



SDSTA

South Dakota Science Teachers Association

Spring Issue | Date: June 22, 2020

Dear Members,

I hope this newsletter is coming to you during a time of relaxation and reflection. I know we all went through a stressful end of the school year, and I am sure, like me, that you have done a lot of reflecting on how virtual learning went and how you could do it differently if we need to do it again. I hope you do not spend too much time worrying about the coming school year and that you are experiencing some deserved relaxation. I know for me that this is the first time during my nineteen years of teaching that I will be home a lot in the summer instead of traveling to Spearfish, Sioux Falls, or even Germany for professional development. I love the PD and I love to travel, but I am enjoying my garden and my horses too. There are several summer PD opportunities included in the newsletter that will allow me to stay home, but I am having a difficult time thinking about being on Zoom again. Also included in the newsletter is a link for submitting a session proposal for the 2021 STEM Ed Conference. If you do not want to present alone, an officer would love to co-present with you! The proposals are due October 31st.

Another thing you may notice about the newsletter is that the submissions are from the SDSTA officers. It is one of the requirements of the officers to make a submission to the newsletter each quarter but all are welcome to submit. I invite you to submit to the newsletter.

When sending out the spring newsletter, I sent out a survey in order to get a better understanding of why people become members of our state science association. I thank all of you who took the time to fill out the survey because your answers have helped us

start brainstorming how we can become an even better organization than we already are. One of the main points expressed in the survey was the connection to other science educators in order to find out what others are doing in their classrooms. Many ideas were given as to how we could better connect to each other. Some of those ideas included an updated website with resources and/or a shared Google Drive, webinars, Twitter, Facebook, and discussion posts. Did you attend the Zoom meetings Jennifer Fowler hosted each week this spring? It was a time to ask questions, share resources, and “see” each other. I found these meetings to be very helpful in connecting with others who were going through the same circumstances while teaching virtually. This might be something that could keep going but instead of weekly, maybe on a monthly basis.

Finally, last but certainly not least, I invite you to go to page 9 where Julie Olson gives a list of resources on social justice. I am afraid I will do or say something this is not correct so I have remained silent. Silence is not the answer. I need to educate myself and I need to spread this education on to my students.

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

Hello Science Friends...

Congratulations on making it to Summer Solstice! What a quarter it has been and I choose to learn from the low points and embrace all the positives. As I worked with teachers and districts the past few months, I continued to be impressed by their resilience and dedication to learn and implement technology quickly and efficiently. We have an impressive accumulation of flex-learning resources ([found here](#)) and the science link is eleven pages long and FILLED with online resources. Also, thank you for those who participated in the weekly Science Collaborative Meetings. They were motivating for me and all who joined in to discuss and share. I hope to offer some version of the meetings again this fall.

My summers months are busy with facilitating and attending professional development, attending virtual national meetings, and revising the K-12 Educational Technology Standards. I am enjoying the diversity that my job offers as there is never a dull moment and no two days are ever the same.

I look forward to working with teachers in the four 1-day trainings Applying the SD Science Translations. Teachers of any level of experience using the Translation documents are invited to attend these virtual trainings. In the mornings, we will "dissect" the documents and understand the value of each of the aspects and in the afternoon you will have a guided opportunity to apply the Translations to your lessons/units that are planned for starting the school year. There's no better time than NOW to ensure your students have a full three-dimensional experience using our SD Science Standards!

We are in the middle of the summer online course Student Sense-Making in Science and the discussion and support the teachers are offering each other is inspiring! This fall I am offering the Interactive Science Notebooks course for 2 graduate credits via BHSU. You may choose from traditional composition notebooks or design a digital format for your students to create with you as the fall semester progresses. The course offers time for you to study, plan, then implement with your students. We will begin on August 10th so you have time before school starts to develop a plan so you students use notebooks on day 1 of school.

No matter how this next school begins or proceeds through the year, please let me know how I can support you and your students! I am here for YOU!

~Jen

"There's no better time than NOW to ensure your students have a full three-dimensional experience using our SD Science Standards!"



Join DOE Science Listserv

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

Applying the SD Science Translations

Who:

Any K-12 Science Educators with varying levels of experience using the Translations.

Where:

Virtually via Zoom

When:

July 8, 2020 [Register HERE](#)

July 22, 2020 [Register HERE](#)

July 23, 2020 [Register HERE](#)

July 29, 2020 [Register HERE](#)



All times are

9:00am – 5:00pm CST/8:00am - 4:00pm MST


Why:

To learn about the aspects of the SD Science Translation documents and use provided guided time to apply them to your classroom units with the support of colleagues.

Cost:

No charge. Contact hour certificates will be provided upon successful completion of the training.

Remote Resources - over 10 pages!!!!

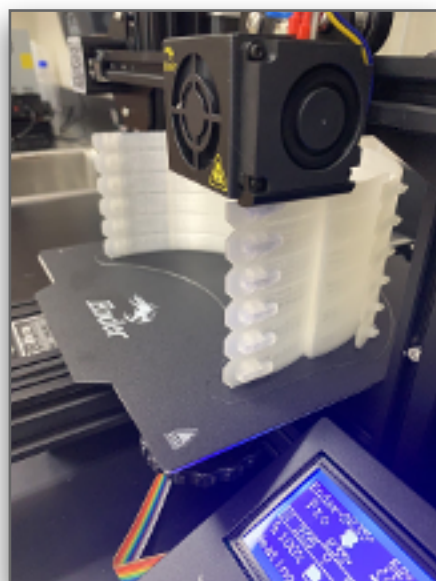
Instructional resources for remote learning curated during summer web DOE meetings. Click on the following link to access them. 

