



SDSTA

South Dakota Science Teachers Association

Fall Issue | Date: September 29, 2019

Dear Members,
I hope the beginning to the new school year has found you well. It was fun seeing all the excited faces and fresh look of the newest additions to class. I hope that you are finding fun and new ideas to try in your classrooms. If you need some new ideas look to our @SDSTA Twitter account or SDSci on Facebook. There, you will find a wealth of resources and others willing to help. We would also love to see your success stories and great ideas you've had.

Our upcoming conference is shaping up to be our best yet! We have some world class speakers eager to share their knowledge with you. The SD STEM Ed. Conference will not disappoint! Links to the registration forms and speaker proposals are in this newsletter or at SDSTA.org. See you in Huron February 6th-8th!

In the near future you will be receiving an email about ordering some SDSTA branded clothing and accessories again! We have partnered with a print shop in Watertown to create an online store for a members only clothing line. Items will include ¼ zips, polos and jackets. We would love to see you all sporting our beautiful logo! Shipping will be available.

For those of you who may be interested in the latest science conversations in the educational community, please be aware that once a year, the National Congress on Science Education meets to discuss issues that may be of interest to NSTA and science education. There are 94 NSTA Chapters and Associated Groups aka CAGS. SDSTA is one of the 94 chapters/groups, and we are responsible for sending a voting delegate to the annual meeting. This year's meeting took place in Alexandria, Virginia and was a rewarding experience that allowed me to network with several state presidents and get some customized professional development to assist me in leading SDSTA. I also spent some time on Capitol Hill and had some great conversations with our

Legislatures. If you are interested in looking over the minutes of this meeting, a [summary has been provided](#).

My hopes are that you will enjoy this fall edition of our newsletter. Julie Olson and Michelle Bartles spend loads of time on putting this together for your professional entertainment! Your thoughts and ideas are always welcome, so if you have something to share please forward it to either of these two people, and they will do their best to accommodate our members. Also, it is my sincere wish that your 2019-20 school year be the best ever and that you continue a lifelong learning process to improve your teaching pedagogies. Remember to get your applications in for presenting at the 2019 Conference, and get registered now to attend!!

Best Regards,
Mark Iverson
SDSTA President

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Greetings from Jen Fowler SD DOE Science Specialist

Hello, science friends!

Welcome back to school... let's dive right into SD [Science Translations](#). These documents of bundled standards were created by SD science educators over the last two years and are a supplement for you. Using them as you design your units will enrich your lessons three-dimensionally. Choose a bundle document that matches the unit you are currently in or are planning for and take the opportunity to incorporate some aspects into your classroom. Perhaps one of the phenomena listed will inspire a theme for your unit.

It was a productive summer with the SD Science Standards and Effective Instruction workshops while partnering with Sanford Underground Research Facility. Their efforts created successful learning opportunities for many K-12 science educators. I am currently researching and planning different methods for future professional development for science educators. There are several possibilities and as you have ideas please share them with me.

The first issues of the *Science Notes* newsletter are filled with info, hints, and strategies that can assist in your classroom. There has been positive feedback and I hope you'll share what topics you would like to see more of as the newsletter is what we make it to be. Look for *Science Notes* on the DOE Science listserv twice a month. To join the DOE Science listserv use this link

<https://www.k12.sd.us/MailingList/DOEScience>

Together we can enhance learning!

Jennifer Fowler

SD DOE Science Specialist

Jennifer.Fowler@state.sd.us

" I am currently researching and planning different methods for future professional development for science educators. There are several possibilities and as you have ideas please share them with me. "



Join DOE Science Listserv

To join the DOE Science listserv use this link:
<https://www.k12.sd.us/MailingList/DOEScience>



Translations of the Unpacked Science Standards now available

A team of South Dakota teachers has worked over the past two years to complete the **Translations of the Unpacked Science Standards**, which are now available on the South Dakota Department of Education's website.

The Translations are intended to be a supplemental resource to help K-12 science educators translate the South Dakota Science Standards into classroom practice by representing how a group of teachers, at a given grade level, might bundle performance expectations into instructional units of study.

The documents are comprised of storylines and examples of phenomena, formative assessment, and three-dimensional performance outcomes to aid teachers in designing their own plans for instruction.

