



SDSTA

South Dakota Science Teachers Association

Spring Issue | Date: December 21, 2020

Dear Members,

Happy Holidays and Happy Christmas Break!! The year 2020 is quickly coming to an end so it is time to reflect on the good.

This year it has been decided that our annual joint conference, SD STEM Ed, will not be held in Huron February 4th through 6th as planned. This was an extremely tough and thoughtful decision as explained in this newsletter. I will miss seeing everyone in person but hope to see you all virtually on February 6th. I'm so excited to tell you about the first ever SDSTA Virtual Science Day! Shout out to Jen, Julie, and Ashley for coming up with the idea and making it happen! We will begin at 8:30 am on February 6th with an SDSTA Welcome. Don't forget to have your coffee in hand and maybe your donut holes too. Beginning at 9:00 am, one of our featured speakers, Paul Andersen, will talk to us about the future of science education. Yes, the Paul Andersen will be talking to us over Zoom! (If I could insert a GIF here it would be of Grover or Kermit with flailing arms.)

There will be two sessions, one at 10:00 and one at 11:00, geared towards K-5 and two sessions geared toward 6-12. Thank you so much to Ashley Armstrong, Lindsay Kortan, Julie Dahl, Matt Miller, Larry Browning, and Chad Ronish for providing us with what I know will be awesome presentations!

At 12:00 there is a choice of four chat rooms that will be hosted (thank you!) by either Anne Lewis, Darwin Daugaard, Jen Fowler, or Ben Benson and Louisa Otto.

We will then have a very short SDSTA business meeting before hearing from our second featured speaker, Stephanie Arne, who will talk about creative conservation. Be sure to read the bios of our featured

speakers so you get an inkling of how fortunate we are to have such an amazing lineup!

Starting at 2:00 there will be recognition given to people who have won awards before our final featured speaker, Sarah McNulty, who is a squid biologist and the founder of Skype a Scientist. Our day will close with a trivia game hosted by Sarah.

The schedule for the first SDSTA Virtual Science Day and a registration link will be sent to all SDSTA members and to the DOEScience listserv very soon. This first SDSTA Virtual Science Day will be FREE not only to members, but to anyone who wants to attend...but, we will be asking you to renew your SDSTA membership and help us grow our membership by getting the word out. Let's make this a big day! Let's have fun, relax, and enjoy each other's company.

Look for the good... If 2020 wasn't so messed up, we most likely wouldn't have had the opportunity to see and learn from all of these great people (the presenters, the chat room hosts, and the featured speakers) on the same day. That's something to reflect on.

If you would like to submit something to be included in the March newsletter, please email the information to Julie.Olson@k12.sd.us by March 14th.

Continue being resilient in our fight to educate by making our students feel safe, making learning fun, and keeping our relationships with our students strong. Thank you for all you do in providing a quality education for each of your students!

Michelle Bartels
SDSTA President

Greetings, Science Teaching Friends!

Congratulations everyone, you've made it to the Winter Solstice! Though it is that time of year when we regularly exclaim "It's only 6 pm" I am going to encourage you to embrace the darkness and shorter amounts of daylight. Let's revisit the study of phenology and seasonal observations you can make yourselves and inspire your students to do the same.

Let's start with a favorite of mine, **winter botany!** Have you tried to identify species of wildflowers this time of year? Find an area to explore and take pictures or sketch the dried flower heads and record other data like height and other notable features regarding remaining leaves, stem shape, and any seeds that are still present. Begin researching now or save the photos for when the plants grow and bloom again in the same area using the stored energy in the underground tubers. How about walking through a field with plants and see what seeds are collected on your clothing. Here in the Black Hills, my dog is covered with Houndstongue and Wild Licorice seeds after a hike this time of year and I am always thinking of the reasons why plants would have adapted to have their seeds carried by something moving against it. This is a wonderful conversation started with your students, too!

Now, how about **snow science?** You may be inspiring future scientists who will study avalanches, climate, or hydrology with activities regarding snow. Many meteorological concepts could be studied by measuring the conditions within a tunnel in the snow and compare to the surface. What are the advantages of being an animal that dens or created tunnels in the snow? What properties does a "blanket" of snow have and how does it affect the ground beneath it? Have a snow-covered hill nearby to have your students conduct various physics experiments?

By discussing **seasons**, there are physical, life, and earth & space science standards that can be met and certainly bring out a globe and make it visible. The why, the timing, and the benefits of seasons in various latitudes in both hemispheres and what is it like at the equator in a year's time? Show migration maps of birds like the Swainson's Hawk that breeds in South

"You may be inspiring future scientists who will study avalanches, climate, or hydrology with activities regarding snow."



Join DOE Science Listserv 

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

Dakota summers and are currently in South America so they can meet their insectivorous needs! The prairies of South Dakota and Argentina are very similar and are on opposite seasonal schedules accommodating avian migrants requiring specific criteria. Awesome, right?

