

MnSTA Newsletter

Volume 71 No.2 A Quarterly Publication of the Minnesota Science Teachers Association Inc. Winter 2025

MnSTA Teaching Awardees Honored

The MnSTA Science Teaching Award is presented each year to honor exemplary teachers at two levels: elementary and secondary. To demonstrate their qualifications for the award, the applicants must describe their teaching practices, list their professional activities, and provide a proposal for using the funds. Each awardee receives a fund of \$1000 for a project that benefits their students, plus free registration for MnCOSE. Recipients of the award are expected to share the results of their projects with other teachers. The judges for the award are members of the MnSTA board of directors. The teachers selected for the award this year are Deborah Schleuter and Jake Pundsack.

The Teaching Award for an elementary teacher was awarded to Deborah Schleuter. Deborah is a 6th grade earth science teacher at Forestview School in Baxter, MN.

The Teaching Award for a secondary teacher was awarded to Jake Pundsack. Jake teaches Biology classes at Melrose Area High School.



MnSTA president Haley Kalina, center, presented the Teaching Awards to Jake Pundsack and Deborah Schleuter at MnCOSE

Presidential Awards for Excellence in Mathematics and Science Teaching

President Biden announced 336 teachers and mentors from around the nation as recipients of the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST), including 3 from Minnesota. These awards honor the vital role that America's teachers and mentors play in shaping the next generation of technical leaders, including scientists, engineers, explorers, and innovators.

Established by Congress in 1995, this award has honored the hard work and dedication mentors exhibit in broadening participation in STEM pathways. This award honors individuals and organiza-

PAEMST continued on page 8

MINNESOTA PAEMST SCIENCE AWARDEES

2021: Harding Senior HS, St. Paul
ANNE ZIELSKE

2022 - Lake Marion Elem., Lakeville
KIMBERLY MENARD

2023 - Hiawatha Collegiate HS, Minneapolis
LAINY BRISTOW

President's Message-Haley Kalina



Greetings MnSTA Members!

We are now halfway through the school year and the implementation year of the 2019 Science Standards!

Science education is thriving in classrooms, informal settings, and outside across our state, thanks to the dedication, creativity, and passion of educators like you! From innovative lessons that spark curiosity to collaborative projects that inspire students to solve real-world problems, and exciting learning opportunities on the horizon, there is so much to celebrate in K-12 science education.

This month, let's shine a spotlight on the collective efforts of our science teaching community. Here are just a few areas where science educators are making a difference and some exciting events on the horizon:

MnCOSE '24 & NSTA 2025: Thank you to so many of you that joined us for MnCOSE 24 in November 2024! We had dynamic sessions, great networking and many new and interactive exhibitors! Also, put November 12-15, 2025 on your calendar and start thinking about how you will join in on NSTA 2025 in Minneapolis! Will you attend, propose a session, or help us review session proposals? Information coming this spring on all of those! Talk with your leaders now to make sure you can be involved in a great learning experience!

Teacher Awardees: Congratulations to the 2024 Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) nominees and the 2021, 2022, and 2023 PAEMST winners and all of the nominees from those years as well (see MDE article for more details). Also, congratulations to our 2024 MnSTA Science Teaching Awardees, Deborah Schleuter, Forestview School, Baxter, MN

and Jake Pundsack, Melrose Area High School. We are grateful for your leadership and dedication to the field of science education!

Continued learning opportunities: There continue to be exciting opportunities to learn and grow with others in the fields of science education in Minnesota! We are celebrating the announcement of ESTEP 2.0 and the continued learning that will be available to teachers to implement standards-based three dimensional teaching and learning. Check out www.mnsta.org/cgi/page.cgi/ESTEP.html for more information! Also, join us for the Wildfire book study going on in January and February (you can join anytime!) and also join us for our virtual Professional Learning Series of monthly webinars on a variety of topics. We have a great membership with rich ideas to share!

Growth & Forward Motion: The biggest celebration we can have is pausing to recognize our growth and progress. The transition to this way of teaching is a marathon, not a sprint! What are you doing today that you couldn't have imagined a few years ago? What can your students do now that they couldn't in September? Celebrate those gains—the work you do matters!

President's message....continued on page 3

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Teacher Feature-Debra Las

Our featured teacher for the winter issue of the MnSTA newsletter is Debra Las. Debra teaches at John Adams Middle School in Rochester where she has been for the past 33 years. She is currently teaching physical science and running the STEM Mentoring Lab after school program. She has also taught earth and life science. Previous to her middle school position, she has taught at Mayo High School, Quarry Hill Nature Center and Western Wisconsin Technical College. Presently Debra is on the Board of Directors for Oraculi, a non-profit that focuses on STEM Mentoring. She is a science education literature reviewer for Corwin Press, an international publisher. She has received credit in thirteen books for her contributions.

Debra enjoys helping students develop their own science projects. E-cybermission is a national competition designed for teams of students in grades 6-9. The Butt Kickers was one project run by students that lasted eleven years until COVID hit. The group was recognized by a number of environmental groups for their work in educating the public about cigarette butt litter. The students removed over 200,000 butts from downtown Rochester over the course of their project. Another group became the state experts on the phenomena of the Decorah Edge and its role in possible nitrate neutralization. The school district invested \$250,000 dollars in new pipes at her school as the result of a student project on water quality in the building. Last year a group made it to nationals in Washington DC where they presented in a nationwide presentation of their project that dealt with conserving water by using coding to monitor soil conditions. She states, "Students will dream big!" E-cybermission is one way to help support students in their own applications of scientific design. One of her students recently described her teaching style as "working alongside students."

