

SDSTA

South Dakota Science Teaching Association

Spring Issue | Date: April 20, 2023

SDSTA Members,

It was great seeing those in attendance at the SD STEM Ed Conference in February. I hope everyone was energized with the theme, "My Students Still Need Me." We had great attendance with a variety of sessions to choose from each hour. Many of our teachers from across the state as well as our featured and keynote speakers drew great crowds to their sessions.

Now that the excitement of the conference has started to fade, this is the time of year when educators can't help but think about all there is left to fit in for the year, end of year testing, and summer break! Edutopia has a great list for how to celebrate the end of the year. Some of their ideas include: inviting your students to make a top 10 list of what they learned throughout the year; celebrating all the learning that was done throughout the year by decorating your room for a party; writing your students a letter (I promise some will hang onto these and tell you how much it meant to them years down the road); or planning an Oscars event and hand out awards to each student for the unique attributes they brought to your class. Whatever you choose to do to get you through the end of the year, know that your friends at SDSTA are here to support you. Reach out if we can help in any way.

Also important this year, know that the snow won't last forever and summer is on the way! To beat the winter blues, TeacherLists gives a number of

suggestions to break up the routine in your classroom. Take your class on a virtual field trip, allow your students to teach a lesson, take on a class project that helps others in your community, try alternate seating options, turn on some music while your students work, or start the class day with an exercise or yoga video!

No matter the weather, the best thing to do this time of year is to start planning your summer professional development schedule. Check out this newsletter which is full of opportunities to grow as an educator.

We love hearing from our membership! Do you have a fun classroom project from the year that you would be willing to share? Did your students come up with a creative science fair project? Are your students out in their communities helping others? If you would like to submit something to be included in the June newsletter, please email the information to Julie Olson, kernelmom@gmail.com, and/or Michelle Bartels, michelle.bartels@k12.sd.us by June 16th.

Ashley Armstrong
SDSTA President



SDSTA Distinguished Service Award

Alison Bowers was awarded with the **2023 Distinguished Service Award**.

This award recognizes the efforts and contributions from a member of SDSTA. Aly has displayed selfless service and dedication to the South Dakota Science Teaching Association, the STEM Ed conference, and to advancing science education across our state. She has served in several capacities to make our conference a success which includes being the hospitality coordinator. Aly has stepped up upon every request and fulfilled a variety of needs. Teachers from across the state reach out to her as a leader in the education field, a standout in science, and someone they can trust and count on. Aly is the SDSTA president elect.



Friend of Science

Dr. John Williams was awarded with the **2023 SDSTA Friend of Science Award**

Each year the South Dakota Science Teaching Association recognizes an individual that exemplifies a Friend of Science in the state of South Dakota. University of South Dakota, elementary science instructor, Dr. John Williams promotes science education outside the classroom, specifically bridging today's education with tomorrow's educators. He steps up every time there is a science need, and he has expertise to share which includes guest speaking, curriculum unit reviews, and more. These things are not only done when on the clock but off the clock – volunteering his time.

Friend of STEM

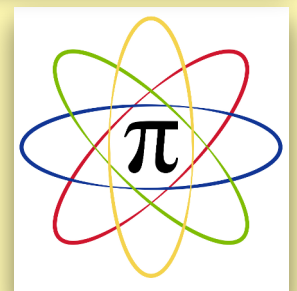
Keloland Television was awarded with the **2023 SDSTA Friend of STEM Award**

The Friend of STEM Award is awarded to a South Dakota television, radio, or printed news organization that covers stories surrounding science, technology, engineering, and math. In their news reporting, they place an emphasis on the importance of quality teaching in areas of STEM. This year, the award goes to Keloland Television, a part of Keloland Media Group.



Ariana Schumacher (right), journalist/reporter, accepted the award from SDSTA President, Ashley Armstrong.

SD STEM Ed Conference 2024 February 1st, 2nd, & 3rd





Presidential Awards for Excellence in Mathematics and Science Teaching

The Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) is the highest recognition that a kindergarten through 12th grade mathematics or science teacher may receive for outstanding teaching in the United States. Since 1983, more than 5,200 teachers have been recognized for their contributions to mathematics and science education. Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education.

Presidential awardees receive a citation signed by the President of the United States, a trip to Washington DC to attend a series of recognition events and professional development opportunities, and a \$10,000 award from the National Science Foundation.

Anyone--principals, teachers, parents, students, or members of the general public--may nominate a teacher by completing the nomination form available on the PAEMST website. For more information, please visit www.paemst.org. The nomination window will be open this Fall to recognize K - 6th grade mathematics and science teachers. Nominate a deserving teacher who exhibits a passion for the subject they teach; who approaches their work with creativity and imagination; and who strives daily to improve their individual teaching practice.

