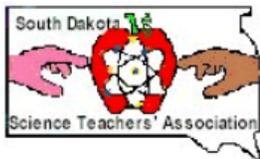


South Dakota Science Teachers' Association



Fall 2017
September 2017 Volume 146



President's Letter

Happy Fall, SDSTA!

Planning is underway for the 2018 26th Annual SD Joint Conference on Math and Science Education. This is really the best time for all SDSTA members to get together and collaborate to learn about all of the amazing things we can do to become better STEM educators. I know there are always discussions about "Huron" – however, the advantage, as I see it, is that we have time, and a place to connect, collaborate, and reinvigorate science education in SD.

I wanted to start the letter with some of the things you might be looking for in preparation of the 2018 Annual Conference.

First, are you willing to share a resource, project, activity, or idea with the SDSTA and SDCTM community? We'd love to have you **HOST A WORKSHOP OR PRESENTATION SESSION** at the conference. The proposal form is all electronic – you can click [here](#) or visit sdsta.org or sdctm.org. Proposals have a hard deadline of November 1, 2017. Direct question to the team by emailing: sdmathscience@gmail.com.

Second, are you part of or do you know of an organization who might want to host an **EXHIBITER BOOTH** at the conference? Send them to: <https://tinyurl.com/SDMathSciExhibitor2018> – Kevin McElhinney of Plankinton is the Conference Exhibitor Coordinator and also has a flier you can share – email him at: Vendor@sdsta.org.

Third, if you're looking for ways to fund yourself or a colleague to attend the conference – make sure you read Mrs. Ally Bowers' article in this news-

letter about scholarships that might apply to you (visit the SDSTA and SDCTM websites for applications).

Finally, we want to see you there! please get your **REGISTRATION** in for the conference. Note: there is a fee for registering after the mail-in deadline of January 15, 2018. The form is included in this newsletter – fill it out, print it out, and mail along with your check to Steve Caron, Conference Finance Officer.

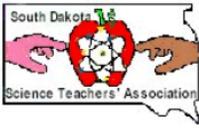
In my less traditional science education role I am consistently reminded about how K-12 might be the last time that a person has formal science training – their high school biology class might be the last time they academically learn about how their body works, high school chemistry might be the last time they consider the nature of acid base reactions, and their middle school earth science activity might be the last time they get to explore the science behind the eclipse (PS – listen to the [August 23 Radiolab](#), do it now – 30 minutes – it's amazing). We have the good fortune of being able to design experiences for students that will shape the way they interact with and influence the future – whether they become future scientists, electricians, educators, or non-career focused citizens – it is important that we work together to learn about the best ways to reach and connect with our students and that we give them the tools necessary to be successful (and I hope you're thinking – "well – what does it mean to be successful?...").

~LIZ Mcmillan

SDSTA President, 2016-2018

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2018 SDSTA Executive 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 officer may hold the same position for up to two consecutive election cycles. This February at the Annual Meeting (February 9 at the Joint Conference) we will be electing the officers to serve from 2018-2020 (2020 is happening, wow!). 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 Math and Science Education 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 2018 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 9, 2017 in Huron.



PERSONAL GENETICS

What are you doing to prepare your students to make informed choices?

Join our effort to build awareness, respect and confidence through genetic discussions. Explore how genetics interconnects with issues of social justice, and as genetic technologies become more widespread, how our society can ensure that education and access to information is available to all people.

Learn more and join the conversation by visiting sanfordresearch.org/education or pged.org.

016059-01 053 9/17



Student Competitions

Science Olympiad— Students compete for awards in teams of two/ three or by themselves in science events. Examples of past events: Tower building, astronomy, Bridge building, egg drop, protein modeling. Many of these are great learning activities to use in the classroom. The event is held on the USD campus Mar. 24, 2018. Go to the South Dakota Science Olympiad website at <http://sites.usd.edu/sdscienceolympiad/home> for more information and team entry forms.



ISEF Affiliated Fairs

Science Fair—South Dakota has four regions for students to compete in with high school students having a chance to qualify to attend the International Science and Engineering Fair to be held in Los Angeles, California this year . <https://www.online-registration-system.com> for the On-line registration system.

Northern South Dakota Science and Math Fair -

Linda Richards: http://www3.northern.edu/science_fair/
Science Department, 1200 S. Jay St., Northern State University, Aberdeen, SD 57401-7198
SPONSORS: Northern State University. TERRITORY: the counties of Roberts, Marshall, Brown, Day, Clark, Spink, Hand, Hyde, Sully, Potter, Walworth, Edmunds, Campbell, McPherson, Faulk and Grant (with the exception of Grant-Deuel High School)

Eastern South Dakota Science and Engineering Fair -

Mr. Brad Blaha: WEB SITE: <https://www.sdstate.edu/science-and-engineering-fair>
ABS Administration Office, South Dakota State University, Box 2207, SAG 156, Brookings, SD 57007. SPONSORS: South Dakota State University and Sigma Xi and The SDSU Foundation. TERRITORY: the South Dakota counties of Beadle, Codington, Kingsbury, Lake, Brookings, Hamlin, Deuel, Moody, Minnehaha, Turner, Lincoln, Yankton, Clay, Union, and Sioux County in Iowa. Also covers Grant-Deuel High School in Grant County, South Dakota.

South Central South Dakota Science and Engineering Fair - March 20, 2018

Mrs. Jody A Strand: WEB SITE: <http://www.dwusciencefair.com> , Dakota Wesleyan University, 1200 West University, Mitchell, SD 57301 SPONSORS: Dakota Wesleyan University, The Mitchell Daily Republic, Twin City Fan & Blower, Touchstone Energy, 6th District Medical. TERRITORY: the counties of Bon Homme, McCook, Miner, Hutchinson, Davison, Hanson, Sanborn, Jerauld, Aurora, Buffalo, Gregory, Brule, Charles Mix, Douglas, Tripp, Lyman, Mellette, and Hughes

High Plains Regional Science and Engineering Fair - March 27, 2018

Jade Herman, <http://www.sdsmt.edu/ScienceFair/>
South Dakota School of Mines & Technology. 501 E. St. Joseph Street Rapid City, SD 57701
Sponsor: South Dakota School of Mines & Technology **Territory:** the counties of Butte, Lawrence, Pennington, Custer, Fall River, Meade, Shannon, Haakon, Jackson, and Bennett



SDSTA sponsors an award for each of the science fairs in South Dakota. The winners' abstracts are printed in the newsletter.

The Components of a Scientific Research Paper—Darwin Daugaard

A scientific poster usually includes many of the following components:

Title: A brief well thought out title will attract viewers and will clarify the subject matter of your poster.

Abstract: If you include an abstract on your poster, make it very short; remember, the poster itself is already a condensed report of your work.

Introduction: When constructing your introduction try to keep it to 1-2 paragraphs. Avoid using technical definitions unless absolutely necessary. The introduction section is here to introduce your issue, so be sure to not bore your readers right away with excessive information. You can even include graphics if they will help the viewer understand the work that you have done.

Materials and Methods: In this section you will cover the materials and methods that you used in your research process. Feel free to include any images, charts, or graphs here that will help the viewer better understand your process.

Results: Summary of your results. Address the general aspects of the data you collected or the number of valid data obtained. Discuss the relationship between the data and your research question. What exactly does your data mean? Include any graphics that can help show you data visually, as the readers can understand graphics more easily and quickly than blocks of text. Sometimes less is more. Be selective when deciding what images, charts, and graphs make it onto your poster! Charts and graphs are usually more effective than tables, but whatever you choose to use, make sure everything is labeled clearly! A graph with missing labels or a table without a title will just leave the reader confused.

