

**28th
Annual**

SD STEM Ed Conference

**South Dakota Council of Teachers of Mathematics
South Dakota Science Teachers' Association**

#SDSTEMEd

February 6, 7, & 8, 2020

**Crossroads Hotel-Huron Event Center
Huron, SD**

STEM for ALL

Last Update: January 28, 2020

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Graduate Credit is available through DWU-Mitchell.

#SDSTEMEd

Next year's conference will be **February 4, 5, & 6, 2021.**

Featured Speakers

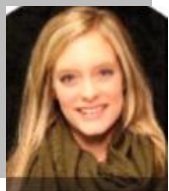
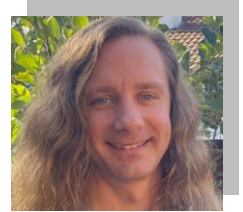
BANQUET SPEAKER — Michael Vargas

is a passionate physics teacher in the Paradise Valley Unified School District. He is currently serving as the Rolls Royce Air Force Association Aerospace Teacher of the Year. Mike took the scientific approach to solving one of Arizona's problems in education: There are only 159 physics teachers in the state. Vargas was the driving force behind Senate Bill 1038: High-Quality Teacher Professional Development Pilot Program, which was signed into law on May 8. The mini-grant program will allow current teachers in the field to get new certifications in hard-to-fill STEM subjects. His willingness to step up as a teacher leader in the state showcases the tangible impact educators can have on local policy and legislation. Besides being our banquet speaker, he is also doing a session at 2:10 on Friday in the Symposium.



OTHER FEATURED SPEAKERS

Sean Nank, PhD, received the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST). Sean is a Distinguished Teacher in Residence and adjunct professor at California State University San Marcos, a full professor at American College of Education, and works for Oceanside Unified School District. Sean currently serves on the MARC committee for NCTM. He has published multiple books, articles, and K-12 math curricula. He has worked in various positions with the US Department of Education, White House Office of Science and Technology Policy, NSF, California Department of Ed & Commission on Teacher Credentialing, San Diego County Office of Education, and Smarter Balanced Assessment Consortium. He was appointed to represent the USA at the International Congress on Mathematical Education in Korea as the mathematics assessment expert as to the current state of mathematics education. Sean is a Facilitator for Illustrative Mathematics and LearnZillion. He is starting his second term as President of the Greater San Diego Mathematics Council. His current research agenda includes how teachers negotiate the balance between the procedural, conceptual, and application via technological resources. Catch his Friday morning sessions in Dakota C and Saturday at 10:00 in Dakota A & 1:40 in Dakota F.



Sara Wevik's focus at South Dakota Manufacturing & Technology Solutions is marketing. She is responsible for maintaining the company's social media platforms, promoting events, and building client relationships. In this role, she is also responsible for managing the "What's So Cool about Manufacturing?" student video contest. Sara's Friday sessions start at 2:10 & 3:30 in Dakota B; and Saturday in Dakota F at 8:00 & 9:00.

Annie Fetter worked on the project that developed the first version of the Geometer's Sketchpad and was a founding staff member of the Math Forum until it ended in 2017. Currently she consults with schools, districts, states, and a world-famous art museum and speaks at conferences, encouraging a focus on sense-making and leveraging students' idea. She works for STEM Education and on NSF grants. Her very first Ignite talk, "Ever Wonder What They'd Notice?", has been used in countless PD session around the world. She reads a lot, is an unapologetic beer snob, plays bass and sings at bluegrass jams and in an all-girl band, plays ice hockey goalie, bakes sourdough bread, and is mother to two of the best dogs a cat lover could have. Find Annie's Friday sessions in Dakota D at 10:30 & 2:10 and all day Saturday in Dakota D.



Travis Lape is entering his 7th year with the Harrisburg School District where he currently serves as the Innovative Programs Director. Travis is passionate about creating learning environments that leverage the best instructional practices that we know get the largest effect on learning. In 2015 Travis was recognized for his work with integrating technology into classrooms by being named TIE Technology Leader of the Year. Travis believes that by empowering learners to drive their learning we can start to create a new system that honors all learners and their cultures. When Travis is not at work you can find him hanging out with his wife Lynn and their two boys DJ (4) and Tyler (1). Find Travis' sessions all day Friday in the Symposium.

2020 SD STEM Ed Conference

South Dakota Council of Teachers of Mathematics
South Dakota Science Teachers' Association

#SDSTEMEd The meeting rooms for all sessions are in
The Crossroads Hotel/Huron Events Center

Program

Thursday, February 6, 2020

7:00 PM - 9:00 PM Evening Sessions (See Program)

Friday, February 7, 2020

7:00 AM - 4:20 PM Registration Open Pre-Function Area

8:00 AM - 5:00 PM Exhibits Open Pre-Function Area

8:00 AM - 8:30 AM Opening Session & Keynote Prairie A & B

8:30 AM - 11:20 AM Morning Sessions (See Program)

11:20 AM - 11:50 AM Networking, Exhibitor & Poster Session Exhibitor Hallway

11:50 AM - 12:50 PM Friday Luncheon Prairie A, B, C
(cost included in the registration fee)

12:50 PM - 1:10 PM Networking, Exhibitors & Poster Session Exhibitor Hallway

1:10 PM - 4:20 PM Afternoon Sessions (See Program)

4:30 PM SDCTM Business Meeting Dakota A
SDSTA Business Meeting Dakota E

5:30 PM - 6:30 PM Social Hour Pre-Function Area
Sponsored by SD STEM Ed & Vendors

6:30 PM Friday Evening Banquet Prairie A, B, C
(Cost is \$25)

Saturday, February 8, 2020

7:00 AM - 11:20 AM Registration Open Pre-Function Area

7:00 AM - 8:00 AM Breakfast Meeting Salon

Presidential Awardees (Past & Present)

8:00 AM - 11:30 AM Morning Sessions (See Program)

11:30 AM - 12:30 PM Saturday Luncheon Prairie A, B, C
(cost included in the registration fee)

12:40 PM - 4:15 PM Afternoon Sessions (See Program)

4:30 PM Joint SDCTM & SDSTA Prairie A & B
Executive Board Meeting

SD STEM Ed Conference 2020 Planner

Thursday, Feb. 6, 2020		
	First Choice	Second Choice
7:00 PM	Science Showcase Prairie B	Math Pot Luck Prairie C

Friday, Feb. 7, 2020		
Remember to visit the exhibits in the Lobby and Hallways of the Crossroads Hotel.		
	First Choice	Second Choice
8:00 AM	Session #: F100 OPENING SESSION	
	Location: Prairie A, B	
	Title: STEM for ALL	
8:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
9:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
10:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
11:50-12:50	Friday Noon Luncheon in Crossroads Hotel – Prairie A, B, C	
12:50-1:10	Exhibitor Networking: Exhibitor and Poster Session	
1:10 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
2:10 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
3:00 PM	Exhibitor Networking: Exhibitor and Poster Session	
3:30 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
4:30 PM	SDCTM BUSINESS MEETING in Dakota A SDSTA BUSINESS MEETING in Dakota E	
5:30	Social hour Sponsored by SD STEM Ed & Vendors	
6:30 PM	Friday Night Banquet in Prairie Ballrooms A, B, C (Banquet Tickets Required - Cost is \$25) Michael Vargas - speaker	

Saturday, Feb. 8, 2020		
	First Choice	Second Choice
8:00 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
9:00 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
10:00 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
10:50 AM	Exhibitor Networking: Exhibitor and Poster Session	
11:30-12:30	Saturday Noon Luncheon in Crossroads Hotel – Prairie A, B, C	
12:40 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
1:40 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
2:40 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
3:30-4:15	Wrap-up and Reflect – Science in Dakota A	Wrap-up and Reflect – Math in Dakota G
4:30 PM	SDCTM & SDSTA JOINT BOARD MEETING IN Prairie A & B	

Next Year's Conference will be February 4, 5, & 6, 2021

Thursday 7:00-9:00PM - Conference Kick Off

Thursday, 7:00 PM

T102 Science Showcase

Prairie B

Bring an activity to share with colleagues that relates to your science classroom. Share your lesson with a link on social media, send to officers@SDSTA.org, to post to the page, or bring copies to share. Pizza will be provided for those who attend!!

#SDSTEMEd

Thursday, 7:00 PM

T103 Math Pot Luck

Prairie C

Network with other math teachers! Share your favorite activities and lessons! Swap teaching ideas! Sharing math teaching ideas will be the focus of this session. Bring 25 copies of your favorite activity to share. Leave with ideas from other great teachers. Pizza will be provided for those who attend.



Friday 7:00AM

Conference Registration Opens - Crossroads Lobby

Share the Classroom Treasures - Salon II

Stop in and see what is there. (Free items)

Banquet Tickets?

There is a limited number of extra banquet tickets still available. Check with Sheila at the Registration Desk.

Friday 8:00AM

Friday, 8:00 AM

F100 Opening Session

Prairie A & B

SDCTM President Crystal McMachen and SDSTA President Mark Iverson will give a conference overview. They will introduce the featured speakers, highlight various STEM sessions, and answer any or all question that may arise.

Breakout Sessions - Friday 8:30AM

Friday, 8:30-10:20 AM

F103 {Two hour session} Resources for Dissection

Benjamin Benson & Steven Rokusek Sanford Research & SDPB
Benjamin.Benson@sanfordhealth.org Steven.Rokusek@state.sd.us

Dissection in the classroom can be hard. Join Steven and Ben to see how their resources can help you make dissection for your students feasible. Session will include hands-on dissection of bovine eye, information about dissection resources at <http://www.sdpb.org/learn>, and finally learn about resources available from Sanford Research's PROMISE program related to dissection.

Prairie C

Middle School, High School Science
<https://research.sanfordhealth.org>



Friday, 8:30 AM

F104 TOP Study Tours

Michelle Bartels Hamlin Middle School
Michelle.Bartels@k12.sd.us

The Transatlantic Outreach Program is all about experiencing Germany firsthand. TOP offers Germany-focused classroom materials and study tour opportunities to K-12 educators of STEM subjects. Learn about the opportunity to experience contemporary Germany for yourself with almost all expenses paid!

Dakota A

Elementary, Middle School, High School Science & Math
<https://sites.google.com/site/bartelsscience/home>

Friday, 8:30 AM

F105 Perceived Definitions of Domain Applied to Problem-Solving Tasks

Margaret Adams South Georgia State College
Margaret.Adams@sgsc.edu

Grade 8 Common Core Standards include functions and domains; but undergraduate college students do not recall this knowledge based on inconsistent applications to graphs and other written problem-solving tasks. A theoretical model of understanding based on schema construction is proposed to explain inconsistencies. Suggestions for instructional practices will be exchanged.

Dakota B

Post-Secondary Math
www.sgsc.edu

Friday, 8:30 AM

F106 Featured Session Everything You Want to Know About Thriving as a STEM Teacher that No One Ever Told You

Sean Nank California State University San Marcos
mathcoachnank@gmail.com

Come discuss actionable steps to embrace STEM, value every student, and advocate for your classroom while staying true to your passion for STEM. We will discuss 10 strategies no one has told you – but they should have! Whether it is your 1st or 41st year of teaching, come learn how to embrace your passion for teaching.

Dakota C

General Interest Math
www.SeaNank.com

Friday, 8:30 AM

F107 Codes, Ciphers, & Enigma: Using Cryptography in the Classroom

Lori Goldade TIE
LGoldade@tie.net

You'll come away with a brief introduction to cryptography and ways to use ciphers in your classroom. This includes cryptography in breakout activities, digital storytelling, ciphers in math and more. You'll also learn about the Enigma machine and how your students can build an Enigma machine from a Pringles can!

