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

February 4, 5, & 6, 2016
Crossroads Hotel-Huron Event Center
Huron, SD

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Graduate Credit is available through DWU-Mitchell.

Next year's conference will be **February 2, 3, & 4, 2017.**

Featured Speakers

BANQUET SPEAKER — Sam Kean as a kid, spent years collecting mercury from

broken thermometers in South Dakota, and now he's a writer in Washington, D.C. His stories have appeared in *The Best American Science and Nature Writing*, *The Atlantic*, *The New York Times Magazine*, *Mental Floss*, *Slate*, and P*sychology Today*, among other places, and his work has been featured on "Radiolab" and NPR's "All Things Considered," among other shows. His books *The Disappearing Spoon* and *The Violinist's Thumb* were national bestsellers, and both were named an Amazon "Top 5″ science books of the year. *The Disappearing Spoon* was nominated by the Royal Society for one of the top science books of 2010, while both *The Violinist's Thumb* and *The Dueling Neurosurgeons* were nominated for PEN's literary science writing award. He earned a master's degree in library science that he "will probably never use". Sean is a fast reader but a very slow eater. Come get your books signed after the banquet.

OTHER FEATURED SPEAKERS

Tom Reardon - taught mathematics for thirty-five years at Fitch High School and for thirty-four years at Youngstown, State University in Ohio. He has been doing Professional Development in mathematics technology for school districts across the U.S. and internationally since 1995. His specialties are graphing technologies (T^3 national instructor), iPads, SMART Boards, integrating multiple technologies, problem solving, and pedagogy. He has earned numerous teaching awards including the Presidential Award for Mathematics Teaching. Tom regularly speaks at NCTM and T^3 national and regional conferences. He is currently developing activities and technologies to assist teachers and students better understand Transformational Geometry in middle and high school.

Benjamin Losby - is the owner of Precision Microscope Sales, a full service laboratory supply company specializing in microscope sales, service and repair. After receiving his B.S. in Physics with an emphasis in Geology and a minor in Mathematics at Montana State University – Bozeman, Ben began a career in the energy industry running remote sensing operations in Montana, North & South Dakota, Wyoming and Alaska. In 2014 he decided to leverage his experience in diagnostic technologies and assumed ownership of Precision Microscope Sales. Based in Billings, MT, Ben travels from Oregon to Minnesota servicing & repairing microscopes for the medical, veterinary and educational industries. Ben can be contacted by phone (800-848-4824), email (blosby@precisionmicroscopesales.com) or online via the company website (www.PrecisionMicroscopeSales.com).

Don Balka – a former middle school and high school mathematics teacher, is a Professor Emeritus in the Mathematics Department at Saint Mary's College, Notre Dame, Indiana. During his career as an educator, Balka has presented over 2,000 workshops on the use of manipulatives with elementary and secondary students at national and regional conferences of the National Council of Teachers of Mathematics, state mathematics conferences, and at inservice training for numerous school districts in the United States. He has taught classes and worked with teachers in schools throughout the world, including Ireland, Scotland, England, Saudi Arabia, Italy, Greece, Japan, and Mariana Islands in the South Pacific. Balka has written over 50 books on the use of manipulatives for teaching K-12 mathematics and is a coauthor of the Macmillan K-5 elementary mathematics series, *My Math*. He has also co-authored books on coaching, leadership, visible thinking in mathematics, and most recently rigor in the mathematics classroom.

Texas Instruments has been working with South Dakota teachers for several years. Former SD science teacher Jeff Lukens has been writing content and delivering workshops for TI throughout his career and during his retirement. Recently, Sanford Research partnered with TI to create the STEM Behind Health series of activities related to careers and science in healthcare and biomedical research. As featured speakers TI will be represented at the conference with a team of experts in science and math education and their various devices. Their sessions will highlight the varied nature of the activities designed for both science and math classes.

Visit www.sdctm.org or www.sdsta.org for complete Program and Hotel Information.

2016 Joint Professional Development Conference

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

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

Program

Thursday, February 4, 2016

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

Friday, February 5, 2016

7:00 AM - 4:20 PM	Registration Open	Pre-Function Area
8:00 AM - 5:00 PM	Exhibits Open	Pre-Function Area
8:30 AM - 11:20 AM	Morning Sessions	(See Program)
11:45 AM - 1:10 PM	Friday Luncheon (cost included in the registration fee)	Prairie A, B, C
1:30 PM - 4:20 PM	Afternoon Sessions	(See Program)
4:30 PM	SDCTM Business Meeting SDSTA Business Meeting	Dakota C Dakota G
5:30-6:45 PM	Social Hour CASH BAR-Hors d'oeuvres sponsored by SDCTM & SDSTA	Pre-Function Area
7:00 PM	Friday Evening Banquet (Cost is $25)	Prairie A, B, C

Saturday, February 6, 2016

7:00 AM - 11:20 AM	Registration Open	Pre-Function Area
7:00 AM - 8:00 AM	Breakfast Meeting Presidential Awardees (Past & Present)	Salon
8:00 AM - 2:00 PM	Exhibits Open	Pre-Function Area
8:30 AM - 12:20 PM	Morning Sessions	(See Program)
12:30 PM - 1:20 PM	Saturday Luncheon (cost included in the registration fee)	Prairie A, B, C
1:30 PM - 3:20 PM	Afternoon Sessions	(See Program)
4:00 PM	Joint SDCTM & SDSTA Executive Board Meeting	Boardroom

SDSTA/SDCTM Joint Conference 2016 Planner

Thursday, Feb. 4, 2016		
	First Choice	Second Choice
7:00 PM	Session #:	Session #:
	Location: Dakota	Location:
	Title: Sharing Session	Title:

Friday, Feb. 5, 2016		
Remember to visit the exhibits in the Lobby and Hallways of the Crossroads Hotel.		
	First Choice	Second Choice
8:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
9:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
10:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
Noon	**Friday Noon Luncheon in Crossroads Hotel – Prairie A, B, C**	
1:30 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
2:30 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
3:30 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
4:30 PM	SDCTM BUSINESS MEETING in Dakota C SDSTA BUSINESS MEETING in Dakota G	5:30 – 6:45 SOCIAL Hour
7 PM	Friday Night Banquet in Prairie Ballrooms A, B, C (Banquet Tickets Required-Cost is $25)	

Saturday, Feb. 6, 2016		
	First Choice	Second Choice
8:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
9:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
10:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
11:30 AM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
12:30 PM	**Saturday Noon Luncheon in Crossroads Hotel – Prairie A, B, C**	
1:30 PM	Session #:	Session #:
	Location:	Location:
	Title:	Title:
2:30 PM	Session #:	Session #:
	Location: Dakota	Location:
	Title: Wrap - Up	Title:
4:00 PM	SDCTM & SDSTA JOINT BOARD MEETING IN THE BOARDROOM	

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Program for 2016 Joint Conference

Special thanks for goes to TIE for the projectors

Thursday 7:00 pm

7:00-9:00 pm **Session: 1**
Prairie B **Feb. 4, 2016**
Grade Level: All

Presenter: Cindy Kroon
SDCTM
Cindy.Kroon@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**
Prairie C **Feb. 4, 2016**
Grade Level: All

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

Science Sharing Session
This year's science sharing theme is grocery store science--labs, experiments, and demos with materials that can all be found at your local grocery store. We'll bring make your own nonparticle beverage, strawberry DNA extraction, cell phone microscopes and more; bring yours and/or experience others.

Friday 8:30 am

8:30-9:20 am **Session: 3**
Prairie A **Feb. 5, 2016**
Grade Level: K-5

FEATURED SPEAKER
Tom Reardon
TEXAS INSTRUMENTS

Integrate Creative Problem Solving Strategies With and Without Technology Part 1
Being able to solve problems is the cornerstone of learning and using mathematics. We will illustrate ways to give your students the power of cleverly using problem solving strategies. We will incorporate ideas from George Polya, the father of Problem Solving, and Marilyn Burns. Take away several ready-to-use activities.

