



SCIENCE BYTES

JANUARY 11, 2010 VOLUME 20

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

K-12: Neuroscience for Kids Newsletter

<http://faculty.washington.edu/chudler/neurok.html>

If you have never downloaded the Neuroscience for Kids Newsletter, you are really missing something. This is the most complete newsletter to help students learn more about the brain and the nervous system. **Check it out - Very Cool Website!**

Gr. 3-12: Engineer Girl

<http://www.engineergirl.org/?id=3821>

You're stranded! And if you have to be stranded somewhere with someone, you might want to hope you are stranded with an engineer. Young people grades 3 to

12 are encouraged to enter this essay contest, where they must think like an engineer to survive while lost in the woods. The deadline to enter is March 1, 2010.

Montana State University Offers Free Lesson Plans and Alternative Energy Interactives

Science teachers can access free lesson plans and download alternative energy interactives through Montana State University's National Teachers Enhancement Network (NTEN). Lesson plans cover all grade levels with topics in Earth science, physical science, life science and space science, including multicultural science lessons developed by Native American teachers, and lessons on rocketry and physics written by a science teacher working with NSF-EPSCoR faculty at MSU.

The "Hydrogen and the Environment" website explains the connection between Yellowstone National Park and the quest for alternative fuels, including videos, student profiles and images, along with free downloads: an interactive map of Yellowstone microbes and an animation of how hydrogen is produced. Visit <http://eu.montana.edu/nten> and click on Professional Resources.

Fireside Chats - Campbell Creek Science Center

January 14: Astronomy on the Cheap--Inexpensive Ways to Explore the Heavens

Interested in getting to know the night sky but not sure how to begin? Wondering what, if any, special equipment you need? Confused by the wide variety of telescopes available and which one is right for you? Amateur astronomer Brett Woern will answer these and many other questions to help you advance your astronomy interests.

Emphasis will be on entry-level equipment, including kid-friendly devices and other gadgets and accessories you can make yourself. There will also be time to look at and try out various equipment and to take apart a telescope to see how it works from the inside. The program begins at 7:00pm Thursday January 14 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.

January 20: On the Trail of the Tamaraw

Sometimes Alaskan biologists travel very far away to aid in endangered species recovery efforts. Join us on a vicarious trip to the Philippines as BLM wildlife biologist Merben Cebrian describes his recent work on the critically endangered water buffalo, the tamaraw. The program begins at 7:00pm Wednesday January 20 at the BLM Campbell Creek Science Center (5600 Science Center Drive). Please call 267-1247 for more information. Check out the Science Center Website for a more complete listing of Fireside Chats.

http://www.blm.gov/ak/st/en/prog/sciencecenter/ccsc_caleNDAR.html

NSTA Conference on Science Education—Philadelphia 2010

Looking forward to what's in store for science education next year, teachers and administrators can count on unmatched face-to-face professional development through NSTA's annual event. Scheduled for March 18-21 in historic Philadelphia, program strands include:

- Meeting the Unique Needs of Urban and Rural Science Learners
- Connecting Content: Between, Within, and Among Subjects
- Closing the Digital Generation Gap Between Teachers and Students
- Rekindling the Fires of Science Teaching and Learning

The kickoff begins on Wednesday, March 17, with ten content-driven, [in-depth institutes](#) (PDIs) and their follow-on pathway sessions along with a [research dissemination conference](#) called Keeping Elementary Primary: Current Research and Best Practices for Quality Instruction.

Beginning Thursday, attendees can find symposia with follow-on web seminars and intensive short courses meant to build content knowledge in a wide range of topics critical to teachers in all science disciplines. Nearly 2000 concurrent sessions are available for every grade band and for the newest preservice teacher to the career professional who writes curriculum or policy. Add to that, we offer terrific field trips, networking with peers and pros, and speakers like Bill Nye the Science Guy and Greg Marshall, a scientist, inventor, and filmmaker, who developed the Crittercam. Visit www.nsta.org/philadelphia for more information. January 22, 2010 is our early bird deadline.

SLOTS STILL AVAILABLE: Digital Learning Network to Host "Solar" Event for High Schools on Jan. 26, 2009

Join NASA's Digital Learning Network for exploration of an upcoming mission to understand more about the sun and its impacts on Earth.

How intense will the next solar cycle be? Can scientists predict when a violent solar storm will blast Earth with energetic particles? How does this peculiarly low activity of the sun in 2007-2010 counteract global warming trends? These are a few of the questions that scientists anticipate the new Solar Dynamics Observatory, or SDO, will help to answer.

SDO is scheduled to launch in February 2010. To energize students and teachers about this mission, NASA DLN will host a one-hour interactive event with scientists and engineers of SDO. Geared for students in grades 9-

12, the event will take place on Jan. 26, 2010, at 1:00 p.m. EST.

