

Science Update November 2016



Ainissa Ramirez, science “evangelist” talked about the “Power of Why” at the NSTA Area Conference

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.

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

***Successful NSTA Conference sets the stage for the next MnSTA Conference**

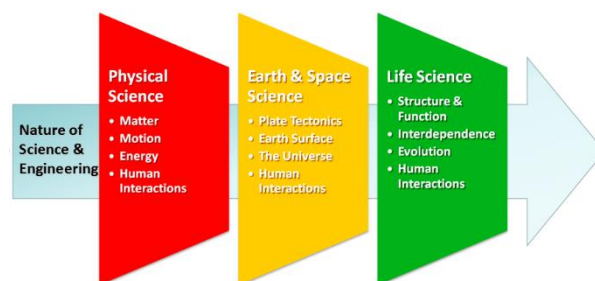
Minnesota hosted one of our most successful area conferences for the National Science Teachers Association. With over 2100 participants, the conference include four featured speakers and 380 sessions over three days. Presenters came from all over the country and even one from Korea (via Skype) – Minnesotan Amanda Meyer speaking from the international school where she is currently teaching.

In support of the NSTA conference, the Minnesota Science Teachers Association agreed to not have a state conference during the 2016-17 school year and instead share in the revenue from this conference. MnSTA will have its next conference in a new season and a new location; November 10 -11 in St. Cloud. Save the date!

For those that attended the conference, you can access presentation materials at the [Conference sessions website](#). You can gain a clock-hours certificate by evaluating the sessions you attended.

***When we get new science standards and what will they be?**

This is probably the most frequent question the science staff receives at the Department of Education. The last legislative session changed the schedule of reviewing content area standards and now the science standards review is scheduled for the 2018-19 school year. Here is an overview of the process:



- A Review Committee of 20-40 people representing a variety of stakeholders will be formed through an application process.

- The Committee will receive input through on-line surveys, town meetings, focus groups and expert reviewers.
- The Committee will study current research on effective science education and will evaluate current models for science standards.
- The recommendations of the Committee will go to the Commissioner of Education. They could recommend to keep the current standards, make revisions or adopt another set of standards.
- The Department of Education will publish the “final draft” of the standards for schools to start planning for implementation and for MDE to begin writing the next version of the Minnesota Comprehensive Assessment (MCA). Full implementation will likely be three – four years later.
- The standards become law through Minnesota’s Rulemaking process. They do not go to the legislature for approval.

More details of the standards review process are available at the [MDE Standards Page](#).

*Green Schools Survey

A research team at the University of Minnesota is conducting a survey about "Green Schools" which are schools that are environmentally responsible, healthy for staff and students, and provide environmental education. They are interested in a wide variety of input about green school awareness, and what is needed to help increase green school activity. This information will be used for research to help design a program to encourage green schools. Please share your views and ideas in this voluntary survey. You or your school will not be identified in any reports. Learn more and complete survey at: mngreenstepschools.org/survey. Please complete survey by **November 18**.

Teacher Events and Workshops

* District Science Leaders Network

If you work at the district level as a curriculum coordinator or other science leadership position, you are invited to participate in this network. We hold 3 or 4 meetings per year to discuss science education issues and share resources or concerns. The meetings are generally three-hour morning meetings at the Minnesota Department of Education. If there is sufficient interest, we may hold meetings in out-state locations. If you would like to receive meeting notices, [email John Olson](#). If you were on the list in the past, there is no need to reply.

* Teaching with Lake Superior Conference, Nov. 12, Duluth



Science educators are invited to the Great Lakes Aquarium for an exciting all-day educator conference designed to showcase regional learning resources and create community around Lake Superior. The Conference offers an opportunity to connect, explore and network while learning new ways to bring STEM to life with your students. The \$20 fee provides 21 sessions with regional experts, hands-on demonstrations, Aquarium admission, parking, lunch and access to free teaching kits for K-12, For more information, registration and other Aquarium professional development, [click here](#).

