Program for 2015 Joint Conference

Special thanks goes to TIE for the use of the projectors

Thursday 7 pm

7:00-9:00 pm **Session**: **1**
Dakota C **Feb. 5, 2015**

Grade Level: All

Presenter: Ellie Cooch
SDCTM
ecooch@spearfish.k12.sd.us
http://www.sdctm.org

Math Sharing Session
Sharing lessons and activities will be the focus of this session. Bring 25 copies of your favorite activity or lesson. Or just come!

7:00-9:00 pm **Session**: **2**
Dakota G **Feb. 5, 2015**

Grade Level: All

Presenter: Liz McMillan
SDSTA
Elizabeth.McMillan@SanfordHealth.org
http://www.sdsta.org

Science Sharing Session
Bring an idea to share with the group. If it is a lab idea, bring 30 copies to pass out to the participants.

Friday 8:30 am

8:30-10:20 am **Session**: **3**
Prairie A **Feb. 6, 2015**

Grade Level: 9-12

FEATURED SPEAKERS
Marie Copeland & Michael Lehman
EMATHS-Embracing Mathematics Assessment
Technology in High School
mariecopeland@gmail.com

A Look at the Unit Circle
Let's introduce our students to the study of trigonometry on the unit circle and then build the trigonometric ratios using transformations. This approach naturally leads to a smooth transition to the study of the trigonometric functions and right triangle trigonometry.

Do you have your banquet Ticket?
You can still buy one
from Steve until Noon

$25.00

Speaker-Bill Zubke
7 pm Friday

Friday 8:30 am

8:30-9:20 am **Session**: **4**
Prairie B **Feb. 6, 2015**

Grade Level: K-12

FEATURED SPEAKER

Mike Welter
SD Highway Patrol
mike.welter@state.sd.us

The Biology of Drug Recognition

This session will focus on the effects drugs have on humans and how different human reactions identify the type of drug that has been ingested. Pupil dilation, body temperature and eye convergence are some of the physical characteristics use with a classification matrix to determine the drugs used in the cases presented.

8:30-10:20 am **Session**: **5**
Prairie C **Feb. 6, 2015**

Grade Level: K-5

FEATURED SPEAKER

Roxie Ahlbrecht
pebbles@sio.midco.net

Multiplicative Thinking

Students develop multiplication and division conceptually through building knowledge of units and composites. This session will focus on instructional activities to build student understanding of multiplicative thinking.

Friday 8:30 am

8:30-9:20 am **Session**: **6**
Dakota A **Feb. 6, 2015**

Grade Level: K-12

Presenter: Mark Iverson
Watertown Middle School
Mark.a.iverson@k12.sd.us

Demonstrations to Shock and Amaze

If you have been looking for ways to "spice-up" your lessons, this is for you. I will offer several different demonstrations I have found to capture student attention and take the fear out of using bangs and booms in class.

8:30-10:20 am **Session**: **7**
Dakota B **Feb. 6, 2015**

Grade Level: 6-12

Presenter: Sharon Rendon
CPM Educational Program
rendon@cpm.org
http://www.cpm.org

Empowering Students to Make Mathematical Connections

Participate in activities designed to develop a rich understanding of the connections between tables, graphs, rules, and situations. Learn to help students move from each representation to the others while developing a deep understanding of the CCSS mathematical practices. Leave with ideas and materials you can use in your own algebra classes.

Friday 8:30 am

8:30-9:20 am **Session: 8**
Dakota C **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Emily Koehler
DeSmet HS
Emily.koehler@k12.sd.us

Twitter for Teachers

Come join the wonderful world of Twitter! Teachers across the globe have flocked to Twitter as a source of instant, personal professional development. Come see why teachers say that Twitter is the best place to learn, share ideas, and meet other teachers like you! (All levels, all subjects.)

8:30-9:20 am **Session: 9**
Dakota D **Feb. 6, 2015**

Grade Level: K-5

Presenter: Sue Brokmeier, Lynda Venhuizen & Larry Browning
SDSU
Sue.Brokmeier@sdstate.edu

To Hands-on--and Beyond!

In order to build physical science content knowledge and confidence in teaching K-5, a number of strategies including hands-on, robotic, concept mapping, and web-based research activities will be discussed. Results from introducing these strategies in higher education and elementary education classrooms will be presented.

Friday 8:30 am

8:30-9:20 am **Session: 10**
Dakota E **Feb. 6, 2015**

Grade Level: 9-12 **Repeat of Session 93**

Presenter: Anne Lewis
SD Discovery Center
anne.lewis@sd-discovery.com
http://www.sd-discovery.com

GLOBE in South Dakota

GLOBE is a world wide, hands-on, school based science education program. The SD Discovery Center and Outdoor Campus West are partnering to support this exciting opportunity to investigate and monitor environmental systems here in SD. Get a sneak peek at our summer professional development as well as a few GLOBE goodies.

Friday 8:30 am

8:30-10:20 am **Session: 11**
Dakota F **Feb. 6, 2015**

Grade Level: K-5 **Repeat of Session 71**

Presenter: Peggy Norris
BHSU/Sanford Underground Research Facility
pnorris@sanfordlab.org

SciGirls: Proven Strategies for Engaging Girls in STEM

This hands-on workshop will highlight science, engineering, and technology activities designed to engage upper elementary and middle school students in STEM, developed by PBS in conjunction with the SciGirls television program. The SciGirls approach is rooted in research about how to engage girls in STEM. Participants will take home sample kits.

8:30-9:20 am **Session: 12**
Dakota G **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Olga Stafford
SDSU
olga.stafford@sdstate.edu

Experimenting with a Pipe Flute (Part 1)

A simple pipe flute will be built using pieces of PVC pipe. The flute can be used to measure resonance frequencies of open or closed pipes. The pipe flute allows students in a physics class to study an example of an "edge tone" device that produces discrete sound frequencies.