Questions? Contact **Jennifer Fowler**, the department's science specialist

Officer Offerings

Happy Holidays!

Submitted by Ally Bowers
SDSTA Science Liason

As teachers know, the instant that Independence Day passes, the Back to School merchandise fills the aisles at your local Walmarts and Targets. Then, before we know it, Halloween is upon us (in August) and then Christmas music fills the store (any day now). Thankfully, there are a few holidays that you can celebrate at school with your science students, without the excess commercialization and showtunes!



Coming up this fall, a classic to celebrate in your chemistry classroom is Mole Day (October 23). This day commemorates Avogadro's number, 6.02×10^{23} , which describes the number of atoms in one mole of any substance. Carolina Biological lists several activity ideas on their website here. [!\[\]\(a03a7eb2f4046e1d3c76772003e549ea_img.jpg\)](#)

In November, World Toilet Day occurs (November 19). World Toilet Day seeks to celebrate and inform what a lifesaving device your toilet is and how sanitation improves lives all over the world. After the recent flooding, where many locals in my area had sewage flow into their basements, I am reminded how grateful I am that sewage usually stays exactly where it should be: not in my house. World Toilet Day is an engaging topic for students and has the added value of getting to openly talk about poop! [!\[\]\(cbe2492b119e39e02a1dab2af4a4b296_img.jpg\)](#)

Finally, as we get past the actual holiday season, two of my favorites occur in the same week, just after the annual SD STEM Education Conference: the International Day of Women and Girls in Science, sometimes shortened to Women in Science Day, (February 11) and Darwin Day (February 12). On Women in Science Day, I like to highlight women who pioneered new areas of study or made groundbreaking discoveries but may receive less credit or attention than they deserved. The next day is Charles Darwin's birthday, so my Biology class celebrates with treats and a fun evolution or natural selection activity.

Celebrating these holidays throughout the year helps my students recognize that science is so much more than a body of knowledge about the world around us! They realize that these scientists were or are real people and their contributions help make society a better place. If you are interested in finding more holidays to celebrate throughout the year, the National Informal STEM Education Network (NISENet) has a detailed calendar here. [!\[\]\(3e2231b1ad3ca8da8658228c00dd08e0_img.jpg\)](#)

Happy Holidays from SDSTA!

Exhibitor Registration Is Open for the 27th Annual SD STEM Ed Conference!

Deadline for getting Exhibitor information into our conference booklet is Dec. 15th. Late sign-ups are welcome but Exhibitor information will not make it into conference booklet.

Do you know companies or organizations who may be interested in hosting an exhibit booth at the SD STEM Ed Conference? Please share their organization name and contact information with vendor@sdsta.org. [!\[\]\(0d5ec72f61334709c3fc9450209b754f_img.jpg\)](#)

Officer Offerings

Glacier National Park

Submitted by Lindsay Kortan
SDSTA Science Liason

My husband and I try to take a hiking trip each summer and this year decided on Glacier National Park (GNP) in order to see some of the glaciers before any further melting occurs. In addition to the glaciers, GNP offers an amazing chance to experience Montana's flora and fauna (we had a couple close encounters, but luckily no bears) and drive the civil engineering landmark that is the Going to the Sun Road. I plan to incorporate my trip into my classroom as we discuss climate change and human impact. We'll watch the National Park Video that shows photo evidence of glacier melting and analyze data from USGS of changes in glacial size. On one of our hikes, I captured video of a very close encounter with a herd of goats and so we'll also read and discuss the article by Colin May on human and goat interactions. If you haven't been to GNP, I highly recommend it as it offers such a wealth of science related experiences and has some of the most beautiful landscape I've ever seen!



Grinnell Lake



Resources:

- **National Geographic Video**
- **USGS Study Overview and Data**
- **Human Impact on Goats**



At Grinnell Glacier

How many oceans are there?

Five might sound like it's wrong, but let's count them off. Everyone gets Atlantic and Pacific relatively quickly. Then you have the Indian Ocean and the Arctic Ocean, which is getting a lot of attention recently, what with all the melting ice caps. The one we hear the least about is the Southern Ocean, which is the youngest. Not youngest in that it just formed, but youngest in that it was only officially defined back in 2000, when the International Hydrographic Organization set its limits. If you want to get truly technical, there really is just one ocean: The boundaries and names of these five are purely human inventions.

