

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

# February 7, 8, & 9, 2013 Crossroads Hotel-Huron Event Center Huron, SD

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Graduate Credit is available through DWU-Mitchell.				
Next year's conference will be <b>February 6, 7, &amp; 8, 2014.</b>				

# Featured Speakers



## BANQUET SPEAKER — Elaine Doll-Dunn

Life is a Marathon, so Double Tie Your Shoes. In 2008 Elaine was the recipient of the Spirit of Dakota Award. The Spirit of Dakota Award Society annually honors one woman, whose leadership qualities, courage, strength of character, and community commitment illustrate the best of South Dakota womanhood. As a ranch girl, Elaine learned at an early age that girls can do anything. She was privileged to live in the shadow of that great shrine of democracy-Mount Rushmore-the plains and hills where Captain Dunbar danced with his wolf. She was born in a small Nebraska town, moved to the Standing Rock Indian Reservation near Wakapala, and spent her elementary years in a one-room country school, where she rode her pony to and from school every day. And, yes, it was uphill and into the wind.

The boundless prairie is a good place to get to know one's self; herding sheep, rounding up cattle, basking in the SD sun, and graduating from Buffalo HS and subsequently Black Hills Teacher's College. Her passions have taken her on some interesting journeys, including launching an all women's marathon...but her greatest thrill is still getting the "Ah ha!" from any age student.

### OTHER FEATURED SPEAKERS

Martha Hildebrandt has a wide background in Mathematics Education. Her education includes a BS from Wheaton College and a MA & Ph.D from Northwestern University both in Illinois. She has been a Mathematics Consultant for grades K-6 and Middle School Department Chairman as well as having taught math at the middle school, high school and college levels. She is a frequent speaker at area teacher workshops and conducts classes for gifted elementary students as well.

Ron Lancaster taught middle and high school mathematics for over 20 years and is now a Senior Lecturer in Mathematics Education at Ontario Institute for Studies in Education of the University of Toronto. He also works as a math consultant for international, private & public schools, educational organizations, and technology companies. Ron sees math everywhere and never leaves home without his pair of math glasses and camera so he's always ready to snap photos of numbers, patterns, shapes, solids, curves and shadows.

Tom Warner grew up in northern California and received his BS degree in Atmospheric Science at UC-Davis. While spending nine years as a pilot for the US Air Force, he came to Rapid City to fly B-1 bombers at Ellsworth. After leaving the Air Force, he was hired as a pilot for the T-28 Storm Penetrating Aircraft for the Institute of Atmospheric Sciences. Tom received his Masters degree in Atmospheric Science from SDSMT. In 2004, he witnessed an upward lightning flash from a tower in Rapid City and has been studying this type of lightning since. He started using high-speed digital cameras to record lightning. Some of his work has been featured on Discovery, National Geographic & the Weather channels.

John Warner and Amy Canon - John and Amy are pioneers in the field of green chemistry and have co-founded Beyond Benign. John is widely considered one of the world's leading experts in designing safer products and processes. He received his education at University of Massachusetts Boston and Princeton. He spent the next 20 years researching and educating professionals in green chemistry. John has recently launched an independent research institute, The Warner Babcock Institute, aimed at working closely with industries to provide green chemistry technologies for the marketplace. Amy holds the world's first Ph.D. in Green Chemistry from the Univ. of Mass. where her research involved the environmentally benign synthesis of photoactive materials. Amy has worked at the Center for Green Chemistry at the U of M Lowell, as an analytical chemist for the Gillette Company, and as a scientist for Rohm and Haas Electronic Materials. Her interests are in green chemistry education and research around safer green chemistry alternative technologies.

David and Christine Vernier - After graduating from Ohio State University, Dave taught high school physics and physical science. His biggest challenge was keeping his students engaged in science. He found that he could hold their attention through a combination of daily demonstrations and highly creative, interactive labs. During the summer, Dave had time to program and tinker with software applications he'd been using in his classes, which helped his students see real-life data and scientific phenomena in real time. The tools Dave used in his earliest classes were the basis for what was to become Vernier's core curriculum of physics and science products. Today, Dave's years in the classroom continue to guide the development of all of Vernier's products. Dave and wife/co-founder, Christine, remain mindful of the unique needs of educators, developing curriculum and products, including data-collection software, sensors, and interfaces that are dynamic and relevant for students, yet are easy for teachers to use. As Christine Vernier puts it, "Our goal is to make sure teachers have what they need, when they need it, along with the best support we can provide."

# 2013 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**

7:00 PM - 9:00 PM	Thursday, February 7, 2013 Evening Sessions	(See Program)
7:00 AM - 4:20 PM	Friday, February 8, 2013 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 Sponsored by Think Through Math & Dr. Arnio	Pre-Function Area 's Learning Solutions
7:00 PM	Friday Evening Banquet (Cost is \$25)	Prairie A, B, C
	Saturday, February 9, 2013	
7:00 AM - 11:20 AM 7:00 AM - 8:00 AM	Registration Open Breakfast Meeting Presidential Awardees (Past & Prese	Pre-Function Area Salon nt)
8:30 AM - 11:20 AM	Morning Sessions	(See Program)
12:00 Noon - 1:00 PM	Saturday Luncheon (cost included in the registration fee)	Prairie A, B, C
1:00 PM - 3:50 PM	Afternoon Sessions	(See Program)
4:00 PM	Joint SDCTM & SDSTA Executive Board Meeting	Boardroom

# SDSTA/SDCTM Joint Conference 2013 Planner

Thursday, Feb. 7, 2013			
	First Choice	Second Choice	
	Session #:	Session #:	
7:00 PM	Location:	Location:	
	Title:	Title:	

Friday, Feb. 8, 2013				
	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:		
	Session #:	Session #:		
9:30 AM	Location:	Location:		
	Title:	Title:		
	Session #:	Session #:		
10:30 AM	Location:	Location:		
	Title:	Title:		
Noon	Friday Noon Luncheon in Crossroads Hotel - Prairie A, B, C			
1:30 PM	Session #:	Session #:		
	Location:	Location:		
	Title:	Title:		
	Session #:	Session #:		
2:30 PM	Location:	Location:		
	Title:	Title:		
	Session #:	Session #:		
3:30 PM	Location:	Location:		
	Title:	Title:		
4:30 PM SDCTM BUSINESS MEETING in Dakota C				
	SDSTA BUSINESS MEETING in Dakota G			
5:30	Social hour Sponsored by Think Through Math & Dr. Arnio's Learning Solutions			
7 PM	Friday Night Banquet in Prairie Ballrooms A, B, C			
(Banquet Tickets Required-Cost is \$25)				

	Sat	urday, Feb. 9, 2013	
	First Choice	Second Choice	
8:30 AM	Session #:	Session #:	
	Location:	Location:	
	Title:	Title:	
	Session #:	Session #:	
9:30 AM	Location:	Location:	
	Title:	Title:	
10:30 AM	Session #:	Session #:	
	Location:	Location:	
	Title:	Title:	
Noon	Saturday Noon Lu	ıncheon in Crossroads Hotel – Prairie A, B, C	
	Session #:	Session #:	
1:00 PM	Location:	Location:	
	Title:	Title:	
2:00 PM	Session #:	Session #:	
	Location:	Location:	
	Title:	Title:	
3:00 PM	Session #:	Session #:	
	Location:	Location:	
	Title:	Title:	
4:00 PM	SDCTM & SDSTA JOINT BOARD MEETING IN THE BOARDROOM		

# Program for 2013 Joint Conference

Special thanks for helping make our conference a success go to: TIE for the projectors, and to Learning Solutions for the Social Hour.

# Thursday 7 pm

7:00-9:00 pm Session: 1 Dakota C Feb. 7, 2013

Grade Level: All

Presenter: Jay Berglund

**SDCTM President** 

### **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. 7, 2013

Grade Level: All

**Presenter: Julie Olson** 

**SDSTA President-elect** 

### **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

8:30-9:20 am Session: 3 Prairie A Feb. 8, 2013

**Duplicate of 39** 

Grade Level: 6-12

### FEATURED SPEAKER

Ron Lancaster
Ontario Institute
ron2718@nas.net

# The Mathematical Lens: Using photographs and videos as a springboard for mathematical inquiry

The focus of this talk will be on taking photographs and videos of the mathematics that we encounter on a daily basis and using these images as the basis of engaging mathematical questions for students. A benefit for students is they become accustomed to seeing and thinking about mathematics everywhere.

# Friday 8:30 am

8:30-10:20 am Session: 4 Prairie B Feb. 8, 2013

Grade Level: K-5

FEATURED SPEAKER Martha Hildebrandt

Chatham University mhildebrandt@chatham.edu

Parents and Children: Playing Games

Are you looking for ways to partner with parents in the educational process? Do you want to engage parents in meaningful, fun activities that will strengthen math skills? Explore exciting games that encourage counting, estimation, facts and logical thinking to be played anytime, anywhere, even in the busiest of lives.

