



SCIENCE BYTES

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Middle and High School Teacher Opportunity International Polar Year: Science, Technology, Engineering, and Mathematics Polar Connections

University of Massachusetts Amherst

14-18 July 2008

Application Deadline: Tuesday, 1 April 2008

Funded by the National Science Foundation (NSF) and University of Massachusetts Amherst, Science, Technology, Engineering, and Mathematics (STEM) Polar Connections is designed to promote the teaching of science

concepts and processes related to the polar regions and to emphasize connections to state and national science standards in middle and high schools.

This unique teacher opportunity features a week-long program at University of Massachusetts Amherst,

which focuses on current science research in the polar regions and makes connections to school science curriculums. The program will address the rapid changes occurring in the physical environment, the corresponding impact on the biosphere, and the history and politics of the polar regions. During the program participants will preview the curriculum materials and draft a plan for incorporating them into the classroom. Online discussion forums will be held during the academic year to facilitate collaborative efforts between participants and university faculty. Teachers can earn Professional Development Points (PDPs) for participation in this program, and three graduate credits will be available at a reduced cost. Housing, meals, and travel reimbursement will be provided for those who live outside the commuting area. In addition to a \$375 USD stipend, participants will receive various materials, a materials budget, and funds to support their dissemination efforts.

To apply, teachers must prepare a narrative statement on how they plan to use the information from this seminar in the classroom, as well as how and where they will disseminate knowledge about the study of polar regions within the school, school district, and community. Applicants must include a resume and letter of support from the school principal or superintendent. The application package can be submitted by e-mail, fax, or regular mail, but should be received by Tuesday, 1 April 2008. Late applications will be accepted on a space available basis.

The program is sponsored by the STEM Education Institute and the Climate System Research Center (CSRC), and is designed for teachers of middle and high school science, math, and technology.

For more information and application forms, please go to: <http://www.umassk12.net/ipy> or contact:

E-mail: ipy@umassk12.net

Phone: 413-545-0734 Fax: 413-545-3697

Earth Science Week Spotlights Upcoming Movie

The makers of "Journey to the Center of the Earth 3D," due in theaters July 11, are collaborating with the American Geological Institute (AGI) to create educational materials and activities linked to this major summer movie release.

Starring Brendan Fraser, "Journey 3D" will plunge its characters - and viewers - into the exciting world beneath the Earth's surface. Walden Media, which is producing this update of the Jules Verne classic, has invited AGI, organizer of Earth Science Week, to help develop a booklet of related geoscience information and activities,

using the movie as an opportunity to explore “science fiction and science fact.”

Additional details on “Journey 3D” educational opportunities will be made available in the coming months. To learn more about the movie, visit <http://www.journey3dmovie.com/> online.

Theme Announced for Earth Science Week 2008

AGI is pleased to announce the theme of Earth Science Week 2008: “No Child Left Inside.” Being held October 12-18, Earth Science Week 2008 will encourage young people to learn about the geosciences by getting away from the television, off the computer, and outdoors.

AGI hosts Earth Science Week in cooperation with sponsors as a service to the public and the geoscience community. Each year, local groups, educators, and interested individuals organize celebratory events. Earth Science Week offers opportunities to discover the Earth sciences and engage in responsible stewardship of the Earth.

This year marks the 10th anniversary of the first Earth Science Week, held in 1998. The program is supported by the U.S. Geological Survey, NASA, the AAPG Foundation, and other major geoscience groups. To learn more about Earth Science Week, related resources, and ways to participate, go to <http://www.earthsciweek.org>.

PolarTREC School Newsletter Article

Craig Kasemodel, Technology and Science Teacher, has been selected as one of 12 teachers for the 2008 PolarTREC program. “PolarTREC is an educational research experience, funded by the U.S. National Science Foundation and managed by the Arctic Research Consortium of the U.S., in which K-12 teachers participate in polar research, working closely with scientists as a pathway to improving science education.” (www.polartrec.com)

Mr. Kasemodel will be traveling aboard the USCGC Healy in the Bering Sea during the month of March conducting public outreach and assisting researchers for the Bering Sea Ecosystem (BEST) science expedition. There will be over 40 polar research scientists participating in 20 different research projects. The projects will include walrus tagging, eiders surveys, snow and ice measurements and mapping, benthic organisms surveys, seabird observations and ecosystem patch dynamics research. The research is documenting how climate change is affecting the Northern Pacific ecosystem.