3 Countries That Don't Use the Metric System



Submitted by James Stearns
SDSTA Treasurer

While most countries have adopted the metric system as an official means of measuring weight and distance, there are still a few holding on to their own system of weights and measures. To be exact, three countries in the world aren't using the metric system. Here they are, along with some explanation as to why they're refusing to adapt the system that over 190 other countries are using.

Myanmar's reasons for not switching to the metric system can be found in its history. This small Asian country (formerly Burma) has a long history of being ruled by other empires. About the 9th century, they were attacked and dominated by the Kingdom of Nanzhao, who introduced Buddhism to the region. The Nanzhao people built a city called Pagan and ruled the Pagan Empire until about the late 13th century when the Mongols defeated them. The Mongols didn't stay long, and for the next few centuries, the country was ruled by various kingdoms. It was part of the Toungoo Dynasty, which was the largest empire in the region in history, from around the 15th through the 18th century. During this period, Myanmar was the most powerful state in all of Southeast Asia. It finally fell under British colonial rule in the 19th century as part of the Indian Empire. Myanmar was under British colonial rule until 1948. Once it was declared an independent nation, Myanmar decided to stick to its own traditional form of measurement, which is **Burmese measurement**. You'll find inconsistent uses of both the imperial system and the metric system on the government website to describe units of measurement. Plans have been made for Myanmar to convert to the metric system. In 2013, the government announced plans to adopt the popular system. However, that was an election year and a new ruling party took over the country. This has led to a halt in discussions of changing the unit of measurement and, as of yet, Myanmar is still officially using the Burmese measuring system.

The African country of **Liberia** has close connections to the United States, which is in part why it is sticking with the **imperial system** of measurement instead of adopting the metric system. It's unique from other African countries because Europe never colonized it. It was instead colonized and founded by a group of freed slaves, with help from the American Colonization Society, in 1821. The society was made up of slaveholders and Quakers who had different reasons for

repatriating slaves to Africa.

For Quakers, the premise behind founding an African country was that freed American slaves would have more freedom in Africa than they would if they stayed in the United States. Plus, this could help spread Christianity through the African continent. For slaveholders, removing freed slaves from American soil could prevent a slave rebellion.

Liberia remained a colony of the American Colonization Society until 1847 when it gained independence as the Republic of Liberia. They modeled their new government after the United States government and named their capital city Monrovia, after the fifth president of the United States, James Monroe. At this point, the metric system is used inside the country for certain measurements. The Minister of Commerce and Industry has declared the need to convert to the metric system to keep up with global trade and to help Liberia with social and economic infrastructure.

With both **Myanmar** and **Liberia** on board with converting to the **metric system** in the not so distant future, that leaves just one country holding steadfastly to their own unit of measurement.

If you're an American who gets confused every time you sign up for a race (a 10K is how long?) you're already well aware that the **U.S.** hasn't adopted the metric system. It's been operating under the **imperial system** ever since it was colonized by the British. When America gained independence in 1776, it kept the imperial system. Soon after, in 1790, Congress proposed converting to the metric system. The Secretary of State at the time, Thomas Jefferson, rejected the idea of using the metric system, citing the very empirical reason of it being "too French." Fast forward to the 20th century, and you'll find several different attempts to go metric. Alexander Graham Bell made a proposal to Congress. The Metric Conversion Act of 1975 proposed a slow adoption of the system, making it easier to handle trade with the rest of the world (like the U.K. was doing). One big problem, though, was that the law was voluntary. So, anyone who didn't want to convert to the metric system didn't have to. Unions in the U.S. pushed back, fearing that switching to the metric system would make it easier for manufacturers to ship their jobs overseas.

Clearly, those who favor the imperial system over the metric system have won the fight so far. If the U.S. holds out long enough, it could very well be the only country in the world that doesn't use the metric system.