8:30-9:20 am Session: 4.5 Prairie C Feb. 8, 2013

Grade Level: 9-12

Presenter: Mick Zeman, Melissa Johnson & Students from NTHS

New Technology High School, SF, SD Michael.Zeman@k12.sd.us

### **Energy--A PBL Approach**

Students prepared energy plans for South Dakota based on research, interviews, and data analysis. The final product consisted of a written proposal with a persuasive presentation. The project was built around Physics standards involving energy and Algebra II standards involving dimensional analysis and data analysis.

# Friday 8:30 am

8:30-9:20 am Session: 5 Dakota A Feb. 8, 2013

Grade Level: 9-12

**Presenter: Sharon Rendon** 

& Julie Jackson

RCAS/CPM rendon@cpm.org

# Effective Collaborative Learning in Secondary Schools

How do we teach more students more rigorous mathematics--equitably? The CCSS standards for mathematical practice come to life in a classroom where students collaborate and are engaged in meaningful mathematics. In this session participants will discuss and practice strategies to use group work effectively to create this student centered learning environment.

# SOCIAL HOUR

FRIDAY 5:30-6:45

Free food, drink, and a chance to talk with other teachers

sponsored by

# THINK THROUGH MATH



and

Dr. Arnio's Learning Solutions

8:30-9:20 am Dakota B Session: 6 Feb. 8, 2013

8:30 am

Friday 8:30-9:20 am Dakota D

Grade Level: K-5

8:30 am Session: 8 Feb. 8, 2013

Grade Level: 9-12

**Presenter: Jan Martin** 

SD Department of Education jan.martin@state.sd.us

Presenter: Tracy Mittleider
RightStart Mathematics

RightStart Mathematics
Tracy@RightStartMath.com
http://RightStartMath.com

# Are Our 12th Graders Ready for College Science?

In 2009, 12th grade students from across the nation participated in a science assessment that included interactive computer tasks. The session will provide participants with access to the tasks and the scoring process so that students can use the tasks in the classroom. In addition, the session will examine student results as they relate to college readiness.

# Using Math Card Games to Involve Families in Practicing Math Skills

Memorizing 390 math facts is exhausting. Sadly, whatever is learned by rote needs frequent review. On the other hand, games are fun and exciting, games provide practice for the facts, and games become an application for the information! Children of various abilities can play addition, multiplication, and fraction games together.

8:30-9:20 am Dakota C

Session: 7 Feb. 8, 2013 8:30-9:20 am Dakota E Session: 9 Feb. 8, 2013

Grade Level: 6-8

**Presenter: Anne Lewis** 

SD Discovery Center annelewis@sd-discovery.com http://www.sd-discovery.com Grade Level: 9-12

Presenter: Judy Vondruska

SDSU

judy.vondruska@sdstate.edu

#### **Fun with Carbon and Climate**

The new framework for science education calls for more instruction on climate than ever. Explore activities to help your students understand the science about how carbon functions in the atmosphere.

# Using iPads in the Science Classroom

There are numerous apps available to help learn science and participants in this session will explore a variety of them. The session will also focus on implementation of iPad use into the classroom, reviewing what has worked and what has not. Bring an iPad if you have one! This session is also appropriate for teachers of grades 6-8.

8:30 am

Friday

9:30 am

8:30-9:20 am Dakota F Session: 10 Feb. 8, 2013

Grade Level: 6-8

Presenter: Barbara Glanzer

Aberdeen Central HS barb.glanzer@k12.sd.us

# Multiple Learning Styles in the MS Math Classroom

Wondering how to get your bodily/kinesthetic learners interested in math? Looking for ways to add music to the mix? Incorporating multiple learning styles into your lessons will help students relate to the math and transfer to long term memory. Be prepared to move, sing, dance, and play as we interact with some math.

8:30-9:20 am Session: 11 Dakota G Feb. 8, 2013

Grade Level: 9-12

**Presenter: Larry Browning** 

& Tiffany Kroeger SDSU & Montrose HS Larry.Browning@sdstate.edu http://seti-2.wikispaces.com/

# Microscopes for Classroom Use-BUILDING

A compound/projection microscope made of PVC parts will be constructed by participants in this session. Materials for 30 will be provided. This microscope was developed for the NCLB/Title II sponsored SETI<sup>2</sup> workshop held at Tiospa Zina in August 2012.

9:30-10:20 am Session: 12 Prairie A Feb. 8. 2013

**Duplicate of 48** 

Grade Level: 6-12

#### **FEATURED SPEAKER**

Ron Lancaster
Ontario Institute
ron2718@nas.net

# Housekeeper and the Professor: Teaching Mathematics with fiction and film

The Housekeeper and the Professor, a novel by Yoko Ogawa, and movie based on the book, both tell a touching story about memory, family, and a boy with a flat head named Root who grows up to be a math teacher. This talk will appeal to teachers wanting to use fiction and film to teach patterning, algebra, geometry, elementary number theory, rational and irrational numbers, proofs, and complex numbers.

# DO YOU HAVE A BANQUET TICKET?

The Speaker is Elaine Doll Dunn. Her topic is "Life is a Marathon, so Double Tie Your Shoes."

Starts at 7:00 pm

See Steve Caron to purchase a ticket.

Buy by noon today!

9:30 am

**Friday** 

Dakota A

9:30 am

Session: 14 Feb. 8, 2013

9:30-10:20 am

**Prairie C** 

Session: 13 Feb. 8. 2013

Duplicate of 94

Grade Level: 9-12

9:30-10:20 am

Grade Level: 9-12

Presenter: Samra Trask

Wall School District Samra.Trask@k12.sd.us

# FEATURED SPEAKER

Tom Warner

SD School of Mines and Technology tom.warner@ztresearch.com http://www.ztresearch.com

### Blackboard Learn + Math = AWESOME

Tired of students sharpening pencils during class? Go electronic with Blackboard Lean. This is a free site available to educators in South Dakota. Get some fun techniques for building content and hosting a class on this versatile site. Works best with tablets.

# Electrify Your Teaching with Lightning

High-speed digital cameras operating at up to 100,000 images per second have provided new insight in the development and behavior of lightning. This presentation shares the latest understanding in lightning physics based on these new observations and discusses implications for lightning hazards and safety.

9:30-10:20 am Session: 15 Dakota B Feb. 8, 2013

Grade Level: K-5

Presenter: Jan Martin

SD Department of Education jan.martin@state.sd.us

# Have you checked out "Share the Classroom Treasures"?

Stop in Salon I and see what is there.

#### Are You Smarter Than a 4th Grader?

In 2009, 4th grade students from across the nation participated in a science assessment that included interactive computer tasks. The session will provide participants with access to the tasks and the scoring process so that students can use the tasks in the classroom. Bring a laptop and come do the tasks and see how you compare to the students.

9:30 am

Friday

9:30 am

9:30-10:20 am Dakota C

Grade Level: 6-12

Session: 16 Feb. 8, 2013

Dakota D

9:30-10:20 am

Session: 17 Feb. 8, 2013

ט

Duplicate of 68

Grade Level: All

Presenter:

Sam Shaw

SD Department of Education sam.shaw@state.sd.us http://nextgenscience.org

#### Next Generation Science Standards I

This hour block will be reserved for teachers to come in and submit a final review of the Next Generation Science Standards. Sam Shaw will guide the audience through the creation process, the architecture of the standards, and expectations for the review. Teachers will then provide feedback to the standards writing process and also for SD to consider in regard to adoption.

**Presenter: Anne Lewis** 

**SD Discovery Center** 

annelewis@sd-discovery.com http://www.sd-discovery.com

### **Project WET 2.0!**

Project WET 2.0 has new activities, online support resources and a brighter, more colorful look in version 2.0. This research based curricular resource will equip you to teach about all aspects of water in grades 6-12 using experiential, hands-on activities. Come, experience new activities and get a sneak peek at our summer field based workshop!





### Inspiring the next generation of scientists

Opportunities for:

- Educator Enrichment Workshops
- Student Discovery Programs
- Interactive Video Conferencing
- •Student & Teacher Research Experience

Check out our Info Session or SanfordResearch.org/Education Facebook.com/SanfordResearch

SANFORD

Are you taking the Conference for credit?

Did you know that you can count one hour of visiting with the vendors?

Questions?
Ask at the registration table!

