

Volume 66 No. 1 A Quarterly Publication of the Minnesota Science Teachers Association Inc. Fall 2023

MnCOSE 2023-Special Edition

MnCOSE 2023 is just around the corner! We hope to see you in Rochester on Friday, Nov 10th and Saturday Nov 11th. Our two-day event is for science teachers of all levels, from pre-K to high school and into college.

We'll kick off the day Friday with a casual affinity-group breakfast. Connect and reconnect with educators like you that have similar experiences and are facing similar challenges.

The 2019 MN Science Standards demand new ways of learning for our students, and we're here to support your transition and growth in implementation. Experiencing three dimensional, phenomenon based science as a learner is key to supporting students in their learning. We're creating a new set of Phenomenon Workshops within the day at MnCOSE to provide exactly this opportunity for you! For no additional cost, you'll be able to register by grade band to participate in these morning-long focused experiential sessions facilitated by some of Minnesota's leading science teachers. Come and experience the excitement of phenomenon based learning yourself, AND grow your skills to bring this to the learners in your practice.

Alongside these new opportunities, we'll fill MnCOSE23 with great presentations by educators that many are used to attending. We want you to have options that meet your needs as a science educator in this time of transition!

Rochester has much to offer and opportunities to learn. Friday night, take time to slow down and enjoy time with new and old friends while you explore what downtown Rochester has to offer.

The Kahler Grand Hotel will be our conference hotel as well as the site to kick off our Saturday

morning events. You can choose to get into the Mayo Health System with us right across the street to tour and learn about innovative health care. We're also working with a local nature center to provide experiential learning on site.

We're welcoming many exhibitors to Mn-COSE23 to support your work. You asked for more time to network with colleagues and exhibitors, so we're including a 90 minute block of time midday Friday to enjoy a networking lunch and connect with exhibitors. As always, many exhibitors will also present sessions to let you dig deeper into their offerings.

Details about registration and lodging are all available on our website at www.mnsta.org. -Eric Koser, MnCOSE Coordinator webmaster@mnsta.org



President's Message-Jill Jensen



Teamwork is tricky but so necessary. Phil Jackson said "The strength of the team is each individual member. The strength of each member is the team.' My team is currently working through a new curriculum that supports the 2019 7th grade science standards and it is challenging! The fact that we are working through these challenges together and finding ways to help each other is leading to progress. Our individual strengths make our team stronger, having daily team meeting time is also a huge benefit. I feel fortunate to be in a building where time for collaboration is supported and provided as well as team members with strengths that are varied. I recognize that not everyone is in this situation. If you aren't in a position to have a team, I hope you feel that the MnSTA team of board members as well as the collective power of all of our members is a team you have in your corner.

The MnSTA Board recently met and I couldn't be more excited to work with this team of talented individuals. The board has a wealth of collective experience and strength that we are harnessing as a team with the intent of supporting our members.

One way our board team is offering support is through our monthly, virtual 'Making Sense of Science' series. These events take place over Zoom and use STEM Teaching Tools as a basis for conversations, facilitated by one of our Regional Representatives. These sessions are free for members with CEU's available by request. They are offered at a range of times and cover a variety of topics that are intended to support your implementation of our new state standards. The September session was a perfect

example of teamwork with members from all over the state joining this conversation, sharing resources and things that work for them as well as offering support for people looking for suggestions.

Registration for the next session can be found :https://www.mnsta.org/cgi/page.cgi/Making Sense of SCIENCE 23-24.html. Members are encouraged to come to any and all that fit in your schedule. There is also a non-member, paid option you could share with colleagues, or encourage them to join our organization!

Our board team is also looking forward to connecting with members at our upcoming fall Conference on Science Education or MnCOSE. This event is scheduled for Friday, November 10th and Saturday November 11th in Rochester, MN. This is a great opportunity to connect with a team of educators and science professionals. During these two days of learning, you can hear from fellow educators, experts in the field of science education and exhibitors. More information and registration can be found: https://www.mnsta.org/cgi/page.cgi/ MnCOSE23.html

Finally, we have a perfect way for you to show your team spirit! Consider ordering a science Tshirt to let others know you are a proud member of MnSTA. Choose your size and select if you'd like to pick up your T-shirt at the conference or for an extra fee have it delivered directly to you. Order information can be found here: https://bit.ly/MnSTAshirts

I hope to see you at one or more of these upcoming events and join the collective team conversation!



Solar eclipse photo taken south of Little Falls on October 14, 2023, 11:45 am. Photo courtesy of Patty Vogel, Little Falls.



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 dasses!

OUTDOOR SCHOOL TRIPS

Overnight

- 3 days, 2 nights
- 6 two-hour classes
- 2 evening classes
- 7 meals

Day Program options available by request





Pending for K-12 Schulenbigs in provided by the Minnesoin Revisionment and Natural Researces Toyst Fund as recommended by the Legislative-Clines Consulting on Minnamin Researces (LOCMI).

Learn more online al OspreyWilds. org/schools



MnSTA Newsletter



SCHOLARSHIPS AVAILABLE!

Online Master's or Graduate Certificate in Chemistry

The Master's in Chemistry will develop the ability to integrate advanced chemistry knowledge and critical thinking skills to effectively approach scientific problems grounded in chemistry.

The Graduate Certificate in Chemistry will advance secondary education instructors interested in teaching advanced chemistry classes or making salary increases.

- Designed for science teachers
- 100% Online
- Start anytime
- Complete on your schedule

css.edu/MSChem

The College of **St. Scholastica**

Our featured teacher for our fall issue isi Anna Dutka. Anna graduated from St Olaf College with a BA in Biology and emphasis in Environmental Education, and received her teaching license and M.Ed in Early Childhood and Early Childhood Special Education from the University of Minnesota, Twin Cities. She is completing her first year as a TOSA and Nature Preschool Teacher for Rosemount-Apple Valley-Eagan (ISD 196) School District. This position involves developing and teaching Nature Preschool at Oak Ridge Elementary, supporting nature-based learning in K-5th grade at Oak Ridge, and supporting curriculum, assessment and outdoor learning in the early childhood programs across the district.

Anna's teaching style involves utilizing the affordances that nature has to offer, in all seasons and types of weather, for sparking students' curiosity and desire to learn more. She uses an inquiry-based approach of wondering alongside the students, asking questions to extend their thinking, and facilitating opportunities for them to find answers through continued exploration, research, experiments and connecting with local experts on the topic. Seeing the joy and love for learning that results from providing students with authentic learning experiences that allow them to make discoveries and ask questions about their world is what has made her passionate about naturebased education.

