MnSTA Newsletter

Volume 66 No. 3 A Quarterly Publication of the Minnesota Science Teachers Association Inc. Spring 2023

Minnesota Finalists Chosen for Presidential Awards for Excellence in Mathematics and Science Teaching

MINNEAPOLIS — The Minnesota Department of Education (MDE) is pleased to announce that four Minnesota teachers have been selected as 2023 finalists for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST).

Minnesota finalists are:

Lainey Bristow, Hiawatha Collegiate High School, Minneapolis. Science Finalist

Jill Jensen, Scott Highlands Middle School, Apple Valley. Science Finalist

Beth Robelia, St. Paul Public Schools Online High School, St Paul. Science Finalist

Alexis Wolf, John Glenn Middle School in Maplewood. Mathematics Finalist

"I am honored to announce the Minnesota finalists for the Presidential Awards for Excellence in Mathematics and Science," said MDE Commissioner Willie Jett. "Lainey, Jill, Beth and Alexis demonstrate expertise and dedication in their classrooms and are exemplary of the work being done by teachers throughout the state to engage students in learning about STEM."

PAEMST is the nation's highest honor for U.S. K–12 science, technology, engineering, mathematics and/or computer science teachers. The award is administered by the National Science Foundation on behalf of the White House Office of Science and Technology Policy.

The finalists represent the most outstanding teachers Minnesota has to offer, and they serve as both a model and an inspiration to fellow teachers. 2023 Minnesota finalists will be recognized informally during STEM day at the Minnesota State Fair, and formally during the Minnesota Council of Teachers of Mathematics conference and the Minnesota Science Teachers Association conference.

Teachers who are selected as PAEMST awardees receive a trip to Washington, D.C., where they attend a series of recognition events and professional development opportunities. They also receive a $10,000 award from NSF, a Presidential certificate and join an elite cohort of award-winning teachers who can influence STEM teaching in Minnesota and nationwide.

For more information about PAEMST, visit https://paemst.nsf.gov.

Jill Jensen-Science Finalist

Beth Robelia-Science Finalist

Lainey Bristow-Science Finalist

Alexis Wolf-Math Finalist

President's Message-Jill Jensen

The vernal equinox recently occurred. While astronomy tells us that spring is here, my front yard tells a different story. Even though it still feels and looks like winter, change is coming. Spring is always an interesting time of year in the classroom too as you work towards wrapping up your final units of learning with an eye on changes for next year at the same time. Changes are working their way into our science curriculum as well. Many schools are in the process of rolling out new curriculum to meet the new science standards in Minnesota. Many teachers are working on changing pedagogy to help their students build their sense making skills and more changes are to come as more grades reach or approach their roll out year. I've personally gone through a number of changes throughout my career as a science educator. Some of the best advice I've been given along the way include: Change is a process, not an event. This quote helps remind me that it's ok to give ourselves time to make adjustments in our teaching. Learning new content and methods of teaching can be challenging and stressful, but every step is a step forward, and through a series of small steps, things that felt daunting can suddenly feel manageable. I have experienced this as I attempted to implement modeling in my classroom this year. What felt very awkward and clunky in the fall, feels a bit more smooth this spring.

MnSTA has been trying to help members through the change in standards this past year with monthly virtual discussions on NGSS topics and a book study. We also hosted a series of virtual sessions to help middle school teachers get ready for physical science standards. There are a number of sessions of ESTEP (Earth Science Teacher Education Project) scheduled for this summer (find out more here: https://www.mnsta.org/cgi/page.cgi/ESTEP.html).

The other quote I'm reminded of is "Change is the only constant in life". Things keep moving forward, students, standards and weather. Here's to hoping the change to spring happens soon!

Build a geodesic dome from old newspapers, fun STEM! https://www.pbs.org/wgbh/buildingbig/educator/act_geodesic_ho.html#:~:text=Stack%20three%20flat%20

Department of Education

Angie Kolonich is the science specialist for the Department of Education. She will keep us updated on science education in the MnSTA newsletter.

Boozhoo*/Greetings Minnesota Science Teachers!
Ziigwan/it is spring once again! All of our snow is finally starting to melt after what seemed like a very long winter. The signs of spring are already here – warmer days, melting snow, more hours of daylight, buds on the trees, and the return of asiginaak/Red-winged blackbirds and opichi/Robin. This winter, I learned something new about one of my neighbors that I would like to share with you. I always thought that Meme (pronounced May-May)/pileated woodpecker was a migratory bird, but I learned that they actually stay here all winter. I learned this because I noticed Meme snacking on the frozen apples hanging on our trees all winter long. I wondered "What is Meme still doing here when it's so cold and snowy?" so I decided to learn more about Meme! It turns out, they do stay close to their nesting sites all winter long. This made me wonder about the other animals in my area – which ones hibernate, like frogs and bears, which ones migrate, like the asiginaak and opichi, and which ones stay all winter, looking for food – like meme and waawaashkeshi/deer. I plan to start keeping an observation calendar of different animals in my area, and see if I can learn more about their habits. Now that I know Meme likes to snack on our apples in the winter, I may leave some more on the trees for them I am glad that I noticed Meme eating apples this winter because it gave me the opportunity to learn something new. I always love learning new things, and I hope that you also have the opportunity to do something you love this spring too.

* You can learn more about Ojibwe language and access audio files of word pronunciation at The Ojibwe Peoples Dictionary – established by faculty at The University of Minnesota https://ojibwe.lib.umn.edu/

Minnesota Academic Standards in Science

MDE specialists presenting "Modeling: A Common Math and Science Practice" at MCTM this April MDE Mathematics Specialist Sara Van der Werf, and MDE Science Specialist Angie Kolonich will be co-presenting a session on the practice of Modeling in Math and Science at the Minnesota Council of Teachers of Mathematics conference on April 22nd in Duluth Minnesota. The session will be held in the Duluth convention center from 11:45am-12:45pm. Presentation materials will be made available after the conference. Please watch for additional resources on Modeling in Math and Science, or reach out to Sara and Angie with questions.

MCA Science Assessment Resources

Resource Highlight: Sample Items Released for the Science MCA-IV.

Preview sets of questions developed for the Science MCA-IV. The Testing 1, 2, 3 MCA Content Resources webpage under Science Resources now has released examples of Science MCA-IV items and Educator Guides. The purpose of these resources is to give Minnesota education professionals a few examples of phenomenon-based, multidimensional items aligned to the 2019 Minnesota Science Standards. The guides include information on benchmark alignment and student response data, to provide context for the online released items.