When asked why she chose teaching as a career, she stated, "In high school I had planned on going into science research. I really had no idea what that was, but I like "doing" science. I was in the Secondary Health Occupations class where I spent time in the Mayo Clinic's scanning electron microscope lab, since I didn't want to go into nursing. I was also in a class called Community Awareness Program (CAP). There I helped in classes where students were learning English as a second language and another class where students were in a self contained classroom due to physical and cognitive

limitations. After the term, the instructor pulled me into the hall and asked me about becoming a teacher. I had never thought of teaching prior, but I had to admit, the lab was repetitive while the classroom was constantly changing and challenging. I never looked back after that experience."

Debra is a Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) Alumni, Science Ambassador for the Centers for Disease Control and Prevention (CDC), Society for Science Advocate Alumni. The STEM Mentoring Lab (partnership with Mayo Clinic and Community Education) and Oraculi are both a part of the STEM Mentoring Lab that is an after school program. Most of the mentors are from the Mayo Clinic Biomedical Graduate Program. This year she has five classrooms running at the same time. It runs every week from September through March.



Debra facilitating a lab with her students.

President's message....continued from page 2

As science teachers, we each play a role in shaping the future by cultivating a love for learning and discovery in our students. Let this be a moment to recognize the meaningful work happening in learning settings every day and to inspire each other to reach new heights.

What success stories from your classroom, school, or setting can we highlight? Share your achievements with me (president@mnsta.org)—we'd love to celebrate your contributions in our upcoming newsletters!

Together, we can keep the excitement for science alive and make an even greater impact.

Thank you for your work & dedication!

Haley Kalina, MnSTA President



Osprey Wilds

Environmental Learning Center

Osprey Wilds is an accredited Outdoor School in Sandstone, Minnesota. We provide K-12 residential and day-use learning experiences, including environmental, adventure, and team-building classes!

OUTDOOR SCHOOL TRIPS

- Overnight
- 3 days, 2 nights
 - 6 two-hour classes
 - 2 evening classes
 - 7 meals
- Day Program options available by request



CLASS SUBJECTS

- Ecology
- Wildlife
- Stewardship
- Culture & History
- Adventure Education
- Naturalist Evening Programs
- & more!



SCHOLARSHIPS AVAILABLE!

Funding for K-12 Scholarships is provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

Learn more online at [OspreyWilds.org/schools](https://ospreywilds.org/schools)



Contact us

schools@ospreywilds.org
320-245-2648



54165 Audubon Drive, Sandstone, MN 55072 | 320-245-2648

Department of Education

Minnesota Department of Education Updates New Resources Available from the Office of Indian Education:

The MDE Office of American Indian Education Canvas Courses are now available for FREE! These courses are endorsed by the Professional Educator Licensing and Standards Board (PELSB) to count toward the cultural competency license renewal condition.

- [Enroll now in Key Concepts and Terms](#), or sign up using the join code YBTYR9. Educators who complete the course can receive one continuing education unit (CEU).
- [Enroll now in Federal Indian Policy](#), or sign up using the join code 4JR34P. Educators who complete the course can earn 1.5 continuing education units (CEU)

New Resource Available from the National Academies of Science, Engineering and Medicine: The National Academies of Science, Engineering and Medicine released a new consensus study report: Equity in K-12 STEM Education: Framing Decisions for the future. Highlights from this resource have been organized into an [interactive website](#), but you can also still download a [free copy of the full report](#).

MDE shares updates for all content areas in the Education Edition Newsletter - a monthly newsletter sent electronically by MDE with important Academic Standards information, research, and legislative updates. [Subscribe to the Educator Edition Bulletin/Newsletter](#).

Science MCA-IV and Alt MCA Performance Level Descriptors

Performance Level Descriptors (PLDs) for the Science MCA-IV and Science Alternate MCA (Alt MCA) are now available on the MDE website on the [Performance Level Descriptors page](#). The Science MCA-IV PLDs, previously named Achievement Level Descriptors, describe phenomenon-based learning of the grade-level expectations set by multidimensional benchmarks in the [2019 Academic Standards in Science](#). The purpose of PLDs are to:

- Provide the criteria for establishing performance levels (or cut scores) for the MCA-IV tests at standard setting in the summer of 2025
- Provide parents, teachers, and other educational partners with a description of student performance that can support instruction and assessment
- Serve as a basis to develop summaries in student score reports to help with the interpretation

of test results

Student performance on the Science MCA-IV and Alt MCA is differentiated into four performance levels: Beginning, Intermediate, Meets, and Advanced. Overall scores within the Meets and Advanced levels are considered to show evidence of student proficiency in the knowledge and skills described in the academic standards.

Science Alternate MCA Kickoff Meeting Recording Available

What: MDE has posted the recording of the Science Alt MCA Kickoff Meeting. It focuses on:

- Preparation and administration for the new Spring 2025 Science Alt MCA operational assessment
- Tools for making decisions about test administration modes (online, paper or hybrid)
- Revised Learner Characteristics Inventory (LCI)
- Revised eligibility requirements
- Test design and alignment to extended benchmarks

Who: MTAS/Alt MCA Test Administrators, District Assessment Coordinators, Special Education Directors/Coordinators and any district staff involved in administering alternate assessments.

