

BaP/"Science Matters to Building a Presence Update, May 2009

New Science Teacher Academy Application Information

Please see the information below regarding the New Science Teacher Academy that NSTA offers to new teachers. The website is www.nsta.org/academy. If you would please send this information out to all people you can think of who can get it into the hands of new teachers I would appreciate it.....Thank you!

This program is:

- a year-long professional development program established to help reduce the high attrition rate among science teachers new to the teaching profession.
- Intended for science educators entering their second or third year of teaching, the Academy is designed to help promote quality science teaching, enhance teacher confidence and classroom excellence and improve teacher content knowledge.

This year NSTA will select 185 teachers to participate as fellows in the 2009 Academy. Participants chosen will receive

- a comprehensive membership package,
- online mentoring with trained mentors who teach in the same discipline, and
- the opportunity to participate in a variety of web-based professional development activities, including web seminars.
- receives financial support to attend and participate in NSTA's National Conference on Science Education, taking place in Philadelphia, March 17-21, 2010.

Who is eligible:

- Science teachers located throughout the country, who will be entering their second or third year of teaching and whose schedule is a minimum of 51 percent middle or high school science, are encouraged to apply for the program.

When is it due:

- Applications must be submitted no later than **June 30, 2009** to be considered.

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K-12: From NSTA: Science in the News

Add this to your bookmarks for science news as well. Page Keeley sent an email about the article on the importance of elementary science (published in the NSTA Reports) just after I had sent out the last eBlast in April – and the article is featured on this section of the NSTA web site, along with others.

Here are the bread crumbs: NSTA Home (www.nsta.org) > Publications and Products > WebNews Digest. You need not be an NSTA member to access this information and the articles highlighted on the site.

Also of Note:

Science Professional Learning Communities summer NSTA conference being held in Orlando, FL the first week of August. Information and registration will be up on the NSTA web site soon.

K-12: NSTA Launches Professional Networking Website for Science Educators
<http://www.nsta.org/communities>

If you ever needed to share a teaching challenge, talk to a teacher in your discipline teaching your grade band, or gather suggestions about resources on assessment from someone who has used the resource and can recommend it, you'll want to join the new online NSTA Communities. This website brings together science education professionals to interact, mingle, share activities and resources, form groups, offer advice, and get help from the community members. Visit www.nsta.org/communities to create your profile and expand your professional network. You may make a friend, offer your expertise, find a mentor, and help build a community with those sharing a passion for science education.

The NSTA Communities site is open to NSTA members as well as New Orleans conference attendees and presenters.

For a visual introduction to the NSTA Communities, view the archived web seminar in the Communities "foyer".

Not an NSTA member? If you are a full-time student, or a teacher in the first 5 years of teaching, membership is only \$32/year. The regular rate is \$74/year; still a bargain if you enjoy reading an outstanding journal for science teachers 9 times a year, want to stay current with developments in the field of science (NSTA News), subscribe to the NSTA listserves, and/or want a reduced price for books and NSTA conference registrations!

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K-12: For your summer reading and content expansion
<http://www.teachersdomain.org/collection/k12/sci/>

Do you want to broaden your knowledge of science content and effective inquiry-based methodologies? Teachers' Domain offers over 1,500 media resources in science, engineering, and technology as well as standards-based professional development courses in Physical, Life, and Earth Sciences. Each resource is coded for grade level, and for media type. For example, in a video segment from Outdoor Nevada, you could learn about burrowing owls, which are yearlong residents of open, dry grassland and desert habitats, and the only owls that nest underground and are active both day and night. Or meet 12-year-old Jesse, the designer of dozens of gliders, in this ZOOM video segment. Some of his gliders fit in your hand, while others can only be stored in the garage. Watch his gliders go and learn why they fly. There are excellent lessons and great resources posted here, so time exploring the site will be well spent.

