

SYSTEMic CONNECTIONS

STEM Web Page Highlights 2012-13

<http://www.asdk12.org/depts/STEM/objectives.asp>

Links to local STEM programs –

Campbell Creek Science Center, Imaginarium, UAA Planetarium, Alaska Zoo, AK Botanical Garden

<http://www.asdk12.org/depts/STEM/>

CALENDAR - STEM EVENTS 2012-2013

February 16	First Tech Challenge - Anchorage Regional Qualifier - Eagle River HS
February 17 - 23	National Engineers Week
February 25 - March 1	2013 Winter Conference for Educators: “Make Sense of Problems and Persevere in Solving Them”
March 2013	1st Annual Alaska Regional Science Bowl
March 22 - 24, 2013	Alaska Science & Engineering Fair
March 30, 2013	Alaska State Science Olympiad - UAA
April 11-14, 2013	NSTA Conference - San Antonio, TX
October 18-20, 2013	Alaska Math Science Conference - Anchorage, AK*

February 11, 2013 v 18

This is an STEM information exchange that is available to all teachers in the Anchorage School District

Please read and then TRY some of these!

1. Video Series: How to Do a Science Fair Project
2. FIRST Tech Challenge Anchorage Regional Qualifier
3. EAA Air Advanced Academy Scholarship
4. National Engineers Week - February 17–23, 2013!
5. New Event Planning and Volunteer Coordination Program
6. Girls with Wings Scholarship Applications!
7. States Soon to Weigh Science Standards Adoption
8. A Natural Safety Topic for Every Science Department
9. from ANROE Newsletter February 7, 2013
10. ASRA - Alaska Summer Research Academy
11. from NSTA's The STEM Classroom - February 2013 Middle School Edition
12. The Alaska Botanical Garden 7th Annual Spring Garden Conference - March 8th and 9th, 2013
13. NASA Seeks Computer Users, Including Students and Teachers, to Analyze Images of Asteroid
14. WetlandsLive!

CHECK OUT THESE WebSITES:

<i>new Online Rock Cycle Module</i>	http://www.geolsoc.org.uk/ks3/gsl/education/resources/rockcycle.html
<i>new New Plate Tectonics Online</i>	http://www.geolsoc.org.uk/Plate-Tectonics
<i>new How to do A Science Fair</i>	http://www.jpl.nasa.gov/education/sciencefair/
<i>Incredible Image of the Sun</i>	http://www.nasa.gov/images/content/719590main_Grid-Sun-orig_full.jpg
<i>Alaska Science & Engineering Fair</i>	http://alaskasciencefair.org
<i>National Ocean Sciences Bowl</i>	http://seagrant.uaq.edu/nosb/whatis.html#national
<i>Nature Works Everywhere</i>	http://www.natureworkseverywhere.org
<i>Science Olympiad</i>	http://www.alaskascienceolympiad.org

Video Series: How to Do a Science Fair Project

Need help getting started on your science fair project? In this video series, a JPL scientist, engineer and educator team up to help you learn how to craft your very own idea for a great science fair project and see it through to completion.

<http://www.jpl.nasa.gov/education/sciencefair/>

FIRST Tech Challenge Anchorage Regional Qualifier

The FIRST Tech Challenge Anchorage Regional Qualifier competition will be on Saturday 16 February at Eagle River HS. The competition begins at 9:00 am and the awards ceremony begins at 3:00 PM. These robotic challenges are the next step above FIRST Lego League. People interested in seeing the competition and learning more about this level of robotics will find much entertainment going on.

EAA Air Advanced Academy Scholarship

We have been informed that there have been NO applicants. This a great opportunity. The Hayward Air Rally, in conjunction with several EAA Chapters is offering scholarships to the EAA Air Advanced Academy. **The deadline has been extended to February 14 in hopes that we will get some applicants for fully funded (including the camp fees and round trip airfare) scholarship to go the EAA Advanced Air Academy in Oshkosh, WI.** Please encourage potential candidates between 16 and 18 years old to apply. Since they need written references they need to start working on the application right away to meet the extended deadline of Feb 14.

What is the EAA Air Academy?