Department of Education- Opportunities

Flexibilities for science teachers will remain in place for the next school year

On March 12, 2021, the Board adopted a resolution to help support teachers and schools navigating changes to the K-12 science standards and benchmarks. This resolution will remain in effect for the next school year (2023-24).

Background

In September 2021, the Minnesota Department of Education (MDE) adopted changes to the K-12 academic standards and benchmarks in science (referred to as the 2019 science standards). The updated standards move "Earth and Space Science" from 8th grade to 6th grade, and "Physical Science" from high school to 8th grade. The new standards also place greater emphasis on the teaching of "Earth and Space Science" at the high school level. PELSB is aware that these changes may impact current science teachers and districts as they implement the new standards.

More information about the 2019 science standards is available on MDE's website.

What does the resolution do?

The 2021 resolution provides additional flexibilities for science teachers who will need an out-of-field permission (OFP) to teach in a science content area or grade level outside of the scope of their existing license(s) due to the impact of the proposed science standards.

Specifically, the resolution allows school districts to seek an out-of-field permission (OFP) for impacted Tier 3 and Tier 4 science teachers without needing to meet the OFP posting requirements. Additionally, these OFPs will not be counted toward the lifetime total for those Tier 3 or Tier 4 science teachers affected by the science changes.

This resolution will be in effect until the Board adopts new rules to determine long-term options for teachers impacted by the changes to the K-12 science standards.

Examples

This resolution applies to the following circumstances:

- A Tier 4 teacher who holds a 7 -12 Earth and Space Science license: The district and teacher would like the teacher to teach Earth & Space Science at the 6th grade level during the 2023-24 school year.
- A Tier 4 teacher who holds a 7 -12 Earth and Space Science license: The district and teacher would like the teacher to teach Physical Science at the 8th grade level during the 2023-24 school year.
- A Tier 3 or Tier 4 teacher who holds either a 9 - 12 Physics or 9 - 12 Chemistry license: The district and teacher would like the teacher to teach Physical Science at the 8th grade level during the 2023-24 school year.

Note: The resolution is not limited to these examples. Other scenarios likely apply.

American Indian Educators Survey

The Minnesota Department of Education is looking to connect with American Indian educators and staff across the state. Please see the message below and pass this opportunity on to anyone that you might know.

The State Personnel Development Grant in collaboration with MDE Special Education Division is looking to get connected with American Indian educators and staff at your respective districts and schools. The goal is to create a supportive network to share updates, professional development opportunities, resources and tools, and general information. Benefits of participation include receiving Continuing Education Units and participating in professional conversations grounded in learning and growing together.

Please forward the survey link to your entire staff so that individuals can self-identify and complete the questions accordingly.

Link to survey: https://forms.office.com/r/TG8Gv-CY9MU

Govinda Budrow from Fond du Lac Tribal and Community College will serve as the facilitator. For additional information, contact Becky Gerdes, State Personnel Development Grant Coordinator, (651-582-8807) at the Minnesota Department of Education.

Milkweed Adaptation Research and Education Network (MAREN) Summer Workshops

This is an incredible year to be studying phenology--signs of spring are arriving a month early in places. What will an early spring mean for milkweeds and monarchs? Help us find out.

We are happy to announce that the Milkweed Adaptation Research and Education Network (MAREN) is offering a variety of virtual and in-person workshops this summer (May - July 2023). These workshops will prepare educators to teach students how to gather and make sense of novel data about milkweed phenology and its effects on pollinators and herbivores. We expect data from multiple sites to help inform decisions about how to plant milkweed to support the declining population of monarch butter-

flies. We welcome and need your participation! Learn more about the workshops here. Visit marenweb.com to learn more about the project. Apply Now!

Opportunity to strengthen your Earth Science credentials

Earth Science Essentials, an advanced online review of Earth Science for high school and middle school science teachers, will be offered May 17 – July 3, 2023 through Minnesota State University Moorhead. This is an ESTEP course. The course is reasonably priced at $165 per credit hour and support for graduate credit may be available through ESTEP. Learn more here

Water Works! A Drinking Water Institute for Educators

A Project of the Minnesota Department of Health Drinking Water Protection Section and the Education Committee of the Minnesota Section American Water Works Association in conjunction with the Hamline University Center for Global Environmental Education. 2023 Drinking Water Institute
Monday, August 7 to Wednesday, August 9
Minneapolis Water Works Link

Press Release

[February 14, 2023, St. Paul, MN] Minnetonka East Middle School's Team1 won the Minnesota Middle School Science Bowl, which was held at Benilde-St. Margaret's School on February 11. Minnetonka East's team will advance to the National Science Bowl after edging out 17 other teams from eight middle schools during the competition organized by the Minnesota Academy of Science.

Minnetonka East's winning team consists of Jacob Lee, Michael Luo, Alex Ren, Addison Shi and Evan Truong, and is coached by Tingting Zhu. The team will represent Minnesota in the U.S. Department of Energy's National Science Bowl held in Washington D.C. from April 27 to May 1. Wayzata East Middle School came in second place; Rosemount Middle School came in third place and also won the Science Bowl Civility Award. See full competition results at mnmas.org.

"I am so proud of these dedicated kids. This is our first year participating in the Science Bowl competition and we didn't expect to become the Minnesota champions," said Minnetonka East Coach-Tingting Zhu. "Students have worked really hard since last fall in our Math & Science Club, which was newly founded and operated by the students. These selfdrivenstudents not only demonstrated their academic knowledge and teamwork but also showed but also showed
their leadership and inspired younger students to participate."

Science Bowl is a venue for students to exercise their science and math knowledge while also strengthening their teamwork skills. During Science Bowl, students compete head-to-head in five-person teams to solve technical problems and answer questions in all branches of science and
math. The tournament runs in a fast-paced, Q&A format where students race to ring in with their answers first and then work collaboratively on multi-part follow-ups. Each team plays multiple games in a round robin competition, vying to advance to a double-elimination tournament.

Science MCA-IV Item Writer Training

We would like to invite you to apply to be part of the Science MCA-IV Item Writer Training in the summer of 2023. The training will be 4 1/2 days total, with a half-day training on June 23 followed by meetings on July 10-11 and July 31-August 1. All meetings this summer will be virtual. Approximately 15-20 additional hours will be needed outside of these dates to complete the writing assignments. This summer, we are focused on writing engaging grade-level phenomena and questions tied to the 2019 Minnesota Science Standards. Our goal for the 2023 item writer training is to generate creative thinking, engaging your unique teaching approaches to build a repository of phenomena and questions for the Science MCA-IV.