9:30 am

**Friday** 

9:30 am

9:30-10:20 am

Dakota E

Session: 18 Feb. 8. 2013

Dakota G

Session: 20

Feb. 8, 2013

**Duplicate of 65** 

Grade Level: 9-12

9:30-10:20 am

Grade Level: 9-12

Presenter:

Presenter: **Brenda Merkel** 

& Tiffany Kroeger SDSU & Montrose HS

**Larry Browning** 

& Rachel Haigh-Blume **NESD AHEC** 

Larry.Browning@sdstate.edu http://seti-2.wikispaces.com/

director@nesdahec.org http://www.nesdahec.org

# Microscopes for Classroom Use-USE

Use of a "home build" compound/projection microscope made of PVC parts for

classroom use will be discussed by a teacher who has built and used them. An earlier session is devoted to building these microscopes. This microscope design was developed for the NCLB/Title II sponsored SETI<sup>2</sup> workshop held at Tiospa Zina in

August 2012.

**NESD AHEC Making Science Hands On** 

We will present on what the NESD AHEC can offer for school science and health classes to ensure that the students have hands on activities and are connected to career and professional development. We are a grant funded program developed to help schools with this sort of core education without cost to the school.

9:30-10:20 am Session: 19 Dakota F Feb. 8, 2013

Grade Level: All

**Presenter: Amanda Harris** 

**AVI Systems** 

Amanda.Harris@avisystems.com

Session: 21 9:30-10:20 am **Symposium** Feb. 8, 2013

Grade Level: 9-12

Facilitator: Dan Van Peursem, USD

Math Faculty from SD **BOR Institutions** dpeursem@usd.edu

# **Google Earth and SMART Tools**

A showcase of SMART Notebook tools to enhance Google Earth's already amazing features. Learn useful tips and tricks that can be applied to lessons in your classroom. Amanda is a SMART Certified trainer

# Discussions on Math with Higher Ed

Come discuss what is on your minds. One topic will be Smarter Balanced Assessments. Come with ideas of how K-12 can join forces with higher ed to help our students that may need remediation or college classes during their senior year of high school.

9:30 am

Friday

10:30 am

9:30-10:20 am

Session: 21.5 Feb. 8, 2013 10:30-11:20 am Session: 23 Dakota B Feb. 8, 2013

Salon II

Grade Level: 6-12

Grade Level: K-5

**Presenter: Julie Olson** 

& Tricia Neugebauer

Mitchell Senior High julie.olson@k12.sd.us

Presenter: Brenda Robertson

Whippourwill Consulting roberston.brenda@ymail.com http://whippourwill4consulting.com

## **Candy Science**

This is a general session on using candy to teach science--chromatography, pH, survival of the fittest, building design to name a few.

10:30-11:20 am

Dakota A

Session: 22 Feb. 8, 2013

Duplicate of 95

Grade Level: 9-12

Presenter:

Joe Herreman

& Sheri Mack

**East Dakota Educational Coop** 

jherreman@edec.org

#### **LIFE 101**

Mathematics. Reading. Spelling. Science. Social Studies. The list goes on and on. It seems all subject areas of life are now taught in separate time periods during the school day with little or no crossover between subject areas. This presentation will provide hands-on strategies of how we can approach the school day as we approach life--tackling the subject areas together in a more realistic approach to learning.

Lessons from Alternative Schools: Ideas for Reaching At-Risk Students

Have a student that just doesn't care?
Seeking new ideas for how to work with that student that is on the edge? Sheri and Joe will share tips and ideas they have learned for working with at risk students at McCrossan's Boys Ranch and High Impact Academy. Take home a CD of some of their favorite lesson plans.

Next Year's Conference is February 6, 7, 4 8, 2014! 

 10:30-11:20 am
 Session: 24

 Dakota C
 Feb. 8, 2013

Grade Level: 6-8

Presenter: Kristi Lutgen

& Rachelle DeBeer
Deubrook Area Schools
Kristi.Lutgen@k12.sd.us
Rachelle.DeBeer@k12.sd.us

### Anyone for a Game of Cards?

A deck of cards take on a whole new set of rules in the math classroom. We will share "games" involving integer operations, fractions, probability and measures of central tendency, all using cards. Come prepared to play!

# Friday 10:30 am

10:30-11:20 am Session: 25 Dakota D Feb. 8, 2013

**Duplicate of 79** 

Grade Level: All

Presenter: Sam Shaw

SD Department of Education sam.shaw@state.sd.us http://nextgenscience.org

#### **Next Generation Science Standards II**

FOR ALL GRADE LEVELS: Please come join us in an extensive review of the Next Generation Science Standards. This will be the last opportunity to review these standards prior to the final release in late March. A laptop computer is recommended to access the standards.

10:30-11:20 am Session: 26 Dakota E Feb. 8, 2013

Grade Level: 9-12

**Presenter: Judy Vondruska** 

SDSU

judy.vondruska@sdstate.edu http://cosmicworkshop.wikispaces.com/

# Get Your Community Involved in Citizen Science Projects

One way to improve student engagement is to make it a family affair! There are many online Citizen Science projects available for use in all science classrooms that can involve parents, siblings, and other members of the community. This session will examine several available projects and discuss methods of implementation into your school and community. This session is appropriate for grades 6-12.

# Friday 10:30 am

10:30-11:20 am Session: 27 Dakota F Feb. 8, 2013

Grade Level: All

**Presenter: Amanda Harris** 

**AVI Systems** 

Amanda.Harris@avisystems.com

#### **SMART Add Ons**

Learn how to create your own self-checking activities using SMART Notebook 11's new Add On tab. The Activity Builder application can turn any lesson into an activity.

10:30-11:20 am Session: 28 Dakota G Feb. 8, 2013

Grade Level: All

Presenter: Matt Miller

& Sharon Vestal

SDSU

Matt.Miller@sdstate.edu

### **Meet the New Teachers**

Prospective science and mathematics teachers from all the college campuses in South Dakota will be invited to engage in a conversation with veteran teachers. The goal is to provide support for the next generation of teachers by providing advice for their future. Come with an encouraging story or success strategy to share. Session 88 will be a similar session.

Next Year's Conference is February 6, 7, 4 8, 2014!

# Friday 10:30 am

10:30-11:20 am Session: 28.5 Salon II Feb. 8, 2013

**Duplicate of 67** 

Grade Level: K-5

**Presenter: Becky Umenthum** 

South Park Elem., Rapid City Becky.Umenthum@k12.sd.us

### **Exploring Math with Art**

Learn to make three different flexagons (flat models that can be flexed or folded to reveal hidden faces). Observing what happens to their drawings as students "flex" their creations will lead to rich mathematical discussions.

# FRIDAY NOON

Noon-1:00 pm Session: 29 Prairie A, B, & C Feb. 8, 2013

Grade Level: All

Jay Berglund, SDCTM Pres. & Brenda Murphey, SDSTA Pres.

# Lunch

2011 Presidential Awardees:
Science—Paul Kuhlman
Avon High School
Math—Deborah Snook
Philip High School

# Friday 1:30 pm

1:30-2:20 pm Session: 30 Prairie A Feb. 8, 2013

**Duplicate of 63** 

Grade Level: 6-12

#### **FEATURED SPEAKER**

Ron Lancaster
Ontario Institute
ron2718@nas.net

## **Mathematical Magic Tricks**

We will learn to perform magic tricks that are based on a mathematical principle and examine how they can be used to improve students' problem-solving abilities through exploring how these tricks work.

# Friday 1:30 pm

1:30-2:20 pm Session: 31 Dakota A Feb. 8, 2013

Grade Level: 6-12

David Vernier
& Christine Vernier
Vernier Software & Technology
cvernier@vernier.com

### From Classroom to Corporation

Classroom teacher, David Vernier, wanted to incorporate technology to make data collection easier for his students. Come and hear now that idea became one of the premier data collection and analysis companies in the US.

1:30 pm

**Friday** 

1:30 pm

1:30-2:20 pm Dakota B Session: 32 Feb. 8, 2013

1:30-2:20 pm Dakota D Session: 34 Feb. 8, 2013

Grade Level: K-5

Grade Level: 6-8

Presenter: Jan Martin

SD Department of Education jan.martin@state.sd.us

& Stacy Stefani
Sioux Falls School District
Iori.stverak@k12.sd.us

Presenter: Jaime Bell, Lori Stverak,

# How Are 8th Graders Doing in Science?

# That's Not the Half of It!: Teaching Fractions for Understanding!

What are fractions? Why are they so difficult? This session will increase teachers' own understanding of fractions through discussion, exploring representations, and solving fraction problems with a variety of different manipulatives.

In 2009, 8th grade students from across the nation participated in a science assessment that included interactive computer tasks. The session will provide participants with access to the tasks and the scoring process so that students can use the tasks in the classroom. In addition, the session will provide information on how SD students did on the 2011 NAEP/TIMSS study.