Here's to adding more daylight as the weeks pass by, and please contact me if you are in search of ideas for incorporating natural phenomena into your classroom to go beyond the textbook. Sharing science with others is my primary passion and I am here for you!

Take care of yourselves! Spread the love! Science Rocks! :)

~Jen



Science Teacher Google Doc 

[This Science Teacher Conversations Google Doc](#) is **an awesome place** to pose a question and maintain documentation of the responses. Please consider following the directions on it when you have a question for the listserv. There are several conversations started and it is nice to see all the responses and the ability to revisit them as needed.

3D Science Lessons for the Elementary Classroom

Ashley Armstrong SDSTA President-Elect and Lindsay Kortan Liason



Elementary teachers are charged with teaching multiple subjects while meeting an ever-extending list of duties and standards. Ideal lessons integrate multiple disciplines to effectively and efficiently reach students. Utilizing science texts in elementary classrooms can be a great way to meet these demands while creating critical thinkers and inspiring budding young scientists. Join us on Saturday, February 6th as we dive into an elementary lesson that immerses students in Science, Math and ELA concepts as they read a grade level book.



Larry and Matt – DAH!

Larry Browning and Matt Miller (SDSU)



"Larry and Matt share some Do-At-Home (DAH) science experiences. Will they be Teacher Advised Do-At-Home (TA-DAH) or Great Resources Or Activities – Not (GROAN) is for participants to decide."

A day in the life of a Sanford Scientist!

Julie Dahl SURF

Every day, people at Sanford Lab take a cage ride nearly a mile underground. During this presentation students get a chance to envision themselves working in an underground research laboratory.



Hands-on inquiry Science At Home

Chad Ronish STEAM Guru

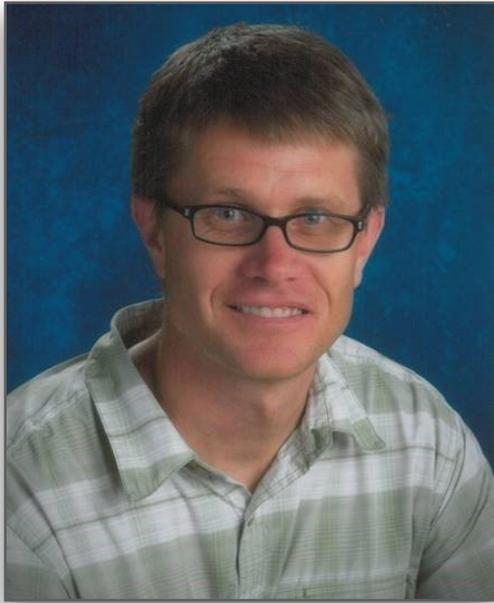


Strategies for hands-on inquiry learning while students are remote learning, home due to illness, or explorations over a weekend or extended break. We will look at how to design easy at home activities, collaboration with classmates, and keeping students engaged when they can't physically be in the classroom. Be ready to participate in this workshop/presentation complete with collaboration and discussion.

Dr. Sarah McNulty is a squid biologist and science communicator. She is the founder and executive director of Skype a Scientist, a non-profit organization that connects scientists to teachers and families around the world. She earned a bachelor's degree in marine science at Boston University in 2011 and her PhD from the Department of Molecular and Cell Biology at the University of Connecticut, graduating in 2019. She studied immunology in cephalopods, focusing on Hawaiian bobtail squid.



Paul Andersen is an educational consultant and YouTube creator living in Bozeman, MT. Paul is an experienced educator having taught science in Montana for 20 years. Paul was the 2011 Montana Teacher of the Year, and was also one of four finalists for the 2011 National Teacher of the Year. In addition to teaching Paul has created hundreds of YouTube science tutorials that have been viewed millions of times by students around the world. Paul has provided training for thousands of students, teachers, and administrators around the world. Paul enjoys providing meaningful professional development that can be applied immediately in the classroom.



Stephanie Arne is the Wildlife and Conservation Ambassador for Curiosity Stream and the former host of Mutual of Omaha's Wild Kingdom. An accomplished wildlife conservationist, Steph has worked in 18 countries and filmed stories on everything from polar bears to penguins. Steph has appeared on the Harry Connick Jr. Show, Animal Planet, HBO Max, and The Weather Channel, and recently became the Wildlife and Conservation Ambassador for Curiosity Stream. Currently, Steph and her husband, wildlife filmmaker, Tim Davison live in Southern California in a 180 square foot tiny house which was featured on Tiny House, Big Living on HGTV.



Teacher embraces new career, new concepts

Darin Newton found an unexpected fulfillment as a substitute teacher, then made a full career change.

When Darin Newton graduated from the University of Montana with a master's degree seven years ago, he fully expected to be working in his area of study: wildlife biology. When his wife, also a wildlife biologist, took a job in the Belle Fourche area, Newton began working as a kindergarten assistant and substitute teacher in the Belle Fourche school district. It was a temporary thing, meant to last only until he found a job in his field. But then something completely unexpected happened. "I really enjoyed being around the kids," Newton said, smiling broadly. [Read More](#)



Darin Newton, who has a Masters in wildlife biology, found an unexpected fulfillment as a substitute teacher, then made a full career change.