Conclusions: In your conclusion section you want to briefly review your research questions and the results you obtain. You also should add why your results are interesting or significant. TIPS: Relate your results to other published research in the field. This will give your research more impact on your readers as well as show your professionalism in the study. You can also suggest continuing research that would build upon your current study.

References: If you have an extremely extensive list of references, you may want to break it into 2 columns. It is very important to follow the format required by the conference you are attending. It is common to shrink the font of the References section if it becomes overbearing and long.

Acknowledgments: You can acknowledge people who have helped you with your work, such as other members of your research group or your funding source. If there are any conflicts of interest regarding you and the work you have presented, be sure to include that here. It is always important to keep you and your work above reproach. Keep this section as short as possible. Fewer than 40 words is best.

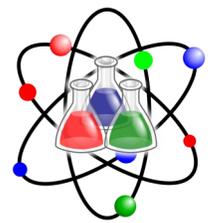
Contact Information: A lot of posters include this section so the readers are able to contact the author later or read more about the research. You can include your email or website address, links to relevant resources, or even a QR code (What is a QR Code?) that viewers can scan to go directly to your website or a PDF version of your poster. If you choose to include this section, keep it very brief.

<https://www.makesigns.com/tutorials/scientific-poster-parts.aspx>

Other resources:

LabWrite from North Carolina State University—<https://projects.ncsu.edu/labwrite/index.html>

Links to Darwin's own research posters: <https://dd045.k12.sd.us/Poster%20Links.htm>



Sanford **Im**agenetics Community Lecture Series

2017 Schedule

Learn how genetics plays a major role in your health at our monthly lecture. Each month will feature a new presentation focused on a specific area of genetic medicine.

Double Feature - Oct. 17

6 p.m. PROMISE Lecture: Breakthroughs in Cancer Immunotherapy Speaker: Steven Powell, MD

7 p.m. Pharmacogenetics: Where we are and Where we are Going Speaker: Megan Bell, ScM, LCGC

Nov. 14 A SNPet about your Genome Speaker: Jason Flanagan, MS, LCGC Learn how genetics plays a major role in your health at our monthly lecture. Each month will feature a new presentation focused on a specific area of genetic medicine. Community Lecture Series 019039-00468 Rev.

All lectures are free and open to the public. They will be held at 7 p.m. in the Sanford Center, Coyote Room. 2301 E. 60th Street N. Sioux Falls Please enter through the main Sanford Center entrance (southeast side of the building, adjacent to the large globe) Call (605) 312-GENE to learn more.

There are also other great resources for learning about DNA & genetics on the website (<http://imagenetics.sanfordhealth.org/your-dna/>)

3M—Discovery Communications Young Scientist Challenge

Students, grades 5-8, are invited to create a 1-2 minute video describing a new, innovative solution that could solve an everyday problem. Ten finalists will be chosen for their passion for science, spirit of innovation and ingenuity, and effective communication skills. <http://www.youngscientistchallenge.com/2016-challenge>



eCYBERMISSION

eCYBERMISSION is a web-based Science, Technology, Engineering and Mathematics competition for 6th, 7th, 8th and 9th grade teams. Your team will propose a solution to a real problem in your community and compete for State, Regional and National Awards.

eCYBERMISSION challenges you to explore how Science, Technology, Engineering and Mathematics work in your world.

<https://www.ecybermission.com/>

Mission Challenges

- [Alternative Energy Sources](#)
- [Environment](#)
- [Food, Health & Fitness](#)
- [Forces & Motion](#)
- [National Security & Safety](#)
- [Robotics](#)
- [Technology](#)

The contest challenges students in grades 6-12 to show how STEAM can be applied to help improve their local communities. Selected finalist schools will receive a prize throughout the contest. <http://www.samsung.com/us/solvefortomorrow/how-it-works.html>



SAMSUNG
SOLVE
FOR TOMORROW

Attention girls, teachers, scout leaders, parents, etc:



Save the Date

TUE 2018 | **Open to all Girls in Middle and High School**
April 17 | Ramkota, 920 W. Sioux Avenue, Pierre, SD

**Discover Opportunities Beyond School in
Science, Technology, Engineering, and Math (STEM)**

Fun, Hands-on Sessions, Opportunities
to Meet and Talk with University, Technical Institutions,
and other STEM Professionals, Keynote Speaker.

Registration opens March 2, 2018

Register online @ www.sd-discovery.org

Sponsored in part by:



Can't come to Pierre? Check out of one these WIS conferences:

Aberdeen: March 6, 2018 – Joyce Kimmel (jkdakota@yahoo.com)

Mitchell: March 6, 2018 – Kellie Nielsen (Kellie.Nielsen@mitchelltech.edu)

Rapid City: March 6, 2018 – Amy DiRienzo (amy.dirienzo@respec.com)

Sioux Falls: March 7, 2018 – Karen Heiling (Karen.Heiling@usd.edu)

Watertown: March 12, 2018 – Heidi Wirtjes (Heidi.Wirtjes@lakeareatech.edu)

Yankton: October 2, 2018 – Kristen Welker (kristen.welker@mtmc.edu)

USA BIO-Olympiad

<https://www.usabo-trc.org/node/19>

A new school year begins! I hope that you have had a restful summer and that this coming year will be your best year ever! It is also that time of year to mark your calendar for the first day to register for the 2018 USABO. I have included the schedule from the website below to help you with your planning. In addition, please note that the registration fee for the 2018 USABO is now \$85 and not \$80. The same conditions apply. In addition, the 2018 Invoice Form is on the USABO web site (<https://www.usabo-trc.org/node/19>) to assist you in your request for funds if you are paying by purchase order.

Kathy Frame Director of USABO and Special Projects E: kframe@cee.org W: <https://www.usabo-trc.org>

[GRANTS—\$\$\$\$\$\$\$]

From the
“grant master” Mark Iverson

A good list of grant opportunities. Some are national and more difficult but some are pretty easy and smaller amounts.

<https://teach.com/what/grants-for-teachers/>



2017-18 Daktronics Outstanding Mathematics Teacher Award

Daktronics, in conjunction with the South Dakota Council of Teachers of Mathematics, is pleased to sponsor the Daktronics Outstanding Mathematics Teacher Award in the state of South Dakota. The recipient of this award receives a plaque and a \$1000 cash award to support the award winner's efforts to teach mathematics with equipment or perhaps help to attend a conference or workshop. Middle school and high school teachers, who spend at least 50 percent of their schedule teaching mathematics, are eligible for this award. Application information is available at <http://www.sdctm.org/>

The completed resume and recommendations need to be included in one file in either a word or PDF file in the order they are outlined above and emailed to Paul Kuhlman at paul.kuhlman@k12.sd.us

The packet must be received by December 1st, 2017.

The recipient for the 2017 Daktronics Outstanding Mathematics Teacher Award will be announced at the 2018 SDCTM/SDSTA Annual Professional Development Conference in Huron.

Did you just mutate for a stop codon? Because you're talking nonsense!

Explanation: A stop codon is a nucleotide in messenger RNA that signals the stop of a translation — the process that cells use to make proteins.