Process Details

Attend five required training/work days (all virtual):

o June 23 (half-day)
o July 10-11
o July 31-August 1

Work independently to complete two phenomenon-based scenarios with 7-8 questions for each phenomenon by August 14, 2023.

Benefits for Educators

· Build a robust understanding of and diverse perspectives on the 2019 Science standards
· Offer insights to the creation of quality assessments that impact 60,000 students per grade
· Expand creative thinking while developing engaging grade-level phenomena and item ideas
· Learn skills and practices that support strong classroom assessment
Collaborate with Science colleagues from across Minnesota

· Earn Continuing Education Units (CEUs)
· Receive monetary participation compensation

If you are interested in being part of this Science MCA-IV writer training this year, please enter your information by April 24, 2023, at www.surveymonkey.com/r/2023MCAWriter Selected writers will be contacted the week of May 1-5. Writers will be chosen based on grade-level and content-area writing needs, as well as experience in developing assessments.

We encourage any teachers and educators interested in becoming a Science item writer to apply. We want to grow the impact teachers have on our Science MCA-IV assessment and look forward to engaging with more teachers around the state. If you have colleagues that might be interested in participating, please send them this information.

Another way to be involved in Science MCA development is to register to participate in MCA Educator Review Committees. Your input is vital in the development of items to the new science standards. We are always looking for more educators to become involved on the review process. This opportunity is open to science, math, language arts, ELL and special education teachers.

Jim Wood and Judi Iverson Science Assessment Specialists 651-582-8541, 651-582-8651
Jim.wood@state.mn.us Judi.iverson@state.mn.us

Registration for ESTEP Online Courses for SUMMER 2023 is OPEN!

GEOS 599: Geoscience for ELE/MS ESTEP Teachers and GEOS 599: Earth Science Essentials 1: An ESTEP Course for Science Educators

These two courses are offered through the Continuing Studies Department at Minnesota State University Moorhead. Each 3-credit graduate level course is facilitated by expert professors who are leaders in their fields and based in Minnesota! Courses run May 17 - July 3 2023. Want to learn more? Check out everything ESTEP HERE!

Minnesota State University Moorhead is moving to a fully automated registration system. To begin the registration process for summer 2023 courses, please fill out the Google Registration Form using the link below. The registrar will reach out to you via email when the system is ready to walk you through the registration process so that your course(s) will be paid for by our grant.

Please note that these are 3 credit, graduate level courses, and while mostly asynchronous, each require approximately 6-8 hours of work per week, especially due to the shortness of the summer term. There is ONE required synchronous virtual meeting on EITHER June 17 or June 24 from 9:00 am - 12:00 pm.

Ready to register? CLICK HERE!

Note: ALL online courses are designated as blended. This means that the courses are offered in an asynchronous style, with scheduled assignment turn in dates and assessments, AND there will also be a REQUIRED synchronous online meeting time per course, that will take place on a scheduled Saturday morning in 3 hour block of time. In order to earn a passing grade and credit for the course, participants MUST commit to both asynchronous AND synchronous requirements.

The Earth Science Teacher Education Project, or ESTEP, is a professional development program for 6th grade and high school earth and space science teachers. Our goal is to facilitate and model best practices in content and three-dimensional teaching strategies so that MN teachers can become practitioners of these new standards and create an environment of investigation and discovery in their classrooms. Graduate credit for all summer bootcamps and online courses are available to participants for FREE (there may be a nominal registration fee for each course/camp; lodging and other expenses are not covered by the grant). Additionally, participation in ESTEP can help prepare currently licensed high school science teachers to obtain an additional licensure in 9-12 Earth and Space Science through MTLE testing.

Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

Explore Your Environment Project Learning Tree (PLT) Workshop for educators

April 15, 2023 from 1-5pm
Ney Nature Center, Henderson, MN
Cost: $75

PLT's new Explore Your Environment: K-8 Activity Guide includes 50 hands-on, multidisciplinary activities to connect children to nature and increase young people's awareness and knowledge about their environment. More Information

Free resources for teaching how science works

Decoding Science https://www.nap.edu/resource/25303/interactive/index.html?utm_source=NASEM+News+and+Publications&utm_campaign=d18874372b-Eblast_Decoding_Science_Ed_2021_05_27&utm_medium=email&utm_term=0_96101de015-d18874372b-102201965&goal=0_96101de015-d18874372b-102201965&mc_cid=d18874372b&mc_eid=1e54d40e2e is a free interactive resource from the National Academies of Sciences, Engineering and medicine. It's all vetted by experts and ready to use in your classroom.

A 90-second video on how science works
Clear answers to challenging questions
Stories from real-life scientists
And more…

PLT "Explore Your Environment" K-8 Activity Guide Released

Project Learning Tree (PLT) released a new curriculum guide to engage kindergarten through grade 8 students in exploring their environment. Fifty field-tested, hands-on activities integrate investigations of nature with science, math, English language arts, and social studies.

Educators can obtain a copy of PLT's Explore Your Environment: K-8 Activity Guide https://www.plt.org/curriculum/k-8-activity-guide-explore-your-environment/ directly from PLT's Shop https://shop.plt.org/Shop/ProductDetails/k8guide, from Amazon and other places where books are sold, or by attending a local PLT professional development workshop https://www.plt.org/trainings/attend-a-training/ conducted by PLT's 50-state network of 75 coordinators and 1,000 facilitators across the country. Minnesota PLT site https://www.dnr.state.mn.us/plt/index.html

Student Programs, Awards and Competitions

Science and Engineering Competitions

- Science Bowl – middle and high school
- Minnesota Science Olympiad – middle and high school
- Science and Engineering Fair – middle and high school
- FIRST Lego League, FIRST Tech Challenge, FIRST Robotics- All grades
- Supermileage Challenge - High school
- Real World Design Challenge - High school
- Toshiba/NSTA ExploraVision - Classroom based for all grades
- NSTA Angela Award – girls grades 5 – 8
- MN Scholars of Distinction – high school
- National Youth Science Camp – two high school seniors are selected as MN delegates

Minnesota Programs and Competitions

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

MDE Science Contacts:

Angela Kolonich, Science Content Specialist
angela.kolonich@state.mn.us
Jim Wood, Science Assessment Specialist
jim.wood@state.mn.us
Judi Iverson, Science Assessment Specialist
judi.iverson@state.mn.us
Sarah Carter, STEM and Computer Science Specialist sarah.carter@state.mn.us
Send submissions for the Science Update to Angela Kolonich angela.kolonich@state.mn.us

Other Minnesota Links:

Minn. Dept. of Education Science Page http://education.state.mn.us/MDE/dse/stds/sci/
Minn. Science Teachers Association mnsta.org
Frameworks for MN Science and Mathematics Standards http://scimathmn.org/stemtc/
Get – STEM Connections between schools and businesses https://getstem-mn.com
Mn-STEM STEM programs and resources for families, schools and community http://mn-stem.com/stem/
Sharing Environmental Education Knowledge environmental education resources https://www.seek.state.mn.us
Minnesota Academy of Science: Science Fair, Science Bowl and other competitions https://www.mnmas.org/
Mn DNR Education website: Curriculum, professional development, posters, etc.
http://www.dnr.state.mn.us/education/index.html
Youth Eco Solutions (YES!) – Statewide, youth-led program for hands-on eco related projects
https://yesmn.org/

The University of Minnesota Nano Center and nano@Stanford present the

Nanoscience Summer Institute for Middle School Teachers

Engage & excite students with real world applications in your classroom!