Hill City students decorate ornaments for National Christmas Tree



Chad Ronish developed a STEAM Research curriculum that explores scientific research and technology.

Hill City School District teacher Chad Ronish seeks to provide opportunities for students to access learning through STEAM (science, technology, engineering, art, math) Integration in the classroom. This year, he led K-12 students in a unique art project: decorating ornaments for the National Christmas Tree display in Washington, D.C.

As a long-time supporter of student-centered, hands-on, inquiry-based learning in all curriculum areas, Chad says: "I want my students to leave my classes with an understanding of 'why' the science works and when we can use it. That comes from doing the science instead of learning about science."

He is currently developing a student-driven Maker Space and STEAM lab, inspired by his participation in the South Dakota Department of Education's SDMath/SDSci program. [Read More](#)

Congratulations PAEMST Finalists

Science Finalists

Brianna Schmidt, a science teacher from Spearfish, SD, has been teaching for 6 years. She is a 2nd grade teacher at West Elementary in Spearfish.

Tiffany Wolla, a science teacher from Rapid City, SD, has been teaching for 6 years. She is a 6th grade science teacher at East Middle School in Rapid City.

Mathematics Finalists

Darcy Vincent, a mathematics teacher from Brookings, SD has been teaching for 12 years. She is a customized learning facilitator for 5th grade mathematics at Camelot Intermediate School.

Merideth Wilkes, a mathematics teacher from Black Hawk, SD, has been teaching for 9 years. She is a K-1st grade combination teacher at Black Hawk Elementary.

Did you hear about the man who got cooled to absolute zero?



He's 0K now.



2020 Science Finalist Brianna Schmidt

2nd Grade Teacher from Spearfish

Brianna Schmidt, a science teacher from Spearfish, SD, has been teaching for 6 years. She is a 2nd grade teacher at West Elementary in Spearfish. Brianna received her degree in Elementary and Special Education from Black Hills State University in 2014. In her building she is a leader in standards innovation, instructional design, on the science curriculum team, and is a STEAM Club Educator. She is a member of the South Dakota Science Alliance and received a Master Teacher Policy Fellowship with the American Association of Physics Teachers and American Institute of Physics.

2020 Science Finalist Tiffany Wolla

6th Grade Teacher from Rapid City

Tiffany Wolla, a science teacher from Rapid City, SD, has been teaching for 6 years. She is a 6th grade science teacher at East Middle School in Rapid City. Tiffany graduated from Black Hills State University in 2013 with a degree in Elementary Education and a Middle School minor. She is an active member of the East Middle School Building Leadership Team and had a leadership role in developing the district's 6th grade science pacing guide. At the state level Tiffany worked on the SD state science test review in 2017.

Do you know an outstanding 7th - 12th grade STEM teacher?

Nominate them today! www.paemst.org

The Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) is the highest recognition that a kindergarten through 12th grade mathematics or science teacher may receive for outstanding teaching in the United States. Since 1983, more than 4,000 teachers have been recognized for their contributions to mathematics and science education. Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education.

Presidential Awardees receive:

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

Anyone--principals, teachers, parents, students, or members of the general public--may nominate a teacher by completing the nomination form available on the PAEMST website. For more information, please visit www.paemst.org. **The 2021 nomination window is now open to recognize 7th- 12th grade mathematics and science teachers. Nominate a deserving teacher today who exhibits a passion for the subject they teach; who approaches their work with creativity and imagination; and who strives daily to improve their individual teaching practice.**

If you have any questions, please contact:

Jennifer Fowler
SD PAEMST Science Coordinator
Jennifer.Fowler@k12.sd.us
605.431.5438

Nomination deadline: March 1, 2021

Application deadline: May 1, 2021

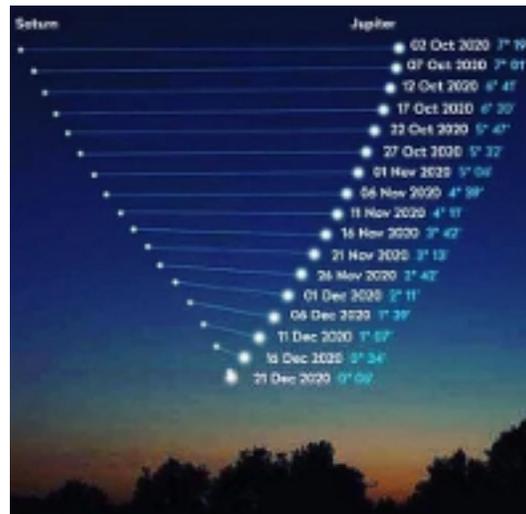
Officer Submissions

NASA Sky View - James Stearns SDSTA Treasurer

Just after sunset, you may observe in the night sky, Saturn and Jupiter will be getting closer & closer to each other. On about December 17 to December 22 they will appear to be one. It would be about twenty years before they will be this close again.