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STEM Teaching Tools – the Next Generation of Science Teaching

Are you looking for ways to make SD Science Standards and 3Dimensional teaching and learning actually happen in your classroom? Are you like me and the Framework for K-12 Science Education was spot on but you don't really get how to put it all into practice? Through SD's involvement in the NSF ACESSE project I have come across an amazing resource that puts the language of the Framework and 3 dimensional teaching and learning into language I can understand and actions that I can actually accomplish. Helps digest assessment, the SD Science Standards, the 3 Dimensions, formative assessment, what is STEM?, and more. Visit: <http://stemteachingtools.org/> to learn more. My new favorite resource there is in the PD Modules tab – mid-way down the page... the "STEM Teaching Tools' PD "Playlists"" These are selections of their articles ("briefings") that give the background, relevance, and instruction for putting these concepts to practice. Each briefing also contains links to many other resources. Connect with Sam Shaw at the DOE to learn more about the ACESSE project or the people behind the STEM Teaching Tools.

STEM
 teaching tools

Teaching Tools for Science, Technology, Engineering and Math (STEM) Education

[HOME](#) [TOOLS](#) [PD MODULES](#) [NEWS](#) [ABOUT](#)

PD Playlist: Introducing the NGSS / NRC Framework Vision to Teachers



Duckweed Habitats

Julie Olson

Duckweed is a floating plant. From its name, you can tell that ducks like to eat it. When duckweed has the things it needs to grow, it produces small duckweeds that will break off and become new duckweed plants. In this experiment, you will design experiments to see what it needs to grow.

Materials:

Duckweed

Spring Water

Small plastic container (clear) with lids

Droppers

Magnifying glasses

Aluminum foil

Fertilizer

Other possible water pollutants

Preliminary observations:

Obtain a container and a few duckweed plants floating in spring water.



What do you observe about them? (as many as you can!)

-

What Questions do you have about duckweed? Can you design an experiment to possibly find the answer?

-

Hypothesis: If I _____ to the duckweed, then _____ will happen because I know _____

Design an investigation: You will need one container with duckweed that will get all of the things that it normally needs to survive. You will have one or more other containers with the same amount of water and duckweed plants to test your hypothesis on.

Make a drawing/model of how you want to set up your investigation.

(hint: I found clear plastic containers with lids at Walmart in the cups aisle)



Data/Observations:

Date									
Number									
Color									

Graph: Graph the days on the x-axis and the number of duckweed on the y-axis.

Conclusions:

1. Is there a pattern in the population numbers? Describe it.
2. Does the data support or refute (prove wrong) your hypothesis? Why do you think so?
3. Look at another team's experiment and data. Discuss it. What is the same between your experiments? What is different?
4. If you were to do this experiment again, what would you change and why?

This can be used for habitat studies for elementary; natural selection and adaptations or matter and energy, or photosynthesis for middle school/high school.



A photon checks into a hotel and is asked if he needs any help with his luggage. He says, "No, I'm traveling light."

Animals At Risk from Climate Change Poster

The complex interaction of biological traits and environmental conditions that cause a species to be susceptible to climate change and the basics of the carbon cycle are made simple and understandable through illustrations, symbols and brief explanatory text—thoroughly documented to reliable sources. Based on studies from the IUCN Climate Change Specialist

Group, the US EPA, NASA, NOAA and the IPCC, the poster features 25 animals that highlight the fundamental impacts of greenhouse gases—causes, effects and risk of extinction—on all forms of life on the planet. To order or to view all of the elements on the poster, please visit: www.theglobaleducationproject.org/climate-change



You Be The Chemist[®] Challenge

An interactive academic contest that encourages students in grades 5-8 to explore chemistry concepts and their real-world applications. The Challenge provides a unique opportunity for a variety of individuals and organizations—including schools, members of the chemical industry, educators, and other community partners—to come together and show their support for STEM education.

The Challenge begins with students completing the Challenge Qualifier, a short multiple choice test provided by CEF and administered by educators and/or Organizers. Based on student participation in a Local Challenge site and/or state, a select number of students will advance to the next level of competition.

Local and State Challenge competitions operate in a quiz bowl format with several rounds of multiple choice questions. Questions are displayed to both the participants and audience on a screen, then students use electronic response devices to indicate their answers. Students participate individually in the Challenge competitions. The students who score the highest will move on to the next level of competition (as noted in the chart above) with the top participant from each state advancing to the [National Challenge](#) in June!

CEF also provides [free study materials](#) to help students prepare for the Challenge. For more information about the Challenge and participation requirements, please see the [Challenge Official Rules](#).

Want to get involved in the Challenge? Please complete an [Inquiry Form](#) to find out how!

<https://www.chemed.org/programs/challenge/>
Or visit our website at www.chemed.org for more information.



Call for Outstanding Biology Teacher of the Year Nominations

Q: Did you hear oxygen went on a date with potassium?

A: It went OK.



Please nominate a deserving teacher for the Outstanding Biology Teacher Award (can be a life science teacher grades 6-12) .

As with most small schools, teachers have many different assignments so for this award, at least one of their assignments must be in the life sciences. They have to have taught and are currently teaching life science for three years or more. There are many deserving teachers

out there that need to be recognized.

The award comes with a \$1000 award sponsored by Sanford Health and is to be used to attend the National Association of Biology Teachers annual national conference or for materials for their classroom. Jeff Peterson was the 2017 award-ee. Send an email with your name and email along with the nominee, their email and school to Julie Olson at julie.olson@k12.sd.us.

*If the Silver Surfer and Iron Man team up,
they'd be alloys.*

Fulbright Distinguished Awards in Teaching

Announcing the launch of the 2017-2018 Fulbright Distinguished Awards in Teaching (DA) Program Online Application for K-12 teachers!

Are you a U.S.:

Primary and/or secondary classroom teacher?

Guidance counselor?

Curriculum specialist?

Curriculum head?

Talented and Gifted coordinator?

Special Education coordinator?

Media specialist/librarian?

You may be eligible to participate in a unique international professional development opportunity for 3-6 months through the Fulbright Program!

By conducting educational research abroad, U.S. teachers gain new skills, learn new instructional methods and assessment methodologies and share best practices with international colleagues and students. Teachers also have the opportunity to expand their understanding of other cultures and international education systems that will enrich their U.S. schools and local communities with global perspectives.

Teachers may travel to: Botswana, Finland, India, Israel, Mexico, Morocco, the Netherlands, New Zealand, the Palestinian Territories, Singapore, Taiwan, the United Kingdom, and Vietnam *Countries are still pending and may change. Please visit the program website for updates. Application deadline: December 1, 2016

Eligibility Requirements: <https://www.iie.org/Programs/Fulbright-Awards-in-Teaching>

This program is sponsored by the U.S. Department of State, Bureau of Educational and Cultural Affairs and is administered by the Institute of International Education.

Scholarship for first year teachers to attend the SDSTA/SDCTM Conference

“GOEHRING/VEITZ LEADERSHIP SCHOLARSHIP”

“The Goehring/Veitz Leadership Scholarship” has been established to encourage new teachers of math and science to become professionally involved on the state level. The scholarship, which is good for a free one or two day registration at the Joint Conference of the South Dakota Council of Teachers of Mathematics and the South Dakota Science Teachers’ Association, is available to any teacher who meets each of the following criteria:

- Is a K-12 teacher of math or science who is in the first year of teaching in SD
- Is a member of SDCTM and/or SDSTA. Applicants must pay their own dues to the chosen organization.