If you have any questions, please contact: Allen.Hogie@k12.sd.us or DrRangerJen@gmail.com

2023 Science Finalist Michelle Bartels

Michelle Bartels, a science teacher from Hamlin School District, has been teaching for 22 years. She spent many years in the middle school and now is enjoying high school science. Michelle earned her bachelor's degree in teacher education from Mount Marty College in 2000 and her master's in Curriculum and Instruction from Black Hills State University in 2011. Since then, she has also completed the K-12 Math and Science Specialist Endorsements program at BHSU. For several years Michelle has been an active member of the SD Science Teaching Association, currently serving on the board as Past President and newsletter co-editor for the organization. She is a National Geographic Certified Educator and is an EdReports science content team member.



2023 Science Finalist Kristen Gonsoir



Kristen Gonsoir, a science teacher from Groton Area High School, has taught 30 years. She currently teaches high school Physical Science and Chemistry. Kristen earned her bachelor's in Chemistry and Education in 1992, and her master's in Teaching and Learning in 2015, both from Northern State University. In 2019 she was a Japan-U.S. Fulbright program teacher. The program focused on utilizing technology to promote global citizenship with students. In 2022, she participated in a National Education Foundation Global Learning Fellowship. At the state level, Kristen has been involved with the DOE Mentor Teacher program and Science Standards Translations Team. She has received multiple awards while serving as her district's debate coach.

2023 Science Finalist Landra Knodel

Landra Knodel, a science teacher with Irene-Wakonda Jr/Sr High School has taught 22 years. She is teaching 7th and 8th grade science along with high school Physical Science, Biology, Chemistry, and Human Anatomy. Landra graduated in 1999 from University of South Dakota with a bachelor's degree in Biology Education and in 2007 with a master's in Natural Science with an emphasis in Physics. She also completed the Science Specialist Endorsement through Black Hills State University in 2011. Landra's passion for science professional development includes leadership roles with SD EPSCoR and the SD Math and Science Leadership Program.



BLACK HILLS SCIENCE EXPLORATIONS SUMMER 2023



THREE-DAY PROJECT WET, WILD, AND LEARNING TREE WORKSHOP FOR K-12 TEACHERS

Support wonder and exploration in your classroom with award-winning environmental education curriculum! Camp Bob Marshall, located in Black Hills National Forest provides the perfect backdrop to learn activities that will engage your students with nature and science. This three-day workshop will provide you with the tools to teach fun, hands-on lessons from Project Learning Tree, Project WET, and Project Wild. You will have the opportunity to take part in the lessons, learn objectives and methods, and how they are connected to your grade-level standards. All participants will receive their own newly revised curriculum guides.

**MONDAY - WEDNESDAY
JULY 17TH-19TH**

PRE-REGISTER HERE:



CAMP BOB MARSHALL

Camp Bob Marshall Rd
Custer, SD 57730

**SPACE IS LIMITED!
PRE-REGISTER TODAY!**

ARRIVE BY: 1pm Monday, July 17th

MEALS:

- ▲ Dinner - Monday and Tuesday
- ▲ Breakfast & Lunch - Tuesday and Wednesday

ACCOMMODATIONS:

- ▲ 8 Rustic cabins available (8 bunks per cabin)
- ▲ Bathhouse on site
- ▲ Tent camping is available & room for smaller campers

CREDIT: Continuing credit/contact hours will be available



CONTACT: ANDREA - BHPFA VOLUNTEER /PROGRAM MANAGER
bhpf@blackhillsparks.org



Professional Development

South Dakota Discovery Center Summer PD

The South Dakota Discovery Center will provide five opportunities for professional development this summer. We specialize in hands-on, interactive professional learning that will inspire and engage you personally and build your efficacy professionally.

Badlands Field PD

Join us for a 3 day/3 night field based experience in Badlands National Park. This year's theme is Climate and Watersheds but all grades and content areas are encouraged to attend for a truly cross curricular, immersive experience.

Soils

"Dig" into soils in one of two workshops, one for K-5, the other for 6-12.

Researchers to Classrooms We will provide an opportunity to learn how to extend research into classrooms (6-12).

OSEU and STEM

Learn how to integrate the Oceti Sakowin Essential Understandings into your STEM instruction (K-5).

All our PD offers credit and a stipend upon submission of final reflection.



Click on this link for more information and to register.