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

$25.00
Speaker - Sam Kean
7 pm Friday

Friday 8:30 am

8:30-9:20 am **Session: 4**
Prairie B **Feb. 5, 2016**
Grade Level: 6-8

FEATURED SPEAKER

Don Balka
Saint Mary's College; Didax
donbalka@sprintmail.com
http://www.mathleadership.com

Archimedes Box

Over 2000 years ago, Archimedes created the Stomachion or "stomach turner", a puzzle consisting of 14 polygons that can be arranged in a 12 x 12 square such that all the vertices are integer points. Rather than creating bellyaches, teachers can use it to present and explore topics to increase geometric understanding.

8:30-9:20 am **Session: 5**
Prairie C **Feb. 5, 2016**

Grade Level: 9-12 **Repeats as Session 73**

Presenter: Liz McMillan
The Sanford PROMISE
SanfordOutreach@sanfordhealth.org
http://stembehindhealth.com

Ti-Nspire: STEM Behind Health

Sanford Research and Texas Instruments have partnered to create STEM Behind Health, a series of activities designed to introduce students to the science and math in various STEM careers in healthcare. Activities are based around type 1 diabetes, breast cancer, clinical and laboratory research. Participants can explore activities on the Ti-Nspire hand-helds in this session.

Friday 8:30 am

8:30-9:20 am **Session: 6**
Dakota A **Feb. 5, 2016**
Grade Level: 9-12

Presenters: Mark Kreie & Jarrod Huntimer
Brookings HS
Mark.Kreie@k12.sd.us
http://markkreie.blogspot.com/

Making the Transition to a Common Core Classroom

Come to learn about how two high school math teachers have made gradual changes in their classrooms as they continue to integrate the CCSS-M. We will discuss where we find resources and what technology tools we use. Participants can expect to leave with activities, projects, and ideas you can implement into your own classroom.

8:30-9:20 am **Session: 7**
Dakota B **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Michelle Nelson
Department of Education
michelle.nelson@state.sd.us

Making the Connection…CTE and Science

Join us to learn about Project Lead The Way (PLTW) and Curriculum for Agricultural Science Education (CASE). Both provide curriculum and professional development for teachers that promote rigorous and relevant student learning opportunities. Courses designed by these programs can be taken for science or CTE credit and offer opportunities for students to explore high-wage, high-demand careers.

Friday 8:30 am

8:30-9:20 am **Session: 8**
Dakota C **Feb. 5, 2016**
Grade Level: 6-8 **Repeats as Session 76**

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

Some Technology Resources for the Classroom
My observation is that students love technology. Why not incorporate some technology in your classroom? I would like to share some of the technology resources I have used in my classroom and if you have technology ideas to use, please share.

8:30-9:20 am **Session: 10**
Dakota E **Feb. 5, 2016**
Grade Level: 6-8

Presenter: Gary T. Nelson
Georgia Gwinnett College
garynelson@hotmail.com

Algebraic Skills Using the Four-pan Balance
The presenter will demonstrate activities that teachers can use to help middle-school students develop algebraic skills using a four-pan balance. Topics include: solving equations, adding integers, systems of equations, and inequalities.

Next year's conference
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Friday 8:30 am

8:30-9:20 am **Session: 11**
Dakota F **Feb. 5, 2016**
Grade Level: k-12

Presenter: Lindsey Brewer NBCT
Huron High School
Lindsey.Brewer@k12.sd.us

QR Codes in the Classroom
A basic "how to" session with QR codes. How to read them, how to make them, and how to use them in the classroom. It would be helpful but not required to have a smart device (iPhone or iPad) with any type of FREE QR Code reader from the app store downloaded.

8:30-9:20 am **Session: 12**
Dakota G **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Darwin Daugaard
Dell Rapids Public High School
Darwin.Daugaard@k12.sd.us

Science in a Suitcase
A variety of demonstrations that can be done in the classroom with explanations and discussion to follow.

8:30-10:20 am **Session: 12.5**
Dakota H **Feb. 5, 2016**
Grade Level: 6-8

Presenters: Peggy Norris & June Apaza
Sanford Underground Research Facility/BHSU
pnorris@sanfordlab.org
http://www.sanfordlab.org

Connecting Sanford Lab Science to the Classroom
The E & O Department at Sanford Lab is piloting curriculum units featuring Sanford Lab science and aligned with the new state science standards. The units are hands-on and inquiry-based. This workshop will feature activities from two 10-day high school units: "Perplexing Puddles" and "We are Made of Starstuff".

Friday 9:30 am

9:30-10:20 am **Session: 13**
Prairie A **Feb. 5, 2016**
Grade Level: 6-8

FEATURED SPEAKER
Tom Reardon
TEXAS INSTRUMENTS

Immediately Investigate Transformational Geometry Activities for Middle and High School
The CCSS introduces Transformational Geometry in middle school and extends it into high school geometry. Get hands-on ideas and activities that have the students discovering the math in 15 seconds or fewer. Uses either a handheld, computer software, or iPad app. Access to these free activities will be shared.

9:30-10:20 am **Session: 14**
Prairie B **Feb. 5, 2016**
Grade Level: K-5

FEATURED SPEAKER
Don Balka
Saint Mary's College; Didax
donbalka@sprintmail.com
http://www.mathleadership.com

Developing Early Number Concepts with Ten Frames
Ten frames are one of the most useful tools for teaching and learning in the primary grades. Participants will experience games and activities matching various Common Core and state standards for number sense and computation. Help students attach meaning to counting, composing/decomposing numbers, understanding place value, and adding and subtraction.

Friday 9:30 am

9:30-10:20 am **Session: 14.5**
Prairie C **Feb. 5, 2016**
Grade Level: 3-6

Presenter: Janet Wagner
Bon Homme Schools
Janet.Wagner@k12.sd.us

Elementary Rock Collection
This will be a make and take session. We will be building a rock collection of igneous, sedimentary and metamorphic rocks to take back to your classroom. This session is geared to 3-6 grade science.
Limited to 20 participants.

9:30-10:20 am **Session: 15**
Dakota A **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Julie Olson
Mitchell Senior High/Sanford Research SERF
Julie.Olson@k12.sd.us

An ELISA Simulation
Participants will conduct an ELISA simulation that doesn't require strict storage requirements or a plate reader. Antibody/antigen reactions and serial dilutions are covered. It uses a colorimeter or spectrophotometer and easily obtainable substance and can be adapted to any scenario you would like. The procedure was developed during a SERF (Sanford Educator Research Fellowship) internship.

Friday 9:30 am

9:30-10:20 am **Session: 16**
Dakota B **Feb. 5, 2016**
Grade Level: 9-12

Presenters: Kevin Smith & Eric Ruppelt
Dakota State University
Kevin.Smith@dsu.edu

Classroom Activities with Desmos

This session will explore classroom activities provided by Desmos (https://teacher.desmos.com). These activities utilize technology tools to allow students to experience problem solving and math modeling in an engaging environment. We will provide an overview of the activities, demonstrate how you could use these in your classroom, and talk about our experience using them with students.

9:30-10:20 am **Session: 17**
Dakota C **Feb. 5, 2016**
Grade Level: K-5

Presenters: Lynda Venhuizen & Susanne Brokmeier
SDSU
Lynda.Venhuizen@sdstate.edu

Math/Science Integration for Earth's Sake

Combine your math and science lessons with these engaging hands-on activities that build computational and measurement skills while teaching about ecosystems and our ecological footprints. Receive a CD-ROM of lesson plans matched to state standards.

Next year's conference
February 2, 3, & 4, 2017

Friday 9:30 am

9:30-10:20 am **Session: 18**
Dakota D **Feb. 5, 2016**
Grade Level: 9-12 **Repeats as Session 85**

Presenters: Dr. James Rice & Phillip Huebner
SD EPSCOR
Phillip.Huebner@sdstate.edu
http://sdepscor.org

Resources and Opportunities through SD EPSCoR

Maximizing efforts in interest and retention of students in pursuing STEM careers requires engaging students early to foster their interest in STEM. SD EPSCoR provides numerous resources and support to schools, teachers, and students. This session will outline the philosophy of the SD EPSCoR program, its current efforts, and its resources.