Friday 9:30 am

9:30-10:20 am **Session: 13**
Prairie B **Feb. 6, 2015**

Grade Level: K-12

FEATURED SPEAKER

Matthew Petersen
SD Highway Patrol
matthew.petersen@state.sd.us

Accident Reconstruction— STEM on the Highways of SD

Trooper Petersen has very specialized accident reconstruction skills that require intense training in physics, trigonometry, and engineering. He will immerse participants in investigating crash scenes using examples of actual accidents that he has reconstructed using his skills to determine velocity, speed and impact.

Have you checked out "Share the Classroom Treasures"?

Stop in Salon II and see what is there.

Friday 9:30 am

9:30-10:20 am **Session**: **14**
Dakota A **Feb. 6, 2015**

Grade Level: 6-8

Presenter: Dr. Erin Nyren-Erickson
HQC Biosciences, Inc/Great Plains STEM Ed Center
nyrenerickson@hqcbio.com
http://www.hqcbio.com

Chemistry Techniques for the 6-8 Classroom
Methods and techniques in chemistry play an important role in a variety of STEM fields. Early introduction to these techniques presents a valuable opportunity for students to be more competitive for STEM jobs. Commonly used techniques, such as chromatography, ELISA, electrophoresis, and more are presented for the middle school classroom.

9:30-10:20 am **Session**: **15**
Dakota C **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Kelly Kukull
& Barb Stoflett
Pearson
http://pearsonsystemofcourses.com/

The System of Courses
Looking for a modern digital mathematics solution? We invite you to examine the possibilities with this dynamic new comprehensive program to meet the needs of every student in your classroom. Welcome to the next generation of teaching and learning.

Friday 9:30 am

9:30-10:20 am **Session**: **16**
Dakota D **Feb. 6, 2015**

Grade Level: K-5 **Repeat of Session 90**

Presenter: Danette Jarzab
SD Discovery Center
danettejarzab@sd-discovery.com
http://www.sd-discovery.com

Math-Ready to Go!
Our GEMS (Great Explorations in Math & Science) kits are filled with ready-to-go math activities that support state standards. This session will include activities from these math kits: Build It Festival (K-6), Frog Math (K-3), Math on the Menu (3-5), and In All Probability (3-6).

9:30-10:20 am **Session**: **17**
Dakota E **Feb. 6, 2015**

Grade Level: 9-12

Presenter: David Doherty
Bitwixt Software Systems
ddoherty@bitwixt.com
http://www.bitwixt.com

Facilitating Students' Understanding of the Structure and Properties of Matter
Progressing from middle to high school, expectations are that students' understanding of the structure and properties of matter will increase in complexity.
We will demonstrate inquiry-based curriculum that uses interactive 3D atomic and molecular models, on iPads and laptops, to visually facilitate and empower this growth in students' understanding.

Friday 9:30 am

9:30-10:20 am **Session**: **18**
Dakota G **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Olga Stafford
SDSU
olga.stafford@sdstate.edu

Experimenting with a Pipe Flute (Part 2)
A simple pipe flute will be built using pieces of PVC pipe. The flute can be used to measure resonance frequencies of open or closed pipes. The pipe flute allow students in a physics class to study an example of an "edge tone" device that produces discrete sound frequencies.

9:30-11:20 am **Session**: **19**
Dakota H **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Nick Restivo
MOEMS
nrestivo@moems.org

Unpacking Geometry from Boxes You Create
Transform used greeting cards into boxes, while discovering geometry concepts that rely on definitions associated with parallelograms. Real life, non-routine problems using those properties will be explored.

Next year's conference is
February 4, 5, 6, 2016

Friday 9:30 am

9:30-10:20 am **Session**: **20**
Symposium **Feb. 6, 2015**

Grade Level: 9-12

Facilitator: Dan VanPeursem, USD
SD BOR Representatives for Mathematics
Dan.VanPeursem@usd.edu

Discussions with Higher Education
Come and ask questions about policies affecting your students as they transition to higher education. We will also have data on how the first year went with the low tuition and dual enrollment courses.

Friday 10:30 am

10:30-11:20 am **Session**: **21**
Dakota A **Feb. 6, 2015**

Grade Level: 9-12 **Repeat of Session 80**

Presenter: Sheila McQuade
O'Gorman HS
smcquade2@sfcss.org

Using the TI-Nspire in Geometry
As a teacher, my favorite activities lead my students to discover geometry concepts. Participants will use Nspire and work through some of the activities I use with my students. The activities I will present could be re-written to be used with Geometer's Sketchpad, Geogebra, or the Cabri Jr. app on the TI-84. Presenter will have Nspires for participants to use.

Friday 10:30 am

10:30-11:20 am **Session**: **22**
Dakota B **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Sharon Rendon
CPM Educational Program
rendon@cpm.org

Exponential Explorations
Come and explore and investigate problems around the concept of exponential equations. Learn how your students can develop an understanding of this concept through connections to geometric sequences and multiple representations. You will leave with problems you can implement this year.

10:30-11:20 am **Session**: **23**
Dakota C **Feb. 6, 2015**

Grade Level: K-5

Presenter: Kathleen Cotter Lawler
RightStart Mathematics
Kathleen@RightStartMath.com
http://www.rightstartmath.com

Place Value: The Foundation of Number Sense
Place value is the foundation, the most important concept, in arithmetic. Place value has a static component, indicating how numbers are recorded, and a dynamic component occuring during an arithmetic operation, involving trading between denominations. We need to teach this right from the start.

Friday 10:30 am

10:30-11:20 am **Session**: **24**
Dakota D **Feb. 6, 2015**

Grade Level: K-5 **Repeat of Session 96**

Presenter: Danette Jarzab
SD Discovery Center
danettejarzab@sd-discovery.com
http://www.sd-discovery.com

Science-Ready to Go
Our GEMS (Great Explorations in Math & Science) kits are filled with ready-to-go science activities that support state standards. This session will include activities from these science kits: Bubble Festival (K-6), Liquid Explorations (1-3), Electric Circuits (3-6), and Space Science (3-5).

10:30-11:20 am **Session**: **25**
Dakota E **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Adam Gordon & Julie S. Mike
Andamio Games
adam.gordon@andamiogames.com
http://www.andamiogames.com

Collaborative STEM Games for Mobile Devices
iNeuron, available on the App Store, teaches the basics of neuroscience, first with individualized instruction, then with group challenges, all delivered on classroom mobile devices. We'll demonstrate how serious games and scaffolded, standards-based curriculum can lead to authentic collaboration and effective learning. Then we'll all play iNeuron together!