Each summer, the Experimental Aircraft Association (EAA) Air Academy offers high school students an opportunity to go to Oshkosh, Wisconsin and learn all about aviation. The EAA Air Academy is a unique summer camp that takes a young interest in aviation to the next level. Participants spend a week at the Air Academy Lodge in Oshkosh, completely immersed in the thrilling world of aviation. Top-notch instructors help to explore the world of flight through aviation studies, hands-on activities, flight simulation and many other exciting experiences. The highlight of the week is a flight in a real airplane! These camps provide the foundation for a lifelong love of aviation as well as the opportunity to create friendships with fellow aviation enthusiasts.

Info about EAA Air Academy here: <http://www.young eagles.org/programs/airacademy/>

<<http://www.young eagles.org/programs/airacademy/>>

Info about Hayward Air Rally here: <http://www.hwdairrally.org/index.shtml> <<http://www.hwdairrally.org/index.shtml>>

For info contact EAAproject@hwdairrally.org <<mailto:EAAproject@hwdairrally.org>>

National Engineers Week - February 17–23, 2013!

This year, we “Celebrate Awesome”!

Engineers all around the world are planning events, classroom visits, and student engagement activities in every engineering discipline. AIAA local sections are hosting a wide variety of activities, so be on the lookout for communication from them in the upcoming days.

What can you do to celebrate National Engineers Week in your classroom?

1. Check out the [National Engineers Week website](#). There are great, simple activities that will get your students thinking about engineering and its impact on their lives.
2. Invite a member of the local AIAA section to come and talk about their job and career, and how it relates to your curriculum.
3. Take a look at [Kid’s Place K–12 Activities](#) on the AIAA website.. There are great aerospace specific activities that you can do with your students.
4. Check out the [Careers in Aerospace](#) videos on the AIAA website. Your students can meet Heather Paul and Christine Smith and learn what they do for a living, how they prepared for their careers, and what challenges they faced to attain their goals.
5. Check out the NASA YouTube channel for short videos about the work that NASA engineers do every day (search for “NASA YouTube” to find sites like www.youtube.com/user/NASAeClips, www.nasa.gov/offices/education/programs/national/nas2/home/index.html, www.youtube.com/user/NASAexplorer, and www.youtube.com/user/ScienceAtNASA).
6. Take a look at National Engineers Week events – many science museums have special events to celebrate engineering contributions.

Finally, we want to hear from you how your class celebrated National Engineers Week. Please feel free to send a short article and pictures from your activities that can be featured in our wrap-up of National Engineers Week around AIAA coming up in March.

New Event Planning and Volunteer Coordination Program

Are you looking for a volunteer to assist with projects in your classroom, or to be a science fair judge or a mentor for your students? AIAA has a new [AIAA STEM K–12 Event Planning and Volunteer Coordination](#) page. This is a new exclusive benefit for AIAA educator associates. After you log in to the website to create an event, you can then select members to invite to your event. This is a new program for AIAA, so we do not have full coverage of all areas for in-person visits, but you can contact AIAA members to work “virtually” with you and your students. Visit the Engineers as Educators page to find out more about this program.

Girls with Wings Scholarship Applications!

Girls With Wings is accepting applications for a Private Pilot training scholarship and a Dreams Take Flight scholarship. Visit www.girlswithwings.com <www.girlswithwings.com> for details.

States Soon to Weigh Science Standards Adoption

In the January 30 edition of Education Week, Erik Robelen explores the decisions that will be made by states regarding adoption of the Next Generation Science Standards (NGSS), set for release this spring. According to the article, "the 26 'lead state partners' helping to develop the K–12 standards have agreed to 'give serious consideration' to adopting them. Recent interviews with officials in a number of those states, such as California, Delaware, Kansas, and Maryland, reveal a generally positive reaction to the second and final public draft, issued this month for comment." Read the full article [here](#).

A Natural Safety Topic for Every Science Department

It's a "natural" safety concern that requires thoughtful consideration. This month's Safety Notes from Flinn Scientific provides guidelines to consider before bringing animals into the classroom.

Make sure to cover "Live Animals in the Classroom" at your next department meeting. Your department, using this edition of Safety Notes, could help establish or enhance a responsible policy regarding classroom animals for your school and district.