The application process is simple. Fill out the form below, have it signed by the building principal, and mail it to Steve Caron along with the regular conference registration form which is available at www.sdctm.org. or www.sdsta.org

APPLICATION

“GOEHRING/VEITZ LEADERSHIP SCHOLARSHIP”

Name: _____

School District: _____

Teaching Assignment: _____

Membership Information:

_____ I am already a member of SDCTM SDSTA (Circle one or both)

_____ I am joining SDCTM and/or SDSTA (Circle one or both)

I am enclosing a check for:

_____ \$5.00 for Elementary Math and/or \$5.00 for Elementary Science

_____ \$20.00 for MS/HS Math and/or \$20.00 for MS/HS Science

(Name) _____ is in his/her first year of teaching in SD at

_____ School District during the _____ school year and is thus eligible for ‘The Goehring/Veitz Leadership Scholarship.’”

Signed: _____, Building Principal

Call for Nominations for the Presidential Awardees for Excellence in Math and Science Teaching



Jennifer Fowler— Secondary Education—PAEMST 2015

It is almost time for 2018 Presidential Award for Excellence in Mathematics and Science Teaching nominations! For the highest honor math and science educators can earn, this year we are looking for applications from K-6 science teachers. National awardees will receive \$10000 and a trip for 2 to Washington, DC for the awards ceremony. Please reach out if you have questions or would like some mentoring, as now is the time to begin planning a lesson. Visit <https://www.paemst.org/> for more information and inspiration!



News from the National Congress on Science Education

In July 2017, I had the privilege to represent SDSTA at the NSTA National Congress on Science Education held in Buffalo, NY. Delegates from the NSTA Chapters and Associated Groups attend forum sessions regarding current issues in science education, discuss the issues, and create resolutions which are then voted on by delegates at the general session. Passed resolutions are then presented to the NSTA Council, then to the NSTA Board. Examples of Board passed resolutions include: NSTA updating their assessment position statement to include three-dimensional learning, adding classroom videos to accompany the lessons plans in the NGSS HUB, a revision of the current NSTA Elementary Position Statement, the development of a STEM Certificate for teachers, enhancement of the NSTA Learning Center search engine, NSTA to define STEM education, and to create a survey for higher education institutions regarding the levels of preparation of preservice teachers in the areas of STEM, NGSS, and three-dimensional learning. The full resolutions that were drafted from at the 2017 NCSE are found at this link: <https://docs.google.com/document/d/1Qf-co6s5-sz0t-Wv2yfl0HztHT3qNaB87L2jXHJg6SI/edit>

Along with Issue Forums having the purpose of creating resolutions to improve NSTA and science education, I also attended a workshop on Collaborating and Building Community Connections which helped me focus on services potentially provided by SDSTA in the coming years.

Jodi Peterson, NSTA Legislative Affairs, had two well attended sessions to increase awareness and advocacy at the state and federal levels. Her main message is that we are the voice for science education and that we need to advocate for science and STEM. Watch for more information to come from SDSTA, and for now Jodi suggests that we stay informed by following the Education Week Blog <http://www.edweek.org/ew/section/blogs/index.html> as well as Achieve at <https://www.achieve.org/>

If you would like to be involved in the planning part of change, consider becoming an officer in SDSTA. Elections will occur in Huron, February 2018. See you there! ~Jennifer Fowler

Cross Cutting Communities for Rural STEM Education

Rural STEM Teachers Wanted!!!

The project: has several positions available for teachers to participate in Professional Learning Communities (PLC). PLC allow teachers to share ideas, teaching tips, and seek help in a supportive environment. Portions of lessons will be shared using Flipgrid technology with feedback provided by the community and SDSU faculty using the same technology. Training on Flipgrid and lesson ideas such as solar telescopes and modeling eclipses will be provided in a workshop on Nov. 4 and 5 at Chamberlain High School. Any teacher interested in participating should contact Larry.Browning@sdstate.edu or Tony.Durr@sdstate.edu or call (605) 688-4548. Stipends and support are available through a Title II grant..



Family Science Night—Tiffany Kroger

Have you ever wanted to contribute to the science education of your future students? Have you wanted to get students and their parents excited about doing science? Hosting a Family Science Night might be just what you are looking for. Here are a few things to think about when planning an event like this.

- 1) Audience: Do you want this to be school wide, or specific to elementary, middle school or high school?
- 2) Purpose: Do you want to expound on something you have already covered in your curriculum? Do you want to get students excited about an upcoming topic? Are you looking to simply provide an avenue to get science conversations happening around the dinner table?
- 3) Hosting: Will you be doing an evening of demos? Will a group of teachers work together to put the evening on? Will you have high school students create their own demos to show to elementary students? Will your students be creating demos for their families?
- 4) Date/Time/Location: Will you need to use the gymnasium for your evening or can it take place in your classroom? Will the evening conflict with any extracurricular activities? Will the set time allow for students to get back from their practices in time to help with set up?
- 5) Funding: Will the activities you plan need materials outside of your current supply? Where will the funds for these supplies come from? Can you get materials donated?



Project WILD/Project Learning Tree and Jewel Cave National Monument

Friday 13 October 2017 7:00 PM Sunday 15 October 2017 11:00 AM

<https://www.evensi.us/project-wild-plt-workshop-jewel-cave-national-monument/199536945>

Are you a teacher, naturalist, or environmental educator? If so, Project WILD and Project Learning Tree (PLT) provide incredible resources for classroom programs. Oh, maybe you need some ideas for field trips? Both curriculum guides offer an assortment of activities that can be incorporated into park visits.

THE WORKSHOP COMBINES CLASSROOM PRESENTATIONS WITH OUTDOOR ACTIVITIES TO MAKE FOR AN EXCITING AND MEMORABLE EXPERIENCE. FURTHERMORE, BY WORKING DIRECTLY WITH PARK RANGERS, PARTICIPANTS WILL HOPEFULLY DEVELOP CONNECTIONS FOR FUTURE PROGRAMS.

The workshop begins at 7 p.m. on Friday and ends at 11 a.m. on Sunday. Lodging may be available on site. Meals will be included with registration, along with an array of resource materials.

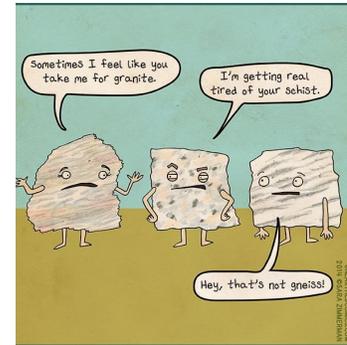
SDSTA/SDCTM Speaker Proposal Forms go Digital

Save the date! The 26th Annual SDCTM/SDSTA Professional Development Conference will be held in Huron February 8-10, 2018.

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 2018 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

at https://docs.google.com/forms/d/e/1FAIpQLSdo-hHY-PAi8_AZ3JE8zjeo4Cz_cgTxwqDelDhADoDJSu9iXw/viewform

Forms will be submitted electronically this year; follow the links on the conference page. The submission deadline is **November 1, 2017** but why wait until the last minute? I can't wait to see what you all have in mind for your sessions!



Personal Genetics Education —Lindsay Kortan

This summer I attended a workshop in Boston, MA put on by the Personal Genetics Education Project (pgEd) team. This project “raises awareness and sparks conversation about the potential benefits as well as the ethical, legal, and social implications of personal genetics” (pgEd.org, 2017). In order to further that mission, they’ve created a multitude of lesson plans that cover topics like the American eugenics movement, personal genome sequencing, direct to consumer genetics testing, genome editing and more. The lessons provide great background information as well as activities to get students critically thinking about the impacts and decisions facing society and themselves related to these difficult topics. The lesson plans as well as other information about the project can be found on their website, pged.org. Their website also allows visitors to put themselves on a map of genetics awareness. By visiting map-ed.org, students and teachers alike may answer a set of questions related to genetics to pin their location on a world map. They can then also see the locations of other map-ed visitors.