Friday 10:30 am

10:30-11:20 am **Session**: **26**
Dakota F **Feb. 6, 2015**

Grade Level: 6-8

Presenter: Chris Larson, Sharon Vestal & Gary Hatfield
SDSU
christine.larson@sdstate.edu

Practicing Mathematical Practices: Probability & Statistics

The Practicing the Mathematical Practices workshop will focus on demonstrating the eight Standards for Mathematical Practice while reviewing content standards in 6-8 statistics and probability. We will provide 6-8 teachers with hands-on activities for their classroom while aligning with the CCSS-M statistics and probability standards.

9:30-10:20 am **Session**: **26.5**
Dakota H **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Judy Vondruska & Olga Stafford
SDSU
judy.vondruska@sdstate.edu

Recruiting Girls into STEM

Gender imbalances exist in many STEM fields. Among first-year university students, women are much less likely than men to say they intend to major in STEM. How can this be changed? This session will convey the results of efforts across the country to increase the number of females in STEM. Participants will discuss implications for efforts in SD.

FRIDAY NOON

Noon-1:00 pm **Session**: **27**
Prairie A, B & C **Feb. 6, 2015**

Grade Level: All

Presenters: Ellie Cooch & Julie Olson
SDCTM & SDSTA Presidents

Lunch

Friday 1:30 pm

1:30-3:20 pm **Session**: **28**
Prairie A **Feb. 6, 2015**

Grade Level: 9-12

FEATURED SPEAKERS

Marie Copeland & Michael Lehman
EMATHS-Embracing Mathematics
Assessment Technology in HS
mariecopeland@gmail.com

Using Data Collection in Algebra

What if we taught functions through modeling? We will explore the use of data collection devices to generate data that can be used by students to understand and write functions without the use of regression. This process engages students in their own learning while at the same time developing a depth of understanding.

Friday 1:30 pm

1:30-2:20 pm **Session**: **29**
Prairie B **Feb. 6, 2015**

Grade Level: 9-12

FEATURED SPEAKER

Cathy Ezrailson
USD
cathy.ezrailson@usd.edu

Pioneer Science (and math) on the Prairie: Exploring Our Roots

Native Americans and early settlers used creative ways to survive (and often thrive) in our unpredictable climates and terrains. This session will demonstrate some of the uses of science on the prairie and in prairie schools.

1:30-2:20 pm **Session**: **30**
Dakota A **Feb. 6, 2015**

Grade Level: K-5

Presenter: Arnie Lund & Angelo Casaburri
Retired NASA team leader at Kadoka
& NASA Educator PD Specialist
badlander@kadokateko.com

Journeying through the Solar System

Building scale models of the solar system is a challenge because of the vast distances and huge size differences involved. Use a meter of cash register tape to construct a linear scale model of the solar system using Astronomical Units (AU), fractions, ratios, decimals, and percentages. Learn new definitions for a planet and dwarf planet.

Friday 1:30 pm

1:30-3:20 pm **Session**: **31**
Dakota B **Feb. 6, 2015**

Grade Level: 6-8

Presenter: Curt Olson
Augustana College
colson@augie.edu

Exploding Dots: An MTC Activity

Experience an example of an activity enjoyed by middle school mathematics teachers when they attend the Sioux Falls Area Math Teachers' Circle. A brief description of FyIG (the SFAMTC) will be given prior to the joy of doing mathematics together. (Other grade levels may even enjoy the fun.)

1:30-2:20 pm **Session**: **32**
Dakota C **Feb. 6, 2015**

Grade Level: K-5 **Repeat of Session 97**

Presenter: Kathy Grotta
LEGO education
kathy.grotta@lego.com
http://www.legoeducation.us

LEGO More to Math Teachers Grade 1-2

More to Math is a hands-on educational tool for teaching problem solving bridging to mathematical facts. It provides practice in core mathematical competencies such as reasoning, perseverance, precision, modeling and representation through individual and team problem solving experiences.

Friday 1:30 pm

1:30-2:20 pm **Session**: **33**
Dakota D **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Jennifer Dolejsi & Allison Schmitz
NSU
Jennifer.Dolejsi@northern.edu

Labs Are Not Just for Science

Learn about the mathematics laboratory program at NSU and how this model can translate into cooperative group learning in your classroom. There will be several hands-on activities presented and strategies to get students talking when working in groups.

1:30-2:20 pm **Session**: **34**
Dakota E **Feb. 6, 2015**

Grade Level: K-12 **Repeat of Session 83**

Presenter: Dan Van Peursem, Matt Miller, & Sharon Vestal
USD & SDSU
Dan.VanPeursem@usd.edu

Meet the Future Teachers

Prospective science and math teachers from all South Dakota institutions will be invited to engage in conversation with veteran science and math teachers attending the conference. The goal is to provide support and encouragement for the next generation of teachers by providing advice, encouraging stories, and successful strategies.

Friday 1:30 pm

1:30-2:20 pm **Session**: **35**
Dakota F **Feb. 6, 2015**

Grade Level: K-5

Presenter: Steven Rokusek
SD Public Broadcasting
steven.rokusek@state.sd.us
http://sdpb.org/learn

Hands-on Science and Math Activities

During this session participants will learn about science and math activities that will keep the children in their care entertained and educated. The activities will include, but are not limited to, a recycling game called Trash Dash, an ecosystem game called Chomp, Nibble, Grow, Grow, Grow, and more.

1:30-2:20 pm **Session**: **36**
Dakota G **Feb. 6, 2015**

Grade Level: K-12

Presenter: Pat Bruinsma & Joy Korman
USD
joy.korman@usd.edu
http://www.usd.edu/ed

USD School of Education M.S. in Technology for Education and Training

Considering a graduate degree? Learn about programs available through USD that will enhance your teaching practice and positively impact student learning. Experience an introduction to instructional tools to bring back to your math and/or science classroom.

