# Thursday 7:00 PM

**7:00 PM** **Session: 1**
**Thursday** **Prairie B**
Grade Level: K-12 Math

**Host:** Allen Hogie
SDCTM President
allen.hogie@k12.sd.us
*www.sdctm.org*

**Math Potluck**
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!

**7:00 PM** **Session: 2**
**Thursday** **Prairie C**
Grade Level: All Science

**Host:** Mark Iverson
SDSTA President Elect
President@sdsta.org
*www.sdsta.org*

**Science Showcase**
This year's science sharing theme is supermarket science lab/demo. Come share one or more labs, experiments, or demos or simply come to network, socialize, and take some ideas back to your classroom. Pizza will be provided

# FRIDAY 8:05 AM

**8:00 AM** **Session: 3**
**Friday** **Prairie A**

**CONFERENCE WELCOME**

**Hosts:** Mark Kreie of Brookings High School
Mark Iverson of Watertown High School

**IGNITE SDSTA/SDCTM Joint Conference**
Get students of all ages out of their seats and talking with "Which One Doesn't Belong?"

# FRIDAY 8:30 AM

**8:30-9:20 AM** **Session: 4**
**Friday** **Prairie A**
Grade Level: Science

**FEATURED SPEAKER**
Barbara Mayes Boustead
NOAA
barbara.mayes@noaa.gov

**Wilder Weather:**
Connecting Weather and Climate to Lessons from Laura Ingalls Wilder.

# FRIDAY 8:30 AM

**8:30-9:20 AM** **Session: 5**
**Friday** **Prairie B**
Grade Level: 6th-8th Math

**Presenter:** Crystal McMachen
Rapid City Area Schools: Southwest Middle School
crystal.mcmachen@k12.sd.us

**Productive Student Talk**
Getting middle school students to talk is easy. Getting middle school students to talk about math can sometimes be a struggle. Come and learn about some easy to implement ways of getting students to have productive math talk.

**8:30-9:20 AM** **Session: 6**
**Friday** **Prairie C**
Grade Level: 9th-12th Science

**Presenter:** Julie Olson & Tricia Neugebauer
Mitchell Senior High
julie.olson@k12.sd.us

**Human to Human Interface Systems**
Have fun exploring the nervous system with the Backyard Brains Human to Human Interface system. Engage in controlling a partner's arm muscles using the electrical impulses from your own muscles.

# FRIDAY 8:30 AM

**8:30-9:20 AM** **Session: 7**
**Friday** **Dakota A**
Grade Level: K-5 Math

**Presenter:** Danae Paxton, Tammy Schrempp, & Carla Sandquist of Timber Lake Elementary
Danae.Paxton@k12.sd.us

**Family Math and Literacy Night**
Timber Lake Elementary Math and Literacy Family Night reached goals of packing the hallways, classrooms and gymnasium with students and their families. We would love to share how our teachers strive to make learning fun while building partnerships with families and empowering the connections needed to help students grow. **Repeat as Session 55**

**8:30-9:20 AM** **Session: 8**
**Friday** **Dakota B**
Grade Level: 9th-12th Math

**Presenter:** Kimberly Jones
Dakota State University

**Drawing with Equations**
Manipulating the parent graphs of functions to draw. Bring your computer, tablet or mobile device to the session to participate.

# FRIDAY 8:30 AM

**8:30-9:20 AM** **Session: 9**
**Friday** **Dakota C**
Grade Level: 6th-12th Science

**Presenter:** Gregory Trieste
Houghton Mifflin Harcourt
gregory.trieste@hmhco.com
*www.hmhco.com*

**Teaching Science: The Next Generation, to get the foundational information and big picture overview of the new science standards.**
During this workshop, participants will collaboratively engage in a hands-on, inquiry-based activity, explore the instructional shifts required by the NGSS, discuss the characteristics of an NGSS-aligned activity, and reflect on next steps for their schools and/or classrooms:
• Plan effective lab experiments
• Differentiate science instruction
• Implement strategies and creative science challenges
• Participate in discrepant events and leave with a ready-too implement action plan

**8:30-9:20 AM** **Session: 10**
**Friday** **Dakota D**
Grade Level: K-12 Math & Science

**Presenter:** Carla Diede
Harrisburg South Middle School
carla.diede@k12.sd.us

**BreakoutEDU**
Break the mold of traditional learning by breaking into BreakoutEDU. Students use problem solving skills and teamwork to solve puzzles that can be tailored to any content or age group. Experience a Breakout yourself and then gain ideas on how to implement it in your own classroom.

# FRIDAY 8:30 AM

**8:30-9:20 AM** **Session: 11**
**Friday** **Dakota E**
Grade Level: K-5 Math

**Presenter:** Kim Webber
Rapid City Area Schools
Kim.Webber@k12.sd.us

**Making the Most of SBAC Resources**
The Smarter Balanced Assessment Consortium is more than the yearly summative assessment! Participants will have the opportunity to learn about a variety of assessment resources that can add to a comprehensive system of classroom, building and district-level assessment, including the Digital Library, Interim Assessments, Performance Assessments and Item Specifications.

**8:30-9:20 AM** **Session: 12**
**Friday** **Dakota F**
Grade Level: 9th-12th Science

**Presenter:** Steven Rokusek
South Dakota Public Broadcasting
steven.rokusek@state.sd.us
*www.sdpb.org/learn/*

**Dissection Video Series and Related Resources**
During this session participants will review science dissections, including the dissection of a cow eye, a sheep heart, an earthworm, a clam and more. The dissections will be reviewed using a video series called Dissection 101. The series includes quizzes, PowerPoint presentations and lesson plans. Grades: 6-12.

# FRIDAY 8:30 AM

**8:30-9:20 AM** **Session: 13**
**Friday** **Dakota G**
Grade Level: K-12 Science

**Presenter:** Dr. Judy Vondruska
South Dakota State University
judy.vondruska@sdstate.edu
*www.sdstate.edu/physics*

**Lessons from PER**
The field of physics education research (PER) is rich with information applicable to all science teachers. This includes effective ways to conduct demonstrations, utilization of heterogeneous grouping, effective engagement methods, etc. This session will share the findings from several fields of PER and allow participants to share their experiences.

**8:30-9:20 AM** **Session: 14**
**Friday** **Dakota H**
Grade Level: K-5 Math

**Presenter:** Deann Kertzman
Center for the Advancement of Mathematics and Science Education at BHSU
deann.kertzman@bhsu.edu

**Basic Fact Mastery through Algebraic Reasoning**
When primary strategies for basic fact learning focus on memorization, children miss opportunities to develop understandings of fundamental principles of mathematics. In this session, relational strategies and sequences for teaching number combinations will be explored in light of three phases of fact acquisition. Several complementary resources will be offered.

# FRIDAY 9:30 AM

**9:30-11:20 AM** **Session: 15 Two Hours**
**Friday** **Prairie A**
Grade Level: 6-12 Science

**FEATURED SPEAKER**
Tricia Shelton
NSTA
*www.nsta.org*

**Selecting Phenomena to Motivate Student Sense-making**
The right phenomena are a key ingredient in successful three-dimensional teaching and learning. Emphasis will be placed on what makes some phenomena better than others and how to use them successfully in the classroom.

**9:30-10:20 AM** **Session: 16**
**Friday** **Prairie B**
Grade Level: K-12 Math & Science

**FEATURED SPEAKER**
Lenny VerMaas
Educational Service Unit #6
lennyvermaas@gmail.com
*http://lvermaas.wikispaces.com/*

**No One Is Born With A Math/Science Brain, Everybody's Brain Can Grow To Learn Math & Science**
Learning is about growth, practice, patience, and persistence. Students with a growth mindset see mistakes as learning opportunities and believe that their brain is like a muscle and gets stronger and more efficient when exercised. Come and learn how to build a growth mindset in your students. **Repeated as Session 68**

# FRIDAY 9:30 AM

**9:30-10:20 AM** **Session: 17**
**Friday** **Prairie C**
Grade Level: K-5 Math & Science

**FEATURED SPEAKER**
Bill Kring
Bill Kring the Math King
billkring@gmail.com

**A Potpourri of Problem Solving - Part 1**
Problem solving can bring in mathematical thinking in myriad ways. This session will contain many different opportunities to apply this process. From sharing brownies fresh out of the oven to counting legs on the bus to measuring the mass of potatoes in a sack to reading the mind of the student, problems presented will give ideas to share as soon as Monday after the conference.