Professional Development with Sanford PROMISE

ELED 592: Science in Action

Teaching science in the elementary classroom doesn't have to be difficult. When reading, math, science questions, and move activities are weaved together they create a day of learning that is fun for students and teachers. This professional development will provide you with resources from Sanford fit and Sanford PROMISE to enhance your lesson planning.

Who: Elementary educators (1st-5th)

Where: Sanford Research, Sioux Falls

Cost: \$30 registration fee

Stipend: \$200

When: June 20-21 | 8:00am-4:30pm- 2 days

[Register for ELED 592: Science in Action](#)



BIOC 592: Modeling: It Takes All Shapes and Sizes

What do you think about when you hear the word model? Is it systems, things, or people? Join the PROMISE team at Sanford research for two days to explore the science and engineering practice of developing and using models. Learn how models are used by research scientists at Sanford and learn about new resources available in our lending library.

Who: Secondary educators (6th-12th grade)

Where: Sanford Research, Sioux Falls

Cost: \$30 registration fee

Stipend: \$200

When: August 2-3, 2023 | 8:00am-4:30pm- 2 days

[Register for BIOC 592: Modeling](#)

Professional Development

EPSCoR Summer Workshops

Fundamentals of Three-Dimensional Science Instruction & Biofilms

This virtual workshop is intended for SD K-12 educators wishing to *build an understanding* of the three dimensions of science teaching and learning. Participants will also learn about the curriculum unit “Stuck Like Glue — Stuck on You” and **receive a \$300 stipend for full participation on all 3 days.**

Dates/Times: June 20 - June 22 from 8:30 a.m. to 4 p.m. MDT (9:30 a.m. – 5 p.m. CDT) each day

Participants will select one of three curriculum units, which they will receive following the workshop.

- Elementary School (gr. 3-4): Pond Scum
- Elementary School (gr. 4-5): What’s in My Water Bottle?
- Middle School: Stuck Like Glue — Stuck on You (Emphasis on Life Science Standards)

Planning for Sense-Making in 3-D Instruction

This virtual workshop is specifically designed for educators who already possess a *fundamental understanding* of the three dimensions of science teaching and learning. Participants will learn about science and engineering research underway at universities across our state while experiencing and learning about a curriculum module around the current science research of biofilms. Participants will **receive a \$300 stipend for full participation on all 3 days.**

Dates/Times: July 11 - July 13 from 8:30 a.m. to 4 p.m. MDT (9:30 a.m. – 5 p.m. CDT) each day

Participants will select one of three curriculum units, which they will receive following the workshop.

- Elementary School: Pond Scum
- Middle School: Dead Zones
- High School: Biofilms in the Human Body



Sanford Professional Development

CORE Principles of Science Engagement and Learning (f2f)

This workshop is specifically designed for teachers who already possess a *fundamental understanding* of the three dimensions of science teaching and learning. During this workshop you will: dive into the application of CORE principles, explore how to leverage student curiosity and creativity, practice strategies for fostering students’ identities as competent science learners, facilitate conceptual change and discover opportunities to connect your classroom to the science happening at SURF (Sanford Underground Research Facility).



Implementing Three Dimensional Science Instruction (virtual)

This workshop is designed for any teacher wishing to *build their understanding* of the three dimensions of science teaching and learning. During this workshop you will: build your capacity to implement three-dimensional science experiences in your classroom, learn strategies to reveal student thinking & promote deep student learning, and discover opportunities to connect your classroom to the science happening at the Sanford Underground Research Facility (SURF).



A \$500 Stipend and 2 Graduate credits available at reduced rates.

Professional Development

Lake and Stream Ecology and Water Quality Workshop

May 31 to June 2, 2023

Enemy Swim Lake, Waubay, SD

You're invited to attend the "Lake and Stream Ecology Workshop" a three-day event at NeSoDak Bible Camp. Teachers who attend t workshop can earn 1 graduate/undergradua credit hour or 2 continuing education units (CEU).

For more information or to sign-up, visit:

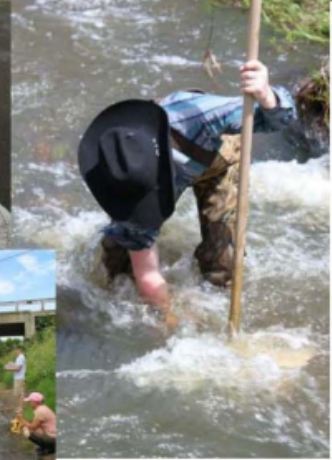
www.neglwatersheds.org/waterquality.html

Call or E-mail:

Dennis Skadsen, Workshop Coordinator

605-345-4661 ext. 118

dennis.skadsen@sd.naednet.net



What will you learn?

