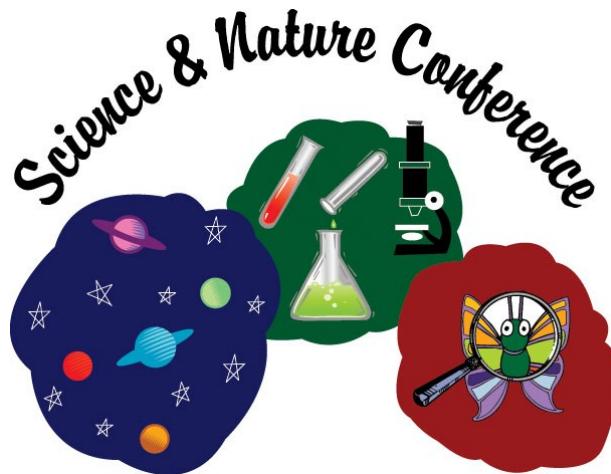


SWWC Service Cooperative presents the 30th Annual



Science gives an investigative way to find answers to questions we have as kids, so let's help our kids nurture their inner scientist. The Science & Nature Conference will provide inspiration for kids to develop skills needed to understand the world around them. These hands-on learning and demonstration sessions give students a chance to explore science in a way they may not have seen before.

May 7, 2024

Open to students in grades K-8

**host site
Southwest Minnesota State University
Marshall, MN**

REGISTER ON-LINE

Who can register?

**Schools register their students and chaperones.
Parents can register their students and chaperone.
www.swwc.org/sn**

Registration Deadline: April 10, 2024

NO Registrations accepted after midnight April 10

SWWC
**STUDENT
ENRICHMENT**

Student Enrichment
1420 East College Drive
Marshall, MN 56258


Monogram
foods
Loves Kids Foundation

CONFERENCE INFORMATION

General Registration

- Available to students in grades K-8.
- REGISTER ON-LINE— www.swwc.org/sn
- All attending adults must be registered.
- There is no student/adult ratio at this time.
- Not required but prefer contact person be an attending adult.

School Participants

- Schools attending are responsible for collecting and entering registrations and payments.
- If your school is unable to attend, direct parents to the website to access the conference information, giving them the option to attend on their own.
- Please make sure parents sending students with the school are aware of the cancellation policy.
- If a parent misses the school registration deadline, they can still register and attend on their own.
- School district funding may be available to support teacher and student participation in SWWC enrichment programs through MINNESOTA GIFTED AND TALENTED REVENUE MN Statute § 126C.10 2(b).

Parent Participants

- Parents can attend with students on their own.
- Adults must be registered along with students.
- Can check with your school to see if they are participating as a school group.

Registration Fees and Deadline

- **Registration closes at midnight on April 10, 2024**
\$40/per student
\$10/per adult
- **NO** registrations accepted after midnight of April 10

Payments

- Payments are made at the time of registration with Credit Card. Payments go through WePay.
- A school can be billed after the event, if they choose too, just contact us prior to registering for a billing code.

Lunch

- Check with your school about the sack lunch program.
- Bring your own lunch – refrigeration not available.
- Place lunches in containers or coolers and label with school/parent name.
- Campus cafeteria is closed for the school year.

Supplies

- Supplies are provided for students at the conference, unless otherwise mentioned in description of session.

Sessions

- The Conference features an opening presentation and three 1 hr. hands-on learning sessions for students.
- Students choose six session options (**grade appropriate**) and are later scheduled into three of those sessions that fit their schedule.
- Select sessions in the order of preference.
- Choices selected by student **DOES NOT** represent their final schedule.
- The students final schedule is based on their choices, session demand & session sizes; therefore, ***we cannot guarantee students will be assigned all topics requested.*** We do our best to give them as many of their choices as we can.
- We retain the right to limit the number of students per district in specific sessions.
- A session may be cancelled due to the number of students registered.

Conference Details

- Conference information is on www.swwc.org/sn.
- **Final schedule** and other information will be emailed to the person who registered kids, a few days prior to the event or as soon as it is ready.
- Please share information with chaperones & parents.
- Chaperones & parents are responsible for knowing the conference information and the cancellation policy.
- Contact person will need to check-in and pick up their group packet the morning of the conference.

Book Fair—Commuter Lounge (BA Bldg.)

- Paper Pie will run a book fair all day.

Students with Special Needs

- The SWWC Service Cooperative, in accordance with the Americans with Disabilities ACT (ADA), is dedicated to making conference activities accessible to all students. Please contact Andrea for special accommodations by April 10, 2024.

