



# SDSTA

South Dakota Science Teachers Association

Winter Issue | Date: December 21, 2019

Happy Holidays!!

I enjoy how this time of year always offers the opportunity to reflect and be thankful for those things that we have in our life. As we have been meeting to plan our annual conference, I am reminded how great it is to be a part of such an amazing group and offer an amazing professional development opportunity.

This year's conference is shaping up to be our best yet! We've got some of the best speakers in the nation and the best educators in the nation! The 2020 SD STEM Ed Conference is going to be amazing! If you haven't already, head over to our website and get your registrations filled out. Deadlines are soon approaching. Graduate credit is also available. Advanced registration forms and the program are available at [www.sdctm.org](http://www.sdctm.org) and [www.sdsta.org](http://www.sdsta.org).

Conference programs will not be printed this year, but the full program will be available online with a draft copy to be posted soon. The schedule-at-a-glance will still be printed and will be available at the registration table. The final version of the conference program will be posted prior to the conference, hoping for the last week in January.

Looking for a lower cost option for your first year teachers? With paid membership, they can attend for free: "The Goehring / Veitz Scholarship for Future Leaders" has been established to encourage first year teachers of math & science to become professionally involved at the state level. The scholarship includes a free one or two day member-price registration at the SD STEM Ed Conference. The only criteria is that the first year K-12 teacher of math or science must be or become a member of SDCTM and/or SDSTA. The scholarship form and registration information can be found on SDCTM's webpage at <http://www.sdctm.org>.

Don't forget about ordering some new SDSTA branded

clothing. We have partnered with a print shop in Watertown to create an online store for a members only clothing line. Find links to the store at [sdsta.org](http://sdsta.org). They make great Christmas gifts!

This year is a Science election year. If you've ever considered being a part of the executive team, this is your chance. Let me know before February if you'd like to be considered for the ballot for any of our positions. This will also be my last conference as President and will be handing the reins over to the very qualified Jen Fowler. With that transition comes new opportunities to get involved and renewed vision for the organization. I cannot wait to see where Jen takes us!

Lastly, don't forget about the grant opportunities offered through our conference. The Daniel Swets Robotics Materials Award and the Kelly Lane Earth and Space Science Grant deadlines are fast approaching. Last year there were very few applicants, so please consider applying. Links to the forms can be found on the website under the conference tab.

And finally, as the calendar page turns to a new year, let me say thank you. Thank you for your continued dedication to teaching and support. It has been a great honor for me to have lead SDSTA and I look forward to a very successful year ahead with continued efforts to promote science education. Let us all march into 2020 with pride of being educators and the drive to make the next year even more amazing. You truly are the best!

Take some time over the break to let the teacher in you take a hiatus. Enjoy the family get-togethers and the food! Recharge your batteries and we'll see you in February to help you through the winter grind!

We'll see you in Huron, February 6th!

Best Regards,  
Mark Iverson  
SDSTA President

## Greetings from Jen Fowler SD DOE Science Specialist

Hello, science friends!

Have you **registered** for the SD STEM Ed Conference on February 6-8 in Huron? I will have two sessions titled "Translating the SD Science Translations" where you'll choose one of these supplemental documents relating to an upcoming unit and begin applying it to your plans. There will also be time allotted for discussion regarding other DOE Science happenings like assessment and accreditation.

Have you made progress adding the SD Science Translations into your units? They are found **here**. Send me a note stating how they are working for you.

See the December 6th issue of Science Notes newsletter with details on the Spring 2020 SD Science and Science-Alt Assessments found **here**.

Encourage your fellow K-12 science educators to join the DOE Science listserv using this link <https://www.k12.sd.us/MailingList/DOEScience>

### Together we can enhance learning!

Happy Winter Solstice!

Jennifer Fowler  
SD DOE Science Specialist  
[Jennifer.Fowler@state.sd.us](mailto:Jennifer.Fowler@state.sd.us)



*"Though the K-2 SD Science Standards are not assessed, teaching them builds students' foundations and fosters their LOVE for science!"*



## Join DOE Science Listserv

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

## SD Science Standard Translations

The link is still <https://doe.sd.gov/contentstandards/> with the Content Standards being found in the center of the main page. Within the Science Standards section, you will find all the same documents you are used to with one new addition, the "Translations of the Unpacked Science Standards."