Dakota D

Middle School, High School Science & Math
<https://tie.net>

[Repeats as F401]

Friday, 8:30 AM

F108 Tracking Mosquitos Using NASA GLOBE Observer

Mosquito Habitat Mapper and Landcover Tool

Dakota E

Cassie Soeffing Institute for Global Environmental Strategies

Cassie_Soeffing@strategies.org

Elementary, Middle School, High School Science
observer.globe.gov and strategies.org

NASA's GLOBE Observer is a citizen science research campaign connecting citizen scientists of all ages in monitoring changes in the frequency, range and distribution of potential disease vector mosquitoes. Your observations of mosquito larvae and their habitats can be paired with environmental data to help forecast disease outbreaks and reduce risk of disease. Lots of resources to share and it's hands on - so bring your phone to get started!



Friday, 8:30 AM

F109 Resisting Scientific Misinformation-Part I

Dakota F

Larry Browning & Matt Miller South Dakota State University

Larry.Browning@sdstate.edu Matt.Miller@sdstate.edu

tumblehomebooks.org/services/resisting-scientific-misinformation

Middle School, High School Science

False scientific claims abound. We will introduce you to SAP (Sources, Author, Purpose) and Resisting Scientific Misinformation curricula to evaluate claims. These are resources to help you and your students identify misleading advertisements and arguments by examining the “scientific” evidence. A follow up session will examine more steps.

Friday, 8:30 AM

F110 Mastery Learning

Dakota G

Diedra Nissen & Kiki Nelsen Roosevelt High School

Diedra.Nissen@k12.sd.us Kiki.Nelsen@k12.sd.us

High School Math

Learn how to implement a mastery learning assessment model in your classroom to increase understanding and keep students engaged all year long. *[Repeats as F510]*

Friday, 8:30 AM

F111 Interims and the Digital Library- How These Programs Can Advance Your Students

Dakota H

Amanda Thronson , Stephanie Higdon & Jennifer Fowler SD DOE Elementary, Middle School, High School Science & Math

Amanda.Thronson@state.sd.us Stephanie.Higdon@state.sd.us Jennifer.Fowler@state.sd.us

We will be discussing interim assessments and the Digital Library and how these programs can be used to find gaps in your students' learning and fill them.

Friday, 8:30 AM

F112 Featured Session What is the Big Deal About Assessment?

Symposium

Travis Lape Harrisburg School District Travis.Lape@k12.sd.us

Elementary, Middle School, High School Science & Math

Come explore ways to bring assessment for learning into your teaching practices. Assessment for learning involves learners becoming more active in their learning and starting to ‘think like a teacher’. They think more actively about where they are now, where they are going and how to get there.

Friday, 8:30 AM

F113 iNaturalist Data in Your Classroom

Salon

Anne Lewis South Dakota Discovery Center

AnneLewis@sd-discovery.org

Elementary, Middle School Science

www.sd-discovery.org

Study biomes, environments, food webs, migrations and more using iNaturalist data. iNat is a citizen science platform that, with a few tips and tricks, will have your students analyzing real data in real time, maybe even contributed by them! **Requires laptop.** *[Repeats as S506]*

Friday 9:30AM

Friday, 9:30 AM

F202 Target-Based Grading in a High School Mathematics Classroom

Prairie B

Mark Kreie Brookings School District

<https://markkreie.blogspot.com>

Middle School, High School Math

Have you considered changing to a target-based grading system? Come and learn about why I redesigned the way I assess students to a target-based model (vs. a standards-based model), how I implemented the model, and how it is working.

Friday, 9:30 AM

F204 Four Levers for Student Engagement

Dakota A

Deb Wolf Sanford Underground Research Facility / BHSU

Elementary, Middle School, High School Science

Debra.Wolf@bhsu.edu

<http://sanfordlab.org/educators>

Student engagement is powerfully influential for learning, motivation and success. In this session, we will identify the 4 engagement levers and provide strategies for implementation. We will also share the free resources and opportunities available from Sanford Underground Research Facility including curriculum, presentations, field trips and professional development.

[Repeats as F304]

Friday, 9:30 AM

F205 5 Math Resources to Make Math Fun!

Dakota B

Kevin Smith & Jessica Dawson Dakota State University & Huron Middle School

Elementary, Middle School, High School Math

Kevin.Smith@dsu.edu Jessica.Dawson@k12.sd.us

www.chasingeinstein.com

Math can be fun. (I'm serious. It can be.) In this session, we're going to show you 5 different websites and math routines that you can easily add to your classroom tomorrow. Each of the resources can be added to your existing math course without deviating too far from your existing math curriculum. The routines that I'll show you are great for engagement, collaboration, problem solving, and fostering math talk with your students...and they're fun! Bring your device. We'll show you how the resource works, you'll try it, and we'll talk about how you can integrate it into your classroom.

Friday, 9:30-11:20 AM

F206 Featured Session – {Two hour session} Design Thinking in STEM classrooms:

How to Foster Student-Centered Dialogue

Dakota C

Sean Nank California State University San Marcos

General Interest Science, Math & STEM

mathcoachnank@gmail.com

www.SeaNank.com

Critical thinking and student discourse are at the center of high quality STEM, science, and mathematics lessons. Come experience the Design Thinking format from the students' perspective, discuss how you can use the model in your classroom, and see how the format sets the template for inquiry that transcends school experiences.

Friday, 9:30 AM

F207 Adventures in Chemistry - Take 2

Dakota D

Sabrina Henriksen Rapid City High School - Rapid City Area Schools

High School Science

Come hear all about how my 2nd year adventure in personalized learning in chemistry has been going. Hear about things I learned and things I'm doing differently. This is an extension of the presentation I gave last year on directed pace, learner-centered, personalized learning in chemistry.

Friday, 9:30-11:20 AM

F208 {Two hour session} Making Learning Visible: Student Discourse

Dakota E

Peggy Norris Sanford Underground Research Facility / BHSU

Elementary, Middle School, High School Science

PNorris@sanfordlab.org

<https://www.sanfordlab.org/feature/k-12-stem-education>

The science standards are about students making sense of their world; learning core scientific concepts, science and engineering practices and crosscutting concepts. How do we know when sensemaking happens? In this workshop, we will explore tools and strategies for making learning visible through student discourse.

[Repeats as F413]

Friday, 9:30 AM

F209 Resisting Scientific Misinformation - Part II

Dakota F

Larry Browning & Matt Miller South Dakota State University

Middle School, High School Science

Larry.Browning@sdstate.edu Matt.Miller@sdstate.edu tumblehomebooks.org/services/resisting-scientific-misinformation

In a previous session, methods for identifying misleading advertisements and arguments were presented. We will continue to apply SAP (Sources, Author, Purpose) and Resisting Scientific Misinformation curricula to evaluate claims by focusing on how you and your students can ask the right questions and understand the scientific process.

Friday, 9:30 AM

F210 Scaffolding Area Model for Multiplication of Binomials

Dakota G

Darrin Merrival Pine Ridge High School

High School Math

Darrin.Merrival@bie.edu

Modified Hot Seat to scaffold area model for multiplying binomials.

Friday, 9:30 AM

F211 Translating the SD Science Translations

Dakota H

Jennifer Fowler SD DOE

Elementary, Middle School, High School Science

Jennifer.Fowler@state.sd.us

<https://doe.sd.gov/contentstandards/SciTranslation.aspx>

It is time to dive into the new SD Science Translations documents! Made by SD teachers for K-12 science educators, these Translations are resources to guide your three-dimensional lesson planning. Additional information regarding our SD Science Assessment and other SD Science news will be discussed.

[Repeats as S411]

Friday, 9:30 AM

F212 Featured Session Power in the Pear!

Symposium

Travis Lape, Innovative Programs Director Harrisburg School District

Elementary, Middle School, High School Science & Math

Travis.Lape@k12.sd.us

Do you want to engage learners and collect their understanding throughout the lesson? Pear Deck Slides give teachers the ability to engage and assess every learner in every seat, no matter what grade or subject. Using Pear Deck will help you create an interactive and community-focused classroom that builds confidence and comprehension.

Friday, 9:30 AM

F213 Modeling Mathematics with John Green: A Culturally Responsive Experience

Salon

Elizabeth (Libbi) Sykora Roosevelt High School, Sioux Falls School District

Middle School, High School Math

Elizabeth.Sykora@k12.sd.us

Imagine walking into math class and hearing, "Today we will analyze a graph of Kim and Kanye's relationship." This session introduces ideas from John Green's novel, *An Abundance of Katherines*, to model functions in a culturally-responsive way. Participants use Desmos to experience the lesson and adapt it for their classroom.

As a member, you may attend
and vote at the Friday 4:30
Business Meeting.
Math=Dakota A
Science=Dakota E



**SOUTH DAKOTA
STATE UNIVERSITY**

College of Natural Sciences

Friday 10:30-11:20AM

Friday, 10:30 AM

F304 Four Levers for Student Engagement

Dakota A

Deb Wolf Sanford Underground Research Facility / BHSU

Elementary, Middle School, High School Science

Debra.Wolf@bhsu.edu

http://sanfordlab.org/educators

Student engagement is powerfully influential for learning, motivation and success. In this session, we will identify the 4 engagement levers and provide strategies for implementation. We will also share the free resources and opportunities available from Sanford Underground Research Facility including curriculum, presentations, field trips and professional development.

[Repeat of F204]

Friday, 10:30 AM

F305 Engineering an Assist Device

Dakota B

Julie Olson Mitchell HS

Middle School, High School Science

Julie.Olson@k12.sd.us

Engineer an Assist Device that will help someone hold a crayon, pencil, or paint brush to build engineering skills, apply to the study of the musculoskeletal system, and empathy. Also learn how to assess student learning for this project.

Friday, 10:30 AM

F307 Featured Session Sense-Making: Is It at the Core of Your Mathematics Program?

Dakota D

Annie Fetter 21st Century Partnership for STEM Education

Elementary, Middle School, High School Math

AnnieFetter@gmail.com

http://annie.mathematicalthinking.org

Are your students making sense of the mathematics they explore? Do they feel that mathematics is an inherently sensible endeavor? We'll look at ways in which students don't make sense of mathematics, consider why, and discuss strategies for making it a larger part of the expectations in your classroom.

Friday, 10:30 AM

F309 A Chalk Talk Session: What is Culturally Responsive Pedagogy?

Dakota F

Matthew Miller & Larry Browning South Dakota State University *Elementary, Middle School, High School, College* Science & Math

Matt.Miller@sdstate.edu Larry.Browning@sdstate.edu www.sdstate.edu/natural-sciences/outreach-opportunities-k-12-students

At a National Science Foundation conference, a session focused on culturally responsive pedagogy. As science teachers, we face many issues within the classroom including the inclusivity of all our students. We will discuss culture, pedagogy and methods for learning more about the various cultures in our communities.

Friday, 10:30 AM

F310 Career Focused Problem Solving Math Course - Understanding the What and the Why *Dakota G*

Stephanie Higdon & Amy Schander SD DOE

High School Math

Stephanie.Higdon@state.sd.us Amy.Schander@k12.sd.us

“When am I ever going to use this?” Would you like standards aligned mathematics tasks and lessons to help answer this question? In this session participants will learn the process used by mathematics and career and technical education teachers from across the state to create this new math course. In addition, teachers will access example tasks created specifically for this course.