July 17-21 2023 | PAID & open to any middle school teacher- Title 1 & rural schools encouraged! | Virtual + materials sent to you!

Excite and engage your students with the power and wonder of nanotechnology! Apply a join us this summer for this virtual professional development experience. Learn about nanoscience and technology, and discover high demand careers for your students.

This ***free, fully remote*** learning experience will be offered **July 17-21, 2023**, 11 am - CDT. For more details and to apply, please go to tinyurl.com/NanoSIMSTinfo. Questions? Contact dmduran@stanford.edu.

MINNESOTA NANO CENTER

Spend Part of Your Summer Researching Nanotechnology at the University of Minnesota!

The Minnesota Nano Center invites you to join the

Research Experience for Teachers (RET) program.

The RET program offers high school and community college teachers the chance to join a lab research team at the University of Minnesota. Teachers with backgrounds in the physical and life sciences and/or engineering fields are encouraged to apply to the program.

The RET program provides:

- Six weeks of hands-on research experience with faculty support
- Travel to the 2024 National Science Teachers Association conference
- Classroom materials support
- Safety and equipment training
- **A stipend of $5,300**

***Schedule*:** June 19 to July 28, 2023.

For more program details and to apply, please go to our website, cse.umn.edu/minic/research-experience-teachers-ret-program, or contact Dr. Jim Marti at jmarti@umn.edu.

National Science Foundation | NSF Center for Sustainable Polymers

Green & Sustainable Chemistry Workshop

for high school teachers

June 19 - 21, 2023
University of Minnesota

The NSF Center for Sustainable Polymers (CSP) in partnership with the Minnesota Corn Growers Association (MCGA) will be offering a **FREE** three-day workshop at the University of Minnesota to high school chemistry teachers on green and sustainable chemistry. The workshop was developed through the University of Minnesota Materials Research Science and Engineering Center (MRSEC) Research Experiences for Teachers (RET) program. Applicants from across the Midwest are welcome.

Applications due April 1, 2023: https://z.umn.edu/greechem

Participating teachers will receive instruction on the principles of green chemistry, industrial applications, and potential impacts to human health and the environment. Shared lesson plans will illustrate how green and sustainable practices apply to secondary chemistry classrooms with education standards in mind. Participants will gain hands-on experience with safer, cost-effective labs that minimize waste and are drop-in replacements for traditional secondary chemistry labs. Topics such as bioplastics, design engineering, biomimicry, and commercial products from renewables will be explored demonstrating relevance to societal needs. Participants will partner with the workshop instructors and one another to develop or modify experiments for use in their classroom. Upon returning to their respective schools during the 2023-2024 academic year, participants are committed to implement at least two green chemistry experiments that they explored or developed at the workshop in their classrooms.

Participating teachers will receive a $300.00 stipend and the option to earn 2 graduate level credits from the Colorado School of Mines (CSM). Participants will also receive resources for lab implementation in their classrooms. Accommodations and parking at the University of Minnesota will be provided for traveling participants. Lunch will be provided each day of the workshop.

For questions please contact Professor Jane Wissinger, jwiss@umn.edu.

MINNESOTA'S EARTH SCIENCE TEACHER EDUCATION PROJECT

ESTEP

LAND WATER SKIES STARS!

