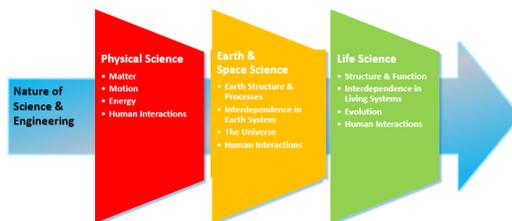


Science Update

August, 2018



Give feedback on the 2009 Standards

This periodic e-newsletter from the [Minn. Dept. of Education](http://www.mn.gov) (MDE) is sent to a few email lists, including the [Minn. Science Teachers Assn.](http://www.mnsta.org) (MnSTA) and district/organization contacts. We encourage you to forward this to other teachers and science leaders. Archived editions are at [this MnSTA site](http://www.mnsta.org). 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

* Provide input for the Science Standards Review

Your feedback on the 2009 science standards is needed by the Science Standards Review committee. The Committee began their work August 1-3. At their next meeting on September 19th, they will review data on the effectiveness and implementation of the current standards. If you are using the standards for classroom teaching, informal education, teacher preparation or other uses, please fill out the survey at <https://www.surveymonkey.com/r/HKWPLVC> by **September 11**. You will be asked to comment on quantity and rigor of standards at your grade range and also comment on specific benchmarks.

36 teachers, professors, scientists, administrators, informal educators, and community members were chosen for the Science Standards Review Committee. Their names and affiliations are listed at the [MDE Science website](http://www.mn.gov) (near the bottom of the page) along with the timeline of the standards development. While you are there also review the Assumptions that will guide the next standards.



You may start to prepare for the new standards by becoming familiar with the primary reference document that is being used by the committee, *A Framework for K-12 Science Education*. This document is available as a free download at www.nap.edu. More information about the *Framework* and how it may impact new standards is described in a series of articles at the [MnSTA Science Standards website](http://www.mnsta.org).

Teacher Events and Workshops

Environmental Education Conference, August 11, Savage

The Minnesota Association for Environmental Education (MAEE) is proud to announce the [2018 MAEE Annual Conference — Making Connections](#)— at McColl Pond Environmental Learning Center in Savage, MN on August 11th. This year we are exploring the connections between environmental education and other areas of learning. We will explore science, social-emotional development, and art through the lens of nature. McColl Pond ELC offers an inspiring landscape in which to learn and make connections with other educators. Lunch is provided with all tickets.



*Southeast MN STEM Networking, August 14, Rochester

Join the Minnesota STEM network, STEM Forward, and the Mayo Clinic Center for Individualized Medicine at the Rochester Arts Center exhibit of the Smithsonian Institution's Genome Project. The exhibit will serve as a dramatic backdrop for conversation among K-12 educators, Higher Education instructors and administrators, the Rochester Area business community, and Mayo Clinic representatives on science, education, careers, and workforce development. The event opens with a continental buffet at 7:30 a.m. The event is free but we ask that you [register](#) in advance if possible.

*Compass to Nature Webinar, August 23

Join the Prairie Wetland Learning Center August 23 1 pm – 2 pm, as they explore the innovative Compass to Nature approach to teaching in the outdoor classroom. Just as a navigational compass enables us to guide our way outside, the Compass to Nature provides unfailing direction for all who seek to lead others in the development of a caring relationship with the world we live in. During this introductory presentation, you will find out more about how you can use your local environment, a study of naturalists, regular field journaling, phenology, and the sense of wonder to effectively connect people with nature. It works anywhere, any time of year, with children and adults.

The Compass to Nature grew from the internationally-recognized Prairie Science Class partnership at the Prairie Wetlands Learning Center, part of the Fergus Falls Wetland Management District in Minnesota.

*Curie Me Away – Musical Story of Madame Curie, Sep. 15 & 16, Minneapolis



Curie Me Away! weaves core chemistry concepts into compelling lyrical metaphor to tell the extraordinary life story of Madame Marie Curie, a pioneer in the field of Physical Chemistry. Written in collaboration with a chemistry professor, this original musical packs a scientific punch while reaching across disciplines to offer inspiration and insight to students of history, womens studies and social studies. Curie Me Away! has performed for the National Atomic Testing Museum (part of the Smithsonian Institution) and won a "Best of Fest" award at the Great Salt Lake Fringe Festival.

The [Bryant Lake Bowl Cabaret Theater](#) is the setting for performances on Saturday and Sunday afternoons.