Friday, 10:30 AM

F311 Hands-On Exploration and Discussion of the NASA@MyLibrary STEM Facilitation Kits & NASA Researcher Presentation Kits

Dakota H

Kathleen Slocum SDSL

Elementary, Middle School, High School, Parents and Caretakers Science & Math

Kathleen.Slocum@state.sd.us

library.sd.gov

NASA@MyLibrary Earth and Space Science Kits are available for checkout via your school library from the South Dakota State Library! The Sun-Earth-Moon Connections Kit focuses on activities and experiences that better help patrons understand their place in space, and how the Sun and Moon impact our planet. The Be A NASA Detective: Expanding Your Senses Kit focuses on activities and experiences that help patrons (and library staff) be more comfortable using tools of science and making predictions based on their observations. These kits have been duplicated and expanded to include Native American resources and adapted for the visually impaired. The South Dakota State Library has also partnered with South Dakota Discovery Center to bring NASA@MyLibrary - NASA Researcher Presentation kits. This is an opportunity for your students to learn about various topics with an actual South Dakota scientist. Schedule a presentation with a scientist via email to present at your library or school virtually. Working with your school librarian, you can check out their kit of materials from the State Library and watch as your students interact with scientists through engaging hands-on activities.



[Repeats as F612]

Friday, 10:30 AM

F312 Featured Session Gamify Your Classroom as Easy as 1,2,3

Symposium

Travis Lape Harrisburg School District Travis.Lape@k12.sd.us

Elementary, Middle School, High School Science & Math

Gimkit is a game show for the classroom that requires knowledge, collaboration, and strategy to win. Come learn how to bring Gimkit to your learners. Already using kahoot or quizlet? This is another level to bring to your classroom. Easy to use your quizlet games with Gimkit so no need to recreate.

Friday, 10:30 AM

F313 Meet the Future Teachers

Salon

Dan Van Peurse USD

Elementary, Middle School, High School Science & Math

Dan.VanPeurse@usd.edu

Prospective science and math teachers from all South Dakota institutions are invited to engage with practicing science and math teachers attending the conference. The goal is to provide support and encouragement for future teachers by having experienced teachers share advice, success stories, and useful strategies.



Friday 11:20-11:50AM

F340 Networking, Exhibitor, and Poster Session

Exhibitor Hallway

Conference attendees have the opportunity to network and visit with Exhibitors and enter door prize drawings. Exhibitors have color coded tickets for drawings. These tickets will be given out in the exhibition hallway at the discretion of the exhibitors. Keep one half and place the other in the drawing buckets at the registration table. The more booths you visit, the better your chances to win a prize! Drawings for this session will be held during Friday lunch and you must be present to win.



#SDSTEMEd

**Houghton
Mifflin
Harcourt™**

Friday 11:50AM – 12:50PM

F350 Lunch :

Prairie A, B, C

Come for a meal, awards, recognitions, and raffle with swag from vendors and other amazing organizations! Hosted by Presidents of SDCTM and SDSTA. Awards to be presented include Outstanding Biology Teacher, Outstanding Mathematics Teacher, Outstanding Physical Science Teacher, Daniel Swets Robotics Materials Award and Kelly Lane Earth & Space Science Grants.



Friday 12:50-1:10PM

F360 Networking, Exhibitor, and Poster Session

Exhibitor Hallway

Conference attendees have the opportunity to network and visit with Exhibitors and enter door prize drawings. Exhibitors have color coded tickets for drawings. These tickets will be given out in the exhibition hallway at the discretion of the exhibitors. Keep one half and place the other in the drawing buckets at the registration table. The more booths you visit, the better your chances to win a prize! Drawing winners from this session will be placed on the TV screen in the exhibit area - prizes must be claimed 4:30 PM Friday!

Friday 1:10-2:00PM

Friday, 1:10 PM

F401 Codes, Ciphers, & Enigma: Using Cryptography in the Classroom

Prairie A

Lori Goldade TIE

Middle School, High School Science & Math

LGoldade@tie.net

<https://tie.net>

You'll come away with a brief introduction to cryptography and ways to use ciphers in your classroom. This includes cryptography in breakout activities, digital storytelling, ciphers in math and more. You'll also learn about the Enigma machine and how your students can build an Enigma machine from a Pringles can! *[Repeat of F107]*



**Technology & Innovation
in Education** *learning is our work*

Friday, 1:10-3:00 PM

F402 {Two hour session} Using Multiple Representations to Make Connections in Algebra

Prairie B

Julie Jackson & Cathy Quinlivan CPM Educational Program

Middle School, High School Math

JulieJackson@cpm.org CatherineQuinlivan@cpm.org

CPM.org

Participate in activities that make connections between a pattern, table, graph and rule. Help students move through the representations, while developing a deep understanding of multiple ways to solve problems and to communicate that understanding verbally and visually. Teachers will receive ideas and materials that they can use in their own classrooms.



Friday, 1:10 PM

F403 You Khan get the Data

Prairie C

Gay Pickner St Joseph Catholic School

Elementary, Middle School, High School Math

Gay.Pickner@k12.sd.us

<https://www.khanacademy.org>

This session will discuss how I successfully use Khan Academy (KA) to meet the needs of my learners and develop a growth mindset with each student. This is a hands on session so I will show you how you can use NWEA math scores with Khan Academy. (Bring computer, NWEA scores and KA login). *[Repeats as F601]*

Friday, 1:10 PM

F404 An Introduction to Nearpod

Dakota A

Ashley Jairam University of South Dakota

Elementary, Middle School, High School Science & Math

Ashley.Jairam@usd.edu

Come learn about how Nearpod can be used to increase student engagement in your classroom. Nearpod is a student engagement platform that allows you to create digital lessons. It can be used in math, science, and various other content areas. Only the free version of Nearpod will be presented.

Friday, 1:10 PM

F405 Black Hills Student Research Journal: STEM Research and Literary

Dakota B

Bree Oatman & Chad Ronish Lead Deadwood School District & Hill City School District

High School Science

Bree.Oatman@k12.sd.us Chad.Ronish@k12.sd.us

Learn how to grow a science fair into a research symposium and mentorship with college faculty and students. Find out how you can collaborate with other schools to have students participate in a blind peer review process to be published in a student research journal. *[Repeats as F611]*

Friday, 1:10-3:00 PM

F406 {Two hour session} Integrating Web 2.0 Applications to Increase Engagement in the Classroom

Dakota C

Dr. Cari Kennedy TIE (Technology and Innovation in Education)

Middle School, High School Science & Math

CKennedy@tie.net

<https://www.tie.net/cari-kennedy/>

Learning facilitators will explore ways to move beyond traditional classroom methods and become tech-rich while integrating new technology applications. Participants will actively utilize the applications to appropriately understand how students can use vocabulary, gaming, formative assessment tools, in addition to alternate forms of presentation tools to amplify engagement and rigor.



**Technology & Innovation
in Education**

learning is our work

Friday, 1:10 PM

F407 Featured Session Standards Based Grading in Math Classes: How Does it Work and How Does it Foster Student Learning?

Dakota D

Sean Nank California State University San Marcos

Middle School, High School Math

mathcoachnank@gmail.com

www.SeanNank.com

Come learn how to make standards based grading work with a traditional report card. Let's discuss best practices, how to make grading student-centered, and how to reward mastery over time. We will learn how to align grading to the standards to better understand student progress, target interventions, and provide multiple attempts at mastery.

Friday, 1:10 PM

F408 The Soil Connection

Dakota E

Dr. Marie Steckelberg Steckelberg Consulting

Elementary, Middle School Science

Marie@Steckelbergconsulting.com

SteckelbergConsulting.com

Water, air and soil are basic to life on this planet but of the three, soil is the least understood. Come ready to get your hands dirty and learn about a standards based curriculum being developed where the phenomena of soil is explored. *[Repeats as F508]*

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Dr. Marie Steckelberg, EdD • Consultant
 Marie@SteckelbergConsulting.com
 SteckelbergConsulting.com



Visit with Conference Exhibitors to be qualified to win valuable prizes at the noon meals and throughout the days.

Next Year's Conference will be February 4, 5, & 6, 2021 Hope to see you there!!!

Friday, 1:10 PM

F409 Teaching Tiny

Dakota F

Larry Browning, Terese Janovec & Steve Wignall SDSU & Nebraska Center for Materials and Nanoscience

High School

Science

Larry.Browning@sdstate.edu TJanovec@unl.edu

<https://ncmn.unl.edu/outreach-teachers>

University of Nebraska – Lincoln, has a variety of classroom kits, REMOTE analysis equipment, and other resources for teachers to use to investigate nanotechnology in their classrooms. Terese Janovec and Steve Wignall from the Nebraska Center for Materials and Nanoscience will join us electronically to discuss resource opportunities (<https://ncmn.unl.edu/outreach-teachers>).

Friday, 1:10 PM

F410 The Kickstart Guide To Making Great Makerspaces

Dakota G

Julie Erickson Technology and Innovation in Education (TIE) Elementary, Middle School, High School Science, Math, STEM, STREAM & STEAM

tie.net

Are you thinking about adding a makerspace to your learning space? Or expand one you already have? This session provides a framework for the process of establishing and refining a makerspace in your school. You will learn how to develop open-ended exploration, increase engagement and support learning for everyone.

[Repeats as S605]

Friday, 1:10 PM

F411 Escape the Cell - Engaging Activities for the Classroom

Dakota H

Louisa Otto Sanford Research PROMISE

Middle School, High School Science

Louisa.Otto@sanfordhealth.org

<https://research.sanfordhealth.org>

Getting students excited about reviewing material is tricky. In this session you will be a student and try to solve puzzles to escape from a cell using escape room activities. This escape kit will be available to check out from Sanford PROMISE to use in your own classroom.

[Repeats as S602]

Friday, 1:10 PM

F412 Featured Session Engage in STEAM Everyday

Symposium

Travis Lape, Innovative Programs Director Harrisburg School District

Elementary, Middle School Science & Math

Travis.Lape@k12.sd.us

STEAM learning begins early. But STEAM isn't about showing a kid flashcards or teaching equations. It is the hands-on things that they do everyday. Come learn how you can use simple items to bring STEAM to life.

Friday, 1:10 PM

F413 {Two hour session} Making Learning Visible: Student Discourse

Salon

Peggy Norris Sanford Underground Research Facility / BHSU

Elementary, Middle School, High School Science

PNorris@sanfordlab.org

<https://www.sanfordlab.org/feature/k-12-stem-education>

The science standards are about students making sense of their world; learning core scientific concepts, science and engineering practices and crosscutting concepts. How do we know when sensemaking happens? In this workshop, we will explore tools and strategies for making learning visible through student discourse.

[Repeat of F208]



SDSU

Extension



<https://extension.sdstate.edu> SDSU Extension Sioux Falls Regional Center

Friday 2:10-3:00PM

Friday, 2:10 PM

F501 Explore National Geographic's Free Online and In-Person Resources

Prairie A

Elaine Larson National Geographic Society

Elementary, Middle School, High School Science, multidisciplinary

ELarson@ngs.org

<https://www.nationalgeographic.org/education/>

Learn about the STEM resources available free from National Geographic. Participants explore how the NGS Educator Network connects educators to standards-based resources, such as lesson plans, videos and maps; professional development; student activities; NGS Explorers; fellowship opportunities; grants; and more. Find out how to become a NatGeo Educator!



[Repeats as S110]

Friday, 2:10 PM

F503 Using Data to Add Relevance

Prairie C

Amy Schander Gayville-Volin School District

Middle School, High School Math

Amy.Schander@k12.sd.us

Are you looking to add relevance to your lessons? This session will examine sources of data that can do just that. Show your students the power of mathematics by examining real data in real time.

Friday, 2:10 PM

F504 Teaching Experiences in Research

Dakota A

Darwin Daugaard & Michael P. Mitchell Dell Rapids Hgh School & Elkton Jr/Sr High School

Darwin.Daugaard@k12.sd.us

Elementary, Middle School, High School Science & Math

This session will consist of sharing different teacher experiences in research. Come prepared to listen and share your experiences. Information will be shared on what to expect and how to find and apply to these experiences.