Cancellation and Refund Policy

- Cancellation requests must be received by the final registration deadline for a refund, less a \$10/student service charge.
- After the deadline, no refunds will be processed.
- If a student is unable to attend, try to send someone in their place and notify us of the change.

Questions?

Website: www.swwc.org/sn

Contact: Andrea at 507-537-2257

andrea.anderson@swwc.org

SCHEDULE & KEYNOTE

8:00 – 9:00	Check-In, Refreshments
9:00 – 9:15	Welcome & Announcements
9:15 – 9:45	Keynote Presentation
10:00 – 11:00	Session I Classes
11:00 – 11:45	Lunch & Book Fair
11:45 – 12:45	Session II Classes
1:00 – 2:00	Session III Classes
9:00 – 2:30	Book Fair (all day in BA Lobby)



Meet a Live Eagle

Learn about eagle biology, ecology, natural history, and cultural connections in an engaging and entertaining presentation by one of our naturalist interpreters.

Jarod Lueck has been with the National Eagle Center for over 6 years. He has been educating with Raptor Ambassadors for over 9 years. When Jarod is not educating people about eagles, he is enjoying fishing on the Mississippi River backwaters and spending his winters bowling on a couple's league with his fellow eagle educator and wife. To learn more about The National Eagle Center go to www.nationaleaglecenter.org.



SESSION TITLES & DESCRIPTIONS

Select sessions appropriate for students grade level 3-5 or 6-8

- A. Growing Your Green Thumb** Gr. K-2, 3-5, 6-8
Take a magical journey through the SMSU greenhouse to see all the shapes, colors, and smells. Students will learn about plants and what they need to grow. They will get to dig in the dirt and pot their very own plant. Each student will pot a succulent and a native plant to grow at home! **Kirsten Brichler, SMSU*
- B. Nursing 411 & Health Careers** Gr. K-2, 3-5, 6-8
Want to know the ins & outs of nursing and other health related fields, let's dive in. We will have multiple hands-on experiences that a nurse may run into while working in the line of duty. Help a choking baby, check your blood pressure, listen to your heart & Virtual Reality experiences of the human body may be some of the options! Come check out tools used in health careers and play with sensory items! **Toni Brouillet, MN West*
- C. Animals Around the World** Gr. K-2, 3-5, 6-8
A zoo educator will take you on a trip around the world to meet animals such as a ball python, large tortoise and/or lizard from four different continents. You will find out about their defenses, habitat, diet and more! **Katy Carchedi, Great Plains Zoo*
- D. Airplane & Space Starfighter Fun** Gr. 3-5
America's Fun Science and Dr. Fun present a hands-on, airplane wing construction class. Learn about the theoretical basis of lift created via Bernoulli's law and have fun flying the creations that you assemble and get to take home! Plus, one copy of our children's book "Tyronne Carter Kid Scientist" will be raffled off in each class! Our programs help promote team building, leadership, self-confidence, creativity, and joy. We make science FUN!
**Dr. Tyronne Carter, America's Fun Science*
- E. Water Bug Discovery** Gr. 3-5, 6-8
Macroinvertebrates are an important part of a thriving freshwater ecosystem, often living most or all of their lives in bodies of water such as lakes, wetlands, and streams. While referred to often as "water bugs," the truth is that the term macroinvertebrates can include arthropods, insects, mollusks, crustaceans, and more - they are creatures without backbones! In our investigation of live macroinvertebrates we'll learn why they are critical to the survival of other animals, and how they can tell us about pollution and environmental health. Get your hands wet, and dial in your microscopes to learn all about these incredible critters! Live animal presentation.
**Katie Chapman, Shetek*
- F. Virtual Cadaver & Human Anatomy** Gr. 6-8
We will explore the virtual cadaver at SMSU. Then explore human anatomy, case studies of things like fractures, tumors, etc. Animal anatomy can also be explored if time allows. **Kris Cleveland, SMSU*
- G. Super Tall Straw Structure** Gr. K-2, 3-5, 6-8
Come learn some engineering skills and challenge yourself by building the tallest straw structure! Supersize your dreams as you and your team work together to build the tallest tower you can out of just a few simple materials you can find around the house.
**Liz Deen, SWWC*
- H. The Shocking Truth about Electricity** Gr. 3-5, 6-8
Students will learn many ways electricity is used and the fundamentals of generating electricity. They will learn the movement of electricity; what it travels through and what it won't travel through. Using a Van de Graaff generator and a bicycle we will generate electricity and show how electricity travels, it will be shocking!
**Jennifer Gross, East River Electric Power Cooperative*
- I. Oh Knots!** Gr. 3-5, 6-8
We may not like knots in our kite strings or knots in shoelaces, but some knots are very handy to have! Maybe you'll do a little fishing this winter or some canoeing next spring. Perhaps you'll sit around the campfire or do some camping. There are special knots you can use for all these activities that you won't want to be without! Learn handy knots and dazzle your friends and family with clever rope tying skills! You'll even get a knot kit to take home!
**Kylie Holdorf, Prairie Ecology Bus Center*
- J. Rubber Rotor Ruckus** Gr. K-2, 3-5, 6-8
Get ready for high-flying fun with our 'Rubber Rotor Ruckus' helicopter program! This engaging hands-on experience will have young minds soaring as they craft their very own rubber band helicopters. Watch excitement take flight as kids learn about aerodynamics, creativity, and teamwork for budding aviators!
**Sam Jens, Lyon CTY Extension*
- K. Zodiac Sign Paper Circuit** Gr. 3-5, 6-8
What is your sign? We will illuminate the stars in your zodiac sign. Paper circuits function as a simple low-voltage electronic circuits made by using LED lights, a type of conductive tape and a small battery. Let's light up your zodiac sign.
**Stacy Johnson, Redwood CTY 4-H*
- L. How thick is your shell? Bald Eagles and DDT** Gr. 3-5, 6-8
Learn through interaction the history of Bald Eagles and the pesticide DDT. We will do an experiment to see how much weight a chicken egg can hold before it breaks and how DDT affected our national symbol. **Jarod Lueck, National Eagle Center*
- M. Let's Play in the Sandbox** Gr. 3-5, 6-8
We will break down the materials used in our Highways by using a virtual Augmented Reality (AR) Sandbox. You will have augmented micro-reality at your fingertips. Learn topography, geography, natural sciences, watershed, and computer sciences. **Jeff Madsen - MN Dot*
- N. Geo-caching with GPS** Gr. 3-5, 6-8
It's treasure hunt time! However, your only clues to finding the loot are a bunch of numbers. What's a treasure-hunter to do? Learn how to plug those numbers into a Global Positioning System (GPS) and follow it to the cache! You will learn to perform basic GPS functions and then put that knowledge to the test and see if YOU can find the hidden treasure! **Andrew Mattox, Prairie Ecology Bus Center*