The Translations documents were created by South Dakota science educators with the SD DOE and are based on the 2015 adopted SD Science Standards. They are intended to be a supplemental resource to help science educators translate the SD Science Standards into classroom practice. The Translations are a representation of how a group of SD teachers, at a given grade level, might bundle performance expectations into instructional units of study. The Translations are so much more than "unpacked" as they are comprised of storylines and examples of phenomena, formative assessment, and three-dimensional performance outcomes provided to aid teachers in designing their own plans for instruction. Teachers should use the Translations as a "go to" document to support and inform their planning.

# SD STEM Ed Conference

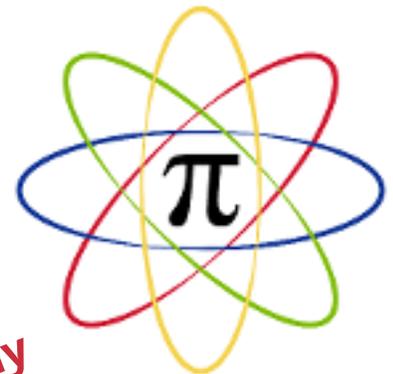
THE JOINT CONFERENCE is now  
**SD STEM Ed Conference**

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



**SD STEM Ed**

**On-line Registration only**

		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
<b>Member</b>	\$100.00	\$100.00	\$75.00	\$120.00	\$95.00
<b>Student</b>	\$50.00	\$35.00	\$25.00	\$65.00	\$55.00
<b>Non-Member</b>	\$135.00	\$150.00	\$125.00	\$170.00	\$145.00



## Kelly Lane Earth and Space Science Grant

Science and math teachers of U.S. citizenship at public, private, or tribal schools in South Dakota may now apply for the 14th annual (2020) “Kelly Lane Earth and Space Science Grant” provided by the NASA South Dakota Space Grant Consortium. Two \$5,000 grants will be awarded to select science or math teachers of U.S. citizenship in South Dakota. The award seeks to improve STEM education in the state through the support of innovative programs in precollege education. Preference will be given to applications focusing on topics pertaining to space science, earth science, and/or the use of geospatial technology. Applications must be received by January 9, 2020.



## Daniel Swets Robotics Materials Award

The NASA South Dakota Space Grant Consortium invites applications for the 2020 “Daniel Swets Robotics Materials Award”. This funding is open to SD teachers/educators of U.S. citizenship who either have: A) taken robotics training or plan to take robotics training and want to begin new robotics programs and teams, or B) have sustained robotics programs/curriculum in their classrooms or at their schools that are in need of additional support due to growth in the number of student participants or aging robotics materials. Applications must be received by January 9, 2020.





### CONGRATULATIONS LOUISE LINDSKOV!

#### 2017 Awardee from Timber Lake

*"The Presidential Award is an incredible and humbling honor. This distinction is a testament to the inspiring patrons, educators, parents, and students from my community who have blessed me with their support on my journey. As their teacher, I know that the decisions I make each day about teaching and learning greatly affect my students. Receiving this prestigious award challenges me to continue my work and fuels my passion for young people as well as science and mathematics education."*

### CONGRATULATIONS KELLY PREHEIM!

#### 2018 Awardee from Armour

*"I am honored and humbled to receive the Presidential Award. This prestigious award validates the dedication, innovation, and passion required to educate children. Thank you to my family, past students, mentors, administrators, colleagues, and others who have encouraged me. It is so important to teach children about nature and get them outdoors, so they can learn to care for our natural world. My kindergartners' enthusiasm confirms the importance of teaching science to our very youngest students."*



## Do you know an outstanding grade K-6 STEM teacher?

Nominate them today! [www.paemst.org](http://www.paemst.org)



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. Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of STEM education. Since 1983, more than 4,800 teachers have been recognized for their contributions to STEM education. Up to 108 teachers are recognized each year.

#### Presidential Awardees receive:

- A citation signed by the President of the United States
- A trip to Washington, D.C. to attend a series of recognition events and professional development opportunities
- A \$10,000 award from the National Science Foundation

#### Other benefits for completing the application process:

Three CEU's from the South Dakota Department of Education can also be earned toward certificate renewal by completing the application process. To be eligible, a PAEMST candidate must complete all components of the application process and submit a scorable application that can be sent on to the state selection committee. All applicants submitting a scorable application will earn credit, not just the state finalists whose materials will be sent on to a national selection panel.