1:30-2:20 pm Dakota C Session: 33 Feb. 8, 2013

1:30-2:20 pm Dakota E Session: 35 Feb. 8, 2013

Grade Level: 9-12

Presenter:

**Cindy Kroon** 

**Duplicate of 98** 

Montrose High School cindy.kroon@k12.sd.us http://ck022.k12.sd.us

SD Public Broadcasting steven.rokusek@state.sd.us http://sdpb.org/edu/

Steven Rokusek

### **Metric Madness**

Each October 10th, the geeks of the world celebrate Metric Day! (10-10 get it?!?!) Join us for an exciting round of Metric Olympics-an activity to celebrate the day with estimation, measurement, and metric calculations. But wait--there's more! Play the fabulous "Metric Madness" board game too! Activities will be hands-on and feet-on.

#### **Dissection 101**

Grade Level: 9-12

Presenter:

During this session participants will review science dissections, including the dissection of a cow eye, a sheep heart, an earth worm and a clam. The dissections will be reviewed using a newly developed video lesson series called Dissection 101.

1:30 pm

**Friday** 

1:30 pm

1:30-2:20 pm Dakota F Session: 36 Feb. 8, 2013

1:30-3:20 pm Dakota G

Grade Level: 6-8

Session: 37 Feb. 8, 2013

Grade Level: 9-12

Presenter:

**Gayle Cushenberry** 

& Paul Kuhlman

Avon HS

gayle.cushenberry@k12.sd.us

Presenter: Nicholas J. Restivo

**Mathematical Olympiads for Elem** 

nrestivo@moems.org http://www.moems.org

### Potato Osmosis and other ideas . . .

Are your students confused by osmosis or struggling to identify hypertonic, hypotonic, and isotonic solutions? This session presents a lab in which students use knowledge of osmosis to determine the sugar concentration of a potato. This lesson reinforces cell transport concepts while integrating algebra and knowledge of solution concentration. Other ideas for osmosis will also be presented.

# **Unpacking Geometry Problems from Boxes You Make**

Transform greeting cards into boxes while discovering real-life geometry problems (suitable for classroom use) and the concepts that help to solve them. We will clarify properties related to parallelograms, rectangles, squares and other quadrilaterals. Ratios, proportion, area and voume will also be visited during this interactive session.

Next Year's Conference is February 6, 7, 4 8, 2014!

Have you considered being a presenter?

Everyone here has something that they do well!

Please think about sharing with other South Dakota teachers.

 1:30-2:20 pm
 Session: 38

 Symposium
 Feb. 8, 2013

Grade Level: 9-12

Presenter: Joan Lubben

DWU

jolubben@dwu.edu

http://myweb.dwu.edu/jolubben/

### **Statistics for Science Fair Projects**

We'll learn how to impress science fair judges by using statistics correctly. Bring your laptop/tablet, your Excel software and plan on downloading a spreadsheet from my website for a practical hands-on tutorial.

2:30 pm

Friday

2:30 pm

2:30-3:20 pm

Prairie A

Session: 39 Feb. 8. 2013

Duplicate of 3

Grade Level: 6-12

### **FEATURED SPEAKER**

**Ron Lancaster** 

Ontario Institute ron2718@nas.net

# The Mathematical Lens: Using photographs and videos as a springboard for mathematical inquiry

The focus of this talk will be on taking photographs and videos of the mathematics that we encounter on a daily basis and using these images as the basis of engaging mathematical questions for students. A benefit for students is they become accustomed to seeing and thinking about mathematics everywhere.

# **SOCIAL HOUR**

FRIDAY 5:30-6:45

Free food, drink, and a chance to talk with other teachers sponsored by

THINK THROUGH MATH

and

Dr. Arnio's Learning Solutions

2:30-3:20 pm Session: 40 Prairie B Feb. 8, 2013

Grade Level: 9-12

# FEATURED SPEAKER Martha Hildebrandt

Chatham University mhildebrandt@chatham.edu

#### **Numbers Are Not Isolated Incidents**

Do your students see numbers in context, or only as isolated incidents? Join us as we explore number series that are encountered in the 9-12 curriculum to discover exciting patterns and amazing relationships. These engaging activities will encourage problem solving, communication and connections, and are ready for immediate classroom use.

2:30-3:20 pm Session: 41 Prairie C Feb. 8, 2013

**Duplicate of 64** 

Grade Level: 9-12

Presenter: John Warner & Amy Cannon

Beyond Benign/Warner-Babcock Institute http://www.beyondbenign,org

Beyond Benign: Green Chemistry in Education

Green chemistry is the science of creating safe, energy efficient and non-toxic products and processes. Come and learn how to bring these concepts and probem-solving methods to life in your classroom.

2:30 pm

**Friday** 

2:30-3:20 pm

2:30 pm

2:30-3:20 pm Dakota B

Session: 42

Feb. 8, 2013 Dakota D

Session: 44 Feb. 8, 2013

**Duplicate of 87** 

Grade Level: 6-8

**Duplicate of 77** 

Presenter: Briana Wirth Mitchell Middle School briana.wirth@k12.sd.us

http://google.com/site/misswirthsmathworld

Grade Level: 6-8

SD Department of Education sam.shaw@state.sd.us

http://doe.sd.gov

Presenter: Sam Shaw

### iPads in the Classroom

The iPad can be more than just a mobile possibilities to enhance classroom learning.

media gadget. The iPad offers endless Learn how iPad technology is being integrated into teaching and learning at Mitchell Middle School.

2:30-3:20 pm Session: 43 Dakota C Feb. 8, 2013

**Duplicate of 85** 

Grade Level: K-5

**Presenter: Kathy Grotta** 

**LEGO** education

kgrotta@legoeducation.us http://legoeducation.us

### **Engineering with LEGOS**

Come and explore simple machines and Physical Science principles such as gears, levers, pulley, and wheels and axles. Science standards are covered as children explore, observe, predict and use critical thinking as well as fine tune their 21st century skills of teamwork, problem solving and communication.

# 2013 Middle School Science Academy

This presentation is a brief overview of the 2013 Middle School Science Academies and to encourage registration for the training. Teachers that register for the Summer Academies will be paid to attend a 3 day training sponsored by Governor Daugaard's Investing in Teachers program. http://www.doe.sd.gov/secretary/iitscience.a spx

**SPECIAL THANKS GO TO OUR FRIENDS AT TIE FOR** PROVIDING US WITH THE **PROJECTORS USED BY OUR PRESENTERS.** 

2:30 pm

Friday

2:30 pm

2:30-3:20 pm Dakota E Session: 45 Feb. 8, 2013 2:30-3:20 pm Symposium Session: 47 Feb. 8, 2013

Grade Level: 9-12

**Presenter: David Doherty** 

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

Grade Level: 9-12

Facilitator: Tina Keller, USD

Science Faculty SD BOR Institutions Tina.Keller@usd.edu

# The Atomsmith Classroom: Using 3D Technology

As a chemistry teacher, you have images and "movies" of atoms and molecules in your head when teaching concepts such as atomic structure, bonding, periodic trends and the gas laws. The Atomsmith Classroom's physics-based 3D models bring these images to life and allow your students to conduct experiments on them.

# **Discussions on Science with Higher Ed**

Come have a discussion with Science Faculty from SD Board of Regents Institutions (USD, NSU, BHSU, SDSU, DSU, SDSMT) on science education and opportunities in the state.

2:30-3:20 pm Dakota F Session: 46 Feb. 8, 2013

**Duplicate of 80** 

Grade Level: 6-8

Presenter: Marie Steckelberg, EdD

SD Discovery Center msteckelberg@dishmail.net http://www.sd-discovery.com Don't forget the business meetings from 4:30-5:30.

Science in Dakota G

Math in Dakota C

# **Curiosity Touchdown Challenge!!**

Wanted: emerging engineers to build a craft that can land on Mars without injuring the payload or damaging the lander - no eggs involved! If you are up to the challenge, join us for the excitement!! We will also explore free NASA resources.

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

2:30 pm

Session: 48

Prairie A

2:30-3:20 pm

Feb. 8, 2013

**Duplicate of 12** 

Grade Level: 6-12

#### FEATURED SPEAKER

Ron Lancaster

Ontario Institute ron2718@nas.net

# Housekeeper and the Professor: Teaching Mathematics with fiction and film

The Housekeeper and the Professor, a novel by Yoko Ogawa, and movie based on the book, both tell a touching story about memory, family, and a boy with a flat head named Root who grows up to be a math teacher. This talk will appeal to teachers wanting to use fiction and film to teach patterning, algebra, geometry, elementary number theory, rational and irrational numbers, proofs, and complex numbers.

Next Year's Conference is February 6, 7, 48, 2014!

Have you considered being a presenter?

Everyone here has something that they do well!

