

Texas Regional Collaboratives for Excellence
in Science and Mathematics Teaching

Higher Standards

New Horizons

*Achieving Excellence
in STEM Education
Through the*
TRC



**EIGHTEENTH
ANNUAL MEETING**

Renaissance Austin Hotel
June 27- 29, 2012

This agenda belongs to: _____

Name: _____

Collaborative: _____

Cell Phone Number: _____



Internet Connection

Please visit our Internet Cafe located in the lower level plaza foyer by the Registration/Information Booths.

TABLE OF CONTENTS

Page 2	June 27 Showcase, Reception, and Dinner
Page 3	Excellence Awards / TRC Partners
Page 4	General Sessions Information / Featured Breakout Session
Page 5	Renaissance Austin Hotel Main Floor and Lower Level Maps
Pages 6-7	Wednesday, June 27 - Session 1 Agenda and Presentation Descriptions
Pages 8-9	Thursday, June 28 - Morning Session 2 Agenda and Presentation Descriptions
Pages 10-11	Thursday, June 28 - Morning Session 3 Agenda and Presentation Descriptions
Pages 12-13	Thursday, June 28 - Afternoon Session 4 Agenda and Presentation Descriptions
Pages 14-15	Thursday, June 28 - Afternoon Session 5 Agenda and Presentation Descriptions
Pages 16-17	Friday, June 29 - Morning Session 6 Agenda and Presentation Descriptions
Pages 18-19	Friday, June 29 - Morning Session 7 Agenda and Presentation Descriptions
Pages 20-21	TRC - Collaboratives and Projects & Geographic Distribution
Page 22	TRC Team
Page 23	Thursday Evening Optional Activities
Page 24-25	Schedule At-A-Glance

TRC is funded by a variety of state, federal, and corporate partners, and is supported by The University of Texas at Austin.

WELCOME



June 27, 2012

Dear Annual Meeting Attendees and Guests,

Welcome to the Eighteenth Annual Meeting of the Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (TRC). For twenty one years, thousands of TRC teacher leaders, educators, professors, administrators, policy makers, and corporate partners have come together, stayed together, and worked together to build capacity in our schools and support excellence in Science, Technology, Engineering, and Mathematics (STEM) education for all students.

This year's theme, *Higher Standards - New Horizons. Achieving Excellence in STEM Education Through the TRC*, challenges us to renew our commitment to join forces with our education, state, and corporate partners to empower our teachers to prepare and inspire a highly educated and skilled workforce for an increasingly scientific and technological workplace.

Successful collaboration among all of us in the STEM education community will help our schools achieve rigor and relevance in science and mathematics teaching and learning. Transforming the culture of STEM education is an imperative for our state and the nation to meet the challenges of a rapidly changing 21st Century.

The TRC team has worked diligently to develop an informative and stimulating program of STEM presentations, demonstrations, exhibits, and panel discussions that embody the foundation and substance of high quality science and mathematics teaching and learning, and their connection to professional development and workforce preparation.

To our major partner, the Texas Education Agency, our corporate partners, and all of our P-16 partners, I express my sincere gratitude and appreciation for helping us mark another milestone of achievements in the service of STEM education and workforce development.

Thank you for taking the time to join us for another exciting professional experience!

Sincerely,

A handwritten signature in black ink, appearing to read "Kamil A. Jbeily".

Kamil A. Jbeily, Ph.D.
Executive Director
Texas Regional Collaboratives

SHOWCASE, RECEPTION, AND DINNER

EVENING PROGRAM

SHOWCASE AND RECEPTION

Wednesday, June 27, 2012
5:00 - 6:45 p.m. - Rio Grande A

DINNER

7:00 p.m. - Grand Ballroom



INTRODUCTION

Kamil A. Jbeily, Ph.D.

*Executive Director, Texas Regional Collaboratives
The University of Texas at Austin*

WELCOME

James P. Barufaldi, Ph.D.

*Director, Center for STEM Education
College of Education
The University of Texas at Austin*

GREETINGS AND REMARKS

Pat Hardy

*Chair, Committee on School Finance/
Permanent School Fund
State Board of Education*

Stacy Avery

*T-STEM Coordinator and MSP State Director
Texas Education Agency*

KEYNOTE SPEAKER

The Honorable Rob Eissler

*Chairman, Public Education Committee
Texas House of Representatives*

TRC 2012 DISTINGUISHED SERVICE AWARD

KEYNOTE SPEAKER



The Honorable Rob Eissler

*Chairman, Public Education Committee
Texas House of Representatives*

Chairman Rob Eissler was first elected to represent Montgomery County and House District 15 in the Texas Legislature in November of 2002. In 2007, he was appointed Chairman of the Public Education Committee where he later earned a "Top 10 Best Legislators" honor from Texas Monthly for his work on education reform and accountability.

Rob has spent a 26-year career dedicated to the schoolchildren of Texas. For 18 years he served on the Conroe Independent School District Board of Trustees, including two terms as President. His tireless work reforming public education and our school's accountability system have helped place Texas at the nation's forefront in public education. His work has been honored by the Texas Council of Special Education Administrators, the Texas Foreign Language Association, and the Texas Association of Business, which awarded him with the Champion for Free Enterprise Award three times.

Rob received a B.A. in Architecture from Princeton University before serving our country as a carrier-based attack pilot on the USS John F. Kennedy in the United States Navy. Rob and his wife, Linda, have three adult children and are members of The Woodlands United Methodist Church.

GREETINGS AND REMARKS



James P. Barufaldi, Ph.D.

*Director, Center for STEM Education
The University of Texas at Austin*



Pat Hardy

*Member, District 11
State Board of Education*



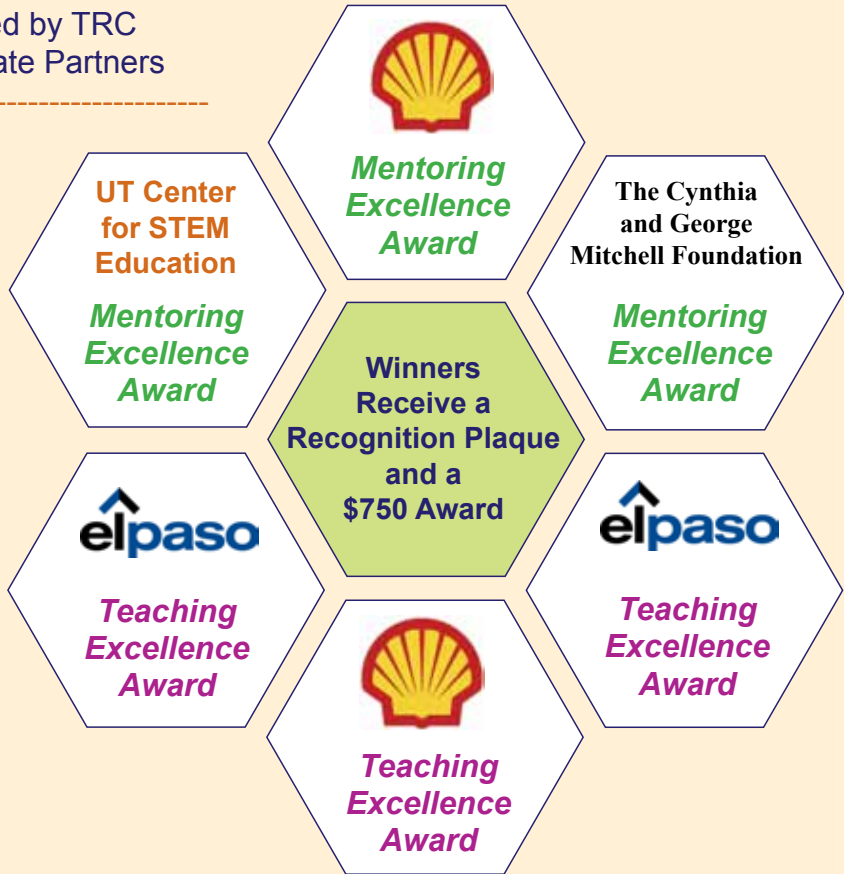
Stacy Avery

*T-STEM Coordinator and MSP State Director
Texas Education Agency*

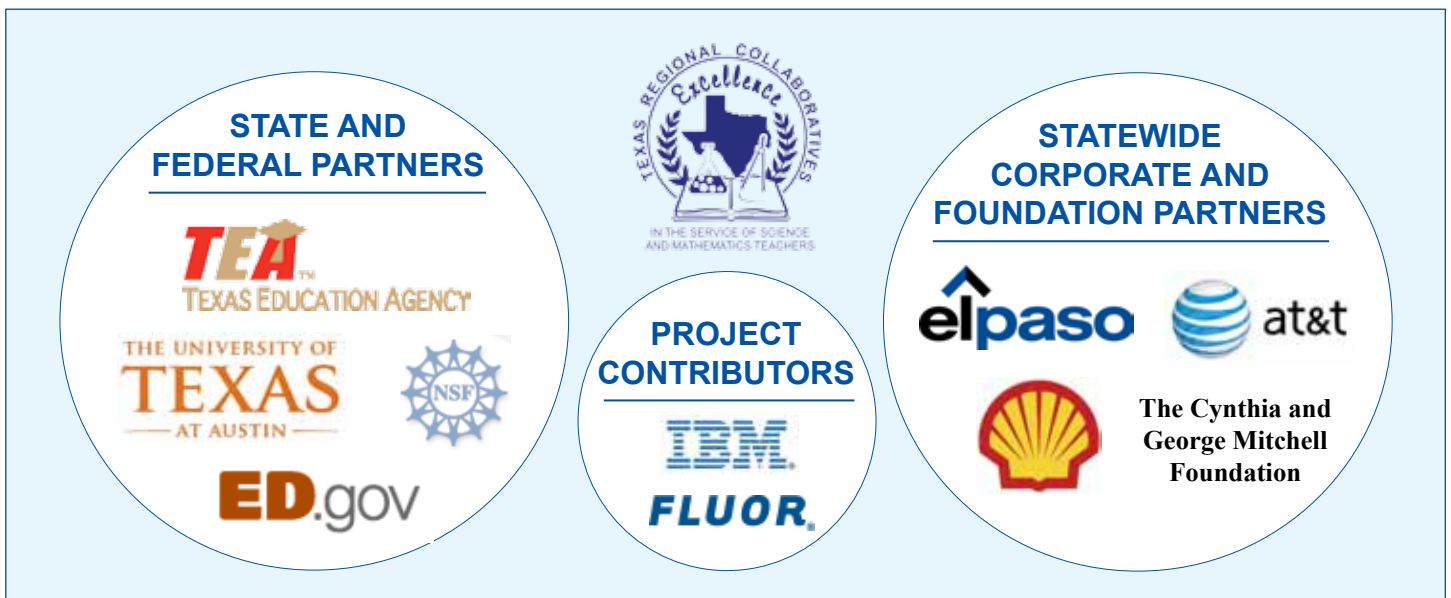
TEACHING AND MENTORING EXCELLENCE AWARDS

Excellence Awards Sponsored by TRC
State, Foundation, and Corporate Partners

2011 Award Winners



TEXAS REGIONAL COLLABORATIVES PARTNERS



GENERAL SESSIONS INFORMATION

State of Science and Mathematics Education

Thursday, June 28 • 8:00 - 9:15 a.m. • Grand Ballroom

Irene Pickhardt

Statewide Science Coordinator
Texas Education Agency

The past year has witnessed many exciting changes in science and mathematics education. New science online instructional materials were adopted and used in classrooms. Rigorous curriculum standards in mathematics have recently been adopted. End-of-Course exams were required for the first time. Come hear about how you can join forces with TEA to help students succeed in math and science.



Crafting Creative Thinkers: The 5 Elements of Effective Thinking

Thursday, June 28 • 12:45 - 1:45 p.m. • Grand Ballroom

Edward B. Burger, Ph.D.

Professor
Williams College & Baylor University

What will our students remember long after they have forgotten the quadratic formula, how to solve for “x,” and how atoms are recombined in a new substance due to chemical change? Here we celebrate the real prize in teaching: inspiring students to be imaginative and creative within mathematics & beyond. Our celebration will highlight explicit skills and methods that allow us to foster the joyful pleasures of creative thinking while still preparing students for the stressful reality of standardized exams.

Edward Burger is Professor of Mathematics and Lissack Professor for Social Responsibility and Personal Ethics at Williams College and Vice Provost for Strategic Educational Initiatives at Baylor University. He is the author of over 35 research articles, 12 books, and 15 video series.