Her favorite lessons she has taught are the weekly buddy classroom lessons that involve the Nature Preschoolers and 5th grade students at Jeffers Pond Elementary. The lessons were designed to incorporate outdoor learning with the 5th grade science or math standards, and preschool standards (Early Childhood Indicators of Progress). The Squirrel Enrichment engineering design challenge was always a favorite lesson, especially when it turned into enrichment for a Red-tailed Hawk who was determined to try and catch the squirrels. In addition to learning academic standards, the relationships formed, the leadership opportunity for 5th graders and fostering a strong sense of belonging to the school community for preschoolers, made these experiences extra special. She is looking forward to getting this buddy classroom collaboration started at Oak Ridge next school year.

Despite growing up working as a camp instructor, volunteering with youth and having several educators in her extended family, she had no desire to become a teacher. In college she decided to pursue her interest in the natural world by studying biology and environ-

mental studies. However, when doing field research for several courses, she quickly realized she did not want to spend so much time in a lab analyzing data. An internship at Dodge Nature Center as a naturalist during the summer, led to discovering her love for teaching through non-formal education. Her position at Como Park Zoo and Conservatory provided her with experience teaching classes for infants thru senior citizens, and through that journey she discovered her passion for early childhood education specifically. This led to pursuing a teaching license in early childhood, during which she learned about Nature preschools, and the potential to combine two areas of interest; the natural world and early childhood education. It was ultimately the support of her administrator in Prior Lake-Savage Area Schools that created the opportunity for her to pilot a nature preschool program, which officially launched her career as a nature-based early childhood teacher.

Anna serves on the Jeffers Foundation's Advisory Board and Natural Start Alliance's Leadership Team, teach as an adjunct instructor for Hamline's Naturebased Early Learning Certificate, and is the chair of MnECO (Minnesota Early Childhood Outdoors). The past few years she has also been working with MDE's early learning department to create resources to support nature-based learning in early childhood. The resources are all available for free on their website. https://education.mn.gov/MDE/dse/early/ highqualel/out/

Most recently she was part of a team that wrote the Nature-based Early Childhood Program Assessment and Guidebook, which is now available for free through the Minnesota Children and Nature Connection. https://sites.google.com/view/mncnc/home/ current-projects

Principal Dr. Cathy Kindem commented, "Anna Dutke is an amazing educator and leader! Words to describe her would include connected, visionary, and inspiring! I have heard staff refer to Anna as a child whisper – she is able to see the potential in all learners and helps scaffold learning so they can be successful in all settings. Anna has a passion for children of all ages, nature and outdoor learning! She is calm, approachable, and has a dream big personality that others are quickly drawn to. I found Anna to be a powerful change agent and influencer having a unique collaborative skill set to vision forward and carry out strategic actions. She offers her support to make positive changes in classrooms and school communities because she cares deeply for students

and colleagues and they look for her for support and guidance."

Do you know a teacher deserving to be featured in Teacher Feature?

Contact Jerry Wenzel jerrywenzel@brainerd.net Send name and email address.



Observing deer across the pond with the Naturebased Connections Preschool class at Oak Ridge Elementary



Investigating a skull the Nature Preschoolers found in the woods at Jeffers Pond in Prior Lake

PhysTEC National Teacher of the Year 2023: Joe Cossette

The 2023 National PhysTEC Teacher of the Year is Joe Cossette of Minnetonka High School in Minnetonka, MN. Cossette was nominated by PhysTEC institution University of Minnesota, from which he graduated. Cossette is an exceptional leader in his department, school, district, and the field of physics teaching at large. In his 9-year career, Cossette has created a hands-on learning environment for physics students. By meeting students where they are, engaging them in deep discussion, and using humor and song in addition to direct instruction, he has been able to make physics an accessible and enjoyable experience.

This dedication to students and excellent education has resulted in impressive growth in Cossette's classroom: through his efforts, the International Baccalaureate (IB) physics classes grew from one section of 12 students to four sections with 120 students in five years. Cossette emphasizes that the number of students taking physics each year has been maintained, but many more students are taking more challenging physics classes. Students excel in these challenging classes due to the welcoming and positive environment he creates.

Cossette's impact goes far beyond the students he teaches regularly. He has mentored numerous teachers, both new and experienced, and has taken on leadership roles in his science department as chair and as IB curriculum lead. Furthermore, he is a former Knowles Teaching Fellow. As an early career teacher, he received financial support, mentoring and coaching, and the support of a community of more than 400 teachers committed to improving their own teaching and their students' learning. Many of the innovative activities Cossette developed during this time are featured on his Passionately Curious Science website.



MnSTA Newsletter

Joe Cossette

Department of Education



Angela Kolonich, Science Education Specialist angela.kolonich@state.mn.us

Boozhoo*/Greetings Minnesota Science Teachers! article 2, section 7. Dry summer days are behind us, making way for • Academic Standards: Minnesota Statutes cool and rainy weather. This fall, I have been think-2022, section 120B.021, subdivision 1 has been ing a lot about nibi/water. Water is important for susamended by Laws of Minnesota 2023, chapter 55, taining life on this planet, and also holds important article 2, section 4. historical, cultural, and scientific significance around MDE is currently working on guidance with regards the world. In Northern Minnesota, Anishinaabe to updated language in the Graduation Requirements communities harvest manoomin/wild rice in the fall. for Science and will post them to the MDE Science Manoomin, the food that grows on the water, is very page when available. important culturally and nutritionally for Anishinaabe We will also share updates for all content areas in the

people. Education Edition Newsletter - a monthly newsletter Considering the importance of nibi (including lakes sent electronically by MDE with important Academic and rivers) makes me wonder "What makes water so Standards information, research, and legislative special?" If I think about nibi from a scientific perupdates. Subscribe to the Educator Edition Bulletin/ spective, it's a fairly simple molecule - H20. Howev-Newsletter. er, the properties that this polar molecule exhibits are MCA Science Assessment update anything but simple! H20 is a known as the "univer-Get involved with the development of the Science sal solvent", and can dissolve substances for trans-MCA. Every year, through Educator and Commuport in the bloodstream, and also allow for chemical nity Review Committees, Minnesota educators and reactions to take place within our cells! Nibi sustains community members across the state bring invaluable our very existence. Water also has a high heat capacclassroom experience, perspectives from teaching ity, leading to more moderate weather in areas near diverse students, and engagement with Minnesota large bodies of water, like lakes and oceans – includ-Academic Standards to the test development process. ing Lake Superior! This moderate weather provides This committee participation ensures that the content the conditions for local plants and animals to thrive and question type align closely with best practices in. The high surface tension of nibi is what allows for in classroom instruction. Each committee is a sepaeasy water transportation from the roots to leaves of rate entity that meets for two to four days. When the plants – even large plants like trees! committee completes their specific review task, a Thinking of all these properties of nibi, it's easy new committee is formed for the next task in the test

to see why water is so important, and has been for thousands of years. Not only is nibi necessary for sustaining life in plants and animals, it also can control our weather! I wonder what are other properties of water that make it so special, and how can we find out? I also wonder how many observable phenomena involve water and its amazing properties? One thing I do know is that we are so very lucky here in Minnesota to have an abundance of such a precious resource – here in the land of 10,000 lakes. * You can learn more about Ojibwe language and ac-

cess audio files of word pronunciation at The Ojibwe Peoples Dictionary – established by faculty at The University of Minnesota.

