



Science Update November 2015



[Apply for an Award](#)

This periodic update from the [Minn. Dept. of Education](#) (MDE) is sent to a few email lists, including the [Minn. Science Teachers Assn.](#) (MnSTA) and district/organization contacts. We encourage you to forward this to other teachers and science leaders. See MDE contacts at the end of this document. Past editions are archived at [MN STEM Teacher Center website](#)

Note: MDE does not endorse any resource or event that is not conducted by MDE.

*** indicates an item that was not in the previous edition**

News

Preparing for the next Minnesota Science Standards Revision

The *Minnesota K-12 Academic Standards in Science* are scheduled for revision during the 2017-18 schoolyear. To get ready, the Minn. Science Teachers Assn.(MnSTA) is collaborating with the Minn. Dept. of Education to hold meetings in MnSTA regions for teachers, administrators and higher education. You will

- provide feedback about how current science standards are working and being implemented,
- learn about new understandings of science teaching and standards,
- provide input for our next science standards and statewide assessments, and
- network with science educators in your region.

These sessions are currently scheduled. More sessions are being developed by the MnSTA regional directors.

- Little Falls: Nov. 30, 5 pm – 7 pm, contact Jerry Wenzel, jerrywenzel@brainerd.net
- Rochester: Dec. 9, contact Denine Voegeli, dvoegeli@isd2899.k12.mn.us
- Fergus Falls, Dec. 10, contact TJ Schmitt, tschmitt@barnesville.k12.mn.us
- South metro area, TBA,
- Champlin (Anoka area) Jan. 5, 4:30 pm – 7 pm, Contact John.c.olson@state.mn.us
- Bemidji, Feb 3. Contact Mike Urban, MUrban@bemidjistate.edu
- Montevideo, Feb. 22, contact Jeremy Brady, jbrady@montevideoschools.org

Watch for an announcement of an online survey that will be available for any science educator to provide input.

Teacher Events and Workshops

Insect workshop for teachers, Nov. 14, Minneapolis

Learn great insect-based classroom projects directly for world-renowned educators and entomologists at the 2015 Entomological Foundation Workshop 10 am – 2 pm. A \$10 registration includes parking at the Minneapolis convention center, lunch, great sessions and classroom resources for K-12 teachers. [Click here for information and registration.](#)

Submit your presentation proposals and save the dates: MnSTA and NSTA conferences

The MnSTA 2016 Conference on Science Education is **Feb. 26-27** in Duluth. Consider sharing your specialty with your colleagues. In exchange for your presentation, you will a significantly reduced registration rate to the conference. Strands for the conference are elementary science, life science, earth & space science, physics and chemistry. The deadline for proposal is December 22 at [this MnSTA site](#).



The National Science Teachers Association 2016 Minneapolis Area Conference will be **October 27-29, 2016**. This is a great opportunity to share your good teaching strategies and programs with a national and regional audience. Proposals are being accepted until January 15 at this [NSTA site](#).

Hint: You can submit a session for both MnSTA and NSTA and use the MnSTA conference to polish your presentation for NSTA .

*** Mn Earth Science Teachers Conference, Feb. 5, Plymouth**

The MESTA conference will feature earth science content and pedagogy sessions as well as classroom resources. This year's keynote speaker will be vertebrate paleontologist and dinosaur expert Kristi Curry Rogers.

There will be four breakout sessions. Two will be hosted by professors Kate Pound and Andy Breckenridge. Two will be hosted by current grade 6-12 teachers. In addition to the keynote and sessions you may enjoy door prizes and networking with earth science colleagues from across the state. Breakfast and lunch are included as part of registration. [Click here for information.](#)

*** Earth Science online course, spring 2016**

Minnesota State University Moorhead is offering an online course for every secondary teacher who wants to renew and enrich their reaching of earth science. It includes an in-depth examination of earth science concept, an emphasis on good classroom investigative practices and opportunities to discuss curricular application with other educators. There is also an introductory course for elementary educators or high school seniors For more information and details [click here](#).

Teacher and School Awards and Opportunities

Presidential Award for K-6 teachers



Do you know an elementary teacher who has excellent teaching skills in Science or Mathematics? Nominate that teacher or yourself for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST). This is the highest national award for teaching and comes with a cash award of \$10,000 and recognition by the President. Going through the application process provides the opportunity for in-depth reflection on your teaching and your contributions to the profession. Applications are due by May 1. For information and nominations go to the [PAEMST website](#).