Friday, 2:10 PM

F505 Featured Session What's So Cool About Manufacturing?

Dakota B

Sara Wevik Sioux Falls

Middle School Science & Tech Ed or Computers

Sara.Wevik@usd.edu

www.sdmanufacturing.com

The "What's So Cool About Manufacturing?" contest is designed to expose, educate and excite middle school students about careers in manufacturing. Over the course of a semester, students will take a field trip to a local manufacturer to film, edit and market to their peers why they think manufacturing is cool. Schools will compete against other schools from across the state to create the best two-minute clip answering the question: "What's so cool about manufacturing?" The goal is to promote STEM education and increase regional awareness about different careers in the industry in a fun and engaging way. Schools that participate will receive free filming equipment and accessories.



Friday, 2:10 PM

F507 Featured Session Noticing and Wondering in the Elementary Grades

Dakota D

Annie Fetter 21st Century Partnership for STEM Education

Elementary Math

AnnieFetter@gmail.com

<http://annie.mathematicalthinking.org>

Want to help students generate ideas and make connections among them, facilitate the development of other problem-solving strategies, and support a classroom culture that gives every student a way to contribute, while treating math as a creative process? We'll notice, wonder, and look at examples about patterns and fractions.

Friday, 2:10 PM

F508 The Soil Connection

Dr. Marie Steckelberg Steckelberg Consulting

Marie@Steckelbergconsulting.com

Water, air and soil are basic to life on this planet but of the three, soil is the least understood. Come ready to get your hands dirty and learn about a standards based curriculum being developed where the phenomena of soil is explored.

Dakota E

Elementary, Middle School Science

SteckelbergConsulting.com

[Repeat of F408]

Friday, 2:10 PM

F510 Mastery Learning

Diedra Nissen & Kiki Nelsen Roosevelt High School

Diedra.Nissen@k12.sd.us Kiki.Nelsen@k12.sd.us

How to implement a mastery learning assessment model in your classroom to increase understanding and keep students engaged year long.

Dakota G

High School Math

[Repeat of F110]

Friday, 2:10 PM

F511 Digitizing Sound

Michael Benjamin Mitchell Technical Institute

Michael.Benjamin@mitchelltech.edu

Have you ever wondered how sound is encoded, transmitted, and decoded in various digital audio applications? Come learn about a process called Pulse Code Modulation and be able to leave with practical career applications for math and physics. Topics include: sound, sampling techniques, interpolation, and coding.

Dakota H

High School Science & Math

Friday, 2:10 PM

F512 Featured Session STEM for ALL

Michael Vargas

Featured Speaker & Banquet Speaker Michael Vargas will lead a session on integrating coding into physics using Sphero robots. The codification of physics is a hot topic at the moment, and this pathway is an entry level fun way to get your high school students interested in what kinematics is, and how it is useful in everyday life. Participants will learn to drive a robot and conduct a mini Mars simulation.

Symposium

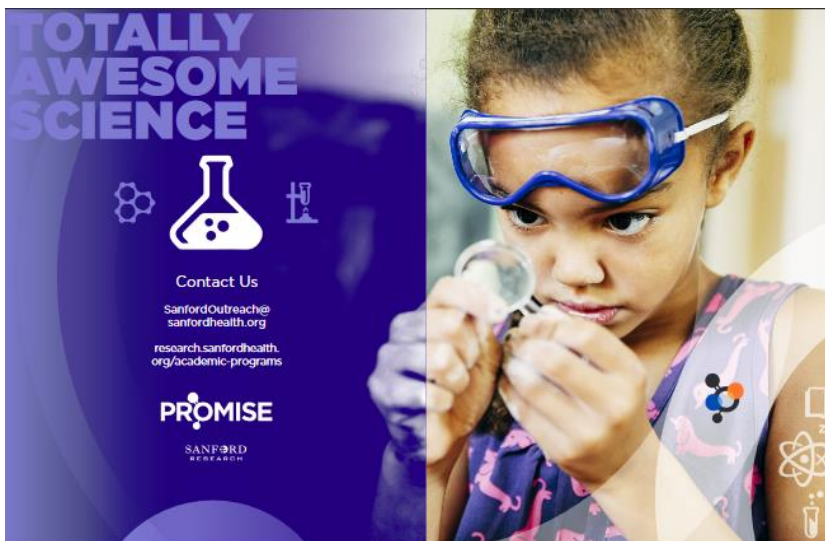
Science

Friday 3:00-3:30PM

F560 Networking, Exhibitor, and Poster Session

Conference attendees have the opportunity to network and visit with Exhibitors and enter door prize drawings. Exhibitors have color coded tickets for drawings. These tickets will be given out in the exhibition hallway at the discretion of the exhibitors. Keep one half and place the other in the drawing buckets at the registration table. The more booths you visit, the better your chances to win a prize! Drawing winners from this session will be placed on the TV screen in the exhibit area - prizes must be claimed 6:00 PM Friday!

Exhibitor Hallway



Friday 3:30-4:20PM

Friday, 3:30 PM

F601 You Khan get the Data

Gay Pickner St Joseph Catholic School

Gay.Pickner@k12.sd.us

This session will discuss how I successfully use Khan Academy (KA) to meet the needs of my learners and develop a growth mindset with each student. This is a hands on session so I will show you how you can use NWEA math scores with Khan Academy. (Bring computer, NWEA scores and KA login). *[Repeat of F403]*

Prairie A

Elementary, Middle School, High School Math

<https://www.khanacademy.org>

Friday, 3:30 PM

F602 Desmos Snapshots: A Tool to Help Facilitate Classroom Conversations

Mark Kreie Brookings School District

Snapshots is a tool housed in the Desmos Teacher Dashboard. Designed with the “5 Practices for Orchestrating Productive Mathematics Discussions” in mind, Snapshots provide a way for teachers to select, sequence, and connect ideas. In this session, participants will learn how to access the Snapshots tools and receive best practice tips about how to use them. Intended for grades 5-12; bring an iPad or laptop.

Prairie B

Middle School, High School Math

<https://markkreie.blogspot.com/>

Friday, 3:30 PM

F603 Speaking Mathematics

Amy Schander Gayville-Volin School District

Amy.Schander@k12.sd.us

Vocabulary acquisition can be difficult in the math classroom. Not understanding the language of mathematics can create some serious roadblocks for students. Come to learn some strategies for teaching math vocabulary and helping students understand the language.

Prairie C

Middle School, High School Math

Friday, 3:30 PM

F604 Learning to Grade Less

Dena Sievers Aberdeen Public School

Dena.Sievers@k12.sd.us

Sparked by Jo Boaler and other teachers, I am on the path of learning how to grade less. Join me for an exploration about how grades affect our student’s mindsets and learning, the impact that standards based report cards and data collection have on grades, and where our time and energy as teachers can best be used.

Dakota A

Middle School, High School Math

Friday, 3:30 PM

F605 Featured Session Workforce Initiatives to Meet Modern Manufacturing Demand

Sara Wevik Sioux Falls

Sara.Wevik@usd.edu

With the nation’s aging workforce and low unemployment rate, employers are looking for innovative ways to recruit the next generation of skilled workers. Join this discussion on the ways South Dakota is actively working to meet the growing demand of skilled trade workers as well as tactics other states are using to change young Americans’ perceptions about modern manufacturing.

Dakota B

Middle School, High School STEM

Friday, 3:30 PM

F606 Incorporating Learning Menus to Maximize Learner Agency

Dakota C

Dr. Cari Kennedy TIE (Technology and Innovation in Education)

Middle School, High School Science & Math

CKennedy@tie.net

<https://www.tie.net/cari-kennedy>

Incorporating learning menus is a great way to increase learner agency in the classroom. They provide students with autonomy and choice while taking into account specific learning needs, interests, and skills. This session will show how to incorporate menus into the classroom in order to increase learner agency daily.

Friday, 3:30 PM

F607 Featured Session Speed Kills...Student Achievement in Mathematics. What's the Alternative? **Dakota D**

Sean Nank California State University San Marcos

Elementary, Middle School Math

mathcoachnank@gmail.com

www.SeaNank.com

Throughout students' K-12 experience, speed is emphasized and sometimes equated with intelligence and ability in math classrooms. We're told speed is not the answer but what is the alternative? Come discuss and experience how students can gain automaticity in numeracy and other mathematical skills via strategies intricately related to deep conceptual understanding. Let's discover how to gain automaticity using meaning and reasoning instead of rote memorization.

Friday, 3:30 PM

F608 How Badlands are Made

Dakota E

Ed Welsh Badlands National Park

Elementary, Middle School, High School Science

Edward_Welsh@nps.gov

<https://www.nps.gov/badl/index.htm>

The story about how the Badlands were made is also the story of how South Dakota and America were made. Join in an erosion activity to help illustrate earth system dynamics in shaping landscapes. Learn more about Badlands National Park and educational programming available to schools.



Friday, 3:30 PM

F609 SD AAPT Annual Meeting & Photo Contest

Dakota F

James Stearns, Larry Browning & Darwin Daugaard Aberdeen School District & SDSU *Middle School, High School, College Science*

James.Stearns@k12.sd.us Larry.Browning@sdstate.edu

SDAAPT.SDSTA.org

This is the annual meeting of the South Dakota Section of the American Association of Physics Teachers (SD AAPT). During the meeting, the group will share experiences, classroom activities, and seek answers to questions and problems. Everyone is welcome to attend & bring their physics & physical science questions. Final voting on the Physics Photo Contest will take place.

Friday, 3:30 PM

F610 Claim-Evidence-Reasoning: Scientific Explanations to Increase Student Voice

Dakota G

Kenn Heydrick STEMscopes / Accelerate Learning, Inc.

Elementary, Middle School, High School Science & STEM

KHeydrick@acceleratelearning.com

www.STEMscopes.com

Claim-Evidence-Reasoning (CER) is a way for students to explain observed phenomenon in a scientific way. This structured approach allows students to use observations and data from an investigation. Students use critical reasoning to connect the claim and evidence together. CER is an acclaimed and highly successful instructional strategy that is changing how students understand concepts and write explanations for phenomena.

Friday, 3:30 PM

F611 Black Hills Student Research Journal: STEM Research and Literary

Dakota H

Bree Oatman & Chad Ronish Lead Deadwood School District & Hill City School District

High School Science

Bree.Oatman@k12.sd.us Chad.Ronish@k12.sd.us

Learn how to grow a science fair into a research symposium and mentorship with college faculty and students. Find out how you can collaborate with other schools to have students participate in a blind peer review process to be published in a student research journal. *[Repeat of F405]*

Friday, 3:30 PM

F612 Hands-On Exploration and Discussion of the NASA@MyLibrary STEM Facilitation Kits & NASA Researcher Presentation Kits

Symposium

Kathleen Slocum SDSL

Elementary, Middle School, High School, Parents and Caretakers Science & Math

Kathleen.Slocum@state.sd.us

library.sd.gov

NASA@MyLibrary Earth and Space Science Kits are available for checkout via your school library from the South Dakota State Library! The Sun-Earth-Moon Connections Kit focuses on activities and experiences that better help patrons understand their place in space, and how the Sun and Moon impact our planet. The Be A NASA Detective: Expanding Your Senses Kit focuses on activities and experiences that help patrons (and library staff) be more comfortable using tools of science and making predictions based on their observations. These kits have been duplicated and expanded to include Native American resources and adapted for the visually impaired. The South Dakota State Library has also partnered with South Dakota Discovery Center to bring NASA@MyLibrary - NASA Researcher Presentation kits. This is an opportunity for your students to learn about various topics with an actual South Dakota scientist. Schedule a presentation with a scientist via email to present at your library or school virtually. Working with your school librarian, you can check out their kit of materials from the State Library and watch as your students interact with scientists through engaging hands-on activities. *[Repeat of F311]*

Friday, 3:30 PM

F613 iNaturalist in Your Watershed

Salon

Anne Lewis South Dakota Discovery Center *Elementary, Middle School, High School Science*

AnneLewis@sd-discovery.org

www.sd-discovery.org

Connect the geosphere to the hydrosphere by exploring what plants and animals live in YOUR watershed using observations from the citizen science platform iNaturalist. We'll delve into how you can contribute data to iNat and more importantly, why you should. You'll need your laptop for this session as it's interactive. *[Repeats as S406]*



**Thank You – Vendors
for all the prizes donated
for the Conference attendees!**

Business Meetings

Friday 4:30-5:30PM

F704 SDCTM Business Meeting

Dakota A
SDCTM.org

All members or interested members of the SD Council of Teachers of Mathematics are invited to attend this discussion about our organization and the state of Mathematics Education in South Dakota and across the country. This is the annual SDCTM business meeting.