9:30-10:20 am **Session: 19**
Dakota E **Feb. 5, 2016**
Grade Level: 5-12 **Repeats as Session 68**

Presenters: Marie Steckelberg & DeVee Dietz
Steckelberg Consulting, LLC
marie@stecklbergconsulting.com
http://SteckelbergConsulting.com

ARTsome Astronomy

Rocket through the solar system through the lens of an artist! Fuse science and the elements and principles of design to analyze the mysterious surfaces of planets, moons, comets, asteroids and our beautiful Earth. Gain a deeper understanding of their geologic story while creating art inspired by images of these celestial neighbors.

Friday 9:30 am

9:30-10:20 am **Session: 20**
Dakota F **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Matthew Gill, Ruth Conway,
Jonathan Hanson & Robin Curtis
SD DOE
Matthew.Gill@state.sd.us
http://doe.sd.gov

SLOs: Clearing the Mud

After practicing with their first SLOs, teachers may wonder how to take their SLO to the next level during the first year of full implementation. There may be areas that they are confused on, since many teachers haven't been trained over SLOs since the summer of 2014. This session would provide teachers with ideas from a math/science teacher and from the SDDOE.

Friday 9:30 am

9:30-10:20 am **Session: 21**
Dakota G **Feb. 5, 2016**
Grade Level: K-5

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

DonorsChoose.org: How to Get FREE Stuff For Your Class

We all need supplies for our classrooms and labs. This session will show you how to get those supplies without spending a dime. Each attendee will leave the session registered on DonorsChoose.org with a project submitted for funding. Other sources for free supplies will be offered.

Friday 9:30 am

9:30-10:20 am **Session: 22**
Symposium **Feb. 5, 2016**
Grade Level: All

Presenters: Travis Almond & Alan Freng
South Dakota Retirement System
Travis.Almond@state.sd.us
http://sdrs.sd.gov

Understand your SDRS, SRP, and SPP Benefits

This presentation will provide you with a sound understanding of the retirement programs that are available to you, the importance of retirement planning, and how these plans work together. Whether you are new to SDRS, early in your career, or in mid or late career, you are encouraged to attend this informative presentation regarding your future benefits and savings options.

9:30-11:20 am **Session: 22.5**
Salon I **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Rick Henningfeld
SD Soybean Research & Promotion Council
rhenningfeld@viviayic.com

Soybean Science=Genetics & Biotechnology

Join us to experience three lesson plans that dive into the science in one of the largest commodities in South Dakota, soybeans! We will explore activities to help students understand how altering the genotype of a soybean can result in desired phenotypes, the technology to make these changes possible and the tradeoffs of these biotechnologies.

Friday 10:30 am

10:30-11:20 am **Session: 23**
Dakota A **Feb. 5, 2016**
Grade Level: 6-12

Presenters: Nathaniel Raak & Dr. Marvin Gamble
MTI & USD
Nathaniel.Raak@mitchelltech.edu

Character Innovation
See ways of using character and innovation to engage students and convey concepts.

10:30-11:20 am **Session: 24**
Dakota B **Feb. 5, 2016**
Grade Level: 6-8

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

Getting Started with Science Fair
Science fair takes a lot of time so starting early is a must. This session will focus on steps and a possible schedule for completing a science fair project. Examples and rubrics will be provided.

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

$25.00
Speaker-Sam Kean
7 pm Friday

Friday 10:30 am

10:30-11:20 am **Session: 25**
Dakota C **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Tricia Neugebauer
Mitchell High School
Tricia.Neugebauer@k12.sd.us
http://mrsneugs.weebly.com

Physics Challenges Challenge Physics Students
Students in conceptual physics are required to use what they have learned to complete real-life challenges such as determining where projectiles will go, how to cushion a fall, the height a marble coaster will reach, where objects will balance, and how light will reflect.

10:30-11:20 am **Session: 26**
Dakota D **Feb. 5, 2016**
Grade Level: 9-12

Presenters: Matthew Gill & Marcia Torgrude
SD DOE & TIE
Matthew.Gill@state.sd.us
http://doe.sd.gov

Math Virtual Coaching Program
The SDDOE is offering a virtual coaching program to all 6-12 math teachers that are interested. Participants will get coached by math experts. This breakout session will describe the online coaching process, as as give a description of the instructional practices the current participants are focusing on over the school year. They would also hear about future coaching opportunities.

Next year's conference
February 2, 3, & 4, 2017

Friday 10:30 am

10:30-11:20 am **Session: 27**
Dakota E **Feb. 5, 2016**
Grade Level: K-5

Presenter: Marie Steckelberg
Steckelberg Consulting, LLC
marie@stecklbergconsulting.com
http://SteckelbergConsulting.com

Engineering Is Elementary: What Is Engineering?
Ready for an engineering design challenge using simple materials? This is your opportunity to be an engineer and relate your problem-solving strategies to the engineering design process. Experience how engineering projects integrate other disciplines. Engaging students in hands-on, real world engineering experiences can enliven math and science and other content areas.

10:30-11:20 am **Session: 28**
Dakota F **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Kelly Brandt
T. F. Riggs HS
Kelly.Brandt@k12.sd.us

TRAC Program
We are running a pilot program with the DOT. We will show and describe 2 modules we are doing to promote engineering in the state of South Dakota.

Do you use Twitter.com ?
Use #SDCTMandSDSTA
To see other tweets
or to make your own

Friday 10:30 am

10:30-11:20 am **Session: 29**
Dakota G **Feb. 5, 2016**
Grade Level: K-12

Presenters: Jamie Tucker, Mark Iverson,
Mark Kreie, Mary Erickson, Larry Browning
SDSTA
Mkerickson@mmm.com

How to Write a Successful Donors Choose Proposal
This will be a panel discussion with successful Donors Choose applicants and a representative from 3M to give a donor's perspective.

10:30-11:20 am **Session: 29.5**
Dakota H **Feb. 5, 2016**
Grade Level: 6--8

Presenter: Beth Harrington
Andes Central District 11-1
Beth.Harrington@k12.sd.us

Using Stations in the Middle School Math Classroom
Stations are a great way to assess your students while keeping them engaged. You will receive one set of stations for Solving Equations as well as ideas for other stations. There will be time to share what you have used in your classroom.

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

$25.00
Speaker-Sam Kean
7 pm Friday

Friday NOON

Noon-1:00 pm **Session: 30**
Prairie A, B & C **Feb. 5, 2016**
Grade Level: All

Presenters: Cindy Kroon & Julie Olson
SDCTM & SDSTA Presidents

LUNCH

Door Prizes
Tom Durkin-Awarding the Kelly Lane Earth & Space Science Grant and the Dan Swets Robotics Materials Award

Friday 1:30 pm

1:30-2:20 pm **Session: 32**
Prairie B **Feb. 5, 2016**
Grade Level: 6-8

FEATURED SPEAKER
Don Balka
Saint Mary's College; Didax
donbalka@sprintmail.com
http://www.mathleadership.com

Transforming Mathematics Classrooms for Rigor
In teaching good mathematics well, rigor plays a big part. What is mathematical rigor? What does it look like in mathematics classrooms? How can South Dakota mathematics teachers at all K-12 grade levels facilitate rigor in their classrooms? Can we note student progress towards rigor?

Friday 1:30 pm

1:30-2:20 pm **Session: 31**
Prairie A **Feb. 5, 2016**
Grade Level: K-5

FEATURED SPEAKER
Tom Reardon
TEXAS INSTRUMENTS

Integrate Creative Problem Solving Strategies With and Without Technology Part 2
Being able to solve problems is the cornerstone of learning and using mathematics. We will illustrate ways to give your studens the power of cleverly using problem solving strategies. We will incorparate ideas from George Polya, the father of Problem Solving, and Marilyn Burns. Take away several ready-to-use activities.

1:30-2:20 pm **Session: 33**
Prairie C **Feb. 5, 2016**
Grade Level: 9-12 **Repeats as Session 63**

FEATURED SPEAKER
Benjamin Losby
Precision Microscope Microscope Sales
blosby@PrecisionMicroscopeSales.com
http://PrecisionMicroscopeSales.com

Not Your Mother's Microscope
Microscopes, and how they can be utilized in the classroom, have come a long way in the past decade. With advances in live digital imaging, what was once limited to 'one student at a time' can now be a classroom activity, sparking questions, and group discussion.