The last time this occurred was May 28, 2000. Saturn, the sixth planet outward from the sun, is the farthest and slowest-moving planet that we can easily see with the eye alone, takes 30 years to go around the sun. Jupiter, the fifth planet outward from the sun, takes 12 years to fully go around the sun. So after a conjunction, it would take Jupiter another twenty years to again catch up with Saturn. But for the best view from Earth, it won't happen again till 2080. The previous time this occurred with a best view from Earth was 800 years ago.

If you'd like a little help finding items in the night sky, try the app 'SkyView @ Lite' is free. Just point your phone at the sky and it tells you the constellation name and star names. (They push the upgrade version. Just ignore the fancy version.)



Jupiter and Saturn will have their 2020 great conjunction on December 21, the day of the December solstice.

SD AAPT Physics Photo Contest - Canceled



The South Dakota branch of the American Association of Physics Teachers' will NOT be having a photo contest this year. The national AAPT Photo Contest has also been canceled.

American Association of Physics Teachers®
Enhancing the understanding and appreciation of physics through teaching

Teacher Self-Care - DIY Bath Bombs - Ashley Armstrong SDSTA President-Elect

Every teacher, paraprofessional, administrator, and virtually (no pun intended) anyone involved in education this Fall deserves to take a deep breath, destress, and put their feet up over break! The best way to do this and keep your scientific currents flowing is to make your own bath bombs.

Ingredients:

- 15 drops of your favorite essential oil
- ¾ tablespoon water
- 2 ½ tablespoons melted coconut oil
- 1 cup baking soda
- ½ cup citric acid
- ½ cup Epsom salt
- ½ cup cornstarch
- Colorant (optional)



Directions:

- Mix all dry ingredients in a large bowl
- Mix all wet ingredients in a separate, small bowl
- Add the wet ingredients to the dry ingredients, slowly, mixing as you add
- Once mixed, place in a mold (They make specific molds for bath bombs but to simplify, use a metal or silicone muffin pan.)
- Let the mold set up for at 2 minutes.
- Remove the bath bomb from the mold and allow to dry for 48 hours
- Now sit back, relax, and know that the work you do is important and appreciated!



What causes the pain you get when you kick a rocket?

Missile Toe

Which educational ict-tool are you looking for?

This flowchart may be shared freely for non-commercial purposes



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 TodaysTeachingTools.com

Professional Development/Classroom Resources

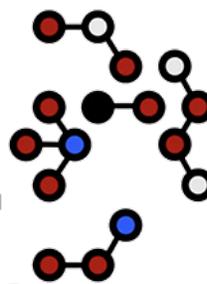
Project Dragonfly Earth Expeditions

Currently celebrating 25 years as an education reform initiative, Miami University's Project Dragonfly is accepting applications now through early 2021 for graduate courses and master's degrees that offer extraordinary experiences through zoos and botanical gardens in the United States and in 15 countries throughout the world. Earth Expeditions are study abroad courses that take place online and in Africa, Australia, Asia and the Americas. Earth Expeditions courses can be taken as stand-alone graduate credit, or they can build toward the Global Field Program (GFP) master's degree.



Chemistry Shorts

**SHORT
FILMS
ABOUT
CHEMISTRY**



Chemistry Shorts films spotlight innovative ways that chemists and chemical engineers are working to solve important problems and create new opportunities. With a detailed lesson plan, aligned with Next Generation

Science and Common Core State standards, teachers can quickly integrate these brief, inspirational films into their classrooms.

Cooking with Chemistry - David Katz

Cooking with Chemistry was first presented as a one-day hands-on workshop for teachers at ChemEd 97, held at the University of Minnesota, Minneapolis, MN, August 3-7, 1997. Here are several of the lab activities found on the website. My favorite is "The Partial Thermal Degradation of Mixed Polysaccharides with Protein Inclusions" aka Peanut Brittle! The recipe uses scientific names of the compounds as well as measurements. Not all of the activities do this but it is fun to do before Christmas and reinforces the importance of reading directions and measuring correctly.

- Food Additives
- Beef Jerky
- Partial Thermal Degradation of Mixed Polysaccharides with Protein Inclusions
- Taffy
- Lollipops
- Caramels
- Pop Rocks



National Geographic Winter On-Line Courses

National Geographic's free online courses for educators equip teachers with powerful tools to transform their classrooms. Through these courses, educators build their own skills and knowledge so they can foster the mindset of a National Geographic Explorer in their students. National Geographic online professional learning courses vary in their lengths and schedules so that busy educators can find a program that fits their needs.

Courses are open to any educator from anywhere in the world who works with students in either a formal or informal setting. In many of our courses, learners can earn graduate credits through university partnerships.

