

Hi Everyone:

Welcome back to a new school year! Also welcome to our new Points of Contact (POC) who joined us over the summer. We are hoping that you will be sure that all teachers of science in your building have a copy of this eblast. Some POC's just forward this on, and other's run off a copy and put it in teacher's mailbox. However the method, we want all our teachers of science to be informed on what is happening. A BIG THANKS for your wonderful service to the students of Montana.

Upcoming events in Montana Math and Science include:

September 23 – Math Day – U of M, Missoula

Oct. 4 – 5 – STEM conference - Helena

October 6 – Math Circle – U of M, Missoula

Oct. 20 – 21 – MEA-MFT Conference - Missoula

Nov. 22 – Science Olympiad - Bozeman

Dec. 8 – 10 – NSTA Regional Conference - Seattle

March 29 – April 1 – NSTA National Conference – Indianapolis

April 25-28 – NCTM National Conference - Philadelphia

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1. Make NSTA your Home Page

This year you might try making www.nsta.org your desktop home page. Each morning when you open up your computer you'd have items like the most current science news which is happening that day, "Blick's Pick which shows the most relevant and interesting science video, a list of current calendar events in science, the all portals to help keep you informed, plus many other features that could impact your science lessons that day.

2. NRC Releases A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas

Please remember, this document will be used to create the Next Generation Science Standards...scheduled for release in late 2012. Please do not use the Framework for guiding curriculum decisions even though it will give you a good idea what will be coming.

The National Research Council (NRC) today released its much-anticipated report that presents a new framework for K–12 science education and identifies the key concepts and practices that all students should learn. A Framework for K–12 Science Education offers a new vision for K–12 education in science and engineering, and represents a significant shift in how these subjects are viewed and taught.

According to the report, "K–12 science and engineering education should focus on a limited number of disciplinary core ideas and crosscutting concepts, be designed so that students continually build on and revise their knowledge and abilities over multiple years, and support the integration of such knowledge and abilities with the practices needed to engage in scientific inquiry and engineering design."

The framework will serve as the basis for the Next Generation Science Standards, a state-led effort managed by Achieve, Inc. The framework will also inform the work of curriculum and assessment developers, researchers, teacher educators, and others.

- Ρεαδ τηε φυλλ ρεπορτ Α Φραμεωορκ φορ Κ-12 Σχιενχε Εδυχατιον ατ: http://www.naep.edu/catalog.php?reqord_id=13165

3. Montana STEM Forum

Registration is now officially open for the fall Montana STEM Forum hosted by the Montana Office of Public Instruction. This year's theme, "A Vision of STEM in the State of Montana," will focus on what STEM looks like across the state of Montana. STEM partnerships will be spotlighted and an update on the statewide STEM initiative will be shared. Dr. Stephen Pruitt will be our featured guest speaker. Dr. Pruitt is the Vice President for Content, Research and Development at Achieve, Inc. and is leading the development of the Next Generation Science Standards (<http://www.achieve.org/staff-stephen-l-pruitt-phd>).

Breakout sessions will include the following:

- Classroom robotics;
- Partnerships that connect students with scientists in the field;
- The creation of outdoor classrooms; and
- The role of business and non-profit organizations in STEM

education

Whether you are a classroom teacher, an administrator, a business or industry employee or employer, a state agency representative, or interested community member, this conference is for you. You will not want to miss the tremendous learning and collaborative opportunities at this year's STEM Forum!

The conference will be held at the Red Lion Hotel in Helena, Montana. It will begin at 8:30 a.m. on Tuesday, October 4 and will end at noon on Wednesday, October 5. There is no fee to attend this conference, and OPI renewal units will be available. Please contact Sheri Harlow by September 23, 2011 at sharlow@mt.gov or by phone at 406-444-9864 in order to register.

A block of rooms is available at the Red Lion Hotel under OPI STEM. Please call (406) 443-2100 by September 9 in order to reserve a room at the state rate. Overflow rooms will also be available at area hotels should all of the rooms at the Red Lion be booked.

If you have questions or need further information regarding the STEM Forum please contact Kristen Crawford by e-mail at kcrawford@mt.gov or by phone at 406-444-3557. We hope to see you in October!