Making PPE (Personal Protection Equipment) for Front Line Workers

Julie Olson, SDSTA Newsletter Co-Editor and teacher at Mitchell Senior High/Second Chance High School, made 1240 ear savers, 209 cloth masks, 640 headbands with buttons, 100 instrument mouthpieces for the Mitchell elementary music program, and 50 visors. She will be making more visors for SPED teachers and front line workers now that she has a new and bigger 3D printer. Julie sent PPE to the South Dakota cities of Sioux Falls, Aberdeen, Watertown, Brandon, Huron, and Springfield. Her PPE has also been sent out of state to Kansas City, KS, Grand Forks, ND, Minneapolis, MN, Anaheim, CA, Lincoln and Omaha, NE, and Cedar Falls, IA.



Mark Iverson, Past-President and 8th Grade science teacher from Watertown, has been busy making PPE for front-line workers around the United States using both his equipment, securing a community grant, Lake Area Tech, and working with other dedicated educators (**Travis Lape** - Harrisburg, and **JJ Clendenin** - 3rd Grade Watertown) to provide free PPE. A list of PPE done by Mark and his crew is shown in the table on the following page.



Making PPE for Front Line Workers (cont.)

A list of PPE done by Mark and his crew.

1	Name/Organization	Ear Savers	Masks	Shields
2	Chamberlain Hospital and Assisted Living	225		
3	Brookings Nurse	12	4	1
4	Watertown Avantara	24	8	8
5	Sioux Falls Nurses	46	2	1
6	Watertown Area Nurses	325	65	26
7	At Risk Citizens	100	13	
8	Essential Employees	390	37	
9	Donated to LATI	205	28	518
10	California Nurses	62	51	551
11	Texas Nurses	12	10	10
12	Ohio Nurses	6	6	6
13	Georgia Nurses	30		30
14	Iowa Dentists			50
15	New York Nurses		20	50
16	Arizona Nurses https://www.amazon.com/hz/wishlist/ls/HDNUT1EAH5FT/ref=hz_ls_biz_ex	50	50	50
17	Seattle Nurses			30
18	New Jersey Nurses			30
19	Louisiana Nurses	6	5	5
20	Area Dentists	50	50	150
21	HyVee Pharmacy	35		
22	Wisconsin Nurses	35		
23	Clear Lake Hospital/Care Center	35		
24	Food Bank/Distribution	50	12	
25				
26	On Hand		52	
27	Totals	1698	413	1516

Would you like to help?

Mark has a wish list on Amazon. A lot of the items on the list are the raw materials that go into making the masks. Some of the other items will help print more efficiently and precisely as well as replacing broken pieces.



Congratulations!!!



Congratulations
Janet Briggs
on retiring after
42 years
of teaching!

Shell Science Lab
CHALLENGE



**Congratulations Julie Olson
for being a District IX winner!**

The annual Shell Science Lab Challenge Competition recognizes outstanding middle and high school programs for their exemplary approaches to science lab instruction utilizing limited school and laboratory resources.

As a district winner, Julie and her school will receive a \$3,000 science lab prize package that includes:

- \$1,000 Shell grant to purchase lab equipment and other science education resources;
- \$1,000 in donated science lab equipment donated by Carolina Biological Supply Company;
- \$300 gift certificate to the NSTA Science Store;
- One-year NSTA membership for two teachers;
- NSTA Learning Center subscription for two teachers; and
- Paid registration for two teachers to attend a future NSTA Area Conference on Science Education.

**Sanford Underground Research Facility's Neutrino Day:
A Matter Mystery
is going virtual the week of July 6-July 11!**

Our headliner is science comedian Brian Malow. In addition to his Neutrino Day stand up special, he will host conversations with scientists about the biggest science mysteries in our universe.

After each day's live talk, our Education and Outreach team will lead virtual science activities for students of all ages to do at home! From hands-on games, a science joke faceoff, online scavenger hunts, Native American games and virtual tours of the facility, Neutrino Day is here all week!

On Saturday, July 11, tune in for the Neutrino Day finale: Brian Malow's science comedy routine.

On June 1, we will launch the Neutrino Day hub, our brand-new website with a full agenda, speaker features and downloadable choice boards to help you and your family get the most out of the event. To stay tuned, follow us on social media and watch our website for updates!

We can't wait to see you at Neutrino Day: A Matter Mystery!

Find us on Facebook, Instagram and Twitter as @sanfordlab

Visit our Neutrino Day webpage: www.neutrinoday.com



Officer Submissions

Blogging - Jeff Peterson SDSTA Liason

Blogging Builds Relationships and Engages Students in Learning

Did you do any blogging in the last 4 months? Did you know that blog become a word in the late 90's? I found blogging to be particularly useful during my delivery of online education this spring. I sought this form of communication as a way to get students to remember their classmates and learn from each other.

Why blogs? I asked myself, what worked when I was an online student in early 2007-09 in pursuit of a Master's Degree at SDSU. I am very appreciative of the education I received thru blogging "called communication threads in most of my classes, timed open note quizzes/tests, research reports, and virtual portfolios. I felt very connected to my professors, and peers but never saw their face until my final capstone, 100% written communication prior to that!

Some tips for blogging with students. Define your expectations clearly.