**9:30-11:20 AM** **Session: 18 Two Hours**
**Friday** **Dakota A**
Grade Level: 9th-12th Math & Science

**Presenter:** Kristen Gonsoir
Groton Area School District
kristen.gonsoir@k12.sd.us

**Communication Styles and Learning**
We all know how to talk, but do we know how to communicate? Effective communication is extremely important, whether educators are communicating with students, parents, co-workers, or supervisors. Effective communication transcends all disciplines of education, including math and science. In this session, participants will learn which communication style they utilize most often and how they can more effectively communicate with others of a different communication style.

# FRIDAY 9:30 AM

**9:30-11:20 AM** **Session: 19 Two Hours**
**Friday** **Dakota B**
Grade Level: K-12 Computer Science

**Presenter:** Kimberly Clark
Technology and Innovation in Education
kclark@tie.net

**Want to Make Computer Science a Thing in your District?**
Let's support and expand computer science learning opportunities for every student. Discover a cohesive K-12 CS curriculum pathway that provides flexible implementation and engages all students. Experience CS concepts with hands-on/ interactive lessons from Code.org. Think BIG as we share computer science possibilities and professional learning with Code.org and beyond. **Repeated as Session 80**

**9:30-11:20 AM** **Session: 20 Two Hours**
**Friday** **Dakota C**
Grade Level: K-5 Science

**Presenter:** Tim Olsen & Marsha Kucker & Cindy Heidelberger Larson of Ground Works-Midwest and SD Agriculture in the Classroom
gwgrowshope@gmail.com
*www.groundworks-midwest.com*

**Science Alive - "Real World" Science Applications**
The staff of the nonprofit, Ground Works-Midwest, will present a philosophical and practical overview of utilizing school teaching gardens and the SD Agriculture in the Classroom program to inspire science learners. Examples of STE(A)M infused, project based, experiential, interdisciplinary curriculum that fulfills SD science education standards will be demonstrated.

# FRIDAY 9:30 AM

**9:30-10:20 AM** **Session: 21**
**Friday** **Dakota D**
Grade Level: 5th-12th Science & Math

**Presenter:** Mark Kreie & Jarrod Huntimer
Brookings High School
mark.kreie@k12.sd.us
*https://markkreie.blogspot.com/*

**Desmos Activity Builder: Customized Activities**
So you know about teacher.desmos.com and you love the activities found there… but you want to customize the activities a bit to better fit your students. Come learn how to modify existing Desmos activities and how to create your own activities using Activity Builder. Intended for grades 5-12 math OR science teachers. Some Desmos experience is helpful but not required; bring an iPad or laptop.

**9:30-10:20 AM** **Session: 22**
**Friday** **Dakota E**
Grade Level: K-8 Math

**Presenter:** Ramiro H. Lafuente-Rodriguez
University of South Dakota

**From Intuition to Abstraction**
The relation and interaction between intuition and abstraction in the process of learning mathematics is used successfully by students and researchers to reach higher levels of understanding. This dynamic of interaction between intuition and abstraction is based on previous knowledge and skills. In this talk I will provide some examples, and their discussions, of specific topics in which this interaction happens naturally, and tends to increase the motivationsw when learning difficult topics

# FRIDAY 9:30 AM

**9:30-11:20 AM** **Session: 23 Two Hours**
**Friday** **Dakota F**
Grade Level: 6th-8th Math

**Presenters:** Jamalee Stone, Allison Deal, Kaitlyn Peterson, Heather Sohl, & Alli Steckleberg
Black Hills State University
jami.stone@bhsu.edu
*www.livebinders.com/play/play?id=2243460*
*Password: sugaku sensei*

**Empowered Problem Solvers! Thanks to Robert Kaplinsky!**
This session will focus on implementing real world problem-based lessons developed by Robert Kaplinsky, that are freely available at https://robertkaplinsky.com/lessons/. Participants will interact with higher depth of knowledge level math problems and examine how to ensure students are problem solvers not just math robots.

**9:30-10:20 AM** **Session: 24**
**Friday** **Dakota G**
Grade Level: 9th-12th Science

**Presenter:** Larry Browning & Matt Miller
South Dakota State University – Physics and Chemistry/Biochemistry Departments
Larry.Browning@sdstate.edu

**APPS Session**
The Advanced Principles in Physical Science (APPS), sponsored by a NCLB/Title II grant, provided online training and F2F workshops. This is an opportunity for participants to get together and share experience, get help with issues in Chemistry and Physics, and build new things to use (e.g. psuedoscopes). All are welcomed.

# FRIDAY 9:30 AM

**9:30-10:20 AM** **Session: 25**
**Friday** **Dakota H**
Grade Level: K-12th Math

**Presenter:** Nicol Reiner
South Dakota Department of Education
nicol.reiner@state.sd.us

**Being Smart in Math Class**
What does being "smart" in math class mean? Thinking that being fast and correct are the only ways to be successful in math turns many students away from math. Let's expand our definition of "smart" in math and talk about how to communicate all of the ways to be successful.

# FRIDAY 10:30 AM

**10:30-11:20 AM** **Session: 26**
**Friday** **Prairie B**
Grade Level: 4th-12th Math & Science

**FEATURED SPEAKER**
Lenny VerMaas
Educational Service Unit #6
lennyvermaas@gmail.com
*http://lvermaas.wikispaces.com/*

**Homework Strategies For The Mathematics & Science Classroom That Engage Students**
Are you stuck in that routine of providing instruction, giving an assignment, correcting the assignment, and then going to the next lesson? Are you looking for a different way to do homework? Strategies like Zip Around, Wager Game, White Out, Pick Five and many more will be shared to engage students and keep them interested in learning.

# FRIDAY 10:30 AM

**10:30-11:20 AM** **Session: 27**
**Friday** **Prairie C**
Grade Level: K-5 Math

**FEATURED SPEAKER**
Bill Kring
Bill Kring the Math King
billkring@gmail.com

**Decode the Language of Mathematics and Demystify Addition and Subtraction**
Speaking the right language of mathematics can help all students develop powerful understandings and connections. Problem solving can use this language to help foster mathematical knowledge and proficiency. Addition and subtraction are so much more than following procedures. Done properly, they build on conceptual understanding that allows students to create models that are mathematically correct as well as make sense to them. These methods extend from work with whole numbers to that with decimals, fractions, and algebraic quantities. The correct use of mathematic terms begins in kindergarten and develops as the child grows older.

**10:30-11:20 AM** **Session: 28**
**Friday** **Dakota D**
Grade Level: 5th-12th Math & Science

**Presenter:** Jarrod Huntimer
Brookings High School
Jarrod.huntimer@k12.sd.us

**Desmos Card Sorts: An Awesome Digital Tool for Any Classroom**
Card sorts are an interactive way for students to learn and generate great discussions. Use text, images, and graphs to facilitate learning, promote student interaction, and check for understanding, fundamental concept knowledge, and vocabulary. Session provides hands-on learning and examples of how to make and use card sorts.

## FRIDAY 10:30 AM

**10:30-11:20 AM** **Session: 29**
**Friday** **Dakota E**
Grade Level: 6th-8th Science

**Presenter:** Cassie Soeffing
Institute for Global Environmental Strategies
cassie_soeffing@strategies.org
*www.strategies.org*

**GLOBE Observer Mosquito Habitat Mapper App**
In many parts of the world, mosquitoes are more than just a summertime nuisance. They spread diseases that kill nearly 2.7 million people a year. Bring your smart device and learn how to use this NASA app to help those working to understand and reduce mosquito-borne diseases.