FEATURED BREAKOUT SESSION

Understanding by Design (UbD)

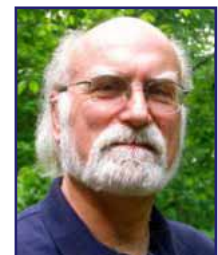
Friday, June 29 • 9:30 - 10:30 a.m. • Wedgwood

Grant Wiggins, Ed.D.

President
Authentic Education

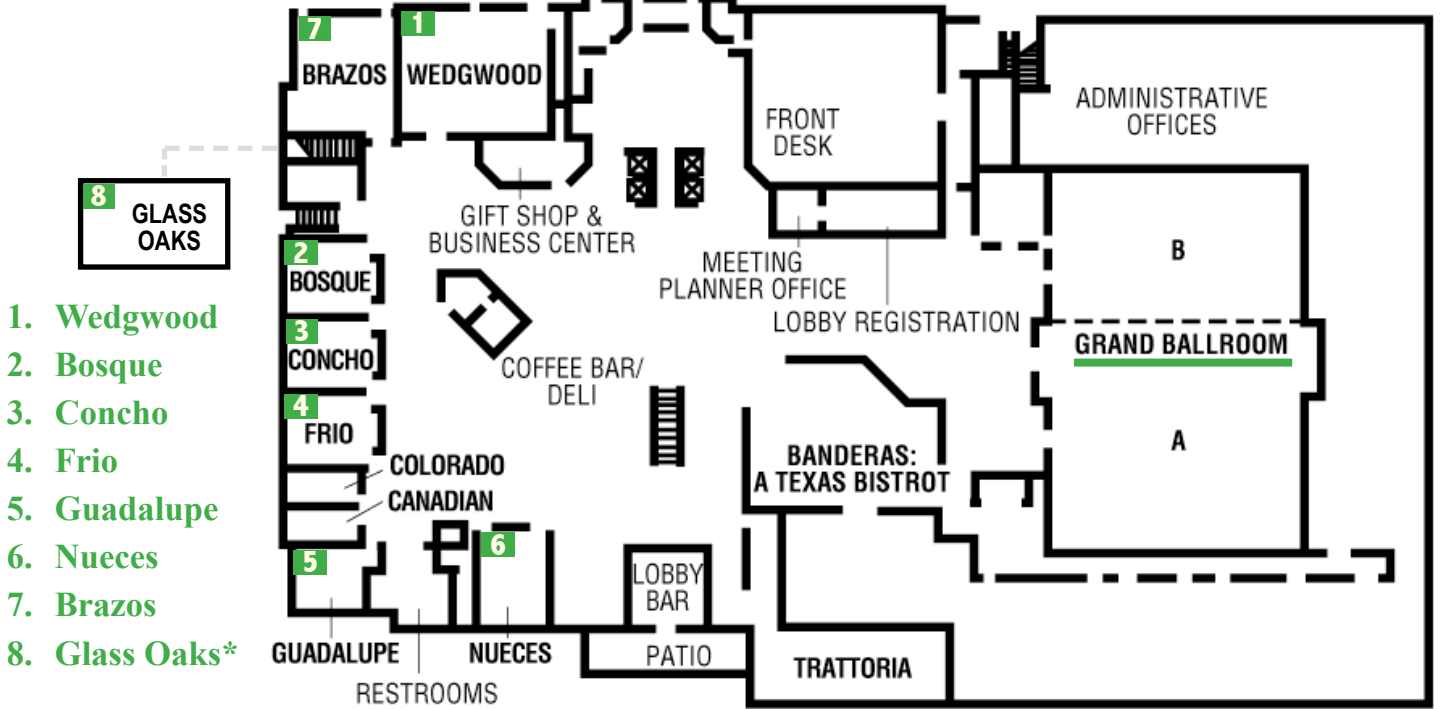
Grant Wiggins is the President of Authentic Education in Hopewell, New Jersey. He earned his Ed.D. from Harvard University and his B.A. from St. John’s College in Annapolis. Grant and his AE colleagues consult with schools, districts, state and national education departments on a variety of reform matters. He and his colleagues also organize conferences and workshops, and develop print and Web resources on key school reform issues.

Grant is perhaps best known for being the co-author, with Jay McTighe of Understanding By Design, the award-winning and highly successful program and set of materials on curriculum design used all over the world, and of Schooling by Design. Grant will present during a live conferencing technology supported session on Friday, June 29, between 9:30 and 10:30 a.m. as part of this year’s TRC Annual Meeting.



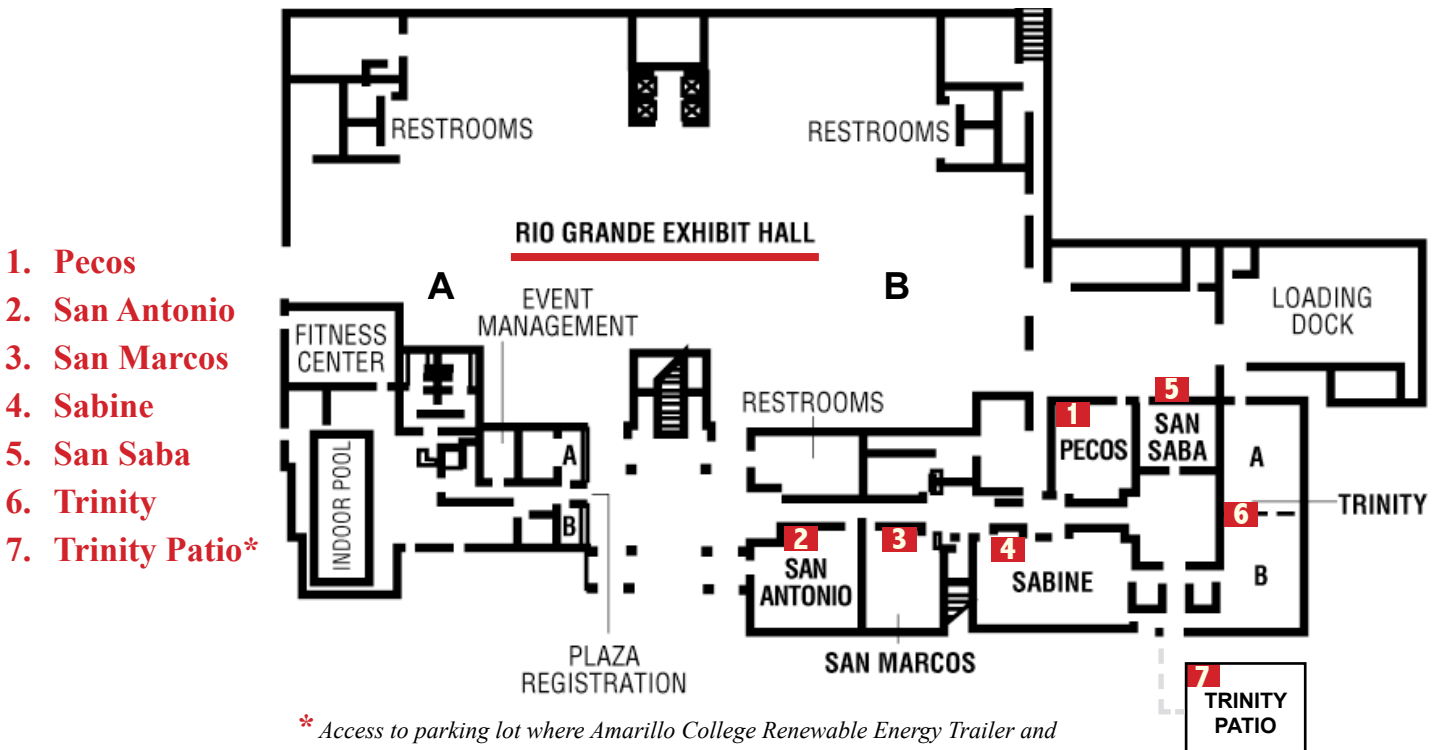
RENAISSANCE AUSTIN HOTEL

MAIN FLOOR



* *Glass Oaks* is the building located to the right of the main hotel. You access it by walking outside of the doors on the Atrium level (behind AustinBytes), down the stairs and enter through the doors on the left.

LOWER LEVEL



* Access to parking lot where Amarillo College Renewable Energy Trailer and TAME Trailblazer will be located.

WEDNESDAY, JUNE 27 - SESSION 1

TIME	PRESENTATIONS / ACTIVITIES	ROOM
8:00 a.m. - Noon 2:00 - 4:00 p.m.	REGISTRATION (Early registration hours on Tuesday, June 26: 1:00 - 5:00 p.m.)	Rio Grande Foyer <i>Lower Level</i>
10:00 a.m. - 4:30 p.m.	SET-UP Showcase Exhibits	Rio Grande A <i>Lower Level</i>
12:00 - 2:00 p.m.	OPENING LUNCHEON and PROGRAM Teaching and Mentoring Excellence Awards	Grand Ballroom <i>Main Floor</i>
2:30 - 3:30 p.m.	SESSION 1 Level	
	A Administrators' Forum Salazar/Carr/Larson/Cielencki/Fletcher	Leadership Wedgwood <i>Main Floor</i>
	B Organizing and Collecting: The Number System Henson/Marsalia/Duell	Elementary <i>Math</i> Bosque <i>Main Floor</i>
	C 100% Engagement with the TI-Navigator Monaghan/Mann/King	Middle School <i>Math</i> Concho <i>Main Floor</i>
	D Meteorite Madness Kennedy/Cooper	Elementary <i>Science</i> Frio <i>Main Floor</i>
	E It's All About the Process! Holcomb	Elementary <i>Science</i> Guadalupe <i>Main Floor</i>
	F Young Architects Explore Volume Ladd/Lamb/Sherman	Elem./Middle School <i>Math</i> Nueces <i>Main Floor</i>
	G Retro-Teaching Mathematics Using Technology and Web 2.0 Tools Gloria	Middle/High School <i>Technology</i> Brazos <i>Main Floor</i>
	H Elements of Success: Constructing the Periodic Table Using Guided Inquiry in a Student-Centered Classroom Szymczyk/Driver	High School <i>Science</i> San Antonio <i>Lower Level</i>
	I Fun Ways to Teach Math and Science in the Elementary Classroom Sweet/Gutierrez	Elementary <i>Math/Science</i> San Marcos <i>Lower Level</i>
	J Statistics with Origami Jumping Frogs Tyre	All <i>Math</i> Sabine <i>Lower Level</i>
	K Rocking Robotics: Making Physics Connections Through Robotics Stevenson/Lain	All <i>Science</i> Pecos <i>Lower Level</i>
	L Shell Pre-trip and Energy Talk Willis/Olson	Field Trip Participants San Saba <i>Lower Level</i>
	M The Mystery of the Mummy Brothers Wall/Weiser	Middle School <i>Science</i> Trinity <i>Lower Level</i>
5:00 - 6:45 p.m.	SHOWCASE and RECEPTION Regional Collaboratives Showcase Exhibits	Rio Grande A <i>Lower Level</i>
7:00 - 9:00 p.m.	DINNER and PROGRAM <i>Details on Page 2</i>	Grand Ballroom <i>Main Floor</i>

NOTES

Foyer music provided by:
Southwest Texas String Trio
 Amy Lou Cox, *Viola*
 Paul Robertson, *Violin*
 Michael Werst, *Cello*

SESSION 1 - PRESENTATION DESCRIPTIONS

A. Administrators' Forum

Gonzalo Salazar, *Los Fresnos ISD*; **Esmeralda Carr**, *East Central ISD*; **Russell Larson**, *Pflugerville ISD*, **Cayla Cielencki**, *Amarillo ISD*; **Carol Fletcher**, *TRC*

What are the benefits of participating in the TRC? How are other districts leveraging their TRC teachers to lead district-wide improvement in science or math instruction? What additional resources and opportunities are available to TRC teachers and districts? These and other questions specific to school administrators will be answered in this discussion of how school districts can use the TRC to achieve their instructional goals. Campus and district administrators from TRC schools across the state will share their experiences and answer your questions.

B. Organizing and Collecting: The Number System

Carla Henson, *Buffalo ISD*; **Audra Marsalia**, *Brazos ISD*; **Pat Duell**, *Kennard ISD*

This session will share information from the Young Mathematicians at Work project, "Investigating Number Sense, Addition and Subtraction". Meet the Masloppy family- an endearing, large family that finds it difficult to keep track of things. The story sets the stage for a series of mathematical investigations in which students explore quantity, counting and grouping, and early place value.