If you have any questions, please contact:

Jennifer Fowler  
 SD PAEMST Science Coordinator  
[Jennifer.Fowler@k12.sd.us](mailto:Jennifer.Fowler@k12.sd.us)  
 605.431.5438

**Nomination deadline: March 1, 2020**

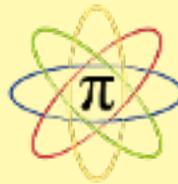
**Application deadline: May 1, 2020.**

# Officer Offerings

## Why do I go to the STEM Ed Conference?

**Tiffany Kroeger**

SDSTA Secretary



I go to the STEM Ed Conference every year for the rejuvenating aspect of interacting with like-minded people. January always seems to be the LONGEST month of the school year and by the end of it, I'm ready to call it quits. Paperwork is mounting, lesson planning is lagging and expectations are rising! However, after attending the conference the paperwork seems doable and slightly more purposeful. Lesson planning is exciting because I have new ideas to implement and the expectations seem achievable. I love talking to teachers across the state who are dealing with the same hurdles I am and being able to bounce ideas off of others. Plus who doesn't love battling the inevitable snow storm to go to good old Huron every year!

**Julie Olson**

SDSTA Newsletter Editor

As a new teacher and the only STEM teacher in Emery when I started, I was desperately seeking other teachers for ideas and collaboration. The SDSTA conference, then the Joint SDSTA-SDCTM, and now the STEM Ed Conferences were invaluable resources to me. The other teachers were so inviting. I learned a lot from them. I wanted to get involved but had little time and a young family. They were very accommodating - letting me transition from doing some presentations, to liaison, to president, and now the newsletter. If you want to get involved, we will find a way to let you taking into account the time and situations you have. Your skills are very important to us at ALL levels. I have made lifetime friends and am so very thankful for this organization.

## Winter Solstice – December 21

**James Stearns**

SDSTA Treasurer



After December 21, the days will be getting longer. Well, actually every day has twenty-four hours, so what we really mean is that there will be minutes of daylight. In South Dakota there is less than nine hours of daylight on December 21 as compared to over fifteen hours of daylight on June 21. So does that mean in January & February it will be getting warmer since each day is longer? NO. The reason the seasonal temperatures don't increase as the number of minutes of sunlight increases. The reason for the seasons is a result of the 23½° tilt of the Earth. We won't receive direct warming sunlight until the sun's warming rays are closer to 90° above South Dakota; which will not happen until spring/summer. Traditionally the months of January and February are our coldest months of the year.

**So what can you do if you're tired of the cold in February? I know where you can go during the first week of February in South Dakota that's 70°.** It's the SD STEM Ed Conference in Huron. It begins Thursday night at 7:00 with Math & Science sharing sessions. On Friday & Saturday, there will be at least sixty speakers presenting one hundred forty sessions. If you're looking for other info, there are seventeen vendors or representatives that are planning on being there to display and share information about their items. Your paid conference registration includes the noon meals. (The Friday night banquet is an additional \$25.) Pre-Registration is taking place between December 16 – January 24 and it is twenty dollars less expensive than onsite registration. **Stay warm and Hope to see you there!!!**

# Professional Development

## Educator Space Camp Scholarship

The [Geek Partnership Society](#) (GPS), a non-profit 501(c)3 organization in Minneapolis, Minnesota, is now accepting applications for the [2020 Space Camp Scholarship](#) through January 20, 2020. This allows a student (age 10-14 in the states of Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin) to attend Space Camp in Huntsville, Alabama

Educator Application requirements

- **Submissions will be accepted now through 11:59 pm January 20, 2020.**
- Complete the [2020 Educator Space Camp Application](#).
- Educator submission: Provide a plan for how would you lead a group of students through the youth question topic, in an interactive way that engages the students. Assume that you have a 90 minute to 2 hour block of time to fill (with breaks) and the ages of the students are the same age range as for the student scholarship (10-14). You can narrow it down to a smaller age group than that, or indicate sections that would be for certain ages (this section is for 10-11, this alternate section is for 12-14, etc). Your judges are not educators, so write towards a layperson's understanding of education.
- A **written letter of recommendation** from a colleague or supervisor.



## Implementing 3-D Science Course

This course will support teachers in the implementation of the South Dakota science standards. Participants will explore the three dimensional aspects of the standards, with a focus on the use of phenomenon, student discourse, and the translations of the standards.

Course Goals:

- Adapt and implement three-dimensional science that promotes deep understanding of disciplinary core ideas, while integrating crosscutting concepts and science & engineering practices.
- Effectively incorporate contemporary practices into planning and teaching including the use of science phenomena, 3-dimensional classroom assessments and effective student discourse.
- Critically examine current instructional practice and craft new approaches to teaching science in the classroom.
- Attend to equity in the classroom by considering culturally relevant approaches to science teaching and learning.

Registrations for the class will be accepted until filled or until the end of December, whichever comes first...so sign up right away!!! Last year this course filled in just a few days.