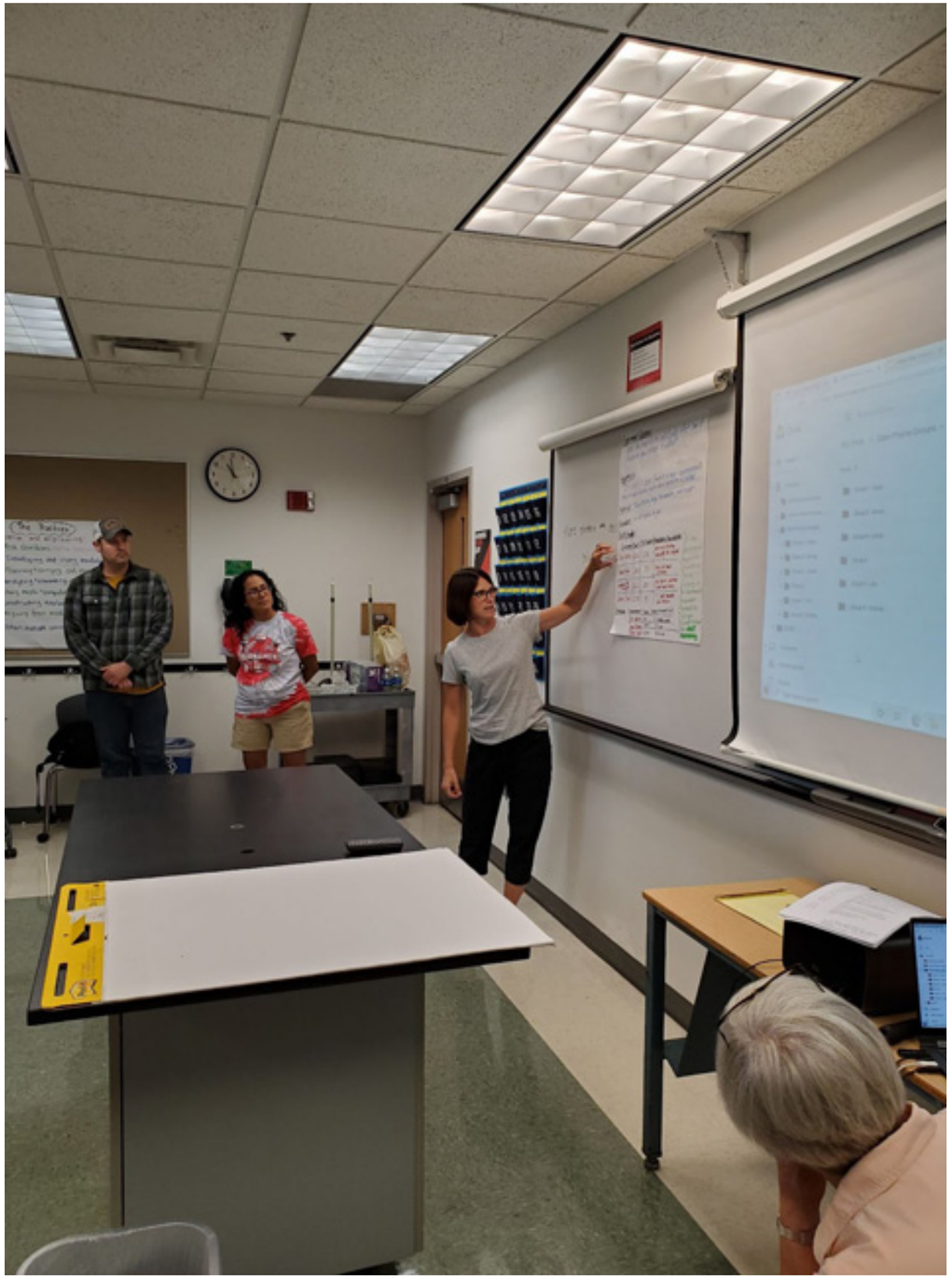
The Earth Science Teacher Education Project, or ESTEP, is a professional development program for 6th grade and high school earth and space science teachers. Both ESTEP programs are NOW funded by an Environment and Natural Resources Trust Fund grant through summer of 2025! This grant allows us to offer high quality professional development focused on environmental and earth science content and the new pedagogy of the MN Science Standards ***at very low cost to teachers and districts.*** Our goal is to facilitate and model best practices in content and three-dimensional teaching strategies so that MN teachers can become practitioners of these new standards and create an environment of investigation and discovery in their classrooms. ***Through our summer boot camps and NEW semester-based online content courses,*** 6th grade and high school earth and environmental science teachers can learn the content and teaching strategies to move their classrooms from teacher-centered lectures to student-led sense-making through authentic use of science and engineering practices. ***Graduate credit for all summer bootcamps and online courses*** are available to participants for FREE (there may be a nominal registration fee for each course/camp; lodging and other expenses are not covered by the grant). Additionally, participation in ESTEP can help prepare currently licensed high school science teachers to ***obtain an additional licensure in 9-12 Earth and Space Science through MTLE*** testing. Read on to learn what ESTEP can do for you and your students! Want to know more? Check out ESTEP programs at https://www.mnsta.org/cgi/page.cgi/ESTEP.html

Registration for 2023 Summer Boot Camps will open in mid-February! You can find dates and sites on our website! MnSTA members will receive email updates!

Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

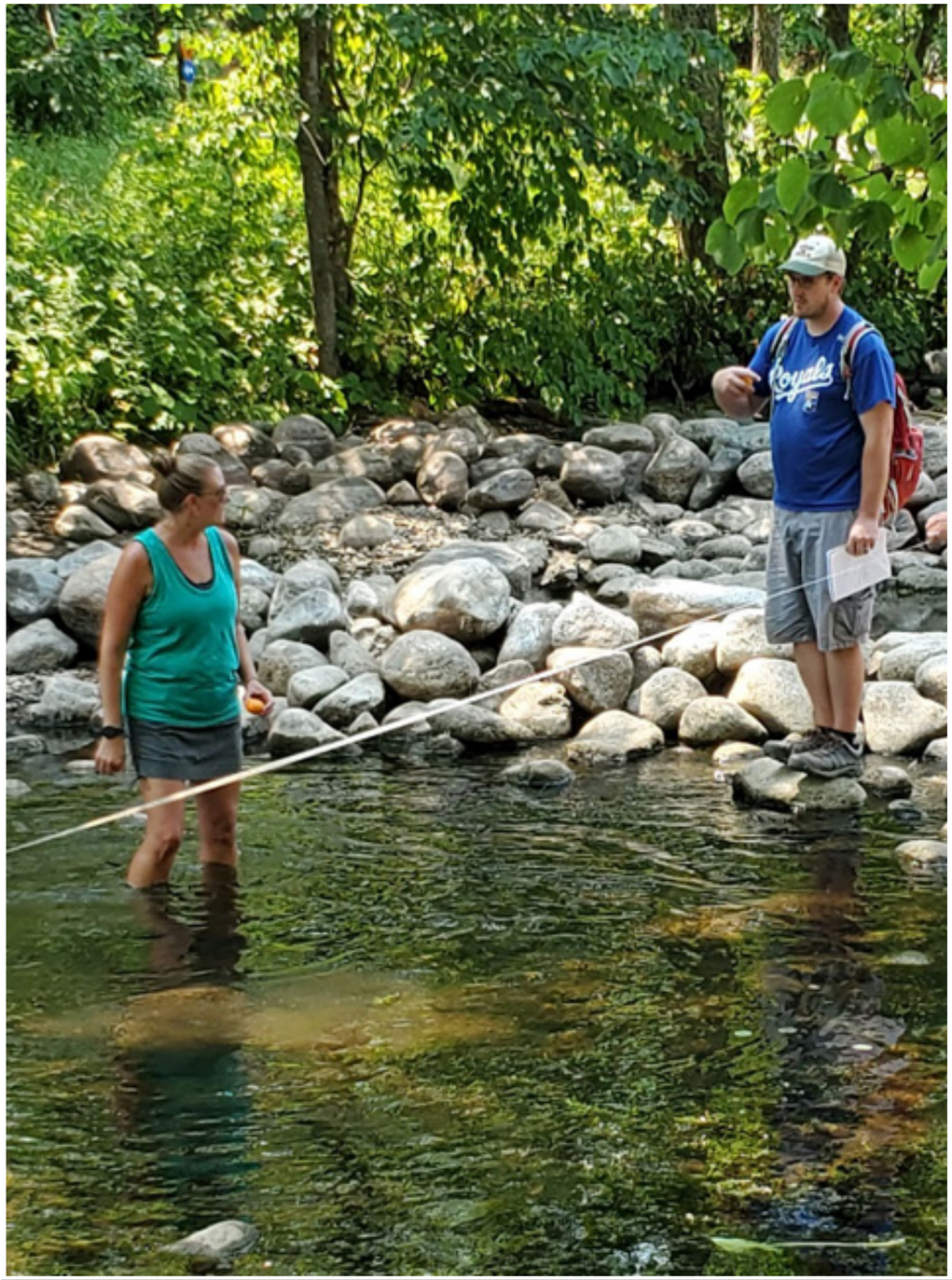
Earth Science Teacher Education Project

Observing clues to rock formation with Dr. Hoppie in Mankato.