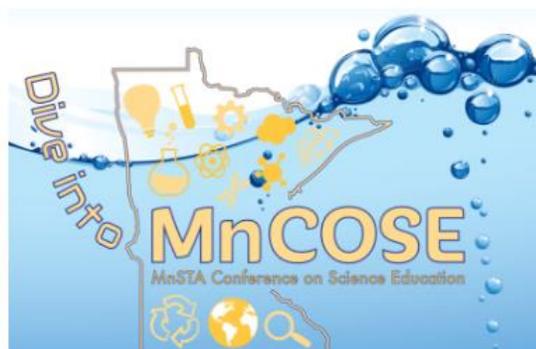
Free Tickets for the Nobel Conference - *Living Soil: A Universe Underfoot*, Oct. 2-3, St. Peter

The 54th Nobel Conference, *Living Soil: A Universe Underfoot*, is happening October 2 & 3, 2018 at Gustavus Adolphus College. The Nobel Conference invites participants to consider the vast diversity and complexity of soil, and to ponder the challenges we face in protecting this most fundamental resource. Join 4,000 people on campus for one or both days to experience presentations in microbiology, botany, ecology and soil science; Q&A sessions; and hands-on activities for designed for high school students. In addition, to help you prepare students, you may utilize classroom-ready resources with supplemental readings and activities. High School delegation tickets are FREE and may be ordered by calling 507-933-7520. [More information about the conference.](#)

International Wolf Symposium Educator Day, Oct. 13, Minneapolis

The International Wolf Center is a leader in providing wolf education. Join us for our [Symposium Educator Day](#) to bring relevant, science-based activities and knowledge to your students. Registration for the day includes: breakfast, lunch, daily break refreshments, materials and a copy of the International Wolf Center's *Gray Wolves Gray Matter* curriculum.

The MnSTA Conference on Science Education, Nov 9-10, St. Cloud



Now is the time to submit session proposals, request funding and register. This year's theme is based on water resources, with a keynote by [Steve McComas](#), *the Lake Detective* of Blue Water Science.

The event begins Thursday evening with a special themed event including a private screening of *Chasing Coral* at the Paramount Theater.

There will be sessions all day Friday with content area strands with their own keynotes and a late afternoon

social event. A new feature is an elementary share-a-thon of instructional ideas by leading science teachers. Saturday brings water-themed workshops, field trips and license renewal sessions. More details and registration are available on the [Conference Website](#).

***Early Career Knowles Teacher Fellowship**

The Knowles Teaching Fellows Program is an intensive and cohesive, five-year program that supports early-career, high school mathematics and science teachers in their efforts to develop teaching expertise and lead from the classroom. Valued at more than \$150,000, Knowles Teaching Fellows receive access to a wide range of benefits... Applications for the [2019 Fellowships](#) are due November 25.

***Science Task Development Opportunity**

Educational Testing Service is seeking graduate students in science education, science teachers from elementary or middle schools, science teacher educators, and professional development facilitators to work with research and test development staff in a project related to elementary science instruction. [The project](#) is focused on developing and validating a set of assessments designed to measure and build elementary science teachers' content knowledge for teaching in one content area: matter and its interactions.

The work will run for approximately 10 months, beginning in September 2018 and ending around June 2019. Work will take place remotely, but participants will be expected to produce specific deliverables based on the project timeline and will be paid based on the time committed to each deliverable.

***Population Connection online Professional Development**

[Population Education](#) is excited to announce that registration is open for our fall 2018 online professional development course for science and social studies educators of grades 6-12! The eight-week course runs from October 15 – December 7, 2018. Discover student-centered learning strategies that use contemporary issues and real-world data to examine the social and environmental impacts of human population and engage in meaningful dialogue with teachers across the world. More information is available [here](#).

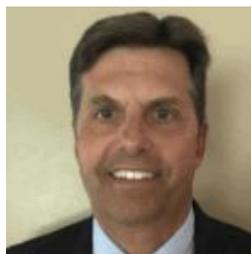
Teacher and School Awards and Opportunities

***Presidential Award Science Finalists and Awardee**

The Minnesota science finalists for the Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) for 2018 are:

- Dan Gruhlke, Eastview Education Center, Monticello
- Bonnie Laabs, Hamline Elementary School, St. Paul
- David McGill, Capitol Hill Elementary School, St. Paul

Their applications will be reviewed at the national level and the awardee will be selected through the National Science Foundation. They will be recognized at the STEM day at the State Fair and the MnSTA Conference on Science Education in St. Cloud November 9. (see info about these events below)



The White House presented the 2016 PAEMST award for science to James Schrankler, science and engineering specialist at St. Anthony Park Elementary School in St. Paul. The award provides \$10,000 in cash and a trip to Washington DC for the award ceremony and professional activities. Over the past five years, Jim has worked as a research fellow on an eight million dollar National Science Foundation engineering grant. The research is a partnership between the University of Minnesota and Purdue University. The work has evolved into a teacher leadership role, where in addition to the curriculum writing and

implementation, Jim coaches other teachers in utilizing the engineering design process. He also teaches science methods for the University of Minnesota.