C. 100% Engagement with the TI-Navigator

Johnette Monaghan, *Janis Mann*, *McKinney ISD*; **Tawnia King**, *Collinsville ISD*

How can middle school teachers incorporate calculators effectively into the curriculum while engaging, encouraging, and compelling student participation? Participants will learn how to use TI-83/84s for middle school math and leave with ready-to-use lessons and activities for the TI-Navigator system.

D. Meteorite Madness

Wendy Kennedy, *Springtown ISD*; **Sherrie Cooper**, *Peaster ISD*

Models will be used to explore inquiry-based learning. Using a-hands on approach, participants will throw dirt bombs to begin critical thinking. During the investigation, they will identify and compare the physical characteristics of the Earth and Moon. At the closing of the activity, the participants will be able to recognize the advantages and limitations of models such as size, scale, properties, and materials in the natural world.

E. It's All About the Process!

Cynthia Holcomb, *ESC Region 15*

Participants will explore elementary-grade activities that promote the integration of process skills through journaling, 5E lessons, and student-directed investigations. Each participant will receive a CD of the materials presented.

F. Young Architects Explore Volume

Steven Ladd, *Tyler ISD*; **John Lamb**, *Cynthia Sherman*, *The University of Texas at Tyler*

This presentation will showcase how 5th grade students acted as "architects" bringing the concepts of perimeter, area, and base full-circle. Students created a blueprint of a property with an irregular base and used cubes to visually represent their properties base. Students showed how the area of a base and the height of a solid were related to the property's volume. This allowed for a more meaningful understanding of volume as opposed to the approach of simply plugging numbers into a formula.

G. Retro-Teaching Mathematics Using Technology and Web 2.0 Tools

Rolando Gloria, *Presidio ISD*

Are you teaching your students using the old techniques or strategies? Do you want to learn some strategies that incorporate technology and useful Web 2.0 tools? Come and see my presentation where the outdated tools used in the classroom meets technology and Web 2.0 tools in order to cater the needs of the students. In this session the attendees will be exposed to different Web 2.0 tools and technology that they can use in the classroom.

H. Elements of Success: Constructing the Periodic Table Using Guided Inquiry in a Student-Centered Classroom

Amber Szymczyk, *Laura Driver*, *Katy ISD*

In this session, participants will work in groups in a mock high school chemistry classroom to experience an inquiry method of learning the fundamental concepts behind the periodic table. In the course of modeling the lesson, participants will also see various formative assessment and classroom management strategies in practice. Participants will receive classroom-ready copies of the model lesson used in addition to teacher notes to take back to their campuses.

I. Fun Ways to Teach Math and Science in the Elementary Classroom

Michael Sweet, *Pharr-San Juan-Alamo ISD*, **Roger Gutierrez**, *Weslaco ISD*

Ideas to teach math and science in the classroom will be shared such as games to utilize for review, foldables, hands-on activities, and technology. Teachers will walk away with a CD that will have samples and activities they can immediately use in the classroom. So come join in the FUN with math and science!

J. Statistics with Origami Jumping Frogs

Maribel Tyre, *The University of Texas at Brownsville*

Create and jump origami paper frogs. The data collected will be used to demonstrate mean, median, mode and range. We will also construct box and whisker plots (boxplots) and discuss outliers. STAAR practice problems will be provided.

K. Rocking Robotics: Making Physics Connections Through Robotics

Pat Stevenson, *Simms ISD*; **Michel Lain**, *Pittsburg ISD*

Join us to identify connections between the Force, Motion and Energy Strand of the TEKS and the implementation of Robotics. From a basic understanding, to learning how to have conversations with administrators, participants will leave equipped to begin a program that will enrich the classroom learning experience. This session will demonstrate applications in all grade levels.

L. Shell Pre-trip and Energy Talk

Marsha Willis, *TRC*; **Hilary Olson**, *The University of Texas at Austin*

This pre-briefing meeting for our June 28 field trip will allow us to complete necessary paperwork, distribute t-shirts and hear an introduction from the symposium coordinator, Hilary Olson. Faculty and researchers at the Department of Petroleum and Geosystems Engineering at The University of Texas at Austin are partnering with the Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (TRC) to host teachers for an afternoon symposium on "Energy, Engineering and the Environment." The symposium will be hosted at the Petroleum and Geosystems Engineering Department on the university campus.

M. The Mystery of the Mummy Brothers

Sally Wall, *Clear Creek ISD*, **Brenda Weiser**, *University of Houston/ Clear Lake*

This rigorous problem based unit leads students through a mystery while reviewing readiness and supporting standards for 8th grade STAAR. What happened to the mummy brothers' museum exhibit? Is there a curse? Did aliens build the pyramids? The students answer these and many questions using a variety of hands-on activities, reading maps and employing critical thinking skills.

THURSDAY, JUNE 28 - MORNING SESSION 2

TIME	PRESENTATIONS / ACTIVITIES		ROOM	
7:00 - 7:45 a.m.	BREAKFAST		Grand Ballroom <i>Main Floor</i>	
8:00 - 9:15 a.m.	GENERAL SESSION State of Science and Mathematics Education Irene Pickhardt, <i>Statewide Science Coordinator</i> , Texas Education Agency (<i>Details on Page 4</i>)		Grand Ballroom <i>Main Floor</i>	
9:30 - 10:30 a.m.	SESSION 2		Level	
	A	Understanding by Design-Chemistry McGeehan/Hsu	Math/Science/Leaders who have attended UbD	Wedgwood <i>Main Floor</i>
	B	Teaching Aquatic Science Using Aquaponics Wood	All <i>Science</i>	Bosque <i>Main Floor</i>
	C	Ad'ucation in Science. How to Get Kids to "Buy" What You Are "Selling" Lindley	Middle School <i>Science</i>	Concho <i>Main Floor</i>
	D	Cookie Book of Science Wims	Elementary <i>Science</i>	Frio <i>Main Floor</i>
	E	Using Multi-meters to Measure Voltage, Current, Resistance and Conductivity of Materials Roberts/Holcomb	All <i>Science</i>	Guadalupe <i>Main Floor</i>
	F	REALLY Virtual Lab-Achieving Excellence in a Novel Learning Environment Sognier	Middle/High School <i>Science/Technology</i>	Nueces <i>Main Floor</i>
	G	Using Technology to Flip Your Classroom Barnett/Solis	All <i>Technology</i>	Brazos <i>Main Floor</i>
	H	TRC Projects DataCenter for 2012-13 Perry	Leadership	San Antonio <i>Lower Level</i>
	I	Research Lessons: The Core of Lesson Study Junk/Kamen	All <i>Math/Science</i>	San Marcos <i>Lower Level</i>
	J	Overview of First Steps in Mathematics Hoard	Leadership	Sabine <i>Lower Level</i>
	K	Is Concept Mapping a K-12 Science/Math Meaningful Learning Tool? Curts/Carrizales	All <i>Math/Science/Tech.</i>	Pecos <i>Lower Level</i>
	L	Crossing the Euler Line: Geogebra vs. Patty Paper Telese	Middle/High School <i>Math</i>	San Saba <i>Lower Level</i>
	M	Using Wall*E, An Animated Film, as an Educational Resource Peterson/Peterson/Reddick	Elementary <i>Science</i>	Trinity <i>Lower Level</i>
N	Amarillo College- Renewable Energy Wind & Solar Initiative Schneider/Mashburn/Webb	All <i>STEM</i>	Glass Oaks <i>Access via Main Floor</i>	
10:30 - 10:45 a.m.	BREAK			

NOTES

SESSION 2 - PRESENTATION DESCRIPTIONS

A. Understanding by Design-Chemistry

Hilde McGeehan, *Authentic Education*; **Tom Hsu**, *Ergopedia*
If you attended the UbD PDA in January or June, plan to attend this work session where you will have the opportunity to apply your UbD learning to chemistry. Copies of the Chemistry TEKS will be available, but, if possible, bring your copy of Understanding by Design with you to the session. Hilde McGeehan will be available to coach the group in UbD strategies, and Tom Hsu will provide content expertise and support while you work with peers to “backward design” chemistry curriculum.

B. Teaching Aquatic Science Using Aquaponics

Sharon Wood, *Lewisville ISD*
Aquaponics combines “hydroponics” (raising plants in water) and “aquaculture” (raising fish in water). Using 10-gallon aquariums, students raise fish and grow plants. Fish waste is used as nutrients for plant growth and the plants in turn remove nitrate from the water. Students learn about raising fish, maintaining a stable environment, the nitrogen cycle and conservation of water.

C. Ad’-ucation in Science. How to Get Kids to “Buy” What You Are “Selling”

Jana Lindley, *San Angelo ISD*
Utilizing a Professional Learning Community (PLC) to develop advertising techniques to garner student interest in the topic you are trying to teach. Strategies include: using pop culture references (media forms), viral videos, alliteration, rhyming, wit and humor, clever approaches and other persuasive techniques. Topics to be covered focus mainly on Science however there are some applications for Math, English and History.

D. Cookie Book of Science

Annette Wims, *Texas Education Agency*
If you enjoy cooking or want some fun delicious ideas to show your students some abstract science concepts in a concrete way join us for Cookie Book of Science. You will see demonstrations of various cookie recipes for teaching about lava, insulation, mining, land formation, rocks, etc. Your students will reach for New Horizons as they reach for cookies.

E. Using Multi-meters to Measure Voltage, Current, Resistance and Conductivity of Materials

Jim Roberts, *University of North Texas*; **Danny Holcomb**, *Denton ISD*
The “multi-meter” is a device that combines resistance, voltage, current and power measurements. We will explore some of these properties with a multi-purpose meter. The periodic table is divided into metals and non-metals. We will see how conductors (metals) and non-conductors (non-metals) can be explored with a meter. The design of a multi-meter will be discussed in the activities with practical applications. Activities with the meters will be provided for the participants.

F. REALLY Virtual Lab-Achieving Excellence in a Novel Learning Environment

Marguerite Sognier, *UTMB, Galveston*
Learn about our newly developed virtual laboratory, gain the information and skills required to implement it in your classroom, and how it can be used to help fulfill the TEKS. Designed with input from researchers, teachers, and students, the lab enables students to perform experiments, make mistakes, keep an electronic notebook, analyze data, and gain an understanding of scientific processes based on a realistic case scenario. Teacher options enable assessment and customization.

G. Using Technology to Flip Your Classroom

Mark Barnett, *ESC Region 20*, **John Solis**, *TRC*
In this session, you will learn the basics of “flipping” your classroom. What is a flipped classroom? Why flip your classroom? Not ready to flip yet? Start slow. You will see resources for flipping and how to use it with your iPad.

H. TRC Projects DataCenter for 2012-13

George Perry, *TRC*
We will preview next year’s Project DataCenter (based on FileMaker v.12) and several of its new features including a new built-in document storage system. Our intent this year is to concentrate on improving what we have and not add a bundle of new features. For the first time, we are planning to have both the current and next year’s DataCenter open at the same time. Important details about this occurrence will be presented. A good part of this session will be allocated to questions and answers.

I. Research Lessons: The Core of Lesson Study

Michael Kamen, **Stephen Marble**, *Southwestern University*;
Debra Junk, *TRC*
The Research Lesson is the core of the process of the Japanese Lesson Study. Lesson Study has been adapted in the US for a number of years and is a process included in many Professional Development projects across the US. The MSTAR and ESTAR Mathematics Institutes support the use of Lesson Study as a professional learning process and many science teachers have used it to improve the teaching of science. This session will review the key components of Lesson Study and provide examples of how it has been implemented with Texas teachers.

J. Overview of First Steps in Mathematics

Penelope Hoard, *ESC Region 10*
First Steps in Mathematics will develop and expand teachers’ understanding of mathematics and how children learn mathematics. This training provides teachers with the tools to successfully diagnose, plan, implement, and evaluate student-learning experience. Diagnostic Tasks and Diagnostic Maps within each strand will help teachers to identify student misconceptions about mathematics. This session will provide information on how to implement the First Steps Professional Development course at your campus or district.