- EDUCATOR CERTIFICATION
- CONNECTING THE GEO-INQUIRY PROCESS TO YOUR TEACHING PRACTICE
- TEACHING GLOBAL CLIMATE CHANGE IN YOUR CLASSROOM
- COLLECTING DATA TO EXPLORE PLASTIC POLLUTION IN OUR COMMUNITIES
- MAPPING AS A VISUALIZATION AND COMMUNICATION TOOL IN YOUR CLASSROOM
- INTEGRATING SERVICE WITH LEARNING GOALS
- STORYTELLING FOR IMPACT IN YOUR CLASSROOM: PHOTOGRAPHY



**NATIONAL
GEOGRAPHIC**

@SDSTA

Professional Development

Upcoming Spring K-12 Science Professional Development Facilitated by SD DOE

Science Webinars: Gather new ideas for incorporating the Science and Engineering Practices in diverse learning situations by signing up for the MINKS & CO webinars that will be addressing the SEPs. There are three remaining webinars in the series on Feb 11, April 8, and May 13th, 2021. Each are led by a different state within the collaboration which will focus on different SEPs. See advertisement on page 11 in this newsletter.

Online Course: *Ambitious Science Teaching* Jan – April 2021
Similar format to the other semester-long science courses in the past year.
More information on the DOE Science Listserv coming soon!

Online Book Club: *Science in the City* Feb – May 2021
Join this new course format with six regional states to dive into this book together while adding conversation regarding rural and diverse populations.
More information on the DOE Science Listserv coming soon!

South Dakota Master Naturalist

Credit and contact hour opportunity!

The South Dakota Master Naturalist program is starting its first certification class in March 2021. All adults 18+ who have a passion for nature, enjoy people and want to contribute to the well being of both through education and service are invited to apply to be part of this inaugural cohort.

To become a Master Naturalist:

- Apply and be accepted to the training.
- Pay \$75 registration fee.
- Attend 12 weeks of training at 2 hours a week (online) to learn about South Dakota's natural world and how to teach about it. Additional assignments required.
- Attend three in-person field sessions to get your hands literally and figuratively dirty or wet.
- Perform 40 volunteer hours of outreach or service projects during and after training. Service should be completed within a year.

For more information and to apply go to: sdmasternaturalist.org. Applications close Jan 29, 2021

This program was created in partnership between South Dakota Game, Fish and Parks, The South Dakota Discovery Center, Black Hill State University, and the Black Hills Parks and Forests Association



Professional Development



This 6-state collaborative (Missouri, Iowa, Nebraska, Kansas, South Dakota and Colorado) is designed to support science educators on a journey to implement 3-Dimensional standards in a supported and sustained learning network that draws upon multiple innovative perspectives and experiences.

This year, the MINKS & CO series will focus on the eight Science & Engineering Practices from the NGSS. Webinars will provide participants space to learn about each practice, how other science teachers are using it to equitably engage students in science learning, and discuss ways to deepen implementation in their own contexts. Emphasis will be placed on using the SEPs as a basis for lesson design to encourage student engagement in various learning environments.

Registration for each webinar is required. Please use the link/s below to submit your registration form. Information regarding each session will be sent out just prior to the webinar, and will include any provided resources along with connectivity information. All webinars are scheduled from 4:30-6pm CT, 3:30-5pm MT.

Graduate credit is available through Friends University. For additional information about this option, please contact Meg Richard (KS) at mrichard@ksde.org and use the "All Sessions" registration link below.

Webinar date	SEP Focus/es	Registration Link	
October 6, 2020	Mathematical and computational thinking	http://bit.ly/MINKSCO-Oct6	
November 12, 2020	Asking questions and defining problems; Obtaining, evaluating, and communicating information	http://bit.ly/MINKSCO-Nov12	
December 10, 2020	Planning and carrying out investigations	http://bit.ly/MINKSCO-Dec10	
February 11, 2021	Analyzing and interpreting data	http://bit.ly/MINKSCO-Feb11	
April 8, 2021	Developing and using models – with literacy connections	http://bit.ly/MINKSCO-April8	
May 13, 2021	Engaging in argument from evidence; Constructing explanations and designing solutions	http://bit.ly/MINKSCO-May13	
All Sessions – for Credit		https://forms.gle/hXHk2YGYL4zxtX8B	

Teacher Resources

The Algae Academy

The Algae Academy is a unique module that teaches the fundamentals of algae and how algae can be applied as a solution for today's global dilemmas. The goal is to use algae as a tool to effectively meet the four disciplines of STEM in an interdisciplinary and applied approach through real-world applications. This five-day drop-in-ready curriculum fulfills the human impact education component in the Next Generation Science Standards that requires students to be able to apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

Free to the 250 teachers accepted for the Spring 2021 session, the kit includes everything you need to complete the module: daily lesson plans for elementary, middle, and high school; lab supplies; live algae for your students to grow in the classroom; and educator training and support. In response to COVID-19, the Algae Academy is now offered in three formats:

- In-person with lab supplies provided
- Online with teacher demonstration; lab supplies provided for teacher to model experiments virtually
- Online-only, video-based curriculum with no lab supplies

After being accepted and completing the curriculum, educators will continue to be provided with free algae and the additional consumables needed to complete the curriculum each year so that the Algae Academy remains a part of your annual education plan. Apply for the Spring 2021 Session. For questions, contact Marissa Nalley at mnalley@thealgaeoundation.org.