The pgEd team will also be coming to South Dakota to offer a summer workshop in July of 2018 at the Sanford Center in Sioux Falls. So, be on the lookout for more information to come!



The Blueberry Story: The teacher gives the businessman a lesson

"If I ran my business the way you people operate your schools, I wouldn't be in business very long!"

I stood before an auditorium filled with outraged teachers who were becoming angrier by the minute. My speech had entirely consumed their precious 90 minutes of in-service. Their initial icy glares had turned to restless agitation. You could cut the hostility with a knife.

I represented a group of business people dedicated to improving public schools. I was an executive at an ice cream company that had become famous in the middle 1980s when People magazine chose our blueberry as the "Best Ice Cream in America."

I was convinced of two things. First, public schools needed to change; they were archaic selecting and sorting mechanisms designed for the industrial age and out of step with the needs of our emerging "knowledge society." Second, educators were a major part of the problem: they resisted change, hunkered down in their feathered nests, protected by tenure, and shielded by a bureaucratic monopoly. They needed to look to business. We knew how to produce quality. Zero defects! TQM! Continuous improvement! In retrospect, the speech was perfectly balanced — equal parts ignorance and arrogance.

As soon as I finished, a woman's hand shot up. She appeared polite, pleasant. She was, in fact, a razor-edged, veteran, high school English teacher who had been waiting to unload. She began quietly, "We are told, sir, that you manage a company that makes good ice cream."

I smugly replied, "Best ice cream in America, Ma'am." "How nice," she said. "Is it rich and smooth?"

"Sixteen percent butterfat," I crowed. "Premium ingredients?" she inquired.

"Super-premium! Nothing but triple A." I was on a roll. I never saw the next line coming.

"Mr. Vollmer," she said, leaning forward with a wicked eyebrow raised to the sky, "when you are standing on your receiving dock and you see an inferior shipment of blueberries arrive, what do you do?"

In the silence of that room, I could hear the trap snap.... I was dead meat, but I wasn't going to lie. "I send them back."

She jumped to her feet. "That's right!" she barked, "and we can never send back our blueberries. We take them big, small, rich, poor, gifted, exceptional, abused, frightened, confident, homeless, rude, and brilliant. We take them with ADHD, junior rheumatoid arthritis, and English as their second language. We take them all! Every one! And that, Mr. Vollmer, is why it's not a business. It's school!"

In an explosion, all 290 teachers, principals, bus drivers, aides, custodians, and secretaries jumped to their feet and yelled, "Yeah! Blueberries! Blueberries!" And so began my long transformation.

Since then, I have visited hundreds of schools. I have learned that a school is not a business. Schools are unable to control the quality of their raw material, they are dependent upon the vagaries of politics for a reliable revenue stream, and they are constantly mauled by a howling horde of disparate, competing customer groups that would send the best CEO screaming into the night.

None of this negates the need for change. We must change what, when, and how we teach to give all children maximum opportunity to thrive in a post-industrial society. But educators cannot do this alone; these changes can occur only with the understanding, trust, permission, and active support of the surrounding community. For the most important thing I have learned is that schools reflect the attitudes, beliefs and health of the communities they serve, and therefore, to improve public education means more than changing our schools, it means changing America.

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shutterstock - 145145347

THE SANFORD PROMISE

2017-18 COMMUNITY LECTURE SERIES

TUESDAY, OCTOBER 17

In partnership with Sanford Imagenetics
6 p.m. - Breakthroughs in Cancer Immunotherapy
Steven Powell, MD, Sanford Health

7 p.m. - Pharmacogenetics: Where we are and
Where we are Going
Megan Bell, ScM, LCGC, Sanford Health

THURSDAY, NOVEMBER 30 AT 5:30 P.M.

Investigating the master regulators of cancer
*Michael Kareta, PhD, Genetics and Genomics
Group, Sanford Research*

THURSDAY, FEBRUARY 22 AT 5:30 P.M.

Rare Disease Scientist Spotlight
In partnership with Coordination of Rare Disease at
Sanford (CoRDS)

TUESDAY, MARCH 13 AT 5:30 P.M.

Support for American Indian college student
educational persistence
*DenYelle Kenyon, PhD, Population Health,
Sanford Research*

THURSDAY, APRIL 5 AT 5:30 P.M.

Stem cell augmentation in ACL surgery
Benjamin Noonan, MD, Sanford Health

LOCATION:

Sanford Center, Dakota Room
2301 E. 60th St. N. Sioux Falls, SD
Please enter through the southeast main entrance
(adjacent to the globe).

RSVP by emailing

sanfordoutreach@sanfordhealth.org
or call (605) 312-6590.

Visit sanfordresearch.org/education to learn more
and to sign-up for email notifications.

SANFORD
RESEARCH

019009-01005 0/17

\$\$\$ for Professional Development

As February 8-9-10, 2018 South Dakota Science Teachers Association and South Dakota Council of Teachers of Mathematics Joint Professional Conference approaches, I am already gearing up for the opportunity to spend time learning from fellow teachers and sharing ideas with each other. This conference is a great place to find resources, network, and give yourself fresh ideas that we all need in February, and I look forward to it every year. If you are lucky enough for your district to cover costs for your PD, congratulations! You can feel free to skip the rest of this article. If you aren't so lucky and are concerned about costs for this conference, read on.

First-year teachers, if you are unsure of whether or not this conference is for you, this is the year to try it out! The Jim Goehring and Ann Veitz Future Leaders Scholarship is available to all first-year math and science teachers in South Dakota. The application is available on the SDSTA.org (and SDCTM.org) website, and simply requires your building principal to verify that you are indeed a first-year teacher. Attendees will still need to register themselves for the conference, pay the dues to join SDSTA or SDCTM, and travel to Huron, but the member rate conference registration fee is covered, as long as the registration deadline is met. Registration is due by January 15, 2018. Any registration not received with payment by that date will be cancelled and attendees will have to re-register on site.

Second-year through fifth-year teachers are eligible to apply for the Marian Fillbrandt Scholarship. Fillbrandt graduated from SDSU with a mathematics degree and spent many years teaching math and science. She established the Fillbrandt endowment in order to help future math and science teachers. This scholarship provides a \$400 stipend to defray the costs of attending the conference, including registration, accommodations, and substitute teachers if districts will not provide one. This scholarship will be awarded to a number of recipients to allow teachers, particularly in rural areas, to spend time interacting with other teachers with similar

interests. A link is available on the SDSTA and SDCTM website to apply.

Other funding opportunities? You can try GoFundMe and other possible sites on the Internet.

I hope that you will join your fellow math & science teachers at the annual conference. Visit the SDSTA.org & SDCTM.org websites for more information about the conference itself and funding opportunities.

The National Academy of Engineering is pleased to announce this year's annual **EngineerGirl Writing Contest** **Engineering and Your Community**

All students - girls AND boys - in grades 3-12 can enter for a chance to win up to \$500! To enter, imagine how engineering can help your community. Then write a plea to your city or county council making the case for an infrastructure improvement! To enter, imagine how engineering can help your community. Then write a plea to your city or county council making the case for an infrastructure improvement!

Full rules and requirements can be found on the EngineerGirl Website:

<http://engineergirl.org/2018contest.aspx>

STEM Education Portal

Connecting Research to the Classroom

The SD EPSCoR Education Portal is a free database of curriculum enhancement resources for STEM (Science, Technology, Engineering, and Math) teachers in middle- and high-school. The portal offers free curriculum modules that are based on scientific research occurring in South Dakota's higher education institutions and that are aligned with the SD Next Generation Science Standards.