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K-12: Great American Backyard Campout
<http://www.nwf.org/BackyardCampout/about.cfm>

The Great American Backyard Campout® provides an opportunity for everyone to relive -- or to experience for the first time -- how much fun it is to spend a night sleeping under the stars and enjoying the sounds of nature. Held on June 27, the Great American Backyard Campout® is a national event that encourages individuals, youth, friends and families to camp out together for one night. Each year the number of campers has steadily grown. The locations and types of campsites vary from family campouts in the backyard to public campsites with 30 or more community members. In previous years, campers have ranged in age from 3 months to 99 years old and have come from all areas of the United States.

The Great American Backyard Campout® supports Great Outdoors Month (June), celebrating the diverse and valuable recreational opportunities across the nation -- especially those linked to America's public lands and waters, which cover more than a third of the nation's surface and attract billions of visitors annually. Learn more about the Great American Backyard Campout and other events taking place in your neighborhood by visiting the National Wildlife Federations web site noted above.

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K-12: PBS: 400 Years of the Telescope

<http://www.pbs.org/soptv/400years/>

This new web site, accompanying the PBS television special "400 Years of the Telescope," offers background information, classroom and family activities, and practical tips for everyone who is teaching about the development of telescopes, the history of astronomy, or the exploration of the universe.

Information on the site includes:

- * An Introduction to Telescopes
- * Getting Your Family Involved with Astronomy
- * The Expanding Universe Explained
- * The Astronomy of Many Cultures
- * How Astronomers Search for Intelligent Life in Space
- * Science Fiction With Good Astronomy
- * Telescopes of the World (a table and database)
- * Frequently Asked Questions about Galileo
- * Video Clips of Interviews with Noted Astronomers
- * An Activity for Observing the Cycles of Jupiter's Moons
- * A Glossary of Astronomical Terms
- * Teaching Ideas for 14 Key Topics Related to the Show
- * A "Toolkit" for Demonstrating Ideas in Optics
- * A Guide to the Changing Role of Women in Astronomy

Information on the site was put together by the educational staff of the Astronomical Society of the Pacific (a 120-year old educational organization which has developed outreach materials on astronomy for a wide range of projects) and Interstellar Studios, the production company that made the TV special.

Both the TV show and the web site are among the key outreach projects of the International Year of Astronomy in 2009, celebrating the 400th anniversary of Galileo turning the telescope toward the heavens.

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Gr K-5: It's available: Issue 14 Penguins and Polar Bears and their oceans
<http://beyondpenguins.nsd.org/>

Issue 14 of the Beyond Penguins and Polar Bears online magazine is now available! In Polar Oceans, learn about two very different oceans - the Arctic and Southern Oceans - at opposite ends of the Earth.

The magazine features science and literacy content knowledge for teachers, as well as a variety of other professional resources. This month, learn about podcasting and how to create ocean-themed performance assessments. Discover high-quality science and literacy lessons and children's literature.

Our Feature Story this month explores the life of the blue whale, the largest animal on Earth, and a simple food chain in the Southern Ocean. This informational text is available at three grade levels (K-1, 2-3, and 4-5) and in text-only, book, and electronic book formats. We've also included templates to engage your students as they develop comprehension skills.

We've also got ideas for integrating art and music into your ocean unit. Download our podcast to learn about an educational song that teaches students about our "One Big Ocean," or create an ocean mural inspired by Wyland's whaling walls.

Of course, there's much more in the latest issue of Beyond Penguins and Polar Bears. Dive in and explore Polar Oceans today!

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Gr 6-12: Freebies from NIGMS
<http://www.nigms.nih.gov/Publications/NAT0409>

These great resources are FREE and are available from Science Education and Outreach, National Institute of General Medical Sciences. These printed and online resources focus on medically relevant life sciences. Printed materials are available individually or in classroom sets.

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 could 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. Free subscription

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

These materials are produced by the National Institute of General Medical Sciences (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.

Submitted by Alisa Zapp Machalek, Science Education and Outreach
National Institute of General Medical Sciences | MachaleA@nigms.nih.gov or 301-496-7301.

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Gr 7-10: NSDL/NSTA Web Seminars Present:
Studying the Human Physiological Limits of Exploring Mars
<http://tinyurl.com/NSTA-LifeonMars-webinar>

May 13, 2009 | 6:30-8:00pm Eastern

Does human biology limit our ability to travel through the solar system? Dr. James Pawelczyk, Associate Professor at Pennsylvania State University and NASA life scientist will discuss space travel as a context to understand human physiology for students. Web seminar is for teachers of grades 7-10.