Participants sharing their experimental design data and results to explain the phenomenon

Dr. Pound modeling the stratigraphy of the St Paul area



Participants investigating and collecting data about variables affecting stream structures.

Analyzing evidence of glacial deposition in Bemidji.

MnSTA The Minnesota Science Teachers Association

Professional Learning Opportunities '22-'23

MnSTA is excited to announce our professional learning opportunities for members this school year. Highlights include:

- **Monthly virtual offerings**
- **NGSS Focused**
- **Free for members**
- **CEU's available**
- **Come to all or any that fit your schedule**

Book: Helping Students Make Sense of the World Using Next Generation Science and Engineering Practices

Available through NSTA Press and Amazon

Book Discussion led by Jill Jensen

NGSS Focused Discussion led by Dana Smith

Date and Time	Topic
October 13 6:30 PM	Book Discussion: Section 1: Big Picture through Chapter 4
November 16 6:30 PM	Intro to NGSS conversation
December 8 6:30 PM	Book Discussion: Section 2.1: What do the practices look like in the classroom - Chapter 9
January 18 6:30 PM	Introduction to MN Science Benchmarks/Using Crosswalk Document
February 2 6:30 PM	Book Discussion: Section 2.2 Chapter 10 - 13
March 15 6:30 PM	Curriculum Review Discussion/Share Out
April 6 6:30 PM	Book Discussion Section 3 How Can We Teach Using the Practices? Chapter 14 - 16

Questions: contact us at: jill.jensen@district196.org; dana_smith@isd31.net

JEFFERS WORKSHOPS

THE OUTDOOR CLASSROOM

Team Teaching with Mother Nature

Be inspired this summer, in an exciting workshop offered by Jeffers Foundation. This is the much-requested, advanced version of our popular three-day professional development training.

What: FREE professional development sponsored by Jeffers Foundation
Who: K-8 teachers, naturalists, and environmental educators - 30 participants
When: July 10 - July 12, 2023 - 3 days - 10:00 am to 3:00 pm daily.
Where: McColl Pond ELC, Savage, MN

Workshop includes:
- Lunch & snacks each day
- EcoTime 2.0 Cards
- Calendar in the Classroom curriculum & MN Weatherguide Environment™ Calendar
- LooKits
- Jeffers Journals for your students
- Participants earn 15 CEU's
- And much more! - It's fun and it's FREE*!

Three days are jam-packed with multi-disciplinary, hands-on activities to engage and inspire your students. Strategies for successful outdoor instruction, a focus on academic standards, an emphasis on STEM and opportunities to share ideas with other educators are special features of the workshop.

*Registration requires a fee of $30 by June 30th to hold your place. Your fee will be returned to you upon completion of the workshop. Cancellations after July 3 are not refundable.

McColl Pond, ELC
Savage Community Park
13550 Dakota Avenue South
Savage, MN 55378

Register online at *jeffersfoundation.org*
Questions, contact David at:
david.grack@jeffersfoundation.org

Environmental Stewardship Through Education JeffersFoundation.org

JEFFERS WORKSHOPS
INSTITUTES

ECOLOGY INSTITUTE

Learn about Minnesota's natural habitats as you investigate through hands-on, outdoor experiences.

This three-day institute aims to help you learn more about Minnesota habitats and to plan engaging outdoor ecology experiences for your students.

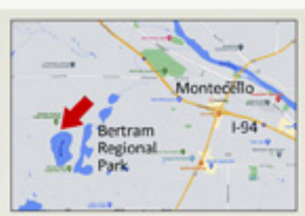
Who: Teachers, naturalists, and environmental educators, grades 3-12. Limited to 15 participants.
What: FREE professional development by David Grack, Ed.D. Sponsored by Jeffers Foundation
When: Mon. June 26th - Wed. June 28th, (3 days) 2023 - 8:00 AM - 4:00 PM - Lunch included
Where: The Chalet at Bertram Chain of Lakes Regional Park, 4 miles SW of Monticello, MN
Need lodging? A campground, including camper cabins, are available in the park. Reservations can be made at co.wright.mn.us (camping fees are not covered by Jeffers)
Registration/CEU's: Earn 30 CEU's. Register by June 16, 2023. A registration fee of $40 will hold your spot. This fee is refunded upon completion of the institute.
Cancellations after June 19th are not refundable.

Ecology, the study of the relationships between living organisms and their physical environment, will provide the content for this institute. Participating educators will be engaged as scientists; collecting, analyzing, and communicating as they conduct field studies. Studies include: a multi-day grassland food web study, two types of forest surveys, and a small-scale aquatic succession lab. Participants will learn techniques and discuss ways to engage their students as practicing scientists, uncovering ecology concepts and core ideas while teaching outdoors on their school grounds and in their communities.

Participating teachers receive Teacher Lookit, and MN Weatherguide Calendar.
Classroom teachers eligible for a class set of Jeffers Journals.

Bertram Chain of Lakes Regional Park
9842 Briarwood Ave NE
Monticello, MN

Register online at jeffersfoundation.org
Questions? Contact David Grack
david.grack@jeffersfoundation.org



Environmental Stewardship Through Education JeffersFoundation.org

JEFFERS WORKSHOPS
INSTITUTES

INSECT INSTITUTE

Team Teaching with Mother Nature:
Content Area Institutes promoting 3-Dimensional Teaching

Kids young and old are fascinated by insects.
Use insects to engage students in science content using 3-dimensional teaching as suggested by state and national standards throughout the year to develop students' ability to observe, investigate, and make claims from evidence, while learning outdoors!

Who: Teachers, naturalists, and environmental educators, grades K-12. Limited to 15 participan
What: FREE professional development by David Grack, Ed.D. Sponsored by Jeffers Foundation
When: Mon. July 17th - Wed. July 19th, (3 days) 2023 - 8:00 AM - 4:00 PM - Lunch included
Where: The Chalet at Bertram Chain of Lakes Regional Park, 4 miles SW of Monticello, MN
Need lodging? A campground, including camper cabins, are available in the park. Reservations can be made at co.wright.mn.us (camping fees are not covered by Jeffers)
Registration/CEU's: Earn 30 CEU's. Register by July 7, 2023. A registration fee of $40 will hold your spot. This fee is refunded upon completion of the institute.
Cancellations after July 10 are not refundable.