Aquatic invertebrate identification and collecting techniques

Basic limnology principles

Lake and stream ecology

Water quality testing procedures

How to interpret water quality data

Environmental curriculum and classroom activities

This workshop is FREE!!

Workshop materials, meals, and lodging provided at no cost to participants!



What: BIOL 592: Ecology of Tallgrass Prairie, 1 credit

- The class is for k-12 teachers of any subject area or graduate students
- Participants will hear presentations, receive materials, and take part in many different field activities (nest dragging, pollinator balls, insect and plant ID)
- Presentations from natural resource managers, researchers, professors, and K-12 teachers.

When: June 2-3, 2023, in conjunction with the South Dakota Grassland Coalitions' Bird Tour (anyone can register for the bird tour, kids are FREE and we have kids' activities)

Where: Pasque Hill on Beaver Creek near Brandon, SD

Cost for credit: approximately \$40 + \$35 Bird Tour registration (includes 3 meals and SD Grassland Coalition membership)

Contact: For credit information, contact Kristel Bakker, Dakota State University, Kristel.bakker@dsu.edu.

JUNE 2-3, 2023 | BRANDON, SD

Birds. At Home, on the Range



Middle School Level TLA July 19 - 22, 2023

With funding from the ExxonMobil Exploration Company, the American Geosciences Institute (AGI) is recruiting middle school-level public school teachers from across the country for the 2023 AGI/ExxonMobil Geoscience and STEM Teaching and Learning Academy (TLA). This academy will build on AGI's long-standing expertise and extensive resources in geoscience education and is designed for teachers who have recently entered Earth and space science teaching roles. The TLA will combine opportunities for geoscience content knowledge and pedagogical skill development, as well as for networking among participants. Review of applications will begin May 1 and will continue until the academy is filled. Applying early is highly encouraged. This academy is recommended for grade 5 to 8 teachers and will include online and face-to-face experiences across the 2023-2024 academic year. The face-to-face portion of the academy will take place in Atlanta, Georgia, July 19-22, 2023. Participants will be provided with room and board in an Atlanta hotel for the duration of the TLA. Each participant will be reimbursed up to \$200 for travel expenses in getting to and from Atlanta.

Elementary Level TLA July 16 - 19, 2023

With funding from the ExxonMobil Exploration Company, the American Geosciences Institute (AGI) is recruiting elementary-level public school teachers from across the country for the 2023 AGI/ExxonMobil Geoscience and STEM Teaching and Learning Academy (TLA). This academy will build on AGI's long-standing expertise and extensive resources in geoscience education and is designed for teachers who have recently entered Earth and space science teaching roles. The TLA will combine opportunities for geoscience content knowledge and pedagogical skill development, as well as for networking among participants. Review of applications will begin May 1 and will continue until the academy is filled. Applying early is highly encouraged. This academy is recommended for pre-K to grade 4 teachers and will include online and face-to-face experiences across the 2023-2024 academic year. The face-to-face portion of the academy will take place in Atlanta, Georgia, July 16-19, 2023. Participants will be provided with room and board in an Atlanta hotel for the duration of the TLA. Each participant will be reimbursed up to \$200 for travel expenses in getting to and from Atlanta.

The academies will provide teachers with hands-on and data-rich Earth science teaching materials and techniques designed to assist teachers in building their own Earth science knowledge, professional networks, and familiarity with resources across the Earth science education community, including those provided by AGI and other organizations. Teachers can apply for the 2023 AGI/ExxonMobil Geoscience and STEM Teaching and Learning Academy by completing the form at (<https://bit.ly/2023-TLA-survey>) and submitting supporting documents.

When applying, you'll be asked to provide:

1. A completed online application form with basic contact information.
2. A 300- to 500-word interest statement describing your motivation for attending the academy and how you believe it will affect your development as a teacher.
3. Your resume including your teaching experience with dates and past professional development. Other information (e.g., extra-curricular activities) may also be included as you choose. Email this resume as instructed on the application.
4. Contact information for an administrator from whom you have requested a recommendation letter on school letterhead. The recommendation letter will be sent by the administrator directly to AGI at tla@americangeosciences.org. The administrator will be contacted only if there is a need to follow up in obtaining the letter.

Odds & Ends

Podcasts - Tiffany Kroeger, SDSTA Secretary



This is the time of year where my enthusiasm wanes and my to do list grows. Hopefully, you are not in the same boat as me but if you are check out these amazing podcasts to re-spark your love for teaching.