Friday 1:30 pm

1:30-2:20 am **Session**: **37**
Dakota H **Feb. 6, 2015**

Grade Level: K-5

Presenter: Chris Larson, Sharon Vestal
& Gary Hatfield
SDSU
christine.larson@sdstate.edu

Practicing Mathematical Practices: Probability & Statistics

The Practicing the Mathematical Practices workshop will focus on demonstrating the eight Standards for Mathematical Practice while reviewing content standards in K-5 statistics and probability. We will provide K-5 teachers with hands-on activities for their classroom while aligning with the CCSS-M statistics and probability standards.

Don't forget the business Meetings from 4:30-5:30.

Science in Dakota G

Math in Dakota C

All members of SDSTA and SDCTM are welcome and are encouraged to attend.

Friday 2:30 pm

2:30-3:20 pm **Session**: **38**
Prairie B **Feb. 6, 2015**

Grade Level: K-12

FEATURED SPEAKERS

John Lord & Brian Biehl
SD Highway Patrol
john.lord@state.sd.us

Police Service Dogs and Drug Interdiction

The troopers will bring their K9 partners (Aros and Zara) to discuss the science of a dog's olfactory system and their ability to detect drugs despite incredible human efforts to conceal them. Along with a live dog demonstration Troopers Lord and Beihl with also educate participants on the officer's skills of observing people under great stress, drug paraphernalia and other warning signs of drug use.

2:30-4:20 pm **Session**: **39**
Prairie C **Feb. 6, 2015**

Grade Level:

FEATURED SPEAKER

Roxie Albrecht
pebbles@sio.midco.net

Place Value: Developing Conceptual Understanding

Traditional models teach positional place value in isolation. This session looks at developing a student's understanding of place value conceptually. We will explore various instructional experiences which will enhance conceptual understandings.

Friday 2:30 pm

2:30-3:20 pm **Session**: **40**
Dakota A **Feb. 6, 2015**

Grade Level: K-5

Presenter: Joan Brooks & Randy Brooks
Core Educational Solutions--NSTA
jbrooks@coredsolutions.com

Using Picture Books to Guide Inquiry in K-5 Science

Learn the theory behind using the 5E Model and blending that with using picture books to integrate science into your elementary classroom. Participate in a model lesson and gain exposure to the SDTA series: Picture Perfect Science.

2:30-4:20 pm **Session**: **41**
Dakota C **Feb. 6, 2015**

Grade Level: K-5

Presenter: Kathleen Cotter Lawler
RightStart Mathematics
Kathleen@RightStartMath.com
http://www.rightstartmath.com

Math Card Games to Master the Facts

Rote memorization of math facts is daunting. Instead, let's play math card games to master the facts! Games are fun and exciting, provide practice, and most importantly, become an application for newly learned information. Join us for some FUN as we learn addition, clock, money, multiplication, and fraction games.

Friday 2:30 pm

2:30-4:20 pm **Session**: **42**
Dakota D **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Peter Vitiello and Darwin Daugaard
Sanford Research
peter.vitiello@sanfordhealth.org
http://www.sanfordresearch.org/education

Protein Biology for the Classroom

Proteins play important metabolic, structural, and communication functions in cells. In this session, Sanford Research scientists will present a protein gel electrophoresis activity to demonstrate how proteins from biological samples are separated and visualized. Participants have access to these materials at no cost through The Sanford PROMISE.

2:30-3:20 pm **Session**: **43**
Dakota E **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Matt Miller
SDSU
Matt.Miller@sdstate.edu

The Ebb and Flow of the Laboratory: Learning in the Lab

In a study of both an undergraduate chemistry teaching laboratory and a research laboratory, certain types of interactions played key roles in learning. This session will discuss the results from the study and how these ideas can be translated to the secondary teaching laboratory.

Friday 2:30 pm

2:30-3:20 pm **Session**: **44**
Dakota F **Feb. 6, 2015**

Grade Level: K-5

Presenter: Kevin Smith
DSU
kevin.smith@dsu.edu
http://kevindsmith.org

Kid Cave: A PBL Project to Teach STEM
Come and learn about a PBL project in which students design a "Kid Cave" using an app on the iPad. We'll walk through the steps involved in implementing the project in your class and talk specifically about the STEM content addressed in the project. If you have an iPad, you'll have a chance to play with the app.

2:30-3:20 pm **Session**: **45**
Dakota G **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Sam Glantzow & Larry Browning
Selby Area School & SDSU
sam.glantzow@k12.sd.us

Turn Your Town into a Solar Observatory
Streets and buildings of your town can be used as a solar observatory just as certain rocks at Stonehenge and streets in Manhattan mark the cycles of the sun. This presentation will show teachers how they can turn their town into a "-henge" to demonstrate annual solar motion.

Next year's conference is
February 4, 5, 6, 2016

Friday 2:30 pm

2:30-3:20 pm **Session**: **46**
Dakota H **Feb. 6, 2015**

Grade Level: 9-12

Presenter: Judy Vondruska
SDSU
judy.vondruska@sdstate.edu
http://etfworkshop.wikispaces.com

Using Conductive Copper Tape to Teach Circuits
Teaching circuits can be a challenge especially if using a setup with numerous wires. Teachers spend more time checking the wiring than helping students learn the underlying circuit principles. Participants in this session will use low-cost copper foil tape with a conductive adhesive to more easily design and analyze basic circuits.

Friday 3:30 pm

3:30-4:20 pm **Session**: **48**
Prairie B **Feb. 6, 2015**

Grade Level: K-12 **Repeat of Session 66**

Presenter: Mary Colson
NSTA
mcolson@moorheadschools.org

Professional Learning Resources@NSTA, K-12
The National Science Teachers Association is more than its journals and conferences. A plethora of online resources are available to enhance your teaching and help you as you delve into the ideas and practices of science. We will explore the NSTA Learning Center and NGSS@NSTA hub. Appropriate for K-12 teachers.