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Gr 8: Field test opportunity for BSCS, funded by the US Dep't of Education
<http://www.bscs.org/inquiry8>

BSCS is seeking eighth grade middle school science teachers to field test a standards- and inquiry-based unit between November 2009 and March 2010. The overall goal of the project is to improve learning in science for all students. Teacher-collaborators will choose one major content area from an eighth grade multidisciplinary science program currently under development (Life Science, Earth/Space Science, Physical Science, or Science and Society) and will teach a unit on that content area to their students. Teacher and student feedback will play a key role in informing the revision of the materials.

BSCS is developing this program with the best approaches to student learning in mind. These approaches are based on current research in learning and teaching for conceptual

understanding and include literacy strategies, sense-making strategies, and a constructivist approach to teaching/learning science. Each unit addresses standards that closely align with state and national standards for eighth grade science.

Selected field test teachers will also be invited to consider field testing the revised materials in the 2010-2011 school year. BSCS will provide additional support for the implementation of the revised materials.

Submit your application by 15 June 2009 to be given priority status and receive a free gift bag. The final application deadline is 25 September 2009.

Submitted by Sue Kowalski, Science Educator, Field Test Coordinator, BSCS
719.219.4148 or skowalski@bscs.org

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Gr 8-12: NSTA's New Science Teacher Academy
<http://www.nsta.org/academy>

In April, NSTA announced that it is accepting applications for the 2009 NSTA New Science Teacher Academy. The NSTA New Science Teacher Academy, co-founded by the Amgen Foundation, is a year-long professional development program established to help reduce the high attrition rate among science teachers new to the teaching profession. Intended for science educators entering their second or third year of teaching, the Academy is designed to help promote quality science teaching, enhance teacher confidence and classroom excellence and improve teacher content knowledge.

For this academic year, NSTA will select 185 teachers to participate as fellows in the 2009 Academy. NSTA Fellows chosen for the program receive a comprehensive membership package, online mentoring with trained mentors who teach in the same discipline, and the opportunity to participate in a variety of web-based professional development activities, including web seminars.

In addition, each NSTA Fellow receives financial support to attend and participate in NSTA's National Conference on Science Education, taking place in Philadelphia, March 17-21, 2010.

Science teachers located throughout the country, who will be entering their second or third year of teaching and whose schedule is a minimum of 51 percent middle or high school science, are encouraged to apply for the program. Applications must be submitted no later than June 30, 2009 to be considered.

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Gr 11-12: Field test opportunity for TERC

TERC, a not for profit education research and development center in Cambridge MA, is seeking high school science teachers to field test at least one of its Biocomplexity and the Habitable Planet curriculum during the fall 2009 school semester. Biocomplexity is an innovative 11th-12th grade capstone course in Ecosystem and Environmental Science

developed at TERC with ecologists from the Cary Institute of Ecosystem Studies.

What is it?

Three units of 6-8 weeks each, funded by the National Science Foundation, that focus on:

(i) The Arctic

Students explore evidence of rapid impacts of climate change on Arctic species, make forecasts and recommend conservation strategies for these species.

(ii) Amazonia

Students analyze patterns of deforestation, explore the economic ecology of ranching, farming and forestry, and propose conservation strategies such as carbon trading, ecosystem service payments, establishment of parks, and reforestation.

(iii) Suburban sprawl and agriculture

Students explore the impact of habitat fragmentation on biodiversity, carbon flow, social factors and ecosystem subsidies as they consider the proposed conversion of farmland to suburban housing.

Students conduct inquiry around land use and conservation challenges. The curriculum actively engages students in science as they:

- Work in teams to address realistic problems in the field and lab
- Wrestle with ecological complexity and uncertainty
- Propose solutions to each challenge, supported by evidence

Pilot teachers implemented these units in advanced honors level courses, as replacement units in AP courses, and as general upper level elective courses. Pre-requisites are introductory biology and either physics or chemistry, as well as two years of algebra.

What resources will we provide you?