Examples of student expectations:

- Come up with a creative title.
- Your post must be 4-6 bullet points in length or 4-6 sentences.
- Include a link to the source used the most.
- Include one picture that supports the contents.
- Reply back to two peers minimum with a 1-2 sentence response. Your response must have substance; add to the research, comment on something you found interesting, dig deeper by clicking on the resource links provided with each post.

My favorite blog during our online learning experience, blog about something you did in the last week to improve your natural surroundings. My students picked up trash, used reusable water bottles, released mature female fish, rode their bikes, planted gardens, etc. They posted a picture and description to prove it!

Roller Coaster Project - Mark Iverson Past-President

A great remote learning project for students to do as part of their 8th grade science course. Below is some of the information but the rest of the project can be accessed through this link: [🔗](#)

GOAL: Your goal is to get a ball (marble, ping-pong, golfball) to land in a cup using a total of 10 steps.

- The ball starting the reaction is considered your 1st step while the ball landing in the cup is considered the last step. So, you really only need to come up with 8 steps in between.
- You will use materials of your choice. The idea is NOT to go out and spend any money...be creative with the materials you have at home.
- Once you have it complete, you will send us a video of you explaining your Rube Goldberg machine and then showing us the ball traveling through your contraption.

Procedure:

1. Start brainstorming how you want your RG machine to work
2. Sketch a diagram of your contraption
3. Make a list of the materials needed for project
4. List the order of events that will happen in your contraption-remember you need a minimum of 10 steps
5. Finally, create your contraption.

Video Link



Officer Submissions

Remote Resources Used

Tiffany Kroeger SDSTA Secretary

positivephysics.com

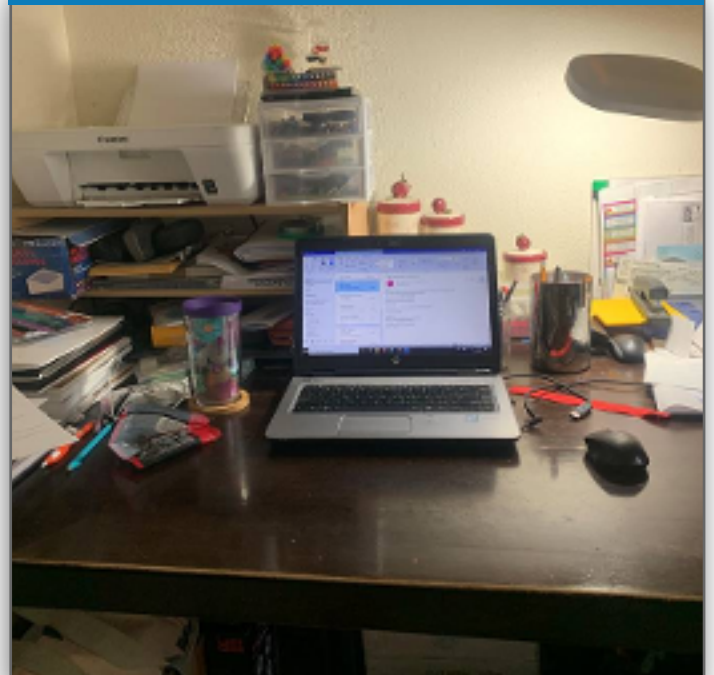
Great resource of physics problems organized by unit and topic. Includes questions, notes, video explanation of problem solving strategies, assessments and a few inquiry activities. Links well with material from ThePhysicsClassroom.com. There is a small subscription fee.

ThePhysicsClassroom.com

Tons of great information and activities but my recent favorite are the concept builders. They give lots of opportunities for students to work on the various concepts in game like setting. Many of my students enjoyed them and found them helpful practice. There are also videos for many of the introductory concepts in physics to help with distance learning this fall if needed.

Remote Office

Sabrina Henriksen SDSTA Liason



A Brighter Future Ahead - Ashley Armstrong SDSTA President-Elect

The last few months have brought about some stark changes for all of us. As a middle school science teacher, I always wondered what it would be like to teach my own children. I wondered what it would be like to teach from home. Well, wonder no more! Not only was I able to teach from home, I did so while chasing my own four children around the house, with my best attempt to help them follow the lessons provided by their teachers. I learned this was not an ideal situation and not one that I hope to continue into the future.

As we prepare for the fall semester, let us prepare for every situation and hope for the best situation. Let us be thankful for the time we spend in the classroom with students and to understand the difficulties that comes with education outside of the classroom. Let us be thankful for the parents that, on top of their work schedule and life that was also flipped upside down, they did their best. Last, but certainly not least, let us be thankful for one another. We are a community of educators who answered the call, adjusted our plans, spent countless hours in front of our screen revamping our work and reached out to as many students as possible.

Give yourself a pat on the back! The end of the 2019-2020 school year may not have went as planned, but we made it! We walked away with stronger student and parent bonds, more technology tools in our toolkit, and with a community of educators that are ready and willing to share their resources in a moment's notice. Do not forget all these lessons and resources when we return in the fall!

I saw some beautiful and amazing front porch pictures showcasing the family time that could have only existed due to this pandemic. My family took a different approach. We are real and raw and thought our photographed memory would be better served in the manner we spent our time at home - in utter chaos!

(Photo Credit: Signature Studios by Lisa)



Officer Submissions

Lessons Learned from OnLine Education - Ally Bowers SDSTA Liason

Shortly after we began distancing learning, one of my coworkers posed the question to us, "Has anyone found ways to give a test or quiz to prevent cheating?" I had been pondering this question as well. I hadn't found a simple (or free) way to give a timed quiz, I didn't have access to a question bank so that each quiz wasn't the same, and even if I had those sorts of tools, how could I prevent my high school students from just calling each other and taking the quiz together? I couldn't.