**10:30-11:20 AM** **Session: 30**
**Friday** **Dakota G**
Grade Level: 9th-12th Science

**Presenter:** Becky Bundy
Black Hills State University - Sanford Underground Research Facility
Becky.Bundy@bhsu.edu
*www.sanfordlab.org/feature/k-12-stem-education*

**It's Electric! - A New Sanford Underground Research Facility Curriculum Unit**
A physical science unit focusing on subatomic particles, electrostatics and electromagnetism will be explored through participatory activities. This unit focuses on the Deep Underground Neutrino Experiment (DUNE), whose detectors will be located deep underground at the Sanford Lab in Lead. Learn how to bring this international project into your classroom!

## FRIDAY 10:30 AM

**10:30-11:20 AM** **Session: 31**
**Friday** **Dakota H**
Grade Level: K-12 Science

**Presenter:** Tiffany Kroeger
Montrose School District
tiffany.kroeger@k12.sd.us
*https://sites.google.com/site/montrosesciencedepartment/*

**How to prepare and run a successful Family Science Night**
Have you ever wanted to expand the amazing things you do in your classroom to your community? Do you want to see students and their parents getting excited about math and science? Hosting a Family Science Night is a great way to get the community together over the common goal of enhancing science and mathematics! Come find out how easy it is to pull off a successful night at your school!

## FRIDAY 11:30 AM

# Visit 2018 Conference Exhibitors! Complete your "Vendor Bingo" to win prizes!

Poster Session hosted by SDSTA Member Darwin Daugaard (Dell Rapids HS)

## FRIDAY 12:00 PM

# ~LUNCH~

Hosted by:
Liz McMillan, SDSTA President &
Al Hogie, SDCTM President

Door Prizes donated by:
Conference Exhibitors

Followed by:
Exhibitor & Networking Session

## FRIDAY 1:30 PM

**1:30-2:20 PM** **Session: 32**
**Friday** **Prairie A**
Grade Level: Science

**FEATURED SPEAKER**
Barbara Mayes Boustead
NOAA
barbara.mayes@noaa.gov

**Wilder Weather:**
Connecting Weather and Climate to Lessons from Laura Ingalls Wilder

## FRIDAY 1:30 PM

**1:30-2:20 PM** **Session: 33**
**Friday** **Prairie B**
Grade Level: K-5 Math

**Presenter:** Kimberly Jones
Dakota State University

**Drawing with Equations**
Engage your students in technology while manipulating parent graphs of functions. Time will be spent working with the online DESMOS calculator and following along to create a drawing using equations. Participants will spend time using DESMOS to create their own drawings by manipulating the variables on parent functions. All participants should bring at least one of the following devices to participate: computer or mobile device such as a tablet.

**1:30-2:20 PM** **Session: 34**
**Friday** **Prairie C**
Grade Level: 6th-8th Science

**Presenter:** Steven Rokusek
South Dakota Public Broadcasting
steven.rokusek@state.sd.us
*www.sdpb.org/learn/*

**Science & Art Activities that will Educate and Entertain**
During this session participants will learn about new education resources which present a very logical approach to drawing. The resources covered in this session will help educators teach artistic expression and the basic understanding of the structural world. Hands-on science activities will also be shared. Grades 2-12.

# FRIDAY 1:30 PM

**1:30-2:20 PM** **Session: 35**
**Friday** **Dakota A**
Grade Level: 9th-12th Science

**Presenter:** Matt Miller
South Dakota State University
matt.miller@sdstate.edu
*www.sdstate.edu/continuing-distance-education/chemistry-chemical-education-ms*

**Alternative Chemistry Labs for the middle and high school classroom**
As part of the MS program in chemistry, participants create laboratory activities based on the research experience they have as part of the MS program. Some of these activities will be discussed along with how they meet the SD Science standards. Activities will be tested during the session.

**1:30-2:20 PM** **Session: 36**
**Friday** **Dakota B**
Grade Level: 6th-12th Science

**Presenter:** Cassie Soeffing
Institute for Global Environmental Strategies
cassie_soeffing@strategies.org
*www.strategies.org*

**NASAs Educator Toolkit: Framing Phenomena-Based Student Investigations**
This toolkit features NASA resources for grades K-12 that can support and frame student investigations with NASA data and content. Included is a QuickStart Guide, Key Features, and an Online Interactive Guide.

# FRIDAY 1:30 PM

**1:30-2:20 PM** **Session: 37**
**Friday** **Dakota C**
Grade Level: K-5 Science

**Presenter:** Lynne Jones
Washington Pavilion
ljones@washingtonpavilion.org
*www.washingtonpavilion.org*

**Stations to Success**
Learn how to successfully integrate hands-on experiences into your classroom through the use of science and engineering stations. Explore some of the Washington Pavilion's most popular stations, and receive tips on creating stations and activities that are budget friendly.

**1:30-2:20 PM** **Session: 38**
**Friday** **Dakota D**
Grade Level: 9th-12th Science

**Presenter:** Benjamin Benson
Sanford Research: Sanford PROMISE
SanfordOutreach@sanfordhealth.org
*www.sanfordresearch.org/education*

**Meat or Cell Function: Teaching about Protein**
Expand student's thinking about protein from "chicken" (meat) to "Actin" and other cell proteins. Learn how to use 21st Century technology to build understanding using chemical properties to separate and evaluate proteins extracted from locally available sources with vertical gel electrophoresis.

# FRIDAY 1:30 PM

**1:30-2:20 PM** **Session: 39**
**Friday** **Dakota E**
Grade Level: 6th-8th Math

**Presenter:** Kevin Smith
Dakota State University
kevin.smith@dsu.edu
*http://www.kevindsmith.org*

**Gamify the Math Classroom**
Looking for ways to engage students in the math classroom? Gamification might be a tool you can use to do this. In this session, you'll learn about ways to add game-based elements such as points, challenges, leaderboards, and badges to your math class.

**1:30-2:20 PM** **Session: 40**
**Friday** **Dakota F**
Grade Level: 6th-12th Math

**Presenter:** Carla Diede
Harrisburg South Middle School
carla.diede@k12.sd.us

**Making Video Instruction Work**
Thinking about flipping your instruction? Interested in using videos in your instruction while still holding learners accountable? Learn how to use EdPuzzle on any device to keep learners engaged during video instruction and hold them accountable. Learn about the data EdPuzzle can provide to help guide your instruction.

# FRIDAY 1:30 PM

**1:30-2:20 PM** **Session: 41**
**Friday** **Dakota G**
Grade Level: 9th-12th Science

**Presenter:** Larry Browning; Patrick Hales; Tony Durr; & Jennifer Kampmann
South Dakota State University Physics and Teaching, Learning & Leadership Departments
Larry.Browning@sdstate.edu

**CCC for Teachers**
Cross Cutting Communities for Rural STEM Education is a Title II/NCLB sponsored project to develop Professional Learning Communities (PLCs) across SD. Come and lean how you can participate in PLCs to exchange ideas and pedagogies to better serve your students - and walk away with some make-and-takes too.

**1:30-2:20 PM** **Session: 42**
**Friday** **Dakota H**
Grade Level: 9th-12th Math

**Presenter:** Cindy Kroon
Montrose High School
cindy.kroon@k12.sd.us
*https://ck022.k12.sd.us/*

**Fun & Games in Algebra**
Do your algebra students LOVE worksheets? Then this session is NOT for you. Come experience my favorite low-cost, high-impact learning activities for algebra and pre-algebra. Your students will thank you.

# FRIDAY 2:30 PM

**2:30-4:20 PM** **Session: 43 Two Hours**
**Friday** **Prairie A**
Science

**FEATURED SPEAKER**
Tricia Shelton
NSTA
*www.nsta.org*

**How do I Know if this lesson is really 3-Dimensional?**
Participants will experience a classroom lesson and analyze its potential to support three-dimensional teaching and learning by building on students' prior knowledge, providing opportunity to express their ideas, and helping students see how the lesson fits coherently into the overall unit of instruction.

**2:30-3:20 PM** **Session: 44**
**Friday** **Prairie B**
Grade Level: 5th-12th Math

**FEATURED SPEAKER**
Lenny VerMaas
Educational Service Unit #6
lennyvermaas@gmail.com
*http://lvermaas.wikispaces.com/*

**Who Is Doing The Talking In Your Classroom? Using Questioning To Develop Student Understanding.**
Teachers ask a lot of questions. Do your questions encourage student thinking and deepen understanding? Do your students ask questions? We will look at several strategies to make your questioning more effective and to help your students learn.