F708 SDSTA Business Meeting

Dakota E
SDSTA.org

All members or interested members of the SD Science Teachers Association are invited to attend. This is a leadership election year and all members are eligible voters.

Friday 5:30-6:30PM

F715 Networking Social

Lobby

Make new friends and renew old friendships!
Join your colleagues for pre-banquet refreshments
and professional networking.



Friday 6:30-9:00PM

F799 SD STEM Ed Awards Banquet

Prairie A, B, C

STEM for ALL - Featured Speaker: Michael Vargas - - - - - Description: Items covered could include: Whiteboarding, High Altitude Science (building a near space payload), The AAPT Public Policy Fellowship, Public Policy in Science, Physics Fun, Leading a Team at the State House, Spheros, and pretty much anything space or aerospace

(Limited Tickets for the Banquet available at the registration table on Friday or during pre-registration.)





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UPCOMING EVENTS



Women In Science



Career Exploration Day



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**IT'S
TIME
FOR
TECH**

PAEMST Breakfast

Saturday 7:00-8:00AM

S099 Breakfast for SD PAEMST State Level Finalists and Past Awardees

Salon

Allen Hogie & Jennifer Fowler PAEMST Coordinators

Elementary, Middle School, High School Science & Math

Allen.Hogie@k12.sd.us Jennifer.Fowler@state.sd.us paemst.org

A breakfast honoring the 2019 State Level Finalists and all Past Awardees.



Saturday 8:00AM

Saturday, 8:00 AM

S101 Teaching Mathematics Standards to Their Intended Level of Rigor

Prairie A

Stephanie Higdon SD DOE

Elementary, Middle School, High School Math

Stephanie.Higdon@state.sd.us

What does rigor look like in a mathematics classroom? Does it mean more work for students to complete? Does it mean the work is more difficult for students? In this session, teachers will build their understanding around what the aspects of rigor look like for grade level clusters of standards. Teachers will also study grade level math tasks and determine level of rigor and cognitive complexity of these tasks.

Saturday, 8:00 AM

S102 What are the Components of a Successful Mathematics Methods Course for 6-12 Pre-Service Teachers? *Prairie B*

Christine Larson South Dakota State University

Middle School, High School Math

Christine.Larson@sdstate.edu

Let's discuss the components of a Mathematics Methods course for middle and high school pre-service teachers. I will share activities, techniques, topics, and lessons, with opportunities to share your ideas for this essential course. Come help decide what future teachers need to know, to help them be better teachers.

Saturday, 8:00-9:50 AM

S103 {Two hour session} Concrete to Abstract-Making Connections from Grades 6-12 Using Algebra Tiles *Prairie C*

Cathy Quinlivan & Julie Jackson CPM Educational Program

Middle School, High School Math

CatherineQuinlivan@cpm.org JulieJackson@cpm.org



CPM.org

This session provides examples of moving from concrete to abstract understanding using Algebra Tiles. These tools will lay a strong foundation in simplifying expressions and solving equations. Examples will be provided of what conceptual understanding might involve and how it progresses from 6th grade through high school.

Saturday, 8:00 AM

S104 Showcase Your Teaching Practice and Win Money (PAEMST)

Dakota A

Allen Hogie & Jennifer Fowler PAEMST Coordinators

Elementary Science & Math

Allen.Hogie@k12.sd.us Jennifer.Fowler@state.sd.us

How would you like to receive \$10,000 for showcasing your teaching practice? The Presidential Award is sponsored by the White House and the National Science Foundation. South Dakota is able to give two awards, one in mathematics and one in science. The 2020 cycle recognizes teachers of grades K-6.

Please fill out your Evaluation of the Conference.

We want next year's to be even better!

Saturday, 8:00 AM

S105 Building a Better Education with a MakerSpace

Dakota B

Chad Ronish & Brian Rupert Hill City High School *Elementary, Middle School, High School, beyond High School* Science, Math & STEAM

Chad.Ronish@k12.sd.us

Explore ideas, funding, resources, and implementation of a Makerspace to create student directed, driven and centered education for your school and community using STEAM education to facilitate Kindergraden-eternity learning that can be tailor made to address Content Standards and student learning goals.

Saturday, 8:00 AM

S106 Science Demonstrations: Pressure

Dakota C

Steven Rokusek South Dakota Public Broadcasting

Elementary, Middle School, High School Science

Steven.Rokusek@state.sd.us

<http://www.sdpb.org/learn/>

During this session, participants will review classic science demonstrations and activities that highlight pressure. Many of the demonstrations are accompanied by lessons. This will be an educational and entertaining session.



Saturday, 8:00 AM

S107 Featured Session {Two hour session} Noticing and Wondering in the Secondary Grades

Dakota D

Annie Fetter 21st Century Partnership for STEM Education

Middle School, High School Math

AnnieFetter@gmail.com

<http://annie.mathematicalthinking.org>

Want to help students generate ideas and make connections among them, facilitate the development of other problem-solving strategies, and support a classroom culture that gives every student a way to contribute, while treating math as a creative process? We'll notice, wonder, and look at examples from algebra through calculus.

Saturday, 8:00 AM

S108 Creating Authentic STEM Experiences for Your Students

Dakota E

Rhea Waldman SD Discovery Center

Elementary, Middle School, High School Science, Math & CTE

RheaWaldman@sd-discovery.org

www.sd-discovery.org

Create meaningful learning experiences for your students to be involved in and contribute to current research. Mentor a generation prepared to code, calculate, design, and discover its way to build a diverse STEM workforce by enabling powerful connections and engaging your students in authentic STEM experiences.

[Repeats as S409]

Saturday, 8:00 AM

S109 Featured Session Lessons Learned from the Career & Technical Academy

Dakota F

Sara Wevik Sioux Falls

Elementary, Middle School, High School STEM

Sara.Wevek@usd.edu

The Career & Technical Academy in Sioux Falls offers high school students career exploration opportunities through hands-on learning experiences. The CTE Academy focuses on workforce demands and employer needs by offering students the opportunity to test out different career fields before graduation. Some of the class offerings include: auto body repair, automotive technology, carpentry and construction, health careers, manufacturing and welding, and Project Lead The Way. The facility uses state-of-the-art equipment and project-based learning to better prepare students for a variety of post-secondary options. Learn more about CTE's student success, plans for the future and lessons learned.

Saturday, 8:00 AM

S110 Explore National Geographic's Free Online and In-Person Resources

Dakota G

Elaine Larson National Geographic Society

Elementary, Middle School, High School Science, multidisciplinary

ELarson@ngs.org

<https://www.nationalgeographic.org/education/>

Learn about the STEM resources available free from National Geographic. Participants explore how the NGS Educator Network connects educators to standards-based resources, such as lesson plans, videos and maps; professional development; student activities; NGS Explorers; fellowship opportunities; grants; and more. Find out how to become a NatGeo Educator!
[Repeat of F501]

Saturday, 8:00 AM

S111 Identifying Signatures of GMO Sequences in Common Food Items

Dakota H

Bruce Bryan miniPCR bio



Middle School, High School Science, STEM

bruce@miniPCR.com

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

Engage in a real-world biotechnology application relevant to agriculture, environmental science, and the food industry. Students use DNA extraction, PCR and gel electrophoresis to test for the presence of a common promoter found in Genetically Modified Organisms, and engage in evidence-based discussion on the genetic engineering of food. You will leave this session prepared to test foods of your choice--from soybeans to tortilla chips!

Saturday, 8:00 AM

S112 Still Trying to Spark Interest

Symposium

Larry Browning & Matt Miller South Dakota State University

Elementary, Middle School, High School Science

Larry.Browning@sdstate.edu Matt.Miller@sdstate.edu

Using common and inexpensive items, students are allowed to investigate how much hydrogen and oxygen make good rocket fuel. The mixture is then tested by applying a spark to the fuel and seeing if the students' micro-rocket flies and how far. We have used this in various grades and settings to spark interest as well as rockets. These experiences will also be discussed.
[Repeats as S612]

Saturday 9:00-9:50AM

Saturday, 9:00 AM

S201 Funding Your Ideas!

Prairie A

Dr. Marie Steckelberg & Julie Olson Steckelberg Consulting & Mitchell Public Schools

Elementary, Middle School, High School

Science

Marie@Steckelbergconsulting.com Julie.Olson@k12.sd.us

SteckelbergConsulting.com

Together, Julie and Marie have secured over \$1,000,000 to fund STEAM projects. Learn where to find funds and tips on how to submit award winning applications!

Saturday, 9:00 AM

S202 What are the Newest Desmos Features and Activities?

Prairie B

Mark Kreie Brookings School District

<https://markkreie.blogspot.com>

Middle School, High School Math

Desmos has made a habit out of releasing new features, tools, and activities. This session will provide demonstrations of all the nuggets released in the past year. All Desmos tools are free. Intended for grades 5-12; bring an iPad or laptop.

Saturday, 9:00 AM

S204 Data Literacy in the Real World

Dakota A

Julie Erickson Technology and Innovation in Education (TIE) *tie.net* Elementary, Middle School, High School Science & Math

Data literacy is critical—being able to read and write effectively with data will help as you work with students, colleagues and in your personal life. This interactive session will explore data conversations, real life examples and more. Bring your device to follow along! *[Repeats as S404]*

Saturday, 9:00 AM

S205 Unlocking the Mystery of Group Discussions!

Dakota B

Chad Ronish Hill City HS Chad.Ronish@k12.sd.us Elementary, Middle School, High School Science

Using Office 365 and Google Docs, you can support and encourage participation of all your students as well as retrieve authentic artifacts of each individual's learning! **Bring your computer.**

Saturday, 9:00 AM

S208 Specialty Crops in the Classroom:

Educating South Dakota's Youth through Mobile Classroom Growing Systems

Dakota E

Spencer Cody Edmunds Central School District Elementary, Middle School, High School Science & Agriculture

Spencer.Cody@k12.sd.us *https://www.echs.k12.sd.us/Page/475*

Edmunds Central has developed mobile classroom growing systems geared toward education and consumption of specialty crops. Currently, 70 school districts across South Dakota are participating in the program. Find out how to incorporate specialty crops in your curriculum! All attending will receive free supplies to grow specialty crops in their classroom!

Saturday, 9:00 AM

S209 Featured Session The Best Manufacturing Resources for Your Classroom

Dakota F

Sara Wevik Sioux Falls Sara.Wevik@usd.edu Elementary, Middle School, High School STEM

Look no further for advanced manufacturing curriculum and fun learning activities for your classroom! This presentation will cover the top websites educators can use for gathering free STEM lesson plans, videos, and manufacturing games to supplement learning. Learn about off-site activities including how to set up manufacturing tours and what STEM camps and events are available in South Dakota.