Friday 3:30 pm

3:30-4:20 pm **Session: 49**
Dakota A **Feb. 6, 2015**

Grade Level: K-5

Presenter: Sonya McNamara
Project Lead the Way
smcnamara@pltw.org
http://www.pltw.org

PLTW-Launch-Elementary STEM
Learn about this exciting new STEM hands-on program addressing the new Next Generation Science Standards and other national and state standards. Through hands-on learning (project and problem-based learning) for kindergarten through fifth grade, students learn important, future-changing lessons. Taking risks, making mistakes, and employing critical thinking.

3:30-4:20 pm **Session: 50**
Dakota B **Feb. 6, 2015**

Grade Level: 9-12 **Repeat of Session 98**

Presenter: K-Dog & G-Trog
(withheld to protect the guilty)
cindy.kroon@K12.sd.us

Mathematical Idol: The Reunion Tour!
Due to increasing fan request (n>0), the infamous duo returns! In their words, "We've made fools of ourselves in front of our students for years. Now is the time to do it in front of our colleagues." The ability to carry a tune, sing, dance, or have rhythm is NOT a requirement for this session!

Friday 3:30 pm

3:30-4:20 pm **Session: 51**
Dakota E **Feb. 6, 2015**

Grade Level: K-5 **Repeat of Session 62**

Presenter: Danette Jarzab
SD Discovery Center
danettejarzab@sd-discovery.com
http://www.sd-discovery.com

Getting Kids Eating Fruits and Veggies
Harvest of the Month, an adaptable, easy to use program gets kids excited about eating fruits and vegetables and has them asking their parents for more! We have added kinesthetic activities and created new learning plans. Discover how you can impact your community's health with this free state-wide program.

3:30-4:20 pm **Session: 52**
Dakota G **Feb. 6, 2015**

Grade Level: 9-12

Presenter: James Stearns & Larry Browning
SD AAPT
James@SDSTA.org
http://SDAAPT.SDSTA.org

SD-AAPT Photo Contest & Annual Meeting
All Physics and/or Physical Science teachers are invited to the annual meeting for the final voting and judging of the photos and essays that have been submitted. Check out the photos in the hall Thursday night and/or Friday and put in your two cents worth. Vote by putting in a penny for your top choice or two. All physics or physical science teachers are invited to this meeting.

Friday 4:30 pm

4:30-5:30 pm **Session**: **53**
Dakota C **Feb. 6, 2015**

Grade Level: All

Presenter: Ellie Cooch
SDCTM

SDCTM Business Meeting

4:30-5:30 pm **Session**: **54**
Dakota G **Feb. 6, 2015**

Grade Level: All

Presenter: Julie Olson
SDSTA

SDSTA Business Meeting

Friday 7:00 pm

7:00 pm--- **Session**: **56**
Prairie A, B & C **Feb. 6, 2015**

Grade Level: All

Facilitators: Ellie Cooch & Julie Olson
SDCTM & SDSTA Presidents

Banquet

Speaker—Bill Zubke

Friday 5:30 pm

5:30-6:45 pm **Session**: **55**
Vendor area **Feb. 6, 2015**

Grade Level: All

Social Hour

Come and visit with other science and math teachers. Light snacks will be provided. There will be a cash bar.

Saturday 7:00 am

7:00-8:00 am **Session**: **57**
Library **Feb. 7, 2015**

Grade Level: Presidential Awardees

Presenter: Allen Hogie & Ramona Lundberg
PAEMST Coordinators

Breakfast for Awardees and Finalists

Saturday 8:00 am

8:00-8:30 am **Session**: **58**
Dakota H **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Judy Vondruska & Suzette Burckhard
SDSU
judy.vondruska@sdstate.edu
http://etfworkshop.wikispaces.com

Engineering the Future Workshop Sharing Session

This is a closed session for participants of the summer 2014 Engineering the Future Workshop at SDSU. Session participants will share their experiences implementing activites from this summer as well as sharing new ideas.

Saturday 8:30 am

8:30-10:20 am **Session**: **59**
Prairie A **Feb. 7, 2015**

Grade Level: 9-12

FEATURED SPEAKERS

Marie Copeland & Michael Lehman
EMATHS-Embracing Mathematics
Assessment Technology in HS
mariecopeland@gmail.com

Rethinking Quadratics

What if we thought of quadratic functions as the product of two linear functions? How would that change our students' understanding of quadratics and factoring? This session will explore this option as an alternative to the "typical" approach to quadratics. Come see where this might lead us.

Saturday 8:30 am

8:30-10:20 am **Session**: **60**
Prairie B **Feb. 7, 2015**

Grade Level: K-5

Presenter: Nicholas J. Restivo
MOEMS
nrestivo@moems.org

A Problem a Day Keeps the Cobwebs Away

Generate excitement among students by modeling how to take risks in mathematical problem solving. Energize and enrich your students to dialogue with each other. Through the use of problems with multiple solution paths, learn techniques that will help you reduce the need to "cram."

8:30-9:20 am **Session**: **61**
Prairie C **Feb. 7, 2015**

Grade Level: K-5

FEATURED SPEAKER

Roxie Ahlbrecht
pebbles@sio.midco.net

Structuring: The Gateway to Mathematical Understanding

Structuring is a basic skill which supports and enhances efficiency when solving additive and subtractive tasks. As students compose and decompose numbers, efficient strategies are developed through an understanding of how to structure which builds a student's capacity to mentally compute multi-digit problems with efficiency and accuracy.

Saturday 8:30 am

8:30-9:20 am **Session**: **62**
Dakota B **Feb. 7, 2015**

Grade Level: K-5 **Repeat of Session 51**

Presenter: Danette Jarzab
SD Discovery Center
danettejarzab@sd-discovery.com
http://www.sd-discovery.com

Getting Kids Eating Fruits and Veggies

Harvest of the Month, an adaptable, easy to use program gets kids excited about eating fruits and vegetables and has them asking their parents for more! We have added kinesthetic activities and created new learning plans. Discover how you can impact your community's health with this free state-wide program.

8:30-9:20 am **Session**: **63**
Dakota C **Feb. 7, 2015**

Grade Level: K-5

Presenter: Jan Martin
SD DOE
jan.martin@state.sd.us

Cut scores, descriptors, and more
-Smarter Balanced Update

So what will my students be expected to know and do in math? What are the cut scores? What resources are available to help in the classroom? The session will focus on the cut scores, achievement level descriptors, and supporting resources available for Smarter Balanced. A look at score reports will also be provided.