4. Lab Safety Video

If you want a humorous 7-minute video that addresses lab safety you might check out:

<http://www.youtube.com/watch?v=cr7roogzM8c>

You might pause it half way through and have your students list on piece of paper all the safety violations, then finish the video and see how close they were to being correct. Throughout this year, please share any great You tube videos.

5. Plan for Math Day & Math Circle

Math Day is a one day event which will be held on Friday, September 23, 2011 at the University of Montana. Students can come on their own or with their teachers. The day will run the approximate length of the school day; it will include small workshops on various math topics, a career panel and lunch. Please register early for this event, so we have enough food! If you attended Math Day last year, we encourage you to come again! The workshops will be different from last year's Math Day.

Missoula Math Circle is an afterschool activity in which math topics are explored in more depth. The activities are broken up into 2 sessions (fall and winter), each with 6 meeting times (see web for details). Students work with UM math graduate students and faculty in a stimulating and challenging environment. Problem solving and self-guided learning will be enjoyed by all! Enrollment is limited, early registration is encouraged.

Program and Application Information: <http://www.math.umt.edu/mathcircle/>

Application Deadline: One week prior to the event.

Instructors: UM Professors and Graduate Students

Information: WEB: <http://www.math.umt.edu/mathcircle/> EMAIL: mathcircle@mso.umt.edu

Organizers: Professor Jenny McNulty * 243-2473 * jenny.mcnulty@umontana.edu

Professor Kelly McKinnie * 243-5694 * kelly.mckinnie@umontana.edu

6. Nominate One of Your Students for the Angela Award.

It's a great honor for one of your students to be nominated by you for an award. For your middle school teachers check out the Angela Award.

<http://www.nsta.org/about/awards.aspx?lid=tnavhp#angela>

This award honors one female student in grades 5–8, who is involved in or has a strong connection to science. The award has been established in honor of Gerry Wheeler, Executive Director Emeritus, and his outstanding dedication to NTSA and lifelong commitment to science education.

Eligibility: Any female student in grades 5–8 who is a resident of the United States, US Territories, or Canada, and is enrolled in full time public, private, or home school. *NSTA employees, NSTA Board and Council members, award judges, and their immediate families are NOT eligible to apply.* **Award:** \$1,000 US EE Savings Bond or Canadian Savings Bond purchased for the equivalent issue price. The awardee will be honored at the Teacher Awards Banquet at NSTA's National Conference.

7. Investigating a Plains Tipi (Workshop credits).

Spend a day on Saturday, September 17, 2011 from 8:30-4:30 exploring the history and archaeology of the Crow Plains Tipi. All participants will receive a full set of curriculum materials and this fulfills many of the requirements for Indian Education for all. Eight renewal units are available, a \$65 fee (check with your school as money is often available for this) includes all the materials and lunch. The workshop is held at Pictograph Cave State Park in Billings. Contact Crystal Alegria at (406) 994-6925 or email calegria@montana.edu.

8. NASA Endeavor Science Teaching Certificate Project: K-12 Educator Fellowships

The NASA Endeavor Science Teaching Certificate Project awards one-year fellowships each year to over 40 current and prospective educators. The project is administered by U.S. Satellite Laboratory Inc. Funding authorization for the project is provided through the NASA Endeavor Teacher Fellowship Trust Fund as a tribute to the dedicated crew of the space shuttle Challenger.

In partnership with state departments of education, Endeavor Fellows take five graduate courses in an innovative, online format from the comfort of their homes or schools. In these courses, participants gain science, technology, engineering and mathematics, or STEM, professional development. They learn to apply research-based pedagogical strategies and cutting-edge STEM content to their classroom contexts while becoming part of a network of like-minded educators across the nation.

Endeavor Fellows earn and are awarded a NASA Endeavor Certificate in STEM Education from Teachers College, Columbia University. Fellows' Leadership Distinction activities will promote learning outside the classroom walls in the fellows' states or districts. Fifteen graduate credits are awarded from regionally accredited higher education partners.

Applications for Cohort 4 will be accepted through **Oct. 15, 2011**.

For more information, visit <http://www.us-satellite.net/nasa/endeavor/index.cfm>.

Questions about this opportunity should be directed to nasa_endeavor@us-satellite.net.