MnSTA Science Teaching Award

Be rewarded for great teaching. Members of the Mn Science Teaching Assn. are encouraged to apply for the MnSTA Science Teaching Award. An elementary teacher and a secondary teacher will each receive a \$1,000 grant for use in their classrooms and they will be recognized at the MnSTA conference. The application is relatively easy and is due September 24. The nomination and application information is available at [this link](#).

***Review Middle School Science Instructional Materials**

[EdReports.org](#) is looking for expert educators to be a part of its next cohort of content reviewers. They are currently [recruiting science teachers and leaders](#) to review middle school science materials. Content

Reviewers with EdReports.org have the opportunity for professional growth and leadership development while contributing their expertise to help equip other educators nationwide with the tools they need to improve student outcomes with the highest quality instructional materials. Content review team members from across the country that meet regularly in PLCs to review materials and create the reports that are ultimately published on the EdReports.org website. A stipend is provided.

***Protolabs Foundation STEM grants**

The Protolabs Foundation is accepting applications for grants to support organizations focused on transforming students' interest in STEM fields into a demonstrated ability to succeed in a STEM career.

The Foundation will award grants of as much as \$25,000 for program-specific or general operating support three areas of the country including the Minneapolis-St. Paul-Bloomington Metropolitan Statistical Area. [The application](#) is due August 13.

School Programs and Instruction Resources

***ZOOMS STEM Design Challenge: Engineering for Animals**

The ZOOMS STEM Design Challenge presented by Flint Hills offers students in grades 3-8 a chance to use the engineering design process to develop a solution to a 'real' problem faced by zookeepers and staff at the Minnesota Zoo. From designing an animal enrichment to renovating a zoo exhibit, the problem will challenge 3rd-8th grade students to use STEM skills to solve the problem and present a solution. Teachers receive resources and support from the zoo to ensure a meaningful experience for all. Selected students will be invited to showcase their solutions at the ZOOMS Design Exhibition in March 2019 at the Minnesota Zoo for a chance to win a backstage pass experience with our animals! **FREE** for all teachers and students to participate!

2018-2019 Design Challenge: Year of the Moose



Enrichment Design Challenge: Design an enrichment to encourage natural behaviors of our six Moose: Grant, Mac, Marais, Alce, Matilda, and Aurora.

Exhibit Design Challenge: Zoo staff are looking for ways to improve the Moose Exhibit to solve current exhibit maintenance issues and create the ability to exhibit more than one moose at a time and to include a more immersive guest experience. More details are at the [Design Challenge website](#).

Climate Change School Board Resolutions Toolkit.

Climate Generation is leading a campaign to make climate change education a priority in our schools through local commitments to teach climate change science. Use our new [Climate Commitments: School Board Resolution Toolkit](#) to raise a resolution to your school board that commits your school district to teaching climate change and climate solutions.

Move Mining Next Gen! video competition

[Move Mining Next Gen](#) is a free video competition that kids grades K-12 can enter from home or as a school project. Students Learn about minerals and their uses, practice persuasive writing, spread the word about mining's impact on daily life, and maybe even win some money!

The video can be any style: animation, live action, Claymation, PowerPoint... or any style they like!
Videos will be judged by a panel of experts, with one prize going to the video entry winning the most online votes. The videos are due January 14.

Student Programs, Awards and Competitions

*STEM Day at the State Fair, Aug 23, St. Paul

Get an up-close look at intriguing, interactive adventures brought to the fair by more than 30 organizations in the Minnesota STEM Network, an initiative of SciMathMN, including robots, rocketry, computer coding and more designed for children of all ages. There will be stage shows each hour, including the Physics Force, the UM Raptor Center, The Bakken Museum, the Science Museum, and Concordia Science Academy. It all happens in the area south of the grandstand called Dan Patch Park. More info is at the [SciMath^{MN} website](#).



*Youth Incentive Award for studying beetles

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 \$600 each year for the [Youth Incentive Award Program](#). The Junior award is a monetary grant of \$200 and the Senior award is \$400. Award recipients also will receive up to \$200 (Junior) and \$400 (Senior) of equipment credit from the [BioQuip Products](#) catalog. This is for students in grades 7-12 only. The deadline is November 1.



Minnesota Programs and Competitions

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 Science Contacts:

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[Jim Wood](#), Science Assessment Specialist

[Judi Iverson](#), 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.