Where: [Science Alternate MCA Kickoff Meeting Recording](#).

Equity in K-12 STEM Education: Framing Decisions for the Future

Introduction: In 2012, the National Research Council leveraged the latest research in science education to develop A Framework for K-12 Science Education (NRC, 2012). The Framework describes a new vision for science education in which students use the three dimensions of science—the science and engineering practices, the crosscutting concepts, and the disciplinary core ideas—to figure out their own science, rather than learning about science others have already figured out. The Framework has been used as a foundational document in the development of state standards across the nation, including development of the 2019 Minnesota Academic Standards of Science. Districts and schools across Minnesota have been supporting teachers in the transition to the new science standards, which began full implementation this year. MDE’s mission is to ensure that every child in Minnesota receives a quality education, regardless of their race or zip code. In support of our mission, this month’s research brief summarizes a recent consensus study

focused on equity in K–12 STEM Education.

Consensus Research: In July 2024, The National Academies of Science, Engineering, and Medicine (NASEM) released a consensus study report titled [Equity in K–12 STEM Education: Framing Decisions for the Future \(2024\)](#), which is available as a free download using an email address. While the entire report is lengthy, the document begins with a 10-page summary describing the five Equity Frames with specific strategies for advancing equity, including recommendations for assessment and data, learning and instruction, teacher learning, partnering with families and communities, instructional materials, and STEM pathways. Each chapter goes into greater detail if you're interested in learning more about the specific research studies. There is also an interactive webpage with highlights from the report on the [National Academies website](#). This is a great place to start digging into the ideas presented. This brief focuses on the Equity Frames for decision making, but you can view the complete list of recommendations in the full report.

Equity Frames: The committee drafting Equity in K–12 STEM Education: Framing Decisions for the Future outlined a specific approach to equity in STEM education. They envision equity in STEM education, “not as a singular goal but as an ongoing process that requires intentional decision making and action toward addressing and disrupting existing inequities and envisioning a more just future” (NASEM 2024, Page S-1). The committee also further acknowledges that equity related goals may not look the same in every school, district, community or region, and that equity goals may vary by context and need to change over time. These equity frames can empower decision-makers at all levels in the education system to generate visions for equity aligned to their specific context and needs.

The STEM Education system includes policies and practices at the federal, state, district and school levels that have the potential to impact STEM education in four key areas: curriculum and instruction, assessment, professional development for teachers and administrators, and pathways and opportunities (such as access to courses and programs). The equity frames were developed to help decision-makers at each of these levels develop more explicit visions for equity and to support decision making across these four key areas. The committee also suggests that decision making toward equity in STEM education will require balancing short-term gains while maintaining

a vision and plan toward longer-term goals. As you read more about the equity frames below, consider how they might support your decision making with respect to curriculum and instruction, assessment, professional development and pathways moving forward.

Equity Frame 1: Reducing Gaps Between Groups refers to the reduction of gaps in STEM achievement, interest or representation between groups based on race, gender identity, social class and other factors.

Equity Frame 2: Expanding Opportunity and Access refers to the elimination of differences in social and material resources necessary for learning, including access to well-prepared educators, high-quality curriculum and instruction, and a network of supports.

Equity Frame 3: Embracing Heterogeneity in STEM Classrooms refers to embracing and engaging with the different lived experiences and identities of students in the classroom.

Equity Frame 4: Learning and Using STEM to Promote Justice refers to engaging young people in addressing injustices experienced in their communities, or contribute to larger justice-focused projects.

Equity Frame 5: Envisioning Sustainable Futures Through STEM refers to imagining a role for STEM education that supports both ecological and human well-being, and potentially re-imagining the structures and settings for schooling.

This list represents a very brief summary of the ideas presented, and you can read more about the Equity Frames on the [National Academies Website](#), and in Chapter 6 of the full report. Please contact Angie Kolonich, Science Education Specialist, angela.kolonich@state.mn.us with questions.

Citations:

National Academies of Sciences, Engineering, and Medicine (NASEM). 2024. Equity in K–12 STEM Education: Framing Decisions for the Future. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26859>

National Research Council (NRC). 2012. A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. <https://doi.org/10.17226/13165>

ARE YOU TIRED OF...

- endless online searching for classroom resources?
- never-ending PDF “lesson plans”?
- materials that look good but hard to use?
- instructional materials that do not align with student needs?

JOIN THE WONDRUS EDUATORS COUNCIL.

www.surveymonkey.com/r/WondrusEducators



Get paid to give feedback to science museums and research institutions on their classroom resources!

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Wetland Conservation Workshop (Formerly H.E.R.P. Project)

Three Day Training and Student Conservation Action Project
June 23-25, 2025 from 9 am-3 pm • Grade K-5 Teachers • \$75 for Teacher Training, meals included

With its 10,000+ lakes and variety of wetlands, Minnesota is a paradise for freshwater turtles and many other wetland wildlife species. There are nine species of freshwater turtles that call Minnesota home, but unfortunately, freshwater turtles and their wetland ecosystems today face a variety of threats that are putting their future in Minnesota at risk. Join Minnesota Zoo naturalists to find out how to guide your students outdoors in exploring their local wetland and take on a real conservation action project centered on helping MN freshwater turtles and wetland wildlife, engaging their community, raise awareness, and preserve their wetland. In this training, teachers will participate in hands-on activities focused on wetland and turtle conservation science, how to lead students outdoors, using nature journaling as a tool to explore and gather data about wetland phenomena, and guiding a

student-driven culminating conservation project near school. Teachers will also get to hear about the conservation efforts that are being taken to save wetland species from the Minnesota Zoo’s Turtle and Mussel Conservation Biologists. All workshop participants will be receive support from Zoo naturalists throughout the school year as needed and will be given access to a collection of digital wetland and turtle education resources.