SESSION TITLES & DESCRIPTIONS Cont.

- O. Build a Bridge** Gr. K-2, 3-5, 6-8
Can you build a bridge that will hold you? Students will work in teams to build a 6-foot-long truss bridge. Each team will have people acting in different roles, just like in a real construction project. You'll build the bridge, test it, crawl through it, and dismantle it! Learn about the different forces engineers must design for, and how they play out in a real bridge that carries traffic (you!).
**Jacob Miller, Mark Austin & Patrick Thompson - MN Dot*
- P. Pollinator Power** Gr. 3-5, 6-8
Do you have what it takes to do one of the world's most important jobs? Take a walk on the wide side as you discover how some of our smallest critters take on the big task of pollinating 75% of the world's plants. Come prepared for an outdoor adventure.
**Tiffany Muellner, Blue Mounts State Park*
- Q. A-Z Astronomy** Gr. K-2, 3-5, 6-8
Explore the depths of space in a wild ride through the universe! Appealing to all ages, this romp through the galaxies includes a roller coaster ride on our dome, a strange stop at a black hole by Mr. Shakespeare, a talking letter with a jelly-bean universe, and a trip to Egypt to explore hieroglyphs- the origins of our letters.
**Ken Murphy, & Gavin Rohner, SMSU Planetarium*
- R. LEGO Robotics** Gr. 3-5
Come build and experiment with engineering! Together in teams, we will construct LEGO models and program them to move. We will learn more about the building blocks of Engineering!
**Crystal Reith, Cottonwood CTY 4-H*
- S. Landsat Observation** Gr. K-2, 3-5, 6-8
Learn how USGS EROS (Earth Resources Observation & Science) Center has used Landsat space-based Earth Observation Satellites for 40 years to track changes on Earth's surface. Help us answer puzzling Land Change questions with our giant Landsat Puzzle!
**Nathan Roberts, U.S. Geological Survey EROS Center*
- T. SNAKES! SNAKES! SNAKES!** Gr. 3-5, 6-8
We will learn about some of the most common and the most dangerous snakes from around the world. We will do some SNAKE ART and then stretch our brains through a slithery scavenger hunt around the classroom. This is your class if you love to learn about snakes and reptiles! Sorry no live snakes.
**Melanie Schmidt, Mankato Community Ed/Rec*