Bring NASA Lessons into Your Classroom

The Ohio STEM Learning Network announces a new collaboration between science nonprofit Battelle and NASA: Next Gen STEM: Space from a Distance. Explore NASA's standards-aligned, hands-on STEM activities.

Starting on February 1, 2021, Next Gen STEM: Space From a Distance will feature standards-aligned design challenges designed for K-12 by NASA professionals. Each week will focus on a different piece of NASA's mission: STEM on Station, Moon to Mars, Commercial Crew, and Aeronaut-X. Each week, you'll get help for guiding your students through the engineering design process, participating in hands-on-STEM activities, and learning about NASA

careers from the professionals themselves.

Each day of the week is themed after a step in the design cycle, starting with #NASAMakerMonday and #NASATestItTuesday, and culminating in #NASAFeedbackFriday. Students will complete a prototype on Monday, iterate on their design, learn about careers at NASA from NASA's own STEM Stars, then submit their designs. NASA professionals designed these activities to demonstrate out-of-this-world concepts with everyday materials.

STEM^x™

Join the Facebook page



ACS-Hach Chemistry Grants

ACS is now accepting applications for the ACS-Hach Professional Development Grants! These grants of up to \$1,500 are intended to support high school chemistry teachers as they identify and pursue opportunities that can advance their professional development and enhance the teaching and learning of chemistry in the classroom.

Deadline for applications is January 4, 2021.



Skype with a Scientist!



STEM Outreach for Sanford Research

We teach K-12 students and teachers, undergraduates, graduate students and the community.

Our goals:

To increase community understanding of science, raise awareness of the benefits of research, and emphasize the role of both in our society.



Check out our new website for free lessons and printables.
promise.sanfordhealth.org

Are you interested in having a scientist talk to your class virtually? Send us an email and we'll get it scheduled.
sanfordoutreach@sanfordhealth.org

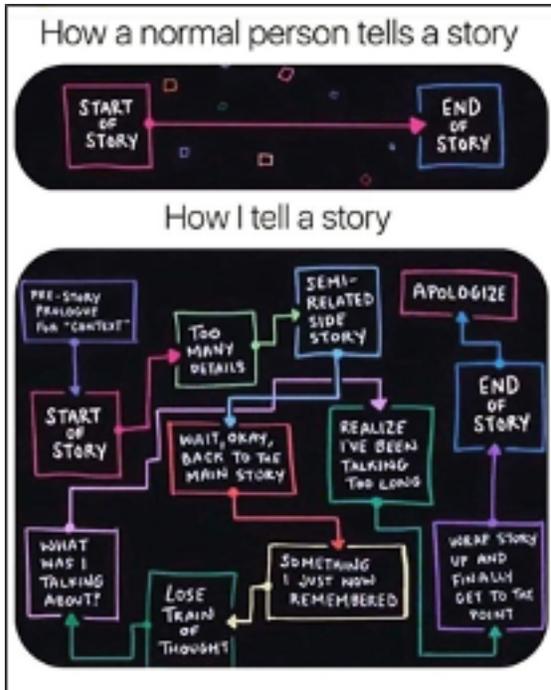
Do you need equipment to do labs in your classroom? We have an equipment lending library full of materials for you to borrow. Fill out this form!
<https://san fo/Equipment>

Follow us on social media



@SanfordPROMISE

Sanford Underground Research Facility



Engagement Traps

When a former intern posted this meme from the Science Humor group on Facebook it hit home for me. I present in classrooms a lot – in person and virtually – and I invariably get off-track. All it takes is a question from a student, a side note from a teacher about her class, or a poster on the wall, and I'm off to the races with a story from my life as a scientist. But there are no serious consequences when I am in your classroom. My goal is to inspire students to be curious about science, and if they get curious about the side trip and not the main story, that is just fine.

But I would fail miserably as a teacher! What I call an interesting side path, researchers in how students learn call a 'seductive detail'. Seductive details are attention-grabbing, interesting but IRRELEVANT pieces of information, in the form of words, illustrations, videos, etc. Irrelevant is the key word because these details can draw a student's attention away from the content you are trying to get them engaged in and on to another topic.

Learn more about engagement traps and how to avoid them at [EDUTOPIA](https://www.edutopia.org/engagement-traps).

Sanford Lab curriculum units can engage your students in the science and engineering behind a bundle of standards while keeping them on track towards mastery. When we develop a new curriculum unit, we work hard to avoid engagement traps by having a tight story line. We figure out what questions students will most likely have and choose investigations and activities to navigate students through those driving questions to mastery of the content. We pilot each unit in South Dakota classrooms.