Registration Period: August 1, 2024 - June 6, 2025 To register, visit <https://mnzoo.org/professional-dev/> Kristi Berg | STEM Specialist | kristi.berg@state.mn.us



To: Biology Educators,

Happy New Year! As we welcome 2025, let's take a moment to celebrate the incredible impact you make in shaping the next generation of scientific thinkers. Your commitment to fostering curiosity and critical thinking in your classrooms is the foundation for the scientific breakthroughs of tomorrow. This year, as we continue aligning our teaching with the NGSS Biology Standards, let's embrace the three-dimensional learning model to engage students in meaningful exploration. From modeling cellular processes to analyzing ecosystems and energy flow, each lesson is an opportunity to bring real-world relevance to your students.

Here are a few ideas to inspire your work in 2025:

1. **Connect Biology to Local Contexts:** Incorporate Minnesota's unique ecosystems, such as its wetlands and forests, into lessons on biodiversity and interdependence. This provides students with tangible examples of the NGSS focus on systems and interactions.
2. **Integrate Engineering Practices:** Encourage students to design solutions to local environmental challenges. For instance, have them investigate how human activities impact our lakes and propose sustainable solutions.
3. **Promote Student-Led Inquiry:** Foster a classroom culture where students ask questions and drive investigations. Challenge them to explain phenomena, such as the adaptation of organisms in Minnesota's changing climate.

As you embark on this new year, know that you are part of a passionate community dedicated to advancing science education. Let's continue to inspire curiosity, deepen understanding, and empower students to see themselves as biologists, scientists, and problem-solvers.

Wishing you a year filled with discovery, growth, and success in your classrooms!

Warm regards,
Shelly A Munoz shellymunoz316@gmail.com

PAEMST continued from page 1

tions that have demonstrated excellence in mentoring individuals from groups that are underrepresented in STEM education and the workforce. Colleagues, administrators, and students nominate individuals and organizations for exemplary mentoring sustained over a minimum of five years.

The National Science Foundation, which manages PAEMST and PAESMEM on behalf of OSTP, provides each recipient \$10,000. For more information, please visit PAEMST (www.paemst.org) and PAESMEM (www.paesmem.net).

To: Physics and Physical Science Educators:

I hope all of you are having a great start to 2025 in your classrooms. This past Saturday the Go4St8 meeting did all sorts of topics in sound, including making an electric guitar. I presented a lab that I like to do in my classroom where students measure the speed of sound using a Vernier microphone and a PVC tube. Students measure the length of the tube, and by snapping their fingers at one end you can measure the time it takes for the echo to occur using the microphone. If either of these activities sound interesting you feel free to email me at hallj@westonka.k12.mn.us and I can share the files I have.

Go4St8 Physics Meeting Hosted by:
Go4St8 **When:** Saturday, March 8, 2025 from 9am to 12pm **Where:** At Burnsville High School and on Zoom.

Description: Go4St8 is a free organization of physics teachers discussing topics for the classroom. They meet four times a year at Minnetonka High School and they also broadcast the meeting on Zoom. For March they will be going over topics in the electromagnetic spectrum. One of the cool things they will be doing is making a laser communication receiver.

If you know of any other great opportunities for physics, please don't hesitate to email me I would like to share as much as possible.

Physics Representative, Jason Hall hallj@westonka.k12.mn.us MnSTA


NSTA Coming to Minneapolis

Your MnSTA team is looking toward November 2025 with anticipation and excitement! The National Science Teaching Association is bringing the NSTA conference to Minneapolis on November 12-15, 2025!

We get the unique opportunity as the hosting state to give lots of insight and help in shaping this conference to be geared towards MN interests and needs, but we need your help and insight! Your feedback will be used to help develop the strands for the entire NSTA conference and to design MnSTA/MN specific hosted sessions. Tell us what you are needing and wanting!

Share your ideas or if you are interested in presenting.

NSTA Survey Link: <https://forms.office.com/r/smNsPy0v6V>



HAVE YOU THOUGHT OF JOINING A SCIENCE BOOK STUDY?

WILDFIRE: THE CULTURE, SCIENCE AND FUTURE OF FIRE

BOOK STUDY TO GAIN UNDERSTANDING IN NATIVE CULTURE AND THE SCIENTIFIC IMPACTS OF FIRE



Meeting Dates: January 15th & 29th and February 12th & 26th at 7:00pm on Zoom

To Register go to www.mnsta.org/wildfire.html



The Minnesota Science Teachers Association

Professional Learning Opportunities '24-'25

MnSTA is excited to announce our professional learning opportunities for members this school year. Each session is approximately 1 hour and consists of a presentation and discussion.

Highlights include:

- Tools to support NGSS
- Free for members
- Clock Hours available
- Come to all or any that fit your schedule



New this year- No Pre-registration required!

Zoom links for each session will be posted on our website at : www.mnsta.org

Must be logged in as a member to see the zoom links. Please register to receive clock hours and follow up resources.