- U. Sunny Circuits** Gr. 6-8
In this session students will use small solar panels to build simple circuits to light LEDs and understand the science behind photovoltaic energy generation. We'll also explore careers in green energy that are helping reach Minnesota's Carbon Free by 2040 goals.
**Logan Schrader & Rose Patzer, MN State Energy Center*
- V. Playing With Polymers** Gr. 3-5, 6-8
Explore the wonderful world of polymers with the SMSU Chemistry Club! Students will investigate the fascinating chemistry behind polymers as they create two take-home products - fluffy slime and edible gummy worms. Become a junior chemist and learn about the variety of polymers that make up our world!
**SMSU Chemistry Club*
- W. Tagback: Recycle to Upcycle** Gr. 3-5, 6-8
What can you build with recycled twist ties? Ever wonder where those twist ties, tags or tabs come from? Let's learn about how Bedford Industries uses various materials to create product tags and ties for fruits, vegetables, breads, and even drinks. You will learn how the engineering team is involved in the upcycle process and what it looks like to collect recycled materials. Find out how you can help the environment when these products make their way to your home. How many can you collect? **Maggie Steinkamp, Bedford Industries*
- X. Science and a Snack** Gr. K-2, 3-5, 6-8
Come learn about the science behind some of your favorite foods! How does milk become cheese? Why does pop fizz? And what's the mystery behind glow in the dark Jello? During the session we'll discuss the science behind these questions and run experiments to demonstrate them as well. Afterwards we'll snack on our experiments!
**Ben Swanson, AURI*

***Photos, videos & media:** By participating in this event, you are giving the SWWC SC permission to use any audio/video recordings and photographs that are taken during the event.



Meet Your Presenters

Kirsten Brichler is the SMSU greenhouse manager and teaches agronomy classes at SMSU. Whether it's planting and caring for a variety of native and tropical greenhouse plants or teaching students about growing crop plants, she deals with many plants most days! Kirsten also has a variety of plants at home, and tries to grow a vegetable and herb garden at home during the summer.

Toni Brouillet is the Health Careers Navigator for Minnesota West Community & Technical College. She helps students who are interested in any Allied Health program that MN West has available. It is her job to help recruit, retain, and inform students in all aspects. In her free time, she enjoys spending time with her husband, 2 kids, 2 dogs, and their cat. Toni's family enjoys being outside, traveling, and playing sports.

My name is **Katy Carchedi**, I am the Education and Engagement Specialist at the Great Plains Zoo. I work with both people and animals on a daily basis, which I think is the best of both worlds. My favorite part of my job is being able to share animal facts with people of all ages that could spark their interest in learning more. While I am not working, I enjoy reading, especially about science and nature. In my free time I create art in many different forms like painting and knitting.

Dr. Tyronne Carter, "Dr. Fun," is the Director of Marketing and Curriculum Design for America's Fun Science, which presents hands-on science enrichment activities and STEM programs to schools, nonprofits, libraries, pre-schools, community education, scouting organizations and parents throughout the Twin Cities and surrounding areas. Tyronne is a licensed, experienced K-8 science teacher, licensed K-12 principal, certified STEM instructor, and a member of both the National Science Teaching Association and American Society for Engineering Education. He is also a published children's book author. America's Fun Science programs, which include utilization of the engineering design process, help promote team building, leadership, self-confidence, creativity, and joy...and make science FUN!

Katie Chapman is the director of the local Shetek Environmental Learning Center, providing nature enthusiasts with hands-on, locally oriented opportunities to explore the outdoors. She enjoys weightlifting, cooking, and hiking!

Kris Cleveland is a Physical Therapist and Professor in Exercise Science at SMSU.

Elizabeth Deen had 25+ years' experience as a teacher. Currently Director of Teaching and Learning at SWWC. She is passionate about inquiry-based science education and tapping into the joy and wonder of learning more about the world around you. She loves to read and is curious about just about any topic.

My name is **Jennifer Gross** and I work at an electric cooperative as an educator. I visit with students and the general public about how we provide safe, affordable, reliable electricity to those who generally live outside the city limits of towns and cities. I am married and have four girls, two in college and two in high school and a dog. I enjoy exercising and golfing and am recently training to scuba dive.

Kylie Holdorf has been a naturalist with the PEBC for 2 years. She enjoys being outdoors as much as possible.

Sam Jens is the Extension Educator for youth development in Lyon County. He has been working with the 4H program since 2016 bringing stem activities to youth to help them explore their sparks.

Jarod Lueck has been with the National Eagle Center for over 6 years now. He has been educating with Raptor Ambassadors for over 9 years. When Jarod is not educating people about eagles, he enjoys fishing on the Mississippi River backwaters and spending his winters bowling on a couple's league with his fellow eagle educator and wife.