9. Climate Change Simulation

Precipice is a 3-D simulation that illustrates some of the future global warming scenarios developed by a student team at the Centre for Digital Media in Vancouver, British Columbia, in collaboration with Global EESE. The experience takes place in an immersive environment where the player is presented with a familiar scene set in the present day and a future scene set in 2032. It demonstrates the dramatic effect that actions taken in the present can have on the future. Within the 3-D environment are a series of characters with whom the player can interact. Through these conversations, players learn of the characters' situations and perspectives on the environment. As the conversations progress, players make certain decisions, influencing the characters to be more aware of the environment and potential risks. If players successfully convince the characters to be more aware, they create a positive change in the future. Players can move between the future and the present as they complete puzzles and conversations to see the effects of their choices. When the game is completed, a montage depicting the future sums up the consequences of players' choices. Please visit:

<http://www.precipice.altereddreams.net/>

10. Add eMSS Link to your Facebook Page.

In today's social media times it's great to have links to promote our science education ventures. E-Mentoring for Student Success (eMSS) is on a national promotion cycle and could use your help.

Included here is information received from a marketing group, Ashoka about how to get the word out. If you have a few minutes to comment on their application, link on your facebook page, like them on the app page, share the entry, etc -- that would be AWESOME!!

The New Teacher Center wants to use every channel possible to make eMSS known throughout the STEM area.

The URL to the application is:

<http://www.changemakers.com/stemeducation/entries/electronic-mentoring-student-success-stem-subjects>

11. Youth Incentive Award

The Coleopterists Society, an international organization of professionals and hobbyists interested in the study of beetles, has established a program to recognize young people studying beetles. The Society has pledged to provide up to \$300 each year for the Youth Incentive Award Program. Each of the two awards (Junior and Senior) is a monetary grant of \$150, award recipients also will receive up to \$200 (Junior Award) and \$400 (Senior Award) of equipment credit from the BioQuip Products catalog. In addition to monetary and BioQuip grants, award recipients will receive a one year subscription to the society journal, The Coleopterists Bulletin.

This is for children of grades 7-12 only. For more information, check the Science Matters message area.

12. SSEP Mission 1 to ISS: Immediate Opportunity For Grade 5-16 Student Research Aboard ISS through Local Experiment Design Competitions

CRITICAL DEADLINE: all participating communities must be aboard by September

15, 2011

The National Center for Earth and Space Science Education (NCESSSE), in partnership with NanoRacks, LLC, announces an immediate opportunity for communities across the U.S. to participate in the first Student Spaceflight Experiments Program (SSEP) mission to America's National Laboratory in space - the International Space Station (ISS). The program is also open to ISS partner nations.

Each participating community will be provided an experiment slot in a real microgravity research mini-laboratory scheduled to fly on the International Space Station (ISS) from March 30 to May 16, 2012. An experiment design competition in each community—engaging typically 300 to 1,000 students—allows student teams to design real experiments vying for their community's reserved experiment slot on ISS. Additional SSEP programming leverages the experiment design competition to engage the community, embracing a Learning Community Model for STEM education.

SSEP missions on STS-134 (Shuttle Endeavour) and STS-135 (Shuttle Atlantis) have recently been completed, with 1,027 student team proposals received, and 27 SSEP experiments selected and flown—representing the 27 communities that participated in SSEP on the Space Shuttle.

Go to SSEP Mission 1 to ISS National Announcement of Opportunity

Link:

<http://ssep.ncesse.org/2011/07/immediate-historic-opportunity-for-schools-student-spaceflight-experiments-program-mission-1-to-the-international-space-station/>

The SSEP on-orbit research opportunity is enabled through NanoRacks LLC, which

is working in partnership with NASA under a Space Act Agreement as part of the utilization of the International Space Station as a National Laboratory.

13. Bringing Science Home

Bring Science Home first launched in May 2011 as a month long program and was met with great success and enthusiasm. On behalf of the Editor in Chief Mariette DiChristina, they would like to invite you to work with them as a content partner to contribute activities to Bring Science Home. As a partner, they will credit all your activities appropriately, display your logo next to your contributions and link back to any of your relevant sites.