Questions: contact us at: jill.jensen@charter.net

Date and Time	Topic
January 9th 7:00 PM	<u>Connecting science instruction to neighborhood life through collaborative design with community.</u>
January 22nd 6:00 PM	Soil Science
February 4th 4:00 PM	<u>How Can Teachers Guide Classroom Conversations to Support Students' Science Learning?</u>
February 10th 4:00 PM	Chemistry Happy Hour with Snow!
March 13th 4:00 PM	<u>Using Phenomena in NGSS-Designed Lessons and Units</u>
April 17th 4:00 PM	Earth Day
April 23rd 4:00 PM	Unraveling the Code of Life: Genetics and Its Role in Modern Biology

We look forward to connecting with you!



Fields of STEM: NSTA Professional Learning Cohort

Overview

NSTA is seeking high school STEM educators from Midwest Dairy states (MN, ND, SD, NE, IA, IL, KS, MO, AK, and the eastern half of OK) to join the 2025 Fields of STEM year-long Professional Learning Cohort, offering synchronous and asynchronous virtual learning experiences and mentoring support.



Our Goal

Fields of STEM aims to empower STEM educators from Midwest Dairy states by harnessing the collective expertise of the cohort and the latest research to improve K-12 STEM education and workforce development both locally and globally.



Who Should Apply

High school science and CTE teachers in Biology, Agriculture, Environmental Science, Anatomy/Physiology, STEM and Food Science.

What You'll Gain

- Professional learning experiences tailored to your subject area, boosting your resume and leadership skills
- Travel stipend and registration to NSTA's 2025 Fall National Conference in Minneapolis, including a pre-conference Professional Learning Institute
- A year-long NSTA membership, including access to virtual cohort space, web seminars, and NSTA resource e-book(s)
- Mentorship from NSTA professional learning experts
- Certificate of completion (*eligible for clock hours/CEUs in most states*)



What You'll Do

- Engage in online forums with Fields of STEM cohort members and NSTA professional learning experts
- Attend three web seminar series
- Complete three Professional Learning Units (PLUs)
- Attend the 2025 NSTA Fall National Conference in Minneapolis, with the opportunity to present your experiences in the cohort and implementing HQIM in your classroom



Commitment

Approx. 5-10 hours per month from January – December 2025.

Application Deadline: January 31

APPLY HERE

Apply Here



Spring Phenology Workshop



Discover how you can elevate your students' observation skills and development as writers and artists through interdisciplinary experiences that focus on seasonal patterns in nature.

FEATURING

Jim Gilbert, retired teacher and naturalist and the phenology consultant for the Minnesota Weatherguide Environment Calendar and Almanac, will join us for a portion of the workshop to share his expertise, including what spring phenology events you may observe with your students this spring on your school grounds.



This workshop focuses on biological and physical events in nature and their relationship with weather and climate. This is the science of Phenology. As spring approaches we anticipate many firsts; including sightings of animals that had either migrated or slept through the winter, noticing leaf out and flower bloom of many trees and spring flowers, and more. Join the Jeffers foundation to learn more about Spring Phenology in Minnesota through observation, investigation, and journaling exercises. Actively participate in lessons and receive resources that have been developed by Minnesota educators that provide place-based experiences that will elevate your instruction of science, ELA, math, social studies, and art while meeting K-7 standards across those subject areas.

What: Who: K-7 Educators **Class Size:** Limited to 30 participants
When: Saturday, March 8, 2025 9:00am - 4:00pm - Lunch will be provided
Where: Jeffers Lodge, Prior Lake, MN
Credit: Earn 7 CEUs
Register online: jeffersfoundation.org A registration fee of \$25 will hold your spot. This fee will be refunded upon completion of the workshop. Register by Friday, February 28. Cancellations after February 28 are not refundable.

Questions, contact David Grack at: david.grack@jeffersfoundation.org

Jeffers Lodge
 3884 Fountain Hills Drive NW
 Prior Lake, MN

South on Hwy. 169 (cross MN River) exit on County 21
 Follow County 21 - 3.8 miles to Fountain Hills Drive.
 Take an immediate right at Lil' Explorers Childcare.



Environmental Stewardship Through Education JeffersFoundation.org

jeffersfoundation.org



**JEFFERS
 WORKSHOPS
 INSTITUTES**

BIRDING INSTITUTE

Make science teaching and learning soar through local bird study

Kids, young and old, are fascinated by birds.

Use birds 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: Teacher Institute for K-12 educators - Limit 15

What: FREE professional development by David Grack, Ed.D. Sponsored by Jeffers Foundation

When: Saturdays, April 12 and 19, 2025 8:00am - 4:00pm. Both dates - Lunch included

Where: Jeffers Lodge, Prior Lake, MN

Registration/CEU's: Register at JeffersFoundation.org through April 4. Cancellations after April 7 are not refundable. Earn 20 CEU's. Option for additional CEUs discussed on April 12. Registration requires a \$25 deposit. Your fee will be returned upon completion.

Ornithology, the scientific study of birds, provides real world science applications for teachers and students. Observation and investigation skills learned during bird study enhance student motivation to experience science both indoors and outdoors and apply science concepts to the natural world. Participants will strengthen their knowledge of local birds, connect science curriculum to ornithology content, examine tools and technology to be used with their students, and develop ideas to use both indoor and outdoor spaces to lead bird lessons throughout the year connected to grade-level science curriculum.