*Green Ribbon Schools Award

Gain national recognition for your school's efforts at being "green." The U.S. Dept. of Education Green Ribbon Schools Award honors PreK-12 schools, school districts and post-secondary schools that are exemplary at

- Reducing environmental impact
- Improving health and wellness
- Providing effective environmental education



Schools prepare an application that is initially evaluated at the state level and finalists are sent on for national evaluation. Applying for the award provides an opportunity to analyze energy and water usage, waste reduction, and transportation. Schools review the strategies that promote healthy practices by students and teachers. In addition, teachers examine their curriculum for instruction in environmental concepts, skills and careers. Through the application process members from various sectors of the school community collaborate to improve their efforts toward sustainability.

[View the application for Minnesota schools and local information](#) or contact [John Olson](#), MDE Science Specialist. [View information about the national Green Ribbon Schools program](#).

*MnSTA Science Teaching Award

Write about your teaching strategies and gain \$1000 for a classroom project. This award for MnSTA members recognizes teachers in two categories, elementary and secondary. The application calls for a narrative about your teaching philosophy and style, a resume and a description of the project you propose for the funds. Awardees are recognized at the MnSTA Conference in February. The application deadline is January 9. [Click here](#) for information, nominations, and the applications.



Cara Riekenberg, a 2014 awardee

* Albert Einstein Educator Fellowship



The AEF Program provides a unique opportunity for accomplished K–12 science, technology, engineering, and mathematics (STEM) educators to serve 11 months in Washington, D.C., in a Federal agency or U.S. Congressional Office. Einstein Fellows bring their experiences as STEM educators to their host offices to inform Federal STEM education efforts. Applications are due Nov. 19. For more information, [click here](#).

* NOAA Climate Stewards

Do you want to do more than just learn about climate change? Join educators across the United States supporting climate resilience. Apply NOW to become part of the 2016 NOAA Climate Stewards Education Stewardship Community. Selected educators who meet project requirements will be eligible for:

- Mini-grants up to \$2000 to support a climate stewardship action project.
- Travel reimbursements to attend select workshops and/or national conferences.
- Special professional development opportunities.
- Additional monetary and educational resources.

Applications are due by midnight PST, November 22, 2015. To learn more, Go to the [NOAA Climate Stewards Education Project Web Site](#)

* A new engineering Resource



[LinkEngineering](#) is a new resource from the National Academy of Engineering. This project that is designed to help PreK-12 educators in the United States implement engineering education in classrooms and out-of-school settings. It provides a platform for preK-12 teachers, informal educators, and state and district level administrators to work and learn as a community to improve precollege engineering education.

It's free to join [LinkEngineering](#) and begin networking, collaborating, and growing your engineering tool-kit. Got a great engineering project/program going on in your school... make sure to sign it up to enhance the collaboration with experts and other educators from all over the U.S.!

* Honeywell Educators @ Space Academy Scholarships

Each scholarship covers tuition for the 5-day program at US Space Camp in Huntsville, AL, round trip airfare, meals, housing, materials and a flight suit. Educators must teach science or math to students aged 10 – 14. Check out the details at [this link](#).

Grants for a state-wide professional develop program are now available

The Minnesota Dept. of Education announces the availability of funding for state-wide science, math and STEM professional development programs. The funding is from the US Dept. of Education Mathematics and Science Partnership (MSP) program. The grant requires a partnership between an institution of higher education (IHE) and a local education agency (LEA) i.e. school district. However other educational organizations may also be partners.

The delivery of the program is different than the previous MSP regional workshop model used in Minnesota. The programs for this grant will have a significant online component that could be used state-wide to facilitate gatherings of local teacher groups, such as district professional learning networks (PLNs or PLCs) or regional groups. The partnerships can submit proposals for programs that are science only, math only or integrated STEM. The grant opportunity documents are available on the [MDE grant site](#). For more information contact [Doug Paulson](#).

Student Awards, Competitions and Programs

* Physics Force Shows, Minneapolis

The Physics Force will be performing a series of educational and entertaining shows Jan. 11-15, 2016 at the University of Minnesota Northrop Auditorium, 84 Church St. SE, Minneapolis. Last year we performed for more than 25,000 students and teachers.



Physics Force Winter Show schedule:

- Monday, Jan. 11, 10 a.m. and 1 p.m.
- Tuesday, Jan. 12, 10 a.m. and 1 p.m.
- Wednesday, Jan. 13, 10 a.m. and 1 p.m.
- Thursday, Jan. 14, 10 a.m., 1 p.m. and 7 p.m. (public show)
- Friday, Jan. 15, 10 a.m. and 1 p.m.