Friday 1:30 pm

1:30-2:20 pm **Session: 34**
Dakota A **Feb. 5, 2016**
Grade Level: K-5

Presenter: Steven Rokusek
South Dakota Public Broadcasting
Steven.Rokusek@state.sd.us
http://sdpb.org/learn

Science + Mathematics + SD History = Fun!
During this session participants will learn about an interesting project that incorporates SD history science, mathematics, and more into one resource. The activities will include, but are not limited to SD ecosystems, natural resources, physical science, mathematics, SD history and more. This session has something for everyone!

1:30-2:20 pm **Session: 35**
Dakota B **Feb. 5, 2016**
Grade Level: 9-12

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

What Are All the Connections?
Empowering students to make connections between mathematical representations of functions is easier said than done. Participants will experience tasks designed to develop a rich understanding of the connections between the multiple representations. Leave with ideas, tasks, and materials you can use in your own classes.

Friday 1:30 pm

1:30-2:20 pm **Session: 36**
Dakota C **Feb. 5, 2016**
Grade Level: 9-12 **Repeats as Session 90.5**

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

Hands-on Geometry - on a budget
I use straws, pasta noodles and even play dough in my Geometry classes. In this session, I will share (cheap) ideas for making manipulatives that help students visualize concepts from high school geometry.

1:30-2:20 pm **Session: 37**
Dakota D **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Jamie Tucker
Brookings High School
Jamie.Tucker@k12.sd.us
https://sites.google.com/a/k12.sd.us/jamietucker

Changing the Way We Teach
With the adoption of the framework for education and new South Dakota Standards comes a new way to teach science. Students are required to gather, explain, and communicate information more now than ever before. Join me to learn some activities that will change the way that you teach and ultimately change the way that students think.

Friday 1:30 pm

1:30-2:20 pm **Session: 38**
Dakota E **Feb. 5, 2016**
Grade Level: K-5

Presenter: Anne Lewis
South Dakota Discovery Center
annelewis@sd-discovery.com
http://www.sd-discovery.com

Become a Nat Geo Certified Educator
National Geographic invites you to participate in its pilot certification program. In this interactive session, share ideas on how you teach and learn about National Geographic's new Learning Framework. This session counts as phase 1 of certification, and you will be invited to be among the first cadre of Nat Certified Educators. Certification is free and at your own pace.

1:30-2:20 pm **Session: 39**
Dakota F **Feb. 5, 2016**
Grade Level: k-12

Presenters: Lindsey Brewer, NBCT, Lori Keleher, NBCT & Allen Hogie, NBCT
Huron High School
Lori.Keleher@k12.sd.us

Is National Board Certification for You?
Join us to learn more about National Board Certification as offered through the National Board of Professional Teaching Standards. The mission of this board is to advance the quality of teaching and learning. The National Board believes higher standards for teachers means better learning for students. There are currently 106 National Board Certified Teachers in South Dakota. Become one of them!

Friday 1:30 pm

1:30-2:20 pm **Session: 40**
Dakota H **Feb. 5, 2016**
Grade Level: 9-12

Presenters: Larry Browning, Matt Miller & Madhav Nepal
SDSU
Larry.Browning@sdstate.edu

STREAM Follow-Up
Participants in the STREAM summer workshop are invited to share stories of successes and challenges with themselves and anyone interested in Vertical Hydroponic Sysems (VHS), Sustainable Habitat Engineering (SHE), or Solar Understanding Nexus (SUN -- solar observatory). This is part of a NCLB/Title II grant and paperwork will be part of this.

1:30-2:20 pm **Session: 40.5**
Symposium **Feb. 5, 2016**
Grade Level: 9-12

Presenters: Rebecca Diischer & Donna Flint
SDSU
Donna.Flint@sdstate.edu
http://sdstate.edu/math

Dual Credit in Mathematics-a Dual Challenge!
University faculty and high school math teachers together support and encourage the success of dual credit/concurrent enrollment students in distinct ways. In this presentation, SDSU faculty will discuss choosing an appropriate dual credit course, on-line course design and how high school teachers can support students as they complete online dual credit mathematics courses.

Friday 2:30 pm

2:30-3:20 pm **Session: 41**
Prairie A **Feb. 5, 2016**
Grade Level: 9-12

FEATURED SPEAKER
Tom Reardon
TEXAS INSTRUMENTS

Valuable Tips and Tricks for TI-84 and TI-84CE(color) Grades 7-12
For new and experienced users. Get 13 creative essential ideas to utilize the TI-84 more effectively. Develop your students' conceptual understanding of the mathematics better. Use color photos to teach transformation graphing. Tips on how to fully utiliza the TI-SmartView graphing calculator emulator and SmartPad app-with/without a SMART Board.

2:30-3:20 pm **Session: 41.5**
Prairie C **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Deirdre Peck
Aberdeen Central HS
Deirdre.Peck@k12.sd.us

Classroom Projects for Earth Science
Keep students engaged with activities for earth science concepts through hands-on activities for weather, geology, and space. Projects and resoures include time scales and distance scales, weather cycles and 3D constellations will be presented.

Friday 2:30 pm

2:30-3:20 pm **Session: 42**
Dakota A **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Sam Glantzow
Selby Area HS
Sam.Glantzow@k12.sd.us

The Atomic Hotel, and other Analogies
The Atomic Hotel is my way of helping chemistry students understand the concepts involved in how electrons enter orbitals. I use analogies to help chemistry students understand other concepts, and I will present a few of them here.

2:30-3:20 pm **Session: 43**
Dakota B **Feb. 5, 2016**
Grade Level: 9-12

Presenters: Sharon Vestal & Matt Miller & Dan Van Peursem
SDSU & USD
Sharon.Vestal@sdstate.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 future teachers by having veteran teachers share advice, success stories, and useful strategies.

Friday 2:30 pm

2:30-3:20 pm **Session: 44**
Dakota C **Feb. 5, 2016**
Grade Level: 6-8

Presenters: Crystal McMachen & Melissa Frein
Rapid City Area Schools
Crystal.McMachen@k12.sd.us

Student Discourse Made Easier
Are you tired of talking too much? Do you feel like your students are not hearing what you are saying? Do you want your students talking and learning from each other? Learn tips today that you can implement in your classroom on Monday morning which will help your students learn how to discuss math concepts together.

2:30-3:20 pm **Session: 45**
Dakota D **Feb. 5, 2016**
Grade Level: K-5

Presenter: Erin Marsh
Pierre Indian Learning Center
Erin.Marsh@k12.sd.us

Motivation, Mindset, and Math!
Let's collaborate on how to change the mindset of our students in math by valuing student's mistakes and engaging them in powerful mathematical conversations. Join us in learning about the importance of student discourse and differentiation for both our “deep thinkers” and higher level learners!

Next year's conference
February 2, 3, & 4, 2017

Friday 2:30 pm

2:30-3:20 pm **Session: 46**
Dakota E **Feb. 5, 2016**
Grade Level: K-5

Presenter: Marie Steckelberg
Steckelberg Consulting, LLC
marie@stecklbergconsulting.com
http://SteckelbergConsulting.com

Engineering Is Elementary: What Is technology?
Engineering and technological literacy are necessary for the 21st century, and these concepts are integrated in the new SD Science Standards. We will examine familiar, everyday objects to develop a better understanding of the term "technology" and make the connnection between technologies and the engineers who design them.

2:30-3:20 pm **Session: 47**
Dakota F **Feb. 5, 2016**
Grade Level: 9-12

Presenter: Dan Van Peursem, facilitator
USD
Dan.VanPeursem@usd.edu

South Dakota BOR Discussions
Meet representatives from the South Dakota BOR to discuss policies and procedures for adapting your students into the university. Come with your questions. Topics for discussion will be dual credit, math placement, and any others you wish to discuss

Look for our featured speakers
and the Presidential Series.

Friday 2:30 pm

2:30-3:20 pm **Session: 48**
Dakota G **Feb. 5, 2016**
Grade Level: 6-8

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

Earth Science Lessons That Rock!
Are you stuck between a rock and a hard place with your archaic lessons in Earth Science? Ready-to-use lessons, from the American Geosciences Institute, will provide teachers with Earth science content, hands-on activities, resources and field experiences to create meaningful experiences for their students.