The curriculum modules were developed by a team of South Dakota STEM teacher leaders and have been tested in their classrooms. The modules provide lesson plans, activities, multi-media content and the opportunity for you and your students to connect to the research scientists who are doing this work for in-person or virtual visits.

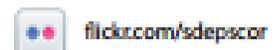
SD EPSCoR's goal in providing these resources to teachers is to help them enrich classroom learning experiences and spark interest in K-12 students to pursue STEM careers. Visit sdepescor.org/edportal to download and start implementing these lesson plans today. Contact Dr. Rhea Waldman at educationdirector@sd-discovery.com or (605) 224-8295 with any questions.



www.sdepescor.org/edportal



Connect With Us:



Engineering and Earth Science Lesson Ideas for Smoky Skies

Lesson: **The Air We Breathe**

Contributed by: Integrated Teaching and Learning Program, College of Engineering, University of Colorado Boulder



Partial Design Process

The above web site contains Middle School lessons on air pollution, pollution detectors and scrubbers.



At right, Air Quality - <http://airquality.weather.gov/> - including surface smoke and ozone concentration (air pollution)

At right, Wildfire maps and management - <https://fsapps.nwcg.gov/>



List of wildfires with details (lists 197 active fires on 9/14/17) - <https://inciweb.nwcg.gov/20/>

The **NCWIT** (National Center for Women and Information Technology) **Award for Aspirations in Computing** is for young women with aspirations and achievements in technology and computing. This year will be their sixth year. The time to submit applications is **Sept. 1 through November 6** and the application is found at <https://www.aspirations.org/aspirations-community/north-south-dakota>

There are many qualified high school girls that would apply if they just had a little push from a leader like you. Any interested female high school student would need to fill in the on-line application, and get a parent and a school official to approve it to be entered into both the national and state contests.

We are looking forward to recognizing student's talent, and hope that you would encourage the young women that you know to apply. Sometimes all they need is a little encouragement and you are the person to provide that.

Thank you,
Pam Rowland,
CybHER Dir.
Pam.rowland@dsu.edu
Dak State U
Madison, SD
Pam.Rowland@dsu.edu





November 18, 2017 SCHEDULE

9:00-9:30
Registration

9:30-9:45
Welcome

10:00-11:45
Session One

11:45- 12:30
Lunch

12:30-2:15
Session Two

2:15-2:45
Ice Cream Break!!

2:45-4:30
Session Three

4:30-4:50
Closing Ceremony



STUDENT SESSIONS

	SESSION ONE	SESSION TWO	SESSION THREE
BLUE	Const Mgmt	Mechanical	Mathematics
YELLOW	Mathematics	Const Mgmt	Mechanical
RED	Mechanical	Mathematics	Const Mgmt

LOCATIONS:

Construction Mgmt - SSO 203
Mathematics - AME 220
Mechanical Design - CEH 249

SESSION ONE: Construction Management

This session will introduce you to the one of the first steps in a construction project: the material take off. We will start a building materials list that includes the numbers of items (how many windows, how much concrete for the foundation, how many feet of rebar, etc.) and the order they are used in the project. From the take-off, an estimate of the cost is created. Once the estimate is created, you will learn how to build the project schedule. Lots of fun and a valuable learning opportunity in project management.

SESSION TWO: Mathematics, Markov Chains and You!

It's one of the best kept secrets in higher education today – mathematics majors are in high demand for top-rated careers like Data Scientist, Financial Engineer, Actuary, Statistician, Mathematician, and Computational Scientist, along with the well-known and rewarding career of being a Math Teacher. In the Mathematics workshop at Ready, Set, Go, we'll investigate the mathematical theory of Markov Chains and their application in predicting behavior, managing transportation, and managing internet and power grids. After completing this workshop, you'll understand one of many ways in which mathematicians play an important role in the management of information that affects our lives every day.

SESSION THREE: Materials in Mechanical Design

Materials are the fundamental "bricks" for engineering design. From a bicycle to a complex satellite project, engineers use materials to build high-tech wonders. To design these marvels, mechanical engineers must first have an understanding of strength, qualities, and cost of materials. In this activity, the students will discover material characterization and selection, and using metals and 3D printed structures, they will perform some hands-on destructive and non-destructive laboratory testing. Get ready for some material breaking and bending!

Register on-line: www.sdstate.edu/jerome-j-lohr-engineering/ready-set-go

\$25.00 per student; FREE for parents & teachers;

Lunch, refreshments & T-SHIRT provided

2018 SDCTM/SDSTA JOINT CONFERENCE

Conference information and program booklets will be available online at www.sdctm.org and www.sdsta.org

ADVANCE REGISTRATION

Crossroads Events Center, Huron South Dakota
February 8-10, 2018 1-800-876-5858

Download this form. Please print clearly. Postmark by January 20, 2018. After this date, please register on-site.

Name _____
Permanent Address _____
City _____ State _____ Zip _____
School/District _____ E-mail _____
Home phone _____ School Phone _____

Please check the appropriate categories for membership, conference registration, and payment.

1. SDCTM/SDSTA MEMBERSHIP(s) and DUES

Please check the appropriate categories. You may join one, both, or neither organization.

Begin/renew SDCTM (math) for one year	Begin/renew SDSTA (science) for one year
_____ Elementary \$5	_____ Elementary \$5
_____ Middle School \$20	_____ Middle School \$20
_____ High School \$20	_____ High School \$20
_____ Post-Secondary \$20	_____ Post-Secondary \$20
_____ Student \$5	_____ Student \$5
_____ Retired \$5	_____ Retired \$5
_____ Other \$20	_____ Other \$20

NOTE: First year teachers are eligible for a scholarship providing a free registration. See www.sdctm.org for details.

2. CONFERENCE ADVANCE REGISTRATION

On-site (late) registration will be available: additional \$25 cost.

Please check the appropriate categories. Noon luncheon is included for each day that you register.

NOTE: The Friday night banquet is NOT included. Banquet tickets may be purchased for \$25 each.

I will attend the conference on (check one): _____ Friday _____ Saturday _____ Both days

SDCTM or SDSTA Member	Non-Member	Student Member
_____ One day \$50	_____ One day \$100	_____ One day \$15
_____ Two days \$75	_____ Two days \$125	_____ Two days \$25

College credit will be available; information/registration will be available at the conference registration table.

3. PAYMENT: By Check Only

Make checks payable to SDCTM.

SDCTM does NOT accept purchase orders.

To use credit card, you must register and pay ONLINE:

Membership(s) total	\$ _____
Registration	\$ _____
Friday Night Banquet (\$25 each)	\$ _____
On-site Late Registration Fee (+\$25)	\$ _____

TOTAL ENCLOSED \$ _____

Requests for refunds must be received by January 20, 2018

4. SEND THIS FORM WITH PAYMENT

Steve Caron

907 South 16th Street School phone (605) 725-8208
Aberdeen, SD 57401 Home phone (605) 226-2292

Email questions to: steve.caron@k12.sd.us

Advance registration must be postmarked by January 20, 2018.
After this date, please register on-site (Additional \$25 fee).

Please check here if you have also submitted a speaker proposal form for the 2018 Conference.

Contact SDCTM with any special needs requests as defined by ADA by emailing Jean Gomer at jeanann@itctel.com by January 20, 2018.