Minnesota Academic Standards in Science

The 2023 Minnesota Legislative session resulted in historic legislation being passed with regard to education - including changes to state statutes that directly impact K-12 science education. Listed below are legislative updates relevant to science education.

Graduation Requirements: Minnesota Statutes 2022, section 120B.024, subdivision 1, has been amended by Laws of Minnesota 2023, chapter 55,

development process.

1. Sign up for MCA Review Committees Database. Committee members are selected to participate in various meetings throughout the summer. Your input is vital in the development of items to the new science standards.

2. 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.

Visit the Minnesota Department of Education at MnCOSE 23

Please visit the Minnesota Department of Education at MnCOSE! We are proposing presentations focused on implementation of the 2019 Academic Standards in Science, and hope that you stop by our exhibit table, where we will have handouts and copies of helpful implementation resources.

Honoring Minnesota Presidential Award Finalists for Science

The Minnesota Department of Education is honored to celebrate the achievements of our Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) finalists again this year. Our Minnesota PAEMST Finalists in Mathematics and Science were celebrated during STEM Day at the Fair on August 24th 2023, where they were announced on the main stage and received a certificate of appreciation signed by the commissioner. Please join us at MnCOSE for another in-person celebration of PAEMST Science finalists this November.

2023 Minnesota PAEMST Finalists in Science:
Lainey Bristow – Hiawatha Collegiate High School

• Jill Jensen – Scott Highlands Middle School

• Beth Robelia – St. Paul Public Schools Online High School

Applications are now open for 2024 Presidential Awards

The Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) are the highest honors bestowed by the United States government specifically for K–12 science, technology, engineering, mathematics, and/or computer science teaching. Anyone—principals, teachers, parents, students, or members of the general public—may nominate STEM teachers who are currently teaching grades K-6 this year. Teachers may also apply directly at www.paemst.org. The nomination deadline is January 8, 2024, and the application deadline is February 6, 2024, for Elementary (K-6). Secondary (7-12) will be eligible to apply during a future cycle. *Applications are now open for 2024 Green Ribbon Schools Award*

The Green Ribbon Schools Award from the U.S. Department of Education honors schools, districts, and higher education institutions that save energy and reduce operating costs, create environmentally friendly learning spaces, promote student health, and incorporate environmental sustainability into the curriculum. The Minnesota Department of Education, in cooperation with the Minnesota Office of Higher Education, nominates candidates based on an application process. Applications for the 2024 Green Ribbon Schools Award are available on our Green Ribbon Schools page, or by contacting MDE Science Specialist, Angela Kolonich. The Green Ribbon Schools application deadline is January 5, 2024. Please send an optional intent to apply message before December 1, 2023 to the MDE Science Specialist, Angela Kolonich (angela.kolonich@state.mn.us).

Applications now open for Scholars of Distinction Program

The Scholars of Distinction program is a statewide program recognizing the academic and intellectual accomplishments by talented Minnesota students that happen both in school and out of school. This program celebrates the collaboration among students and educators, as well as family and community members, that promote ongoing inquiry and the quest for new learning and new understanding of the world around us. The new and improved program has a streamlined application process and adds new areas for student recognition. Students may now earn recognition in Computer Science, Cultural Studies, Environmental Leadership, Mathematics, Science, Social Studies and STEM. Participants may be enrolled in grades 11-12 at a public or private school; homeschooled, or enrolled in a Postsecondary Enrollment Options (PSEO) program.

All applicants must complete the Intent to Apply form to enter the program October 1-November 1, 2023. Projects are due on or before February 1, 2024. Find the Intent to Apply form link, specific criteria and other important information on the Scholars of Distinction Award page: Scholars of Distinction

Department of Education

2023 Legislative Impacts on Minnesota Sciel Education

The 2023 Minnesota legislative session resulter in historic legislation being passed with regard to education—including changes to state statutes that directly impact K–12 science education. This doc ment presents an overview of those changes. Information for contextualizing the legislative impacts of the updated graduation requirements presented in this document.

Minnesota is currently in transition from the 2009 Academic Standards in Science to the 2019 Academic Standards in Science*. The 2019 standards represent significant shifts in science instruction a assessment, including the shift to phenomena-driv three-dimensional science instruction.

The 2019 science standards are scheduled for full implementation in the 2024-2025 school year, and students will take the new MCA-IV aligned to the 2019 science standards in the Spring of 2025. As jof full implementation of the 2019 science standard middle school courses will change.

As of the 2024-2025 school year:

•6th grade science includes Earth and Space Scien Benchmarks

•7th grade science includes Life Science Benchma •8th grade science includes Physical Science Bench marks

In addition to the above changes due to implementation of the 2019 Academic Standards in Science the 2023 legislative session resulted in updated la guage in the Graduation Requirements for Science More information about the updated language, an clarification of that language are provided below. * Resources to support transition to the 2019 Academic Standards in Science can be found on our S ence Standards Implementation page.

Updated Language in the Graduation Requirem for Science

Summary of change: Students must complete one credit to satisfy all the earth and space science standards for grades 9-12, one credit to satisfy all life science standards for grades 9-12, and one cre to satisfy all the chemistry or physics standards for grades 9-12.

