education.

In addition, the channel's website at http://www.weather.com provides educational resources, interactive maps, and radar for regional and local purposes. For instance, "Weather Insights" is a free newsletter provided to educators every other month throughout the school year. Phone 1-800-471-5544 to get it by mail, or visit http://www.weather.com/education to print a copy.

Also online, "Teacher's Lounge" offers weather materials for teachers, including a weather encyclopedia, careers in meteorology, weather glossary, weather games, climate change information, weather videos, and standards-based lesson plans. Visit http://www.theweatherchannelkids.com/weather-ed/teacher-resources for more.

From Seed to Seed

From Seed to Seed is a professional development course presented by the National Gardening Association for K–8 teachers who already incorporate botany and gardening (indoors or out) into their science curriculum and for teachers who would like to start doing so. In addition to the core botanical information, activities and experiments that address K-8 national standards in various disciplines are provided. The course content is divided into two parts: From Seed to Seed and Exploring Plant Topics. The first part follows the life cycle of a plant from seed to seed and lays the foundation for more complex and fascinating topics in plant biology in the second part. Cost is $60. To learn more, go to www.kidsgardening.org.

CCSC Fireside Chats

Astronomy Lecture - February 11:

Cosmic Rays

Beyond our planet, the "empty space" of space is not really empty at all. Find out about the tiny but energetic particles that swirl everywhere through space, where they come from, and what happens when they hit Earth's atmosphere from Dr. Katherine Rawlins, a professor of physics and astronomy at the University of Alaska Anchorage. The programs begins at 7:00pm on Thursday Center (5600 Science Center Drive). Please call 267-1247 for more information.

February 17:

The Iditarod at 100--Celebrating the Centennial of the National Historic Trail

Come learn about the history of the opening of the Iditarod National Historic Trail. Author and historian Thom Eley will bring to light little-known details on government efforts to establish this trail, including pioneering the Crow Pass Trail. The program begins at 7:00pm on Wednesday February 17 at the BLM Campbell Creek Science Center (5600 Science Center Drive).Please call 267-1247 for more information.

Free Science Education Materials from NIH

We have new, free materials on biomedical topics. These print and online resources include:

A new edition of The Chemistry of Health that includes:

*a full-color booklet featuring chemistry basics

*short "Meet a Chemist" profiles

*a companion poster

*an extensive online resource, ChemHealthWeb (http://publications.nigms.nih.gov/chemhealth/), with downloadable chapters, chemistry A-Z glossary, molecule gallery and chemistry-related puzzles and games.

Two full-color classroom posters available at http://publications.nigms.nih.gov/order/pubdescriptions/chemhealthwebposter.html and http://publications.nigms.nih.gov/order/pubdescriptions/findingsposter.html.

The latest issue of Findings magazine at http://publications.nigms.nih.gov/findings/issues.asp. This issue features Marc Zimmer, a biochemist who studies glow-in-the-dark proteins, and Lola Eniola-Adefeso, a chemical engineer who studies methods to improve heart disease drugs.

Like all of our offerings, these printed and online resources focus on medically relevant life sciences and are free of charge. Printed materials are available individually or in classroom sets. They are also downloadable from http://publications.nigms.nih.gov/order/classroom.html. Here is a sampling of our products:

Findings magazine, which profiles vibrant scientists and includes puzzles and games. Each semi-annual issue introduces students not only to cutting-edge research, but also to the varied personalities, hobbies and backgrounds of the researchers, who serve as role models for future scientists. Our new "Ask a Scientist" online feature allows students to submit relevant scientific questions to researchers profiled in the magazine. Subscriptions are free.

Award-winning booklets on topics including cell biology, genetics, chemistry, pharmacology, structural biology and computational biology. Several of the book-

lets are enhanced with additional online content.

Interactive games and crossword puzzles that teach science.

Scientific image galleries containing downloadable photos, illustrations and videos.

Video and audio interviews with scientists.

A monthly electronic newsletter that highlights recent scientific advances. Subscriptions are free.

These materials are produced by the National Institute of General Medical Sciences (NIGMS), part of the National Institutes of Health. They are not copyrighted and you are free to excerpt content from them to use in the classroom or on a class Web site.

For the latest NIGMS news and information, follow us on Twitter or become our Facebook fan!