Saturday 8:30 am

8:30-9:20 am **Session**: **64**
Dakota E **Feb. 7, 2015**

Grade Level: K-5

Presenter: Mari Biehl
SD Inovation Lab
mbiehl@sdinnovationlab.org
http://sdinnovationlab.org

Designing Learning with Kids

Designing their own learning--that's crazy talk! Or is it? By allowing students to work through the design process they are encouraged to build, modify, and share—a universal attribute of human thinking. Find out how to give kids the tools to think and plan using the design cycle with you as their guide on their learning adventure.

8:30-9:20 am **Session**: **65**
Dakota F **Feb. 7, 2015**

Grade Level: K-8

Presenter: Steven Rokusek
SD Public Broadcasting
steven.rokusek@state.sd.us
http://sdpb.org/learn

Engaging Science Activities: The Senses

During this session participants will learn about science activities that will keep the children in their care entertained and educated. The session will include, but is not limited to sight, balance, and skin sensitivity activities.

Saturday 8:30 am

8:30-9:20 am **Session**: **66**
Dakota G **Feb. 7, 2015**

Grade Level: K-12 **Repeat of Session 48**

Presenter: Mary Colson
NSTA
mcolson@moorheadschools.org

Professional Learning Resources@NSTA, K-12

The National Science Teachers Association is more than its journals and conferences. A plethora of online resources are available to enhance your teaching and help you as you delve into the ideas and practices of science. We will explore the NSTA Learning Center and NGSS@NSTA hub. Appropriate for K-12 teachers.

8:30-9:20 am **Session**: **67**
Dakota H **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Judy Vondruska & Suzette Burckhard
SDSU
judy.vondruska@sdstate.edu

Using the Human Body to Study Torque and Engineering Design

Many of the muscle and bone systems of the human body act as levers. In this session simple and reproduceable models of the human forearm and back will be used to collect data about forces and torques. More complex models will be used to demonstrate the engineering principles associated with these systems.

Saturday 8:30 am

8:30-9:20 am **Session**: **68**
Salon I **Feb. 7, 2015**

Grade Level: K-12

Presenter: Allen Hogie & Ramona Lundberg
PAEMST Coordinators

Tips for Winning Money

Would you like to receive $10,000? Every year, South Dakota is able to give two $10,000 awards, one in science and one in math. The Presidential Award is sponsored by the White House and the National Science Foundation.

Saturday 9:30 am

9:30-10:20 am **Session**: **70**
Prairie C **Feb. 6, 2015**

Grade Level: K-5

FEATURED SPEAKER

Roxie Ahlbrecht
pebbles@sio.midco.net

Addition and Subtraction: Developing Understanding

Students develop their understanding of addition and subtraction working with concrete materials, moving to representations before they are developmentally ready for the abstract tasks. Let's explore activities to build our instructional toolbox to include concrete materials and representations in our instruction.

Saturday 9:30 am

9:30-11:20 am **Session**: **71**
Dakota A **Feb. 7, 2015**

Grade Level: K-5 **Repeat of Session 11**

Presenter: Peggy Norris
BHSU/Sanford Underground Research Facility
pnorris@sanfordlab.org

SciGirls: Proven Strategies for Engaging Girls in STEM

This hands-on workshop will highlight science, engineering, and technology activities designed to engage upper elementary and middle school students in STEM, developed by PBS in conjunction with the SciGirls television program. The SciGirls approach is rooted in research about how to engage girls in STEM. Participants will take home sample kits.

9:30-10:20 **Session**: **72**
Dakota B **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Chris Larson, Sharon Vestal & Gary Hatfield
SDSU
christine.larson@sdstate.edu

Practicing Mathematical Practices: Probability & Statistics

The Practicing the Mathematical Practices workshop will focus on demonstrating the eight Standards for Mathematical Practice while reviewing content standards in 9-12 statistics and probability. We will provide 9-12 teachers with hands-on activities for their classroom while aligning with the CCSS-M statistics and probability standards.

Saturday 9:30 am

9:30-10:20 am **Session**: **73**
Dakota C **Feb. 7, 2015**

Grade Level: 6-8

Presenter: Jan Martin
SD DOE
jan.martin@state.sd.us

Cut scores, descriptors, and more- Smarter Balanced Update

So what will my students be expected to know and do in math? What are the cut scores? What resources are available to help in the classroom? The session will focus on the cut scores, achievement level descriptors, and supporting resources available for Smarter Balanced. A look at score reports will also be provided.

9:30-10:20 am **Session**: **74**
Dakota D **Feb. 7, 2015**

Grade Level: K-5

Presenter: William Kliche & Lori Stverak
Rapid City Schools
william.kliche@k12.sd.us

Strategies for Teaching Understanding in Fractions

We will provide hands-on ideas for teaching fractional understanding.

Next year's conference is
February 4, 5, 6, 2016

Saturday 9:30 am

9:30-10:20 am **Session**: **76**
Dakota G **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Darwin R. Daugaard
Dell Rapids Public High School
darwin.daugaard@k12.sd.us
http://dd045.k12.sd.us

Doc's Master Plan (Finding Quantum Numbers)
Doc's Master Plan is a model of the electrons around an atom. This model will be introduced and its uses demonstrated. Find quantum numbers, electron configuration notation, and schematics and electron-dot notation can be easier to find using Doc's Master Plan. This is a chemistry topic for regular chem or advanced chem.

9:30-10:20 am **Session**: **77**
Dakota H **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Suzette Burckhard & Judy Vondruska
SDSU
suzette.burckhard@sdstate.edu

The Science and Engineering of Tower Building
Skyscrapers and telecommunications towers are both tall structures supported by a similar internal structure. In this session, participants will build towers in phases using an increasing amount of engineering content while still emphasizing science principles.