Saturday, 9:00 AM

S210 Let's DIVE-in To Engineering and the Engineering Design Process

Dakota G

Kenn Heydrick STEMscopes / Accelerate Learning, Inc. Elementary, Middle School Science & STEM

KHeydrick@acceleratelearning.com *www.STEMscopes.com*

Students get engaged with practical and inquiry-based engineering experiences by using the DIVE-in method. This program was developed in partnership with the New York Hall of Science. Transform your classroom into an authentic makerspace with the DIVE process. Learn how to facilitate and use the design process through consensus.

Saturday, 9:00 AM

S211 Let's DIVE-in To Engineering and the Engineering Design Process

Dakota H

Bruce Bryan miniPCR bio Middle School, High School Science & STEM

bruce@miniPCR.com *https://www.minipcr.com/*

Go beyond paper and candy models when studying DNA structure. Have your students directly investigate how factors like temperature, pH, and genetic sequence affect DNA. Then learn how to use fluorescence to investigate enzyme activity using an inquiry approach. You will directly observe β -galactosidase activity – and watch it glow!





SD EPSCoR
RESEARCH. EDUCATION. ECONOMIC DEVELOPMENT.

Saturday 10:00-10:50AM

Saturday, 10:00 AM

S304 Featured Session Student Discourse: How Do We Really Make it Meaningful?

Dakota A

Sean Nank California State University San Marcos
mathcoachnank@gmail.com

*Middle School, High School Math
www.SeanNank.com*

Student discourse is important but how do we foster meaningful opportunities to discuss math? Come experience productive struggle while engaging in strategies such as 5 practices, which one doesn't belong, and other language and instructional routines that provide access for all students. We will experience the strategies as students and debrief the curricular and pedagogical strategies. Examples from the new Illustrative Mathematics High School curriculum will be used.

Saturday, 10:00 AM

S305 Escape Room Education

Dakota B

Chad Ronish Hill City High School Chad.Ronish@k12.sd.us

Elementary, Middle School, High School Science & Math

Create a student driven, guided and centered learning environment in your classroom using the Escape Room concept for learning and assessment. We will explore an activity and look at resources for any budget.

[Repeats as S610]

Saturday, 10:00 AM

S306 Teaching Science GLOBE-LY

Dakota C

Anne Lewis & Julie Olson South Dakota Discovery & Mitchell High School
AnneLewis@sd-discovery.org Julie.Olson@k12.sd.us

*Elementary, Middle School, High School Science
www.sd-discovery.org*

GLOBE is an international science and education project sponsored by NASA and NOAA. Learn how being a GLOBE teacher can connect your students to others around the world.

[Repeats as S606]

Saturday, 10:00 AM

S307 Featured Session The Power of Students' Ideas in the Math Classroom

Dakota D

Annie Fetter 21st Century Partnership for STEM Education
AnnieFetter@gmail.com

Elementary Math

http://annie.mathematicalthinking.org

Do your students believe that they have important mathematical ideas? Do they believe that mathematics makes sense and is about more than answers? Do they think of themselves as problem solvers? We'll explore routines and strategies for eliciting, valuing, and leveraging students' ideas in the PreK-5 classroom (and beyond!).

[Repeats as S507]

Saturday, 10:00 AM

S308 Density Dependant: Relating Ocean Density to Common Phenomena

Dakota E

Spencer Cody Edmunds Central School District

Middle School, High School Science

Spencer.Cody@k12.sd.us

<https://www.echs.k12.sd.us/site/Default.aspx?PageID=390>

American Meteorological Society through Project Maury has curriculum to help teachers cover ocean density. We will be using AMS pressure block kits modeling densities along with activities on sound travel/circulations. Attendants will receive a set of pressure blocks and materials concerning ocean density.

Saturday, 10:00 AM

S309 Computational Astronomy: A lesson plan for High School Math and Science Teachers

Dakota F

Donna Kliche & Martha Garlick SDSM&T

Middle School, High School Science & Math

Donna.Kliche@sdsmt.edu Martha.Garlick@sdsmt.edu

During the summer 2019, SDSMT, Augustana and SDSU faculty teamed up to provide middle/high school teacher participants with math lessons that include space exploration examples which they can share with their students. An example of such lessons will be presented at the conference. *[Repeats as S510]*

Saturday, 10:00 AM

S310 How to Use Phenomena to Make Gains in Student Inquiry

Dakota G

Kenn Heydrick STEMscopes / Accelerate Learning, Inc.

Elementary, Middle School, High School Science & STEM

KHeydrick@acceleratelearning.com

www.STEMscopes.com

Are you looking for a strategy to introduce an anchor phenomenon to your students? Join us as we model presenting an anchor phenomenon and creating a driving question board. Participants will be working in collaborative groups to identify anchoring, investigative, and everyday phenomena.

Saturday, 10:00 AM

S311 Intentionally Integrating Formative Assessments

Dakota H

Fenecia Foster & Debra Hunking Southeast Technical Institute

Elementary,

Middle School, High School, Post-secondary Science & Math

Fenecia.Foster@southeasttech.edu Debra.Hunking@southeasttech.edu

Intentional integration of formative assessment is essential for facilitating student learning. This session will focus on how to align learning outcomes with learning activities and formative assessments. We will model strategies for engaging all learners and specifically consider how to adapt the ideas to your specific students and content area.

Saturday, 10:00 AM

S312 Using Radio Astronomy to Map the Milky Way

Symposium

Larry Browning South Dakota State University

High School Science

Larry.Browning@sdstate.edu

Using data from the Green Bank Observatory (GBO) you and your students can map the Milky Way and search for pulsars too. Working with Dr. Kathryn Williamson, WVU, Larry will introduce the resources, processes, and opportunities to bring Radio Astronomy into your classroom. Pulsar trading cards will also be available.



STEM Educators, help your students:

Find their path. Own their future.

Southeast Tech offers STEM Exploration Events, group campus visits and STEM presentations at your school to introduce students to careers in science, engineering technology and math.

UPCOMING EVENTS

- Women in Science
- Career Exploration Day

SOUTHEAST TECH

605-367-6040 | SOUTHEASTTECH.EDU

IT'S TIME FOR TECH

Saturday 10:50-11:30AM

S320 Networking, Exhibitor, and Poster Session

Exhibitor Hallway

Conference attendees have the opportunity to network and visit with Exhibitors and enter door prize drawings. Exhibitors have color coded tickets for drawings. These tickets will be given out in the exhibition hallway at the discretion of the exhibitors. Keep one half and place the other in the drawing buckets at the registration table. The more booths you visit, the better your chances to win a prize! Drawings for this session will be held during Saturday lunch and you must be present to win.

Saturday 11:30AM-12:30PM

S330 Lunch :

Prairie A, B, C

Come for a meal, networking with new friends, awards, recognitions, and raffle with swag from vendors and other amazing organizations! Hosted by Presidents of SDCTM and SDSTA.

Saturday 12:40-1:30PM

Saturday, 12:40 PM

S401 Math-Make it a Game

Prairie A

Susan Gilkerson Rutland

Elementary, Middle School, High School Math

Susan.Gilkerson@k12.sd.us

Students struggle with the daily routine of doing their math homework. This workshop will explain how I took games that the students love to play and adapted their math lesson to them. *[Repeat of S603]*

Share the Classroom Treasures

You have until 3:00PM today to gather what you can use in your classroom. All items are free.

*Please fill out your Evaluation of the Conference.
We want next year's to be even better!*

Saturday, 12:40 PM

S402 Dig Up Dirt & Bake It Too!

Prairie B

Ashley Armstrong & Lindsay Kortan Bon Homme School District & Yankton High School *Middle School, High School Science*

Ashley.Armstrong@k12.sd.us Lindsay.Kortan@k12.sd.us

With recent local flooding, students have experienced the effects of excess soil moisture content and how it relates to both urban and rural flooding. In this lesson, students learn how to test soil moisture content and make plans for reducing localized flooding. *[Repeats as S502]*

Saturday, 12:40 PM

S403 Family Math Continues...K-2

Prairie C

Cindy Kroon Montrose School Dist

Elementary Math

Cindy.Kroon@k12.sd.us

<https://ck022.k12.sd.us>

Explore a set of take-home activities designed to help families with young children discover the fun and engaging side of mathematics. Family math is not: flash cards, worksheets, or math homework. Family math is: puzzles, games, and engaging activities. Play around with math in a family-friendly environment and (hopefully) change perceptions about math. Lessons learned from year one plus all new activities! (Grades K-2)

Saturday, 12:40 PM

S404 Data Literacy in the Real World

Dakota A

Julie Erickson Technology and Innovation in Education (TIE) *tie.net* Elementary, Middle School, High School Science & Math
Data literacy is critical—being able to read and write effectively with data will help as you work with students, colleagues and in your personal life. This interactive session will explore data conversations, real life examples and more. Bring your device to follow along!
[Repeat of S204]

Saturday, 12:40 PM

S405 POGIL. Process Oriented Guided Inquiry Learning

Dakota B

Chad Ronish Hill City HS *Middle School, High School* Science
Chad.Ronish@k12.sd.us
POGILs are a collaborative student centered learning tool that allow students to explore Chemistry content on their own or with a team using collaborative Office 365 or Google doc techniques. Explore group work that is effective and inclusive for students. **Bring your computer.**

Saturday, 12:40 PM

S406 iNaturalist in your Watershed

Dakota C

Anne Lewis South Dakota Discovery Center *Elementary, Middle School, High School* Science
AnneLewis@sd-discovery.org *www.sd-discovery.org*
Connect the geosphere to the hydrosphere by exploring what plants and animals live in YOUR watershed using observations from the citizen science platform iNaturalist. We'll delve into how you can contribute data to iNat and more importantly, why you should. You'll need your laptop for this session as it's interactive.
[Repeat of F613]

Saturday, 12:40 PM

S407 Featured Session Two Structures for Looking at Student Work

Dakota D

Annie Fetter 21st Century Partnership for STEM Education *Elementary* Math
AnnieFetter@gmail.com *http://annie.mathematicalthinking.org*
To get better at making quick instructional decisions, we need to practice doing it slowly, sometimes with colleagues, and without any urge to give “grades”. We'll look at a set of student work and think about both individual and group feedback.
[Repeats as S607]

Saturday, 12:40 PM

S408 Global to Local: Teaching Causes and Impacts of El Nino and La Nina

Dakota E

Spencer Cody Edmunds Central School District *Middle School, High School* Science
Spencer.Cody@k12.sd.us *https://www.echs.k12.sd.us/site/Default.aspx?PageID=390*
American Meteorological Society through Project Maury has curriculum to help teachers cover complex climatological issues. We will cover activities that utilize the AMS El Nino/La Nina climate charts. Each attendant will get an interactive climate chart along with other materials relating to climatology and ocean science.



South Dakota Discovery Center
Your hands-on science playground

Saturday, 12:40 PM

S409 Creating Authentic STEM Experiences for Your Students

Dakota F

Rhea Waldman SD Discovery Center

Elementary, Middle School, High School Science, Math & CTE

RheaWaldman@sd-discovery.org

www.sd-discovery.org

Create meaningful learning experiences for your students to be involved in and contribute to current research.

Mentor a generation prepared to code, calculate, design, and discover its way to build a diverse STEM

workforce by enabling powerful connections and engaging your students in authentic STEM experiences.

[Repeat of S108]

Saturday, 12:40 PM

S410 Integrating Birds Into the Curriculum

Dakota G

Kelly Preheim Armour School

Elementary Science

<https://www.facebook.com/BirdTeach-367011353690070/>

Teaching about birds and nature is a perfect way to inspire children of any age to get outdoors and explore!