# FRIDAY 2:30 PM

**2:30-3:20 PM** **Session: 45**
**Friday** **Prairie C**
Grade Level: K-5 Math

**FEATURED SPEAKER**
Bill Kring
Bill Kring the Math King
billkring@gmail.com

**Take a Balloon Ride to Understanding Integer Arithmetic**
The gas balloon is a model that connects principles of science to an understanding of the arithmetic of integers. Gas bags are connected to positive integers, sand bags are connected to negative integers, addition is connected to putting bags on the balloon, and subtraction is connected to taking bags off of the balloon. Multiplication and division are naturally developed and the procedure is extended to the explanation of absolute value, combining like terms, and solving equations. **Repeated as Session 69**

**2:30-3:20 PM** **Session: 46**
**Friday** **Dakota A**
Grade Level: K-12 Math & Science

**Presenter:** Lindsey Brewer, NBCT & Lori Keleher, NBCT
Huron School District
Lindsey.Brewer@k12.sd.us
*www.TransformYourClassroom.net*

**Transform your Classroom Routine!**
Are you tired of the same old activities? Join us to learn 3 ways to transform ordinary assignments into engaging activities. Receive examples, instructions, and templates to create your own versions of Connect Four, Find Someone Who and Spot Right. Get your students moving both physically and mathematically!!!

# FRIDAY 2:30 PM

**2:30-3:20 PM** **Session: 47**
**Friday** **Dakota B**
Grade Level: K-5 Science

**Presenter:** Gregoery Trieste
Houghton Mifflin Harcourt
Gregory.Trieste@hmhco.com
*www.hmhco.com*

**Success in the Changing Elementary Science Classroom**
During this workshop, participants will collaboratively engage in a hands-on, inquiry-based activity, explore the instructional shifts necessary for effective science practices in our changing classrooms, discuss the characteristics of a STEM-aligned activity, and reflect on next steps for their schools and/or classrooms.

**2:30-3:20 PM** **Session: 48**
**Friday** **Dakota C**
Grade Level: K-12th Math

**Presenter:** Nicol Reiner
South Dakota Department of Education
nicol.reiner@state.sd.us

**Brain Research and Learning Mathematics**
What does brain research tell us about learning math effectively? Why are mistakes and struggle so important? What ideas and strategies in the classroom will help us engage students with mathematics? Come to explore these questions and to learn helpful strategies to create a math learning culture in your classroom.

# FRIDAY 2:30 PM

**2:30-3:20 PM** **Session: 49**
**Friday** **Dakota D**
Grade Level: 9th-12th Math & Science

**Presenter:** Gail Jacobsma
Arlington High School
Gail.Jacobsma@k12.sd.us

**Paperless with Class OneNote**
My classroom has become virtually paperless with Class OneNote in my high school math classes. Class OneNote is related to OneNote but has additional features for classroom use. I would love to share with you my journey and show you many cool things you can do with this product.

**2:30-3:20 PM** **Session: 50**
**Friday** **Dakota E**
Grade Level: K-12 Math & Science

**Presenter:** Mark Iverson & SDSTA/SDCTM Officers and Board Members
*sdsta.org* and *sdctm.org*

**Professional Development Speed Dating**
Join us for the Professional Development Speed Dating Session! We've got 50 minutes to get you as much info as possible. Choose a topic below you are interested in and stop by their table. At the switch you can visit another table or take your new idea and head off to another session. Come and go as you please. Sit where you like and get the information that pertains to you! Presented by the officers and friends of SDSTA and SDCTM.

# FRIDAY 2:30 PM

**2:30-3:20 PM** **Session: 51**
**Friday** **Dakota F**
Grade Level: 6th-8th Science

**Presenter:** Angie Plaine
Harrisburg South Middle School
angie.plaine@k12.sd.us

**iPads in the Classroom**
This session will share creative ideas for using iPads in the science classroom. From student projects, to fun lesson ideas and presentation options. Come ready to see student examples and get all kinds of apps and activities your students will be excited to try.

**2:30-3:20 PM** **Session: 52**
**Friday** **Dakota G**
Grade Level: 9th-12th Science

**Presenter:** Tiffany Sanderson
South Dakota Soybean Research and Promotions Council
tsanderson@vivayic.com;
rhenningfeld@vivayic.com
*www.sdsoybeanscience.org*

**Soybean Science – Teaching Genetics & Energy Flow with Soybeans**
Discover the free educational resources on www.sdsoybeanscience.org . We will walk through lessons covering topics on genetics & biotechnology and energy flow concepts from photosynthesis and cellular respiration to using renewable fuels for human energy needs. Be ready to jump into some hands-on activities and discuss how these resources may supplement your existing curriculum.

# FRIDAY 2:30 PM

**2:30-3:20 PM** **Session: 53**
**Friday** **Dakota H**
Grade Level: 6th-12th Science

**Presenter:** Julie Olson
Mitchell Senior High
julie.olson@k12.sd.us

**Edible Polymers (aka Spherification)**
Learn how to experiment with different edible components to make fake caviar or noodles while learning about polymers. Spherification is a cooking technique.

# FRIDAY 3:30 PM

**3:30-4:20 PM** **Session: 54**
**Friday** **Prairie B**
Grade Level: 9th-12th Math & Science

**Presenter:** Lisa Cardillo & Katie Keppen
Harrisburg High School
Lisa.Cardillo@k12.sd.us

**5 Years of Customized Learning - Where are we now?**
5 Years into our journey into customized learning at Harrisburg High School we invite you to come talk with a high school math and science teacher about our journey! What we have learned, what our days look like, what we have changed and where we are going next. Both teachers started at the freshmen level and now customize up to an AP level.

# FRIDAY 3:30 PM

**3:30-4:20 PM** **Session: 55**
**Friday** **Prairie C**
Grade Level: K-5 Math

**Presenter:** Danae Paxton, Tammy Schrempp, & Carla Sandquist of Timber Lake Elementary
Danae.Paxton@k12.sd.us

**Family Math and Literacy Night**
Timber Lake Elementary Math and Literacy Family Night reached goals of packing the hallways, classrooms and gymnasium with students and their families. We would love to share how our teachers strive to make learning fun while building partnerships with families and empowering the connections needed to help students grow. **Repeat of Session 7**

**3:30-4:20 PM** **Session: 56**
**Friday** **Dakota A**
Grade Level: K-12 Math & Science

**Presenter:** Lindsey Brewer, NBCT & Lori Keleher, NBCT of Huron School District
Lindsey.Brewer@k12.sd.us
*www.TransformYourClassroom.net*

**What books should you be reading?**
Join us for a roundtable discussion about what educational books you are currently reading and what inspiring books you should be reading. Come check out 4 books that are trending right now. Prizes (books and gift certificates) will be given away!

# FRIDAY 3:30 PM

**3:30-4:20 PM** **Session: 57**
**Friday** **Dakota B**
Grade Level: K-5+ Science

**Presenter:** Carl Fellbaum
Washington Pavilion
cfellbaum@washingtonpavilion.org
*www.washingtonpavilion.org/*

**Hands-On Success: Using Ziplocs & Diapers To Investigate Plastic Polymers & Career Options**
Research shows that hands-on projects improve student success, but what does that look like in a classroom or afterschool setting? Join the Washington Pavilion for two polymer projects that use diapers and plastic bags to help students connect kitchen science and a viable career option. Scalable up to high school.
**Repeated as Session 71**

**3:30-4:20 PM** **Session: 58**
**Friday** **Dakota C**
Grade Level: 9th-12th Math

**Presenter:** Sharon Vestal & Christine Larson
South Dakota State University
sharon.vestal@sdstate.edu

**NETS for Surface Area and Volume**
How many tiles in a mosaic? How many pyramids does it take to make a cube? What do Clementines have to do with surface area? Come explore these and many other SA and Volume concepts.This session can be used to fulfill the requirements for the Implementing Productive Mathematical Discourse follow-up.