If you know of other people or organizations that would be interested in these free educational resources, please forward this message to them. We also encourage you to include information about our free materials in relevant listservs, Web sites and newsletters.

If you have any questions about NIGMS science education materials, please contact me at alisa.machalek@nih.gov or 301-496-7301.

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Wind for Schools Program Offers Hands-On Science

The Alaska Center for Energy and Power will lead a new Wind for Schools program in Alaska under a grant from the U.S. Department of Energy.

The program offers hands-on science education to children and college students. ACEP, part of the Institute of Northern Engineering at the University of Alaska Fairbanks, will work with program partners Renewable Energy Alaska Project and the National Renewable Energy Laboratory.

The university will offer a college-level wind energy curriculum and provide job placement opportunities for students. These students will then help deliver the K-12 curriculum and help communities install wind turbines at their schools.

In November, Alaska installed its first school turbine at Sherrod Elementary in Palmer. The turbine is being used to teach students about science and energy. In addition, several utility-scale wind systems are now operating throughout the state, along with numerous residential wind systems and businesses that cater to wind-power generation.

The Wind for Schools program will address the wind industry's need for a skilled workforce. ACEP and its partners are planning to expand the program to 10 Alaska schools over the next year and are seeking funding through the state's Renewable Energy Fund and other sources.

Contact Kat Keith, Wind for Schools coordinator, 907-590-0751 or kmkeith@alaska.edu <mailto:kmkeith@alaska.edu> .

Educational Institutions to Develop Climate Change Program

Three of Alaska's leading informal science education institutions are joining forces for a new program that will tell the story of climate change in Alaska.

The Challenger Learning Center of Alaska in Kenai, the Anchorage Museum, and the University of Alaska Museum of the North in Fairbanks will develop in-house exhibits for visitors and traveling outreach programs for rural school districts. The program is funded by a $980,000 NASA grant.

"Alaska is the bellwether for climate change. This funding will help us make current climate change research more accessible, understandable and engaging for audiences ranging from schoolchildren in rural Alaska to international visitors of all ages," said UA Museum education director Laura Conner, who developed the collaboration concept.

The three-year project uses Magic Planets – globe-like screens with images projected from the inside – to show how arctic systems are connected to the rest of the planet.

During the first year, the partners will develop content for the Magic Planet systems and activities for the traveling outreach program and presentations in Anchorage, Fairbanks and Kenai.

The UA Museum will work with University of Alaska Fairbanks researchers to produce content for the Magic Planets. NASA satellite images and digital animations will show how different regions of the world have warmed over the last 50 years and how those changes affect things like sea ice, vegetation patterns and animal migrations, insect outbreaks and ocean currents.

In Kenai, the Challenger Learning Center of Alaska staff will develop curricula and activities to complement the digital globe presentations, as well as prepare students for the presentations and help them help them build on what they learned. All of the activities will be aligned to the state's educational standards in Earth science and/or physical sciences.

The Anchorage Museum's Imaginarium Discovery Center will develop activities for community science nights, which will be presented in conjunction with the traveling school tour programs. Tabletop exhibits, presentations and hands-on activities will give families and community members the opportunity to explore the effects of climate change. Program staff members will work with tribal village councils, teachers, local agencies and other organizations to develop a list of climate change topics that are most relevant to each community.

During the grant's second and third years, each partner organization will take the program to several school districts throughout the state, using smaller, more portable Magic Planet systems. In some school districts, outreach will include visits to several communities.

Contact Kerynn Fisher, University of Alaska Museum of the North communications coordinator, at 907-474-6941, 907-378-2559 or klfisher@alaska.edu <mailto:klfisher@alaska.edu> .
See: www.uaf.edu/museum/ <http://www.uaf.edu/museum/>
www.akchallenger.org/ <http://www.akchallenger.org/>
www.anchoragemuseum.org/ <http://www.anchoragemuseum.org/>

Polar CINEMA at IPY Oslo Science Conference

Organizers of PolarCINEMA announce that registration for the program is open. This event will take place as part of the IPY Oslo Science Conference (IPY-OSC) in Oslo, Norway from 8-12 June 2010.