Mr. Kasemodel will broadcast live for www.IPY.org on International Polar Day: Changing Earth

March 12, 2008 from Dutch Harbor and conduct education outreach with the villages on the Pribilofs and St. Lawrence. He will conduct live broadcasts from the Healy during the expedition with IPY teachers from all over the world. In addition, Mr. Kasemodel will maintain a daily blog and website, produce several other digital projects, curriculum materials, and promote polar science and research upon his return. For more information, please visit www.polartrec.com, www.arcus.org, and www.ipy.org. Please stay tuned to the websites for the updates on the 2008 BEST Expedition and Mr. Kasemodel’s adventure.

Middle School Mosaic - The Art & Heart of Teaching

(New class offering & stipend)

She’s back! Debbie Silver, an outstanding speaker from the National Middle School Association, is returning to Anchorage on May 28-29 for the Summer Academy. Last year Debbie focused on differentiation. The class was called Lion Taming 101. Participants gave her rave reviews and asked whether we could have her come back to focus on classroom management. So...

Middle School Education is sponsoring Debbie Silver once again. This brand new class is called The Art & Heart of Teaching. She really is quite the storyteller and also provides plenty of practical suggestions. (Her resume identifies her as a humorist!) She spent most of her career as a middle school science teacher, so she really knows the challenges we face with young adolescents. Spend 2-days laughing and sharing ideas with colleagues from across the content areas. Core teachers, elective teachers, and PE teachers – this class is for all of us!

The Middle School Mosaic is an on-going staff development plan just for middle school staff. \$100 stipends will be offered to help defray the cost of the 1-credit. Registration for the Academy opened this morning on MLP. Currently it is course #23 in the listings. Sign up early to reserve your spot.

23. ASDSA-08-A: The Art & Heart of Teaching: Managing a Middle School Classroom (Middle School Mosaic strand), 1 Credit
Course Block: A-05/28-29/2008

Greetings Space Science Education Community!

The LPI Earth and Space Science Newsletter for March 2008 is now available on our Web site. This newsletter highlights Earth and space science education opportunities and news.

Included In This Edition at
<http://www.lpi.usra.edu/education/score/news/>
<<http://www.lpi.usra.edu/education/score/news/>>
The Phoenix Mission lands on Mars! and more in Calendar.

Learn about a variety of summer teacher field trips and workshops in Workshops and Courses
Find out about teaching awards, student contests, and an opportunity to name a telescope in Events/Opportunities
Connect to new classroom activities, including demonstrations on the scale of our Universe, in Resources
Read about an avalanche on Mars, new insight to the insides of the Earth, rings around a moon, and new measurements on the size of the Milky Way in Mission News and Science.

Travel Expedition to the Amazon Rainforest

We are inviting a select group of teachers and teacher professional development program leaders to join us in the inaugural Travel Expedition to the Amazon Rainforest which will depart July 14, 2008 and return home on July 22, 2008.

This exciting educational experience will also involve United States teachers working with teachers in Iquitos to create conservation lessons that will be used in U.S. and Peruvian classrooms and in a new Environmental Education center being built in Iquitos, Peru. The Rainforest must be preserved for future generations and is the richest resource in the Iquitos area. Today, Peruvians are realizing the importance of educating their youth to help preserve this national treasure. This Learning Expedition, will help to ensure the future for many, many young people at home and abroad, while also offering a high quality professional development program.

On the inaugural trip, you will be asked to actively take part in the pre-departure online course beginning June 23 for two weeks, and to meet the leaders and join the trip embarking on July 14 from Miami. On the final day of the expedition, you will meet with teachers from Iquitos to develop conservation lesson plans. Following the trip, you will complete the third week of the online course and complete your classroom materials..