This brought up a bigger question: If I wanted to assess students' content knowledge, is a 15-question multiple choice quiz with low-level thinking questions the best way to do so? No, it was not. If I wanted to see which students deeply understand the content and allow them to show me what they got out of a unit, I needed to expand my ideas of what their assessments might look like.

In Biology, my students ended the year figuring out ecology and how living and nonliving things interact with each other. Rather than quizzing students on nutrient cycles, I asked them to find nutrients and nutrient transformations in their homes and yards. They took pictures and explained their examples, such as their dog taking in carbon from its food (made of plant and animal matter) and giving off carbon dioxide through cellular respiration. In Chemistry, I asked my students to find a chemical reaction in their daily life and relate it to as much content knowledge as they could. Students were able to demonstrate their knowledge of families of elements, types of reactions, conservation of mass and energy, entropy, and thermodynamics with one simple prompt.

The lesson learned here is that when I allow students to step out of their comfort zones and be creative (with scaffolding and clear directions), they rise to the occasion. The work they submitted was phenomenal! I wanted them to find something that they were interested in and apply their knowledge, and they did. Their work was creative and thoroughly demonstrated the knowledge that they had. I would encourage you to think about ways that you can let students step out of the box, rather than doubling down on anti-cheating tools and strategies. You may be pleasantly surprised.

My Favorite Distance Learning Tools - Ally Bowers

YouTube allows you to record directly from your webcam or mobile device, which came in very handy when I needed to review molarity and concentration equations with my chemistry students. My handwriting on a screen is atrocious, so I propped my cell phone above my desk with a small shelf and recorded myself working through each problem from their study guide on paper. I linked each video clip to a hyperdoc version of the study guide so that students could click on the video if they were stuck or to check their work.

Screencast-o-matic was another handy tool. Screencast-o-matic allowed me to create videos for mini lectures of new material or to review interactive questions in my students' online textbook. It has the option to record your screen, your webcam, or both and it has free and paid versions.

In saving the best for last, EdPuzzle is a fabulous video tool. In EdPuzzle, you can upload your own video (from youtube or the video file itself) or embed a video already on YouTube or other websites. I linked EdPuzzle with my Google Classroom in order to automatically import my students. Then, I chose the video and embedded questions for students to answer as they watched. You can prevent skipping ahead, embed short answer or multiple choice questions, and see how many times a student watched particular sections of the video. This was great for introducing a topic or for a quick check-in to see if students were grasping concepts or not. I didn't use EdPuzzle for every video, but it was a great tool for things that I really needed kids to watch and understand.

Officer Submissions

Social Justice Resources : Where to Begin? - Julie Olson SDSTA Co-Editor

It is very difficult for me to find the right words, afraid I'll say the wrong thing or ask the wrong person, when discussing social justice, white privilege, racism, and prejudice but silence is not an option. We are increasingly coming to school with a more diverse student population therefore we need to educate ourselves. It is important to face the sources of racism and to educate ourselves thereby allowing us to become not only better teachers for ALL of our students but better people and citizens of the United States/world. As many of you are asking, so did I, what resources can I start with? Here are some that were recommended to me (with some thoughts and uses thus far.)

Starters (short):

White Privilege: Unpacking the Invisible Backpack by Peggy McIntosh – A 3 page document the is a synopsis of a longer article. It presents examples of white privilege and some of them could be attributed to economic or class privilege too. Still, the point is made that whites have unearned privileges just by the color of their skin. https://psychology.umbc.edu/files/2016/10/White-Privilege_McIntosh-1989.pdf

Brene' Brown "We need to keep talking about Charlottesville"- Facebook Live recording - Just after the riots in Charlottesville, NC in 2017. A short engaging discussion of white privilege with no holds on what is said in a straight forward manner. What I really liked about this is that she says that we won't get it perfect when discussing race but it has to start somewhere. She also gives you ways to start the discussions and make your feelings known. https://www.facebook.com/watch/live/?v=1778878652127236&ref=watch_permalink

Explaining White Privilege to a Broke White Person by Gina Crosley-Corcoran – This 4 page document does a good job at discussing some of the statements of McIntosh as well as acknowledging other types of privilege (e.g. economic, gender).



Books:

Me and White Supremacy: Combat Racism, Change the World and Become a Good Ancestor by Layla F. Saad - This book does an excellent job of defining many terms, such as prejudice vs racism, while encouraging the reader to answer questions of themselves at the end of each "lesson." I am doing a "book study" with my daughter and am journaling my answers/insights for discussion and further reflection/review.

Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants by Robin Wall Kimmerer – This was something I came across on Twitter and I thought it sounded interesting from the standpoint of better understanding my Native American students' culture through storytelling and connecting it to science. A great read! I think all of my students will benefit and I plan to make this book available to them. I want to read them the stories (short) when we go on field trips.

How to Be an Anti-Racist by Ibram X. Kendi

White Fragility – by Robin DiAngelo There is also an educator study guide <http://beacon.org/assets/pdfs/DiAngelo-EducatorsProfDevGuide.pdf>

What Does It Mean to Be White? By Robin DiAngelo

Documentaries/Movies:

13th – Ava DuVernay (Netflix) - In this thought-provoking documentary, scholars, activists and politicians analyze the criminalization of African Americans and the U.S. prison boom.