- Please consider contributing by submitting an article to the **Special Track on Politics and Information Systems, Technologies and Applications: PISTA 2018** (<http://www.2018iisconf.org/pista>), being organized in the context of the 12th International Multi-Conference on Society, Cybernetics, and Informatics (IMSCI 2018), to be held on **July 8 - 11, 2018**, in Orlando, Florida, USA, jointly with:
The Special Track on Social and Organizational Informatics and Cybernetics: SOIC 2018
- The Special Track on Qualitative Research, Modeling, and Methodologies: QRMSE 2018
- The Symposium on Innovation and Entrepreneurship: SIE 2018
- The 22nd World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2018
- The respective web sites of the above events and the others being jointly organized can be found at the general CFP posted at: <http://www.2018iisconf.org/cfp-summer2018.asp>

To submit your article, please click the "Authors" tab on the conference website. Submissions for face-to-face and virtual presentations are both accepted.

The deadlines for this first CFP are the following:

October 10th, 2017: Article submissions

- October 10th, 2017: Invited session proposals
- November 23rd, 2017: Notifications of acceptance
- December 14th, 2017: Uploading of camera-ready or final version

1. IMSCI/PISTA and all its collocated events are being **indexed by Elsevier's SCOPUS** since 2005. The 2018 proceedings will also be sent to Elsevier's SCOPUS.

Authors of **early submissions** to PISTA 2018 (or any of its collocated events) and, consequently, of early acceptances and registrations will be:

Considered in the selection of **keynote speakers** because this selection will need additional reviews.

2. Invited for submitting a **second paper** on special topics; which, if accepted, will require **no additional fee for its presentation**. These topics, which will be selected by the Organizing Committee, are very important topics, but are not necessarily among the usual grants priorities. The IIS will finance this kind of papers which are important for many authors but are not among the priorities of policy makers in organizations which might financially be supporting participations in conferences.

- Details about the following issues have also been included at the URLs given above:

Pre- and post-conference virtual sessions.

- Virtual participation.
- Two-tier reviewing combining double-blind and non-blind methods.
- Access to reviewers' comments and evaluation average.
- Waiving the registration fee of effective invited session organizers.
- Best papers awards.
- Publication of best papers in the Journal of Systemics, Cybernetics, and Informatics (JSCI), which is indexed in EBSCO, Cabell, DOAJ (Directory of Open Access Journals), and Google Scholar, and listed in Cabell Directory of Publishing Opportunities and in Ulrich's Periodical Directory. (All papers to be presented at the conference will be included in the conference printed and electronic proceedings)

Please consider forwarding to the appropriate groups who might be interested in submitting contribution to the above mentioned collocated events. New information and deadlines are posted on the conference and the IIS web site (especially at the URL provided above).

Best regards, PISTA 2018 Organizing Committee

Happy Autumn Equinox! As always there is a lot happening in the GLOBE world, internationally, nationally, and right here in South Dakota. In South Dakota, we are having several GLOBE and GLOBE related professional development opportunities.

STEAM Quick Stops: Prairie and the Pole Exploration is an online professional development opportunity. STEAM stands for Science, Technology, Environment/Engineering, Art and Math. We'll meet once a month from October - April (not in December) from 4:15 PM CT - 6:15 PM CT via Google Meet Hangout. We'll explore interactive web based resources as well as hear from special guest speakers about the Prairie and the Poles. Elisabeth Gambino, art teacher and [Grosvenor Teacher Fellow](#) will be providing art instruction. Spaces limited. Stipend provided.

[Register for STEAM Quick Stops.](#)

Basic GLOBE Nov 17-18. Washington High School. Sioux Falls
Don't just teach science, do science! GLOBE is an international science and education project that engages students in earth systems exploration and research. GLOBE is sponsored by NASA and the National Science Foundation. Stipend provided.

[Register for Basic GLOBE](#)

Stipend Opportunity

To celebrate Earth Science week, collect and report data during the month of October and receive a stipend. Please email me when you have reported the data so I can confirm it is being reported in the school status report.

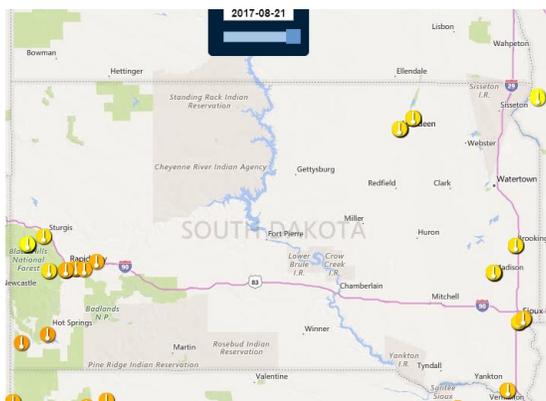
GLOBE Stars (Local edition)

If you are doing GLOBE with your students or learners, let me know! I want to feature you on the blog and in my letters.

Eclipse Data

I'm pleased to report that South Dakota had several people scattered around the state using the GLOBE Observer App during the Eclipse.

A shout out to Deb Springman of the East Dakota Water Development district for contributing Eclipse temperature data.



Anne Lewis
Special Projects Director
South Dakota Discovery Center
805 W Sioux Ave.
Pierre, SD 57501
605-224-8295
AnneLewis@sd-discovery.org

Sites reporting temperature data during the Eclipse on 8/21/2017.

School Year Data

Also thank you to Robert Stahl and Jonathon Stahl of Faulkton Area School District and Patty Martin of Aberdeen Roncalli for reporting data.

Well done! Feel free to reach out to me with any GLOBE related questions.

Regards, Anne Lewis

Honeywell

EDUCATORS AT SPACE
ACADEMY

Are You a Math or Science Teacher?



See what it takes to make it
at the Honeywell Educators
at Space Academy.

Honeywell Educators at Space Academy takes educators where no classroom can possibly go! Since its inception in 2004, more than 2,776 educators from 62 countries, 52 U.S. states and territories have graduated from the Honeywell Educators at Space Academy.



During the program, educators participate in a variety of activities including 45 hours of classroom, laboratory, and field-training. Simulated astronaut training exercises, high-performance jet simulations, scenario-based space missions, and flying programs are just a small sampling of what's in the curriculum.

Along with your fellow educators, you'll work together as a team to achieve a multitude of mission objectives. Whether you're performing experiments in the lab, repairing satellites, or adding a module to the International Space Station, all of the educational simulations are realistic, exciting, and challenging.

Among some of the many planned activities, you will also participate in two simulated Space Shuttle Missions where you could end up being a Mission Specialist, Flight Director, Commander — or even the Shuttle Pilot! You may find yourself taking a space walk — or even walking on the Moon (in simulators, of course). And when it's time to return to earth, you'll also get to experience what it would be like to land in the ocean with a parachute and be rescued by a helicopter. Honeywell Educators at Space Academy takes you where no classroom can possibly go so you can bring your experiences and excitement back to your students!

2018 application portal is now open until November 14, 2017.

APPLY HERE! <https://educators.honeywell.com/application>

Please contact honeywell@spacecamp.com with any questions.

2018 application portal opens on September 5, 2017



About Honeywell Educators at Space Academy

For math and science teachers, Honeywell Educators at Space Academy (HESA) is a dream come true! Imagine the opportunity to learn about space and science by spending five incredible days at the world's premiere space learning center.

Testimonials

"The Honeywell Space Academy is 'Hands Down' the most incredible professional development program that I have ever attended."