SD STEM Ed Conference

THE JOINT CONFERENCE is now
SD STEM Ed Conference

Save the date! **FEB. 6-8, 2020**

Over the past few years, the SDCTM/SDSTA Joint Professional Development Conference (JPDC) Executive Board has been moving toward paperless registration. We will only have on-line registration for the 2020 SD STEM Ed Conference (hosted by JPDC). This will be the same great conference we've had for the past 27 years – under a new name as of 2019!



Participants will register online at: <https://forms.gle/nB5bxikUExzZHDvP7>. You will receive an invoice at the email provided within 2 business days. The invoice can be paid online via credit card or PayPal or [participants/school districts](#) can mail a copy of the invoice with a check to:

SDCTM/SDSTA JPDC
 Sheila McQuade, Treasurer
 c/o O’Gorman High School
 3201 S. Kiwanis Ave
 Sioux Falls, SD 57105

On-line Registration only

SD STEM Ed

Early Bird Discounts!

	Early Bird June 1 - Dec. 15		Pre-Registration Dec. 16 - Jan 24 <i>Payment must be postmarked by Jan 20 or online payment COMPLETED by paying with Paypal or credit card by Jan 24.</i>		After Jan 24 and Onsite	
	2 day registration	1 day registration	2 day registration	1 day registration	2 day registration	1 day registration
Member	\$85.00	\$60.00	\$100.00	\$75.00	\$120.00	\$95.00
Student	\$30.00	\$20.00	\$35.00	\$25.00	\$65.00	\$55.00
Non-Member	\$135.00	\$110.00	\$150.00	\$125.00	\$170.00	\$145.00

2020 SD STEM Ed Conference Session Proposals

Consider putting together a session to share with other educators from around the state.

- Submit as many sessions as you want but you may not get acceptance of all.
- Both workshop or presentation style welcomed.
- Presenters must be registered or exhibiting at conference
- You will receive confirmation of acceptance by December 1.



Projectors will be supplied as needed. Other materials or technology is the responsibility of the presenter.

“What would life be if we had no courage to attempt anything?”
Vincent Van Gogh

Educator Academy in the Amazon Rainforest

July 1-11, 2020

The Educator Academy in the Amazon Rainforest provides powerful professional development designed to transform student learning. Immersed in the Peruvian Amazon, teachers learn about this key global eco- system while building their ability to engage students in scientific research, engineering design, cross- cultural connections, and stewardship projects. Field workshops support NGSS 3D learning, STEM, 5E and more.



With specialized tracks for elementary, middle school, and HS/AP educators, participants will:

- Work side-by-side with scientists and researchers on citizen science projects and field studies on the ACTS Rainforest Canopy Walkway in one of the world's most biologically diverse environments.
- Explore conservation and sustainability via hands-on workshops with indigenous communities.
- Spend a day in an Amazon village and explore the role of education in creating a sustainable future for Amazon children.
- Work in grade-level cohorts to develop strategies for using the Amazon as a vehicle for incorporating standards-based inquiry, STEM, and sustainability education into the classroom.

Academy Fee of \$2695 includes pre-departure prep, resource kit, & in-country land costs (air is not included).

\$1250 scholarship deadline is February 1, 2020. Space is limited to 30 educators. Get the details and download a syllabus and scholarship application at: www.morphoinstitute.org/educator-academy



Questions? Contact: Christa Dillabaugh, Morpho Institute Director
Email: info@morphoinstitute.org
Phone: (913) 214-6126



Earn professional development hours and/ or graduate education credit this fall!

Population Education is excited to announce that registration is open for our fall 2019 online professional development course for science and social studies educators of grades 6-12! Discover student-centered learning strategies that use contemporary issues and real-world data to examine the social and environmental impacts of human population and engage in meaningful dialogue with educators across the world. The course is asynchronous, which means students can work at their own leisure and pace while still abiding by the pre-set submission deadlines. There are weekly discussion boards, journals, and a final project, all built to provide participants with meaningful feedback and materials to use within their own educational setting.

- The 8-week fall semester runs from October 14 - December 9, 2019.
- Choose to earn three (3) graduate education (ED) or science education (SCED) credits from Adams State University and/ or 45 professional development clock hours (4.5 CEUs) for completing the full eight weeks.
- The cost is \$80.00 for CEUs only or \$245.00 for CEUs plus graduate credit.
- The class will be capped at 30 participants, so don't wait to sign up!