The shows are free, but reservations are required. [Click here for reservations.](#)

* ExploraDome Scholarships Available



The Bell Museum is proud to offer single-day ExploraDome visits in the 2015-16 school year funded by our generous donors, The Richard M. Schulze Family Foundation, and Xcel Energy.

Schools with 25% or more of their students as recipients of the Federal Free and Reduced Lunch Program are eligible for this special offer. Please visit our website for more information and to download the application.

The information is in the middle of the [linked page](#).

* Rural student energy program for secondary youth

Youth Energy Summit (YES!) is a team-oriented youth program that uses hands-on, experiential learning and energy action projects to address energy opportunities and issues in rural Minnesota communities.

Students are the energy of the YES! program; they are student groups in grades 7 through 12 representing schools or communities, guided by local, adult coaches. They have engaged in local foods, waste reduction, recycling, and energy conservation. Students have built solar

panels, conducted energy audits, designed and built compost bins and small wind turbines, and started greenhouses to grow food for their cafeteria. For information, [click here](#).

* STEM Communicator Award

The Minnesota High School STEM Communicator Award competition is open to grade 9-12 individuals and teams of up to two students. For teams, the abstract and paper may be the same; teams will collaborate on their essays. Students entering the Minnesota High School STEM Communicator Award competition should:

- Have completed an investigative research project that explored a current issue relating to science, mathematics, technology, and society (library research projects will not be accepted);
- Depending on grade, have taken a minimum of two years of high school science, including class work in biology or environmental science, chemistry and physics or have concurrent enrollment in physics -or-
- Depending on grade, have taken a minimum of two years of high school math at an advanced level of coursework for their grade;
- Have submitted an "Intent to Apply" by **March 15, 2016** and application materials by **April 15, 2016** at 5:00 p.m.
- **NEW:** Highly motivated students may submit documented participation in STEM-type activities to replace coursework in math and science, especially where AP or rigorous coursework may not be offered in their schools at their grade level. Examples may include, but are not limited to: Advanced Scouting projects, long-term research work at a college or university, mentorships in STEM areas, AP or Honors level math and science classes, Science Bowl participation, Robotics competitions, or Destination Imagination engineering projects. Please contact Karen Newell for clarification. kmnewell@mnmas.org

Teach About Minnesota



Address state standards about Minnesota using innovative outdoor lessons and engaging reading material with help from the Minnesota Department of Natural Resources. Check out the [DNR education website](#) for links to curriculum, professional development, colorful posters, and more. View reading materials and teacher guides from past [Conservation Volunteer](#) magazines and sign up for a MinnAqua and Project WILD, WET or Learning Tree professional development workshops for teachers.

Bonus: the DNR's [forestry education website](#) features additional posters and activities that use trees as a context for learning, including [free books](#) for students on Minnesota's forests and trees. The DNR can mail you a variety of free, colorful posters on topics such as Minnesota's state symbols, biomes, tree products, watersheds, fish, and more.

Pilot Testing of Evolution Assessment Items

The American Association for the Advancement of Science's Project 2061 is recruiting eighth grade and high school science teachers who are able to pilot test multiple choice items with

their students **in the fall of 2015**. We are currently developing NGSS-aligned assessment items to measure what students understand about **evolution, including both natural selection and common ancestry**. Your students' responses to these assessment items will help us improve them and design additional items. The assessment will be administered online and should take no longer than 45 minutes to complete. For information and to participate complete this [online form](#).

Other Minnesota Competitions and Programs

Many competitions, out-of-school programs and field trip opportunities are listed in the [Reach for the Stars Catalog of Programs and Activities](#).

MDE Contacts:

[Dawn Cameron](#), Science Assessment Specialist,
[Jim Wood](#), Science Assessment Specialist,
[John Olson](#), Science Content Specialist,
[Doug Paulson](#), STEM Integration Specialist,
Send submissions for the Science Update to John Olson

Other Minnesota Links:

[Minn. Dept. of Education Science Page](#)
[Minn. Science Teachers Association](#)
[Minn. Frameworks for Science and Mathematics Standards](#)
[Get – STEM](#) Connections between schools and businesses
[Mn-STEM](#) STEM programs and resources for families, schools and community
[Sharing Environmental Education Knowledge](#) environmental education resources
[Minnesota Academy of Science](#): Science Fair, Science Bowl and other competitions
[Mn DNR Education website](#): Curriculum, professional development, posters, etc.