K. Is Concept Mapping a K-12 Science/Math Meaningful Learning Tool?

Jamie Curts, **Julio Carrizales**, *The University of Texas-Pan American*
Concept Mapping (CM) has been employed as a cognitive strategy to stimulate learners to make cognitive progress in organizing and understanding new information. We will use a hands-on-approach to measure participants’ pre-knowledge on a basic TEKS math/science focus question (i.e., what is the basic structure of an animal cell?), explain the process of hierarchical CM (HCM), ask participants to elaborate an HCM based on the focus question, and post-test participants’ knowledge using electronic clickers.

L. Crossing the Euler Line: Geogebra vs. Patty Paper

James Telese, *The University of Texas at Brownsville*
This session will introduce participants to the triangle properties related to the formation of the Euler Line. They will compare and contrast two instructional methods for teaching what is the Euler Line and identify properties of triangles.

M. Using Wall*E, An Animated Film, as an Educational Resource

Sara Peterson, **Jason Peterson**, *Smithville ISD*; **Heather Reddick**, *The University of Texas MD Anderson Cancer Research Center*
Attendees will participate in a modeled lesson using the animated film Wall*E as a tool to engage and appeal to learners in their elementary classroom. In an abbreviated session, attendees will participate in an engaging lesson on the Water Cycle that can be adapted and utilized in their classroom. Also, attendees will receive numerous lessons integrating Wall*E into their curriculum.

N. Amarillo College- Renewable Energy Wind & Solar Initiative

Art Schneider, **Ron Mashburn**, **Walter Webb**, *Amarillo College*
Wind and solar energy is sweeping the State of Texas. Amarillo College prepares technicians to work in both of these emerging fields. During the workshop we will review energy, wind, and solar and culminate by building a solar car from a kit. We will have our 44-foot Renewable Energy trailer on site and a solar telescope for live views of the sun.

THURSDAY, JUNE 28 - MORNING SESSION 3

TIME	PRESENTATIONS / ACTIVITIES		ROOM
10:45 - 11:45 a.m.	SESSION 3		Level
	A	Understanding by Design-Physics McGeehan/Hsu	Math/Science/Leaders who have attended UbD
	B	Under Water Robotics - A Summer Camp Jackson/Hernandez	High School <i>Math</i>
	C	Successful Strategies for Engaging Middle School ELL Students Minter	Middle School <i>Science</i>
	D	Mastering Multiplication through Manipulation Sprinkle	All <i>Math</i>
	E	Teachers: Patrons of Creativity in the Classroom Anderson/Holbert/Slaughter	Leadership
	F	Teaching Geometry Through Foldables and Activities Ross/Gentes/Burt	High School <i>Math</i>
	G	Astronomy Labs on a Budget Hardy	Middle/High School <i>Science</i>
	H	How Does the Brain Learn Mathematics? Duran/Peralta	All <i>Math</i>
	I	An Eighth Grade Math Immersion Model-What we Did, What We Learned, What We Are Doing Next? Hemphill/Larson	Leadership
	J	Science Notebooks as Assessing Tools Tamayo-Fagler/Mejia	Elementary <i>Science</i>
	K	Muffles' Truffles Integrated Literacy Martin/Jackson/Lamb/Smith/Sherman	Elementary <i>Math</i>
	L	Teaching the Lunar and Tide Cycles Don't Phase Me! Ramirez	Middle School <i>Science</i>
M	Creating Confident Readers in Your Science Classroom Schroeder/Currie	Middle/High School <i>Science</i>	
12:00 - 1:45 p.m.	LUNCH GENERAL SESSION Crafting Creative Thinkers: The 5 Elements of Effective Thinking Edward B. Burger - Professor, Williams College & Baylor University (<i>Details on page 4</i>)		Grand Ballroom <i>Main Floor</i>
12:45 - 5:00 p.m.	TRC/SHELL Energy Symposium Field Trip (Separate registration required) <i>Meet Marsha Willis in the Lobby at 12:45 p.m.</i>		Lobby <i>Main Floor</i>

NOTES

SESSION 3 - PRESENTATION DESCRIPTIONS

A. Understanding by Design-Physics

Hilde McGeehan, *Authentic Education*; **Tom Hsu**, *Ergopedia*

If you attended the UbD PDA in either January or June, plan to attend this work session where you will have the opportunity to apply your UbD learning to Physics. Copies of the Physics TEKS will be available, but, if possible, bring your copy of Understanding by Design with you to the session. Hilde McGeehan, will be available to coach the group in UbD strategies, and Tom Hsu, will provide content expertise and support while you work with peers to “backward design” Physics curriculum.

B. Under Water Robotics - A Summer Camp

Suzana Jackson, *El Paso ISD*; **Veronica Hernandez**, *ESC Region 19*

In this session you will get ideas on how to motivate students in STEM careers using a variety of projects including Lego Mindstorms. We will include information regarding materials and grant sources. Please check our introductory website: waterbotics.weebly.com

C. Successful Strategies for Engaging Middle School ELL Students

Jessie Minter, *Galveston ISD*

Learn successful instructional strategies to use in class to engage your students. See how empowering students to perform their own investigations and sharing their data with other schools facilitates their comprehension of science concepts and academic language development. Perform an example activity with demonstrations of others. Bring your iPad and see how students use this with a digital microscope to perform a variety of different investigations. Receive access to lesson plans geared to TEKS.

D. Mastering Multiplication through Manipulation

Jodi Sprinkle, *Midland ISD*

In 3M, we will learn to bridge the gap between the use of manipulatives (base-10 blocks) and written multiplication that will make sense to all students. We will also discover the connection of 3rd grade multiplication to algebra with the use of algebra tiles.

E. Teachers: Patrons of Creativity in the Classroom

Sarah Anderson, **Lara Holbert**, **Kelsey Slaughter**, *Frenship ISD*

In this workshop, we will address reasons why new teachers leave education and provide ideas to encourage good teachers to stay and develop their craft. We will present ideas and activities to help new teachers, mentor teachers, and instructional coaches with classroom management and other administrative responsibilities. We will share strategies to provide teachers with the tools necessary to move from starving artists to patrons of creativity in the classroom.

F. Teaching Geometry Through Foldables and Activities

Christine Ross, **Kelly Gentes**, **Itzel Burt**, *Humble ISD*

We will demonstrate how you can use foldables and activities to raise the level of rigor as students take notes and learn concepts. Modeling of lessons will be used to show that sometimes all you need is a piece of paper, pencil, and questions to teach geometry. All files used will be shared electronically after the session.

G. Astronomy Labs on a Budget

Debra Hardy, *Krum ISD*

Easy and inexpensive activities for secondary and middle school Astronomy are presented. These engaging activities travel from a planetary accretion model to moon phases then across the Solar System to the constellations.

H. How Does the Brain Learn Mathematics?

Reynaldo Duran, **Aimee Peralta**, *Presidio ISD*

Are you right-brained or left-brained? Does it matter? Come join us and find out as we share some research-based brain-compatible teaching strategies that actively engage all types of students in a mathematics classroom. In this session, you will have the opportunity to assess your own brain dominance, learn and experience some of these teaching strategies, and see how these have been applied to our own classrooms and fostered collaboration among us, teachers in our Mathematics Department.

I. An Eighth Grade Math Immersion Model-What We Did, What We Learned, What We Are Doing Next?

Susan Hemphill, *ESC Region 13*; **Russell Larson**, *Pflugerville ISD*

As part of our TRC grant we had several districts participate as part of our immersion model, this is the story of one district, Pflugerville ISD, and how they utilized the resources provided to their MTMs to support ongoing professional development throughout their district. In this session we will take some time to explain the planning, implementation and the outcomes for the year. With our new grant PISD will continue to build on their immersion model. Ideas and plans for next year will be shared. There will also be a question and answer time at the end of this session.

J. Science Notebooks as Assessing Tools

R. Patricia Tamayo-Fagler, **Adriana Mejia**, *Clear Creek ISD*

It is really important for practicing and future teachers to realize that ongoing and formative assessment as well as students' self-assessment are a crucial part of best learning and teaching science practices. For this presentation, a hands-on learning experience will be included to tie with the use of the science notebook.

K. Muffles' Truffles Integrated Literacy

Ruby Martin, **April Jackson**, *Tyler ISD*; **John Lamb**, **Nathan Smith**, **Cynthia Sherman**, *The University of Texas at Tyler*

Engaging students with manipulatives and mental math to explore multiplication and division. Children's literature will be infused throughout the K-3 presentation.

L. Teaching the Lunar and Tide Cycles Don't Phase Me!

Dawn Ramirez, *Fort Stockton ISD*

Using the 5E Model, we'll go beyond cookie moon phases to teach these two natural cycles. Learn how to use kinesthetic activities, children's literature, creativity and technology to get your students to understand the relationships between the Earth, Moon, Sun and Ocean systems. We'll put a new spin on the Moon-on-a-Stick Lab, demonstrate how to use simple materials to model the tides, and show you how easy it is for your students to become moviemakers.

M. Creating Confident Readers in Your Science Classroom

Carolyn Schroeder, *Texas A&M*; **TTione Currie**, *Trinity ISD*

Do your students have problems reading science materials? Come and explore strategies to help them learn science more effectively by becoming better readers. Based on NSTA's Once Upon a Life Science Book, this workshop will introduce you to successful reading experiences that support science content learning, along with reading strategies to help develop your students' reading skills. Although the book specifically deals with life science concepts, the strategies can be applied to any science.

THURSDAY, JUNE 28 - AFTERNOON SESSION 4

TIME	PRESENTATIONS / ACTIVITIES		ROOM
2:15 - 3:15 p.m.	SESSION 4		Level
	A	Successes and Challenges: Project Directors' Panel Fletcher/Ralston/Utsman/Minix-Wilkins/Roehl	Leadership <i>Wedgwood Main Floor</i>
	B	Making the Most of Your Composition Books and Your Time Ard	All <i>Science Bosque Main Floor</i>
	C	PLCs: How to Start (and Continue) the Conversation Krimmer/Hernandez	Leadership <i>Concho Main Floor</i>
	D	Fostering Algebraic and Geometric Thinking in 5-Minute Bursts Lamb/Sherman/Smith	Elem./Middle School <i>Math Frio Main Floor</i>
	E	QR Codes and the Human Body System Gallegos	High School <i>Science/Technology Guadalupe Main Floor</i>
	F	Notebooks + Foldables = Notebook Foldables Bynum/Casimir/Alexander	All <i>Math/Science Nueces Main Floor</i>
	G	iClassroom-Incorporate the iPad in your Daily Lessons and Organization Martinez	All <i>Science Brazos Main Floor</i>
	H	The NSTA Learning Center: Personalized, "Just in Time," Learning for Science Educators Mendez	All <i>Science San Antonio Lower Level</i>
	I	Providing a Habitat for Butterflies Garay-Escobedo/Anderson/Zuniga	Elementary <i>Science San Marcos Lower Level</i>
	J	"Building-up" from Area to Volume Morrow/Jones/Hill	Elementary <i>Math Sabine Lower Level</i>
	K	Sustainability in the Wild: Student and Classroom Success with "The AreoCharger" Guerrero	Middle/High School <i>Math/Science Pecos Lower Level</i>
	L	Digging into Earth Science Fitzgerald/Bizzell	Elementary <i>Science San Saba Lower Level</i>
M	Magnifying Your Perspective Maxwell/Storms/Kelly/Gonzalez/Kemp	Elementary <i>Science Trinity Lower Level</i>	
N	TAME/TRC Family Math and Science Mini-grant Program Raj/Collins	All <i>STEM Glass Oaks Access via Main Floor</i>	
3:15 - 3:30 p.m.	BREAK		

NOTES

SESSION 4 - PRESENTATION DESCRIPTIONS

A. Successes and Challenges: Project Directors' Panel

Carol Fletcher, TRC; Becky Ralston, Region 12 Mathematics Collaborative (Waco); Diane Utsman, Region 18 Mathematics Collaborative (Midland); Roxanne Minix-Wilkins, Region 5 Science Collaborative (Beaumont); Sheryl Roehl, Texas State Aquarium-ESC 2 Regional Collaborative (Corpus Christi) and Region 3 Collaborative (Victoria)

This session is designed for Project Directors and Instructional Team Members. New Project Directors will find this session especially helpful. The session will feature a panel of experienced Math and Science Project Directors sharing their successes and challenges in directing a Collaborative. Topics addressed will be program design, recruitment of teachers, roles of content experts, and working with administrators.

B. Making the Most of Your Composition Books and Your Time

Karyn Ard, Troup ISD

Have you struggled with using note-booking in class because you are afraid it takes up too much time or it just gives you more to grade? Come see how note-booking can make your life easier and help to organize your students' backpacks AND thoughts. We will share ideas on how you CAN have time for note-booking.