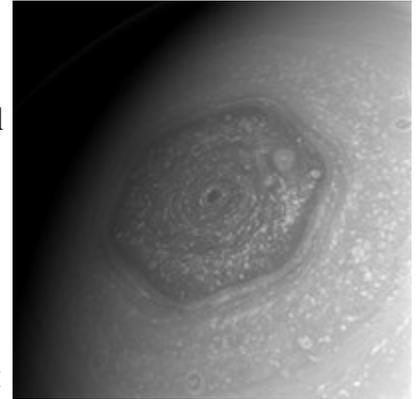


Cassini Says Goodbye

By Teagan Wall

On September 15th, the Cassini spacecraft will have its final mission. It will dive into the planet Saturn, gathering information and sending it back to Earth for as long as possible. As it dives, it will burn up in the atmosphere, much like a meteor. Cassini's original mission was supposed to last four years, but it has now been orbiting Saturn for more than 13 years!

The spacecraft has seen and discovered so many things in that time. In 2010, Cassini saw a massive storm in Saturn's northern hemisphere. During this storm, scientists learned that Saturn's atmosphere has water vapor, which rose to the surface. Cassini also looked at the giant storm at Saturn's north pole. This storm is shaped like a hexagon. NASA used pictures and other data from Cassini to learn how the storm got its six-sided shape.



Cassini also looked at some of Saturn's moons, such as Titan and Enceladus. Titan is Saturn's largest moon. Cassini carried a lander to Titan. The lander, called Huygens, parachuted from Cassini down to the surface of the moon. It turns out, Titan is quite an exciting place! It has seas, rivers, lakes and rain. This means that in some ways, Titan's landscape looks a bit like Earth. However, its seas and rivers aren't made of water—they're made of a chemical called methane.

Cassini also helped us learn that Saturn's moon Enceladus is covered in ice. Underneath the ice is a giant liquid ocean that covers the whole moon. Tall geysers from this ocean spray out of cracks in the ice and into space, like a giant sneeze. Cassini flew through one of these geysers. We learned that the ocean is made of very salty water, along with some of the chemicals that living things need.

If there is life on Enceladus, NASA scientists don't want life from Earth getting mixed in. Tiny living things may have hitched a ride on Cassini when it left Earth. If these germs are still alive, and they land on Enceladus, they could grow and spread. We want to protect Enceladus, so that if we find life, we can be sure it didn't come from Earth. This idea is called planetary protection.

Scientists worry that when Cassini runs out of fuel, it could crash into Titan or Enceladus. So years ago, they came up with a plan to prevent that from happening. Cassini will complete its exploration by diving into Saturn—on purpose. The spacecraft will burn up and become part of the planet it explored. During its final plunge, Cassini will tell us more about Saturn's atmosphere, and protect the moons at the same time. What an exciting way to say goodbye!

To learn more about Saturn, check out NASA Space Place: <https://spaceplace.nasa.gov/all-about-saturn>

The above image of the hexagonal storm on Saturn's north pole was taken by Cassini in 2013.

Image credit: NASA/JPL-Caltech/Space Science Institute



Officers
President:
Elizabeth McMillan
2101 Morning Glory Drive,
Brookings, SD 57006
Elizabeth.McMillan@sanfordhealth.org

**Past-President and
Newsletter Co-Editor:**
Julie Olson
821 N Capital St. Mitchell, SD 57301
Julie.Olson@k12.sd.us

President-Elect:
Mark Iverson
1700 11th St. NE Watertown, SD 57201
Mark.A.Iverson@k12.sd.us

Secretary:
Tiffany Kroeger
Tiffany.Kroeger@k12.sd.us

Treasurer:
Deirdre Peck
Deirdre@SDSTA.org
Newsletter Co-Editor:
James Stearns
James.Stearns@k12.sd.us

Science Liaisons:
Larry Browning (S D S U)
Larry.Browning@sdsta.edu

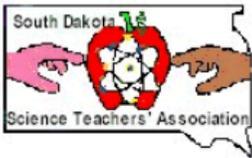
Jennifer Fowler
Jennifer.Fowler@k12.sd.us

Lindsay Kortan
lkortan@ysd.k12.sd.us

Kevin McElhinney
Vendor@SDSTA.org

Michelle Bartels
Michelle.Bartels@k12.sd.us

PAEMST Contact:
Ramona Lundberg:
Ramona.Lundberg@k12.sd.us



STEAM Quick Stops: Prairie and the Pole Exploration is an online professional development opportunity. STEAM stands for Science, Technology, Environment/Engineering, Art and Math. We'll meet once a month from October - April (not in December) from 4:15 PM CT - 6:15 PM CT via Google Meet Hangout. [Register for STEAM Quick Stops.](#)

Basic GLOBE Nov 17-18. Washington High School, Sioux Falls. Don't just teach science, do science! GLOBE is an international science and education project that engages students in earth systems exploration and research. GLOBE is sponsored by NASA and the National Science Foundation. Stipend provided. [Register for Basic GLOBE](#)

The SDSTA Newsletter is published four times a year. The September (Fall) issue (this one) 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)

SD AAPT Photo Contest

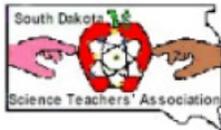
The contest is open to high school students in grades 9-12. Students must print out, sign, and return the [Contest Rules and Entry Agreement](#), HTML version or [WORD](#) version, when submitting their entry. Failure to submit this form will invalidate the contest entry. Entries are limited to 6 per 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 years deadline is January 1st. Send submissions to:
James Stearns
15 North Fifth Street
Groton, SD 57445-2024
Questions? email
James@SDSTA.org

Mail to: Deirdre Peck, SDSTA Treas.
409 S. Kline Street
Aberdeen, SD 57401

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

Name _____ Home Phone _____ - _____
Home Address _____ E-mail _____
City _____ State _____ Zip _____
Your School _____ School Phone _____
School Address _____ City _____ State _____ Zip _____
Your area K-6 7-8 9-12 College Other _____
(circle one)
Referred by _____

South Dakota Science Teachers' Association
 Julie Olson and James Stearns
 Editors, SDSTA Newsletter
 15 North Fifth Street
 Groton, SD 57445-2024



ADDRESS SERVICE REQUESTED



Delivered at the speed of light.

Calendar of Events

Calendar of Events

- | | |
|------------------------------------|---|
| October 13 - 15 | Project WILD/PLT & Jewel Cave, Custer, SD |
| October 17 | Sanfords PROMISE Lecture & Pharmacogenetics, SF |
| November 1 | Deadline for Speaker Proposals for SDSTA / SDCTM
26th Annual Conference |
| November 9 - 11 | NSTA Area Conference - Milwaukee, WI |
| November 14 | SNPet Lecture, 7 PM, Sanford Center, SF |
| November 30 | Investigating Regulators of Cancer, Sanford Center, SF |
| December 1 | Deadline to apply for Outstanding Math Teacher |
| February 8-9 & 10, 2018 | 26th Annual Science & Math Professional
Development Conference in Huron, SD |
| February 22 | Rare Disease Scientist Spotlight, Sanford Center, SF |
| March 13 | Support Am Indian College Student, Sanford Center, SF |
| March 15-18, 2018 | NSTA National Conference—Atlanta, GA |
| March 24 | Science Olympiad— http://sites.usd.edu/sdscienceolympiad/home |
| April 5 | Stem Cell Augmentation in ACL Surgery, Sanford Center, SF |
| April 17 | Women in Science—Pierre, www.sd-discovery.org |
| July 11-13, 2018 | 7th Annual STEM Forum Expo (NSTA) - Philadelphia, PA |

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