# FRIDAY 3:30 PM

**3:30-4:20 PM** **Session: 59**
**Friday** **Dakota D**
Grade Level: 5th-12th Math

**Presenter:** Mark Kreie
Brookings High School
mark.kreie@k12.sd.us
*https://markkreie.blogspot.com/*

**The "New" Smarter Balanced Embedded Calculators**
Students taking the online South Dakota Smarter Balanced math assessment will have access to embedded Desmos calculators. In this hands-on session, participants will increase their level of comfort using the calculators. This session is intended for grades 5-12 teachers & Desmos users of all abilities. Bring an iPad or laptop. **Repeated as Session 100**

**3:30-4:20 PM** **Session: 60**
**Friday** **Dakota E**
Grade Level: 9-12 Science

**Presenter:** Tracy Moody
Sanborn Central
tracy.moody@k12.sd.us

**Photosynthesis/Cellular Respiration (Ideas for better understanding)**
Many traditional high school students struggle with terms and cycles of Photosynthesis and Cellular Respiration. This session will give a handful of ideas to help students dig a little deeper and understand these complex processes.

# FRIDAY 3:30 PM

**3:30-4:20 PM** **Session: 61**
**Friday** **Dakota F**
Grade Level: K-12 Science

**Presenter:** Jamie Tucker & Marcie Welsh
Brookings High School
jamie.tucker@k12.sd.us

**Incorporating CCC and SEP into activities and labs**
Would you like to learn how to change your current lab or activity to incorporate the cross cutting concepts and science and engineering practices? Join us for a look at biology and chemistry activities that you can easily incorporate CCC and SEP into.

**3:30-4:20 PM** **Session: 62**
**Friday** **Dakota G**
Grade Level: 9th-12th Science

**Hosts:** Larry Browning & James Stearns
SD Americian Association of Physics Teachers
Larry.Browning@sdstate.edu
*http://sdaapt.sdsta.org/*

**SD AAPT Annual Meeting**
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 welcomed to attend and bring their physics and physical science questions.

# FRIDAY 3:30 PM

**3:30-4:20 PM** **Session: 63**
**Friday** **Dakota H**
Grade Level: 9th-12th Math

**Presenter:** Pandi Pittman & Nadia Deal
Dupree High School

**Mass Customized Learning in Mathematics**
Our presentation will be an overview of the style of Mass Customized Learning that our school uses in Mathematics class for High School.

**3:30-4:20 PM** **Session: 64**
**Friday** **Symposium**
Grade Level: 6th-9th Science

**Presenter:** Liz McMillan of Sanford Research
AEOP eCYBERMISSION Ambassador
SanfordOutreach@sanfordhealth.org
*www.sanfordhealth.org/education*

**Scientific Inquiry & Engineering Design for the Community**
eCYBERMISSION is the Army Education Outreach Program (AEOP)'s framework and online competition for 6th-9th grade students to showcase projects that seek to understand and solve problems in their communities. Learn about recent eCYBERMISSION projects and how you and/or your students can get involved.

# FRIDAY 4:30 PM

**4:30-5:30 PM** **Session: 65A**
**Friday** **Dakota C**

## SDCTM Annual Business Meeting

Allen.Hogie@k12.sd.us
*www.sdctm.org*

All members are invited to attend.

# FRIDAY 4:30 PM

**4:30-5:30 PM** **Session: 65B**
**Friday** **Dakota G**

## SDSTA Annual Business Meeting

officers@sdsta.org
*www.sdsta.org*

All members are invited to attend. 2018 is an election year, come vote for new officers.

# FRIDAY Evening

## 5:30 PM

## Networking Event

Sponsored by:
SD EPSCoR and Fisher Scientific

## 6:15 PM

# ~BANQUET~

Semi-Formal Meal
Awards &
Keynote Address:

## Always Question…
## Always Wonder…

## Dr. Robert Pyatt

# SATURDAY, FEBRUARY 10
# 7:00 AM

**7:00-8:30 AM** **Session: 66**
**Saturday** **Salon**
Grade Level: K-12 Math & Science

**Breakfast for SD PAEMST State Level Finalists and Past Awardees**
*www.paemst.org*

**Hosted by:** SD PAEMST Coordinators:
Allen Hogie (Math)
Allen.Hogie@k12.sd.us
Ramona Lundberg (Science)
Ramona.Lundberg@k12.sd.us

# SATURDAY 8:30 AM

**8:30-9:20 AM** **Session: 67**
**Saturday** **Prairie A**
Grade Level: Science

**FEATURED SPEAKER**
Tricia Shelton
NSTA
*www.nsta.org*

**Exploring the Science and Engineering Practices**
Come explore science and engineering practices (such as constructing explanations and developing models) that are central to the vision of education described in the Framework and NGSS.

# SATURDAY 8:30 AM

**8:30-9:20 AM** **Session: 68**
**Saturday** **Prairie B**
Grade Level: K-12 Math & Science

**FEATURED SPEAKER**
Lenny VerMaas
Educational Service Unit #6
lennyvermaas@gmail.com
*http://lvermaas.wikispaces.com/*

**No One Is Born With A Math/Science Brain, Everybody's Brain Can Grow To Learn Math & Science**
Learning is about growth, practice, patience, and persistence. Students with a growth mindset see mistakes as learning opportunities and believe that their brain is like a muscle and gets stronger and more efficient when exercised. Come and learn how to build a growth mindset in your students.
**Repeat of Session 16**

# SATURDAY 8:30 AM

**8:30-9:20 AM** **Session: 69**
**Saturday** **Prairie C**
Grade Level: K-5 Math

**FEATURED SPEAKER**
Bill Kring
Bill Kring the Math King
billkring@gmail.com

**Take a Balloon Ride to Understanding Integer Arithmetic**
The gas balloon is a model that connects principles of science to an understanding of the arithmetic of integers. Gas bags are connected to positive integers, sand bags are connected to negative integers, addition is connected to putting bags on the balloon, and subtraction is connected to taking bags off of the balloon. Multiplication and division are naturally developed and the procedure is extended to the explanation of absolute value, combining like terms, and solving equations. **Repeat of Session 45**

**8:30-9:20 AM** **Session: 70**
**Saturday** **Dakota A**
Grade Level: 9th-12th Science

**Presenter:** Lisa Cardillo of Harrisburg High School & Liz McMillan of Sanford Research
SanfordOutreach@sanfordhealth.org
*www.pged.org;*
*www.sanfordresearch.org/education*

**Genetics: more complex than one subject…**
From precision medicine & gene editing to the American Eugenics Movement - understanding DNA, genes, chromosomes, inheritance, etc. is foundational to medicine & life science. Ignite curiosity and connect to social sciences with classroom lessons and activities in genetics. Information about the summer 2018 PROMISE-pgEd workshop at this session and the Sanford PROMISE exhibit booth.

# SATURDAY 8:30 AM

**8:30-9:20 AM** **Session: 71**
**Saturday** **Dakota B**
Grade Level: K-5+ Science

**Presenter:** Carl Fellbaum
Washington Pavilion
cfellbaum@washingtonpavilion.org
*www.washingtonpavilion.org/*

**Hands-On Success: Using Ziplocs & Diapers To Investigate Plastic Polymers & Career Options**
Research shows that hands-on projects improve student success, but what does that look like in a classroom or afterschool setting? Join the Washington Pavilion for two polymer projects that use diapers and plastic bags to help students connect kitchen science and a viable career option. Scalable up to high school. **Repeat of Session 57**

**8:30-9:20 AM** **Session: 72**
**Saturday** **Dakota C**
Grade Level: 6th-12th Science

**Presenter:** Katie Anderson of Dakota State University SD Discovery Center/SD EPSCoR & Rhea Waldman of SD Discovery Center/SD EPSCoR
katie.anderson@dsu.edu
*sdepscor.org/edportal/*

**Made by Teachers for Teachers - Education Portal – Conecting Research to the Classroom**
Get your students excited about STEM and connect them to SD scientists using a new FREE resource! The education portal is a powerful tool that offers curriculum modules aligned with the new science standards, that include engaging, hands-on activities and connections to actual SD scientists and their current research. **Repeated as Session 102**

# SATURDAY 8:30 AM

**8:30-9:20 AM** **Session: 73**
**Saturday** **Dakota D**
Grade Level: 6th-8th Math

**Presenter:** Christine Larson & Sharon Vestal
South Dakota State University
christine.larson@sdstate.edu

**Proportions, Percents, and Fractions OH MY**
Teachers will investigate real life examples of proportions, percents and fractions. This session can be used to fulfill the requirements for the Implementing Productive Mathematical Discourse follow-up.