Young students are naturally interested in nature, so integrating birds into the curriculum helps them feel passionate about a subject whether it be science, math, reading, or writing.

Saturday, 12:40 PM

S411 Translating the SD Science Translations

Dakota H

Jennifer Fowler SD DOE

Elementary, Middle School, High School Science

Jennifer.Fowler@state.sd.us

<https://doe.sd.gov/contentstandards/SciTranslation.aspx>

It is time to dive into the new SD Science Translations documents! Made by SD teachers for K-12 science

educators, these Translations are resources to guide your three-

dimensional lesson planning. Additional information regarding our SD

Science Assessment and other SD Science news will be discussed.



[Repeat of F211]

Saturday 1:40PM

Saturday, 1:40 PM

S501 Virtual Math Coaching: Reflecting on Your Practice

Prairie A

Stephanie Higdon, Molly Ring & Mark Kreie SD DOE

Elementary, Middle School, High School Math

Stephanie.Higdon@state.sd.us Molly.Ring@k12.sd.us Mark.Kreie@k12.sd.us

John Hattie's research has found that students can show more than one full year of growth when teachers record and reflect on video of lessons. In addition to collective teacher efficacy, teachers collaborating to determine best teaching practices has the greatest effect on student growth. The South Dakota Virtual Math Coaching program provides a platform for teachers to collaborate with math teachers from across the state to reflect on their own teaching practice and impact student learning. In this session teachers will have the opportunity to learn from current math coaches and hear the vision for the future of this valuable program.

Saturday, 1:40 PM

S502 Dig Up Dirt & Bake It Too!

Prairie B

Ashley Armstrong & Lindsay Kortan Bon Homme School District & Yankton High School Middle School, High School Science

Ashley.Armstrong@k12.sd.us Lindsay.Kortan@k12.sd.us

With recent local flooding, students have experienced the effects of excess soil moisture content and how it relates to both urban and rural flooding. In this lesson, students learn how to test soil moisture content and make plans for reducing localized flooding.

[Repeat of S402]

Saturday, 1:40 PM

S503 Family Math Continues...3-5

Cindy Kroon Montrose School Dist

Cindy.Kroon@k12.sd.us

Prairie C

Elementary Math

<https://ck022.k12.sd.us>

Explore a set of take-home activities designed to help families with young children discover the fun and engaging side of mathematics. Family math is not: flash cards, worksheets, or math homework. Family math is: puzzles, games, and engaging activities. Play around with math in a family-friendly environment and (hopefully) change perceptions about math. Lessons learned from year one plus all new activities! (Grades 3-5)

Saturday, 1:40 PM

S504 Teachers that are Encouraged, Empowered and Excellent:

A Program of Classroom Control that Works

Kate Jorgensen Kate Trains

Kate.Jorgensen86@gmail.com

Dakota A

Elementary, Middle School, High School Science & Math

www.KateTrains.com

Dynamic! Teacher Empowered! Excellent! A Program of classroom management that improves test results-NOW! Principal supported, staff directed and designed to increase time to teach, encouragement, empowerment and excellence in every classroom.

[Repeats as S604]

Saturday, 1:40 PM

S506 iNaturalist Data in Your Classroom

Anne Lewis South Dakota Discovery Center

AnneLewis@sd-discovery.org

Dakota C

Elementary, Middle School Science

www.sd-discovery.org

Study biomes, environments, food webs, migrations and more using iNaturalist data. iNat is a citizen science platform that, with a few tips and tricks, will have your students analyzing real data in real time, maybe even contributed by them! Requires laptop.

[Repeat of F113]

Saturday, 1:40 PM

S507 Featured Session The Power of Students' Ideas in the Math Classroom

Annie Fetter 21st Century Partnership for STEM Education

AnnieFetter@gmail.com

Dakota D

Elementary Math

<http://annie.mathematicalthinking.org>

Do your students believe that they have important mathematical ideas? Do they believe that mathematics makes sense and is about more than answers? Do they think of themselves as problem solvers? We'll explore routines and strategies for eliciting, valuing, and leveraging students' ideas in the PreK-5 classroom (and beyond!).

[Repeat of S307]

Saturday, 1:40-3:30 PM

S508 {Two hour session} PLTW: Incorporating Transportable Skills Into STEM Education

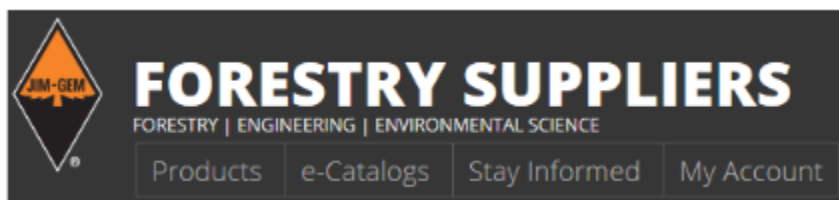
Kathy Van Kley & Dr. Laura Heitritter Project Lead The Way Elementary-HS Science, Computer Science, Engineering, Biomedical Science

KVanKley@pltw.org

Dakota E

www.pltw.org

Industry leaders agree that skills such as communication, collaboration, critical/creative thinking, problem solving, and ethical reasoning are crucial to the success of an employee. Incorporating these skills into learning at an early age and continuing to build on them year after year provides students with a valuable and forever skill set.



Saturday, 1:40 PM

S509 Featured Session Seven Steps for Adapting Technology in a 1:1 Environment.

Dakota F

Sean Nank California State University San Marcos

Middle School, High School Math

mathcoachnank@gmail.com

www.SeanNank.com

Come discuss seven steps that will ensure implementing technology in a meaningful way. We will address lessons learned during a district 1:1 implementation program, discuss how classrooms were able to achieve a zero percent failure rate, and see how these lessons can inform your district, school, and classroom.

Saturday, 1:40 PM

S510 Computational Astronomy: A lesson Plan for High School Math and Science Teachers **Dakota G**

Donna Kliche & Martha Garlick SDSMT

Middle School, High School Science & Math

Donna.Kliche@sdsmt.edu Martha.Garlick@sdsmt.edu

During the summer 2019, SDSMT, Augustana and SDSU faculty teamed up to provide middle/high school teacher participants with math lessons that include space exploration examples which they can share with their students. An example of such lessons will be presented at the conference. *[Repeat of S309]*

Saturday, 1:40-3:30 PM

S511 {Two hour session} Mathematical Modeling: An Introduction and Example for the Classroom **Dakota H**

Martha Gregg Augustana University

High School Science & Math

Martha.Gregg@augie.edu

The fourth Standard for Mathematical Practice tells us students should be able to employ mathematical modeling, "the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions" (SD State Standards for Mathematics). This presentation will introduce modeling and provide an example appropriate for the classroom.

Saturday 2:40-3:30PM

Saturday, 2:40 PM

S601 WE ARE.... NOT your traditional math class!

Prairie A

Shana Ward & Rebecca Myers-Kapelewski Rapid City Area Schools

Middle School, High School Math

Shana.Ward@k12.sd.us Rebecca.Myers@k12.sd.us

How do you mix 21st Century learning with best practices? As co-teachers, we will share our experiences in our blended math classroom (station rotation model). We will share how we created a space that involves increased student discourse, student engagement, student voice/choice, student agency, and academic ownership.

Saturday, 2:40 PM

S602 Escape the Cell - Engaging Activities for the Classroom **Prairie B**

Louisa Otto Sanford Research PROMISE

Middle School, High School Science

Louisa.Otto@sanfordhealth.org

<https://research.sanfordhealth.org>

Getting students excited about reviewing material is tricky. In this session you will be a student and try to solve puzzles to escape from a cell using escape room activities. This escape kit will be available to check out from Sanford PROMISE to use in your own classroom.

[Repeat of F411]



Saturday, 2:40 PM

S603 Math-Make it a Game

Prairie C

Susan Gilkerson Rutland

Elementary, Middle School, High School Math

Susan.Gilkerson@k12.sd.us

Students struggle with the daily routine of doing their math homework. This workshop will explain how I took games that the students love to play and adapted their math lesson to them.

[Repeat of S401]

Saturday, 2:40 PM

S604 Teachers that are Encouraged, Empowered and Excellent: A Program of Classroom Control that Works

Dakota A

Kate Jorgensen Kate Trains

Elementary, Middle School, High School Science & Math

Kate.Jorgensen86@gmail.com

www.KateTrains.com

Dynamic! Teacher Empowered! Excellent! A Program of classroom management that improves test results-NOW! Principal supported, staff directed and designed to increase time to teach, encouragement, empowerment and excellence in every classroom.

[Repeat of S504]

Saturday, 2:40 PM

S605 The Kickstart Guide To Making Great Makerspaces

Dakota B

Julie Erickson Technology and Innovation in Education (TIE) *Elementary, Middle School, High School Science, Math, STEM, STREAM & STEAM*

tie.net

Are you thinking about adding a makerspace to your learning space? Or expand one you already have? This session provides a framework for the process of establishing and refining a makerspace in your school. You will learn how to develop open-ended exploration, increase engagement and support learning for everyone.

[Repeat of F410]

Saturday, 2:40 PM

S606 Teaching Science GLOBE-LY

Dakota C

Anne Lewis & Julie Olson South Dakota Discovery Center & Mitchell High School *Elementary, Middle School, High School Science*

AnneLewis@sd-discovery.org Julie.Olson@k12.sd.us

www.sd-discovery.org

GLOBE is an international science and education project sponsored by NASA and NOAA. Learn how being a GLOBE teacher can connect your students to others around the world.

[Repeat of S306]

Saturday, 2:40 PM

S607 Featured Session Two Structures for Looking at Student Work

Dakota D

Annie Fetter 21st Century Partnership for STEM Education

Elementary Math

AnnieFetter@gmail.com

http://annie.mathematicalthinking.org

To get better at making quick instructional decisions, we need to practice doing it slowly, sometimes with colleagues, and without any urge to give “grades”. We'll look at a set of student work and think about both individual and group feedback.

[Repeat of S407]

Saturday, 2:40 PM

S609 Real-World Connections: Bringing Researchers into Your Classroom

Dakota F

Rhea Waldman SD Discovery Center

Elementary, Middle School, High School Science, Math & CTE

RheaWaldman@sd-discovery.org

www.sd-discovery.org

Tired of coming up with answers to: “When will I ever need that again?” Link your students to the real world by bringing South Dakota researchers into your classroom. Have an expert answer the question for you, while engaging your students and teaching them the “why” behind what they learn.

Saturday, 2:40 PM

S610 Escape Room Education

Dakota G

Chad Ronish Hill City High School *Elementary, Middle School, High School* Science & Math
Chad.Ronish@k12.sd.us

Create a student driven, guided and centered learning environment in your classroom using the Escape Room concept for learning and assessment. We will explore an activity and look at resources for any budget.

[Repeat of S305]

Saturday, 2:40 PM

S612 Still Trying to Spark Interest

Symposium

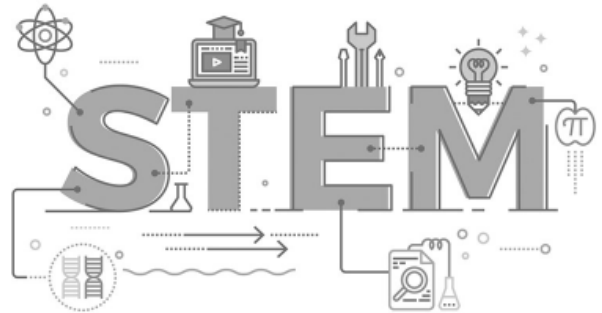
Larry Browning & Matt Miller South Dakota State University
Elementary, Middle School, High School Science
Larry.Browning@sdstate.edu Matt.Miller@sdstate.edu

Using common and inexpensive items, students are allowed to investigate how much hydrogen and oxygen make good rocket fuel. The mixture is then tested by applying a spark to the fuel and seeing if the students' micro-rocket flies and how far. We have used this in various grades and settings to spark interest as well as rockets. These experiences will also be discussed.