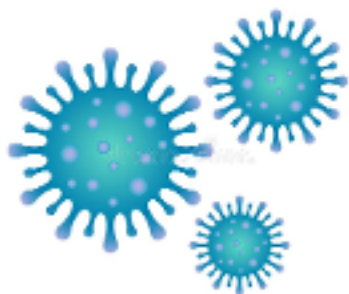
Selma – Ava DuVernay - The briskly paced movie traces the mass incarceration of black men back to the ratification of the 13th Amendment in 1865. historical drama about the 1965 Selma to Montgomery Marches.

Just Mercy – Based on the book by Bryan Stevenson - World-renowned civil rights defense attorney Bryan Stevenson works to free a wrongly condemned death row prisoner. This is free to watch on YouTube, Apple TV, etc.

Professional Development/Classroom Resources

Corona Virus Video and Resources for K-8

FunScienceDemos, a YouTube channel created by a Temple University professor and a Pennsylvania teacher, offers videos addressing science topics. In this video, a teacher explains how viruses infect healthy cells, providing information to help students keep themselves and their families calm and healthy. Free teaching resources accompany the lesson.



Inventing a Backscratcher from Everyday Materials K-2

Being able to recognize a problem and design a potential solution is the first step in the development of new and useful products. In this activity, students create devices to get "that pesky itch in the center of your back." Once the idea is thought through, students produce design schematics (sketches). They are given a variety of everyday materials and recyclables, from which they prototype their back-scratching devices. The



class will try out other student's backscratchers and discuss which are the most useful and what they liked about them. Testing them out is a key part of the process.

EDU_MC39.12 - Helping Students Succeed

Course Description:

In this book study we will be covering materials covered within the book title Helping Students Succeed. Author Paul Tough once again encourages us to think in a brand-new way about the challenges of child-hood. Rather than trying to "teach" skills like grit and self-control, he argues, we should focus instead on creating the kinds of environments, both at home and at school, in which those qualities are most likely to flourish. Mining the latest research in psychology and neuroscience, Tough provides us with insights and strategies for a new approach to childhood adversity, one designed to help many more children succeed.

Cost:

\$45.00 (PDF Book Included)

Registration:

[URL](#)

Hosting Institution:

University of Sioux Falls

Self-Paced Learning (Learning Management System):

Start Date – August 30, 2020

End Date – December 27, 2020

Professional Development/Classroom Resources



Are you looking for ways to engage and inspire your students next school year? The **Society for Science & the Public** creates opportunities for students and trains educators, and is proud to announce the following science education opportunities. Share with your STEM colleagues to support the students in your community.



Science News in High Schools magazine

Enroll your school in *Science News in High Schools*

Receive dynamic science journalism and ready-to-use, standard-aligned teaching content through our *Science News in High Schools* program. Regeneron and other sponsors are funding the participation of over 4,900 public high schools during the 2020-2021 school year. Spots are filling up fast, so fill out the [interest form](#) today.



Research Teachers Conference Lottery

The Society for Science & the Public will select 200 teachers to come to Washington, D.C., October 2-4, 2020, for an all-expenses-paid, peer-led weekend of sharing best practices involved in leading students in science research. High school teachers of all experience levels will be selected. The deadline to [enter the lottery](#) is July 15.



Check Out the Regeneron Science Talent Search 2020 Application

Do you know a rising high school senior with an extraordinary science research project? Encourage them to enter the competition that recognizes the future leaders of the scientific community and awards more than \$3 million each year to deserving students and supportive schools. The [application](#) is open now.



Two satellites decided to get married.

The wedding wasn't much, but the reception was incredible.

Virtual Professional Development for K-12 Science Teachers

WHAT

South Dakota EPSCoR is offering *virtual three-day teacher workshops* throughout the summer. Participants will *strengthen their understanding of three-dimensional science teaching* and receive support in meeting South Dakota's K-12 Science Standards.

Participants will also learn about science and engineering research underway at universities across our state and learn about a *newly developed K-12 curriculum* module with plans for more modules in the future.

The learning *workshops will be virtual*, using a combination of guided independent learning, collaborative online learning, and hands-on science activities and experiences. Participants will need to have access to Wi-Fi and a device compatible for video-conferencing (such as a laptop computer) for the collaborative online learning components of the workshop. If this is a barrier, please let us know and we'll try to help.

Featured topics will include phenomena-based instruction, facilitation of classroom discourse, and attention to equity and cultural relevance.

DETAILS

Participants will receive a total *stipend of \$300* for the three days with completion of all days and components of the workshop. Graduate credit will be available at discounted tuition. Space is limited in each session, so register early. Additional details and registration link available at: <http://sdepescor.org/education/>.

Summer 2020

WHEN

There are *five options* for the three-day virtual sessions.

- June 22 - 24
- June 29 - July 1
- July 13 - 15
- July 15 - 17
- July 20 - 22

WHO

Teachers of science across South Dakota: Elementary Teachers; Middle School Science Teachers; and High School Science Teachers

QUESTIONS

Nicol Reiner
Nicol.Reiner@bhsu.edu
605.642.6910

Education & Outreach
Sanford Underground Research
Facility
Black Hills State University



Professional Development

NSTA: Distance Learning Strategies and Assessment

In the four-part web seminar series on Distance Learning That Supports Student Sensemaking, participants will explore ways in which they can continue to give students experiences with relevant, intriguing phenomena to create the need to engage in science learning using distance-learning strategies. The focus will be on synchronous and asynchronous online learning, but we'll also consider how to connect students to their learning communities through smart- phones and local computers (no internet access).