Lessons, readings, and teacher guide, classroom support via phone and e-mail, a stipend of \$150 per unit completed in your classroom.

What are your responsibilities?

- Field-test at least one unit in the expected timeframe
- Obtain consent from your students before the unit begins
- Give pre-post student assessments to assess unit efficacy
- Complete on-line implementation surveys

Submitted by Tara Robillard tara_robillard@terc.edu Tel: 617- 547-0430

K-12 Science

Have You Sampled Bytesize Science?

The American Chemical Society (ACS) is giving its popular kid- and teen-friendly podcast, Bytesize Science, an upgrade with the debut of new video episodes. In the latest video podcast, viewers find out that Paris—the land of the Eiffel Tower and delicious

French bread—was once a tropical rainforest 55 millions years ago. Other recent videos topics include:

The e-Nose: Scientists try to develop an electronic sniffer

What goes on inside the bug-eating pitcher plant, *Nepenthes Alata*

Download more audio and video episodes of Bytesize Science at www.bytesizescience.com or subscribe to the podcast on iTunes. New episodes of the Bytesize video podcasts will be posted the first Wednesday of every month. New episodes of the audio podcast will appear biweekly. Don't forget, you can also subscribe to this e-blast through iTunes, by doing a search for K12Science and then finding the podcast located under iTunes U.

2nd Annual Aquatic Academy for Teachers

Join in at Camp Newaygo for the 2nd annual Aquatic Academy for Teachers. The Academy, hosted by the Muskegon River Watershed Assembly, will be held on September 29th, 2009. You will be able to choose from sessions including Project LEP (Leopold Education), GEMS - River Cutters, MEECS Water Quality, Muskegon River Water Monitoring Program (MiCorps), Lake Michigan ecology on a GVSU Water Resource Institute research vessel and more.

Registrations are limited to the first 120 teachers who sign up. The registration fee of \$25 is refundable upon participation, mileage may be reimbursed, and lunch and classroom materials will be provided. If you wish, you can even stay over night at Camp Newaygo. There will be activities (weather dependent) including Astronomy at the Beach with Stephen Wessling from the Kropscott Farm Environmental Center and Cris DeWolf, Chippewa Hills High School astronomy teacher. For more information a brochure may be downloaded from this URL:

<http://www.mrwa.org/repository/pdf/brochure.pdf>

Year of Science—The Month of May Features Sustainability and the Environment

Sustainability represents a way of thinking, living, and acting to ensure that our choices do not impact future generations' ability to enjoy a high quality of life. This means being good stewards of the earth, good citizens in local and world communities, and sharing resources with human and natural populations.

Celebrating sustainability means celebrating the ways individuals and communities have successfully considered sustainability to make better decisions. Let's celebrate the scientists, the city planners, the students, and citizens who have found innovative ways to promote and live sustainability.

To learn more about these topics and more please visit the Year of Science 2009 website at:

<http://yearofscience2009.org>

Become Part of the Henry Ford Teacher Fellow Program

Become an active partner in education with The Henry Ford and help inspire and shape the minds of tomorrow's innovators! The new Henry Ford Teacher Fellow Program will select twelve to sixteen K-12 social studies and science/technology teachers each year through a competitive application process. Teacher Fellows will work with The Henry Ford Education Team to create a wide variety of cutting-edge and innovative educational programs that can become national models. The Henry Ford Teacher Fellow project will be led by Paula Gangopadhyay, Director of Education at The Henry Ford who possesses national-level museum education and school-reform leadership experience. Dorothy Ebersole, Curator of Education, will be the coordinator of the sessions and will act as the teacher liaison.

Commitment Required

Dedicated availability to participate in the first meeting on June 20, 2009; five weekdays to be determined in June- August and two Saturdays per month from 10:00 a.m.-4:00 p.m. in September-December 2009.

Application Details

Review the Henry Ford Teacher Fellow Application Information.

Complete and submit The Henry Ford Teacher Fellow Application Form and accompanying application essay.