Below are two examples of Bring Science Home activities:

- Ø [It's a Solid... It's a Liquid... It's Oobleck!](http://www.scientificamerican.com/article.cfm?id=oobleck-bring-science-home)
(<http://www.scientificamerican.com/article.cfm?id=oobleck-bring-science-home>)
- Ø [Bend Water with Static Electricity](http://www.scientificamerican.com/article.cfm?id=static-electricity-bring-science-home)
(<http://www.scientificamerican.com/article.cfm?id=static-electricity-bring-science-home>)
- Ø A full list of activities is found on the Bring Science Home landing [page](http://www.scientificamerican.com/section.cfm?id=bring-science-home) (<http://www.scientificamerican.com/section.cfm?id=bring-science-home>)

As you can see, the activities are designed for kids and parents or caretakers to do together in just a few minutes a day, using readily available household materials. The aim is to make science fascinating, accessible and a part of everyday life. In May they published 20 activities over four weeks, four of which had companion videos. From October, it is their goal for the first activity of each month to have a video associated with it. We'd be delighted if some of those videos came from our partners.

Bring Science Home is part of our contribution to Change the Equation, the CEO-led public-private partnership to cultivate widespread STEM literacy in the United

States. Nature Publishing Group (NPG), *Scientific American's* parent organization, joined Change the Equation in September 2010, committing to a three-year Bridge to Science program.

14. Teaching From Space Office Seeks Educators to Experience Microgravity

Teaching From Space, a NASA Education office, in partnership with the Reduced Gravity Education Flight Program announces the opportunity for students and educators across the country to collaborate on an experiment to be tested aboard a microgravity aircraft. This incredible opportunity is open to any current K-12 classroom educator in the United States. Educators must also be U.S. citizens.

The Microgravity Experience begins with students and educators developing and proposing a reduced gravity experiment. Selected educator teams will then be engaged in a suite of activities that include online professional development on classroom resources for microgravity, collaboration with a NASA mentor and a reduced-gravity flight. With combined input from their students and mentor, educator teams will design and fabricate their experiments to be tested and evaluated aboard an aircraft that flies approximately 30 roller-coaster-like climbs and dips to produce periods of micro and hyper gravity, ranging from zero gravity to 2 g.

Seven teams of four to five educators will be selected from this application process to travel to NASA's Johnson Space Center in Houston, Texas. Educators will participate in Reduced Gravity Flight Week **Feb. 6-11, 2012**, and fly their own experiments aboard NASA's Reduced Gravity Aircraft (Note: This opportunity is contingent upon the NASA Education budget).

Educator teams interested in participating in this unique Microgravity Experience need to submit a proposal no later than **Sept. 21, 2011**. For more information, check out <http://microgravityuniversity.jsc.nasa.gov/tfs> or send an e-mail to jsc-rgeducator@nasa.gov.

Thanks again to Michigan's state leader David Bydlowski for some great posts.

15. Funny Science Jokes for Kids

What did the sea say to the shore? Nothing, it just waved.

What should we do with crude oil? Teach it some manners of course!

A volcano is a mountain with hiccups.

Watson: Holmes, what kind of rock is this?

Sherlock Holmes: Why that's sedimentary, my dear Watson.

Q: Why did the alien want to leave the party?

A: The atmosphere wasn't right.

Q: What is an astronaut's favorite drink?

A: Gravi-tea.

Q: How do you make a baby sleep on space ship?

A: You rocket.

16. Virulent: Action and Strategy Game in Systems Biology

Virulent, the first game for learning science developed and tested by the education research group at the Wisconsin Institutes for Discovery, is now available. See:

<http://discovery.wisc.edu/discovery>

This game represents something that many educators, parents, and grandparents have been waiting for: a videogame that is both truly engaging and

based on sound science. Virulent is available free from:

<http://discovery.wisc.edu/discovery>

or

<http://discovery.wisc.edu/home/morgridge/research/erca/erca.cmsx>

as a standalone program for Windows and the Mac operating systems. It is even better played on an iPad (because of its touch screen), and can be downloaded as a free App from iTunes. (It does not download to iPhones.) By the end of summer, all 15 planned levels of the game will be available to play on iPads, Android tablets, web browsers, and as a standalone program for Windows and Mac systems. They hope you will play Virulent yourself, and if you like it, pass it along to young people and teachers you know. Their group has several more such science-based games in the design and production stage.