C. PLCs: How to Start (and Continue) the Conversation

Annette Krimmer, El Paso ISD; Veronica Hernandez, ESC Region 19
In order for teachers to be active members of a professional learning community, they need time together with guiding questions that direct the conversation. Learn how to provide 90 minute sessions that bring teachers and instructional leaders together during the school day for productive dialogue about students, assessments, intervention, and instruction.

D. Fostering Algebraic and Geometric Thinking in 5-Minute Bursts

John Lamb, Cynthia Sherman, Nathan Smith, The University of Texas at Tyler

This presentation will describe how 3rd-8th grade teachers explored and implemented Mark Driscoll's Fostering Algebraic and Geometric Thinking problems broken down in 5-minute intervals. We discovered our teachers had difficulty implementing Driscoll's problems within their curriculum because of time requirements. Therefore, we divided many of Driscoll's problems into small 5-minute tasks allowing the teachers to use these tasks as warm-up activities over a series of days.

E. QR Codes and the Human Body System

Lucinda Gallegos, Sonora ISD

This lesson is designed to integrate technology into the biology classroom by using smartphones or iPads to scan QR codes. It focuses on making learning relevant to students' lives by incorporating life lessons about teenage health issues into the anatomy lesson, and is designed for the biology classroom or as an introductory lesson to A&P class.

F. Notebooks + Foldables = Notebook Foldables

Debbie Bynum, Sandra Casimir, Martha Alexander, ESC Region 18

The fast-paced session will show you how to efficiently and effectively combine two superb instructional strategies into one incredible learning experience. Using the idea of an "anchor tab" explore the use of 3-D graphic organizers in a journal or notebook to help students become more engaged with their learning.

G. iClassroom-Incorporate the iPad in your Daily Lessons and Organization

Raul Haro Martinez, Pecos Barstow Toyah ISD

Today's students are "digital oriented students" that are surrounded by media. The incorporation of technological tools in the classroom such as the iPad can present a new dimension on how we present content to our students. We will present fun and interactive ways to present science and math concepts with the use of the iPad for different grade levels.

H. The NSTA Learning Center: Personalized, "Just in Time," Learning for Science Educators

Flavio Mendez, NSTA

The Learning Center is NSTA's professional learning portal designed to enhance educators' pedagogical content knowledge. With over 3,000 free resources, a suite of PD tools, and a professional learning community - the Learning Center can help! Attend this session and learn how to create your account, find resources, and stay engaged with others online. All participants receive complimentary access to one SciPack, a self-directed interactive online module. Bring your computer.

I. Providing a Habitat for Butterflies

Sylvia Garay-Escobedo, Jennifer Anderson, Maricela Zuniga, Dallas ISD

The attendees will learn to make individual habitats for butterflies for children to take home and watch the life cycle of the butterfly.

J. "Building-up" from Area to Volume

Faith Morrow, Stella Jones, and Eddie Hill, Tyler ISD

The connections between area and volume are explored in this activity, along with the understanding of how the formula for volume can be either $v = l \times w \times h$ or $v = \text{area of } b \times h$. (Which will lead to further understanding in secondary concepts - i.e., triangles, quadrilaterals, and pyramids and prisms.) Upper-elementary students require hands-on opportunities to help them transition from the concrete to the pictorial to the abstract reasoning behind each formula. Participants will leave with 5 activities that can supplement their instruction in teaching and reinforcing area and volume using four different types of manipulatives.

K. Sustainability in the Wild: Student and Classroom Success with "The AreoCharger"

Carlos Guerrero, Robstown ISD

Award winning students co-present with their teacher on how to build the ultimate generator. Inspired by last year's TRC SECO workshop and put into practice in the classroom, students working on hydro/wind turbine, placed first at the South Texas/Coastal Bend Engineering and won scholarships by presenting at a regional conference. This session includes the students' demonstration of building the cell phone charger using common household items.

L. Digging into Earth Science

Natalie Fitzgerald, Jennifer Bizzell, Ector County ISD

Do your students struggle with 5th grade Earth Science concepts? If so, this session is for you! Participants will create a foldable using visual and kinesthetic interaction. The foldable will include: fossil formation, landforms, natural resources, rapid and slow changes to the Earth's surface, making of sedimentary rocks, weathering, erosion, deposition, and the making of soil. You will have an Earth Science foldable sample to bring back to your classroom to create with your students.

M. Magnifying Your Perspective

Jason Maxwell, Rice University; John Storms, Katy ISD; Matthew Kelly, Humble ISD; Yarah Gonzalez, Cypress-Fairbanks ISD; Shaunte Kemp, Sheldon ISD

In this lesson, the learner rotates while viewing the "sun" through a plastic food container lid. Their shifting perspective creates an apparent movement of the "sun" and demonstrates how the rotation of the Earth can create a similar apparent motion of the Sun in our sky.

N. TAME/TRC Family Math and Science Mini-grant Program

Savita Raj, Linda Collins, TAME

This session will provide an overview of the TAME/TRC Family Math and Science mini-grant program. Participation guidelines and the application process will be discussed. In addition, attendees will also receive a discount code for scheduling additional Trailblazer visits to their schools. TEKS maps for all exhibits and connections to the EiE program will be highlighted.

THURSDAY, JUNE 28 - AFTERNOON SESSION 5

TIME	PRESENTATIONS / ACTIVITIES		ROOM
3:30 - 4:30 p.m.	SESSION 5		Level
	A	Using Mobile Technology to Support Teacher Professional Development Kapral/Lamb	Leadership <i>Wedgwood Main Floor</i>
	B	Going Digital: Using Computers and Personal Devices on a Regular Basis in the Science Classroom Matte-Swart/Swart	Middle/High School <i>Science/Technology</i> Bosque <i>Main Floor</i>
	C	Cells: Not Your Cell Phone-Integration of Science and CTE Concepts Garcia/Reddick	CTE High School <i>Science</i> Concho <i>Main Floor</i>
	D	Enhancing Math Learning Through Anchor Charts and Songs Guerra/Martinez	Elementary <i>Math</i> Frio <i>Main Floor</i>
	E	Get Up and Go with Middle School Geometry! Rinehart	Middle School <i>Math/Technology</i> Guadalupe <i>Main Floor</i>
	F	STAAR: Investigate the Impact on Math Instruction Scott	Leadership Nueces <i>Main Floor</i>
	G	“Animorphosing” The Animation of Metamorphosis Raleigh/Christian	Elementary <i>Science/Technology</i> Brazos <i>Main Floor</i>
	H	Teachers TryScience Expands Its Resources for Texas STEM Teachers Dochon	All <i>STEM</i> San Antonio <i>Lower Level</i>
	I	Investigating Inflatable Interpretive Interlocking Science Williams	All <i>STEM</i> San Marcos <i>Lower Level</i>
	J	Putting the Rigor in Math with Patterns, Number Lines, Angles and Logical Reasoning Johnson	All <i>Math</i> Sabine <i>Lower Level</i>
	K	OnTRACK for College Readiness: Math Parrish	Middle/High School <i>Math</i> Pecos <i>Lower Level</i>
	L	Explore OnTRACK Science Lee	Middle School <i>Science</i> San Saba <i>Lower Level</i>
M	Empowering 21st Century Science Students Using Web 2.0 Webb/Brooks	All <i>Science/Technology</i> Trinity <i>Lower Level</i>	
5:00 - 7:00 p.m.	Vendor Fair with Reception <i>Details below</i>		Rio Grande B <i>Lower Level</i>
5:00 - 8:00 p.m.	TAME Trailblazer <i>Details below</i>		Parking Lot <i>Access via Trinity Patio</i>

VENDOR FAIR

The TRC Vendor Fair is an opportunity for those attending the Annual Meeting to view high quality science and mathematics instructional materials as displayed by a variety of commercial and educational companies* and non-profit organizations. Attendees are encouraged to visit informally with company representatives to learn about the latest in books, equipment and technology for the classroom. Light refreshments will be served.

**Texas Regional Collaboratives does not endorse any particular vendor or any particular product sold, used, or displayed at this event.*

LIST OF VENDORS (subject to change)

- CPO Science
- Delta Education
- DynaStudy, Inc.
- Fisher Science Education
- Integral Mathematics, Inc.
- LAB-AIDS
- National Science Teachers Association
- PASCO Scientific
- Rice University STEMscopes
- Science Kit
- SmartSchool Systems
- Supporting Science, Inc.
- Vernier Software & Technology

TAME TRAILBLAZER

Visit the TAME (Texas Alliance of Minorities in Engineering) Trailblazer and get a chance to win a 'half-price Trailblazer visit' - finger foods will be served. To access, exit through doors located by Trinity on Lower Level (see map on page 5).

SESSION 5 - PRESENTATION DESCRIPTIONS

A. Using Mobile Technology to Support Teacher Professional Development

Andrew Kapral, *University of Houston*; **John Lamb**, *The University of Texas at Tyler*

This session will provide an opportunity to discuss ways in which mobile technology is being integrated into TRC projects across the state. Project Directors and Instructional Team Members that are currently using, or planning to use, mobile technology devices in their projects will benefit from participating in this discussion of expected benefits, potential pitfalls, and practical solutions.

B. Going Digital: Using Computers and Personal Devices on a Regular Basis in the Science Classroom

Patricia Matte-Swart, Ed Swart, *Conroe ISD*

We will present ideas for using technology regularly in the classroom, whether you have laptops or only student devices to work with. Examples: students conduct self-paced and directed research, combine the jigsaw strategy with computers, utilize digital labs, use online graphs and Google maps to report data, use online quizzes, and motivating students to engage in and reflect on scientific reading by using educational, protected environments which mimic the social networking platforms through which students are used to interacting.

C. Cells: Not Your Cell Phone-Integration of Science and CTE Concepts

Marianne Garcia, *Lockhart ISD*; **Heather Reddick**, *The University of Texas MD Anderson Cancer Research Center*

Cells, not your cell phone cells, are the basic units of all life. Students better understand difficult concepts when a real work application is included. This session provides real world public health and sports medicine applications to the study of cells Integration of Science and CTE concepts.

D. Enhancing Math Learning Through Anchor Charts and Songs

Elvira Guerra, Juana Martinez, Donna ISD

This session will help bring out the creative side in any teacher with the desire to reach all types of learners through songs and creative anchor charts. Come learn how to make the most of YouTube and chart tablets.

E. Get Up and Go with Middle School Geometry!

B. Michelle Rinehart, *ESC Region 18*

Come explore numerous examples of brain-compatible instruction based on the CSCOPE exemplar lessons and the research-based strategies identified in Dr. Marcia Tate's "Mathematics Worksheets Don't Grow Dendrites." We will "get up and go" as we experience specific ways to effectively integrate movement, journals, humor, drawings, investigations, and technology into a middle school math course. Leave with practical ideas for making your instruction more brain-friendly!

F. STAAR: Investigate the Impact on Math Instruction

Liz Scott, *ESC Region 7*

"Fewer, deeper, and clearer," are the words TEA has used to describe STAAR. How should these three words impact math instruction? How could increased rigor be translated into an assessment question? This session is designed to help instructional leaders examine these topics and leave with a deeper and clearer understanding of STAAR's impact on math and science instruction.

G. "Animorphosing" The Animation of Metamorphosis

Margaret Raleigh, Elda Christian, *ESC Region 1*

Learn about developmental stages of metamorphosing animals and then complement the lesson by the creation of fanciful metamorphosing creatures, their environments, and their food. To finish the metamorphosis product, participants will add animation to produce their story.

H. Teachers TryScience Expands Its Resources for Texas STEM Teachers

Sandy Dochen, *IBM*

IBM presents an update of the exciting on-line resource, Teachers TryScience web site, developed in partnership with the TRC. View experiential learning at its best with new hands-on lesson plans, and their correlation with Texas science standards. Learn how to create new lesson plans, and post comments with your colleagues across Texas and the world.

I. Investigating Inflatable Interpretive Interlocking Science

Shanya Williams, *Longview ISD*

In a smart world filled with "iEverything," simple items used in activities for science are disappearing. Using economical latex balloons, IPC, chemistry, physics, and biology concepts merged with the arts, ELA, and social studies will have the students up, up, and away into hands-on learning.