To view and/or print your copy of "Live Animals in the Classroom" please go to:

<http://www.flinnsci.com/teacher-resources/emails/safety/snfeb13/>

Thank you for supporting Flinn Scientific! It is a privilege to help you teach science safely.

from ANROE Newsletter February 7, 2013

Iditarod Conference for Educator's

Anchorage- February 25 – March 1

Are you interested in the mushing scene? Have you ever wondered about connecting the Last Great Race to your curriculum? Are you ready to take advantage of the integration of STEM into the most famous dog race in history? Then sign up for the 2013 Winter Conference for Educators, "Making Sense of Problems and Persevere in Solving Them".

<http://iditarod.com/teacher/2012-winter-conference-for-educators/>

Alaska Botanical Garden Spring Garden Conference

Anchorage- March 8 & 9

Theme: "Where our Food Comes From". For Early Bird Registration go to <http://www.alaskabg.org/> or call ABG: 907-770-3692 ext 0.

Gr 6-12 Sealtag

Engage students, grades 6-12, with research and remote monitoring technology used to study endangered Steller sea lions. The website offers a hands-on STEM curriculum aligned to Ocean Literacy Principles and Science Content Standards. Activities include learning how your cell phone acts like a transmitter, designing a seal tag, animal crime scene investigations, and more. <http://sealtag.org/TeacherToolbox.html>

Comic Book Super Powers in Real Life – Southern Fried Science

Check out this article about five organisms with real super powers that rival their comic book counterparts. And while there, check out the rest of the website, a marine science, environmental science, and conservation blog by a team of scientists who love the ocean, science, conservation, philosophy, education, and outreach.

<http://www.southernfriedscience.com/?p=14057>

Gr. 10-12 Juneau Icefield Research Program

Application deadline April 15 June 21 through August 16. Takes senior high school, undergraduate, and graduate-level students on an 8-week expedition from Juneau, AK, to Atlin, BC, over the Juneau Icefield. Students receive training and experience in backcountry skiing, glacier travel, and crevasse rescue; participate in JIRP's long-running mass balance and surface elevation surveys; receive lectures from top Scientists in a range of natural sciences (including glaciology, geology, climatology, meteorology, biology, and ecology); and perform individual research projects, the results of which they present at public symposia in Atlin and Juneau. Some scholarships are available. Application materials and additional information are available at JuneauIcefield.com<<http://JuneauIcefield.com>><<http://JuneauIcefield.com>>

ASRA - Alaska Summer Research Academy

Gr 6-8 Alaska Summer Research Academy

Application deadline February 28 June 3 – 14 is a day program for students entering 6th through 8th grade. The Alaska Summer Research Academy (ASRA) is now accepting applications for their middle school program. It is designed for students who are curious about the world and passionate about learning. This years topics include chemistry, robotics, food science, math in nature, and many more! This is a dynamic, hands-on opportunity is for your students (sorry, you can't attend). The web site including the application form is

<http://www.uaf.edu/asra/summer-programs/middle-school/2013-modules/>

Gr 9-12 Alaska Summer Research Academy

Applications are now being accepted for the Alaska Summer Research Academy for your STUDENTS. This amazing, hands-on opportunity not only offers incredible science opportunities for kids, but also may lead to career opportunities. This years high school topics are:

- * Archaeology<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/archaeology/>>
- * Biomedicine<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/biomedicine/>>
- * Fiber and Electronics<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/fiber-and-electronics/>>
- * Forensics<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/forensics/>>
- * Undersea Aliens!<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/marinebiology/>>
- * Plug In!<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/plug-in/>>
- * Robots, Networks, and
Arduinos<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/robots-networks-and-arduino/>>
- * Smart Circuits<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/smart-circuits/>>
- * Sounds of Science<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/sounds-of-science/>>
- * Vetmedicine<<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/vetmedicine/>>

The web site for the application packet and more information is:

<http://www.uaf.edu/asra/summer-programs/high-school/2013-modules/>

from NSTA's The STEM Classroom - February 2013 Middle School Edition

Coaster Crafter: Build. Ride. Scream!

In this science, technology, engineering, and mathematics (STEM) [learning game](#) for grades 6–12, students explore and practice key STEM concepts by designing, building, and sharing virtual roller coasters. A teachers guide provides background information on the physics topics involved in coaster creation, including inertia, velocity, acceleration, gravity, mass, momentum, friction, and potential and kinetic energy.