AAPT Physics Photo Contest - Dailyn Kiner - Mitchell HS

The vibrancy of the colors at dusk or dawn. The reds, oranges, yellows, blues and purples. Sometimes even green, but why does the sky have those colors? Why does it look like that when all we see from outer space is the blue from the ocean and the green from the land? This is where a phenomenon known as scattering comes in. Particles and molecules on a very small scale in the atmosphere affect light rays and change their direction. This causes them to scatter. Colors of the sky are determined by different wavelengths of light and the size of particles. Violet has the shortest wavelength while red has the longest according to NASA. The shorter the wavelengths, the more they are not visible which also explains why we can see the blue so well in the daytime, they are more broken up. The time of the year also has something to do with how sunsets and sunrises appear. They say that the best colors show up in the late fall and winter. Even though most nights and mornings don't seem very colorful or even pretty, it all has to do with perspective. Even the most ordinary of colors can look different when you are further up. If you were to take a plane, it would look incredible compared to if you were on the ground.



Thank you for your donation that was used to make our 2023 SD STEM Ed Conference more awesome!

Avera



Regional Science Fair Recipients of SDSTA Award

Effects on Descent of Different Sized/Shaped Parachutes Esten Biegert - Spearfish Middle School

High Plains Regional Science and Engineering Fair
South Dakota School of Mines & Technology
Teacher: Mr. Travis Ladwig

A parachute is defined as a device used to slow the movement of a person or object as it falls or moves through the air. Based on this definition does it matter what shape or size the parachute is? The overall purpose of my experiment is to determine how five differently shaped parachutes using two different sizes each with equal areas (in^2) will affect the speed of descent, stability, and survival of the payload (egg). To determine this I had to find out how a parachute works, what type of material to use, and what design type of parachute would work best. Based on my research I believed that the circle parachute that has the greatest area (in^2) would have the overall best performance and the annulus (ring) would fail. In order for me to test my hypothesis I had to first make the parachutes. I measured, traced, cut, sewed, and assembled each parachute. After preparing the parachutes I began my experiment by dropping them from a height of 25ft. Each time a parachute was dropped it was attached to a basket that contained an egg and weights to equal 8 oz. I completed 3 trials for each parachute plus a control (payload only). After completing the experiment and gathering data I determined that the rectangle parachute with the greatest area (in^2) performed better than the rest and had the most payloads (eggs) that survived. The annulus (ring) parachutes did have the fastest descent rate and all the payloads (eggs) were destroyed. Overall the shape and size of a parachute does affect the descent rate, stability, and survival of an egg.



Esten Biegert

Radioactive Effects on Planaria

Abby Schnell-Braun - Northwestern Area High School

Northern S.D. Science and Mathematics Fair
Northern State University
Teacher: Denise Clemens

Intrigued by Kate Moore's *The Radium Girls*, I was inspired to do this project; exposing planaria to the radiation of Americium-241. The planaria were left in contact with the radioactive cases for approximately a week to observe their movement and growth overall. Over the course of the observation period, the experimental planaria grew rapidly in their severed state. The control group remained dormant, without much movement or growth. The experimental planaria developed cancerous cells caused by radiation, which were killed off and regenerated rapidly by the planaria's neoblasts. In conclusion, the control group died within the first three days, while the experimental worms were killed due to the water inside the test tubes drying up.

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UPCOMING EVENTS

April 22

Earth Day

June 16

Newsletter Submissions due

Any member may submit lessons, ideas, links...

June 17-19

Black Hills Science Explorations

Project Wet, Wild, & Learning Tree Workshop

February 1-3, 2024

SD STEM Ed Conference

Huron, SD

The SDSTA Newsletter is published four times a year and is e-mailed to 67 paid members. The membership year in SDSTA starts with the February conference and ends the thirty-first of January. Dues are due at each conference for member discount rates. SDSTA members may give a one year free membership to their student teachers by submitting the student teacher's name & address. One paid conference registration may be given to the SDSTA member that has made a submission to the newsletter (or given a presentation at the conference) and has referred at least three new members. Members may also earn a 10% finder's fee for any science related ads placed in the newsletter. Our rates are \$50 per page (or 3 to 4 quarter pages).



Mail to:

Spencer Cody, SDSTA Treasurer
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Mina, SD 57451

Become a Member!

\$5 Student, K-6, Retired **\$20** All Others

Name _____ Home Phone _____

Home Address _____ E-mail _____

City _____ State _____ Zip _____

Your School _____ School Phone _____

School Address _____

Your area (circle one) K-6 7-8 9-12 College Other _____