Meet Your Presenters

Jeff Madsen is an engineer from MnDOT who plans, builds, operates, and maintains a safe, accessible, efficient, and reliable multimodal transportation system that connects people to destinations and markets throughout the state, regionally, and around the world.

Andrew Mattox has been with the PEBC for two years. In his spare time, he likes to explore nature in our area.

Jacob Miller is a MnDOT Engineer who focuses on planning, building, and maintaining safe, accessible, efficient, and reliable transportation.

My name is **Tiffany Muellner**, I am the Blue Mounds State Park Naturalist. I spend my days developing and presenting programs at the park and in the community. My favorite program I to do is leading the Prairie and Bison Tours in the summer months. During my free time I enjoy baking, traveling, and spending time with friends and family.

Ken Murphy is a professor of physics and director of the planetarium. One of his hobbies is learning astronomy and doing night sky observations. He also enjoys computer modeling and animation.

Crystal Reith has served as the Cottonwood County 4-H Extension Educator for the past 17 years. She enjoys programming that involves hands-on application and exploration. She has a passion for photography, livestock, and baking.

Nathan Roberts is a Data Scientist at the USGS EROS Center where he works with Landsat Data and tries to learn how people use their data.

Melanie Schmidt is the Enrichment Coordinator with MAPS Community Education. She is involved in a variety of youth initiatives sponsored by the Minnesota Service Cooperatives.

Logan Schrader has a background in higher education, student development, and communications, serving in various roles since 2014. He came to the Energy Center in March of 2022 with his primary role including social media, website management, communications, and outreach. He is also currently helping educators bring Energy into their classrooms.

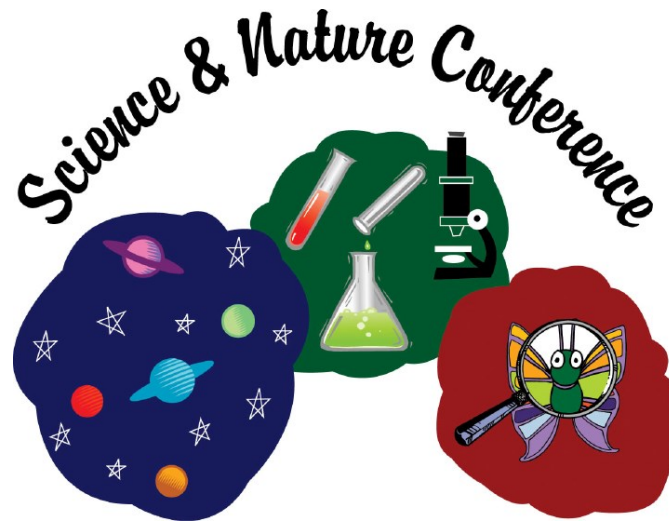
The **SMSU Chemistry Club** has historically done a lot of outreach programs. We perform demonstration shows & make ice cream using liquid nitrogen. They also work with smaller groups that come to campus doing a variety of hands-on activities. Occasionally, they take their show on the road & travel to area schools for reaction shows & hands-on activities. The Chemistry Club enjoys sharing their enthusiasm for science & tries to inspire future scientists!

Maggie Steinkamp is the Talent Specialist at Bedford Industries. She focuses on employee and community engagement and assists with everyday HR functions. Maggie enjoys being outside, spending time with family and friends, and exploring restaurants around Minnesota.

Ben Swanson is a food scientist with AURI where he offers technical support to clients to help commercialize their products as well as works on larger, stakeholder driven initiatives to add value back to Minnesota agricultural products.



SWWC Service Cooperative



Our 2023-2024 Partners:

Monogram Foods Loves Kids Foundation
Southwest Minnesota Arts Council
Southwest Initiative Foundation
United Way of West Central Minnesota
United Way of Southwest Minnesota
Southwest MN Workforce Development Board
Schwan's Company
Carr Family Foundation
Pipestone Helping Farmers
Federated Rural Electric Trust
Great River Energy
Kandiyohi Power Charitable Trust
Lyon-Lincoln Electric Trust
Meeker Cooperative Electric Trust
Otter Tail Power Company Foundation
Redwood Electric Trust
Sioux Valley Energy Customers' Trust
United Way of Nobles County
Agralite Electric Trust
Brown County Rural Electric Trust
Minnesota Valley Coop Light & Power Trust
Renville Sibley Cooperative Power
United Way of Pipestone County
Hey Dobbs Architects
Southwest MN State University
MN West Community & Technical College
Marshall Radio
Ridgewater College

For the full list of partners go to www.swwc.org/foundation



Science & Nature

SWWC
**STUDENT
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