Graduate and CEU credit are available from Montana State University.

Learning Expeditions was created by Diana Crew, Marily DeWall, and Juliana Texley with Non Profit partner, Immersion Presents and corporate partner, " International Expeditions" to retain and reward K-12 teachers and provide them with first-hand, real-world experiences to bring their curricula alive as well as to improve science

teaching and learning, and increase awareness about geography, culture, and global economies

Our Mission : To demonstrate the power of real-world experiences by exposing teachers first-hand to the topics they teach and to instill a passion for learning in students based on the experiences and enthusiasm of their teachers

If you will be at NSTA, stop by the Immersion Presents Booth #1845 for more information!

Interested? Contact Diana Lee Crew for complete details and pricing Don't Delay....

We know the timing is Short! But we want you to have one of the first spots available!

A large portion of the costs have been subsidized to bring the price down for teachers.

Contact Diana Lee Crew for a complete itinerary and course syllabus.

Diana Lee Crew

diana@immersionpresents.org

[<mailto:diana@immersionpresents.org>] or

Diana@realworldconnections.com

[<mailto:Diana@realworldconnections.com>]

Beyond the Central Dogma June 24th - 28th, 2008
Salt Lake City, Utah

Research is adding new chapters to the story of gene expression as we know it. Come and be a part of the team that brings this new information to light! The Genetic Science Learning Center is now accepting applications for Beyond the Central Dogma - a 5 day Summer Institute focused on drafting new curriculum materials that bring the latest advances in molecular genetics to the classroom. We are looking for creative high school biology teachers from across the U.S. to collaborate in this exciting program. Participate in sessions with leading research scientists, including Dr. Mario Capecchi, who received the 2007 Nobel Prize in Medicine. The Institute will take place June 24-28, 2008 at the University of Utah in Salt Lake City. Participants will receive travel, lodging, meals and an additional stipend. For more information and an application see:

<http://learn.genetics.utah.edu/teachers/courses/gsh2008/>

Application Deadline: Friday April 4, 2008 We look forward to receiving your application! The Genetic Science Learning Center

Announcement of Opportunity - Become a MESSENGER Fellow

Take part in the current golden era of Solar System exploration by becoming a MESSENGER Educator Fellow! As an integral part of NASA's MESSENGER mission to Mercury, the Fellows will help bring the excitement of this daring mission to classrooms across the nation.

What is MESSENGER?

Humankind is sending a spacecraft back to Mercury! NASA's MESSENGER (MErcury Surface, Space ENvironment, GEOchemistry, and Ranging) mission will be only the second spacecraft to ever visit, and the first to orbit, this enigmatic planet. Launched in 2004, the robotic spacecraft completed its first flyby of its target in January 2008, sending back the first pictures of the previously unseen side of Mercury. After two more flybys (in late 2008 and 2009), MESSENGER will go into orbit around Mercury in 2011 and begin a year-long, comprehensive study of the planet. MESSENGER will not only dramatically increase our understanding of Mercury, but also help reveal the story of the Solar System's formation. How would you like to help take the nation along for this thrilling ride as a MESSENGER Educator Fellow?

Visit <http://MESSENGER.jhuapl.edu> for more information; click "Education" for information on the education and public outreach efforts of the mission, including the MESSENGER Educator Fellowship Program.

What is a MESSENGER Educator Fellow?

An essential part of the MESSENGER education and public outreach program is a nationwide teacher training initiative whereby a cadre of thirty Fellows - master science educators - conduct teacher training workshops nationally, training up to 27,000 grades preK-12 educators over the mission lifetime. Fellows train educators on education materials (termed MESSENGER Education Modules) developed by the MESSENGER education and public outreach team. To date, over 8,000 educators across the nation have been trained by the MESSENGER Educator Fellows. Taking part in the MESSENGER Educator Fellowship Program is a great opportunity for educators to make a broad, yet profound impact in science education in the preK-12 community.

What are MESSENGER Education Modules?