2:30-3:20 pm **Session: 48.5**
Dakota H **Feb. 5, 2016**
Grade Level: 6-8

Presenter: Cassie Soeffing
IGES/NASA
cassie_soeffing@strategies.org

Create your own NASA portal to NGSS with NASA Wave
Wavelength, NASA's dynamic website, is a repository of classroom resources focused on Earth and Space Science. NASA Wavelength allows you to create a customized path to resources to teach a broad range of topics including climate, weather, magnetism, engineering design, the solar system, and astrobiology to name just a few. Wavelength allows easy access to NASA science data, images and apps.

Friday 3:30 pm

3:30-4:20 pm **Session: 49.5**
Prairie C **Feb. 5, 2016**

Grade Level: 9-12

Presenter: Mark Kreie & Jarrod Huntimer
Brookings High School
Mark.Kreie@k12.sd.us
http://markkreie.blogspot.com

Why You Need to Bring Desmos Into Your Classroom
Come and see why Desmos is a must-have for all 6-12 math teachers. Participants will be actively engaged in exploring Desmos, with a large focus on the Desmos Teacher site and activity builder. Please bring a laptop or iPad.

3:30-4:20 pm **Session: 50**
Dakota A **Feb. 5, 2016**
Grade Level: 9-12 **Repeats as Session 64**

Presenter: Samra Trask
Wall HS
Samra.Trask@k12.sd.us

Paperless Math Classrooms? You Bet!!
Explore and share methods of going paperless in math classrooms using tools such as tablets, OneNote, TI-Calculators, Planbook, and more. LOVE this session! This session grows with every new group due to myriad tricks shared by educators.

3:30-4:20 pm **Session: 51**
Dakota B **Feb. 5, 2016**
Grade Level: 6-8

Presenter: Dan Van Peursem, facilitator; USD
Dan.VanPeursem@usd.edu

Deflate Gate
In this session we will look into the science (Amonton's Law) and math behind Deflate Gate and run an experiment to see if the temperature alone could account for the difference in air pressure in the footballs during the 2015 AFC championship game.

Friday 3:30 pm

3:30-4:20 pm **Session: 51.5**
Dakota C **Feb. 5, 2016**
Grade Level: K-5 **Repeats as Session 76.5**

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

Math Fair

Have fun with math! We've all heard of Science Fairs. . .but what about a Math Fair. Come and get some ideas for a math fair that you can easily customize to your school.

3:30-4:20 pm **Session: 52**
Dakota D **Feb. 5, 2016**
Grade Level: 9-12

Presenters: Dr. Marvin Gamble & Nathaniel Raak
USD & MTI
Marvin.Gamble@usd.edu
http://sites.usd.edu/marvin-gamble

Magical Numbers 4 & 5 and Pythagorean Triples

I will show ways to find Primitive Pythagorean Triples and why the numbers 4 and 5 are magic numbers associated with Pythagorean Triples. An explaination will be given for each number.

Have you checked out
"Share the Classroom Treasures"?
Stop in Salon I and see what is there.
At 2:30 pm Saturday,
these treasures become trash!

Friday 3:30 pm

3:30-4:20 pm **Session: 53**
Dakota E **Feb. 5, 2016**
Grade Level: K-5

Presenter: Anne Lewis
South Dakota Discovery Center
annelewis@sd-discovery.com
http://www.sd-discovery.com

Elementary GLOBE

Get a jump on the new science standards with Elementary GLOBE. GLOBE is an international science and education project that involves students in monitoring earth's systems through data collection, data reporting, and participation in research projects conducted by practicing scientists. Bring hands-on learning about the spheres to your classroom.

3:30-4:20 pm **Session: 53.5**
Dakota F **Feb. 5, 2016**
Grade Level: K-5

Presenter: Kathleen Lawler
Activities for Learning, Inc.
Kathleen@RightStartMath.com
http://RightStartMath.com

Fractions: The Whole Story

Explore the simplicity and beauty of fractions by approaching them with a linear model, rather than pie slices. Learn how to ask the right questions to guide your students to a solid understand, including adding, subtraction, multiplying, and dividing fractions. We will demonstrate activities and games to build confidence.

Friday 3:30 pm

3:30-4:20 pm **Session: 54**
Dakota H **Feb. 5, 2016**
Grade Level: 9-12

Presenters: James Stearns & Larry Browning
Aberdeen School District & SDSU
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.

3:30-4:20 pm **Session: 54.5**
Symposium **Feb. 5, 2016**
Grade Level: 6-8

Presenters: Liz McMillan & friends
Sanford Research
elizabeth.mcmillan@sanfordhealth.org
http://www.sanfordresearch.org

Notebooks & Lab Journals in Science & in the Classroom
Scientists use lab journals in various, authentic ways to track their thoughts, data, and experiments. New trends in classroom techniques include the use of notebooks and lab journals. Explore some successes and challenges of this trend with regional colleagues.

Friday 4:30 pm

4:30-5:30 pm **Session: 55**
Dakota C **Feb. 5, 2016**
Grade Level: All

Presenter: Cindy Kroon
SDCTM President

SDCTM
Business Meeting

4:30-5:30 pm **Session: 56**
Dakota G **Feb. 5, 2016**
Grade Level: All

Presenter: Julie Olson
SDSTA President

SDSTA
Business Meeting

Friday 5:30 pm

5:30-6:30 pm **Session: 57**
Vendor Area **Feb. 5, 2016**
Grade Level: All

Presenter: Social Hour
Cash Bar

Friday 7:00 pm

7:00 pm **Session: 58**
Prairie A, B, & C **Feb. 5, 2016**
Grade Level: All

Presenter: Banquet
Sam Kean

Saturday 7:00 am

7:00-8:00 am **Session: 59**
Library **Feb. 6, 2016**
Grade Level: All Awardees

Presenter: PAEMST
Breakfast
Presidential Awardee Breakfast

Saturday 8:00 am

8:00-8:30 am **Session: 59.5**
Dakota F **Feb. 6, 2016**
Grade Level: 9-12

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

Engineering the Future Follow-up
This is a closed session for participants who took part in "Engineering the Future 2015" this past summer. Participants will discuss their experiences in implementing activities from this summer into their classroom, describe modifications and share new ideas.

Saturday 8:00 am

8:00-8:30 am **Session: 60**
Dakota H **Feb. 6, 2016**
Grade Level: 9-12

Presenters: Sharon Vestal & Chris Larson
SDSU
Sharon.Vestal@sdstate.edu

Follow-up Housekeeping for UMP 2015
This is a closed session for participants of the summer 2015 UMP Workshop at SDSU. Session participants will share their experiences implementing activities from this summer as well as sharing new ideas.

Saturday 8:30 am

8:30-9:20 am **Session: 62**
Prairie B **Feb. 6, 2016**
Grade Level: 6-8

FEATURED SPEAKER
Don Balka
Saint Mary's College; Didax
donbalka@sprintmail.com
http://www.mathleadership.com

Algebra Tiles: Representing the Big Ideas
Visualizing major concepts in algebra for Grades 6-9 aids in understanding. Participants will be actively involved with algebra tiles for working with operations and algebraic expressions, solving equations and inequalities, and playing games for reinforcing the big ideas.

8:30-9:20 am **Session: 63**
Prairie C **Feb. 6, 2016**
Grade Level: 9-12 **Repeat of Session 33**

FEATURED SPEAKER
Benjamin Losby
Precision Microscope Sales
blosby@PrecisionMicroscopeSales.com
http:// PrecisionMicroscopeSales.com

Not Your Mother's Microscope
Microscopes, and how they can be utilized in the classroom, have come a long way in the past decade. With advances in live digital imaging, what was once limited to 'one student at a time' can now be a classroom activity, sparking questions, and group discussion.