Too Much/Too Little is a new upper elementary unit that has been piloted, revised and is ready for general use. Students explore the phenomena of flood and drought as they analyze maps and graph weather data, then tie it to South Dakota with a case study of the historic Rapid City flood of 1972 using 3D printed models. They then examine engineering design solutions to issues of too much and/or too little water, generating and comparing solutions to a local water issue of their choice. The unit concludes with an introduction to the Sanford Underground Research Facility, and the unique engineering challenge presented by pumping water a vertical mile in an effort to keep the underground dry for science.

Check out Too Much, Too Little along with all our Sanford lab curriculum units at www.sanfordlab.org/educators.

Peggy Norris, Ph.D.
pnorris@sanfordlab.



We are here to support you in *any* way that we can!

Our curriculum units are available for check-out [here](#). And **we are eager to bring our [presentations](#) and [field trip activities](#) to you and your students *virtually*!** Since every classroom looks a bit different in these changing and challenging times, please reach out so we can get creative and craft something special that fits your unique situation: BHSUSURFEducation@bhsu.edu

Best wishes,
Becky M. Bundy, PH.D.
Becky.Bundy@BHSU.edu

Opportunity for 2021 Graduates



IMPORTANT DATES

10 November 2020
Application Open*

28 February 2021
Application Due*

28 June 2021
Start of NYSCamp

21 July 2021
End of NYSCamp

CONTACT

 NYSFoundation
PO Box 3387
Charleston, WV 25333

 office@nysf.com

 +1 304 205 9724

 @NYSCenter

 @WVNYSCamp

 www.nyscamp.org

*FL, GA, and MA do not use online application, see apply.nyscamp.org for application process in these states

OVERVIEW

In its 59th year, the NYSCamp has traditionally been a residential science, technology, engineering, and mathematics (STEM) program in the eastern mountains of West Virginia designed to honor and challenge some of the nation's rising STEM leaders and provide them with opportunities to engage with STEM professionals and participate in exciting outdoor activities. In response to the COVID-19 pandemic, however, the 2021 NYSCamp will be an entirely virtual experience. The 2021 NYSCamp will be held virtually for two accomplished high school graduates from each state in the USA, plus Washington DC and select countries. More information can be found at nyscamp.org.

HIGHLIGHTS

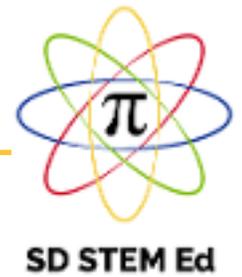
- Daily lectures and seminars with leading scientists
- Directed studies alongside visiting and resident STEM professionals
- Engaging activities in the natural, physical, computer sciences, creative arts, and outdoor recreation areas
- Opportunities for delegates to engage with STEM professionals, staff, and each other in fun and meaningful ways
- Special events and surprise guests throughout NYSCamp
- Delegates attend **free of charge**

ELIGIBILITY

- Graduates from high school between 1 July 2020 and 30 June 2021
- Documented superior academic proficiency
- Recognition for notable achievements in STEM program areas
- Skills and achievements outside of STEM and/or academics
- Intent to pursue higher education and a career in STEM
- Availability to commit to a minimum 4.5 hour daily participation
- Submit an application at apply.nyscamp.org on/before deadline

MORE INFORMATION AT APPLY.NYSCAMP.ORG

SD STEM Ed Conference 2021 Canceled



After much deliberation, the members of the SDCTM/SDSTA Joint Board have made the difficult decision to cancel the 2021 SD STEM Ed Conference. This decision was made with consideration for the health and well-being of attendees, the uncertainty in the current environment, and the policy restrictions and health risks associated with large gatherings. Because of the many unknowns regarding the COVID-19 pandemic, it has been decided that there is no safe way to conduct an in-person event. There are just too many variables, and not enough solutions.

This decision was not made lightly.

- The health of our members is our primary concern. In a time of surging COVID numbers, hosting a large gathering is inadvisable.
- In a time of constantly changing information, predicting the COVID situation three months in advance is impossible. Significant planning for the conference starts many months before the February event. Delaying the decision long enough to “see what happens” is simply not possible.
- If a decision were made to host the conference, plans must be made for registration, catering, travel, hotel, and meeting rooms. These plans are put into place months before the event. A last-minute decision to cancel would require refunding of registration dollars, but all other bills would still need to be paid. This would be a significant financial exposure for SDSTA and SDCTM.
- A last-minute cancellation would require that we notify all vendors and registrants. It would be a tremendous task to notify everyone in a timely manner.
- Very few session proposals were received this year. This undoubtedly reflects the uncertainty of our presenters regarding the February prognosis. With so few break-out sessions available, the quality of our conference would be impacted.
- SD STEM Ed brings in nationally known speakers for our keynote and featured presentations. As a current hotspot, South Dakota is not exactly a place that they are excited to visit. Additionally, their travel expenses are paid by the conference. Once reservations are made, we are financially committed, even if we cancel later.
- Many schools have informed their staff that no out-of-town conference attendance will be allowed this year. In addition to concern about the personal health of their teachers, there are concerns regarding contagion and bringing a virus back home to their schools. This could dramatically reduce our expected attendance.
- Many schools are already reporting difficulty finding substitute teachers. If a substitute cannot be found teachers may be denied professional leave to attend.
- The health of our Executive Board members is a big concern. They are the workers who make the conference happen. The possibility of illness/quarantine preventing their attendance is real.
- If an attendee becomes very ill, and the source is traced back to our event, SD STEM Ed could possibly be determined at fault and sued for damages.
- National affiliates (NCTM and others) have already canceled in-person events for spring 2021.