For more information and to register, visit <https://populationeducation.org/online-course-registration/>

Developing and Using Models



South Dakota's science standards call for students to be able to develop and use models. Our monthly 2 hour PD delivered via an in-person, interactive hangout will give you an overview of the different ways to develop and use models using our most popular curricula: GLOBE, GEMS, Project WET and more! Learn multiple ways to integrate modeling into your teaching. Get informed! Get inspired! All from the comfort of your classroom or home.

We meet the 4th Monday of the month, October through April except for December in an interactive, online meeting space. Chrome or Firefox browser required as is a recent version of Windows 10 or MacOS. We'll do a tech check before class to make sure you can connect.

During our session you will have time to review your standards and start planning on how to integrate developing and using models into your instruction. Teaching an activity using models with a short reflection is required for credit.

The class is free. Credit (pending) will have a fee.

Questions?
Contact Anne at
annelewis@sd-discovery.org
or call 605-224-8295.

Register at: <https://sd-discovery.org/event-3523637>



EARTH EXPEDITIONS

LEARNING IN THE WORLD COMMUNITY

Now accepting applications for 2020

OXFORD, Ohio (Sept. 3, 2019) – Miami University's Project Dragonfly is accepting applications for 2020 Earth Expeditions graduate courses that offer extraordinary experiences in 16 countries throughout the world.

<http://EarthExpeditions.MiamiOH.edu>

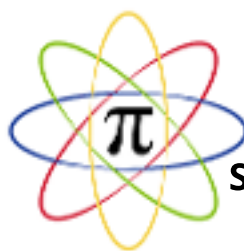
Earth Expeditions can build toward the Global Field Program (GFP), a master's degree that combines summer field courses worldwide with web learning communities so that students can complete the GFP master's part-time from anywhere in the United States or abroad. <http://GFP.MiamiOH.edu>

Project Dragonfly also offers the Advanced Inquiry Program (AIP) master's degree that combines web instruction from Miami University with experiential learning and field study through several AIP Master Institutions in the U.S. Applications for Miami's 2020 cohorts are being accepted now with place-based experiences provided at zoos and botanical gardens in Chicago, Cincinnati, Cleveland, Denver, New York, San Diego, Seattle, and St. Louis. New for 2020: residents of the Jacksonville, Florida area can study and earn the AIP master's through Jacksonville Zoo and Gardens, AIP's newest Master Institution. <http://AIP.MiamiOH.edu>

Graduate tuition for all programs is greatly reduced because of support from Miami University.



Project Dragonfly
Inquiry | Community | Voice



Save the Date!

SD STEM Ed Conference 2020

February 6th, 7th, & 8th

Professional Development

STEP UP

Did you know that encouragement from high school teachers is the primary reason undergraduate women in physics chose that degree? That's right! And what's more, if half of the high school physics teachers in the United States successfully encourage a single woman to pursue a physics career, the percentage of women in undergraduate physics will jump from 20% to 50%. The STEP UP project is here to help you do just that. Together, we can ensure that women play an equal role in the future of physics.

STEP UP provides two free, self-contained lessons that are backed by research and shown to increase interest in physics, especially among young women. Think of the great gains that physics will make when powered by the full might of the future generations! Register to join our community or download these lessons and other pedagogical tools by visiting www.STEPUphysics.org.



STEP UP



ROBOTICS

SDSU Extension/SD 4-H will be holding two DDN based robotics trainings this fall.

Currently participants will have the option of participating in one of three locations:

- Sioux Falls
- Rapid City
- Winner

Beginner robotics training:

October 12, 2019 from 9 (cst) to 12 (cst): This DDN based training is open to all adults interested in learning more about the basics of using LEGO® MINDSTORMS® robots with youth. Participants will gain familiarity with the construction of the robot as well as basic programming commands.



Intermediate Robotics training:

October 26, 2019 from 9 (cst) to 12 (cst): This DDN based training is open to all adults interested in advancing their knowledge of using LEGO® MINDSTORMS® robots with youth. Participants will build upon simple programming skills and learn the basics of utilizing sensors.