Please think about sharing with other South Dakota teachers.

# Friday

3:30 pm

3:30-4:20 pm Prairie C Session: 49 Feb. 8, 2013

Grade Level: 9-12

Presenter: William Kliche

& Sharon Rendon SD DOE & Rapid City Schools william.kliche@state.sd.us

### **High School Pathways in CCSS**

This presentation will familiarize grade 8-12 Math Educators of the pathways districts can utilize in covering CCSS with traditional Algebra I-Geometry-Algebra II or the choice of the Math I, II, and III pathway Currently Rapid City is utilizing the integrated pathway and Sharon Rendon will help in sharing information on that.

3:30-4:20 pm Session: 50 Dakota A Feb. 8, 2013

Grade Level: 6-12

Presenter: Liz McMillan

Sanford PROMISE

SanfordOutreach@sanfordhealth.org http://www.sanfordresearch.org/education

# Sanford PROMISE-Programs and Opportunities

The Sanford Program for the Midwest Initiative for Science Exploration seeks to engage students and educators in high-tech, hands-on science. This presentation will provide the audience with an overview of the array of programming available and information on how to get involved.

Friday 3:30 pm

3:30-4:20 pm Session: 51 Dakota B Feb. 8, 2013

Grade Level: K-5

Presenter: Lisa Weier

Camelot Int. School-Brookings

lisa.weier@k12.sd.us http://lw117.k12.sd.us

# Using Visual Thinking Strategies in Science

"What is going on in this picture?" What do you see that makes you say this?" "What more do you see?" Learn how one image and these three little questions promote critical thinking and creativity; expand observation and clarification skills; and challenge students to hold multiple perspectives in a safe environment.

3:30-4:20 pm Session: 52 Dakota C Feb. 8, 2013

**Duplicate of 104** 

Grade Level: K-5

**Presenter: Becky Umenthum** 

South Park Elementary, Rapid City Becky.Umenthum@k12.sd.us

### **Origami for Elementary Students**

Learn to make an origami book. Incorporate geometry vocabulary as you learn to fold several squares into the same "units". Then combine the units in different ways to make cubes and other interesting shapes.

Friday 3:30 pm

3:30-4:20 pm Session: 53 Dakota D Feb. 8, 2013

Grade Level: 6-8

Presenter: Sheila McQuade

O'Gorman HS

smcquade2@sfcss.org

### **Common Core Geometry Activities**

The Common Core and the 8 Mathematical Practices promote cooperative learning and students learning through discovery. I will share some of the activities that I have used in my HS Geometry classes that can be used by anyone in grades 7 - 12 to guide students to discover and learn some very key concepts.

3:30-4:20 pm Session: 54 Dakota E Feb. 8, 2013

Grade Level: 9-12

Presenter: Paul R. Kuhlman

**Avon School** 

paul.kuhlman@k12.sd.us http://pk014.k12.sd.us

# Using YouTube and Music to Develop Critical Thinking Skills

Did you know 48 hours of video are uploaded to YouTube every minute? In addition, over 10 billion songs have been downloaded on iTunes. In this session we will explore some ways to use this content to develop critical thinking skills as well as give some extra kick to your classroom!

Friday 3:30 pm

3:30-4:20 pm Session: 55 Dakota F Feb. 8. 2013

**Duplicate of 69** 

Grade Level: 6-8

Presenter: Marie Steckelberg, EdD

SD Discovery Center mstekelberg@dishmail.net http://www.sd-discovery.com

### **Solar System Scale Models**

Building scale models of the solar system is a challenge because of the vast distances and huge size differences involved. Build and explore two models that help students understand the distances between the orbits of the planets and their size differences. Explore free NASA resources.

3:30-4:20 pm Session: 56 Dakota G Feb. 8, 2013

Grade Level: 9-12

**Presenter: James Stearns** 

SD AAPT

James.Stearns@k12.sd.us http://SDAAPT.SDSTA.org

# AD-AAPT Photo Contest & Annual Meeting

All Physics and/or Physical Science teachers are invited to the annual meeting and the final voting & 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: 57 Dakota C Feb. 8, 2013

Grade Level: All

Presenter: Jay Berglund

**SDCTM President** 

**SDCTM Business Meeting** 

4:30-5:30 pm Session: 58 Dakota G Feb. 8, 2013

Grade Level: All

**Presenter: Brenda Murphey** 

**SDSTA President** 

**SDSTA Business Meeting** 

7:00 pm--- Session: 59 Prairie A, B, & C Feb. 8, 2013

Grade Level: All

**BANQUET** 

SPEAKER: Elaine Doll Dunn

Resident of SD and the World

#### Life Is a Marathon

Life is a marathon. Uphill, downhill, sudden curves and speed bumps, all calculated to bring out the best or worst in us. The pursuit of happiness lies in courage to live, patience to persist, and tenacity to "take it on." With humor, hints, harangue, and homily. . . I dare you to dream!

# Saturday 7:00 am

7:00-8:00 am Session: 60 Library Feb. 9, 2013

**Grade Level: Awardees** 

Presenter: Diana McCann

& Ramona Lundberg
PAEMST Coordinators

**Breakfast for Awardees and Finalists** 

# Saturday 8:00 am

8:00-8:30 am Session: 61 Dakota G Feb. 9, 2013

Grade Level: 9-12

**Presenter: Larry Browning** 

SDSU

Larry.Browning@sdstate.edu

#### **Cosmic Conections**

Housekeeping for Cosmic Connections Followup????? Paperwork for participants in the summer 2012 Cosmic Connections workshop will be completed during this session.

If you were a part of Cosmic Math or

Engineering the Future
In the Summer of 2012
You should attend one of the
housekeeping sessions at 8:00 am

# Saturday 8:00 am

8:00-8:30 am Session: 62 Dakota H Feb. 9, 2013

Grade Level: 9-12

Presenter: Judy Vondruska

& Dr. Suzette Burckhard

SDSU

judy.vondruska@sdstate.edu

### **Engineering for the Future I**

Housekeeping for the ETF12 Follow up for participants who attended the Summer 2012 Engineering the Future Workshop.

Participants will share their experiences of implementing engineering principles into their science classrooms.

# Saturday 8:30 am

8:30-9:20 am Session: 63 Prairie A Feb. 9, 2013

**Duplicate of 30** 

Grade Level: 6-12

FEATURED SPEAKER
Ron Lancaster
Ontario Institute

ron2718@nas.net

## **Mathematical Magic Tricks**

We will learn to perform magic tricks that are based on a mathematical principle and examine how they can be used to improve students' problem-solving abilities through exploring how these tricks work.

# Saturday

8:30 am

Saturday 8:

8:30 am

8:30-9:20 am Session: 64 Prairie C Feb. 9. 2013

Feb. 9, 2013 Duplicate of 41

**Grade Level:** 

FEATURED SPEAKERS
John Warner
& Amy Cannon

Beyond Benign/Warner-Babcock Institute http://beyondbenign.org

Beyond Benign: Green Chemistry in Education

Green chemistry is the science of creating safe, energy efficient and non-toxic products and processes. Come and learn how to bring these concepts and problem-solving methods to life in your classroom.

8:30-9:20 am Session: 65 Dakota A Feb. 9, 2013

**Duplicate of 18** 

Grade Level: 9-12

Presenter: Brenda Merkel

& Rachel Haigh-Blume

**NESD AHEC** 

director@nesdahec.org http://www.nesdahec.org

### **NESD AHEC Making Science Hands On**

We will present on what the NESD AHEC can offer for school science and health classes to ensure that the students have hands on activities and are connected to career and professional development. We are a grant funded program developed to help schools with this sort of core education without cost to the school.

Are you taking the Conference for credit?

Did you know that you can count one hour of visiting with the vendors?

Questions?
Ask at the registration table!

8:30-9:20 am Session: 66 Dakota B Feb. 9, 2013

Grade Level: K-5

Presenter: John D. Hollingsworth
University Center--Sioux Falls
John.Hollingsworth@SDUniversityCenter.org

#### **Pentominoes**

In this session, we will explore the possible pentominoes and coverings. Good activity for K-5 students but could be used in upper grades as well.

# Saturday 8:30 am

8:30-9:20 am Session: 67 Dakota C Feb. 9, 2013

**Duplicate of 27** 

Grade Level: K-5

**Presenter: Becky Umenthum** 

South Park Elem., Rapid City Becky.Umenthum@k12.sd.us

### **Exploring Math with Art**

Learn to make three different flexagons (flat models that can be flexed or folded to reveal hidden faces). Observing what happens to their drawings as students "flex" their creations will lead to rich mathematical discussions.