* Renewable Energy Workshop, Nov. 12, Arden Hills

This professional development workshop from 8 am – noon prepares K-12 grade educators and administrators to teach hands-on solar activities. Learn how on-site or community solar projects can save money and provide learning opportunities for students. Tour the rooftop solar project at Mounds View High School. REcharge Labs provides free equipment and curriculum that you need to teach renewable energy. [For information click here.](#)

Project Learning Tree Fall Workshop, Nov. 12, Bloomington

Whether you teach preschool or high school, in any subject, strengthen your environmental education toolbox with PLT! The next workshop is 9 am - 3 pm, at the Minnesota Valley National Wildlife Refuge, Bloomington. Free! Includes lunch, CEUs, the [PLT Pre-K8 Activity Guide](#), and a swag bag of great teaching resources. For information, [click here.](#)

***Growing Green Hearts Teacher Trainings, Nov. 29 and Dec. 5, Fridley**

Springbrook Nature Center and Growing Green Hearts have teamed up for 2 teacher trainings taught by Heidi Ferris. ParentAware approved courses lead teachers through playful, standards-based activities and practices for elementary and early learning Environmental Science, Technology, Engineering and Math (eSTEM).



- STEMtastic, Nov 29 4:30 – 6:30 pm
- Science Inside Out, Dec. 5, 6 – 8 pm

Go to this site [for information](#)

***21st Century Workforce Conference, Dec. 16, Staples**

This conference brings together personnel from K-12 schools, agencies, colleges and businesses to collaborate in college and career readiness activities. There will be presentations on career programs for schools and discussions by grade levels and career clusters. The conference is free and schools will be reimbursed \$100 for sending teacher representatives. Information and registration are at the [National Joint Powers Alliance website.](#)

*** Earth Science Teacher Conference, February 5, Plymouth**

Save the date and watch the MN Earth Science Teachers Assn. (MESTA) [website](#) for upcoming program information.

Playdates for Educators (of all sorts)! With Anmarie Thomas

One of my favorite things about leading UST's Playful Learning Lab and teaching in the Center for Engineering Education is the opportunity to meet and collaborate with incredible people, many of who are educators in a formal, or informal sense. I've been thinking that it would be wonderful to have an opportunity to bring together a diverse group of people in the Twin Cities who are interested in Playful Learning and STEAM/iSTEM. Thus, I am delighted to announce that the Playful Learning Lab will be hosting monthly, free playdates for educators, artists, and makers who want to discuss, share, and... [Click here for more info.](#)

Teacher and School Awards and Opportunities

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.](#)

* Presidential Award nominations and applications are now available.



Nominate exemplary science teachers (including yourself) for the Presidential Award for Excellence in Mathematics and Science Teaching. This is the most prestigious award in this field and includes recognition activities in Washington DC and a \$10,000 award. This year, teachers of grades 7-12 are eligible submit an application that describes content understanding, instructional strategies, assessment practices, professional development and leadership. Just completing the application provides professional growth. The application is due May 1. For information go to the [PAEMST website.](#)

*NOAA Climate Stewards Community

Join educators across the United States supporting climate resilience. Apply NOW to join the NOAA Climate Stewards 2017 Stewardship Community. Selected educators who meet project requirements will be eligible for:

- Up to \$2000 to support the execution of a climate stewardship action project.
- Travel reimbursements to attend select workshops and/or national conferences - following the successful completion of a climate stewardship project.
- Special professional development opportunities.
- Monetary and educational resources.

To learn more about this opportunity and to apply, go to the [NOAA Climate Stewards Education Project Web Site](#)

Professional Development Grant Opportunities

The Education Minnesota Foundation offers scholarships for licensed teachers obtaining National Board Certification. [Check this link.](#)

The Bruce Vento Science Educator Professional Development Grant supports educators who teach science as part of their day and want to acquire and share new skills and knowledge. You may request up to \$1500. The deadline is December 9. [Go to this link.](#)

Send your used Science Books to Schools in Africa



When John Olson went to Liberia*, he found that library of his school had many books with Minnesota school stamps. He planned his biology lessons with a textbook from Verndale High School and read a novel from Anderson Open School. These had been sent to Africa by a St. Paul based organization, Books for Africa (BFA). John was able to arrange to have a 40 foot container of books shipped to Liberia for distribution by Peace Corps volunteers.