•Clarification: Minnesota Statutes 2022 Section 120B.018 DEFINITIONS Subdivision 4. Credit. "Credit" means the determination by the local sch district that a student has successfully completed a academic year of study or mastered the applicable

ence	subject matter. •Clarification: The most straightforward approach to
ed	meeting graduation requirements in science includes
1	an Earth and Space Science course addressing all the
at	benchmarks, a Life Science course addressing all
u-	the benchmarks, and a Physics or Chemistry course
	addressing all the benchmarks. This approach aligns
L -	with teacher licensing and teacher preparation.
-	2023 Legislative Impacts on Minnesota Science
	Education, September 2023 2
9	•Clarification: Alternative approaches to meeting
	the graduation requirements are permitted, but will
5	require careful planning to ensure that each and ev-
and	ery student satisfies all required academic standards,
ven,	and that courses offered are taught by appropriately
	licensed teachers.
l	Effective date: Effective beginning with the 2024–
d	25 school year
e	• <i>Clarification</i> : Districts must ensure this change is in
part	place for students entering the 9th grade during the
ırds,	2024-25 school year.
	Statutory references:
	•Graduation Requirements: Minnesota Statutes
nce	2022, section 120B.024, subdivision 1, has been
1	amended by Laws of Minnesota 2025, chapter 55,
arks	Next stans:
cn-	•MDF will provide guidance to support all districts
man	implementing the Minnesota Academic Standards
	in Science Specifically MDE can provide guidance
~, in_	to districts interested in an alternative approach to
ш- Ре	meeting the graduation requirements.
d.	•For help identifying which license is required for
iu.	a particular assignment, please consult the Assign-
-	ment-Licensure Table.
Sci-	Updates to Required Academic Standards for Sci-
	ence
ents	Summary of change:
	Required Academic Standards for Science now
	include earth and space science, life science, and the
e	physical sciences, including chemistry and physics.
the	Effective date:
edit	Effective beginning with the 2024–25 school year
or	Statutory references:
	•Academic Standards: Minnesota Statutes 2022,
	section 120B.021, subdivision 1 has been amended
	by Laws of Minnesota 2023, chapter 55, article 2,
nool	section 4.
an	Contact Information: for teacher licensure
e	PELSBE@state.mn.us for state policy:
	angela.kolonicn(<i>w</i>)state.mn.us

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 Chal lenge, 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 Special-

ist 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 communitySharing 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



Opportunities

Registration is now OPEN for SUMMER 2024ESTEP boot camps for 6th grade and highschool teachers!

Participant registration is on a first-come, first served basis. Registration is considered complete when the registration google form is completed, non-refundable registration fee is received by M TA. The non-refundable registration fee is \$20 and does not include lodging, meals or transport tion. Participants can choose a stipend of \$300 (3 graduate credits (requires assignment complete in addition to attending boot camp) upon complet of the boot camp. The stipend OR graduate credit paid for through a generous grant from the Minn Environment and Natural Resources Trust Fund. Read on to learn more!

ESTEP Boot Camps for 6th grade teachers The ESTEP 6th grade professional development a one week, bootcamp style, regional workshop incorporates earth and space science content wit teaching strategies to get you thinking about cha ing your teacher craft to help your students make sense of science. We'll walk you through invest tions that you can use no matter where you are i your transition to the new standards - you'll lear about phenomena, storylines and 3-dimensional egies by DOING the science! SUMMER 2024 Boot Camps Bemidji (June 17 - 21) North Metro (July 8 - 12) Rochester Area (July 22 - 26) **Register HERE**

ESTEP Summer Boot Camps for High School Earth Science Teachers

New legislation states that all students must com one credit of Earth and Space science in high sel to graduate. These boot camps will help deepen understanding of the key content areas and 3-dir sional pedagogy. Along with our summer bootca these courses will help those of you working tow passing the required content MTLE exam to add ditional licensure in 9-12 Earth and Space Scient ESTEP is a fast paced, one week, bootcamp stylregional workshop that focuses on a specific set earth and space science benchmarks AND the teing strategies you will need to start making the s to science sense-making with your students.

 Deepen your understanding of earth science concepts through investigations!
 Utilize 3-dimensional strategies by DOING
 legislation states that all students must complete one credit of Earth and Space science in high school to graduate. These courses will help deepen your

• Utilize 3-dimensional strategies by DOI the science!

024	• Begin building confidence in your unit and
	lesson planning!
	• Collaborate and discuss how phenomena and
st-	storylines relate to particular investigations!
te	
and	Summer 2024 Boot Camps
nS-	Physical Geology/Systems at Fond du Lac Tribal and
0.00	Community College (June 17 - 21)
a-	Meteorology and Climate at St. Cloud State Univer-
OR	sity (June 24 - 28)
ion	Hydrology (Rocks and Waters) at MSU Mankato
etion	(July 15 - 19)
lit is	NEW! Earth Systems at TBD METRO AREA (July
lesota	22 - 26)
	Register HERE
	Free Short Courses
	Knowles Academy is offering 10 free introductory
is	short courses and one six-week online course. Led by
that	experienced teachers, Knowles Academy courses are
h	designed to improve mathematics and science teach-
ng-	ing and learning. Participants will engage in interac-
e	tive discussions with instructors and other partici-
iga-	pants as they explore new tools and strategies to use
n	in their classrooms. All courses are held via Zoom.
n	Here is a sampling of the courses:
strat-	Project-Based Learning Basics
	Equitable Group Work
	Exploring a Physical Science Phenomenon
	through the Practices of Science
	Exploring a Life Science Phenomenon
	through the Practices of Science
	From Blab to Lab! How to Leverage Engineering
	Design for Increased Student Engagement in Science
	Labs Information here
plete	ESTEP (Earth Science Teachers Education
hool	Project) Spring and Summer 2024 Online
your	Course Registration is OPEN!
nen-	Contact Sue Bertch at MSU Moorhead to register!
amps,	Her email is susan.bertsch@mnstate.edu Read on to
vard	see if ESTEP can help you!
ad-	6th grade Teachers! Dive in and improve your
ce.	content and pedagogy knowledge in these key earth
e,	and space science areas! Our courses are designed
of	for TEACHERS and will be invaluable as you de-
ach-	velop your course, and begin working on transition-
hift	ing to a student sense-making approach!
	High School Teachers! GET READY! New
nce	legislation states that all students must complete

understanding of the key content areas and 3-dimensional pedagogy. Along with our summer bootcamps, these courses will help those of you working toward passing the required content MTLE exam to add additional licensure in 9-12 Earth and Space Science.

Spring 2024 Offerings (Courses run January 8 -May 8 2024)

GEOS 599: MN Rocks/Natural Resources for ESTEP Teachers

GEOS 599: Earth Science Essentials I

GEOS 599: Teaching and Learning Earth Science in 3D for ESTEP Teachers

Summer 2024 Course Offerings (Courses run ay 15 - July 10 2024)

GEOS 599: Earth Systems Science for ESTEP Teachers

*ESTEP Summer Boot Camp registration is separate from online course registration.