**What:** ED592 Implementing 3-D Science (2 graduate credits through Black Hills State University)

**When:** Course begins January 13st – blended. This course is self-paced (mostly) and flexible for your schedule.

**Where:** From the comfort of your own home/school (online and some synchronous virtual sessions)

**Who:** K12 teachers (This class is for you if you teach science.)

**Why:** The class will be informative, useful, practical, and collaborative!

Cost: \$40 per credit (with \$40 stipend provided to you upon successful completion of the course) ... Ultimately it will cost you \$40 for 2 graduate credits!!!

How to enroll: Send me (debra.wolf@bhsu.edu) an email stating that you are interested in enrolling and I will send you a registration form.

# Professional Development

## 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](http://www.morphoinstitute.org/educator-academy)

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



## National Geographic Educator Certification

National Geographic Educator Certification is a free professional development program that recognizes pre-K through 12 formal and informal educators committed to inspiring the next generation of explorers, conservationists, and change makers. These educators are part of a powerful movement to make the world a better place by empowering students to be informed decision-makers equipped to solve meaningful challenges in their communities and beyond. Don't just teach students about the world—teach them how to change it. The next cohort opens up in winter 2020.



## Travel to Germany! TOP Study Tours

Where do the best lessons in life come from? From **Experience!**

Experience is what the Transatlantic Outreach Program is all about. Since 2002, TOP has sought to find the best and most qualified social studies and STEM educators and give them the opportunity to experience contemporary Germany in the most dramatic way possible: in person.

From Berlin to Frankfurt, from Stuttgart to Munich, from Hamburg to Kiel, from Dresden to Schwerin, and from Weimar to Leipzig, each corner of Germany is sampled through sight, sound, touch, and taste!

Begin your TOP journey by clicking on the link and applying for the trip of a lifetime!



# Professional Development

## SD STEM ED Conference

### HIGHLIGHTS FROM OUR FEATURED SPEAKERS

#### Annie Fetter

<https://annie.mathematicalthinking.org/>

- Noticing and Wondering in the Elementary Grades
- The Power of Students' Ideas in the Math Classroom

#### Travis Lape

<http://www.lensintolearning.com/>

- Gamify your classroom as easy as 1,2,3
- Engage in STEAM Everyday

#### Sean Nank <http://www.seannank.com/>

- Everything you want to know about thriving as a STEM teacher that no one ever told you
- Standards Based Grading in math classes: How does it work and how does it foster student learning?

#### Sara Wevik

- What's So Cool About Manufacturing? A Career Exploration Contest
- The Best Manufacturing Resources for Your Classroom

To see more sessions, go to the **ONLINE SD STEM ED Conference booklet.**



## Global Education 101

Global Education 101 is an introductory course designed to support educators across the country to begin to understand global competence, how to grow as globally competent educators, and learn practical strategies for incorporating it into your classroom. Throughout the course you will hear directly from elementary and secondary teachers from urban and rural areas about global education in their classrooms. This self-paced multi-media course includes readings, videos, interactive group discussions, classroom activities, and quizzes.

### COURSE OBJECTIVES



Educators will be able to:

- Define global competence and its connection to student success;
- Understand themes and concepts of global education and global competence;
- Develop instructional strategies to incorporate global competence into lessons and units;
- Build resources for further learning and networking for global competence.



What would a woman version of iron man be called?

Fe male



**SD STEM Ed Conference 2020**

**February 6th, 7th, & 8th**

**The SD STEM Ed Conference booklet is done and ONLINE!**

**Booklets will not be printed this year.**



# Professional Development

## INTRODUCTION TO MODELING - ON-LINE COURSES

**Intro to Modeling:** What are conceptual models? What is modeling? What is Modeling Instruction - what is it like for teachers? For students? How does it work? Why does it work? What does it have to do with NGSS? This distance learning course will take on these questions and more in a 15-week distance learning format that meets once weekly, three hours per meeting. We will delve into the cognitive underpinnings of Modeling Theory - reading about some of the seminal theories upon which it is based, engage in Modeling discourse and practice discourse management, watch videos of Modeling classrooms and make sense of student thinking by watching them whiteboard and listening to them talk with each other. We will look at how Modeling uncovers the spectrum of middle and high school science topics, exploring the storylines from the various disciplines, discussing the fundamental models of each of these disciplines with expert Modelers from physics, chemistry, biology, and middle school science. The course will be led by Janelle Hollingshead, Ariel Serkin, Tanea Hilber and Nathan Harada. 