Saturday 10:30 am

10:30-11:20 am **Session**: **78**
Dakota B **Feb. 7, 2015**

Grade Level: 6-8

Presenter: Tammy Jo Schlechter
Hermosa School
tammyjo.schlechter@k12.sd.us

Turn Your Classroom into a Habit for Mathematicians
Energize your classroom with best practices discovered by Tammy Jo, Tammy Jo's students and colleagues. This workshop will promote planning and activities that lead to productive dispositions in not only students but their teachers as well. This workshop is listed for middle school, but with a creative perspective, it can apply to K-12 teachers.

10:30-11:20 am **Session**: **79**
Dakota C **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Jan Martin
SD DOE
jan.martin@state.sd.us

Cut scores, descriptors, and more
--Smarter Balanced Update
So what will my students be expected to know and do in math? What are the cut scores? What resources are available to help in the classroom? The session will focus on the cut scores, achievement level descriptors, and supporting resources available for Smarter Balanced. A look at score reports will also be provided.

Saturday 10:30 am

10:30-11:20 am **Session**: **80**
Dakota D **Feb. 7, 2015**

Grade Level: 9-12 **Repeat of Session 21**

Presenter: Sheila McQuade
O'Gorman HS
smcquade2@sfcss.org

Using the TI-Nspire in Geometry
As a teacher, my favorite activities lead my students to discover geometry concepts. Participants will use Nspire and work through some of the activities I use with my students. The activities I will present could be re-written to be used with Geometer's Sketchpad, Geogebra, or the Cabri Jr. app on the TI-84. Presenter will have Nspires for participants to use.

10:30-11:20 am **Session**: **81**
Dakota E **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Jeff Schneider
SD Innovation Lab
jschneider@pastfoundation.org
http://sdinnovationlab.org

Teaching the Common Core Standards in Three Schools at Once!
How I teach a Transdisciplinary Problem Based Learning class in three schools, simultaneously. How I cover all the Common Core Standards. This session will include links to relevant sites/information/resources, an extensive question and answer session, and LOTS of ideas for projects that have been proven in multiple classrooms.

Saturday 10:30 am

10:30-11:20 am **Session**: **82**
Dakota F **Feb. 6, 2015**

Grade Level: K-8

Presenter: Mark Iverson & Chad Lentsch
Watertown Middle School
Mark.a.iverson@k12.sd.us

Science Dojo: Add a Little Kick to Your Lessons.
This sharing session will focus on the hard to teach concepts in your curriculum. Bring your problems, frustrations or failures to have the group slice and dice your lessons into something amazing. Bring your katana and your resources for the good of the group.

10:30-11:20 am **Session**: **83**
Dakota G **Feb. 7, 2015**

Grade Level: K-12 **Repeat of Session 34**

Presenter: Dan Van Peursem, Matt Miller, & Sharon Vestal
USD & SDSU
Dan.VanPeursem@usd.edu

Meet the Future Teachers
Prospective science and math teachers from all South Dakota institutions will be invited to engage in conversation with veteran science and math teachers attending the conference. The goal is to provide support and encouragement for the next generation of teachers by providing advice, encouraging stories, and successful strategies.

Saturday 10:30 am

10:30-11:20 am **Session: 84**
Dakota H **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Suzette Burckhard
SDSU
suzette.burckhard@sdstate.edu

The Science and Engineering of Windmills
Windmills and related machines have been used for centuries to produce power. Modern windmill/wind turbine designs have changed in terms of the tower configuration and the blade design. In this session, participants will design, build, and test a variety of windmills and discuss the underlying science and engineering principles.

Saturday NOON

Noon-1:00 pm **Session: 85**
Prairie A, B & C **Feb. 6, 2015**

Grade Level: All

Presenters: Julie Olson & Ellie Cooch
SDSTA & SDCTM Presidents

Lunch

Next year's conference is
February 4, 5, 6, 2016

Saturday 1:00 pm

1:00-2:50 pm **Session: 86**
Prairie A **Feb. 7, 2015**

Grade Level: 9-12

FEATURED SPEAKERS
Marie Copeland & Michael Lehman
EMATHS-Embracing Mathematics
Assessment Technology in HS
mariecopeland@gmail.com

Using Origami to Introduce Geometry
Engage your students on day one. Use origami paper to build three dimensional figures to visualize and explore special right triangles, area and volume. Connections between the size of the paper and the size of the figure we create will be discovered, which explores the ratios of similar figures.

??? Sanford Ad ???

Saturday 1:00 pm

1:00-1:50 pm **Session**: **87**
Prairie B **Feb. 7, 2015**

Grade Level: 6-8

Presenter: Peggy Norris & David Demuth
BHSU/Sanford Underground Research Facility
pnorris@sanfordlab.org

Connect Your Students with Scientists:
The K-12 STEM Series

Connect your students to scientists and modern scientific research, whether it's looking deep into space or deep into molecules. In its second year, Dakota's K-12 STEM Initiative is a collaborative effort among partners across K-12, higher education and research centers across the Dakotas, using technology to connect students with scientists.

1:00-1:50 pm **Session**: **88**
Prairie C **Feb. 7, 2015**

Grade Level: 9-12

FEATURED SPEAKERS

Cathy Ezrailson
USD
cathy.ezrailson@usd.edu

Why a Lab Safety Protocol Could Save Your Life

Do you teach science in a classroom or lab? Do you have a method for buying, storing, organizing and using science equipment? Have you ever experienced (or know of a fellow teacher who has experienced) a mishap while teaching or demonstrating in a science class? Perhaps a science safety protocol could help.

Saturday 1:00 pm

1:00-1:50 pm **Session**: **89**
Dakota A **Feb. 7, 2015**

Grade Level: K-5

Presenter: Sonya McNamara & David Hosick
Project Lead the Way
smcnamara@pltw.org
http://www.pltw.org

PLTW: STEM Journey

Project Lead the Way is the leading STEM education program in the nation. Now five PLTW programs, a K-12 STEM journey, give students the opportunity to develop world class skills and knowledge preparing them for post-secondary education and the global economy. Learn about the new Launch, Gateway and high school programs.

1:00-1:50 pm **Session**: **90**
Dakota B **Feb. 7, 2015**

Grade Level: K-5 Repeat of Session 16

Presenter: Danette Jarzab
SD Discovery Center
danettejarzab@sd-discovery.com
http://www.sd-discovery.com

Math-Ready to Go!