[Repeat of S112]

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www.nap.edu

Wrap-Up & Reflection Discussions

Saturday 3:30-4:15 PM

S704 Math Wrap-up and Reflect

Dakota A

SDCTM

Join SDCTM Leadership and offer your feedback from the conference and recommendations for future events. Turn in your survey for a chance to win a free conference registration to the 2021 SD STEM Ed Conference.

S708 Science Wrap-up and Reflect

Dakota E

SDSTA

Join SDSTA Leadership and offer your feedback from the conference and recommendations for future events. Turn in your survey for a chance to win a free conference registration to the 2021 SD STEM Ed Conference.

Saturday 4:30-6:30 PM

S801 SDSTA & SDCTM Officers and Conference Leadership Joint Board Meeting

Prairie A

JPDC Board SDSTA & SDCTM Officers and Conference Leadership meet to reflect & discuss current conference outcomes and strategize for upcoming event(s). If you are interested in helping to manage the conference and be part of the Joint Board, please contact SD STEM Ed Board Chair Cindy Kroon at Cindy.Kroon@k12.sd.us Next Year's Conference will be February 4, 5, & 6, 2021.



SDSU
Extension

<https://extension.sdstate.edu> Sioux Falls Regional Center



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The Learning Company™

National Park Service

Badlands National Park
South Dakota

Representatives will be exhibiting on Friday from 8:00 AM until 5:30 PM.

(Most will be available on Saturday till noon.)

These include:

Amplify Education	Emily Lammers
Badlands National Park	Ed Welsh
CPM Educational Program	Julie Jackson & Cathy Quinlivan
Forestry Suppliers	Deanie Stinson
Houghton Mifflin Harcourt	Matt Misialek & Billy Pugliese
miniPCR bio	Bruce Bryan
National Academies of Sciences, Engineering & Medicine	Barbara Murphy
National Inventors Hall of Fame	Rick Myskewitz & Sophia Johnson
Sanford PROMISE & Sanford Health	Amy Baete & Benjamin Benson
SD EPSCoR	Mel Ustad
South Dakota Discovery Center	Anne Lewis & Rhea Waldman
South Dakota School of Mines	Ashli Maddox
South Dakota State Library	Kathleen Slocum
SDSU – College of Natural Sciences	Ian Charnley
South Dakota State University – SD 4-H	Christine Wood & Katherine Jaeger
Southeast Technical Institute	Fenecia Foster & Debra Hunking
Steckelberg Consulting	Dr. Marie Steckelberg
STEMscopes	Aichell Joseph
Technology & Innovation in Education (TIE)	Julie Erickson & Kim Clark
WorldStrides	Rives Kuhar

***Name Tag Lanyards are compliments of Sanford and Hoodamath** *(Thank you)*

South Dakota Science Teachers' Association Business Meeting will be held in Dakota E at 4:30 pm on Friday, February 7, 2020
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SD Council of Teachers of Mathematics Business Meeting will be held in Dakota A at 4:30 pm on Friday, February 7, 2020

Graduate Credit

Conference credit will be offered through Dakota Wesleyan University. You may register for one-hour of credit at the 599 level. Attendance at 15 hours worth of sessions, lunches, and/or the banquet are required to earn graduate credit from Dakota Wesleyan University along with assignments listed in the syllabus. You must register online to receive this graduate credit at the following link: <https://store.dwu.edu/NonDegreeCredit>. Registration for credit will close at 5 pm on Friday, February 7. Make sure to register for the SD STEM Ed Conference! A syllabus listing course requirements can be found at: https://drive.google.com/file/d/1xMZ2ZHLP4uuwpxAxMKQ_6GekwvoNBQys/view?usp=sharing. Please remember that you must submit all assignments by the due date listed in the syllabus in order to receive credit for the course. Please also note that there is no withdrawal date for courses running for 21 days or fewer, therefore once you register you will not be able to withdraw from this course. For more information, contact Dr. Ashley Digmann at (605) 995-2891 or at Ashley.Digmann@dwu.edu.

Next year's conference will be **February 4, 5, & 6, 2021**

The 2020 Conference Committee would like to offer a Special Thanks to . . .

Dakota Wesleyan University and Dr. Asheigh Digmann for handling the credit.



All speakers for their dedication to the future of mathematics and science education.

All exhibitors for their enthusiastic participation.

The Huron Area Chamber of Commerce, The Huron Convention and Visitors Bureau for a great deal of help and cooperation.



The Huron Events Center & Crossroads Hotel for their help and generous hospitality.

All the conference participants who make all of our efforts worthwhile and without whom there would be no conference.

THANKS Sanford Health (and Sanford PROMISE)
for the donation & sponsorship of our conference.
Thank You for providing lanyards.



THANK YOU to SD EPSCoR
for the donation & sponsorship of our conference.

A SPECIAL THANKS GOES TO TIE FOR HELPING US WITH PROJECTORS!

(This year's TIE Conference is April 19-21, 2020 in Sioux Falls.)

THANK YOU to Hoodamath for providing lanyards.

Next year's SD STEM Ed conference will be **February 4, 5, & 6, 2021.**

The 2020 Spring STEM Ed Conference is a joint venture of the South Dakota Science Teachers' Association (SDSTA) and the South Dakota Council of Teachers of Mathematics (SDCTM)

Note: There is a common registration form for the conferences. One form is used to register for all activities, including SDSTA and SDCTM memberships. The best discount on the registration rate is Early Registration by Dec. 15th. There is still a discount for paid Pre-Registration between Dec. 16th – Jan. 24th. Anything thereafter will be considered On-Site Registration. On-Site Registration rates are:

ONE-day (SDCTM or SDSTA members)	\$95	Non-members	\$145	Students	\$55
includes the Noon Luncheon for that day					
TWO-day (SDCTM or SDSTA members)	\$120	Non-members	\$170	Students	\$65
includes the Noon Luncheon for both days					

The Friday Night Banquet is **NOT** included in the registration fee. A ticket for the banquet may be obtained at an additional cost of **\$25**. {Registration & payment after Jan. 24th will be considered as on-site registration.}

Because of a limited printing budget, the program was available in advance at the SDCTM website [www.sdctm.org] or SDSTA website [www.sdsta.org]. The printed Schedule-at-a-Glance will be distributed on site with the registration materials.

**2020 Mathematics and Science Conference
SDSTA & SDCTM**

Please take time to respond to the following questions concerning the conference. This information will help the program committee take steps to improve future conferences. Circle one in each group:

Content Area: Math Science Both STEM Other _____
Grade Band: Elementary Middle School High School College Other

Circle which no cost-to-you items you enjoyed; or X those we could do without:

Morning: donut holes & coffee; Afternoon: popcorn; All day: pop; Other _____

What presentation or presentations did you feel were the most useful or helpful?

What made it (or them) good?

Were there any presentations that disappointed you?

Please give us your overall assessment of the conference along with any comments you would like to share.

Detach and fill in the following for a final prize to be sent after the conference. To register for the prize, turn in this entry along with your evaluation form.

_____ Name
_____ Address
_____ City, State, Zip Code

If you wish to complete the survey online,
<https://www.surveymonkey.com/r/Q7QVHQ8>



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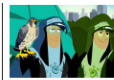
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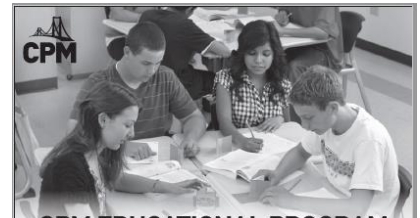
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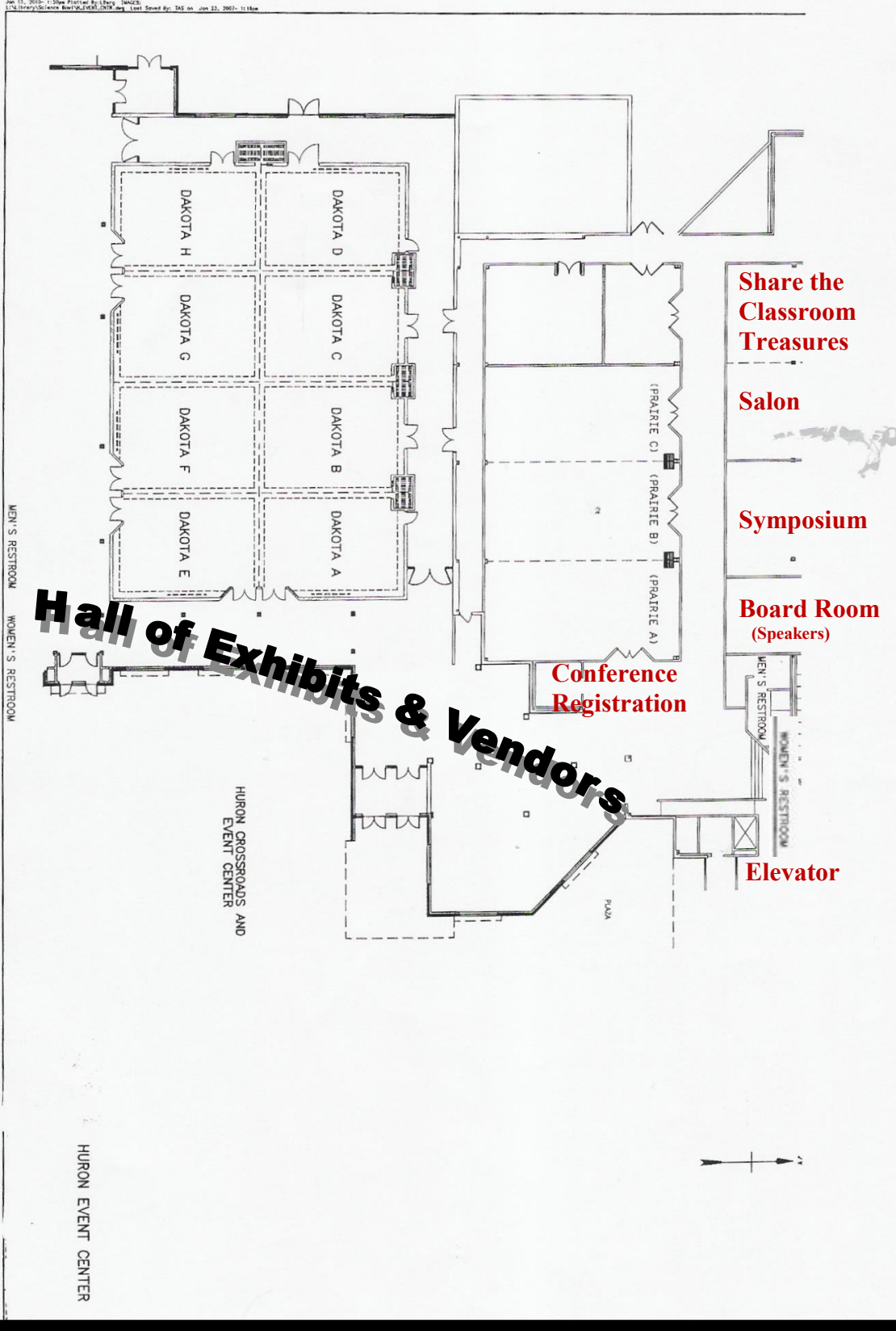
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