Use the high-interest topic of insects to engage students in science lessons that meet grade level standards for classification, living systems, life cycles, structure and function, and more. Participate in indoor and outdoor observation, discussions, and single and multiple-day investigations. Explore terrestrial and aquatic insects through: taxonomy lessons, collecting and studying specimens, and life cycles and niche research and investigations. Discover and rediscover how insects can work to drive science lessons and also extend opportunities to connect science learning with skills in reading, writing, math, geography, art, and more.

Participating teachers receive Teacher Lookit, and MN Weatherguide Calendar.
Classroom teachers eligible for a class set of Jeffers Journals.

Bertram Chain of Lakes Regional Park
9842 Briarwood Ave NE
Monticello, MN

Register online at jeffersfoundation.org
Questions? Contact David Grack
david.grack@jeffersfoundation.org

Environmental Stewardship Through Education JeffersFoundation.org

FREE EcoTime 2.0 Workshop

for elementary educators

JEFFERS WORKSHOPS

Jeffers Foundation is proud to introduce the

newly revised EcoTime 2.0

written *by* Minnesota teachers *for* Minnesota teachers

Workshop participants will experience lessons from a student perspective and explore ways to effectively engage students in the NEW Minnesota K-12 Academic Standards in Science and the Three Dimensions of Science Instruction, with a focus on outdoor learning and using science journals.

Jeffers facilitators engage your participants with effective outdoor instructional strategies for using your schoolgrounds as a teaching resource!

EcoTime 2.0 includes 120 K-5 lessons organized in three related groups:

- ***Greetings:*** Building community and engagement in science concepts.
- ***Science Activities:*** Promoting investigation, analysis, and interpretation of data.
- ***Interdisciplinary Lessons:*** Extending science instruction to language arts, math, art, and engineering.

Participating teachers will receive:

- A FREE dynamic 3-Hour Workshop*
- A set of 120 EcoTime 2.0 lessons
- A Jeffers Journal.
- Classroom teachers are eligible to receive a FREE classroom set of Jeffers Journals to use with their students.

*Can be extended one additional hour to include grade-level teaching practicum with Jeffers facilitators

Connect with Jeffers at JeffersFoundation.org to request an EcoTime 2.0 workshop at YOUR school! Questions? contact: David.grack@jeffersfoundation.org

Environmental Stewardship Through Education JeffersFoundation.org

E3

Energy Education for Educators

MINNESOTA STATE
Energy Center of Excellence

High School CTE, STEM, and AFNR teachers
E3 is a **free** opportunity for you to spark your interest and to bring opportunities for energy career exploration to your students.

Monday June 12 and Tuesday June 13
Saint Cloud Technical and Community College

Wednesday June 14 and Thursday June 15
Merit Center, Marshall MN

What's included?

- 16 CEU's
- Industry Tours
- Lunches and One Night's Stay
- Curricular Resources
- Free Lab Kits for Your Classroom
- Access to our Mobile Energy Classroom

www.energycareersminnesota.org/e3

Registration Opens March 1, 2023

Email energycenter@mnwest.edu for more information


MnSTA The Minnesota Science Teachers Association
LOOKING FOR SUPPORT FOR ELEMENTARY SCIENCE?
Minnesota Science Teachers Association has an offer for you.
NEW
MNSTA IS OFFERING A $75 BUILDING MEMBERSHIP TO COVER ALL TEACHERS IN YOUR BUILDING
All teachers receive access to the monthly newsletter and online resources as well as member rate for the annual conference.
TO LEARN MORE:
Metro:
Lee.Filipek@district196.org
Out-state
kandy.nolesstevens@smsu.edu


MnSTA The Minnesota Science Teachers Association
It is our mission to: stimulate, coordinate, and improve science teaching and learning for all.
Why Join MnSTA?
NEWS
• Keep up with the latest developments in science education
• Network with peers from around the state
• Help us advocate for science education at the district and state level
Join at mnsta.org

Keep Your MnSTA Profile Up-To-Date

MnSTA does its best to keep you abreast of everything happening in science education in Minnesota. We do this via several outlets including:

- MnSTA Website
- MnSTA Facebook and Twitter pages (@MnSTA1)
- Weekly Digest of postings (sent via email)
- Monthly Science Update from MDE Science Specialist John Olson (sent via email)
- Quarterly Newsletter (availability announced via email)
- Occasional email messages to all members

The best way to make sure you are receiving email notices and all of the above information, please make sure that MnSTA has your correct email address, mailing address, and your permission to send this information to you. Your profile also contains information about your school, disciplines you teach, and the grade levels you work with. These can all be updated at any time.

You can update your MnSTA profile by going to the MnSTA website (www.mnsta.org) and logging in. Click on the My Profile link. You will then see links to Update Profile, Update Address, Update Photo, and Change Password. If you have any questions about this, please feel free to contact MnSTA.

MnSTA, Inc. is an IRS 501 (c) (3) Charitable Educational Corpora-tion, incorporated as a tax exempt, non-profit organization with the Minnesota Secretary of State. Donations and dues are tax deductible charitable contributions for itemized deductions on IRS form 1040 Schedule A. The newsletter is an exempt program service provided to the membership. A membership form is found on the last page

MnSTA Board Directory

Below, you will find information about your MnSTA Board Members. The listing includes the board member's school (or organization), mailing address, work phone, FAX number, and e-mail address. The board wishes to make itself as accessible as possible for our members. Please feel free to contact your discipline representative, regional representative, or executive board members if you have ideas, concerns, or wish to help with the mission or operation of MnSTA. We are always looking for members who wish to serve MnSTA as Board Members, Non-Board Service Chairs or Members, and as Committee Chairs or Members.

Executive Board:

Exec. Secretary	Karen Bengtson 320-253-9333	St. Cloud Area School Dist. 472 karen.bengtson@isd742.org	1000 44th Ave N. St. Cloud MN 56303
Past President	Angela Osuji 612-668-3400	Washburn High School Angela.Osuji@gmaiil.com	201 W 49th St. Minneapolis, Mn 55419
President	Jill Jensen 952-423-7581	Scott Highlands Middle School jill.jensen@district196.org	14011 Pilot Knob Rd. Apple Valley, MN 55124
Treasurer	John Olson	Metropolitan State Univ. johnolson98@gmail.com.	700 E. 7th St. St. Paul, MN 55107
DOE Science Specialist	Angela Kolonich	angela.kolonich@state.mn.us	

Discipline Directors:

Biology	Michelle Housenga 612-720-5705	Minneapolis Washburn HS Michelle.housenga@mpls.k12.mn.us	201 West 49th St. Minneapolis, MN 55419
Earth Science	Dana Smith 218-333-3215	Bemidji Middle School dana_smith@isd31.net	1910 Middle School Ave. NW Bemidji, MN 56601
Chemistry	Jose Morales Collazo 507-376-6121	Worthington High School jose.morales777@gmail.com	1211 Clary St. Worthington, MN 56187
Elementary/Greater MN	Robin Knutson 218-454-6123	Forestview Middle School robin.knutson@isd181.org	12149 Knollwood Dr. Baxter, MN 56425
Elementary/Metro	Lee Filipek 952-431-8370	196 Online lpfilipek@netscape.net	Eagan, MN 55123
Higher Ed	Rachel Humphrey 320-308-3232	St. Cloud State Univ. rhumphrey@stcloudstate.edu	Wick Science Bldg #160 720 4th AVe. So. St. Cloud 56301
Informal Ed	Caitlin Potter	Cedar Creek Ecosystem Science Reserve caitlin@umn.edu	2660 Fawn Lake Dr. NE E. Bethel 55005
Alternative Ed.	Jess Paulson 952-852-0129	Sciences Academy jpaulson@jgesa.org	8008 83rd St. NW Maple Lake, Mn 55358
Physics	Phillip Sexton 612-401-5700	Minnetonka High School phillip.sexton@minnetonkaschools.org	18301 Hwy 7 Minnetonka, MN 55345
Private Schools	Steve Heilig	Retired sheilig57@gmail.com	

Region Representatives:

Region 1&2: North	Jennifer Aakre 218-444-1888	TrekNorth Jr.&St.High School jaakre@treknorth.org	2400 Pine Ridge Ave. NW Bemidji, MN 56601
Region 1&2: North	Elizabeth Cakebread 218-784-5300	Ada-Borup-West School elizabethc@ada.k12.mn.us	604 W. Thorup Ave. Ada, MN 56510
Region 3: Northeast	Nikki Ojanen 218-879-3328	Cloquet Middle School nojanen@isd94.org	2001 Washington Ave. Cloquet, MN 55720
Region 4: Westcentral	Harrison Aakre haakre@alexschools.org	Alexandria Area High School	4300 Pioneer Rd. Alexandria, MN 56308

MnSTA Board Directory

Region 5: Northcentral	Miranda Graceffa 218-330-6154	Crosslake Community School mgraceffa@crosslakekids.org	36972 Cty Rd 66 Crosslake, MN 56442
Region 6: Southcentral	Holly Knudson 507-537-6920 X 1059	Marshall High School holly.knudson@marshall.12.mn.us	400 Tiger Drive Marshall, MN 56258
Region 7: Eastcentral	Missie Olson 320-274-3341	Becker High School molson@isd726.org	12000 Hancock St. Becker, MN 55308
Region 8: Southcentral	Holly Knudson 507-537-6920 X 1059	Marshall High School holly.knudson@marshall.12.mn.us	400 Tiger Drive Marshall, MN 56258
Region 9: South	Eric Kehoe 507-234-5181	JWP Hight School ekehoe@sd2835.org	110 E 3rd At. Janesville, MN 56048
Region 10: Southeast	Emily Zinck 507-523-2191	Lewiston-Altura ezinck@lewalt.k12.mn.us	100 County Road 25 Lewiston, MN
Region 11: Metro	Mila Velimirovich-Holtz velim002@umn.edu	University of MN	2088 Larpenteur Ave. W. St Paul 55113
Region 11: Metro	David McGill	Capitol Hill Gifted and Talented Magnet	560 Concordia Ave. St. Paul MN 55103

Ancillary Positions:

Database	Mark Lex	marklex@umn.edu		
Webmaster	Eric Koser W: 507-387-3461 x 322	Mankato West H.S. F: 507-345-1502	1351 S. Riverfront Dr. e: ekphys#gmail.com	Mankato, MN 56001
Newsletter	Jerry Wenzel	jerrywenzel@brainerd.net		
Social Media Coord.	Dan Voss	dcvoss1@gmail.com		
NSTA Dist. IX Director	Angela Osuji 612-668-3400	Washburn High School Angela.Osuji@gmaiil.com		201 W 49th St. Minneapolis, Mn 55419
Conference Coordinator	Eric Koser W: 507-387-3461 x 322	Mankato West H.S. F: 507-345-1502	1351 S. Riverfront Dr. e: ekphys#gmail.com	Mankato, MN 56001

Events Calendar

If you have events you want placed on the calendar, send them to the editor - see page 2 for deadlines, address, etc.

Conferences / Workshops

MnCOSE: Nov. 9-11, '23 Rochester

MnSTA Membership Application Form

Join the Minnesota Science Teachers Association (MnSTA), the professional organization whose primary goal is the advancement of science education. Mail this form along with your check to: MnSTA Treasurer, 24405 Iceland Path, Lakeville, MN 55044

Home

Name (First, MI, Last)

Address

City | State | Zip code

Phone number

Preferred email address

Second email address

School/Organization

Name

Address

City | State | Zip code

Phone number

School district #
(enter "P" if Private, "A" if Alternative, "C" if Charter)

Rates

- ❑ Basic Membership $25
- ❑ First Year Teacher $15
- ❑ Retired Teacher $15
- ❑ Pre-service Student..... $10
- ❑ Elementary School Building $75
  Includes all teachers in the building
- ❑ Life Membership: to age 35 ..... $400
  age 36-50 .... $300
  over 50 ..... $200

❑ New Member ❑ Renewing/Past Member

A joint MnSTA - NSTA membership is available through NSTA (https://www.nsta.org)

Discipline and Grade Level

- ❑ Biology
- ❑ Chemistry
- ❑ Earth Science
- ❑ Environmental Sci
- ❑ Life Science
- ❑ Physical Science
- ❑ Physics
- ❑ Elementary (PreK-2)
- ❑ Elementary (3-6)
- ❑ Middle/Jr. High School (6-9)
- ❑ High School (9-12)
- ❑ College/University
- ❑ Informal Ed

MnSTA Photo Release Statement

By becoming a member of the Minnesota Science Teachers Association (MnSTA) or by attending any MnSTA-sponsored event, you are granting permission for the use of your image for MnSTA promotional purposes without compensation. If you have questions regarding this policy, please contact membership@mnsta.org

Privacy Information

Who can view your School/Organization Profile? ❑ Members ❑ Administration only

MnSTA keeps you informed about the events and issues impacting science education in Minnesota through its website and an email Digest of those website postings, and periodic informational emails.

Do you consent to receive email communications from us? ❑ Yes ❑ No

Teacher Leadership

❑ Please contact me regarding additional involvement and/or potential leadership opportunities with MnSTA