For questions contact Christine Wood at: 605-782-3290

Christine.Wood@sdsta.edu


Save the date! The 28th Annual SD STEM Ed Professional Development Conference will be held in Huron February 6-8, 2020. This annual conference is hosted by SDCTM and SDSTA.

Sessions presented by South Dakota's best (that's you) comprise a very large part of the success of this conference. If you have presented before, thank you. I hope that you will present again for the 2020 event. If you have not presented before, please consider it this year. Let others benefit from your ideas and experiences. You can present with partner(s) if you are hesitant to go it alone the first time. Presenting a session is a fun and rewarding experience. You can be certain that you will have a friendly audience!

Speaker proposal forms are now available. Forms will be submitted electronically this year; follow the links on the conference page. **The submission window closes on Oct. 31, 2019** I can't wait to see what you all have in mind for your sessions!

Cindy Kroon - SD STEM Ed Conference Chair



IT'S ALL ABOUT
 SCIENCE
Science

2020 FESTIVAL

SANFORD
HEALTH

Go mad for science.

April 4, 2020



Resources

SANFORD LAB EDUCATION AND OUTREACH

Greetings from Sanford Lab Education and Outreach!!!

Today's PD "nugget" is focusing on student engagement. Remember that the acronym **SCORE** can remind you of factors that you can leverage to increase student engagement.

S is for Success – Students need to believe that they have the possibility of being successful if they are going to engage in the learning. Scaffolding can help. [Here's an article](#) with some straight-forward examples.

C is for Curiosity – Everyone loves a good mystery, an odd picture, a weird question. Use the natural world around you...and your phone camera...to bring those mysteries, pictures, and weird questions into your classroom. [Read Dan Meyer's blog post here.](#) (Yes, it's math...but I can embrace a math idea...occasionally.)

O is for Originality (or creativity) – What opportunities do you provide for students to "put their own stamp" on the lesson? An engineering design challenge might be "just the thing". Remember, however, that a great engineering design challenge requires students to use content knowledge to create a better version – it's not just trial and error. [Here's a website with lots of ideas.](#) (I'm not suggesting that these are all great, but rather, a site to inspire your creativity.)

R is for Relationships – Do students get to know each other? Do they get to know you? Are you building trust that will enable students to take risks? Do all students have a voice? Classroom norms...when practiced explicitly...can foster positive, trusting relationships. Take the time...it's worth it! Here are the norms that we probably used as part of our PD. A couple of examples can be found [here](#) and [here](#).

E is the Energy that results from student **engagement**.

We'd love to hear from you, so reach out if you need anything...or just to let us know how things are going.



Deb Wolf
Director - Education and Outreach
Sanford Underground Research Facility

Update from Jewel Cave National Monument



Due to a construction project inside Jewel Cave, the Monument will be suspending ranger-guided cave tours from October 1, 2019 through early May 2020. This also means that Academic Fee Waivers will not be available or processed until the cave tour schedule is fully operational.

For more information, please call the Monument directly at (605) 673-8300 and speak with a park ranger.



**Consider submitting a session proposal by
October 31, 2019 for the**

SD STEM Ed Conference

FEB. 6-8, 2020

**WARNING:
DUE DATES
ARE CLOSER
THAN THEY
APPEAR**

Resources



The Harnessed Atom Curriculum Classroom includes a teacher edition, 30 student books, a poster, videos, interactive games, and two CDs including editable PowerPoint presentations for each lesson. It covers electric power production beginning with atomic structure and includes non-biased information on nuclear power production, as well as information on renewable energies. It is divided into 10 lessons that can be used as a whole or as individual pieces. Additional information on the curriculum can be found here:



Receive The Harnessed Atom Curriculum Classroom Kit at no cost!



Ask A Jr. Ranger Program

Black Hills Parks and Forests Association has a **YouTube Channel!** Paired videos with questions and answers offer students the opportunity to take your students on virtual field trips to the Black Hills.

Visit <https://blackhillsparks.org/> For more information on the partnerships supporting education with the National Park Service and the US Forest Service.

SD Outstanding Biology Teacher Call for nominations

Congratulations to Cherrie Martenson, the 2019 SD Outstanding Biology Teacher. NABT is accepting nominations for the 2020 SD OBTA. Send the name and school of the nominee to Jeff Peterson at jeff.peterson@k12.sd.us.