8:30-9:20 am Session: 68 Dakota D Feb. 9, 2013

**Duplicate of 17** 

Grade Level: All

Presenter: Sam Shaw

SD Department of Education sam.shaw@state.sd.us http://nextgenscience.org

### **Next Generation Science Standards**

This two hour block will be reserved for teachers to come in and submit a final review of the Next Generation Science Standards. Sam Shaw will guid the audience throught the creation process, the architecture of the standards, and expectations for the review. Teachers will then provide feedback to the standards writing process and also for SD to consider in regard to adoption.

# Saturday 8:30 am

8:30-9:20 am Session: 69 Dakota E Feb. 9, 2013

**Duplicate of 55** 

Grade Level: 6-8

Presenter: Marie Steckelberg, EdD

SD Discovery Center mstekelberg@dishmail.net http://www.sd-discovery.com

### **Solar System Scale Models**

Building scale models of the solar system is a challenge because of the vast distances and huge size differences involved. Build and explore two models that help students understand the distances between the orbits of the planets and their size differences. Explore free NASA resources.

8:30-9:20 am Session: 70 Dakota F Feb. 9, 2013

Grade Level: 9-12

Presenter: Sheila McQuade

O'Gorman HS smcquade2@sfcss.org

#### Writing Proofs in Geometry

The Common Core has placed a renewed emphasis on Geometry proofs. Are you ready to teach proofs (again)? Some teachers haven't taught proofs for many years and others have never taught proofs. Let's help one another gear up and get ready for proofs. Please be prepared to share with others what has worked for you when teaching proofs. (This session is intended to be a sharing session.)

Saturday 8:30 am

8:30-9:20 am Session: 71 Dakota G Feb. 9, 2013

Grade Level: 9-12

**Presenter: Larry Browning** 

& Christine Larson

**SDSU** 

Larry.Browning@sdstate.edu http://cosmicworkshop.wikispaces.com/

# CC12: Reflections and Napoleon's River

We will explore using similar triangles to measure things that are difficult to measure directly. This session is part of the Cosmic Connections 2012 program sponsored by a NCLB/Title II grant.

8:30-9:20 am Session: 72 Dakota H Feb. 9, 2013

Grade Level: K-12

**Presenter: Judy Vondruska** 

& Dr. Suzette Burckhard

SDSU

judy.vondruska@sdstate.edu http://etfworkshop.wikispaces.com/

## **Science and Engineering in the NGSS**

This session will focus on exploring the engineering practices which are part of the new NCSS and how to implement them into the K-12 curriculum. Session participants will also develop a needs assessment for teachers working to meet the engineering aspect of the new standards. This session is appropriate for all grade levels K-12.

Saturday 8:30 am

8:30-9:20 am Session: 73 Salon I Feb. 9, 2013

Grade Level: K-12

Presenter: Diana McCann

& 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: 73.5 Prairie A Feb. 9, 2013

Grade Level: All

Presenter: Carol DenOtter
University of Sioux Falls
Carol.DenOtter@usiouxfalls.edu

# Developing Fraction Concepts and the Common Core Standards

During this session, participants will investigate fraction activities that may be used with student to strengthen their understanding of fraction concepts. When students are provided with adequate time and experiences, a deep conceptual understanding is developed. Picture books, models, and activities will be shared.

# **Saturday**

9:30 am

**Saturday** 

9:30 am

9:30-10:20 am Prairie B

Session: 74 Feb. 9. 2013

Grade Level: 6-8

FEATURED SPEAKER Martha Hildebrandt

**Chatham University** mhildebrandt@chatham.edu

I Wish I Had a Game For. . .

Math games engage, entertain, and enrich your lessons, but finding one to fit the needs of your class can be challenging. Join the fun while you learn strategies that use common materials to create unique, exciting, fast-paced games that are designed for your students, interface with your curriculum and reach across disciplines.

9:30-10:20 am Session: 76 Dakota A Feb. 9. 2013

Grade Level: All

**FEATURED SPEAKER David Vernier** & Christine Vernier **Vernier Software & Technology** cvernier@vernier.com

The Future of Data Collection

Vernier Software & Technology just introduced LabQuest 2. Come learn about it and other innovations in data collection and its use in a classroom environment.

9:30-10:20 am Session: 75 **Prairie C** Feb. 9, 2013

Grade Level: 6-12

Ken Graupmann Presenter:

& Jeff Hememway

SD Assoc. of Conservation

**Districts & NRCS** 

kengraupmann@yahoo.com

**Healthy Soil** 

Learn how to use materials & activities provided by your local Conservation District and the Natural Resources Conservation Service to aid in teaching earth science, biology, and environmental studies.

9:30-10:20 am Session: 77 Dakota B Feb. 9, 2013

**Duplicate of 42** 

Grade Level: 6-8

Presenter: Briana Wirth

Mitchell Middle School briana.wirth@k12.sd.us

http://google.com/site/misswirthsmathworld

iPads in the Classroom

The iPad can be more than just a mobile media gadget. The iPad offers endless possibilities to enhance classroom learning. Learn how iPad technology is being integrated into teaching and learning at Mitchell Middle School.

Saturday 9:30 am

Session: 78 Feb. 9, 2013

9:30-10:20 am Session: 80 Dakota E Feb. 9. 2013

9:30 am

Session: 81

Feb. 9, 2013

Saturday

Grade Level: 6-8

**Duplicate of 46** 

Presenter: Marie Steckelberg, EdD

**SD Discovery Center** 

msteckelberg@dishmail.net

http://www.sd-discovery.com

Grade Level: K-8

9:30-10:20 am

Dakota C

**Presenter: Julie Olson** 

& Tricia Neugebauer Mitchell Senior High julie.olson@k12.sd.us

**Candy Science** 

This is a general session on using candy to teach science--chromatography, pH, survival of the fittest, building design to name a few.

Wanted: emerging engineers to build a

**Curiosity Touchdown Chellenge!!** 

craft that can land on Mars without injuring the payload or damaging the lander - no eggs involved! If you are up to the challenge, join us for the excitement!! We will also explore free NASA resources

9:30-10:20 am Session: 79 Dakota D Feb. 9, 2013

**Duplicate of 25** 

Grade Level: All

**Presenter: Sam Shaw** 

SD Department of Education sam.shaw@state.sd.us http://nextgenscience.org

Grade Level: 9-12

9:30-10:20 am

Dakota F

**Presenter: Matt Miller** 

& Sharon Vestal

SDSU

Matt.Miller@sdstate.edu

**Next Generation Science Standards II** 

FOR ALL GRADE LEVELS: Please come join us in an extensive review of the Next Generation Science Standards. This will be the last opportunity to review these standards prior to the final release in late March. A laptop computer is recommended to access the standards.

Integrating Math and Science Practices

The Common Core Standards and the Next Generation Science Standards state specifically that students need to experience math and science using certain practices. Similar practices are suggested in both math and science. We will investigate ways of incorporating both in lessons.

# **Saturday**

9:30 am

Saturday

9:30 am

9:30-10:20 am Dakota G

Session: 82 Feb. 9, 2013

9:30-11:20 am Session: 83 Feb. 9, 2013 Dakota H

Grade Level: 6-12

Grade Level: 9-12

**Presenter: Judy Vondruska** 

Presenter: Dr. Suzette Burckhard

SDSU

suzette.burckhard@sdstate.edu http://etfworkshop.wikispaces.com/

judy.vondruska@sdstate.edu http://cosmicworkshop.wikispaces.com/

# and the Human Body

SDSU

# ETF12: Bridges, Towers, Structures

Bridges, towers, buildings, and even the human body are designed to carry forces. Although each may have different shapes or configurations, the principles of structural engineering may be used to evaluate their performance. In this session participants will construct various engineering structures and evalutate their performance with digital measurements and compare these measurements to how your body works to carry and support loads.

# **Get Your Community Involved in Citizen Science Projects**

One way to improve student engagement is to make it a family affair! There are many online Citizen Science projects available for use in all science classrooms that can involve parents, siblings, and other members of the community. This session will examine several available projects and discuss methods of implementation into your school and community.





Inspiring the next generation of scientists

Opportunities for:

- •Educator Enrichment Workshops
- Student Discovery Programs
- Interactive Video Conferencing
- Student & Teacher Research Experience

Check out our Info Session or SanfordResearch.org/Education Facebook.com/SanfordResearch

SANF

9:30-10:20 am Session: 84 Salon I Feb. 9, 2013

Grade Level: All

**Presenter: Robert Arnio** 

**Learning Solutions** 

bhlearningsolutions@rushmore.com

### Think Through Math

This session is a follow up to the discussions during Friday's Social Hour. Dr. Arnio will demonstrate live help, setting common core or customized pathways, and other unique program features.