This program is being offered twice:

July 6, 9, 13, 16 3:00-4:30 EST

August 4, 11, 18, 25 7:15-8:45 EST



National Geographic - Educator Certification

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



National Geographic OnLine Courses for Summer 2020

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.



- 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

2021 SD STEM Ed Conference Session Proposals

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

- Submit as many sessions as you want but you may not get acceptance of all.
- Both workshop or presentation style welcomed.
- Presenters must be registered or exhibiting at conference.
- Proposals are due by October 31, 2020
- You will receive confirmation of acceptance by December 1.

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



Professional Development

ASM Materials Camp

We will be expanding our online community to provide you with year-round camaraderie and teacher resources. You will be able to participate virtually in the week of Materials Camp by registering for the week most convenient to your schedule. Every teacher registered for Materials Camp will receive a box of supplies for participating in activities during the Camp, and to use with their classes in the fall. You will be receiving additional information regarding logins, materials, etc. in the coming weeks. Please feel free to encourage your colleagues to join us too.

July 6-10	10 am-12 pm / 1-3 pm / 5-6 pm
July 6-10	12-2 pm / 3-5 pm / 7-8 pm
July 13-17	10 am-12 pm / 1-3 pm / 5-6 pm
July 20-24	10 am-12 pm / 1-3 pm / 5-6 pm
July 27-31	10 am-12 pm / 1-3 pm / 5-6 pm
August 3-7	10 am-12 pm / 1-3 pm / 5-6 pm
August 10-14	10 am-12 pm / 1-3 pm / 5-6 pm



4H Summer Adventures for Kids

This summer will look very different for youth across the state as each community and family decides what is best for them. In an effort to meet youth wherever they may be this summer, SD 4-H is taking our educational programs virtual. The South Dakota Summer Adventure program will utilize a variety of the lessons traditionally use in the classroom and during after school and day camp programs. The program runs for 11 weeks starting June 1. Each week will have a different theme and will consist of a variety of live zoom sessions, recorded videos, and DIY activities away from the screen. Materials required for the activities will be easily found around the home or easily accessible even in the most rural communities. For older youth the majority of the activities will require minimal to no adult supervision (example: cutting fruits/vegetables). Our activities will explore everything from photography to kitchen science throughout the summer. For more information please click on the clover.



100Kin10 Anti-Racism Resource List

This document is a compilation of anti-racism resources compiled by 100Kin10. This document is designed for non-Black people, including other people of color who are committed to rooting out white supremacy in themselves and their communities. While not all of these resources will resonate with individuals from other marginalized groups, many might still be helpful.

Please note that this document is living and we will add to it. This is by no means intended to be comprehensive, and we are just at the beginning of this journey as an organization.

100Kin10 unites the nation's top academic institutions, nonprofits, foundations, companies, and government agencies to address the nation's STEM teacher shortage. Together, we are tackling systemic challenges and getting 100,000 excellent STEM teachers into classrooms nationwide. By giving STEM teachers the support they need, we are helping to educate the next generation of innovators and problem solvers.

100KIN10



Click for the GoogleDocs list

Professional Development

SD Discovery Center

The SD Discovery Center is offering three distance summer professional development opportunities. In developing these opportunities we established the following criteria.

Our PD had to:

- Support educators in using three dimensional instruction.
- Abide by CDC guidelines whatever those might be in a month.
- Utilize hands-on, experiential learning.
- Keep screen time at a minimum.
- Be adaptable for in person and remote classroom teaching.
- Be enjoyable for the educator.



A tall order to be sure but we think we did it. We are offering three learning opportunities

STEM Research in the Classroom: Connecting Research to Students.

Use cutting edge research conducted in South Dakota to teach science through hands-on lessons.

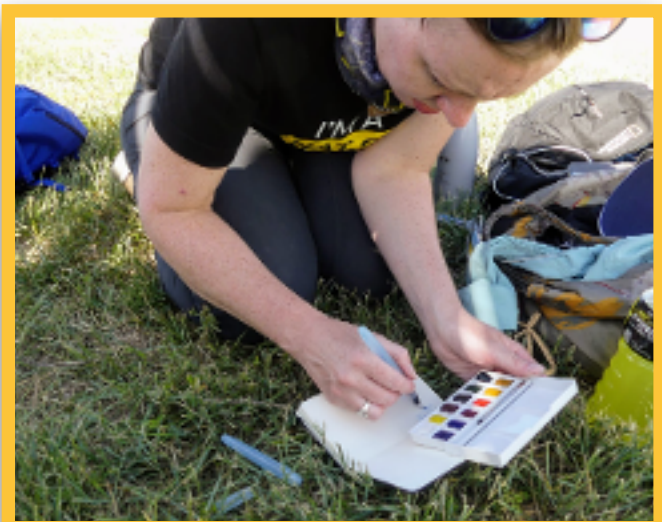
Field Research for Teachers

Teachers conduct local, place based field research using iNaturalist and GLOBE to develop phenomena for student investigation.

How to Teach Nature Journaling

A professional learning community for educators who want to effectively integrate nature and field journals into instruction.

To learn more or sign up go to: <https://sd-discovery.org/Professional-Development>



Professional Development

ED 692 Interactive Science Notebooks

What: ED 692 Interactive Science Notebooks (2 graduate credits through Black Hills State University or 30 Contact Hours available from SD DOE upon successful completion of the course) This course will have a similar format as the Student Sense-Making in Science courses that were offered last spring and again this summer!

When: August 10 – November 15, 2020 (14 weeks)

Where: Online... and wherever you work best . This course contains 4 modules with weekly online assignments due Sunday nights and each module includes a scheduled webinar.