**8:30-9:20 AM** **Session: 74**
**Saturday** **Dakota E**
Grade Level: 9th-12th Science

**Presenter:** Alison Bowers, Hanson School District & Darwin Daugaard, Dell Rapids High School
Research Experience for Teachers - SD Space Grant Consortium/NASA

**Research Experience for Teachers**
A panel discussion on our experiences during this summer's RET program funded by NASA and the SD Space Grant Consortium.

# SATURDAY 8:30 AM

**8:30-9:20 AM** **Session: 75**
**Saturday** **Dakota F**
Grade Level: 9th-12th Science

**Presenter:** Carrie Cox
Chamberlain High School
carrie.cox@k12.sd.us

**Incorporating OSEU Standards**
Objectives of the Session are: 1) to educate fellow educators on the OSEU Standards, 2) relate SD Science Standards to the OSEU Standards, and 3) discuss resources available to incorporate those standards in the science classroom. Time will be given to work on a lesson plan of your own at the end of the session.

**8:30-9:20 AM** **Session: 76**
**Saturday** **Dakota G**
Grade Level: 9th-12th Science

**Presenter:** Madhav Nepal, Larry Browning, & Matthew Miller
South Dakota State University
madhav.nepal@sdstate.edu

**iLEARN for Science and Ag Ed Teachers**
Immersive Learning Experiences And Rural Networking (I-LEARN) is a USDA funded workshop for science/AgEd teachers. Teachers apply best practices for teaching NGSS Crosscutting Concepts within the context of climate variability and collaborate with scientists in the field. Stop by if you want to be a part of next summer's workshop.

# SATURDAY 9:30 AM

**9:30-10:20 AM** **Session: 77**
**Saturday** **Prairie A**
Grade Level: 6th-8th Science

**Presenter:** Dr. Janet Briggs
Black Hills State University
janet.briggs@bhsu.edu

**Teaching Weather and Climate through Project ATMOSPHERE**

Learn about resources and activities for teaching about the weather, climate, and climate change from a participant in Project ATMOSPHERE, a 2-week training through the National Weather Service and National Oceanic and Atmospheric Administration. Great online resources and interactive investigations will be shared!

# SATURDAY 9:30 AM

**9:30-10:20 AM** **Session: 78**
**Saturday** **Prairie B**
Grade Level: 5th-10th Math

**FEATURED SPEAKER**
Lenny VerMaas
Educational Service Unit #6
lennyvermaas@gmail.com
*http://lvermaas.wikispaces.com/*

**Inch Boy, Yao Ming, and Other Fun Statistics Activities**

Activities will introduce and build statistical concepts to develop understanding, flexibility, and adaptability in students' statistical skills. Students need to have a wide variety of experiences with statistics to make sense of the vast amount of data that is created on a daily basis. Experience activities and find resources to help your students enjoy learning statistics.

**9:30-10:20 AM** **Session: 79**
**Saturday** **Prairie C**
Grade Level: K-5 Math

**FEATURED SPEAKER**
Bill Kring
Bill Kring the Math King
billkring@gmail.com

**Decode the Language of Mathematics and Demystify Multiplication and Division**

Speaking the right language of mathematics can help all students develop powerful understandings and connections. The correct use of mathematical terms begins in kindergarten and develops as the child grows older. Problem solving can use this language to help foster mathematical knowledge and proficiency. Multiplication and division are so much more than following procedures. Done properly, they build on conceptual understanding that allows students to create methods that are mathematically correct as well as make sense to them. These methods extend from work with whole numbers to that with decimals, fractions, and algebraic quantities.

# SATURDAY 9:30 AM

**9:30-11:20 AM** **Session: 80 Two Hours**
**Saturday** **Dakota A**
Grade Level: K-12 Computer Science

**Presenter:** Kimberly Clark
Technology and Innovation in Education
kclark@tie.net

**Want to Make Computer Science a Thing in your District?**
Let's support and expand computer science learning opportunities for every student. Discover a cohesive K-12 CS curriculum pathway that provides flexible implementation and engages all students. Experience CS concepts with hands-on/ interactive lessons from Code.org. Think BIG as we share computer science possibilities and professional learning with Code.org and beyond. **Repeat of Session 19**

**9:30-11:20 AM** **Session: 81 Two Hours**
**Saturday** **Dakota B**
Grade Level: K-5 Science

**Presenter:** Spencer Cody
Edmunds Central School District
Spencer.Cody@k12.sd.us
*https://www.echs.k12.sd.us/*

**Specialty Crops in the Classroom: Educating South Dakota's Youth through Mobile Classroom Growing Systems**
Edmunds Central is developing mobile classroom growing systems geared toward education and consumption of specialty crops not presently consumed by PreK-6 students in South Dakota. Participating classrooms will receive a mobile light grow cart with associated supplies along with support and curriculum throughout the upcoming school years.

# SATURDAY 9:30 AM

**9:30-10:20 AM** **Session: 82**
**Saturday** **Dakota C**
Grade Level: K-6 Math & Science

**Presenters:** Allen Hogie, SD PAEMST Mathematics Coordinator
Ramona Lundberg, SD PAEMST Science Coordinator
allen.hogie@k12.sd.us
*www.paemst.org*

**Showcase Your Teaching Practice and Win Money**
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 2018 cycle recognizes teachers who teach in grades K-6.

**9:30-10:20 AM** **Session: 83**
**Saturday** **Dakota D**
Grade Level: 6th-8th Math

**Presenter:** Christine Larson & Sharon Vestal
South Dakota State University
christine.larson@sdstate.edu

**Powers of 10**
Teachers will explore exponents, including Powers of Ten and fractional exponents. This session can be used to fulfill the requirements for the Implementing Productive Mathematical Discourse follow-up.

# SATURDAY 9:30 AM

**9:30-10:20 AM** **Session: 84**
**Saturday** **Dakota E**
Grade Level: 6th-12th Science

**Presenter:** Dr. Judy Vondruska & Julie Olson
Vector Education
judy.vondruska@gmail.com

**Biomechanics**
Whether a biology, physics, or physical science teacher, biomechanics can be used to teach a multitude of concepts. This session will focus on the engineering design of long bones and the concepts of mechanical advantage and torque associated with arm and back muscles. Activities can be adapted for MS/HS.

**9:30-10:20 AM** **Session: 85**
**Saturday** **Dakota F**
Grade Level: 6th-8th Math

**Presenter:** Mark Kreie
Brookings High School
mark.kreie@k12.sd.us
*https://markkreie.blogspot.com/*

**The Desmos Teacher Site: Where Math Meets Amazing**
In this session, participants will take an active role in exploring teacher.desmos.com. Participants will learn about navigating around the teacher dashboard, receive best practice tips about the presentation toolkit, and find activities they can use in their classroom next week. Intended for grades 5-12 teachers; bring an iPad or laptop.

# SATURDAY 9:30 AM

**9:30-10:20 AM** **Session: 86**
**Saturday** **Dakota G**
Grade Level: 6th-8th Science

**Presenter:** Matt Miller, Madhav Nepal, Larry Browning, Troy White and Laura Edwards
South Dakota State University
Matt.Miller@sdstate.edu
*www.sdstate.edu/biology-and-microbiology/usda-ilearn*

**Resources from i-LEARN 2017**
We organized a USDA funded PD workshop for science teachers in May of 2017. Here we share teaching modules useful in teaching climate variability in both science and AgEd classrooms. The modules are based on locally available resources, economically feasible and useful for teaching in rural settings.