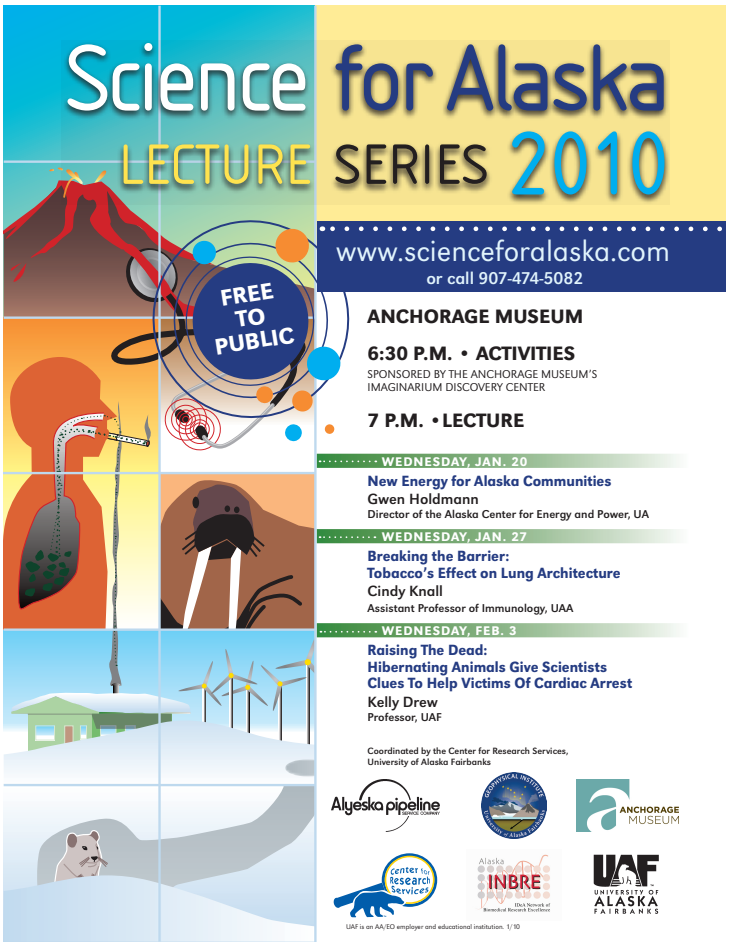
PolarCINEMA will showcase and celebrate unique productions that are inspired by and increase the awareness of the polar regions. Organizers invite all filmmakers, reporters, scientists, and educators to send in their polar productions and be part of this festival at IPY-OSC.

During IPY 2007-2008, film proved a strong instrument to explore new frontiers of polar science, and mesmerized and informed the public. Fiction films, documentaries, TV-series and internet broadcasts all helped translate polar science to the screen; portrayed a rich history of exploration, culture, and contemporary life; and investigated peoples' and natures' response and adaptation to a changing climate.

In Oslo, this rich legacy created by professionals and amateurs looking for new and innovative ways to get the message across will be celebrated. The PolarCINEMA will include a mixture of screenings, debates, and open discussions with filmmakers, educators, scientists, and the public. Topics of discussion will include the success and impact of the medium in increasing our understanding of the Arctic and Antarctic and their relation to the rest of the globe.

More information on the submission process and the general rules and procedures, as well as the entry form, is available at:
http://www.ipy-osc.no/section/1259870117.03.

Entry Deadline: Monday, 15 February 2010.
For further information, please go to:
http://www.ipy-osc.no/section/1259870117.03.
Or contact:
Mare Pit
Email: mare.pit@iasc.info



Green Aviation Student Challenge

The Environmentally Responsible Aviation project of the Integrated Systems Research Program, Aeronautics Research Mission Directorate, has announced a new student contest. The Green Aviation Student Challenge invites students to propose ideas and designs for future aircraft that use less fuel, produce less harmful emissions and make less noise.

The contest spans a full calendar year, so high school and college students have multiple opportunities to enter. The deadline for the first round for high school entries is May 1, 2010. First-round entries from college students are due Dec. 15, 2010. The second round deadlines are in December 2010 for high school entries and May 2011 for college entries.

Students are asked to submit a well-documented paper and a short video to explain their ideas. The ERA project intends to reward top-scoring students by airing their videos on NASA Web sites, and students may win a trip to an aviation event. Top college students may also earn a paid internship at a NASA center.

For more information about the high school contest, http://aero.larc.nasa.gov/era_high/competitions_high_era.htm. Questions about the contest should be directed to Elizabeth Ward at Elizabeth.B.Ward@nasa.gov