Water Science School

New and Improved!



Ever wondered how much water it takes to grow a head of lettuce, or even to 'grow a hamburger?' When the stream near your house floods, how does the USGS measure the amount of water flowing? Care to find out what pH is, how much water is used to produce electricity, how much water is stored in glaciers, or what the effects of acid rain are? The U.S. Geological Survey's Water Science School website, located at <https://www.usgs.gov/water-science-school> is available to answer these and other questions.

YOUTH INCENTIVE AWARD



The Coleopterists Society, an international organization of professionals and hobbyists interested in the study of beetles, has established a program to recognize young people studying beetles. The Society has pledged to provide up to \$600 each year for the Youth Incentive Award Program. Each of the two awards (Junior and Senior) will receive a monetary grant of \$200 and \$400, respectively, and a matching equipment credit from the BioQuip Products catalog for \$200 (Junior Award) and \$400 (Senior Award). In addition to monetary and BioQuip grants, award recipients will receive a one year subscription to the society journal, The Coleopterists Bulletin.



This is for students of grades 7-12 only.

A Youth Incentive Award Committee from the Coleopterists Society will evaluate the applications and will select up to two winners annually; one each in junior (grades 7-9) and senior (grades 10-12) categories. The selection committee invites proposals for topics such as field collecting trips to conduct beetle species inventories or diversity studies, attending workshops or visiting entomology or natural history museums for special training and projects on beetles, studying aspects of beetle biology, etc. The proposed activities or projects will be evaluated on their degree of creativity, educational benefit to the applicant, scientific merit, feasibility and budgetary planning. This Award is for proposals by individuals only. Each applicant is strongly encouraged to find an adult advisor (teacher, youth group leader, parent, etc.) to provide guidance in proposal development, but the proposal **MUST** be written by the applicant. The Coleopterists Society would also be happy to assist in establishing contacts between youth and professional Coleopterists.

Applications for this year must be submitted by **1 November**.

Marian Fillbrandt Scholarship



Marian Fillbrandt graduated from South Dakota State in 1933 with a Mathematics major. She spent many years teaching math and science. She established the Fillbrandt Endowment at South Dakota State to help South Dakota math and science teachers. A committee of faculty, along with Jeff Nelson with the SDSU Foundation, has determined that this endowment can be best utilized by providing \$400 stipends to second through fifth year math and science teachers to attend the SDSTA/SDCTM conference. This will allow new teachers in rural areas to interact with their colleagues with similar professional interests. The application deadline is December 1, 2019. The \$400 stipend is intended to defray the costs of conference registration, accommodations, a substitute teacher for the Friday of the conference if a district will not provide one, and other costs associated with conference attendance. If you are selected for this stipend, you will be required to write a brief report at the end of the conference stating how the stipend benefited you and what you learned at the conference that you plan to use in your classroom. If you are selected, but are unable to attend for some reason, the stipend money will be returned to the endowment fund. The selection committee will take financial need into account during the selection process.

Miscellaneous

SD AAPT Photo Contest

The contest is open to high school students in grades 9-12. Students must print out, sign, and return the Contest Rules and Entry Agreement, HTML version or WORD version, when submitting their entry. Failure to submit this form will invalidate the contest entry. Entries are limited to 6 per teacher per school each year. Photos will be judged on the quality of the photo and the accuracy of the physics in the explanation that accompanies the photograph. Photo may be from something Naturally Occurring or Contrived (objects were manipulated) Prizes—SD-AAPT will award cash prizes & certificates to top three places. Judging-Photos entered will be displayed during the annual Winter Meeting at the Joint Science & Math Conference in Huron in February. This year's deadline is January 1st.

Entries may be mailed or photo & word document may be emailed.