Who: K-12 teachers with a classroom of students learning science

Why: Collaborating with other K-12 science educators will enhance and support your lessons increasing student engagement and success.

How: Schoology will be the online platform used for this course.

Cost: \$80 if desiring graduate credit (\$40/credit = reduced tuition, non-refundable if course is dropped)

Materials: Courtesy of SD DOE and following registration, participants will receive a free copy of this text: Teaching science with interactive notebooks. By Kellie Marcarelli. Please email Jennifer.fowler@state.sd.us with your preferred mailing address to receive the book in July. Email Jennifer if you also want to take the class for credit after registering.

Also, begin thinking how you will have your students obtain a notebook (traditional composition notebooks are preferred by teachers and students) and perhaps they will buy their own, or you/school will provide them, or perhaps by donation of some sort.



NSTA STEM Forum and Expo Goes Virtual!

NSTA is excited to announce the transition of its 2020 STEM Forum & Expo, previously scheduled July 22–24 in Louisville, Kentucky, to a one-of-a-kind virtual STEM event, taking place July 27–30. **NSTA's STEM Forum & Expo Virtual** will feature an engaging array of sessions, panels, and presentations focused on the latest developments and insights on the most important topics and issues affecting the STEM education community today.

Each day of the four-day event will concentrate on a different grade level:

- July 27—early childhood and upper level elementary educators and administrators
- July 28—middle school level educators and administrators
- July 29—high school level educators and administrators
- July 30—post-secondary level educators and administrators



Astronaut Mike Massimino will kick off each day with a message of support and encouragement for attendees. The Forum will also have a virtual exhibit hall, several networking opportunities, and special events, including the Elementary Showcase and the Robot Roundup.

This reimagined event, although different in format from any previous NSTA conference, promises exciting prospects both familiar and innovative. We look forward to welcoming you to **NSTA's STEM Forum & Expo Virtual** in July!

Professional Development

Online STEM

The **STEM Education Center at WPI** is offering a menu of unique online PDs that will engage you in small group collaborations from the comfort of your home or anywhere with Wi-Fi. Our PDs are aligned with standards and practices, provide PDPs/CEUs/grad credits, and you always leave with resources for your classrooms (and the support of new-found friends). **Register soon**, after learning about our summer offerings [HERE](#) or below.

Online STEM Teaching: Meeting the Needs of all Learners

Late June & early July offerings for PK-12 educators

Need to enhance your online teaching skills to better meet the needs of all of your students? With this set of **introductory** and **advanced** workshops, you can do just that! There's even a PD specifically for administrators/coaches. [More info](#)

STEM/STEAM Projects

July 15-16 for PK-12 educators

Looking for new STEM or STEAM project ideas to incorporate into your classroom? Look no further! Explore challenges aligned with grade-level standards and follow the steps of the engineering design process to solve them. Always an educator favorite! [More info](#)

STEM for All: equity and inclusion for high-quality STEM learning

July 20-21 for PK-12 educators, pre-service teachers & graduate students

Explore the barriers to inclusion in STEM and learn with others how to reframe the issues and implement strategies such as culturally responsive teaching (CRT) to work towards equity in STEM. [More info](#)

Seeds of STEM: Research-based Preschool Curriculum

July 20-22 for Preschool educators

Problem Panda has a LOT of problems! Step into the shoes of a preschool student and experience this hands-on approach to doing STEM with young children. Explore the Seeds of STEM curriculum binder and color images, and discuss with other educators how to implement this year-long curriculum in your classroom. [More info](#)

STEM Educator Certificate Course (*grad credit available*)

July 27-31 for PK-12 educators

Earn a STEM Certificate from WPI! Join us on a journey to design a high-quality, integrated STEM Challenge that aligns with STEM standards of your choice. This course is great for in-school educators, out-of-school educators, and coaches of all grade levels. It's one of a kind! [More info](#)

Assessments Re-imagined (*grad credit available*)

August 3-7 for PK-12 educators

Transform the way you look at assessment practices. Re-imagine and redesign your current assessments to meet critical elements of high quality, while collaborating with grade-level colleagues. Assessing will never be so clear!

[More info](#)

Project Based Learning Institute (*for school teams*)

August 18-20 for PK-12 educators

Immerse yourself in PBL! Work together with your educator team to dive deeper into the understanding of project-based learning. Let us guide you to plan real-world, high-quality PBL experiences for your students. [More info](#)

We look forward to meeting with you virtually this summer,

Mia, Donna, Shari, Terry, and Kathy

stemcenter@wpi.edu

www.wpi.edu/+ste

Equipment Lending Library

Sanford Research believes every student should have access to the resources to pursue careers in science and research. As a result, Sanford PROMISE is committed to sharing over \$40,000 of resources and supplies with schools. Educators at academic institutions across the region have access to the technology housed in the Sanford PROMISE Community Lab at no charge.

Failure to return equipment on time, without damage, may result in removal of future lending opportunities.

All equipment must be reserved using the request form. First priority is always given to educators who have attended Sanford PROMISE educator workshops. All other equipment distribution is prioritized on a first-come, first-served basis after completion of the request form. Homeschool educators are welcome to request equipment from the lending library.

See activities and equipment available.



Contact: Benjamin Benson, Research Education Specialist
 (605) 312-6421 benjamin.benson@sanfordhealth.org

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.