The Important Details

These courses are offered through the Continuing Studies Department at Minnesota State University Moorhead. Each 3-credit graduate level course is facilitated by expert instructors who are leaders in their fields and based in Minnesota at NO COST to you!

*Please note that these are 3 credit, graduate level courses, and while mostly asynchronous, each require approximately 4-6 hours of work per week, including a required final Pedagogy assignment in all content courses.

+All ESTEP online courses EXCEPT Teaching and Learning Earth Science in 3D for ESTEP Teachers have TWO required synchronous virtual meetings on two scheduled Saturdays from 9:00 am - 12:00 pm.

**Teaching and Learning Earth Science in 3D is a pedagogy and methods course. This course will meet synchronously on a more frequent basis (two weekday evenings per month + one Saturday morning - 9:00 am - 12:00 pm - per month). These meetings are required.

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 **REQUIRED** synchronous online meeting times per course. In order to earn a passing grade and credit for the course, participants MUST commit to both asynchronous AND synchronous requirements. A final pedagogy assignment is also required for all content courses.

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).

Adopt-a-Drain K-12

Teach students to protect local waterways! Adopta-Drain is a great program for students and educators who want to help protect local waterways. Like residents all over the state of Minnesota, schools can sign up and sweep debris out of local storm drains.

In addition, some areas of the state have provided funding to offer free support materials to help educators implement the Adopt-a-Drain program in schools. This includes the City of Minneapolis, Hennepin County, Capitol Region Watershed District, the City of Edina, the City of Duluth, and Nine Mile Creek Watershed District. Visit Adopt-a-Drain K-12 to view support materials and see if your local school is in this focus area. Teachers who sign up receive online training, newsletter support, access to online K-12 learning resources, printed classroom materials, and cool swag and incentives for themselves and their students! Please share this opportunity with teachers you know. You may also email k12@adopt-a-drain.org to inquire about purchasing these support materials in other areas.



Opportunities



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

- Monthly virtual offerings
- Tools to support NGSS
- Free for members
- CEU's available
- Come to all or any that f your schedule



Registration can be found at Mnsta.org

Once you are registered, you will be sent the zoom link for that meeting

Stay tuned In Depth, **Content Specific Conversation** Dates coming soon!

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

Professional Learning Opportunities '23-'24

e	Date and Time	Topic
s	September 14th 4:00 PM	How can I foster curiosity and learning in my classroom? Through talk!
	October 12th 3:45 PM	How can I get my students to learn science by productively talking with each other?
	November 16th 7:00 PM	How can I promote equitable sensemaking by setting expectations for multiple perspectives?
	December 14th 4:00 PM	Practices should not stand alone: How to sequence practices in a cascade to support student investigations
	January 11th 4:00 PM	Prompts for Integrating Crossoutting Concepts Into Assessment and Instruction
	February 15th 7:00 PM	Engaging students in computational thinking during science investigations
	March 14th 6:30 PM	Using Nature Journaling to identify meaningful local phenomena and support the infinite range of student sensemaking
	April 11th 6:30 PM	Beyond "misconceptions": How to recognize and build on Facets of student thinking
	May 9th 6:30 PM	Year-end wrap up, conversation with MnSTA leadership

Opportunities



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.



Opportunities









Fall 2023

MnSTA Newsletter

Opportunities





LOOKING FOR SUPPORT FOR ELEMENTARY SCIENCE?

Minnesota Science Teachers Association has an offer for you.





MNSTA IS OFFERING A \$75 BUILDING MEMBERSHIP TO COVER ALL TEACHERS IN YOUR BUILDING

All interfaces receive necess to the monthly newsletter and anime resources as well as member rate for the annual conference.

TO LEARN MORE:

Metro: Lee.Filipek@district196.org

Out-state kandy.nolesstevens@smsu.edu

Opportunities



MnSTA Newsletter

MnCOSE



MnCOSE



Friday

- Extended, phenomenon-base workshops
- Teacher-led session
- Exhibitors
- · Panel of water qual experts
- Tour our Industry Sponsor Mayo Clini



Registration still open!

You can sign up through the day of!

Register and check out the program: bit.ly/MnCOSE23

Saturday

	 Native Sky Watchers at
d	the Mayo HS
	planetarium
าร	 Quarry Hill Nature
	Center field trip
ity	 GO4ST8 workshop
	 Practice the Practices
	for Secondary
с	Instruction

MnCOSE-FRIDAY SESSIONS

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MnCOSE	R.
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Deet		Session 1		Session 2	Session 3		Session 4	Session 5	
Room	7:45 - 8:30	8:40 - 9:30	9:40 - 10:15	10:20 - 11:10	11:30 - 12:20	12:20 - 1:50	2:00 - 2:50	3:00 - 3:50	4:15 - 5:15
Suites 102 to 105	Affinity Groups & Welcome w/ Breakfast		Keynote - Water phenomena for 3-D instruction			Lunch & Exhibits			
Mayo Clinic						Ν	layo Health Tour 1:1	5 - 4:00	
One Discovery Square									Annual Meeting & Awards w/ Reception
Suite 101		Helping Us Help You: Forging Productive STEM Partnerships with Colleges & Universities		Experiencing Chemistry with Life Science Phenomena	Ensuring Access and Equity for All Doesn't Have to Be Rocket Science!		Attraction and Repulsion-It's Magnetic	Supporting ALL Students: Making Sense of phenomena through shared experiences.	
Suite 106		Educating About the Dangers of Vaping: Resources & Activities for Science Teachers		Great Lakes Shipping 101	Research Quest- FREE Online Investigations From Natural History Museum of Utah		Protocols for Science and Engineering Practices	30 Phenomenal FREE 3-D Resources	
Suite 107		NAEP Questions Tool: The Great Unknown Resource for Educators		The Voltaic Pile	Teaching about Dark Skies and Light Pollution		Why Are Oysters Dying and How Can We Use Chemistry to Protect Them?	Give and Take: Educator Community Beyond Your Classroom	
Suite 108		Developing and Scaling Impactful Professional Learning With Partnerships		Flushing Forward	Using Naturalist Practices to Guide Students Towards Asking Better Questions		Effective Literacy and Writing Strategies in the Science Classroom	Using Phenomena in 3D Science to Engage Students and Make Learning Relevant	
Suite 109		Phenomenal Learning: Applying the Three Dimensions of Science to Hands-On Instruction		Science Storytime!	Birds & Bees: The Good, The Bad, The Ugly		Do, Reflect, Apply: Engineering an Experiential Learning Experience	Engineering Lean: A Journey of Continuous Improvement	
Suite 110		UP and ATOM: Let's take a moment for Minnesota Science		3D Assessment for the 2019 Science Standards	Storylining new science units in Middle School		Going Live in 2025- Science MCA-IV	The OpenSciEd Instructional Model: Routines for Advancing Students Through a Storyline	
Suite 111		Help Your Students Experience Energy		Climate Change Learning Through Team-Based Integrated STEM Activities - the Climate Action Simulation and the 10,000 Pounds Project	Free 3D curriculum for earth and life science		Actionable Norms for Effective Group Work	Introducing the Nature of Science through Puzzles	
Suite 112		Students Today, Engineer's Tomorrow!		How many potatoes does a society need? Using energy to make ethical claims.	Science of Racism		Unpacking Indigenous Education for All - Overview	Indigenous Education in K-8 Science	