**9:30-10:20 AM** **Session: 87**
**Saturday** **Dakota H**
Grade Level: K-12 Science

**Presenter:** Peggy Norris
Sanford Underground Research Facility & Black Hills State University
pnorris@sanfordlab.org
*www.sanfordlab.org/educators*

**The Sanford Underground Research Facility - K-12 Connections**
The E&O team at the Sanford Underground Research Facility strives to connect science and engineering happening underground to standards-aligned, STEM programming at all grade levels. As Sanford Lab evolves, so does our material. Come explore the latest exciting developments for the science lab and the corresponding educational opportunities.

# SATURDAY 10:30 AM

**10:30-11:20 AM** **Session: 88**
**Saturday** **Prairie A**
Grade Level: Science

**FEATURED SPEAKER**
Barbara Mayes Boustead
NOAA
barbara.mayes@noaa.gov

**Wilder Weather:**
Connecting Weather and Climate to Lessons from Laura Ingalls Wilder

**10:30-11:20 AM** **Session: 89**
**Saturday** **Prairie B**
Grade Level: 7th-12th Math

**FEATURED SPEAKER**
Lenny VerMaas
Educational Service Unit #6
lennyvermaas@gmail.com
*http://lvermaas.wikispaces.com/*

**How Did You Do That? Number Tricks And Algebra**
Use the mystery behind why a number trick works to help students develop skills in algebra and problem solving. In addition to being motivating, number tricks help students learn to manipulate symbolic expressions as well as formulate and reformulate generalized solution patterns. Come and learn how to be a mathematical magician.

# SATURDAY 10:30 AM

**10:30-11:20 AM** **Session: 90**
**Saturday** **Prairie C**
Grade Level: K-5 Math

**FEATURED SPEAKER**
Bill Kring
Bill Kring the Math King
billkring@gmail.com

**A Potpourri of Problem Solving - Part 2**
Problem solving can bring in mathematical thinking in myriad ways. This session will contain many different opportunities to apply this process. From placing digits in an arrangement to weighing with four stone fragments to number sequence in exotic places to determining the gender of residents in a condominium complex, problems will give ideas to share as soon as Monday after the conference.

**10:30-11:20 AM** **Session: 91**
**Saturday** **Dakota C**
Grade Level: 7th-12th Math

**Presenter:** Sharon Rendon
CPM Educational Program

**Desmos Marbleslides**
Marbleslides is one of the most popular Desmos activities. Select the challenge of your choice – linear, quadratic, or beyond – and get sliding! Come and learn more about the activity that engages and challenges students of all ability levels and will have students asking for more. No Desmos experience required; bring an iPad or laptop.

# SATURDAY 10:30 AM

**10:30-11:20 AM** **Session: 92**
**Saturday** **Dakota D**
Grade Level: 9th-12th Math

**Presenter:** Sharon Vestal & Christine Larson
South Dakota State University
sharon.vestal@sdstate.edu

**Exploring Geometry with Exploragons**
Teachers will explore a number of geometry concepts such as similarity, parallel lines, trigonometry, and various theorems using Exploragons. This session can be used to fulfill the requirements for the Implementing Productive Mathematical Discourse follow-up.

**10:30-11:20 AM** **Session: 93**
**Saturday** **Dakota E**
Grade Level: 9th-12th Science

**Presenter:** Larry Browning & Ben DeNeui
South Dakota State University - Physics Department
Larry.Browning@sdstate.edu

**Dialogues Review**
Dialogues -- short scripted conversations between two or three characters -- are a pedagogy used to introduce new concepts, develop understanding, and review material. The Dialogue pedagogy will be introduced and modeled. Resources (http://moosemosspress.com/) will be available for review. Tips and experiences about writing your own will also be discussed.

# SATURDAY 10:30 AM

**10:30-11:20 AM** **Session: 94**
**Saturday** **Dakota F**
Grade Level: 5th-12th Math

**Presenter:** Mark Kreie
Brookings High School
mark.kreie@k12.sd.us
*https://markkreie.blogspot.com/*

**Rich & Engaging Mathematical Tasks**
Tired of using the same lessons year after year? Looking for activities that engage and challenge all students? Activities such as 3-ACT Tasks, Estimation 180, and Open Middle problems are for you! Come learn about where to find and how to use these free resources. Intended for grades 5-12.

**10:30-11:20 AM** **Session: 95**
**Saturday** **Dakota G**
Grade Level: 6th-12th Science

**Presenter:** Rick Hudson
Bon Homme School District 4-2
rick.hudson@k12.sd.us

**Summer of Love (of STEM)**
My summer experience as a research assistant with the SD-RET program at SDSM&T; learn about sustainability and how to construct a microbial fuel cell on the cheap. The program was funded by the NSF, and 10 educators had the opportunity to participate. Lesson Plans Included.

# SATURDAY 10:30 AM

**10:30-11:20 AM** **Session: 96**
**Saturday** **Dakota H**
Grade Level: K-12 Math & Science

**Presenter:** Michelle Bartels
Hamlin School District
michelle.bartels@k12.sd.us
*https://sites.google.com/site/bartelsscience/*

**Breakout!**
Work collaboratively to solve a series of critical thinking puzzles using clues, hints, and strategy to open a locked box. Join me to see how breaking in to a Breakout box motivates students to learn.

# SATURDAY 11:30 AM

Last Chance to Visit Exhibitors!

# SATURDAY 12:00 NOON

# ~LUNCH~

Hosted by:
Al Hogie, SDCTM President
Liz McMillan, SDSTA Past-President
Mark Iverson, SDSTA President

Door Prizes donated by:
Conference Exhibitors

# SATURDAY 1:00 PM

**1:00-1:50 PM** **Session: 97**
**Saturday** **Dakota A**
Grade Level: Adaptable K-12 Science

**Presenter:** Ed Welsh
Badlands National Park
edward_welsh@nps.gov

**Badlands National Park and the Geologic Story of South Dakota**
Explore how to use the fossil record to synthesize information on past ecosystems from the perspective at Badlands National Park. Participate in a hands-on erosion activity that you can utilize in the classroom. Help students make conclusions on the processes that shaped the natural and geologic history of South Dakota.

**1:00-1:50 PM** **Session: 98**
**Saturday** **Dakota B**
Grade Level: 9th-12th Science

**Presenter:** Larry Browning & Matt Miller
South Dakota State University - Physics and Chemistry & BioChemistry Departments
Larry.Browning@sdstate.edu

**Demonstrations to Spark Their Interest**
From students to insurance adjusters we have managed to attract interest in our demonstrations and interactive activities. Using common materials, we like to add the "WOW" and "I wonder" factor to our classes without the Fire Department. See if we can do that again in 2018.

# SATURDAY 1:00 PM

**1:00-1:50 PM** **Session: 99**
**Saturday** **Dakota C**
Grade Level: K-5 Math

**Presenter:** Gregory Trieste
Houghton Mifflin Harcourt
gregory.trieste@hmhco.com
*www.hmhco.com*

**Math Expression 2018**
Math Expressions 2018 is a research-proven curriculum that encourages students to explore math in a hands-on, digital and discussion based environment. Content is focused on essential core concepts connecting coherence between grade level topics providing gains in deep conceptual understanding, fluency with procedures and the ability to apply understanding to solve problems.