**Middle School Modeling Advanced Topics** is a 5-week distance learning course for teachers who have already taken any Modeling workshop, thus bringing together a group of participants who are familiar with the pedagogy and have experience implementing it in the classroom. The course will address how to support teachers continuing to implement Modeling in their own classrooms. Main topics will include incorporating student-to-student discourse, assessing students' conceptual learning, and leading engaging lessons that build models through storylines. This course will show how Modeling is aligned with the Next Generation Science Standards and 3-Dimensional Learning. Participants will also be given the opportunity to incorporate claim, evidence, reasoning into their science teaching repertoire. Finally, the course will focus on giving participants a more in-depth understanding of the middle school Modeling resources and provide assistance "Modelize-ing" their own activities. The course will be led by George Nelson and David Bates. 



*Transforming STEM Education*

This Spring on Thursdays from 7-10 PM (EST), AMTA will offer a 45-hour **Distance Learning Electricity & Magnetism Modeling Course**. It will run for 15 consecutive weeks, meeting for 3 hours per week for synchronous communications, and will require at least three additional hours per week for individual and virtual group work. The course will develop content knowledge and pedagogy for teaching a high school electricity and magnetism course from a microscopic Modeling perspective. This course will require you to bring your Modeling "A" game each week! This is an excellent opportunity for any Modeler who is looking to deepen their content understanding and extend their understanding and experience in Modeling. The course will be led by Holly McTernan, Jess Dykes and Donna Blakeney. 



### How do you get an astronaut's baby to sleep?

You rocket!

All South Dakota High School Seniors and  
First-Year Undergraduates  
with an interest in STEM  
are eligible to apply

## Davis-Bahcall Scholars

**-2020-**

*4 to 5 weeks, Fully Supported  
Summer Study and Travel Program*

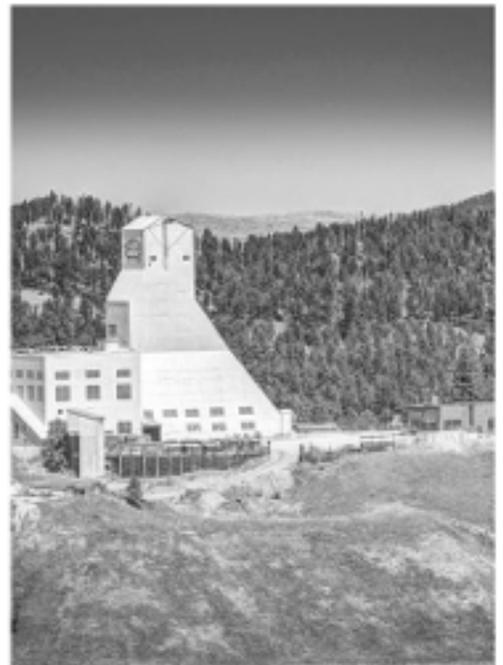
Sponsored by:  
Sanford Underground Research Facility  
South Dakota Space Grant Consortium  
First Premier Bank  
Black Hills State University

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**Application Deadline**

**January 27, 2020**

FOR MORE INFORMATION  
[doe.sd.gov/scholarships/DAVIS-BAHCALL.aspx](http://doe.sd.gov/scholarships/DAVIS-BAHCALL.aspx)



## STEM Teacher Leadership Network

TERC's STEM Teacher Leadership Network (<https://STEMTLnet.org>), funded by the National Science Foundation (NSF), is inviting teacher leaders, aspiring teacher leaders, as well as researchers and administrators interested in effective school leadership, to join, view, and interact with this new virtual learning community and collegial network.



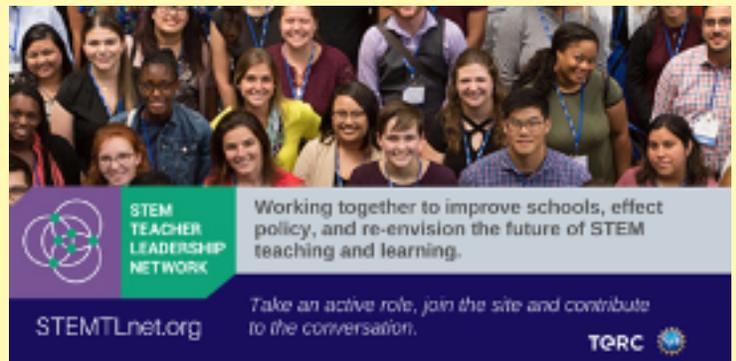
"This interactive professional learning community will focus on how teacher leaders can affect change in STEM education," said Joni Falk, Principal Investigator of this effort. "We've already heard from many teacher leaders who are excited that this network will enable them to explore new leadership paths and opportunities, connect to leaders across the country, and find relevant resources and upcoming events for their continued professional growth."