MnCOSE-FRIDAY SESSIONS



MnCOSE 2023 Friday 11/10/23

		Session 1		Session 2	Session 3		Session 4	Session 5	
Room	7:45 - 8:30	8:40 - 9:30	9:40 - 10:15	10:20 - 11:10	11:30 - 12:20	12:20 - 1:50	2:00 - 2:50	3:00 - 3:50	4:15 - 5:15
Suite 113		Using Islands to teach Earth Science		Empowering Your Career-Connected Learning	Why I teach science: Reconnecting to your deeper purposes for teaching		Navigating Watershed Stewardship: Empowering Teachers and Students	Redesigning Earth & Space Science 5-12	
Suite 114		What do we want to get out of lab work?		Promoting a Claim-Evidence-R easoning Culture in your Classroom	Using Google Earth to teach Earth Science		Phenomena Don't Have to Be Phenomenal!	Help your students become STEM Teachers	
Riverview A		Workshop: Practice the Practices for Middle School Instruction		Workshop: Practic Middle Scho	e the Practices for ol Instruction		Using Pivot Interactives to increase active learning to your classroom	What is Computer Science, and how does it connect to the 2019 Minnesota Science	
Riverview B		Workshop: Practice the Practices for High School Instruction		Workshop: Pract for High Scho	ice the Practices ool Instruction		Noticing, Wonderin Routines to Pro Disco	g, and Connections prote Engaging purse	
Riverview C-1		Workshop: Practice the Practices for Elementary Instruction		Workshop: Practic Elementary	e the Practices for Instruction		Traveling the Water Cycle and Human Impacts on Earth's Water	Chemical Reactions: Recovering Copper from Waster Solutions	
Riverview C-2		Protocols for Student Success with Science and Engineering Practices		Behind the Scenes at the Pivot Interactives Studio Lab	Engineering Curriculum and Engineering Competitions Available to 9-12 Grade Students		Equity in the Clas EducationStr	ssroom in Science rategies to Use!	
Riverview D-1		Power to Go-H2O: Harnessing the Force of the Ocean		STEM for the Everyday Elementary Classroom	Exploring the Potential of Artificial Intelligence in Science Education		Science and Engineering Practice 8 Doesn't Go Far Enough	Playing the Long Game with the SEPs and CCCs in Assessment	
Riverview D-2		Harnessing the Power of Napari for Multidimensional Image Data Exploration and Construction		Path to Discovery: My Personal Journey through Points-Based Grading, Standards-Refere nced Grading, the 2009 and 2019 MN Science Standards, and	Student-created computational models in a biology class? Hold my drink!		How do I know that it worked? An orientation to methods in research on learning	A New Minnesota Campus for a New Era - Science, Learning & Student Success	
Riverview E		Workshop: Pollinators in the Science Classroom: Hands-on activities to teach pollinator biology & conservation		Workshop: Pollina Classroom: Hand teach pollinator biol	tors in the Science Is-on activities to logy & conservation		Science Fair 101: A Comprehensive Guide for Educators	Creating More Accessible and Inclusive Science Classrooms	

Fall 2023

MnSTA Newsletter

MnCOSE 2023 Friday 11/10/23

MnCOSE-SATURDAY SESSIONS



Saturday	11/11/2022		MnCO	SE 2023				
Room	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	Noon
Kahler Hotel Heritage Hall I		GO	4ST8 Works	hop				
Kahler Hotel Heritage Hall II								
Kahler Hotel Heritage Hall III			ç)-12 Practicir	ng the Practio	ces Worksho	р	
Mayo HS Planetarium		Native	e Sky Planeta	arium Presen	tation			
Quarry Hill Nature Center			Quarry Hill	Nature Cent	er Field Trip			
		tives	UNIVERSITY OF MIN ROCHESTER	CL	ayo S	TEMso	opes	
Thank you Sponsors!		SΔV	VΔS	Ţ	ታወ	ť	wig so	

LEARNING COMPANY

MnCOSE

UNIVERSITY OF MINNESOTA EXTENSION

NVIRONMEN¹ TRUST FUND

Engage with free hands-on activities to learn pollinator biology & conservation + gain pollinator-focused research skills.



Meet many new **MN Science Standards!**

z.umn.edu/PSC-MN-**Standards**

Reserve your spot by visiting z.umn.edu/PSC-MnCOSE

Register here

MnSTA Newsletter

Fall 2023

MnCOSE23

Limited to 16 teachers reserve your spot!

POLLINATORS IN THE SCIENCE CLASSROOM

MnCOSE23

Friday, November 10 8:40-9:30 AND 10:20-12:20 (must attend both sessions)



You will receive:

Pollinator Education Toolkit (\$100 value)

Curriculum materials (\$150 value)

Instruction from UMN experts

Mayo Clinic tour (Friday afternoon). STEM Forward and the Mayo Clinic would like to invite secondary educators on a tour of three Mayo Clinic Laboratories. Participants will see how Mayo Clinic combines practice, education, and research to provide the best care possible. The tour will be three hours and will help educators understand the relevancy for STEM education and experience for their students. Max 50 participants.

Quarry Hill Nature Center (Saturday morning). Experience the power of phenomena-based science with outdoor education at Rochester's Quarry Hill Nature Center, which is celebrating its 50th year. During this field trip teachers will become students and participate in three experiences. The program, geared for upper elementary teachers, will be conducted by RPS science teachers and Quarry Hill naturalist staff. Collect data at Quarry Hill Pond, help with bird banding, and check out the Exploration Hall. Max 30 participants, rain or shine. Be prepared for changes in weather!

Mayo High School Planetarium (Saturday morning). Come explore the known and unknown depths of space at Rochester Public School's Planetarium at Mayo High School. Your guide, Planetarium Director Ben Joslin, will lead you through an immersive experience underneath the 30 ft dome. Learn about Native Sky knowledge and what this facility, opened in 1966 and completely updated, has to offer for field trips and community opportunities.