**1:00-1:50 PM** **Session: 100**
**Saturday** **Dakota D**
Grade Level: 5th-12th Math

**Presenter:** Mark Kreie
Brookings High School
mark.kreie@k12.sd.us
*https://markkreie.blogspot.com/*

**The "New" Smarter Balanced Embedded Calculators**
Students taking the online South Dakota Smarter Balanced math assessment will have access to embedded Desmos calculators. In this hands-on session, participants will increase their level of comfort using the calculators. This session is intended for grades 5-12 teachers & Desmos users of all abilities. Bring an iPad or laptop. **Repeat of Session 59**

# SATURDAY 1:00 PM

**1:00-1:50 PM** **Session: 101**
**Saturday** **Dakota E**
Grade Level: 6th-8th Math

**Presenter:** Shana Ward & Brittany Hausmann
Rapid City Area Schools

**THINK-PAIR-SHARE SUCCESS!**
Using a very intentional strategy, students learn to share ideas and how to talk to one another about their thinking.
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**1:00-1:50 PM** **Session: 102**
**Saturday** **Dakota F**
Grade Level: 6th-12th Science

**Presenter:** Katie Anderson, Dakota State University SD Discovery Center/SD EPSCoR & Rhea Waldman, SD Discovery Center/SD EPSCoR
katie.anderson@dsu.edu
*sdepscor.org/edportal/*

**Made by Teachers for Teachers - Education Portal – Connecting Research to the Classroom**
Get your students excited about STEM and connect them to SD scientists using a new FREE resource! The education portal is a powerful tool that offers curriculum modules aligned with the new science standards, that include engaging, hands-on activities and connections to actual SD scientists and their current research. **Repeat of Session 72**

# SATURDAY 1:00 PM

**1:00-1:50 PM** **Session: 103**
**Saturday** **Dakota G**
Grade Level: K-12 Science

**Presenter:** Dr. Marie Steckelberg of Steckelberg Consulting & Michelle Bartles of Hamlin Middle School
marie@steckelbergconsulting.com
*www.SteckelbergConsulting.com*

**It's Phenomenal**
Phenomena – what and where are they? Why are they a key component for the teaching of science? Join us for a phenomenal exploration to finding answers to these questions!

**1:00-1:50 PM** **Session: 104**
**Saturday** **Dakota H**
Grade Level: 9th-12th Math

**Presenter:** Dr. Donald Teets & Dr. Donna Kliche
South Dakota School of Mines

**Computational Astronomy for Teachers and Their Students**
This presentation will describe a two-day workshop for math and science teachers, to be offered Spring, 2018 at SDSMT. The workshop will offer curriculum ideas in the area of space science. Workshop participants will receive one graduate credit, with tuition paid from a NASA grant.

# SATURDAY 2:00 PM

**2:00-2:50 PM** **Session: 106**
**Saturday** **Prairie A**
Grade Level: K-12 Math & Science

**Presenter:** Marcie Welsh & Jamie Tucker
Brookings High School
marcie.welsh@k12.sd.us

**Classroom Review and Formative Assessment**
Learn about and experience several ways to do in-class review and formative assessment with your students. Activities and strategies range from digital to pencil-and-paper and from whole class, timed competitions to individual and self-paced

**2:00-2:50 PM** **Session: 107**
**Saturday** **Prairie B**
Grade Level: 9th-12th Math

**Presenter:** Sharon Rendon & Julie Jackson
CPM Educational Program
sharonrendon@cpm.org
*www.cpm.org*

**Using Manipulatives and Investigations to Teach Geometry Highlighting the Math Practices**
Participants will use hinged mirrors to look at polygons and similar triangles, rubber bands to explore dilations, patty paper to look at characteristics of shapes-mostly quadrilaterals, paper plates to fold and find shapes and angles and linear relationships, and other manipulatives, as well as interesting problems to develop and apply geometry concepts and review vocabulary. Topics include similarity, triangle heights, transformations, central angles, polygons, area, and more.

# SATURDAY 2:00 PM

**2:00-2:50 PM** **Session: 108**
**Saturday** **Prairie C**
Grade Level: 9th-12th Math & Science

**Presenter:** Sheila McQuade
O'Gorman High School
smcquade2@sfcss.org

**Using the Flipped Classroom to teach Geometry**
I have had some great success using the flipped classroom model but have also encountered some pitfalls along the way. In this session I will share what the flipped classroom looks like for my classes and as well as some tips to help you get started "flipping" your classes.

**2:00-2:50 PM** **Session: 109**
**Saturday** **Dakota A**
Grade Level: K-12 Science

**Presenter:** Anne Lewis
South Dakota Discovery Center
annelewis@sd-discovery.org
*www.sd-discovery.org*

**A Primer on Teaching (and Understanding) Climate Change**
Students, their families and community members often look to teachers, particularly science teachers, to help them understand climate change. In this session we will delve into the science as to why the IPCC says $CO_2$ is the major driver of climate change, what are trustworthy websites, and what to do about denialists.

# SATURDAY 2:00 PM

**2:00-2:50 PM** **Session: 110**
**Saturday** **Dakota B**
Grade Level: 6th-8th Math

**Presenter:** Susan Gilkerson
Rutland
susan.gilkerson@k12.sd.us

**Google Classroom for Ipads**
Learn how I have implemented Google Classroom to create an almost paperless math room.

**2:00-2:50 PM** **Session: 111**
**Saturday** **Dakota C**
Grade Level: K-8 Science

**Presenter:** Benjamin Benson
Sanford Research: Sanford PROMISE
SanfordOutreach@sanfordhealth.org
*www.sanfordresearch.org/education*

**Modeling Structure and Function**
Looking for ways to provide students with experiences in modeling? Students learn more about themselves and the way they work through building and interacting with models of body structure and function using art supplies and candy. Free supply kit to first 18 attendees at this make and take session.

**2:00-2:50 PM** **Session: 112**
**Saturday** **Dakota D**
Grade Level: 6th-12th Science

**Presenter:** Julie Olson
Mitchell Senior High
julie.olson@k12.sd.us

**Drones**
Drones - Learn about what we've been doing since receiving a grant from the South Dakota Space Grant Consortium.

# SATURDAY 2:00 PM

**2:00-2:50 PM** **Session: 113**
**Saturday** **Dakota E**
Grade Level: K-5 Math

**Presenter:** Diane Wimp
Rapid City Area Schools
Diane.Wimp@k12.sd.us

**Making the Most of the Last Ten Minutes of Math**
This session will cover the debrief portion of the math lesson. You will learn how to pick work to share, how to let your students do the talking, and how to make sure students are delving into Standards 3, 7, and 8 of the Standards for Mathematical Practice.

**2:00-2:50 PM** **Session: 114**
**Saturday** **Dakota F**
Grade Level: 9-12 & Postsecondary Math

**Presenter:** Dr. Margaret Adams
South Georgia State College
DrMargaretAdams@gmail.com

**Patterns of Misconceptions about Functions among High School Students and Traditional Freshman Enrolled in College Algebra**
What grades 8-12 students learned about functions differs from what they recall in college algebra. Presented are written, open-ended prompts revealing conceptions of function definitions, domains, and properties of one-to-one, piecewise and rational functions. Misconceptions have implications for mathematical applications in particular majors and with more advanced study of mathematics.

# SATURDAY 2:00 PM

**2:00-2:50 PM** **Session: 115**
**Saturday** **Dakota G**
Grade Level: 9th-12th Science

**Presenter:** Bree Oatman
Lead Deadwood School District
bree.oatman@k12.sd.us

**Sparking Understanding of Electron Configuration**
Participate in several interactive games and modeling activities that help students conceptualize electron configuration.

**2:00-2:50** **Session: 116**
**Saturday** **Dakota H**
Grade Level: K-5th Science

**Presenter:** Dr. Marie Steckelberg
Steckelberg Consulting
marie@steckelbergconsulting.com
*www.SteckelbergConsulting.com*

**Engineering, Raisins & Frogs!**
Hop right on in to explore how life science connects to the engineering design process!

# SATURDAY 3:00 PM

**3:00-3:30 PM** **Session: 116**
**Saturday** **Prairie A**

**Science Wrap-up and Reflect**
Join SDSTA leadership and offer your feedback from the conference and recommendations for future events. Turn in your survey for a chance to win conference registration to the 2019 Conference on Math/Science Education

**3:00-3:30 PM** **Session: 117**
**Saturday** **Prairie B**

**Math Wrap-up and Reflect**
Join SDCTM leadership and offer your feedback from the conference and recommendations for future events. Turn in your survey for a chance to win conference registration to the 2019 Conference on Math/Science Education

# SATURDAY 4:00 PM

**4:00-6:00 PM** **Session: 117**
**Saturday** **Prairie A**

**Board Meeting**
SDSTA & SDCTM Officers and Conference Leadership meet to discuss current conference outcomes and strategize for upcoming event(s).