J. Putting the Rigor in Math with Patterns, Number Lines, Angles and Logical Reasoning

Patricia Johnson, *The University of Texas at Tyler*

Participants will take from this activity a plethora of teaching strategies to help make meaning while enhancing the understanding at a level that all students can grasp. This will include Number-of-the-Day Activities; Growing Squares with Patterns; Card Games; using Angles to teach shapes and number sense.

K. OnTRACK for College Readiness: Math

Mark Parrish, *Institute for Public School Initiatives*

Participants will learn how to access, explore, and experience free student ready lessons from OnTRACK for College Readiness that support student success on STAAR and other assessments. As part of TEA's Project Share, OnTRACK provides more than 200 engaging and interactive online lessons for Algebra 1, Algebra 2, Geometry and grade 8 math. OnTRACK is being developed by the Institute for Public School Initiatives (IPSI) at UT Austin in partnership with the Texas Education Agency (TEA).

L. Explore OnTRACK Science

Martha Lee, *Institute for Public School Initiatives*

As part of TEA's Project Share, OnTRACK provides more than 150 of STAAR-aligned lessons for 8th grade science, biology, chemistry, and physics. Each lesson includes engaging and interactive learning experiences, assessments with meaningful feedback, and additional resources. OnTRACK materials enable participants to effectively use interactive media in a non-linear learning environment with students struggling in science. Participants will learn how to access, explore, and experience free student ready lessons from OnTRACK for College Readiness.

M. Empowering 21st Century Science Students Using Web 2.0

Katy Webb, Juliann Brooks, *Friendswood ISD*

Tired of teaching 21st Century students with 20th Century tools? Come transform traditional science projects with Web 2.0. Learn to use a variety of free tools, resources and technologies in order to create engaging science lessons to empower today's digital natives.

FRIDAY, JUNE 29 - MORNING SESSION 6

TIME	PRESENTATIONS / ACTIVITIES	ROOM	
7:00 - 7:45 a.m.	BREAKFAST	Grand Ballroom <i>Main Floor</i>	
8:00 - 9:00 a.m.	SCIENCE AND MATHEMATICS LEADERSHIP SESSIONS (<i>Details below</i>) -TRC Resources for Hands-On Biology Lessons -Understanding the Role of Teachers' Math Knowledge in the TRC Professional Development	Trinity, Lower Level San Antonio, Lower L.	
9:30 - 10:30 a.m.	SESSION 6	Level	
	A Understanding by Design Wiggins	All <i>Math/Science</i>	Wedgwood <i>Main Floor</i>
	B Science Through the Core Content Areas and Beyond: How to Identify the Big Ideas of Science Through the Core Content Areas Holt	Elem./Middle School <i>Science</i>	Bosque <i>Main Floor</i>
	C Rigor Does NOT Mean MORE WORK!! Le/Porter	Middle/High School <i>Math</i>	Concho <i>Main Floor</i>
	D If You Are Not in the Box-Why Get Out? Sechelski	All <i>Technology</i>	Frio <i>Main Floor</i>
	E Build Me a Mountain... Topographical Maps, Satellite Views and Erosional Features Borrego/Snelling	Elem./Middle School <i>Science</i>	Guadalupe <i>Main Floor</i>
	F Energize Your Science Curriculum! Tomas/Scoggin	All <i>Science</i>	Nueces <i>Main Floor</i>
	G "Spring, Sprang, Sprung": Vocabulary Comes Alive! Bynum/Utsman/Alexander/Casimir	All <i>Math/Science</i>	Brazos <i>Main Floor</i>
	H Using iPads in the Elementary Classroom Ranford/Vreeland/Bean/Taville/Ortiz	Elementary <i>Technology</i>	San Antonio <i>Lower Level</i>
	I Dual Language Foldables and Kid-Friendly Tools for Science Journals (K-5) Shull/Arita	Elementary <i>Math/Science</i>	San Marcos <i>Lower Level</i>
	J Making Science Fun with Sorts! Bray	Elementary <i>Science</i>	Sabine <i>Lower Level</i>
	K Chemistry for Grades 3-5 Barton	Elem./Middle School <i>Science</i>	Pecos <i>Lower Level</i>
	L Properties of Quadrilaterals Tyre	All <i>Math</i>	San Saba <i>Lower Level</i>
M Curriculum Integration that Works! Geometry in Construction, Algebra of Automotive Systems, and Business World Algebra Burke/Moore	High School <i>Math</i>	Trinity <i>Lower Level</i>	
10:30 - 10:45 a.m.	BREAK		

SCIENCE LEADERSHIP SESSION (*Trinity*)

TRC Resources for Hands-On Biology Lessons

Sara Flusche, Lisa Bellows, North Central Texas College

The TRC has funded the development of a Biology Lab Manual for Texas in collaboration with North Central Texas College. This manual outlines various resources and activities that can be used to meet the Biology TEKS. It will be available by download free of charge to all TRC members. This session will provide an overview of the lab manual and an opportunity for Project Directors to share ideas for its use with TRC teachers and suggestions for future versions.

MATHEMATICS LEADERSHIP SESSION (*San Antonio*)

Understanding the Role of Teachers' Math Knowledge in the TRC Professional Development

Debbie Junk, Cynthia Lima, TRC

How do we know we are making an impact on students' mathematical success in Texas schools? What is the role of teachers' mathematical knowledge and how can we measure it, and interpret the results to inform our programs? These and other issues about teachers' mathematical knowledge will be discussed in the context of Texas Regional Collaboratives mathematics professional development programs. Come prepared to share your experiences around this issue. Recent data from TRC math programs will provide the foundation for the discussion.

SESSION 6 - PRESENTATION DESCRIPTIONS

A. Understanding by Design

Grant Wiggins, *Authentic Education*

Participate (via Web conferencing technology) in an engaging and thought provoking session in Understanding by Design (UbD) led by Grant Wiggins, one of the UbD developers. Understanding by Design is a framework for improving student achievement. Dr. Wiggins will relate personal experiences that motivated him to develop the “backward design” process, and tell how teachers, schools, and districts can benefit by “working smarter” through regular reviews of results (achievement data and student work) and the collaborative design, sharing, and peer review of units of study.

B. Science Through the Core Content Areas and Beyond: How to Identify the Big Ideas of Science Through the Core Content Areas

Lora Holt, *Anthony ISD*

Feel like science gets taught in isolation of other subjects? Notice that elementary or middle school teachers either feel uncomfortable teaching science or may be passing on the idea to students that science is different from math, ELAR or social studies? In this session, workshop participants will investigate the big ideas of science content and process ideas and apply them to the other core subject areas to see how these big ideas translate into other areas of learning. By the end of this session, you will be able to spread the word that the big ideas of science are not only taught in other subjects, but are necessary to learning any subject area and by using Essential Questions, you can use big ideas to create central themes of learning across the four core.

C. Rigor Does NOT Mean MORE WORK!!

Tom Le, Daniel Porter, *Humble ISD*

This session will focus on increasing the rigor in a math classroom through the use of effective questioning techniques, exploratory exercises, and metacognition as well. First, the learner will gain experience firsthand through a model lesson. Then, multiple strategies will be presented to break the myth of teaching from “simple to complex.” All files used will be shared electronically after session.

D. If You Are Not in the Box-Why Get Out?

Joy Sechelski, *College Station ISD*

Why confine yourself to out of the box thinking when you should have never boxed yourself in? Using creative ways with 21st Century technology in the classroom and take home ready-made lessons for all ages will be the focus. Why re-invent the wheel when we don't have the time in the first place. You don't have to have a big budget or fancy equipment to “wow” the students.

E. Build Me a Mountain... Topographical Maps, Satellite Views and Erosional Features

Hilda Borrego, Victoria Snelling, *McAllen ISD*

Are middle school students struggling on how to interpret topographical maps and satellite views to identify land and erosional features and predict how weathering may reshape these features? Well, this breakout session will feature a series of fun engaging hands-on lessons on topographical maps. Participants will not only create topographical maps of mountains, peaks and plateaus, but will also learn about the scales and the way that elevations are shown on these maps. Participants will also have the opportunity to look at USGS maps and satellite views of various erosional features. All participants will walk out with lesson plans and activities ready to use in their classrooms.

F. Energize Your Science Curriculum!

Doris Tomas, *Offshore Energy Center*; **Claire Scoggin**, *Houston Museum of Natural Science*

Free resources! This session will provide you with information on how to enhance your Earth Science curriculum with fun, creative hands-on activities and materials.

G. “Spring, Sprang, Sprung”: Vocabulary Comes Alive!

Debbie Bynum, Diane Utsman, Martha Alexander, Sandra Casimir, *ESC Region 18*

Visual Kinesthetic Vocabulary® (VKVs): one of Dinah Zike's instructional models that transform words from 2-dimensional to 3-dimensional tools. Learn to manipulate and change words to form numerous words to foster students' ability to transfer what they learn about similar words. Academic vocabulary can be interactive allowing students to process and make the connections necessary! This session is geared for all levels in all content areas.

H. Using iPads in the Elementary Classroom

Janelle Ranford, *University of Houston*; **Pam Vreeland, David Bean, Wendy Taville**, *Alvin ISD*; **Alejandra Ortiz**, *Houston ISD*

Join us to explore strategies for integrating a single iPad into elementary science instruction. Presenters will share classroom successes and challenges along with their favorite science apps. Participants should plan to bring their iPads and be prepared to share their experiences during this informal open discussion.

I. Dual Language Foldables and Kid-Friendly Tools for Science Journals (K-5)

Janet Shull, Aurelia Arita, *Fort Worth ISD*

Dual language foldables and kid-friendly tools for science journals (K-5), are classroom examples for 3-5 Centers, and Spanish English cognates science concept word walls. There are 180+ concept words, as well as school-wide words to label common areas like the fire extinguisher, water fountain, window, locker, etc.

J. Making Science Fun with Sorts!

Gwyn Bray, *Alvin ISD*

Making science fun with sorts provides fun interactive games for students to use as a reinforcement or refresher of science topics taught. Teachers will leave with ready-to-make games that can be put to use right away.

K. Chemistry for Grades 3-5

Chani Barton, *Pearland ISD*

In this session, we will explore the Chemistry TEKS for grades 3-5. A 5E lesson will be provided and lessons ideas will be given to explore Phases (States) of Matter. We will be discussing the particles of a solid, liquid, and gas. We will compare these and discuss the effect of thermal energy on each phase.

L. Properties of Quadrilaterals

Maribel Tyre, *The University of Texas at Brownsville*

Students discover the properties of the square, rectangle, rhombus, parallelogram, kite, and trapezoid. Engage your students by having them use protractors to measure angles and diagonals in quadrilaterals. Students will be able to apply the properties and theorems of these quadrilaterals to STAAR problems.

M. Curriculum Integration that Works! Geometry in Construction, Algebra of Automotive Systems, and Business World Algebra

Scott Burke, Tom Moore, *Contextual Learning Concepts*

In a revolutionary approach, a math teacher and a CTE teacher joined forces to design rigorous mathematics courses taught through relevant project-based CTE curriculum. Now six years later standardized test scores have increased, gender equity and enrollment are soaring, and discipline incidents are virtually a thing from the past. Join us to learn how higher quality STEM education can be achieved in any school setting. Check us out online at: www.geometryinconstruction.org.

FRIDAY, JUNE 29 - MORNING SESSION 7

TIME	PRESENTATIONS / ACTIVITIES		ROOM
10:45 - 11:45 a.m.	SESSION 7		Level
	A	Using Inquiry and Problem Based Learning to Meet the Rigor Requirements of the Revised TEKS Yoder/Matte-Swart/Morley	Middle/High School <i>STEM</i>
	B	It's Not What You Think! Grubbs	All <i>STEM</i>
	C	Discovering Science in Literature Cavallin/Perez	Elem./Middle School <i>STEM</i>
	D	Activities in Algebra Borchardt/Brogdon/Booker	Middle/High School <i>Math</i>
	E	Foam Friends! A Creative Approach to Chemistry Allison/Robinson	Middle/High School <i>Science</i>
	F	Chocolate Rocks II Estrada/Wolf	Middle School <i>Science</i>
	G	Investigating Newton's Laws: A Hands-On Approach Becker	Middle School <i>Science</i>
	H	iLearn with QR Codes Solis	All <i>Technology</i>
	I	Groceries, Stamps and Measuring Strips: Early Multiplication Brown/Acker/Bailes	Elementary <i>Math</i>
	J	Identifying Core Planning and Teaching Strategies Required to Prepare Students for Revised Standards and Assessments Franks/Pitts	Leadership
	K	Don't Throw That Away! I Need it for Class! Everyday Items for Math Monaghan/Mann/Green/Lane/King/Campbell	All <i>Math</i>
	L	What's all that Physics Equipment and Apparatus Mandated in Physics TEKS 2F & 2G? Sears/Plas	High School <i>Science</i>
M	Numeracy for All Harris	All <i>Math</i>	
12:00 - 2:00 p.m.	LUNCH <ul style="list-style-type: none"> • Nita Beth Camp Legacy Awards • Door Prizes! 		Grand Ballroom <i>Main Floor</i>



Friday Lunch Door Prizes!