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Contact Us

SanfordOutreach@sanfordhealth.org

research.sanfordhealth.org/academic-programs

PROMISE

SANFORD RESEARCH



Re-Opening School: What It Might Look Like?

by Jennifer Gonzalez

I don't need to give you much background here: As you all know, schools have been closed worldwide in response to the COVID-19 pandemic, and in the same way that cities are at various stages of reopening businesses, schools are doing the same thing, or at least thinking about how it might work. We all know that unless someone develops a vaccine soon, school just can't be run the same as it was before. There's reinfection to consider, second and third waves of cases that could cause new shutdowns, and on a more distant horizon, the stark possibility that new viruses could take us down just like this one did.

I figure right now, educators everywhere are trying to decide the best course of action, or at least wondering what their district leadership is considering. Since I have access to a lot of educators all over the place, I believe the best way I can help with that process is to ask you all what you're doing, then curate those ideas so they can reach more people. So about a week ago I tweeted out a request for ideas. I got some from there, some from my own searching, and some from the legwork that Larry Ferlazzo already did on this topic.

Reading through all the proposals was overwhelming, especially when I clicked through to look at the densely-packed documents that detailed all the different distancing and disinfecting protocols that had to be considered. I would give each one about thirty seconds, and then I just wanted to run away. The words just swam together after a while. I'm guessing you may have experienced something similar at some point. I guess I just wanted to validate that for you: Yes, it's overwhelming. So in the spirit of contributing something of value here, rather than adding to the overwhelm, I'm going to do three things.

The first part will be practical. I'll very quickly run through seven different ideas people are considering for reopening schools. I was kind of excited about one idea in particular, because it's something a little different and it might actually work. The second part will also be practical, but more random. In this section I'll share other thoughts and ideas I've seen floating around that connect to school reopenings but aren't necessarily tied to specific plans. The third part will be more of a pep talk. I'm not sure how much good it will do, but I want to talk a little bit about what I would be doing right now if I were a classroom teacher bracing myself for the upcoming school year. My hope is to offer something that will help you get through this.

Alrighty then. Deep breath. [\(click on the hyperlink to see the full description of each part\)](#)



Part 1: Ideas For Re-Opening

Solution 1 - Alternating days or half-days

Solution 2 - Cohorts

Solution 3 - Selective return of grade levels, students, or teachers

Solution 4: One course at a time

Solution 5: One room school house

Solution 6: Individual learning plans

Solution 7: Keep distance learning

Part 2: Other Considerations

Remediation vs acceleration

Getting input from all stakeholders

Making equity and culturally responsive teaching an integral part of the plan

Looping

Substitute availability

Childcare for teachers' kids

Part 3: Facing the Unknown (can be seen by clicking on the link)



For Educators

INSPIRE · ENGAGE · EDUCATE · EMPLOY
The Next Generation of Explorers

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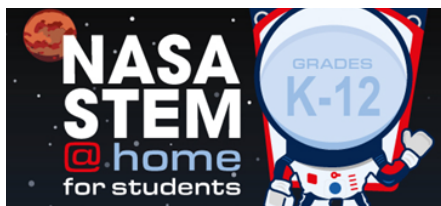
<https://blogs.nasa.gov/educationexpress/>



What's new?



NASA EXPRESS



The NASA Strategy for STEM Engagement serves as a roadmap to frame and guide the Agency's work to benefit students over the next three years. The scope of STEM engagement encompasses all endeavors to attract, engage and educate students and to support educators, educational institutions, and professional and student organizations.

Next Moon Step Challenge: Make your mark with NASA and Future Engineers

When Neil Armstrong first stepped foot on the Moon over 50 years ago, he captivated the world, saying, "That's one small step for a man, one giant leap for mankind." Around the world, young people gathered around TV sets to tune in. The historic mission inspired the Apollo Generation to pursue space-related careers; with many of those individuals serving in NASA leadership roles today—at NASA centers, in space and at home.

NASA's Artemis program is working to launch astronauts to the Moon once again, with a goal of sending the first woman and next man to the lunar surface by 2024, and inspiring the next generation of explorers, scientists, engineers and dreamers—the Artemis Generation—along the way.

As NASA progresses with the Artemis program, NASA's Office of STEM Engagement, or OSTEM, envisions students across the nation being a part of that journey, and ultimately, future missions. NASA's direct work with students aims to engage the Artemis generation and stimulate interest in STEM careers across the nation.

On May 30, SpaceX's Crew Dragon launched to the International Space Station. This launch was the first time American astronauts had launched from American soil since the end of the Space Shuttle Program in 2011. The launch was witnessed around the world, a crucial milestone for future missions to the Moon and beyond. A major moment for NASA, it was also a significant for the students of the Artemis Generation tuning in. Students across the country had been preparing for the launch for weeks, from virtual classrooms to back yard missions. For many, this was the first time they had seen a launch from American soil, and for all, it was the first time NASA had launched a commercial rocket into orbit.

Building off the momentum of a successful launch, NASA collaborated with Future Engineers to create the Next Moon Step Challenge, with hopes of keeping the launch excitement and inspiration alive within the Artemis Generation, and encouraging them to make their mark in space. The challenge, open from Friday, June 5 to Tuesday, July 21, asks K-12 students to brainstorm what their famous line would be as they first step foot on the Moon **Finish the article...**

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.

Why was the SpaceX rocket late for liftoff?

Because it was Dragon.

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UPCOMING EVENTS

July 6-11

Neutrino Day

Lead, SD

September 15

Newsletter Submissions due

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

October 31

STEM Ed Conference Session Proposals

Anyone can do it!

February 4-6, 2021

SD STEM Ed Conference

Huron, SD



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

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