The free membership will provide access to networking tools, resources, and interactive online events throughout the year to explore topics related to STEM teacher leadership. Members will share their leadership paths, challenges, strategies, resources, upcoming opportunities and events with each other.

"NSF is pleased to support a project that is developing an interactive professional learning community for STEM educators," said Nafeesa Owens, Program Director/Staff Associate within the Education and Human Resources Directorate at NSF. There are excellent STEM teachers across our country who are leading in and out of the classroom each day. This project not only gives them needed resources, but also promises a network where they can grow and learn on their leadership journey together."

Each month, the site will explore a theme related to teacher leadership. Each theme will have an online, interactive, expert panel, related resources, a blog, and a month-long facilitated discussion.

The STEM Teacher Leadership Network encourages all those interested in teacher leadership to join this network, share resources, and participate in monthly theme events, and ongoing group discussions. The site provides a venue for educators, researchers, principals and administrators to explore how teacher leadership expertise can be leveraged to improve STEM teaching and learning within schools, contribute to new research and development efforts, and influence education policy and its implementation at the district, state, and national level.



### Exhibitor Registration Is Open for the 28th Annual SD STEM Ed Conference!

Do you know companies or organizations who may be interested in hosting an exhibit booth at the SD STEM Ed Conference? Are there organizations or companies that you would like to see as an exhibitor at the conference?

**Please share their organization name and contact information with [vendor@sdsta.org](mailto:vendor@sdsta.org).**



# Resources

## CDC Teacher and Student Resources

Are you an educator that needs more scientific activities for your students? Are you a student that enjoy science and want to learn more about it? The links below provide interactive learning opportunities for students and creatively gives a deeper look in the world of science. Learn about microbiology, infectious diseases or become a food detective and learn about different types of bacteria.

**EXCITE! – Teacher Roadmap** – a collection of resources for educators wishing to teach classes, units or entire courses in epidemiology and public health sciences (EPHS).

**Countdown to Zero** – Defeating Disease is presented by the American Museum of Natural History in collaboration with The Carter Center.

**Fight Back!** – Kids, the Food Detectives need your help to fight an enemy...Bacteria! Play the games, listen to the songs and solve the cases to become a Food Detective!

**Infectious Disease Trading Cards** – Find out about some of the infectious diseases studied at CDC. Set

**KidsHealth for Kids** – Calling all kids! Visit this Web site for awesome articles, fun features, and interactive activities.

**MedMyst** – Students of all ages are invited to play MedMyst, an interactive learning adventure. As you enter a futuristic world, you will help solve medical mysteries in infectious diseases.

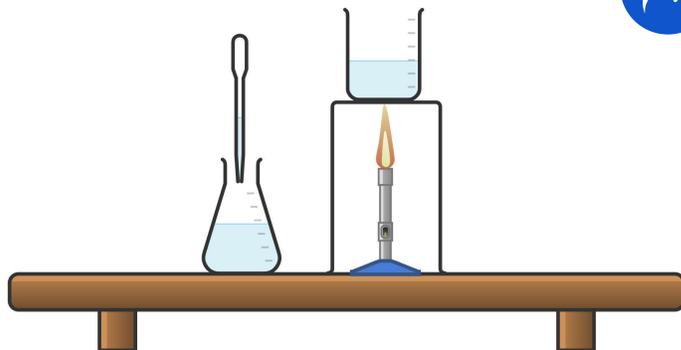
**Science Ambassadors** – Science teachers from nationwide middle and high schools compete for the chance to collaborate with CDC scientists on epidemiologic-based lesson plans.

**Stalking the Mysterious Microbe!** – MicrobeWorld explores the world of microbes with vivid images and descriptions. Learn about microbiology, what microbiologists do and how they do it



## Chemix

Chemix is an online editor for drawing science lab diagrams and school experiment apparatus. Have you ever tired of looking for free clip art or the right diagram for a quiz, test, or worksheet? The app provides easy sketching for both students and teachers. It is free and easy to use.



## How do you define "STEM"? The Great STEM Debate

Anyone paying half-attention to schools knows about the acronym STEM: Science, Technology, Engineering and Math, the four pillars supporting a career-ready future for students. There's hardly another term in the education world that's as commonly referenced. But when strung together, just what do those four letters actually mean? Read more at: [As it turns out, it depends on whom you ask. Read more from The 74.](#)



## Disappearing Water? - NSTA NGSS vetted Grades K-2 Resource from Serendip Studio

This lesson is part of a series of weather related lessons from AAAS Science NetLinks. In this lesson, students watch what happens to water over time. Equal amounts of water will be placed in cans. One can will be closed and the other will be open. Students compare water levels over time to compare evaporation rates. They keep a journal to record their observations.