MESSENGER Education Modules include inquiry-based, hands-on lessons for grades preK-12 that are aligned to the National Science Education Standards and Benchmarks for Science Literacy. The Modules focus on Solar System science, Solar System exploration through history, and the process of designing, constructing, and sending a spacecraft to another planet. Each

Module contains one or more education units addressing these central themes. The Staying Cool education unit explores the basic concepts of light, heat, and energy to investigate how spacecraft such as MESSENGER can study planets using light and radiation without being damaged by the harsh high-temperature, high-radiation environment in which they have to operate. Staying Cool was developed in concert with the American Association for the Advancement of Science's Project 2061, and it received outstanding grades for both scientific content and pedagogy from the NASA Office of Space Science's Education Product Review.

The Voyage: A Journey Through the Solar System education unit investigates Earth's place in the Solar System using models as powerful tools of exploration. The Voyage education materials are designed to help teachers nationwide bring into the classroom the excitement of the Voyage one to 10-billion scale model of the Solar System located on the National Mall in Washington, DC (see <http://www.voyagesolarsystem.org/> for more details).

The Exploring Ice in the Solar System unit examines the importance of water in the form of ice in the Solar System. From hands-on experiences with ice, the unit moves on to investigating ice in everyday life, in polar regions on Earth, and throughout the Solar System. Exploring Ice in the Solar System received outstanding grades for both scientific content and pedagogy from the NASA Office of Space Science's Education Product Review; it is also one of the educational units featured during the International Polar Year 2007-2009.

Future planned MESSENGER education units include a comprehensive look into the process of designing spacecraft missions in general (Mission Design), further exploration of the Solar System using models (The Voyage Continues), a study into the history of Solar System exploration (Stories Across Cultures), as well as an opportunity for students to use real MESSENGER data in the classroom (Using MESSENGER Data).

More information on the Voyage and Staying Cool Modules, including lesson layout, lesson descriptions, and downloadable lessons, can be found at the National Center's Journey through the Universe program web site: http://journeythroughtheuniverse.org/program_overview_po_co.html

What organizations are involved in the MESSENGER mission?

The MESSENGER mission is supported by the NASA Discovery Program under contract to the Carnegie Institution of Washington (CIW) and the Johns Hopkins University Applied Physics Laboratory (JHU/APL). The MESSENGER education and public outreach program team

includes individuals from the following organizations: National Center for Earth and Space Science Education (NCESSSE), Carnegie Institution of Washington Carnegie Academy for Science Education (CIW/CASE), Center for Educational Resources at Montana State University-Bozeman (CERES/MSU-Bozeman), American Association for the Advancement of Science (AAAS), Minority University-SPace Interdisciplinary Network (MU-SPIN), Smithsonian Institution National Air and Space Museum (SI/NASM), and Science Systems and Applications, Inc. (SSAI). The MESSENGER Educator Fellowship Program is managed by NCESSSE.

What is the commitment expected of a MESSENGER Educator Fellow?

This recruiting class of Fellows must commit to conducting MESSENGER educator-training workshops for a minimum of 100 teachers per year for a total of two years, beginning in summer 2008, and sharing evaluation information from the workshops with NCESSSE.

If selected as a MESSENGER Educator Fellow, what will you receive?

To help you become an effective MESSENGER Educator Fellow, and to help you reach the program goals, you will receive the following:

1) A package of materials to establish your credentials as a representative of a NASA spacecraft mission, including:

- Business cards which identify you as a MESSENGER Educator Fellow; the cards will bear logos from NASA, CIW, JHU/APL, and NCESSSE.
- A press release about your acceptance to the program; the press release can be issued to media outlets in your community.
- A letter of introduction from the NCESSSE Center Director to authorizing officials (e.g., superintendents and museum directors) at potential workshop venues; the letter establishes you as a MESSENGER Educator Fellow connected with a current NASA spacecraft mission.
- A personal Web environment at the MESSENGER Educator Fellowship Program Web site to promote your workshops (currently being planned).

2) An all-expense-paid, five-day training workshop in Washington, DC, in summer 2008; the workshop includes:

- Information on the science and engineering behind the mission, including presentations by MESSENGER mission scientists and engineers.
- Tours of the Smithsonian National Air and Space Museum, including the new Steven F. Udvar-Hazy Center, and the Johns Hopkins University Applied Physics Laboratory MESSENGER Mission Operations Center (subject to availability of these facilities).