Slots are limited, and schools will be selected upon evidence of need and how the event will match the school's curricular activities. All schools interested in connecting to this videoconference must send a contact name, school name and address, grade level, number of students to participate, and a short description of how this event will benefit the curriculum to Dr. Marci Delaney, marci.delaney@nasa.gov.

Classroom Resources - Alaska Space Grant @ UAF

Here's another interesting website I stumbled on today.

<http://www.uaf.edu/asgp/atrm/atrmClassroomMaterials.htm#download>

<<http://www.uaf.edu/asgp/atrm/atrmClassroomMaterials.htm#download>>

NASA's Summer of Innovation

NASA has launched an initiative to use its out-of-this-world missions and technology programs to boost summer learning programs. NASA's Summer of Innovation supports President Obama's Educate to Innovate campaign for excellence in science, technology, engineering and mathematics, or STEM, education.

The Summer of Innovation program will work with thousands of middle school teachers and students during multi-week programs in the summer of 2010 to engage students in stimulating math and science-based education programs. NASA's goal is to increase the number of future scientists, mathematicians, and engineers, with an emphasis on broadening participation of underrepresented groups.

NASA plans to release a Cooperative Agreement Notice (CAN) entitled Summer of Innovation Pilot Program to consortia of the National Space Grant College and Fellowship Program (Space Grant). NASA has determined that submitters for this opportunity must be the Lead Institution of the state's Space Grant Consortium. The Space Grant national network includes more than 850 affiliates from universities, colleges, industry, museums, science centers, and state and local agencies supporting and enhancing science and engineering education, research and public outreach efforts for NASA's aeronautics and space projects. These affiliates belong to one of 52 consortia in all 50 states, the District of Columbia and the Commonwealth of Puerto Rico. There may only be one proposal per state.

Representatives of interested public/private entities including other federal agencies, non-profit and for-profit entities, and organizations/associations with relevant experience, are encouraged to contact the state Space Grant Director in the state(s) of particular interest.

www.nasa.gov/spacegrant

<<http://www.nasa.gov/spacegrant>>

Contingent upon the availability of funding, NASA intends to competitively select up to seven states to pilot the Summer of Innovation during 2010. Awards may range from \$1 million - \$5 million dollars each will have a period of performance of 36 months. Local programs will be required to develop ways to keep students and teachers engaged during the school year and to track student participants' performance through 2012. Awardees will be expected to leverage the unique capabilities and resources of program partners to ensure a sustainable effort following the period of performance.

The Summer of Innovation Notice of Intent is available online:

<http://nspires.nasaprs.com> <<http://nspires.nasaprs.com/>>

Vernier Announces Expansion of the LabQuest® Family of Probeware

New Sensor and Interface Options Provide STEM educators with State-Of-The-Art Technology and Unprecedented Value

Beaverton, OR – January 14, 2010 – Vernier Software & Technology continues to deliver products that improve hands-on scientific exploration while meeting school budget constraints. Vernier announced this week at both the Florida Educational Technology Conference (FETC) in Orlando and the British Education and Training Technology (BETT) in England the latest products in their probeware offerings: the Labquest® Mini and the SpectroVis® Plus. Also new to Vernier's technology offerings is the Mini GC®, or Mini Gas Chromatograph.

The LabQuest Mini offers an interface solution for educators who use a computer or netbook to collect scientific data. Based upon Vernier's flagship interface, the Vernier LabQuest, the LabQuest Mini has many of the same features, without a screen, for less than half the price, making it an ideal solution for students using computers to collect data. LabQuest Mini offers the same 100 kHz maximum sampling rate as the LabQuest, along with five sensor ports that are compatible with more than 54 sensors. LabQuest Mini includes free Logger Lite software, or for more advanced analysis it can interface with Logger Pro® 3 software. Sixteen Vernier lab books covering core topics in Biology, Chemistry, Earth Science, Environmental Science, Physical Science, Physics, Physiology, Engineering and Water Quality are also available for hands-on experiments.

Analyzing compounds in general chemistry and organic chemistry is now easier with Vernier Software & Technology's new Mini Gas Chromatograph—the Mini GC. For use in high school and college courses, the Mini GC uses newly patented technology that allows students to use room air as a carrier gas.

“In the past, chemistry instructors have only had the option of gas chromatographs that cost many thousands of dollars—often over \$10,000. This new technology gives college chemistry instructors the ability to outfit a lab more cost effectively. At the same time, high school science lab teachers who may have considered gas chromatography, but it was beyond their reach, can now provide state-of-the-art technology for advanced chemistry classes,” said Dan Holmquist, Senior Partner at Vernier and a former chemistry instructor.