## Time to Think - NSTA NGSS vetted Grades 3-5 Resource from AAAS NetLinks

This resource allows the user to accurately measure and experiment with human reaction time. An interactive program measures reaction times in milliseconds and compares them in different cases (from simply reacting to a visual cue to having to read and then make a decision before reacting).



**What are you waiting for? Sign-up for the SD STEM Ed conference!**

IT'S ALL ABOUT  
 SCIENCE  
**Science**

**2020 FESTIVAL**

**SANFORD**  
HEALTH

Go mad for science.

**April 4, 2020**



# 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](mailto:James@SDSTA.org)



## SDSTA Board Elections

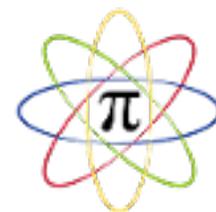
According to the SDSTA Constitution (visit [www.sdsta.org](http://www.sdsta.org) to view the full document), the Officers of the organization include President, President-Elect, Past President, Secretary, Treasurer, and Newsletter Editor. Officers are elected every other year and hold a two-year term. 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](mailto: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.



**Don't forget to register!**

**SD STEM Ed Conference**

**FEB. 6-8, 2020**



# Student Opportunities

## National Youth Science Camp



Applications are now being accepted from high school seniors in the class of 2020 to represent South Dakota at the 2020 National Youth Science Camp (NYSCamp). Two students from each state, Washington, D.C, and 8 countries will attend the all-expenses-paid program which is held from June 22 through July 15, 2020.

The NYSCamp is a science, technology, engineering, and mathematics (STEM) program hosted in the eastern mountains of West Virginia. Students will have an opportunity to conduct research at the nearby Green Bank Observatory and to explore the surrounding Monongahela National Forest through backpacking, mountain biking, caving, rock-climbing, and kayaking.



Applications must be submitted online at by 6 PM EST on February 28, 2020.

## 2020 Space Camp Scholarship

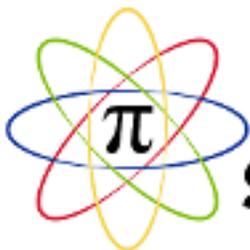
The [Geek Partnership Society](#) (GPS), a non-profit 501(c)3 organization in Minneapolis, Minnesota, is now accepting applications for the [2020 Space Camp Scholarship](#) through January 20, 2020. This allows a student (age 10-14 in the states of Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin) to attend Space Camp in Huntsville, Alabama at no cost (other than transportation to the airport). This year's essay theme: **"What are the most important challenges when planning a long distance space flight and how would you solve them?"**

Qualifications:

- Be age 10-14 (at the time they attend).
- Live in the 5 state area (MN, IA, WI, SD, ND).
- Be able to demonstrate an interest in and understanding of space exploration.
- Have parental consent and fill out the application fully and accurately.
- Be able to attend Space Camp during the available time period.
- Be able to attend a 5-night program out of state without a parent.
- If you win the scholarship, you must fill out additional forms from Space Camp and agree to follow its rules and regulations.
- Be able and willing to represent Geek Partnership Society while attending Space Camp.
- Be able to attend the 2020 [CONvergence](#) convention in Minneapolis for the announcement on stage during Opening Ceremony. The winner and responsible adult will receive complimentary memberships to the convention.



**In addition, GPS is offering a scholarship for an educator to attend Space Camp.**



**FEB. 6-8, 2020**

**SD STEM Ed**

**The SD STEM Ed Conference booklet is done  
and ONLINE!**

**Booklets will not be printed this year.**



# Student Opportunities

## KIDS TO PARKS DAY NATIONAL SCHOOL CONTEST

Kids to Parks Day is May 16, 2020! National Park Trust (NPT) invites students across the country to participate in the 10th annual Kids to Parks Day, a nationwide grassroots movement to celebrate America's parks and public lands.

In honor of this day, NPT is once again hosting the Kids to Parks Day National School Contest to help educators engage their students with their local parks. This national contest is open to all Title I schools in the United States (grades pre-K through 12). Classes can receive funding for a Kids to Parks Day field trip at a local park or public land/waterway in their community.