# Saturday 10:30 am

10:30-11:20 am Session: 85 Dakota B Feb. 9, 2013

**Duplicate of 43** 

Grade Level: K-5

**Presenter: Kathy Grotta** 

**LEGO** education

kgrotta@legoeducation.us http://legoeducation.us

### **Engineering with LEGOS**

Come and explore simple machines and Physical Science principles such as gears, levers, pulley, and wheels and axles. Science standards are covered as children explore, observe, predict and use critical thinking as well as fine tune their 21st century skills of teamwork, problem solving and communication.

10:30-11:20 am Session: 86 Dakota C Feb. 9, 2013

Grade Level: 6-8

Presenter: Nicholas J. Restivo

**Mathematical Olympiads for Elementary** 

nrestivo@moems.org http://www.moems.org

# "Get Over It!" You Can't Know All the Answers

Generate excitement for, and interest in mathematical problem solving. Energize and enrich your curriculum by encouraging your students to take risks in problem solving while reminding them that a REAL problem takes some time and effort to solve. Use these methods and reduce the need to "cram" for state assessments.

# Saturday 10:30 am

10:30-11:20 am Session: 87 Dakota D Feb. 9, 2013

**Duplicate of 44** 

Grade Level: 6-8

Presenter: Sam Shaw

SD Department of Education sam.shaw@state.sd.us http://doe.sd.gov

# 2013 Middle School Science Academy

This presentation is a brief overview of the 2013 Middle School Science Academies and to encourage registration for the training. Teachers that register for the Summer Academies will be paid to attend a 3 day training sponsored Governor Daugaard's Investing in Teachers program. http://www.doe.sd.gov/secretary/iitscience.a spx



Have you checked out

"Share the Classroom
Treasures"?

Stop in Salon I

and see what is there.

At 4:30 pm today, these treasures become trash!



# Saturday 10:30 am

10:30-11:20 am Session: 88 Dakota E Feb. 9, 2013

Grade Level: All

**Presenter: Matt Miller** 

& Sharon Vestal

SDSU

Matt.Miller@sdstate.edu

#### **Meet the New Teachers**

Prospective science and mathematics teachers from all the college campuses in South Dakota will be invited to engage in a conversation with veteran teachers. The goal is to provide support for the next generation of teachers by providing advice for their future. Come with an encouraging story or success strategy to share. Session 28 was a similar session.

10:30-11:20 am Session: 90 Dakota G Feb. 9, 2013

Grade Level: 9-12

**Presenter: Larry Browning** 

& Tiffany Kroeger

SDSU & Montrose HS

Larry.Browning@sdstate.edu http://cosmicworkshop.wikispaces.com/

### CC12: Air Rocket Launchers--BUILD

Pneumatic launchers for paper rockets will be built during this session. These are useful for discussing projectile motion as well as engineering and design topics. Safety issues, integration in lessons, improvements/extension will be introduced and expanded on in a subsequent session. This is sponsored by NCLB Title II grant: Cosmic Connections 2012.

# Saturday NOON

Noon-1:00 pm Session: 91 Prairie A, B, & C Feb. 9, 2013

Grade Level: All

**Presenters:** 

Brenda Murphey, SDSTA President & Jay Berglund, SDCTM President

# Lunch

# Saturday 1:00 pm

1:00-2:50 pm Session: 92 Prairie A Feb. 9, 2013

Grade Level: K-12

**Presenter: Matt Gill** 

SD Department of Education Matthew.Gill@state.sd.us http://doe.sd.gov/oats/SDAP.aspxd

#### **South Dakota Assessment Portal**

Come learn how to use SDAP to create online assessments that are aligned to the Common Core Standards. Teachers have the option to create their own tests or use a pre-made form already aligned to the new standards. At this session, teachers will have the opportunity to play around in the program and begin creating their own tests.

# Saturday

1:00 pm

# Saturday

1:00 pm

1:00-2:50 pm Prairie B Session: 93 Feb. 9, 2013

Grade Level: K-5

# FEATURED SPEAKER Martha Hildebrandt

Chatham University mhildebrandt@chatham.edu

## The Best of Lola May

If you heard Lola May present, you know her talks were filled with practical, effective activities to enliven your classroom. Take a fresh look at those wonderful strategies! If you never heard Lola, share in her legacy, add valuable teaching tools to your repertoire, and leave with activities ready for classroom use.

1:00-1:50 pm Prairie C Session: 94 Feb. 9. 2013

**Duplicate of 13** 

Grade Level: 9-12

# FEATURED SPEAKER

**Tom Warner** 

SD School of Mines and Technology tom.warner@ztresearch.com http://www.ztresearch.com

# Electrify Your Teaching with Lightning

High-speed digital cameras operating at up to 100,000 images per second have provided new insight in the development and behavior of lightning. This presentation shares the latest understanding in lightning physics based on these new observations and discusses implications for lightning hazards and safety.

PERSONAL NOTES FOR NEXT YEAR:

PERSONAL NOTES FOR NEXT YEAR:

# Saturday 1:00 pm

1:00-1:50 pm Session: 95 Dakota A Feb. 9, 2013

**Duplicate of 22** 

Grade Level: 9-12

Presenter: Joe Herreman

& Sheri Mack

**East Dakota Educational Coop** 

jherreman@edec.org

# Lessons from Alternative Schools: Ideas for Reaching At-Risk Students

Have a student that just doesn't care? Seeking new ideas for how to work with that student that is on the edge? Sheri and Joe will share tips and ideas they have learned for working with at-risk students at McCrossan's Boys Ranch and High Impact Academy. Take home a CD of some of their favorite lesson plans.





#### Inspiring the next generation of scientists

Opportunities for:

- Educator Enrichment Workshops
- Student Discovery Programs
- Interactive Video Conferencing
- •Student & Teacher Research Experience

Check out our Info Session or SanfordResearch.org/Education Facebook.com/SanfordResearch

SANFORD

# Saturday 1:00 pm

1:00-1:50 pm Session: 96 Dakota B Feb. 9, 2013

Grade Level: 6-8

Presenter: Rebecca DallaGrana

SD ELI Team

rebecca.dallagrana@state.sd.us

http://artscouncil.sd.gov

#### **Creative Classroom I**

Arts integration has a significant impact on student retention and achievement.

Teachers in this workshop will receive lesson plans teaching them how to use creative techniques, which focus on technology and hands-on learning, to enhance student understanding.

Attendance at Creative Classroom II is suggested, but not required.

1:00-1:50 pm Session: 97 Dakota C Feb. 9, 2013

Grade Level: 9-12

Presenter: Liz McMillan

**Sanford PROMISE** 

SanfordOutreach@sanfordhealth.org http://www.sanfordresearch.org/education

# Diagnosing Disease and Investigating Family Inheritance

Through Polymerase Chain Reaction (PCR) and DNA Electrophoresis students can investigate a family's disease prevalence. By creating a family pedigree students can start to predict the inheritance pattern. Handouts and digital files can be shared with participants and equipment may be borrowed from the Sanford PROMISE program to conduct these activities.

# Saturday 1:00 pm

1:00-1:50 pm Session: 98 Dakota D Feb. 9, 2013

**Duplicate of 33** 

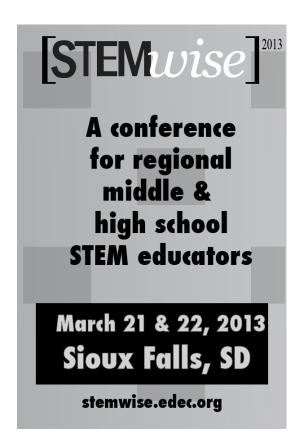
Grade Level: 9-12

**Presenter: Cindy Kroon** 

Montrose High School cindy.kroon@k12.sd.us http://ck022.k12.sd.us

#### **Metric Madness**

Each October 10th, the geeks of the world celebrate Metric Day! (10-10 get it?!?!) Join us for an exciting round of Metric Olympics-an activity to celebrate the day with estimation, measurement, and metric calculations. But wait--there's more! Play the fabulous "Metric Madness" board game too! Activities will be hands-on and feet-on.



# Saturday 1:00 pm

1:00-1:50 pm Session: 99 Dakota E Feb. 9, 2013

Grade Level: K-5

Presenter: Nicholas J. Restivo

Mathematical Olympiads for Elem.

nrestivo@moems.org http://www.moems.org

# Exciting & Challenging Problem Solving

Generate excitement for, and interest in mathematical problem solving among your students. Energize and enrich your 3rd to 5th grade curriculum by encouraging your students to take risks in problem solving while reminding them that a REAL problem is not the same as a practice exercise. Reduce the need to "cram" for state assessments by utilizing the methods and the types of questions discussed.