Saturday 8:30 am

8:30-9:20 am **Session: 64**
Dakota A **Feb. 6, 2016**
Grade Level: 9-12 **Repeat of Session 50**

Presenter: Samra Trask
Wall HS
Samra.Trask@k12.sd.us

Paperless Math Classrooms? You Bet!!
Explore and share methods of going paperless in math classrooms using tools such as tablets, OneNote, TI-Calculators, Planbook, and more. LOVE this session! This session grows with every new group due to myriad tricks shared by educators.

8:30-9:20 am **Session: 65**
Dakota B **Feb. 6, 2016**
Grade Level: 9-12

Presenters: Marcia Torgrude, TIE &
Sam Shaw, DOE
mtorgrude@tie.net
http://mtorgrude.tie.wikispaces.net

3D Understanding of the New Science Standards
Participate in a 3-D Student Performance to develop an understanding of the core ideas, cross-cutting concepts and science and engineering practices. Learn how all three dimensions intersect to allow students to engage in science through gathering, reasoning and communicating. Hear what a cohort of SD teachers are doing.

Please fill out your evaluation of the conference. We want next year's to be even better.

Saturday 8:30 am

8:30-9:20 am **Session: 66**
Dakota C **Feb. 6, 2016**

Grade Level: K-5

Presenters: Lori Stverak & William Kliche
Rapid City Schools
Lori.Stverak@k12.sd.us

Classroom Activities to Teach Fractions
This hour long workshop will be filled with activities and lessons to provide students with a deeper understanding of fractions. This workshop will go beyond simple answer getting. It will give teachers ideas to help teach understanding fractions and give a why and how to operations with fractions.

8:30-9:20 am **Session: 67**
Dakota D **Feb. 6, 2016**
Grade Level: 9-12

Presenters: Carl Fellbaum & Sen Subramanian
SDSU
Carl.Fellbaum@sdstate.edu
Search "RhizoDive" on Facebook

RhizoDive Right in! Study Bacteria with SDSU!
This NSF funded hands-on project will use DNA sequencing and bioinformatics to examine rhizobial diversity in legumes throughout SD. Educators and students will participate in a summer 2016 two day workshop at SDSU where they will isolate/prep DNA for next-generation sequencing. An additional lesson plan demonstrating plant stem cell division into specialized tissue is provided.

Saturday 8:30 am

8:30-9:20 am **Session: 68**
Dakota E **Feb. 6, 2016**
Grade Level: 5-12

Presenters: Marie Steckelberg & Devee Dietz
Steckelberg Consulting, LLC
marie@stecklbergconsulting.com
http://SteckelbergConsulting.com

ARTsome Astronomy
Rocket through the solar system through the lens of an artist! Fuse science and the elements and principles of design to analyze the mysterious surfaces of planets, moons, comets, asteroids and our beautiful Earth. Gain a deeper understanding of their geologic story while creating art inspired by images of these celestial neighbors.

8:30-9:20 am **Session: 68.5**
Dakota F **Feb. 6, 2016**
Grade Level: 9-12

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

Heavy Lifting: A NASA Design Squad Challenge 1
In Part 1 of this session participants will be challenged to construct, test and evaluate a working model of a crane to be used on the Moon for mining activities. This project helps students explore engineering design principles and learn about the scientific concepts of simple machines and Newton's Laws of Motion.

Saturday 8:30 am

8:30-9:20 am **Session: 69**
Dakota G **Feb. 6, 2016**
Grade Level: 9-12

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

Notice & Wonder
"What do you notice?" and "What do you wonder?" are two questions mathematics teachers have used to engage their students. Matt and Larry will apply this pedagogic technique in three science specific situations: end of chapter problems, videos, and demonstrations.

8:30-9:20 am **Session: 70**
Dakota H **Feb. 6, 2016**
Grade Level: 9-12

Presenters: Sharon Vestal & Chris Larson
SDSU
Sharon.vestal@sdstate.edu

UMP: FUNctions--Inverses, Logs, & Exponentials
This session is part of the Using Mathematical Practices follow-up workshop funded by a SD Board of Regents Title II grant. We will investigate properties of inverse functions, focusing on logarithmic and exponential functions.

8:30-9:20 am **Session: 71**
Salon I **Feb. 6, 2016**
Grade Level: All

Presenters: Allen Hogie & Ramona Lundberg
PAEMST Coordinators
Allen.Hogie@k12.sd.us

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: 72**
Prairie A **Feb. 6, 2016**
Grade Level: 6-8

FEATURED SPEAKER
Tom Reardon
TEXAS INSTRUMENTS

Building Concepts in Grades 6-8: Fractions, Expressions, Equations
We will explore a set of interactive lessons designed to engage students and introduce new ways to think about and discuss important mathematical concepts. Get hands-on experience with interactive activities that illustrate a developmental trajectory of fractions, expressions, and equations. In color! Access to these free activities will be shared.

9:30-10:20 am **Session: 73**
Prairie C **Feb. 6, 2016**

Grade Level: 9-12 **Repeat of Session 5**

Presenters: Liz McMillan & Jeff Lukens
The Sanford PROMISE
SanfordOutreach@sanfordhealth.org
http://stembehindhealth.com

TI-Nspire: STEM Behind Health
Sanford Research and Texas Instruments have partnered to create STEM Behind Health, a series of activities designed to introduce students to the science and math in various STEM careers in healthcare. Activities are based around type 1 diabetes, breast cancer, clinical and laboratory research. Participants can explore activities on the Ti-Nspire hand-helds in this session. Math teachers welcomed!

Saturday 9:30 am

9:30-10:20 am **Session: 74**
Dakota A **Feb. 6, 2016**
Grade Level: 7-12

Presenter: Jamalee Stone
BHSU
jami.stone@bhsu.edu

Principles to Action in a 7-12 Math Methods Class
Principles to Actions: Ensuring Mathematical Success for All clarifies the conditions, structures, and policies needed to promote conditions for all students to be successful in mathematics. Learn how this book can be used as a resource to foster secondary pre-service math teachers' competency in teaching, learning, and other essential elements of education.

9:30-10:20 am **Session: 75**
Dakota B **Feb. 6, 2016**
Grade Level: 6-12

Presenter: Julie Olson
Mitchell Senior High/Sanford Research SERF
Julie.Olson@k12.sd.us

Phenomena to Engage Students in Argumentation
Learn techniques to engage students in the scientific process of argumentation--found in the SD Science Standards.

9:30-10:20 am **Session: 76**
Dakota C **Feb. 6, 2016**
Grade Level: 6-8 **Repeat of Sesion 8**

Presenter: Michelle Bartels; Hamlin School
Michelle.Bartels@k12.sd.us
http://sites.google.com/site/bartelsscience/

Some Technology Resources for the Classroom
My observation is that students love technology. Why not incorporate some technology in your classroom? I would like to share some of the technology resources I have used in my classroom and if you have technology ideas to use, please share.

Saturday 9:30 am

9:30-10:20 am **Session: 76.5**
Dakota D **Feb. 6, 2016**
Grade Level: K-5 **Repeat of Session 51.5**

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

Math Fair
Have fun with math! We've all heard of Science Fairs. . .but what about a Math Fair. Come and get some ideas for a math fair that you can easily customize to your school

9:30-10:20 am **Session: 76.7**
Dakota E **Feb. 6, 2016**
Grade Level: 6-8

Presenter: Sheri Mack
West Central
Sheri.Mack@k12.sd.us

Students Learning English as a New Language
Math and science teaching stragies for students learning English as a new language.

9:30-10:20 am **Session: 76.9**
Dakota F **Feb. 6, 2016**
Grade Level: 9-12

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

Heavy Lifting: A NASA Design Squad Challenge 2
In Part 2 of this activity participants will compare crane designs from the previous session in terms of the scientific principles and engineering practices involved. Participants will also have the opportunity to work withK'NEX kit models of simple machines.

Saturday 9:30 am

9:30-10:20 am **Session: 77**
Dakota H **Feb. 6, 2016**
Grade Level: 9-12

Presenters: Sharon Vestal & Chris Larson
SDSU
Sharon.Vestal@sdstate.edu

UMP: FUNdamentals of Graphing
This session is part of the Using Mathematical Practices follow-up workshop funded by a SD Board of Regents Title II grant. Come join us as we explore transformations of graphs, both using technology and without technology.