Using Technology to Connect Students and the Environment

The National Environmental Education Foundation has released this [video](#), which shows how technology can further STEM learning through the environment, both outside and in the classroom. The video demonstrates how the students of Islesboro Central School in Maine use technology to help document the ecological condition of nature preserves near their school.

Engineers Week

During [Engineers Week](#) (E-Week), taking place February 17–23, teachers can show students how engineering depends on math and science. Teachers can invite engineers to their classrooms to speak about their work. The E-Week website provides resources for teachers, students, and engineers.

Introduce a Girl to Engineering Day

Celebrated this year on February 21, Introduce a Girl to Engineering is a national movement that shows girls how creative and collaborative engineering is and how engineers are changing our world. See the [website](#) to access information about hands-on activities, experiments, and resources for teachers, students, and parents.

from LPI Earth and Space Science News – February 2013

Presidential Awards for Excellence in Mathematics and Science Teaching

The 2012-2013 nomination period for grade 7 - 12 mathematics and science, teachers for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) program is currently open. The 2012-2013 nomination deadline is April 1, 2013. Application deadline is May 1, 2013.

Grants to Attend NIST Summer Institute for Middle School Science Teachers

School districts can apply for a grant to send middle school science teachers to National Institute of Standards and Technology (NIST) Summer Institute for Middle School Science Teachers. The Summer Institute is a two-week workshop for middle school science teachers featuring hands-on activities, lectures, tours, and visits with NIST scientists and engineers

in their laboratories. Dates: July 8-19, 2013. Application deadline: March 20, 2013.

ING Unsung Heroes Award Grants

ING Unsung Heroes helps teachers turn great ideas into reality for students. Each year, 100 educators are selected to receive \$2,000 to help fund their innovative class projects. Three of those are chosen to receive the top awards of an additional \$5,000, \$10,000 and \$25,000. The application deadline is April 30, 2013.

Climate Change Kit for Middle School

"Climate Change, Wildlife, and Wildlands: A Toolkit for Formal and Informal Educators" contains case studies, activities, and videos based on climate science, environmental education, and stewardship information.

New Online Rock Cycle Module

The Geological Society of London has a new Rock Cycle online module for students and teachers.

New Plate Tectonics Resources Online

The Geological Society of London has new online map-based resources on plate tectonics for students and teachers.

The Alaska Botanical Garden 7th Annual Spring Garden Conference - March 8th and 9th, 2013

Friday, March 8th - Annual Meeting

6:30-8:30 pm in the auditorium at the Anchorage Museum at Rasmuson Center

Keynote by Gary Paul Nabhan

Saturday, March 9th, 2013 - 6th Annual Spring Garden Conference

8:30am - 4:45pm (location TBA)

Keynote by Gary Paul Nabhan

<http://www.eventbrite.com/event/5223722294?ref=ebtn>

We are pleased to feature internationally-celebrated Nature Writer, Poet, Ethnobotanist, and Sustainable Food and Farming Advocate Gary Paul Nabhan as Keynote Speaker at the ABG Spring Garden Conference.

Local talks include, but are not limited to (this is a preliminary list!): Landscape Design, Community Gardens in Tyonek, Rock Gardening, Growing Fruit, Beekeeping, Urban Farming in Anchorage, Organic Gardening, and more! Schedules and Registration materials will be posted on the ABG website soon.

Gary Paul Nabhan is a pioneer of the "local foods" movement and the heirloom seed saving movement. He is a proponent of conserving biodiversity and cultural diversity. A recipient of a MacArthur "genius" award, he has been honored as a "visionary" by Utne Reader, Mother Earth News, Bioneers, Saveur Magazine, and Time Magazine. As the W.K. Kellogg Endowed Chair in Sustainable Food Systems at the University of Arizona Southwest Center, Nabhan works to build more just, nutritious, sustainable and climate-resilient foodsheds. He was among the earliest promoters of the use of native foods in preventing diabetes. Gary is also an orchard-keeper, wild foods forager and pollinator habitat restorationist working from his small farm in Patagonia, Arizona near the Mexican border.