- Training on the MESSENGER Education Modules, including recipes for success in using the Modules in teacher training workshops as well as in classrooms.

- An overview of program logistics and reporting documents.

- Best practices on planning and conducting effective teacher training workshops.

- An introduction to the MESSENGER Educator Fellowship Program Web environment, including online reporting tools and personal Web spaces.

3) A presenter's package for conducting MESSENGER workshops, including:

- Copies of the grades preK-12 MESSENGER education units (which include the currently available Staying Cool, Exploring Ice in the Solar System and Voyage: A Journey Through the Solar System, as well as Mission Design, to be available in 2008.)

- A how-to manual on planning, advertising, conducting and assessing effective teacher training workshops, including sample workshop agendas, best practices on facilitating educator training workshops, and approaches to adapting MESSENGER education content for curricula concentrating on math, technology, reading, and writing.

- Multimedia resources, including posters and CD-ROMs.
- Educational supplies necessary to conduct workshops.

4) An annual allowance of up to \$250 to help cover the cost of conducting workshops.

5) Ongoing logistical and informational support from NCESSSE for all aspects of the MESSENGER Educator Fellowship Program.

6) Ongoing detailed analysis of the assessments of your workshops based on the feedback provided by the workshops attendees.

7) A MESSENGER Educator Fellowship Program Update Session to take place in spring/summer 2009 (details to be determined).

How will Fellows be selected?

This Announcement of Opportunity is intended to recruit a new cadre of thirty Educator Fellows capable of making a two-year commitment to the program, for the academic years 2008-2009 and 2009-2010. In order to maximize the reach of the program, Fellows are usually chosen to reflect a geographically and institutionally diverse mix of individuals from a variety of settings - science centers/museums, school districts, universities, educational organizations, etc. While a variety of factors will be used in the final selection, a MESSENGER Educator Fellowship candidate must be a legal U.S. resident actively teaching students or conducting teacher training in a formal (traditional classroom setting, school district) or informal (mu-

seum, science center, etc.) science education environment. Experience with teacher/adult training is not required but is strongly desirable.

The application submission requirements are:

- 1) A completed application form.
- 2) A current resume or curriculum vitae.
- 3) A written letter of commitment from your host institution (current employer or sponsoring organization) to provide you release time to conduct MESSENGER educator training workshops, and an expressed willingness to support you in these efforts throughout the two-year Fellowship.
- 4) Two letters of reference from individuals or institutions that are familiar with your teaching style and can speak to your success as a presenter.
- 5) A two-page proposal outlining an implementation plan for the workshops you would conduct, including possible venues, audiences, and goals.
- 6) A ten-minute video sample of yourself teaching/training an audience on an inquiry-based, hands-on lesson. The video sample should clearly demonstrate your abilities to facilitate inquiry-based learning. If you cannot submit a video sample, please submit a written explanation as to why you cannot. Please note, however, that applications with a video will be given higher consideration than those without.

To receive an application form, please contact the MESSENGER program manager at messenger@usra.edu, and you will receive the application as a PDF file in a return email. Applications are due at NCESSSE by April 18, 2008. Fellowship selections will be announced by April 30, 2008. The training workshop is scheduled to take place June 23-27, 2008.

Middle School Science Camp

Hello 6th, 7th and 8th grade educators,

Washington Sea Grant and the National Oceanic and Atmospheric Administration located in Seattle are excited to announce that NOAA Science Camp registration has opened with TWO sessions available this summer!! Our goal is to reach a wide variety of campers from throughout the Puget Sound and across the state for the 50 openings in each of the two week sessions. We have had attendees from right here in Seattle and the Puget Sound to Moses Lake and as far as Alaska, Oregon, BC and even Nebraska - so come on over to the 2008 NOAA Science Camp!

Online registration will be available through Acteva or by mail. Registration will remain open until both sessions of camps are full. Note: Camp sessions I and II will

be identical programs, so please register for one week only.