Saturday 10:30 am

10:30-11:20 am **Session: 78**
Prairie B **Feb. 6, 2016**
Grade Level: 6-8

FEATURED SPEAKER
Don Balka
Saint Mary's College; Didax
donbalka@sprintmail.com
http://www.mathleadership.com

Games and Activities for Pre-Algebra and Algebra
Participants will be involved with algebra games and activities for order of operations, integer arighmetic, operations on monomials and binomials, solving linear and quadratic equations. They will use cards, dice, two-color counters, and number tiles for concepts in Grades 6-9.

Saturday 10:30 am

10:30-11:20 am **Session: 78.3**
Prairie C **Feb. 6, 2016**
Grade Level:

Presenter: Sonya McNamara
Project Lead the Way
sonyakmcnamara@WestCentralPLTW

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.

10:30-11:20 am **Session: 78.5**
Dakota A **Feb. 6, 2016**
Grade Level: 9-12

Presenters: Peggy Norris & June Apaza
Sanford Underground Research Facility/BHSU
pnorris@sanfordlab.org
http://www.sanfordlab.org

Connecting Sanford Lab Science to the Classroom
The E & O Department at Sanford Lab is piloting curriculum units featuring Sanford Lab science and aligned with the new state science standards. The units are hands-on and inquiry-based. This workshop will feature activities from two 10-day high school units: "Perplexing Puddles" and "We are Made of Starstuff".

Did you miss a handout?
The presenter may have posted it on our Conference Wiki

Saturday 10:30 am

10:30-11:20 am **Session: 79**
Dakota B **Feb. 6, 2016**
Grade Level: K-5

Presenter: Julie Olson
Mitchell HS
Julie.Olson@k12.sd.us

Squishy Circuits/Paper Circuits
Learn how to teach basic electricity with play dough, paper, LED's and button batteries.

10:30-11:20 am **Session: 80**
Dakota C **Feb. 6, 2016**
Grade Level: 9-12

Presidential Series Jay Berglund
Gettysburg High School
Jay.Berglund@k12.sd.us

Barbie Bungee Jumping
Participate in a classroom activity to create a mathematical model needed to design a bungee jump for a Barbie doll using rubber bands for the bungee cord.

10:30-11:20 am **Session: 80.5**
Dakota D **Feb. 6, 2016**
Grade Level: 9-12

Presenter: Liz McMillan
The Sanford PROMISE
SanfordOutreach@sanfordhealth.org
http://www.sanfordresearch.org/education

Private Session:Genetics Ed Workshop Follow-up
Participants in the summer 2015 Ed Enrichment Workshop at Sanford Research will meet to discuss the implications of receiving their direct to consumer genetic information of their classroom practice in genetics.

Saturday 10:30 am

10:30-11:20 am **Session: 81**
Dakota E **Feb. 6, 2016**
Grade Level: 9-12

Presenters: Jeff Schneider & Mary EK Schneider & Heather Kellert
SD Innovation Lab
jschneider@sdinnovationlab.org
http://sdinnovationlab.org/

Science, Math and Humanities? Sure why not?
Blending 4 content areas using SD Science Standards and common core in a demonstration of a Hybrid Teacher Model designed to provide credits to students in Humanities, Math, and Science via Transdisciplinary Problem Based Learning. The class is innovative, standards driven, and customized. Session will include a demonstration of the virtual presence robot (Double) and class-flipping tool, Swivl.

10:30-11:20 am **Session: 81.5**
Dakota F **Feb. 6, 2016**
Grade Level: 9-12

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

Cooking with the Sun-Creating a Solar Oven Part 1
Solar ovens are used worldwide, providing fuel-free cooking and water decontamination especially in remote and poor regions of the world. In Part 1 of this session, participants will design and build a solar oven. This activity will utilize the scientific concepts of heat transfer and materials science.

Saturday 10:30 am

10:30-11:20 am **Session: 82**
Dakota G **Feb. 6, 2016**
Grade Level: 6-8

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

Chemical Magic
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.

10:30-11:20 am **Session: 83**
Dakota H **Feb. 6, 2016**
Grade Level: 6-8

Presenters: Chris Larson & Sharon Vestal
SDSU
Christine.Larson@sdstate.edu

Using Mathematical Practices:
FUN with Fractions 1
This session is part of the Using Mathematical Practices follow-up workshop funded by a SD Board of Regents Title II grant. We will explore activities that can be used to develop a deeper conceptual understanding of fractions and decimals, focusing on addition & subtraction.

Have you checked out
"Share the Classroom Treasures"?
Stop in Salon I and see what is there.
At 2:30 pm today,
these treasures become trash!

Saturday 11:30 am

11:30-12:20 pm **Session: 85**
Dakota B **Feb. 6, 2016**
Grade Level: 9-12 **Repeat of Session 18**

Presenters: Dr. James Rice & Phillip Huebner
SD EPSCOR
Phillip.Huebner@sdstate.edu
http://sdepscor.org

Resources and Opportunities through SD EPSCoR
Maximizing efforts in interest and retention of students in pursuing STEM careers requires engaging students early to foster their interest in STEM. SD EPSCoR provides numerous resources and support to schools, teachers, and students. This session will outline the philsophy of the SD EPSCoR program, its current efforts, and its resources.

11:30-12:20 pm **Session: 86**
Dakota C **Feb. 6, 2016**
Grade Level: 9-12

Presidential Series Jay Berglund
Gettysburg High School
Jay.Berglund@k12.sd.us

Programming the TI-84
Basic programming on the TI-84 calculator. Use programming to reinforce logical thinking, formula usage, and a deeper understanding of algorithmic calculations. Using TI Connect for programming will also be included.

Saturday 11:30 am

11:30-12:20 pm **Session: 87.5**
Dakota F **Feb. 6, 2016**
Grade Level: 6-12

Presenters: Judy Vondruska & Suzette Burckhard; SDSU
Judy.Vondruska@sdstate.edu
http://etfworkshop.wikispaces.com

Cooking with the Sun-Creating a Solar Oven Part 2
In Part 2 of this session participants will test previously created solar ovens for thermal loss, heat-up time, and heat concentration. The scientific principles of radiation, conduction, convection and insulation will be used to better understand the efficiency of the various designs.

11:30-12:20 pm **Session: 88**
Dakota G **Feb. 6, 2016**
Grade Level: 6-8

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.

11:30-12:20 pm **Session: 89**
Dakota H **Feb. 6, 2016**
Grade Level: 6-8

Presenters: Chris Larson & Sharon Vestal; SDSU
Christine.Larson@sdstate.edu

Using Mathematical Practices:
FUN with Fractions 2
This session is part of the Using Mathematical Practices follow-up workshop funded by a SD Board of Regents Title II grant. We will explore activities that can be used to develop a deeper conceptual understanding of fractions and decimals, focusing on addition & subtraction.

Saturday 12:30 pm

12:30-1:30 pm **Session: 90**
Prairie A, B, & C **Feb. 6, 2016**
Grade Level: All

Presenters: Julie Olson & Cindy Kroon
SDSTA & SDCTM

LUNCH

Saturday 1:30 pm

1:30-2:20 pm **Session: 90.5**
Prairie C **Feb. 6, 2016**
Grade Level: 9-12 **Repeat of Session 36**

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

Hands-on Geometry - on a budget
I use straws, pasta noodles and even play dough in my Geometry classes. In this session, I will share (cheap) ideas for making manipulatives that help students visualize concepts from high school geometry.

1:30-2:20 pm **Session: 91**
Dakota A **Feb. 6, 2016**
Grade Level: 6-8

Presenter: Steven Rokusek
South Dakota Public Broadcasting
Steven.Rokusek@state.sd.us
http://sdpb.org/learn

Science: In the Classroom. At Home…Everywhere!
During this session participants will learn about five science activities that will encourage the children in their care to think about (live) science in the classroom and at home. The activities covered during the session will focus on both life and physical science topics. Your students will love these interactive activities.