Send submissions to:

James Stearns – SD-AAPT Photos

15 North Fifth Street

Groton, SD 57445-2024

Questions? email James@SDSTA.org



SDSTA Board Elections

According to the SDSTA Constitution (visit www.sdsta.org to view the full document), the Officers of the organization include President, President-Elect, Past President, Secretary, Treasurer, and Newsletter Editor. Officers are elected every other year and hold a two-year term. An elected officer may hold the same position for up to two consecutive election cycles. This February at the Annual Meeting (February 7 at the Joint Conference) we will be electing the officers to serve from 2020-2022. In addition to the elected officers, there are Liaisons that serve on the Executive Board. This group of individuals is appointed by the President and is meant to represent a wide range of grade bands or affiliations in science education. Together the executive board determines the goals and visions of the organization and works with the Executive Board of the SD Council of Teachers of Mathematics (SDCTM) on the Joint Board to co-host the Annual SD STEM Ed Conference. If you are interested in serving on the executive board of SDSTA, please email president@sdsta.org and let us know! We would love to know who's out there that wants to get involved. We would also love to know if you have a colleague that you would recommend/nominate to the Executive Board – we will accept your nomination by email and connect with the nominee to determine if they would be interested. We will be printing bios for those interested in running for an officer role in the 2020 election in the winter newsletter so that our membership has an opportunity to learn more about you and your goals for the organization ahead of the election on February 7, 2020 in Huron.

**Consider submitting a session proposal by
October 30, 2019 for the 28th Annual Joint Conference**

SD STEM Ed Conference

FEB. 6-8, 2020



Miscellaneous

SAMSUNG Solve for Tomorrow

As the world around us constantly changes, our need for STEM leaders and creative thinkers arises.

The [Samsung Solve for Tomorrow contest](#) is designed to spark STEM interest in middle and high school students, and is committed to empowering teachers to further inspire our leaders of tomorrow. Every year, thousands of students participate in the contest to create solutions to problems that they care about most.

We encourage you to enter our 10th annual Solve for Tomorrow contest to take part in this STEM movement. The application takes only a few minutes to complete on www.samsung.com/solve. Over **\$3 million** in technology and classroom materials will be awarded to 300 schools across the country (a minimum of 5 schools in every state will be selected).

Teachers must apply by **October 23rd** to participate. Please take a moment to submit an application, or if you already have, spread the word to colleagues for more chances to win.



- Linked to SD Standards
- Hands-on activities
- Real life scenarios



- DOT engineering mentor & advisor
- Free materials
- Easy to follow and adapt lesson plans

TRAC.SDDOT.COM

STEM Links

science FRIDAY

SCIENCE BUDDIES

Practical ACTION





What's new?

<https://spaceplace.nasa.gov/>



What Powers a Spacecraft?

A spacecraft generally gets its energy from at least one of three power sources: the Sun, batteries or unstable atoms. To choose the best type of power for a spacecraft, engineers consider where it is traveling, what it plans to do there and how long it will need to work. Go to <https://spaceplace.nasa.gov/> to learn more.



NASA's award-winning Space Place website engages upper-elementary-aged children in space and Earth science through interactive games, hands-on activities, fun articles, and short videos. With material in both English and Spanish and numerous resources for parents and teachers, Space Place has something for everyone. Learn about everything from black holes and wild space weather to the reasons for seasons here on Earth. The Space Place has material on space, the Sun, the Solar System, our own planet, and the scientists and technology that make discovery possible.

NASA Invites Students to Name Next Mars

Red rover, red rover, send a name for [Mars 2020](#) right over! NASA is recruiting help from students nationwide to find a name for its next Mars rover mission.



K-12 students in U.S. public, private and home schools can enter the Mars 2020 Name the Rover essay contest. One grand prize winner will name the rover and be invited to see the spacecraft launch in July 2020 from Cape Canaveral Air Force Station in Florida.

The Name the Rover contest is part of NASA's efforts to engage students in the STEM enterprise behind Mars exploration and inspire interest in science, technology, engineering and mathematics.



**Why aren't astronauts hungry after blasting into space?
BECAUSE THEY HAD A BIG LAUNCH!**

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UPCOMING EVENTS

October 4-10



World Space Week

October 5



International Observe the Moon Night

October 13-19



Earth Science Week

American Geosciences Institute

October 31



Session Proposals Due

December 1

Confirmation of Proposal Acceptance

February 6-8



SD STEM Ed Conference

Huron, SD

The SDSTA Newsletter is published four times a year and is e-mailed to 130 paid members and several school science departments. 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).



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 _____

Referred by _____

Mail to:

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