Students must research and write the proposal themselves. (Though we encourage teachers to provide support and feedback!) Teachers and staff will also have a short section to complete. Your entries should explain how your experience will promote education, health and wellness, and park stewardship. NPT will award park grants up to \$1,000 to winning entries. We encourage schools to plan their Kids to Parks Day field trip during the month of May 2020 but exceptions can be made based on school schedules. Last year, 79 grants were awarded.

All entries are due by February 14th, 2020.



**NATIONAL  
PARK TRUST**  
TREASURE FOREVER.

## NASA Wear STEM Challenge



Middle and High School Students and Educators,

Join the Artemis generation! This December we are launching the NASA WEAR STEM Challenge. This opportunity gives middle and high school students the task to design wearable radiation countermeasures for deep space exploration. Protecting Artemis astronauts from high-energy charged particles and solar particle events (SPE) are important to exploration. You and your team can join the challenge and participate in NASA's exploration of deep space. **To participate in WEAR, lead educators must register to participate in the challenge by January 24, 2020.**

During the challenge, teams will participate in webinars to learn more about deep space radiation and the development of countermeasures. The challenge ends with the submission of video proposals from registered teams. The top proposals will receive invitations to participate in the culminating event at a NASA center.

**NASA  
WEAR**

## Davis-Bahcall Scholarship

The Davis-Bahcall program is an all expense paid, summer travel program sponsored by the Sanford Underground Research Facility, Black Hills State University, the South Dakota Space Grant Consortium and First Premier Bank.

Davis-Bahcall Scholars will spend five weeks of their summer exploring the world of modern scientific research at some of the nation's leading laboratories and universities. They will spend one week at the Sanford Underground Research Facility and travel to other research laboratories in the US and in Italy. Topics explored will cover physics plus a variety of other science and engineering topics. Participants will have the opportunity to interact with and learn from distinguished professors from all over the world.





## What's new?

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



## Explore Mars: A Mars Rover Game

Always wanted to cruise around on the surface of another planet? Well, you're in luck! In Explore Mars, you will be driving a rover on Mars and collecting information about Martian rocks.

First, you will choose a rock to investigate. Then, you'll send a sequence of commands telling the rover how to get to that rock. Don't forget to include the command to analyze the rock! This information will then be sent back to scientists on Earth.

You will earn points every time you successfully analyze a new Martian rock. If you want a high score, plan carefully. Some rocks are worth many more points than others!



Earth



Sun



Solar System



Universe



Science and Tech



Educators

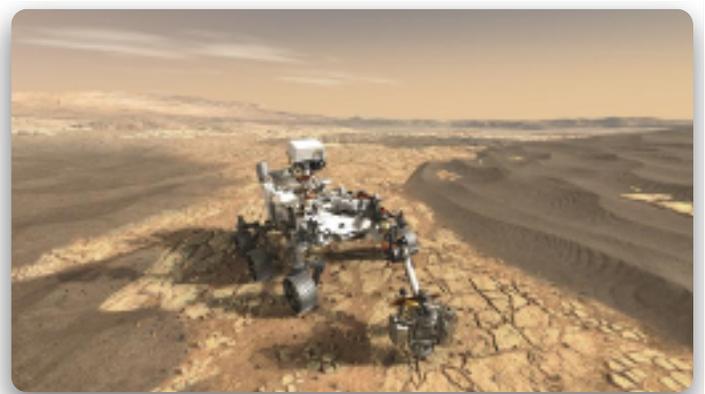
NASA's award-winning Space Place website engages upper-elementary-aged children in space and Earth science through interactive games, hands-on activities, fun articles, and short videos. With material in both English and Spanish and numerous resources for parents and teachers, Space Place has something 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.



**What should this rover be named?**

**Beginning in January 2020, click here to vote on the top names.**

**Mars 2020** is a rover that NASA will launch to Mars in the summer of 2020. The rover will cruise around investigating rocks in a region called Jezero Crater. A very long time ago, Jezero Crater contained a lake that was filled with liquid water — and possibly even living organisms.



## If an athlete gets athlete's foot, do astronauts get missiletoe?

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**UPCOMING EVENTS**

**January 9**

**Daniel Swets Robotics Materials Award**

Application DUE (page 3) 

**Kelly Lane Earth and Space Science Grant**

Application DUE (page 3) 

**January 20**

**Space Camp Scholarship**

Application DUE (page 6)



**January 27**

**TOP Study Tour**

Application DUE (page 7)



**February 6-8**

**SD STEM Ed Conference**

Huron, SD



**April 4**

**It's All About Science Festival**

Sioux Falls, 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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Groton, SD 57445-2024