2 iPad 3
(16GB)



3 Flip Video
(4GB)



5 Kodak
Easyshare Sport



SESSION 7 - PRESENTATION DESCRIPTIONS

A. Using Inquiry and Problem Based Learning to Meet the Rigor Requirements of the Revised TEKS

Gloria Yoder, *Academy ISD*; **Patricia Matte-Swart**, *Conroe ISD*; **Carolyn Morley**, *College Station ISD*

Take a look at the rigor of the revised TEKS and how it can be met by introducing your students to a different way of learning. Memorization of facts and information won't cut it in today's world. Inquiry and Problem Based Learning (PBL) encourage students to take ownership of the learning process as they "think" their way through a situation. Participants will be given examples of lessons in biology, chemistry, and physics as they experience the Inquiry process for themselves.

B. It's Not What You Think!

Judy Grubbs, *ESC Region 7*

Are you teaching but your students are not learning? Perhaps they suffer from common misconceptions. Join us as we explore research-based strategies that uncover and challenge existing understandings and help guide students into more scientific ways of thinking.

C. Discovering Science in Literature

Nancy Cavallin, *St. Mary's Academy Charter School*; **Janie Perez**, *The Gregory-Portland ISD*

Learn how teaching science through the first book in the Guardians of Ga'Hoole series, written by Kathryn Lasky, keeps your students engaged and retentive. Book One, "The Capture" is full of science, with magnetism, owl pellets, moon phases, migration, basic bird biology and much more. See how the use of videos, vocabulary activities, interactive websites, lab activities and more will engage the students and entice them to enter the world of science exploration. Teachers will leave this session with at least one week's worth of activities. If you bring your thumb drive, lessons can be uploaded.

D. Activities in Algebra

Linda Borchardt, *Vernon ISD*; **Sherri Brogdon**, and **Sheri Booker**, *Burkburnett ISD*

This session will include activities for an algebra class that can be completed on a shoestring budget. The activities involve working with slope / rate of change. Participants will be making parachutes from plastic bags, string, and index cards to "float" marbles from a tall distance. Next, they will calculate the slope. Another possible activity will be building vehicles with LEGOs with a sail made from aluminum foil. Using a fan as the catalyst, participants will find the rate of change.

E. Foam Friends! A Creative Approach to Chemistry

Cheryl Allison, **Lacy Robinson**, *ESC Region 8*

Experience first-hand the evidence of a chemical change! Attend this make-and-take session to create your personal "foam friend" by simply mixing a couple of chemicals. It is fun, safe, and connected to Chemistry TEKS.

F. Chocolate Rocks II

Sabrina Estrada, **Lori Wolf**, *Denton ISD*

Participants will journey through the Rock Cycle. They will use chocolate chips, white chips, and butterscotch chips to simulate Weathering of Rocks, Igneous Rocks, Sedimentary Rocks, and Metamorphic Rock. This is a hands-on activity and brings some fun to the Rock Cycle.

G. Investigating Newton's Laws: A Hands-On Approach

Don Becker, *Clear Creek ISD*

We will use a variety of stations where students can investigate each of Newton's 3 Laws that is being applied, while using the correct vocabulary in their answer. Printed lab sheets, digital copies, and a door prize will be given out.

H. iLearn with QR Codes

John Solis, *TRC*

Learn how to create and utilize QR codes with mobile devices in the classroom. QR codes are more than just links to websites. See how QR codes can create text-based documents on mobile devices, link to audio-recorded content, and be utilized for print-based instructional media.

I. Groceries, Stamps and Measuring Strips: Early Multiplication

Barbara Brown, *Grapeland ISD*; **Susan Acker**, *Magnolia ISD*; **Courtney Bailes**, *Coldspring-Oakhurst ISD*

This session will share information from the Young Mathematicians at Work project, "Investigating Multiplication and Division." The focus of this unit is the introduction and early development of multiplication. By making use of realistic situations, students are invited to find ways to mathematize their lived worlds with grouping structures. Contexts, such as the following, will be explored: inside the grocery store; postage stamps; city buildings, windows, and buses; tiled patios; a baker's trays; and sticker pages.

J. Identifying Core Planning and Teaching Strategies Required to Prepare Students for Revised Standards and Assessments

Ruth Franks, **Peggy Pitts**, *The University of Texas at Austin*

Through our work with pre-service and in-service elementary teacher education programs, we are working to identify the core strategies, content knowledge and lesson preparation skills that elementary science teachers need in order to face the growing demands associated with higher standards. We are leveraging our findings in the College of Natural Sciences Quest Learning and Assessment Platform to develop support modules that can be used by both trainers in professional development programs and by classroom teachers in more personalized learning experiences.

K. Don't Throw That Away! I Need it for Class! Everyday Items for Math

Johnette Monaghan, **Janis Mann**, *McKinney ISD*; **Phyllis Green**, *Grand Prairie ISD*; **Shannon Lane**, *Ferris ISD*; **Tawnia King**, *Collinsville ISD*; **Megan Campbell**, *Van Alstyne ISD*

Do you teach in a low socio-economic school? Do you feel pressured to buy the fancy manipulatives that other schools have? Participants will get great ideas for how to use everyday items found in their homes and classrooms to replace or supplement those expensive manipulatives while still facilitating learning.

L. What's all that Physics Equipment and Apparatus Mandated in Physics TEKS 2F & 2G?

Tim Sears, *Weslaco ISD*; **Dan Plas**, *The University of Texas-Pan American*

The recently revised high school Physics TEKS specifies a lengthy list of sometimes-unfamiliar lab apparatus. In this workshop, participants will rotate through a series of stations designed to engage students and reinforce physics readiness standards using the equipment. The activities will be provided and advice on developing an adequate inventory of essential equipment will also be offered.

M. Numeracy for All

Pam Harris, *Consultant*

What do people do when they do mental math? How can you help your students develop efficient and sophisticated strategies for computing? Come and join us as we engage in activities that build numerical power, including a couple of brand new strings.

Who We Are

The Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (TRC) is an award-winning statewide network of sixty-four P-16 partnerships (Regional Collaboratives) that provide sustained and high intensity professional development to P-12 teachers of science and mathematics across the state. This infrastructure of over 58 institutions of higher education collaborating with the Texas Education Agency, Education Service Centers, school districts, and business partners, has a 21-year track record of designing and implementing exemplary professional development using research-based instructional models, materials, and best practices. In addition, the TRC network includes 25 project (BTIM and Mid-Career) that focus on teacher mentoring, recruitment, and preparation.

Our Mission

To provide Texas science and mathematics teachers with support systems of scientifically researched, sustained, and high intensity professional development and mentoring to assist them in the successful implementation of the Texas Essential Knowledge and Skills (TEKS). TRC programs equip teachers with the knowledge and skills to engage students in meaningful science and mathematics learning experiences. Activities are designed to improve students' scientific, mathematical and technological literacy, and inspire them to pursue science and engineering related careers.

Achievements

Over two million students across Texas have benefited from the improved instruction and performance of participating teachers. The program has developed the knowledge, skills, and leadership capacity of approximately 33,000 teachers of science and mathematics through sustained and high intensity professional development. Many of these teachers serve as Science Teacher Mentors (STMs) and Mathematics Teacher Mentors (MTMs), and share their experiences with other teachers through mentoring, peer coaching, technical assistance, and workshops at the campus, district, and regional levels. Science and mathematics teachers in almost all of the state's 254 counties have been the beneficiaries of this extensive statewide network.

Values

- We **serve** our teachers and students.
- We **treasure** our people.
- We **operate** with integrity.
- We **reward** our partners.
- We **contribute** to systemic reform and to the community.

Background Information and History

In 1991, tremendous science education reform activities were underway across Texas and the nation. Changes necessitated that teachers provide science instruction in fields for which they were not prepared. Dr. Kamil A. Jbeily, then at the Texas Education Agency, initiated a series of regional meetings across the state to explore ways to create support systems of professional development for Texas science teachers. The meetings included representatives from education service centers, colleges and universities, school districts, business and industry, and institutions of informal education. The goal was to create regional partnerships built on collaboration and cost-sharing that provided science teachers with relevant, sustained, high-intensity professional development. These P-16 partnerships, with federal funding from the Dwight D. Eisenhower Science Professional Development Program, developed into the statewide network that is now the Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching.

On March 2, 1996, with the reorganization of the Texas Education Agency, the statewide administrative office of the Texas Regional Collaboratives (TRC) was moved, under a TEA-UT partnership agreement to the Science Education Center, now the Center for STEM Education at The University of Texas at Austin. The program has enjoyed support from a wide range of partners including the U.S. Department of Education Eisenhower Grants Program, the Texas Education Agency, the National Science Foundation, and a number of corporate supporters including AT&T Foundation, Shell Oil Company, the Toyota USA Foundation, The Cynthia and George Mitchell Foundation, El Paso Corporation, and others. In addition, over fifty business and community partners support activities of the Collaboratives at the regional level.

In March 2006, through a historic \$1.0 Million gift from Shell, two Louisiana Regional Collaboratives prototypes modeled after the TRC commenced their activities in the service of Louisiana science teachers. In July 2006, the TRC launched a new initiative supported by Math and Science Partnership funding through the Texas Education Agency to provide high quality professional development to mathematics teachers across Texas. After a competitive process, grants were awarded to 20 Regional Collaboratives for Excellence in Mathematics Teaching.

To date, the Texas Regional Collaboratives have served over 33,000 science and mathematics teachers, who in turn have shared their knowledge with other teachers at the district, regional, and state levels. The long-range goal of the Regional Collaboratives is to continuously (1) enhance the quality of science and mathematics teaching in Texas through Professional Development Academies and inter-regional collaboration; (2) increase the number of qualified science and mathematics educators by building the leadership capacity of teachers to mentor and serve a larger number of teachers; and (3) improve accountability of the system by evaluating the impact of the professional development on teachers' knowledge and skills, their performance in the classroom, and on student achievement.

The Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching program has received commendations from the U.S. Department of Education, policy makers, state legislators, and business partners. The Program was inducted into the Texas Science Hall of Fame on January 17, 2000, and was recognized by the Governor, the Senate, and House of Representatives on January 16, 2001 for distinguished achievements and contributions to supporting education reform.

TRC is sponsored by a variety of state, federal, and corporate partners, and is supported by The University of Texas at Austin.