* Who? Youth entering 7th and 8th grades in the fall of 2008

* Where? NOAA's Sand Point Facility on Lake Washington, 7600 Sand Point Way NE, Seattle, Washington

* When? Session I – July 7 - 11, 2008, 9 – 4p.m.

Session II – July 14 - 18, 2008, 9 – 4p.m.

* Cost? \$225 for either session – Scholarships are available.

Please share this link with students, parents, family and friends: <http://www.wsg.washington.edu/education/events/noaa.html>

Summer opportunities for experienced MS formal and informal educators as well as camp assistants who are HS and undergraduates, will be posted on the website as well. This is a two week day camp commitment with a two day training at the NOAA facility.

The camp was established in 2003 through a partnership between Washington Sea Grant and NOAA's Western Regional Center in Seattle. Every summer the camp is held at NOAA's Seattle facility at Sand Point, summer camp sessions offer opportunities for seventh and eighth graders to explore marine science and have fun at the same time. Participants are introduced to earth and ocean sciences and to science careers through hands-on activities emphasizing solutions to real-world problems while working with NOAA scientists.

Due to the continuing popularity of this program, two sessions of camp are offered in 2008. Both sessions are expected to fill up fast.

If you would like hand outs, scholarship forms and a poster for your program or classroom, please contact NOAA Science Camp by email:

noaacamp@u.washington.edu or phone: 206-685-9117.

Julie Hahn

Operations Manager & Education Coordinator

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3716 Brooklyn Avenue NE

Seattle, WA 98105

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wsg.washington.edu

The Award-Winning Smithsonian Science Education Academies for Teachers return for 2008.

Biodiversity, July 6-11, 2008

"The academy offered a great model on how to conduct inquiry science. The field trips were amazing, definitely the highlights of the event, to be able to see and do the things

we did and to learn directly from the sources sometimes was an invaluable experience!"
2007 Biodiversity Academy Participant

Electricity and Magnetism, July 20-25, 2008

"Thanks so much for everything! I am well aware of the monumental amount of work that goes into an event of this caliber. You have collectively done an amazing job. I have been personally enriched and recharged for my new school year. I hope these academies continue in the future for other teachers to tap into and benefit from."

2007 Electricity and Magnetism Academy Participant
Other academies offered include Energy and Motion, July 6-11, 2008, and Ecological Field Studies, July 20-25, 2008.

Why spend your time at an ordinary PD course this summer, when you can reconnect with the excitement, joy and fun of science at one of four unforgettable SSEAT Academies? Each SSEAT Academy is a week-long immersive science experience, including content sessions to deepen your understanding of key concepts, and behind-the-scenes access to cutting edge science at world-class research facilities. Three optional graduate-level credits are available for each Academy--please contact the NSRC PD Center at nsrcpdcenter@si.edu for more information.

Space is available in each of the four SSEAT Academies but space is limited--register today!

How to Register for the 2008 Academies

Online-- Go to

<https://secure.thriva.com/Reg/Form.aspx?IDTD=2357652=2409151>

<<https://secure.thriva.com/Reg/Form.aspx?IDTD=2357652&IDRPH=2409151>>

or Visit www.scienceteachersacademies.si.edu

By phone-- Call the NSRC PD Center at 202.633.2970

By fax-- Fax your completed registration form, found at

<http://www.nsrconline.org/docs/08SSEATregform.doc>
to the NSRC at (202)287-2070

By Mail-- Complete the Registration form found at

<http://www.nsrconline.org/docs/08SSEATregform.doc>
and mail to:

NSRC Professional Development Center
901 D Street, SW, Suite 704-B

Washington, DC 20024

Learn More About this Summer's Exciting Professional Development Programs at

<http://www.scienceteachersacademies.si.edu>

Register now and save \$100!

The Smithsonian Science Education Academies for Teachers (SSEATs) have been hailed by educators and researchers from across the country and the globe! Teachers have traveled halfway around the globe to attend these unique professional development programs.

Windows to the Universe

<http://www.windows.ucar.edu/>