Nabhan has served as Director of Science at the Arizona-Sonora Desert Museum and co-founded Native Seeds/SEARCH, a nonprofit conservation organization working to preserve indigenous southwestern

agricultural plants and knowledge of their uses. Throughout his writings, he inspires communities to bring the local, heirloom fruits, vegetables, herbs, and other foods back into widespread cultivation.

While much of Nabhan's work has focused on the food systems, plants, and cultures of the American Southwest, his messages are far reaching, and relevant to all regions. His book *Renewing Salmon Nation's Food Traditions* discusses the regional plants and animal species of the Pacific Northwest region, and offers an ethnobotanical record of species that were once abundant in our "Salmon Nation".

NASA Seeks Computer Users, Including Students and Teachers, to Analyze Images of Asteroid

NASA is looking for armchair explorers, including students and teachers, to investigate and analyze high-resolution Dawn spacecraft images of the asteroid Vesta, including craters and other features, from their computer. Learn more and join the asteroid exploration team at http://dawn.jpl.nasa.gov/DawnCommunity/asteroid_mappers.asp <http://dawn.jpl.nasa.gov/DawnCommunity/asteroid_mappers.asp> . For more information about NASA's mission to the asteroids Vesta and Ceres, check out <http://dawn.jpl.nasa.gov> <<http://dawn.jpl.nasa.gov>> .

WetlandsLive!

[Copper River Delta, Alaska]WetlandsLive!<<http://wetlandslive.pwnet.org/>> is a series of live webcasts featuring students working in wetlands from Panama to Alaska, and we invite Alaskan teachers to join the hundreds of others throughout the Western Hemisphere who are participating in this great program. Classes will be watching and interacting online through the website wetlandslive.pwnet.org<<http://wetlandslive.pwnet.org>> to learn about the important role wetlands play in all our ecosystems, and to share their own stories. The first webcast was broadcast from Canada in October, and two more are planned: March 8th (Panama) and May 9th (Cordova).

Targeted to grades 4-6, the WetlandsLive! website also features information, lesson plans, and inspiration to get started with your own wetlands studies. More information on the webcasts can be found below.

*******Exclusive to teachers in Alaska: Our Alaska Wetlands VIDEO CONTEST**

All Alaska schools are eligible to enter a short video for a chance to win \$1000 in field trip support or media equipment. The videos could highlight a service project or field study (yes, difficult in most of Alaska at the moment!) or could document student learning from websites and other sources – the only criteria is it must highlight an aspect of wetland habitat. Creativity will be key here! For more information on the video contest please go to:

http://wetlandslive.pwnet.org/pdf/Chugach_video_contest.pdf. The deadline for submissions is March 31.

*******Exclusive to teachers in the Anchorage School District**

Interested in visiting local wetlands with your class, or in having a wetlands specialist visit your class? Please contact Sarah Warnock, Education Program Manager at Alaska Geographic, for more information: (907)771-8467

About the Webcasts:

March 8: Panama Bay

Although school's out on the 8th, the program will be available for viewing any time through <http://WetlandsLIVE.pwnet.org>. This webcast features students studying wetlands on the Bay of Panama. The mudflats are a rest stop for millions of Alaska's birds that migrate as far south as Argentina. The program also highlights mangrove swamps, an important nursery for hammerhead sharks.

May 9: CORDOVA, ALASKA 9 - 10 a.m. AKTime

May is American Wetlands Month, and Alaska has the largest contiguous wetlands on the Pacific Coast of North America. Find out how students in Cordova are engaging in wetlands on the Chugach National Forest through hands-on field studies.

Questions? Contact Kristy Liercke at lierckkx@pwcs.edu<<mailto:lierckkx@pwcs.edu>> or by calling (703) 791-7359. WetlandsLIVE is brought to you by the USDA Forest Service, Prince William Network, and many other partners. If you don't want to receive e-mail announcements about WetlandsLIVE, please contact Kristy at lierckkx@pwcs.edu<<mailto:lierckkx@pwcs.edu>> to ask that your name be removed from the mailing list.

WetlandsLIVE is on Facebook - go to <http://www.facebook.com/WetlandsLIVE> to "like" us there and follow us on Twitter at <https://twitter.com/wetlandslive>