Participants receive a copy of *Birds of the Northwoods Activity Book* (Grack, 2007)

Jeffers Lodge
 3884 Fountain Hills Dr. NW
 Prior Lake, MN

South on Hwy. 169 (cross MN River)
 exit on County 21. Follow County 21
 3.8 miles to Fountain Hills Drive.
 Take an immediate right at
 Lil' Explorers Childcare.



Questions - Contact: david.grack@jeffersfoundation.org

Environmental Stewardship Through Education

JeffersFoundation.org



jeffersfoundation.org

Opportunities

UP HERE, CONFIDENCE GROWS ORGANICALLY

Just like plants need sunlight, students need **opportunities**. As they immerse themselves in our programs that are so rich in opportunity, they leave as better versions of themselves. As students grow, their **future** grows with them, helping to create the next generation of environmental stewards. Because at Wolf Ridge, **learning, passion, confidence—life itself—grows here.**



DID YOU KNOW?

Only **29%** of Minnesota students currently have access to **Outdoor School** programming. Research shows that **spending time outdoors reduces stress by 30%** and enhances academic outcomes, self-esteem, critical thinking, and relationship skills.

Our new Lake Superior site immerses students in the unique biodiversity of the Great Lakes!

INTERESTED IN BRINGING YOUR SCHOOL ON AN OVERNIGHT TRIP?

Our programming offers unparalleled opportunities for students to discover not only the natural world but also their own potential. Choose from over 50 one-of-a-kind experiential lessons! Limited availability for Fall and Spring, but don't miss out on the unique experiences we offer during the winter season. Scholarships are available for qualifying schools.

Visit wolf-ridge.org/k12 to learn how you can grow.

TEACHER TRAINING INSTITUTE

Earn continuing education units while exploring wild pedagogies and outdoor teaching strategies. Our workshops provide practical skills to inspire your students and deepen their connection to the environment.

2025 WORKSHOP DATES:

- ▶ Winter Weekend Workshop: January 31-February 2, 2025
- ▶ Spring Full Day Workshop: Saturday, April 26, 2025
- ▶ Summer Week-Long Workshop: June 16-20, 2025

For more information and FAQs on our workshops, visit this link ▶ bit.ly/WRTTI
Have questions? Reach out to Emily Pavlisich at scheduling@wolf-ridge.org.



LEARN MORE!



Our curriculum is aligned with MN state academic standards in Social Studies, Art, Physical Education, and federal Next Generation Science Standards.

Opportunities



S.T.I.N.T. BWCAW TRIP

Short Term Immersive Naturalist Training

Dive into the Wilderness. Learn through Adventure.

JULY 6 - 18, 2025
ENTERING GRADES 10-12
\$1705

Looking for an enriching experience to deepen your teen's connection to nature? Our two-week S.T.I.N.T. camp invites young naturalists to explore the stunning Boundary Waters with experienced Wolf Ridge staff. Campers will develop essential naturalist skills like observation and curiosity, venturing through wetlands, pine forests, and more to discover lichens, plants, moths, and dragonflies. This immersive journey fosters personal growth, teamwork, and a lasting passion for the outdoors.

"This changed my life"
-2024 S.T.I.N.T. Participant

HIGHLIGHTS

Hands-On Experiences:

- They'll paddle through the breathtaking Boundary Waters alongside experienced naturalists and professionals in natural resources.
- Each day is guided by their own curiosity, allowing them to explore topics that truly interest them.

A Unique Learning Journey:

- S.T.I.N.T. Camp offers an immersive, hands-on experience your child can't find in any classroom.
- Perfect for young naturalists, this program is a powerful way for them to start or deepen their understanding of the natural world.

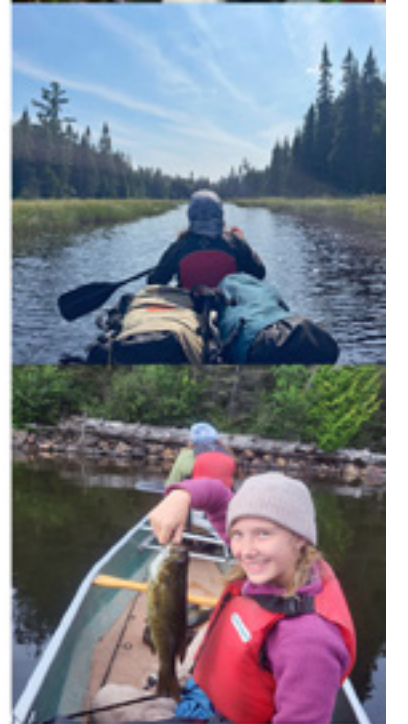
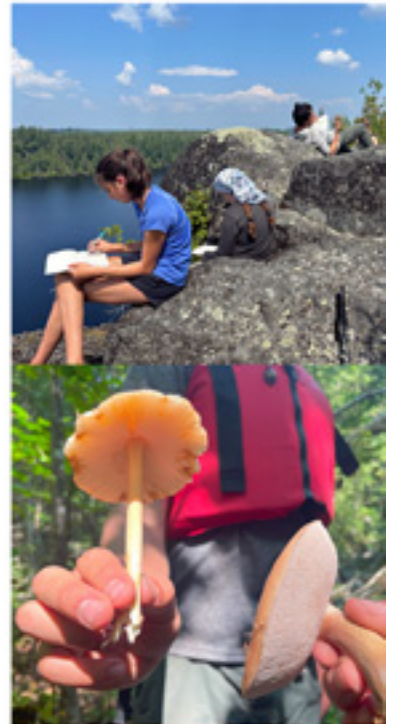
A Life-Changing Experience:

- Empower your child with the skills, insights, and passion for nature that only this unforgettable experience can offer.