# PERSONAL NOTES FOR NEXT YEAR:

# **Saturday**

1:00 pm

Saturday

1:00 pm

1:00-2:50 pm Dakota F Session: 100 Feb. 9, 2013 1:00-1:50 pm Dakota G Session: 101 Feb. 9, 2013

Grade Level: 6-12

Grade Level: 9-12

**Presenter: Dr. Janet Briggs** 

Black Hills State University janet.briggs@bhsu.edu

Presenter: Larry Browning & Tiffany Kroeger SDSU & Montrose HS

Larry.Browning@sdstate.edu http://cosmicworkshop.wikispaces.com/

# Incorporating Science & Engineering Practices into Earth-Space Science Classrooms

The Next Generation Science Standards will focus on science & engineering practices found in "A Framework for K-12 Science Education." Be ahead of the game and learn how to incorporate these practices into your classroom--from asking questions, developing models, planning investigations, analyzing data, computational thinking, constructing explanations, engaging in arguments, to evaluating and communicating information.

# CC12: Air Rocket Launchers--USE AND SAFETY

Pneumatic launchers for paper rockets built during a previous session will be discussed as learning tools for classrooms and informal educational events. Safety issues, integration in lessons, design criteria, and improvements/extension will be part of this discussion. This is sponsored by NCLB Title II grant: Cosmic Connections 2012.

# PERSONAL NOTES FOR NEXT YEAR:

PERSONAL NOTES FOR NEXT YEAR:

# Saturday 1:00 pm

1:00-2:50 pm Session: 102 Dakota H Feb. 9, 2013

Grade Level: 9-12

Presenter: Dr. Madeleine Andrawis

& Judy Vondruska

SDSU

madeleine.andrawis@sdstate.edu http://etfworkshop.wikispaces.com/

# ETF12: Basic Circuits and Applications to Electrical Engineering

The first half of this 2-hour session will focus on basic circuit analysis using bread boards and a discussion of circuit applications in electrical engineering. The second half of the session will focus on construction of an engineering-related circuit. This session will help teachers address NGSS in physical science and engineering.

# Saturday 2:00 pm

2:00-2:50 pm Session: 103 Salon II Feb. 9, 2013

Grade Level: 6-8

Presenter: Jean Gomer Independent Consultant Jean.Gomer@k12.sd.us

### How Big Is the Fish?

What does the size of a fish have to do with ratios, proportions, and scale models? Come see this and other ways to get students involved with the mathematical concepts.

# Saturday 2:00 pm

2:00-2:50 pm Session: 104 Prairie C Feb. 9, 2013

**Duplicate of 52** 

Grade Level: K-5

**Presenter: Becky Umenthum** 

South Park Elem, Rapid City Becky.Umenthum@k12.sd.us

### **Origami for Elementary Students**

Learn to make an origami book.
Incorporate geometry vocabulary as you learn to fold several squares into the same "units". Then combine the units in different ways to make cubes and other interesting shapes.

2:00-2:50 pm Session: 105 Dakota A Feb. 9, 2013

Grade Level: 6-8

**Presenter: Wendy Schamber** 

Lead-Deadwood Middle School wendy.schamber@k12.sd.us http://ws027.k12.sd.us

# Using Edmodo for Students to Communicate

This presentation will show how one class uses Edmodo to communicate outside of the classroom. This includes student-student communication as well as student-teacher communication in a safe environment. It also allows students to not miss instruction when absent by using a flipped class situation.

# Saturday

2:00 pm

Saturday

2:00 pm

2:00-2:50 pm Dakota B Session: 106 Feb. 9, 2013 2:00-2:50 pm Dakota E

Grade Level: 9-12

Session: 108 Feb. 9, 2013

Grade Level: 6-8

Presenter: Pandi Pittman

Wall School District pandi.pittman@k12.sd.us

Presenter: Rebecca DallaGrana

SD ELI Team

rebecca.dallagrana@state.sd.us http://artscouncil.sd.gov

#### Creative Classroom II

Arts integration has a significant impact on student retention and achievement.

Teachers in this workshop will receive ideas on how to use creative techniques, which focus on technology and hands-on learning, to engage students and help them correlate real-life lessons to math and science classes. Attendance at Creative Classroom I is suggested, but not required.

# Park Steward Grant--Wall HS and Badlands National Park

The Park Stewards program, through the National Park Foundation, has provided Wall HS teachers and students the opportunity to explore the relevance of Badlands National Park, and enabled them to become stewards of parks through service-learning projects. Learn about this partnership, and the curriculum developed for secondary life science classes.

2:00-2:50 pm Dakota D Session: 107 Feb. 9, 2013

Grade Level: 9-12

Presenter: Marvin Gamble

USD

Marvin.Gamble@usd.edu

2:00-2:50 pm Session: 109 Dakota G Feb. 9, 2013

Grade Level: 9-12

**Presenter: Matt Miller** 

& Larry Browning

**SDSU** 

Matt.Miller@sdstate.edu

# **Magic Squares with Mental Math**

I will demonstrate how to make a 3 X 3 magic square and solve the magic squares. Also, I will make a 4 X 4 personal magic square and do mental multiplication mathematics with proofs.

# Demonstrations to Spark Their Interest

We will present new demonstrations (at least different from last year) which are easy to make from materials you can find. Our goal is to present a variety of demonstrations that can be incorporated at multiple levels. The content will focus on physics and chemistry.

# Saturday 3:00 pm Saturday 4:00 pm

3:00-3:50 pm Session: 110 4:00-??? Session: 112 Dakota C Feb. 9, 2013 Board Room Feb. 9, 2013

Grade Level: All

Presenter: Jay Berglund
SDCTM President

# Conference Wrap-up--Math Round Table Discussion

This is a chance to share your reflections on the sessions you attended at the conference.

3:00-3:50 pm Session: 111 Dakota G Feb. 9, 2013

Grade Level: All

**Presenter: Brenda Murphey** 

**SDSTA President** 

# Conference Wrap-up--Science Round Table Discussion

This is a chance to share your reflections on the sessions you attended at the conference.

> SEE YOU NEXT YEAR!

Jean Gomer, facilitator

### **Joint Board Meeting**

This is a meeting for officers of the math & science organizations to review submitted evaluations & reflect on this years sessions & begin preparations for next year.

Please remember to leave your completed evaluation form in the box that will be on the Registration Desk Saturday afternoon. Thanks.

Next Year's Conference is February 6, 7, 4 8, 2014!

Don't forget to fill out your evaluation of the conference!

We need your input to make next year even better!

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

Activities for Learning, Inc.

Tracy Mittleider

AVI Systems Brian Lee

Bitwixt Software Linda Doherty

Black Hills Raptor Center John Halverson & Maggie Engler
Connecting Point Computer Centers Courtney Jutting & Mark Robbins
CPM Educational Program Bob Peterson & Sharon Rendon

Dakota Area Health Rachel Haigh-Blume

fit/WebMD Jason Raether
Glencoe McGraw-Hill Carol J. Heisel
Houghton Mifflin Harcourt Matt Misialek
Learning Solutions of the Black Hills Dr. Bob Arnio
LEGO Education Kathy Grotta

Mathematical Olympiads for Elementary Nicholas J. Restivo

Pearson Mike Limmer
Sanford PROMISE Liz McMillan
Sanford Underground Research Facility Peggy Norris

SD Discovery Center (Pierre)

Anne Lewis & Marie Steckelberg
SD Game Fish and Parks

Curt Robertson & Jason Kool

SDSU Extension Joan Hegerfeld-Baker
Technology and Innovation in Education Mary Lou McGirr

Vernier Software & Technology David & Christine Vernier

Whippourwill Consulting Brenda Robertson

South Dakota Science Teachers Association Business Meeting will be held in Dakota G at 4:30 pm on Friday, February 8, 2013

SD Council of Teachers of Mathematics Business Meeting will be held in Dakota C at 4:30 pm on Friday, February 8, 2013

#### **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.

<sup>\*</sup>Name Tag Lanyards are compliments of SD Game Fish and Parks

# The 2013 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 **TIE** FOR HELPING US WITH PROJECTORS!

Next year's conference will be February 6, 7, & 8, 2014.

**The 2013 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) \$50 Non-members \$100 Students \$15 includes the Noon Luncheon for that day

TWO-day (SDCTM or SDSTA members) \$75 Non-members \$125 Students \$25 includes the Noon Luncheon for both days

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

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.

## 2013 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: Grade Band:	Math Elementary	Science Middle School	Both High School
What presentation of	or presentations did yo	ou feel were the most useful or he	lpful?
What made it (or the	nem) good?		
Were there any pre	sentations that disappo	vinted you?	
Please give us your share.	overall assessment of	the conference along with any co	omments you would like to
	he following for a fina ong with your evaluati	I prize to be sent after the confere	ence. To register for the prize
	Name		_
	Address		_
	City, State, Zip C	Code	_

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#### **Vendor Coordinator**

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