BFA collects, ships and distributes books to students of all ages in Africa. They are the largest shipper of donated text and library books to the African continent. They collect all types of books appropriate for African students. High school and college textbooks are especially needed. As a general guideline, books should be less than ten years old. You can drop off books at their St. Paul warehouse or ship them to the Atlanta workshop. For details, go to the [BFA Donate Books](#) page. Help to end the book drought in African schools

*To learn more about John's Peace Corps activities in Liberia, you can access his journal at [this link.](#)

Chemical Disposal

The Chemical Safety Day Program is again being offered by the University of Minnesota. The program is designed to assist schools and colleges in disposing of unwanted chemicals and hazardous waste from science, art, industrial technology, and maintenance departments. The program comes to the school site for pick-up. [Click here](#) for Information about the program.

Student Awards, Competitions and Programs

*Explore a Career in Energy, Maple Grove

Join Energy Explorers to learn about a variety of technical careers from working professionals. Monthly evening meetings at Great River Energy explore a variety of topics. For example the November 15th meeting is about drones. For information go [click here.](#)

***Girls, Science and Technology, Nov. 12, St. Paul**



Join Fox 9 and prominent female scientists from around the state for this important community event on Saturday 10 am – 4 pm at the Science Museum of Minnesota. It's a brilliant and fun opportunity for girls to be introduced to the exciting worlds of science and technology through hands-on demonstrations and activities. Up to four kids are free with a full-price adult admission. [Go to this website for information.](#)

***GIS Mapping Contest: My Hometown on the Map**

Students are challenged to create a map that tells a story about their hometown using free Geographic Information System (GIS) online resources. All students are eligible and schools can submit up to five entries. The competition is open until April 21. The competition website is at [this link](#). Information about the free GIS license for schools is at [this MDE website](#).

***World of 7 Billion Student Video Contest**

Students in grades 6 – 12 will create a short video about human population growth that highlights one of the following global challenges: climate change, ocean health, or rapid urbanization. Students can win up to \$1,000 and their teachers will receive free curriculum resources. The contest deadline is February 23, 2017. Contest guidelines, resources, past winners, and more can be found at [this link](#).

***Water/Ways Traveling Exhibition Coming to Minnesota**

Water/Ways is a traveling exhibition and community engagement initiative of the Smithsonian Institution's Museum on Main Street program. We Are Water MN, a companion exhibit that was developed with statewide partners, tells the Minnesota water story. We Are Water MN is an interactive story collecting exhibit that focuses on individuals' relationships with and responsibilities to water. The exhibit is touring seven out-state cities up through February. Teachers may download resources. Information is at [this website](#).



Physics Force Shows, Minneapolis and Rochester



The University of Minnesota's Physics Force will perform an educational and entertaining public show in January. Join us to experience how physics is interesting, understandable and fun! Be sure to share information with your teaching colleagues and announce the show to your students, January 9-13, 2017, Northrop Carlson Family Stage at the University of Minnesota and May 10 - 11 in Rochester. The show is free, but reservations are required. These public shows fill up quickly so we wanted to give you the first opportunity to register and get it on your calendar. [For information, click here.](#)

Tech Experience Tours

The Minnesota High Tech Association (MHTA) is providing a unique event for students interested in learning more about technology and the high tech business world. During the 2016-2017 school year, we are connecting high school students with STEM-focused companies and high-tech businesses in Minnesota. We are working with a number of education institutions and non-profit organization to provide high school students with the opportunity to have a first-hand encounter with a high-tech work environment.

Through a generous grant from the AT&T Foundation, MHTA and its Foundation is also able to provide support for some Tours. Educators may apply for funds at this link – [Tech Experience Tours Scholarship Application](#). Even schools that do not receive a scholarship can still participate in the program. Contact [Tim Barret](#) if you are interested in participating in the experience or have any questions.

Science and STEM Competitions

This is the time of the year to organize your teams and inform your students.

- [Science Bowl](#),
- [Science and Engineering Fair](#),
- [Science Olympiad](#),
- [FIRST Robotics](#)
- [FIRST Tech Challenge, FIRST LEGO League, and Renewable Energy Challenge](#)
- [NSTA student competitions](#): Bright Schools, eCybermission, ExploraVision

Minnesota Competitions and Programs

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

MDE Contacts:

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

Other Minnesota Links:

[Minn. Dept. of Education Science Page](#)
[Minn. Science Teachers Association](#)

[Frameworks for MN 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.