SCAN TO VIEW SCHOLARSHIPS

For more information, contact Charlie Pavlisich at charlie.pavlisich@wolf-ridge.org
Registration opens end of November 2024





ATTENTION: SCIENCE TEACHERS GRADES 4-12!

Student scholarship opportunity for outdoor learning on the North Shore.

Thanks to funding partners, Wolf Ridge Environmental Learning Center, located in Finland, Minnesota, is offering scholarships to schools.

DOES YOUR SCHOOL QUALIFY?

Your school may qualify for scholarships at either the school-wide or individual student level. Scholarships can be used for tuition, lodging, and meals for 3 days/2 nights or 5 days/4 nights for students in grades 4-12, for groups from 15 to 350 people. School year and summer programming is available.

ABOUT WOLF RIDGE

Wolf Ridge is an accredited residential environmental school located on the North Shore featuring a nationally recognized curriculum that aligns with state academic standards, Common Core, and Next Generation Science Standards. Instructors involve students in the direct observation, inquiry, and exploration of wild forests, wetlands, lakes, and streams.

Features include:

- 2,000-acre classroom on the North Shore
- 68-acre field station on Lake Superior
- 18 miles of hiking and ski trails
- Multiple lakes and streams
- Dining hall with produce from our organic farm
- Indoor rock-climbing walls and outdoor ropes courses



INTERESTED?

Please reach out to Wolf Ridge K-12 Program Coordinator Emily Pavlisich (scheduling@wolf-ridge.org or 218-353-7414, ext. 107) with questions or to find out if your school is eligible for scholarships. Learn more at wolf-ridge.org/programs/educators/k-12-class-trips.



2025 Teacher Workshops
at Wolf Ridge

2025 Workshop Dates

Winter Weekend Workshop

January 31- February 2, 2025

Learn to co-teach with the snow, **naturalist skills** and tips and tricks for teaching in the cold.

Cost: \$400-\$650 per participant depending on choice of lodging (includes programming, meals, and lodging)

Spring Full Day Workshop

April 26, 2025 (8:00am - 4:00 pm)

Spend a Saturday at Wolf Ridge exploring and learning through the outdoors!

Cost: \$225 per participant (includes programming and lunch)

Summer Week Long Workshop

June 16 - 20, 2025

Spend a week (or a half week) at Wolf Ridge being fully immersed in practices that scientists do. This week will include studying watersheds, bird banding, trips to Lake Superior and so much more!

Half Week Cost: \$450-\$700 per participant depending on choice of lodging

Full Week Cost: \$700-\$950 per participant depending on choice of lodging (includes programming, meals, and lodging)



What We Offer

Weekend Workshops at Wolf Ridge for Single Districts/ Schools

Bring a group of teachers from your district/school on an available weekend of your choice to participate in a series of workshops related to outdoor learning. Workshops can be catered to any range of K-12 education and beyond!. See sample workshop topics for more information on programming.

- Stay in The Margaret A. Cargill (MAC) Lodge. The MAC Lodge is divided into different sections and has rooms that have 4-8 beds and private bathrooms and showers in each room. Meals are provided, cafeteria style, in our Dining Hall.
- Workshop times include Saturday and Sunday morning (8:30 -11:45 am), and Saturday afternoon (1:30 -4:45 pm).
- Bring the family! Wolf Ridge would be happy to set up activities for spouses and children, or give suggestions for activities for them to do on their own.
- Evening activities (6:30-9:15 pm) can include either our Adventure Ropes Course or Indoor Rock Climbing, depending on the interest of the group. Campfire space is also available in the evenings.

Contact scheduling@wolf-ridge.org for more information

Weekend Workshops at Wolf Ridge for Individual Teachers

Interested in collaboration with teachers from other districts? Wolf Ridge hosts weekends for individual teachers to sign up to come take part in a weekend of professional development and to network with other teachers across the region that are working towards being a leader of outdoor learning in their school. Contact emily.pavlisich@wolf-ridge.org for more information about when workshop weekends are available.



On-Site Workshops

Stuck on what can be done on the grounds of your building? Wolf Ridge naturalists can come to your school for professional development workshops for groups of teachers. We offer half day or full day workshops with themes and topics connected to your schools goals and needs.

Sample Workshop Topics and Themes

(Don't see what you're looking for on this list? Contact emily.pavlisich@wolf-ridge.org to co-create the program that best meets your needs!)

- Basics of outdoor learning- how to get started!
- Naturalist Practices- practices to help our students explore the natural world
- Nature Journaling- from starting out to new ideas
- Outdoor Pedagogy- engage as a student in an outdoor class and reflect on pedagogy techniques
- Phenology- what is it and how to incorporate it all year long
- Outdoor investigations- basics of conducting an investigation and collecting and interpreting data
- Improv and Community Building- learn improv skills and team games
- Citizen Science- learn about ways your students can engage with citizen science projects



Contact scheduling@wolf-ridge.org for more information

ASHG 2025 DNA DAY ESSAY CONTEST



What is DNA Day?