**We will miss you all and look forward to seeing you in Huron for 2022!
Save the date: tentatively scheduled for Feb. 3-5 2022.**

SDCTM/SDSTA JPDC Executive Board Members

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Michelle Bartels

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Mark Iverson

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Julie Olson

Cindy Kroon



<https://blogs.nasa.gov/educationexpress/>



What's new?

Click on the pictures for more!

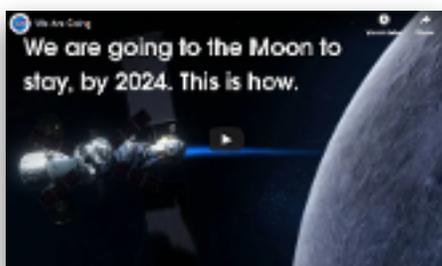


THE ARTEMIS TEAM

NASA has selected 18 astronauts to form the Artemis Team. The first woman and next man to walk on the Moon will be chosen from this group. Boasting a diversity of backgrounds, expertise and experience, these astronauts are ready to inspire the Artemis Generation.



Artemis is the first step in the next era of human exploration. Together with commercial and international partners, NASA will establish a sustainable presence on the Moon to prepare for missions to Mars.



NASA Names Artemis Team of Astronauts Eligible for Early Moon Missions

NASA has selected 18 astronauts from its corps to form the [Artemis Team](#) and help pave the way for the next astronaut missions on and around the Moon as part of the [Artemis](#) program.

Vice President Mike Pence introduced the members of the Artemis Team Wednesday during the eighth National Space Council meeting at NASA's Kennedy Space Center in Florida.

"I give you the heroes who will carry us to the Moon and beyond – the Artemis Generation," said Vice President Mike Pence. "It is amazing to think that the next man and first woman on the Moon are among the names that we just read. The Artemis Team astronauts are the future of American space exploration – and that future is bright."

The astronauts on the Artemis Team come from a diverse range of backgrounds, expertise, and experience. The agency's modern lunar exploration program will land the first woman and next man on the Moon in 2024 and establish a sustainable human lunar presence by the end of the decade.

NASA will announce flight assignments for astronauts later, pulling from the Artemis Team. Additional Artemis Team members, including international partner astronauts, will join this group, as needed.

"We are incredibly grateful for the president and vice president's support of the Artemis program, as well as the bipartisan support for all of NASA's science, aeronautics research, technology development, and human exploration goals," said NASA Administrator Jim Bridenstine. "As a result, we're excited to share this next step in exploration – naming the Artemis Team of astronauts who will lead the way, which includes the first woman and next man to walk on the lunar surface."

The astronauts of the Artemis Team will help NASA prepare for the coming Artemis missions, which begin next year working with the agency's commercial partners as they develop human landing systems; assisting in the development of training; defining hardware requirements; and consulting on technical development. They also will engage the public and industry on the Artemis program and NASA's exploration plans.

[Read the entire article here.](#)

The NASA EXPRESS message features updates from NASA and STEM associates about workshops, internships, and fellowships; applications for grants or collaborations; promotions for student and educator opportunities; online professional development; and other announcements.

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UPCOMING EVENTS

January, 2021

Ambitious Science Teaching

Online Course

January 29, 2021

South Dakota Master Naturalist

Application Due

February, 2021

Science in the City

Online Book Club

February 6, 2021

SDSTA Virtual Science Day

The SDSTA Newsletter is published four times a year and is e-mailed to 98 paid members. The membership year in SDSTA starts with the February conference and ends the thirty-first of January. Dues are due at each conference for member discount rates. SDSTA members may give a one year free membership to their student teachers by submitting the student teacher's name & address. One paid conference registration may be given to the SDSTA member that has made a submission to the newsletter (or given a presentation at the conference) and has referred at least three new members. Members may also earn a 10% finder's fee for any science related ads placed in the newsletter. Our rates are \$50 per page (or 3 to 4 quarter pages).



Become a Member!

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

Name _____ Home Phone _____

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City _____ State _____ Zip _____

Your School _____ School Phone _____

School Address _____

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

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