Deadline for applications: May 26, 2009 (Post-marked. No late applications will be accepted)

Selection notification: June 1, 2009

By involving teachers in the creation of these resources the institution will gain the expertise of practicing educators familiar with curriculum requirements, classroom realities and teacher needs. In my experience with similar projects teachers gain not only increased content knowledge of history from this type of fellowship but also improved instructional skills.

To receive the application form, program announcement, and program benefits, qualifications and application requirements, please contact Dorothy Ebersole, Curator of Education at dorothy@TheHenryFord.org. No phone calls please.

High School Science

NASA Invites High School Students to Apply for Inspire Project

NASA's Interdisciplinary National Science Program Incorporating Research Experience,

known as Inspire, is accepting applications from high school students through June 30. NASA will make selections in September.

The selectees will participate in an online learning community in which students and parents have the opportunity to interact with their peers and NASA engineers and scientists. It also provides appropriate grade level educational activities, discussion boards, and chat rooms for participants and their families to gain exposure to the many career opportunities at NASA.

Students selected for the online learning community will have the option to compete for experiences during the summer of 2010 at NASA facilities and participating universities throughout the nation. The Inspire project is designed to encourage 9th through 12th grade students to pursue careers in science, technology, engineering and math. The summer experience provides students a hands-on opportunity to investigate education and careers in those disciplines.

For information about the project, including details about how to apply, visit the Inspire website at:

http://www.nasa.gov/offices/education/programs/descriptions/INSPIRE_Project.html

Middle School and High School Science

Using Sensors in the Life Sciences

Are you a teacher who is interested in spending an intense week studying the local environment and the life sciences utilizing technological tools? If so, you will be interested in this institute that will utilize Vernier Sensors, TI84 plus calculators, GPS, labpros/CBL2 and laptops in the life sciences. Teachers will learn how to use both “hand-held” and computer technology to do life science studies. The cost of the workshop is \$100. The workshop will be held at the Knabusch Math and Science Center in Monroe, MI. It will take place from June 22 – 26 from 9:00 am to 3:00 pm. To register, please visit:

<http://www.solutionwhere.com/Monroeisd/cw/main.asp>

If you have questions, please contact Tom Green at greent@monroe.k12.mi.us

Elementary and Middle School Science

Build a Moon Habitat

At The Space Place, you can have it your way. Read about NASA's plans to return to the Moon and, this time, stay a while. Designing a lunar habitat is part of the challenge that NASA must meet first. Kids can help, and they can practice their English or Spanish at

the same time. It's easy to toggle back and forth between the two versions of these cool plans for a do-it-yourself lunar habitat. This fun activity that can involve the whole family can be found at NASA's website for kids, The Space Place:

<http://spaceplace.nasa.gov/en/kids/exploration/habitat>

Just click on "Lea en español" to toggle to the identical activity in Spanish.

Calendar: Upcoming Events/Opportunities/Deadlines

2009: The Year of Science

<http://www.yearofscience2009.org>

May 13: NSDL/NSTA Web Seminars Present: Studying the Human Physiological Limits of Exploring Mars | <http://tinyurl.com/NSTA-LifeonMars-webinar>

May 15: Deadline to apply for GEMS Space Science Sequence Workshop at CMU

<http://gems.cmich.edu/cohort-application.html>

May 20: Deadline for entries in the Discovery Education 3M Young Scientist Challenge

<http://www.youngscientistchallenge.com>

June 15: Deadline to apply for the BSCS Grade 8 field testing opportunity

<http://www.bsos.org/inquiry8>

June 15-19: Math Machines workshop for high school teachers in Gahanna

<http://www.mathmachines.net>

June 16-17: COSI workshop: CSI: The science of Solving Crimes

<http://www.cosi.org/educators/professional-development/workshops-k-12>

June 27: Great American Backyard Campout

<http://www.nwf.org/BackyardCampout/about.cfm>

June 30: Deadline to apply for the NSTA New Science Teacher Academy

<http://www.nsta.org/academy>

July 14-15: Wet and Wild on the Rocks

Contact Gene Easter: Gleaster@sbcglobal.net

July 20-21: COSI workshop: Inquiry Into Science & Literature: Cross-Curricular Connections

<http://www.cosi.org/educators/professional-development/workshops-k-12>