Saturday 1:30 pm

1:30-2:20 pm **Session: 92**
Dakota C **Feb. 6, 2016**
Grade Level: 6-8

Presenter: Gary T. Nelson
Georgia Gwinnett College
garynelson@hotmail.com

Teach with Passion, Manage with Compassion
Time, it has been said, is the coin of learning, yet every teacher has known the frustration of losing valuable learning time to matters of discipline. For some teachers and students, the amount of time lost is great. The presenter will share strategies that are proven to restore that lost time to teachers and students in a way that is simple, fair, and mutually respectful.

1:30-2:20 pm **Session: 94**
Dakota E **Feb. 6, 2016**
Grade Level: K-5

Presenter: Denise Heisinger
John Paul II Elementary
Denise.Heisinger@k12.sd.us
http://mrsheisinger.weebly.com

Prodigy Math
Prodigy is an online program that provides students with grade level math questions in a gaming based format. Prodigy also provides teachers the ability to assign standard based questions aligned to Common Core State Standard. Prodigy also allows teachers to monitor student progress through several different report features.

1:30-2:20 pm **Session: 94.5**
Dakota F **Feb. 6, 2016**
Grade Level: 9-12

Presenters: Judy Vondruska & Suzette Burckhard; SDSU
Judy.Vondruska@sdstate.edu
http://etfworkshop.wikispaces.com

Using a 3D Printer
This session is intended for participants who took part in the "Engineering the Future 2015" workshop at SDSU this past summer. Participants will learn how to design and program a 3D printer and ways to incorporate 3D printing into their classrooms.

Saturday 1:30 pm

1:30-2:20 pm **Session: 95**
Dakota G **Feb. 6, 2016**

Grade Level: 9-12

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

Demos to Spark Their Interest?!
From burning carpets and chocolate, to melting plastic and oxygen accelerated explosions, we never know what will go wrong. Bring your safety glasses, hearing protection, and fire extinguishers just in case we have another disaster (honestly, it's Matt's fault ;-).

Saturday 2:30 pm

2:30-3:20 pm **Session: 96**
Dakota C **Feb. 6, 2016**

Grade Level: All

Presenter: Cindy Kroon
SDCTM

Conference Wrap up
Math Round Table to discuss the conference

2:30-3:20 pm **Session: 97**
Dakota A **Feb. 6, 2016**
Grade Level: All

Presenter: Julie Olson
SDSTA

Conference Wrap UP
Science Round Table to discuss the conference.

Saturday 4:00 pm

4:00 pm- **Session: 98**
Board Room **Feb. 6, 2016**

Presenter: Jean Gomer
SDSTA/SDCTM

Joint Board Meeting
This last session is for Science and Math Officers to review/discuss the comments, presenters, vendors, and other events of the conference.

Participants:

Thank you
for helping us make this
conference great!

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

AEOP (NSTA)	**Cheryl Long**	
Core Educational Solutions	**Randy Brooks**	
CPM Educational Program	**Sharon Rendon**	**Bob Petersen**
Division of Career and Technical Education	**Michelle Nelson**	**Jane Gubrud**
Go Inspire! Nerd Nook	**Carrie Leopold**	
Great Minds	**Tanika Majette**	
McGraw-Hill	**Carol Heisel**	
National Science Teachers Association	**Mary Colson**	
NCSM Math Ed Leadership	**Sharon Rendon**	
ORIGO Education	**Vikki Lange**	
RhizoDive:	**Carl Fellbaum**	
Sanford Health	**Andrew Cardillo**	
SDSU Mathematics Dept	**Donna Flint**	
SD Department of Transportation TRAC Program	**Ann Campbell**	**Naomi Fossum**
South Dakota Discovery Center	**Anne Lewis**	
Technology and Innovation in Education	**Marcia Torgrude**	**LuAnn Lindskov**

***Thanks to all Vendors for their donations of door prize, including Carolina Biological's $100 gift certificate**

*Name Tag Lanyards are compliments of Sanford PROMISE

*Thank you to Educational Innovations for the UV zipper pulls

South Dakota Science Teachers Association Business Meeting
will be held in Dakota G
at 4:30 pm on Friday, February 5, 2016

SD Council of Teachers of Mathematics Business Meeting
will be held in Dakota C
at 4:30 pm on Friday, February 5, 2016

Graduate Credit

Conference credit will be offered through Dakota Wesleyan University. You may register for one hour of credit at the 499 or 599 level.. Attendance at a sharing session is required to earn graduate credit from Dakota Wesleyan University. There will be personnel available to register you for the credit on Thursday night from 7:00 to 9:00 pm, and on Friday morning from 7:30 to 8:30 am. Check in the hotel lobby for the DWU table. A syllabus listing course requirements will be available at the time of registration. For more information, contact Rocky Von Eye at (605) 995-2625.

Next year's conference will be **February 2, 3, & 4, 2017**

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2016 Mathematics and Science Conference
SDSTA & SDCTM

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

Content Area:	Math	Science	Both
Grade Band:	Elementary	Middle School	High School

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

What made it (or them) good?

Were there any presentations that disappointed you?

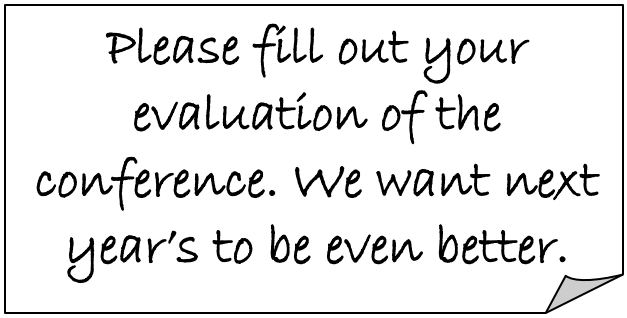
Please give us your overall assessment of the conference along with any comments you would like to share.

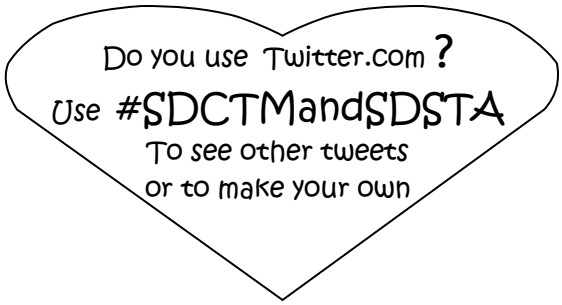
Detach and fill in the following for a final prize to be sent after the conference. To register for the prize turn in this entry along with your evaluation form.

_____
Name

_____
Address

_____
City, State, Zip Code





https://2016-sdctm-sdsta-pdc.wikispaces.com/

The 2016 Conference Committee would like to offer a Special Thanks to …

Dakota Weslyan University and Rocky Von Eye for handling the credit.

Coke for helping provide refreshments throughout the conference.

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

All exhibitors for their enthusiastic participation.

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

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

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

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

Next year's conference will be **February 2, 3, & 4, 2017.**

The 2016 Spring Conference is a joint venture of the South Dakota Science Teachers Association (SDSTA) and the South Dakota Council of Teachers of Mathematics (SDCTM)

Note: There is a common registration form for the conferences. One form is used to register for all activities, including SDSTA and SDCTM memberships.

ONE-day (SDCTM or SDSTA members) includes the Noon Luncheon for that day	$50	Non-members	$100	Students $15
TWO-day (SDCTM or SDSTA members) includes the Noon Luncheon for both days	$75	Non-members	$125	Students $25

The Friday Night Banquet is **NOT** included in the registration fee. A ticket for the banquet may be obtained at an additional cost of **$25**.

Because of a limited printing budget, the program was available in advance at the SDCTM website [www.sdctm.org] or SDSTA web site [www.sdsta.org]. Printed programs were not mailed, but were distributed on site with the registration materials.

DAKOTA H
DAKOTA G
DAKOTA F
DAKOTA E
DAKOTA D
DAKOTA C
DAKOTA B
DAKOTA A
(PRAIRIE C)
(PRAIRIE B)
(PRAIRIE A)
Share the Classroom Treasures
Salon
Symposium
BoardRoom
(Speakers)
Conference Registration
Hall of Exhibits & Vendors
Elevator
MEN'S RESTROOM
WOMEN'S RESTROOM
HURON CROSSROADS AND EVENT CENTER
PLAZA
MEN'S RESTROOM
WOMEN'S RESTROOM
HURON EVENT CENTER