It is a celebration of the discovery of DNA's double helix in 1953 and the successful completion of the Human Genome Project in 2003, which gave us the ability to read a complete genetic blueprint for building a human being.

What is the ASHG DNA Day Essay Contest

It is a contest open to high school students around the world. Each year, students are asked to examine, question, and reflect on an important topic in genetics by writing a 750-word essay. Human genetics experts evaluate each submission and may even provide feedback to help you improve. Submission is free, and there is a chance to win up to \$1,000!

ASHG DNA Day Essay Contest Information:

- Prizes: Three winners will receive up to \$1,000 and a matching lab equipment grant, 10 honorable mentions will win \$100 each. All winners and honorable mentions are announced on the Essay Contest website, ASHG's social media platforms, and in their local media outlets.
- Eligibility: All high school students
- Submission Cost: FREE
- Submission Process: Teachers must submit student essays online at the link the right.
- Due Date: Early March



bit.ly/3S2QoIW

NEED HELP?

Connect with a human genetics expert for help on your essay, or any genetics-related question, through the ASHG Genetics Engagement and Education (GENE) Network. The GENE Network is a FREE resource made up of human genetics experts from around the world who have volunteered to answer your questions. Connect today follow the link/QR Code to the right.



bit.ly/3rcaFuD

For all additional ASHG resources about the wonders of human genetics and genomics, including videos, games, and handouts, visit Discover Genetics at the link/QR Code to the right.



bit.ly/3UKhI0s



It is our mission to:
stimulate, coordinate, and improve science teaching and learning for all.

Why Join MnSTA?

- 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






MnCOSE 24
MnSTA Conference on Science Education



Celebrating 60
years of **MnSTA**

Free resources for teaching how science works

[Decoding Science](#) 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](#) directly from [PLT's Shop](#), from Amazon and other places where books are sold, or by attending a local PLT professional development workshop conducted by PLT's 50-state network of 75 coordinators and 1,000 facilitators across the country. [Minnesota PLT site](#)

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](#)

Minn. Science Teachers Association mnsta.org

[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.](#)

[Youth Eco Solutions \(YES!\)](#) – Statewide, youth-led program for hands-on eco related projects

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 www.mnsta.org
- Instagram @mnscienceteachers
- MnSTA Facebook and Twitter pages (@MnSTA1)
- Weekly Digest of postings (sent via email)
- Updates from MDE Science Specialist Angela Kolonich (newsletter)
- 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 Addresses, 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 Corporation, 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/Database	Tom Meagher	Owatonna Public Schools	
	507-210-4143	tmeagher@isd761.org	
President	Haley Kalina	Alexandria Public Schools	510 McKay Ave N. Alexandria, MN 56308
	320-762-7900	president@mnsta.org	
Past President	Jill Jensen	Scott Highlands Middle School	4011 Pilot Knob Rd. Apple Valley, MN 55124
	952-423-7581	jill.jensen@district196.org	
Treasurer	John Olson	Metropolitan State Univ.	700 E. 7th St. St. Paul, MN 55107
		treasurer@mnsta.org	
DOE Science Specialist	Angela Kolonich		angela.kolonich@state.mn.us

Discipline Directors:

Biology	Shelly Munoz	Brainerd Public Schools	
		shellymunoz316@gmail.com	
Earth Science	Dana Smith	Bemidji Middle School	1910 Middle School Ave. NW Bemidji, MN 56601
	218-333-3215	dana_smith@isd31.net	
Chemistry	Open		
Elementary/Greater MN	Robin Knutson	Forestview Middle School	12149 Knollwood Dr. Baxter, MN 56425
	218-454-6123	robin.knutson@isd181.org	
Elementary/Metro	Kim Benton	Garlough Environmental Magnet	1740 Chariton St. West St. Paul 55118
	651-403-8172	kimberly.benton@isd197.org	
Higher Ed	Sarah Gibson	St. Cloud State University	Wick Science Bldg. 720 4th Av. S. St. Cloud 56301
	320-308-4083	szgibson@stcloudstate.edu	
Informal Ed	Felicia Leammukda	St. Cloud State University	
		felicia.leammukda@stcloudstate.edu	
Alternative Ed.	Jess Paulson	Sciences Academy	8008 83rd St. NW Maple Lake, Mn 55358
	952-852-0129	jpaulson@jgesa.org	
Physics	Jason Hall	Mound Westonka High School	5905 Sunnyfield Rd. E. Minnetrista 55364
	jhall@ahastars.org		
Indigenous Science	Hillary Barron	Bemidji State University	1500 Birchmont Dr. Bemidji, 56601
	218-428-2689	hilliary.barron@bemidjistate.edu	
Private Schools	Mark Peterson	Benilde-St. Margaret's School	2501 Hwy 100 S. St. Louis Park MN 55416
	320-420-5246	mpeterson@bsmschool.org	

Region Representatives:

Region 1&2: North	Elizabeth Cakebread	Ada-Borup-West School	604 W. Thorup Ave. Ada, MN 56510
	218-784-5300	elizabethc@ada.k12.mn.us	
Region 3: Northeast	Nikki Ojanen	Cloquet Middle School	2001 Washington Ave. Cloquet, MN 55720
	218-879-3328	nojanen@isd94.org	
Region 4: Westcentral	Open		
Region 5: Northcentral	Miranda Graceffa	Crosslake Community School	36972 Cty Rd 66 Crosslake, MN 56442
	218-330-6154	mgraceffa@crosslakekids.org	