Plenty of sessions are available opposite the Mayo Clinic tour, with a second session of "Practice the Practices for Secondary Instruction" and a GO4ST8 Workshop being held opposite the Quarry Hill and planetarium field trips.

Learn more and register - see you there! https://www.mnsta.org/cgi/page.cgi/MnCOSE23.html



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LET TWIG ENGAGE YOUR STUDENTS WITH NGSS!



Join 12 other schools in Minnesota who have already adopted Twig to engage their students in threedimensional Learning, letting them take on STEM roles and experience careers while making sense of real-world phenomena, and learning to solve real-life problems.



Join us at the booth or get a little dirty while wearing your goggles with both of our presentations! Twig for Elementary - Nov 10, 2023, 11:30 AM - 12:20 PM Twig for Middle School - Nov 10, 2023, 02:00 PM - 02:50 PM

Signup for the Free Weekly News @ Twig Science Reporter before the tradeshow, or live at the booth to get your Plinko Entrees!





MnSTA Newsletter







Feeling lucky?

ign up at www.twigsciencerep



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Experience the Wonder in These Great Sessions

Friday, Nov 10, 2023 | 10:20 AM - 11:10 AM | Suite 101 Experiencing Chemistry with Life Science Phenomena

Bryn Lutes, PhD, Lecturer and General Chemistry Lab Director, Department of Chemistry, Washington University - St. Louis, MO; Contributing Author, Savvas Learning Company (pronouns: she/her)

Students typically feel a strong connection with their biology courses, but struggle to see how chemistry relates to their everyday lives. Using phenomena related to biology and the medical field can help students become more engaged and build conceptual scatfolds for future courses. Come immerse yourself in examples of anchoring phenomena, classroom activities, and see examples of student work.

Friday, Nov 10, 2023 | 11:30 AM - 12:20 PM | Suite 101 Ensuring Access and Equity for All Doesn't Have to Be **Rocket Science!**

Monica Morton, Lead Science Curriculum Specialist, Savvas Learning Company

Take on the role of a consultant for NASA to design a system to model a rocket launcher. This challenge will highlight tools to support Gender Equity, Economically Disadvantaged Youth, English Learners, Students with Disabilities, and Advanced and Gifted Learners. Participants can immediately implement strategies with their students by using the workshop resources suggested and great take-aways.





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SAVVAS

Join Us at the Endzone **RSVP Today!**

Thursday, November 9, 2023 5:30 p.m. - 8:00 p.m. Forager Brewery/Barrel Room 1005 6th St NW, Rochester, MN 55901

Look for this lineup as your welcome party!





To be in the playbook, **RSVP** using this link and QR Code:



Hosted by Savvas Learning Company



Fall 2023

MnSTA Newsletter

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Secondary

Elementary

Savvas.com 800-848-9500

Science

Science

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Transform how your students learn science with Active Learning through **Phenomena** and the **Science Practices**



The only platform for authentic, interactive video-based science activities. All Science Subjects. Grades 6 through Higher Ed.

Engage Students

Go from teaching science through lectures, slides & drills to inviting students to actively participate in the process of science.

Use Phenomena in Every Lesson

Give students unrestricted exploration of phenomena more often than just "lab days", without time, resource, or safety constraints

Enjoy Teaching Again

Exchange fruitless web searches, failed lab experiments, and passive learning for tools both you and your students will love using.

This resource has transformed my teaching by providing **REAL** experiments demonstrating science phenomena for students to analyze and interpret data...I think my students learn more..."

- Best of STEM Educator Judge



MnCOSE SPONSORS



We don't play favorites at STEMscopes — we love every aspect of STEM. Students deserve an education that reveals the wonders of science, technology, engineering, and math, and teachers should have the tools they need to explore these subjects with their students. With STEMscopes, we provide a comprehensive suite of results-oriented STEM curriculum from Pre-K through high school.

Science





Collaborate SCIENCE







Scan the QR code or visit www.acceleratelearning.com to learn more about our STEM solutions!

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MnSTA Newsletter

MNCOSE 2023

FOCUSED CURRICULUM







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UNIVERSITY OF MINNESOTA ROCHESTER

Recommend a student who is **PERSEVERENT**. **DEDICATED** to solving the world's health challenges and has a **PASSION FOR SCIENCE** to a place that values teaching and learning.

z.umn.edu/UMRNominate

The University of Minnesota is an equal opportunity educator and employe

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)
- □ 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.

A. Inc. is an IRS 501 (c) (3) Char Educational Corpora-tion, incorpora a tax exempt, non-profit organization with Minnesota Secretary of State. Donation dues are tax deductible charitable contr ions for itemized deductions on IRS for 40 Schedule A. The newsletter is an exem ogram service provided to the membershi membership form is found on the last page

□ Updates from MDE Science Specialist Angela Kolonich (newsletter)

Recent Additions to the Board



Hillary Barron Indigenous Science Ed "Boozhoo! I am a descendent of the White Earth Band of Ojibwe and northern Minnesota is my home. I am an Assistant Professor of Biology at Bemidji State University, where I teach a variety of biology courses and do research on culturally responsive science teaching in college STEM classes. I have been working for several years in professional development for Minnesota science teachers, and am passionate about incorporating Indigenous science perspectives into science curriculum and instruction.³



Gwen Isaacson Region 9: South

32

"My name is Gwen Isaacson and I am excited to be your new Region 9 Board Representative! I will be starting my 9th year of teaching Chemistry, Physics, Physical Science, and 3D Printing at Loyola Catholic School in Mankato, MN. Outside of school, my husband David and I enjoy hiking and playing with our 3 miniature schnauzers Bailey, Fritz, and Herman. I am looking forward to having a great school year and am looking forward to getting to know each and every one of you!"



Amy Blom Region. 6 & 8: Southcentral & Southwest

Hello MnSTA Members! My name is Amy Blom and I currently serve as the Region 6 & 8 representative. This is my 12th year of teaching in the southwest area of Minnesota. Through these wonderful years I have had the opportunity to grow with my students in teaching a variety of science courses. This year I have the opportunity to teach 6th Grade Science, 9th Grade Integrated Science, and College Biology. It is a great opportunity to see the students grow and learn through a variety of teaching methods. Outside of the classroom I enjoy spending time with my cherished pets, family, and friends. I also enjoy gardening, camping, and hiking. I always look forward to the spring when everything is rejuvenated, but like life there is always a season and I have learned to cherish everyday in its own unique way.