The Mini GC takes up a small footprint on the lab bench and is light enough to be easily moved from lab to lab. Students can learn to separate and identify compounds using technology that is now thousands of dollars less than traditional gas chromatographs. Students can use the following compounds in the Mini GC: Alcohols, Aldehydes, Aromatic Hydrocarbons, Carboxylic Acids, Esters, Ethers, Ketones, and Nitriles.

Rounding out Vernier's new product offerings is the improved SpectroVis Plus®, an array diode spectrophotometer. The updated SpectroVis Plus has an improved range of 350-950 nanometers, enhanced optical resolution and new support for fluorescence, all at a price hundreds of dollars less than traditional spectrometers. This sensor is ideal for high school and higher education chemistry and biology classes and can be used with either a computer or a LabQuest interface.

For more information visit the website at www.vernier.com <<http://www.vernier.com/>> .

2010 Thacher Environmental Research Contest for Grades 9-12

Entries Due: April 5, 2010

\$3,500 in Prizes Available

Arlington, Va.-- Scientists and decision-makers are using a greater variety of tools and data than ever before to investigate and respond to our changing planet. With an increasing amount of these tools and data becoming publicly available, students have an unprecedented opportunity to participate in scientific research that explores Earth's evolving environment.

The 2010 Thacher Environmental Research Contest, an activity of the Institute for Global Environmental Strategies, awards cash prizes to secondary school students (grades 9-12) whose projects demonstrate the best use of satellites and other geospatial technologies or data to study Earth.

Three cash awards will be given: 1st place -- \$2,000; 2nd place -- \$1,000; and 3rd place -- \$500. Entries can be submitted by individuals or teams. In the case of team entries, the cash award will be split equally among the winning team members.

In addition to prizes for the winning students, the teachers of the first-, second- and third-place students or teams will receive a \$200 amazon.com gift card. If participation is part of an after-school club or other activity

independent of school, the student or team can identify an adult "coach" who would be eligible for this award (e.g., a parent, club leader, etc.).

Entries must be postmarked April 5, 2010. IGES plans to announce the winning entries by May 12, 2010. Entries will be judged by IGES staff.

Eligible geospatial tools and data include satellite remote sensing, aerial photography, geographic information systems (GIS), and Global Positioning System (GPS). The main focus of the project must be on the application of the geospatial tool(s) or data to study a problem related to Earth's environment.

Geospatial technologies and data have numerous uses in science research, ranging from climate prediction to archaeology. They can be used to improve our understanding of the Earth system, including interactions among the atmosphere, biosphere, geosphere and hydrosphere. They can also be used to improve the quality of our lives by supporting weather prediction, natural hazards monitoring, agriculture, land-use planning, coastal management, transportation, public health, emergency response and other fields.

The Thacher Environmental Research Contest (formerly the Thacher Scholars Award) was founded in honor of former IGES board member Peter Thacher, who died in 1999. Peter Thacher was former deputy executive director of the United Nations Environment Program, NASA advisor and, at the time of his death, president of the Earth Council Foundation/U.S. He was a leader in promoting the use of satellite remote sensing .

For more information on the 2010 Thacher Environmental Research Contest, please visit

<http://www.strategies.org/ThacherContest><http://rs6.net/t_n.jsp?et=1102929639051&s=3574&e=001hYfpSwmUeLbfyQF-bqnQamhMHe7X48jthjN2hYm4VZ2IT_HTsziX4QzKNWBBUwz89kxHMwMZN64-wfoayy0zkm8ykGlpHOSZIC_e-li-oLYNAW27HkwaltJij10JlkSk6SvsY8eCZUo=>>

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LECTURE SERIES 2010

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ANCHORAGE MUSEUM
6:30 P.M. • ACTIVITIES
SPONSORED BY THE ANCHORAGE MUSEUM'S
IMAGINIUM DISCOVERY CENTER

7 P.M. • LECTURE

..... **WEDNESDAY, JAN. 20**

New Energy for Alaska Communities
Gwen Holdmann
Director of the Alaska Center for Energy and Power, UAA

..... **WEDNESDAY, JAN. 27**

**Breaking the Barrier:
Tobacco's Effect on Lung Architecture**
Cindy Knall
Assistant Professor of Immunology, UAA

..... **WEDNESDAY, FEB. 3**

**Raising The Dead:
Hibernating Animals Give Scientists
Clues To Help Victims Of Cardiac Arrest**
Kelly Drew
Professor, UAF

Coordinated by the Center for Research Services,
University of Alaska Fairbanks

Alyeska pipeline
Geological Institute
ANCHORAGE MUSEUM
Center for Research Services
Alaska INBRE
UAF UNIVERSITY OF ALASKA FAIRBANKS

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