Our GEMS (Great Explorations in Math & Science) kits are filled with ready-to-go math activities that support state standards. This session will include activities from these math kits: Build It Festival (K-6), Frog Math (K-3), Math on the Menu (3-5), and In All Probability (3-6).

Saturday 1:00 pm

1:00-1:50 pm **Session**: **90.5**
Dakota D **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Chris Larson
SDSU
christine.larson@sdstate.edu

Using Algebra Tiles to Teach HS Algebra
Algebra Tiles can be used to explore a variety of algebraic concepts. Come see how they can be used to teach basic concepts like combining like terms, using the distributive property, and solving linear equations, to more complex concepts like factoring, solving linear inequalities, and solving systems of linear equations.

1:00-1:50 pm **Session**: **91**
Dakota E **Feb. 7, 2015**

Grade Level: K-5

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

Simple Research Ideas for Elementary Students
Engage elementary students in research that doesn't require a lot of money, materials, or space.

Next year's conference is
February 4, 5, 6, 2016

Have you thought about presenting?

Saturday 1:00 pm

1:00-1:50 pm **Session**: **92**
Dakota F **Feb. 7, 2015**

Grade Level: 6-8

Presenter: Janet Briggs
BHSU
janet.briggs@bhsu.edu

Low-Maintenance School Gardens
Learn about low-maintenance gardens that you and your students can plant and manage, including supporting Monarch butterflies and two of South Dakota's endangered butterflies, planting a xeriscape garden with native plants, and more. Hear how Master Gardener volunteers can assist throughout the process.

1:00-1:50 pm **Session**: **93**
Dakota G **Feb. 7, 2015**

Grade Level: 9-12 Repeat of Session 10

Presenter: Anne Lewis
SD Discovery Center
anne.lewis@sd-discovery.com
http://www.sd-discovery.com

GLOBE in South Dakota
GLOBE is a world wide, hands-on, school based science education program. The SD Discovery Center and Outdoor Campus West are partnering to support this exciting opportunity to investigate and monitor environmental systems here in SD. Get a sneak peek at our summer professional development as well as a few GLOBE goodies.

Saturday 2:00 pm

2:00-2:50 pm **Session**: **95**
Dakota A **Feb. 7, 2015**

Grade Level: K-5

Presenter: Sonya McNamara & David Hosick
Project Lead the Way
smcnamara@pltw.org
http://www.pltw.org

PLTW-Launch-Encouraging Critical Thinking
Through hands-on learning (project and problem-based learning) for kindergarten through fifth grade, students learn important, future-changing lessons. Taking risks, making mistakes, and employing critical thinking are all part of exciting problem solving activities. Teachers and students learn and discover together, becoming far more engaged.

2:00-2:50 pm **Session**: **96**
Dakota B **Feb. 7, 2015**

Grade Level: K-5 Repeat of Session 24

Presenter: Danette Jarzab
SD Discovery Center
danettejarzab@sd-discovery.com
http://www.sd-discovery.com

Science-Ready to Go
Our GEMS (Great Explorations in Math & Science) kits are filled with ready-to-go science activities that support state standards. This session will include activities from these science kits: Bubble Festival (K-6), Liquid Explorations (1-3), Electric Circuits (3-6), and Space Science (3-5).

Saturday 2:00 pm

2:00-2:50 pm **Session**: **97**
Dakota C **Feb. 7, 2015**

Grade Level: K-5 Repeat of Session 32

Presenter: Kathy Grotta
LEGO education
kathy.grotta@lego.com
http://www.legoeducation.us

LEGO More to Math Teachers Grade 1-2
More to Math is a hands-on educational tool for teaching problem solving bridging to mathematical facts. It provides practice in core mathematical competencies such as reasoning, perseverance, precision, modeling and representation through individual and team problem solving experiences.

2:00-2:50 pm **Session**: **98**
Dakota D **Feb. 7, 2015**

Grade Level: 9-12 Repeat of Session 50

Presenter: K-Dog & G-Trog
(withheld to protect the guilty)
cindy.kroon@K12.sd.us

Mathematical Idol: The Reunion Tour!
Due to increasing fan request (n>0), the infamous duo returns! In their words, "We've made fools of ourselves in front of our students for years. Now is the time to do it in front of our colleagues." The ability to carry a tune, sing, dance, or have rhythm is NOT a requirement for this session!

Saturday 2:00 pm

2:00-2:50 pm **Session**: **99**
Dakota E **Feb. 7, 2015**

Grade Level: 9-12

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

Mitosis in Onion Roots

Fix, stain, and view onion roots then learn how to utilize this procedure to engage your students in research related to cell division, cancer, and mitosis in general. There will be music, on-line resources, and student/teacher worksheets to utilize.

2:00-2:50 pm **Session**: **100**
Dakota F **Feb. 7, 2015**

Grade Level: K-12

Presenter: Mark Iverson
Watertown Middle School
mark.a.iverson@k12.sd.us

Weather Ballooning: Taking Your Teaching Out of this World

If you have ever wanted to start a weather balloon project with your class this session is for you. I am by no means an expert but will offer my experience, resources, fails and accomplishments and get you in contact with the experts that guided me.

Saturday 2:00 pm

2:00-2:50 p m **Session**: **101**
Dakota H **Feb. 7, 2015**

Grade Level: 9-12

Presenter: Matt Miller & Larry Browning
SDSU
Matt.Miller@sdstate.edu

Demonstrations to Spark Their Interest

Come and see if we get it right this year. After melting the carpet and melting chocolate we've learned how to whip our students into shape and teach them about acids and bases.

Saturday 3:00 pm

3:00-3:50 pm **Session**: **102**
Dakota C **Feb. 7, 2015**

Grade Level:
Presenter: Ellie Cooch
Math Wrap UP

3:00-3:50 pm **Session**: **103**
Dakota G **Feb. 7, 2015**

Grade Level:
Presenter: Julie Olson
Science Wrap Up

Saturday 4:00 pm

4:00-???? **Session**: **104**
Boardroom **Feb. 7, 2015**
Presenter: Jean Gomer
Joint Board Meeting (for Officers)