Kyle Casper Region 10: Southeast

"Hello, I am Kyle Casper and I'm glad to represent and serve Region 10 on the MnSTA Board of Directors. Region 10 is my home biome. I grew up in Winona, went to college in St. Cloud, taught in rural Alaska, earned a master's from Montana, and settled back in Rochester. Along the way, my wife and I welcomed two children. We love spending time together as a family, especially outdoors. After 15 years of teaching secondary science, I moved into an instructional facilitator role to support science and math teaching and learning. The shift to 3D learning has reinvigorated my love of teaching science and I look forward to collaborating with all of you.'

MnSTA Newsletter

Region Reps





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		St. Cloud Area School Dist. 472 1000 44th Ave N. St. Cloud MN 5		
	320-253-9333		karen.bengtson@isd742.org	
President-Elect	Haley Kalina		Alexandria Public Schools	510 McKay Ave N. Alexandria, MN 56308
	320-762-7900		haleykalina@gmail.com	
President	Jill Jensen	Scott High	lands Middle School	14011 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
			johnolson98@gmail.com.	
DOE Science Specialist	Angela Kolonic	:h	angela.kolonich@state.mn.u	IS

Discipline Directors:

Biology	Michelle Housenga	Minneapolis Washburn HS	201 West 49th St. Minneapolis, MN 55419
	612-720-5705	Michelle.housenga@mpls.k1	12.mn.us
Earth Science	Dana Smith	Bemidji Middle School	1910 Middle School Ave. NW Bemidji, MN 56601
	218-333-3215	dana_smith@isd31.net	
Chemistry	Shelly Munoz	Pierz Healy HS	112 Kamnic St. Pierz, Mn 56364
	320-468-6485	ShellyMunoz316@gmail.co	m
Elementary/Greater MN	Robin Knutson 218-454-6123	Forestview Middle School robin.knutson@isd181.org	12149 Knollwood Dr. Baxter, MN 56425
Elementary/Metro	Kelli Ellickson	Cedar Park Elementary STEM	A School 7500 Whitney Dr. Apple Valley MN55124
Higher Ed	Rachel Humphrey	St. Cloud State Univ. Wick S	Science Bldg #160 720 4th AVe. So. St. Cloud 56301
	320-308-3232	rhumphrey@stcloudstate.ec	du
Informal Ed	Caitlin Potter	Cedar Creek Ecosystem Scie	nce Reserve 2660 Fawn Lake Dr. NE E. Bethel 55005
		caitlin@umn.edu	
Alternative Ed.	Jess Paulson	Sciences Academy	8008 83rd St. NW Maple Lake, Mn 55358
	952-852-0129	jpaulson@jgesa.org	
Physics	Jason Hall	Academy of Holy Angels	6600 Nicollet Ave. Richfield, MN 55423
		jhall@ahastars.org	
Private Schools	Open		
Region Representa	tives:		
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 218-879-3328	Cloquet Middle School nojanen@isd94.org	2001 Washington Ave. Cloquet, MN 55720
Region 4: Westcentral	Harrison Aakre	Alexandria Area High Schoo	4300 Pioneer Rd. Alexandria, MN 56308
	haakre@alexschools.org		
Region 5: Northcentral	Miranda Graceffa 218-330-6154	Crosslake Community Schoo mgraceffa@crosslakekids.or	ol 36972 Cty Rd 66 Crosslake, MN 56442 g
Region 6&8 Southcent	Amy Blom	Edgerton Public	423 1st Ave. W. Edgerton, MN 56128
	507-442-7881	ablom@edgertonpublic.con	n
Region 7: Eastcentral	Missie Olson	Becker High School	12000 Hancock St. Becker, MN 55308
	320-274-3341	molson@isd726.org	

MnSTA Board Directory

Region 9: South	Gwen Isaacson	Loyol
		gisaa
Region 10: Southeast	Kyle Casper	Roche
Region 11: Metro	Mila Velimirovich-Holtz	Unive
	velim002@umn.edu	
Region 11: Metro	Kyle Schwarting	ISD 1
	651-423-7740	kyle.
Ancillary Position	<u>s:</u>	
Database	Mark Lex	mar
Webmaster	Eric Koser	Mank
	W: 507-387-3461 x 322	F: 507
Newsletter	Jerry Wenzel	jerryv
Social Media Coord.	Dan Voss	dcvos
NSTA Dist. IX Director	Angela Osuji	
	612-668-3400	Ange
Conference Coordinato	or Eric Koser	Mank
	W: 507-387-3461 x 322	F: 507

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 MESTA Minnesota Earth Science Teachers' Association February 2, 2024 Resigter at https://www.mnearthscience.org

Fall 2023

MnSTA Newsletter

a Catholic School	145 Good Counsel Dr. Mai	145 Good Counsel Dr. Mankato, MN 56001		
cson@loyolacatholi	cschool.org			
ester Public Schools	615 7th St. SW Rochester	MN 55902		
ersity of MN	2088 Larpenteur	Ave. W. St Paul 55113		
196 3455 153	Brd St. W Rosemou	int, MN 55068		
.schwarting@distric	t196.org			
klex@umn.edu				
ato West H.S.	1351 S. Riverfront Dr. N	1ankato, MN 56001		
7-345-1502	e: ekphys#gmail.com	kphys#gmail.com		
wenzel@brainerd.ne	et			
ss1@gmail.com				
Washburn Hig	gh School 201 W 49th St.	Minneapolis, Mn 55419		
la.Osuji@gmaiil.cor	n			
ato West H.S.	1351 S. Riverfront Dr. N	1ankato, MN 56001		
7-345-1502	e: ekphys#gmail.com			

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		School/Organization	
Name (First, MI, Last)		Name	
Address		Address	
City Sta	ate Zip code	City Sta	ate Zip code
Phone number		Phone number	
Preferred email address		School district # (enter "P" if Private, "A" if Alternative, "C" if Charter)	
Second email address			
Rates		Discipline and Grade Level	
Basic Membership \$25 First Year Teacher \$15 Retired Teacher \$15 Pre-service Student \$10 Elementary School Building \$75 Includes all teachers in the building \$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)		Biology Elementary (PreK-2) Chemistry Elementary (3-6) Earth Science Middle/Ur. High School (6-9) Environmental Sci High School (9-12) Life Science College/University Physical Science Informal Ed Physics Informal Ed MnSTA Photo Release Statement By becoming a member of the Minnesota Science Teachers Association (MnSTA) or by attending any MnSTA-eponsored 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	
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