COLLABORATIVES AND PROJECTS (2012-2013)

Regional Mathematics and Science Collaboratives

R	M	S	REGIONAL COLLABORATIVES
1	◆	◆	Region 1 Collaborative/ <i>Edinburg</i> UT Pan American Regional Collaborative/ <i>Edinburg</i> UT Brownsville Regional Collaborative/ <i>Brownsville</i> TAMU International Regional Collaborative/ <i>Laredo</i>
2	◆	◆	Region 2 Collaborative/ <i>Corpus Christi</i> Texas State Aquarium-ESC 2 Regional Collaborative/ <i>Corpus Christi</i>
3	◆	◆	Region 3 Collaborative/ <i>Victoria</i>
4	◆	◆	Region 4 Collaborative/ <i>Houston</i> Rice University Regional Collaborative/ <i>Houston</i> Galveston County Regional Collaborative/ <i>Galveston</i> Lake Houston Regional Collaborative/ <i>Humble</i> UHCL Regional Collaborative/ <i>Houston</i> UH-Downtown Regional Collaborative/ <i>Houston</i> Aldine ISD Regional Collaborative/ <i>Houston</i>
5	◆	◆	Region 5 Collaborative/ <i>Beaumont</i>
6	◆	◆	Region 6 Collaborative/ <i>Huntsville</i> TAMU-College Station Regional Collaborative/ <i>College Station</i>
7	◆	◆	Region 7 Collaborative/ <i>Kilgore</i> UT Tyler Regional Collaborative/ <i>Tyler</i>
8	◆	◆	Region 8 Collaborative/ <i>Mount Pleasant</i> TAMU-Texarkana Regional Collaborative/ <i>Texarkana</i>
9	◆	◆	Region 9 Collaborative/ <i>Wichita Falls</i>
10	◆	◆	Region 10 Collaborative/ <i>Richardson</i> Southern Methodist University Regional Collaborative/ <i>Dallas</i> UT Dallas Regional Collaborative/ <i>Dallas</i>
11	◆	◆	Region 11 Collaborative/ <i>Fort Worth</i> North Central Texas College Regional Collaborative/ <i>Gainesville</i> University of North Texas Regional Collaborative/ <i>Denton</i>
12	◆	◆	Region 12 Collaborative/ <i>Waco</i>
13	◆	◆	Region 13 Collaborative/ <i>Austin</i> Capital City Regional Collaborative/ <i>Austin</i> UT MD Anderson Regional Collaborative/ <i>Smithville</i> UT Austin-College of Nat. Sci. Regional Collaborative/ <i>Austin</i>
14	◆	◆	Region 14 Collaborative/ <i>Abilene</i>
15	◆	◆	Region 15 Collaborative/ <i>San Angelo</i>
16	◆	◆	Region 16 Collaborative/ <i>Amarillo</i>
17	◆	◆	Region 17 Collaborative/ <i>Lubbock</i>
18	◆	◆	Region 18 Collaborative/ <i>Midland</i>
19	◆	◆	Region 19 Collaborative/ <i>El Paso</i>
20	◆	◆	Region 20 Collaborative/ <i>San Antonio</i> OLLU Regional Collaborative/ <i>San Antonio</i>
	25	39	

R: Region M: Mathematics S: Science

BTIM (Beginning Teacher Induction and Mentoring)

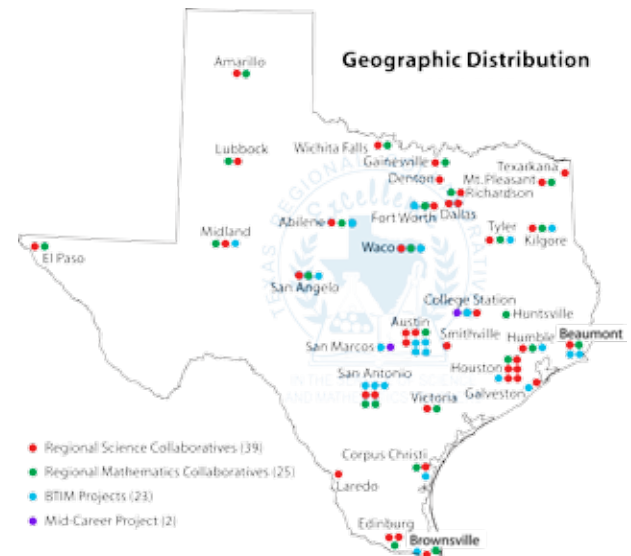
R	M	C	S	INSTITUTIONS
1		◆		UT Brownsville/ <i>Brownsville</i>
2		◆		Texas State Aquarium-ESC 2/ <i>Corpus Christi</i>
4			◆	Galveston County/ <i>Galveston</i> Humble ISD/ <i>Humble</i> University of Houston-Downtown/ <i>Houston</i>
5	◆		◆	Region 5 ESC/ <i>Beaumont</i>
6		◆		Texas A&M University System/ <i>College Station</i>
7		◆		Region 7 ESC/ <i>Kilgore</i> UT Tyler/ <i>Tyler</i>
11		◆		Region 11 ESC/ <i>Fort Worth</i>
12		◆		Region 12 ESC/ <i>Waco</i>
13		◆	◆	Austin Community College/ <i>Austin</i> Region 13 ESC/ <i>Austin</i> Texas State University/ <i>San Marcos</i> UT Austin - UTeach/ <i>Austin</i> UT Austin - UTeach Institute Expansion/ <i>Texas</i>
14		◆		Region 14 ESC/ <i>Abilene</i>
15			◆	Region 15 ESC/ <i>San Angelo</i>
18			◆	Region 18 ESC/ <i>Midland</i>
20	◆	◆	◆	Region 20 ESC/ <i>San Antonio</i> OLLU/ <i>San Antonio</i>
		23		

R: Region M: Mathematics S: Science
C: Combined Science/Math

Mid-Career

R	INSTITUTIONS
6	Texas A&M University System/ <i>College Station</i>
13	Texas State University/ <i>San Marcos</i>

R: Region



TEXAS REGIONAL COLLABORATIVES TEAM



Kamil A. Jbeily, Ph.D.

*Founder and
Executive Director*
512-471-9460
kamiljbeily@utexas.edu

*Charter Member,
Texas Science Hall of Fame*



James P. Barufaldi, Ph.D.

Principal Investigator
512-471-7354
jamesb@austin.utexas.edu

*Director, Center for STEM Education
The University of Texas at Austin
Rubén E. Hinojosa Regents Professor
in Education*



Nathalie Beausoleil

Documentation Specialist
512-232-6208
nathalie.b@austin.utexas.edu



Jeff Early

Manager of Business Affairs
512-471-9279
jeff.early@austin.utexas.edu



Carol Fletcher, Ph.D.

Associate Director
512-232-5690
carol.fletcher@austin.utexas.edu



Stephen Gray

Webmaster/Technical Operations Manager
512-471-9400
stephengray@utexas.edu



Karl Hereim

Grants and Contracts Specialist
512-471-7408
khereim@austin.utexas.edu



Mary Hobbs, Ph.D.

Coordinator for Science Initiatives
512-471-8729
maryhobbs@utexas.edu



Debra L. Junk, Ph.D.

Coordinator for Mathematics Initiatives
512-232-0880
junkdeb@utexas.edu

Special Projects Assistants

Gail Seale - gails@austin.utexas.edu

Melissa Garcia - melissagarcia@austin.utexas.edu



Kris Mason

Assistant to the Executive Director
512-232-6207
kmason@austin.utexas.edu



George Perry

DataCenter Coordinator
512-471-6183
perry@austin.utexas.edu



John Solis, Ph.D.

Coordinator for Technology Initiatives
512-471-6862
john.solis@austin.utexas.edu



Todd Sherron, Ph.D.

Evaluation Coordinator
512-232-8063
todd.sherron@austin.utexas.edu



Amy Werst

Coordinator for Special Projects
512-471-7450
amy.werst@austin.utexas.edu



Marsha Willis

Professional Development Coordinator
512-232-5015
marshawillis@austin.utexas.edu

Research Assistants

Jair Aguilar - jair.aguilar@utexas.edu

Clare Coleman - ccoleman812@utexas.edu

Chris Fisher - chrisfisher@utexas.edu

Nick Laguzza - nick11989@gmail.com

Cynthia Lima - cynesperanza@yahoo.com.mx

Cesar Navarrete - ccnavarrete@utexas.edu

Scott Peterson - snp425@gmail.com

Casey Powers - caseyblairp@yahoo.com

THURSDAY EVENING OPTIONAL ACTIVITIES

ARBORETUM AREA

Within walking distance

STORES

Banana Republic
Barnes and Noble
Bath and Body Works
Chico's
Express
The Gap
Just Add Water
Nine West
Pottery Barn
Restoration Hardware
Sunglass Hut

RESTAURANTS

Amy's Ice Cream
Cheesecake Factory
Eddie V's Edgewater Grill
Fire Bowl Café
Fresh Choice
Macaroni Grill
Manuel's
P.F. Chang's China Bistro

RECREATION & ENTERTAINMENT

The Alamo Drafthouse - Village

2700 W. Anderson Ln. – Movies and meals.
Eat and drink while you watch.
www.drafthouse.com

Dave and Busters

9333 Research Blvd. – Dining and giant arcade.
www.daveandbusters.com

Main Event

13301 N. Highway 183 – Family fun center.
www.maineventusa.net

Broken Spoke

3201 South Lamar – Country music and dancing.
www.brokenspokeaustin.tx.com

Lone Star River Boat

208 Barton Springs Rd. – River cruise with dinner.
www.lonestarriverboat.com

Bats Under Congress Bridge

100 Congress Avenue – Bat viewing at dusk.
www.austintexas.org

Highland Lanes Bowling Alley

8909 Burnet Road
www.highlandlanes.com

SHOPPING MALLS

The Domain - 11410 Century Oaks Terrace (1 mile)
Lakeline Mall - 11200 Lakeline Mall Dr. (8 miles)
Barton Creek Mall - 901 S. Capital of Texas Hwy. (10 miles)

TRANSPORTATION TO TOWN

Yellow Cab Austin

Fare estimate from Renaissance to 6th Street District is about \$30 one way.
512-452-9999

If you choose to drive and park downtown, please read all signs carefully to avoid receiving citations.

TRC STAFF RESTAURANT RECOMMENDATIONS

Bartlett's – 2408 W. Anderson Ln.
Blue Star Cafeteria – 4800 Burnet Rd.
Buenos Aires Café – 1201 E. 6th St.
El Caribe – 5610A N. Lamar Blvd.
La Cocina de Consuelo – 4516 Burnet Rd.
Chuy's – 11680 Research Blvd.
Clay Pit – 1601 Guadalupe St.
Cover 3 – 2700 W. Anderson Ln., Suite 202
Curra's Grill – 614 E. Oltorf St.
Freddie's Place – 1703 S. First St.
Hey Cupcake – 5530 Burnet Rd.
Hoover's Cooking – 13376 Research Blvd.
Hopdoddy's Burger Bar – 2438 W. Anderson Ln.
Hula Hut – 3825 Lake Austin Blvd.
Indian Palace – 3616 Far West Blvd.
Iron Cactus – 10001 Stonelake Blvd.
Juan in a Million – 2300 E. Cesar Chavez St.
Lavaca Teppan – 1712 Lavaca St.
Lick It, Bite It, or Both Bakery – 11101 Burnet Rd. # A140
Mighty Fine Burgers – 10515 N. Mo-Pac Expy.
North by Northwest – 10010 N. Capital of Texas Hwy.
Red's Porch – 3508 S. Lamar Blvd.
Roaring Fork – 10850 Stonelake Blvd.
Rudy's Country Store & BBQ – 11570 Research Blvd.
Santa Rita Cantina – 1206 W. 38th St.
Satay Restaurant – 3202 West Anderson Lane, Suite 205
Shady Grove – 1624 Barton Springs Rd.
The County Line BBQ – 5204 FM 2222
Threadgill's – 6416 North Lamar Blvd.
Titaya's Thai Cuisine – 5501 North Lamar Blvd. #C101
Torchy's Tacos – 4211 Spicewood Springs Rd.
Trudy's North Star – 8820 Burnet Rd.
Trulucks – 10225 Research Blvd., Suite 4000

SCHEDULE AT-A-GLANCE

WEDNESDAY June 27	A	B	C	D	E	F
	Wedgwood Main Floor	Bosque Main Floor	Concho Main Floor	Frio Main Floor	Guadalupe Main Floor	Nueces Main Floor
8:00 - 4:00 p.m.	Registration -- Rio Grande Foyer, <i>Lower Level</i>					
10:00 - 4:30 p.m.	Gallery Showcase Set-up -- Rio Grande A, <i>Lower Level</i>					
12:00 - 2:00 p.m.	Opening Luncheon and Program -- Grand Ballroom, <i>Main Floor</i>					
2:30 - 3:30 p.m. SESSION 1	Administrators' Forum L	Organizing and Collecting: The Number System M	100% Engagement with the TI-Navigator M	Meteorite Madness S	It's All About the Process! S	Young Architects Explore Volume M
5:00 - 6:45 p.m.	Showcase and Reception -- Rio Grande A, <i>Lower Level</i>					
7:00 - 9:00 p.m.	Dinner and Program -- Grand Ballroom, <i>Main Floor</i>					
THURSDAY June 28	A	B	C	D	E	F
	Wedgwood Main Floor	Bosque Main Floor	Concho Main Floor	Frio Main Floor	Guadalupe Main Floor	Nueces Main Floor
7:00 - 7:45 a.m.	Breakfast -- Grand Ballroom - <i>Main Floor</i>					
8:00 - 9:15 a.m.	General Session: <i>State of Science and Mathematics Education</i> , Irene Pickhardt -- Grand Ballroom, <i>Main Floor</i>					
9:30 - 10:30 a.m. SESSION 2	Understanding by Design-Chemistry <i>For leaders who attended UbD</i> M/S	Teaching Aquatic Science Using Aquaponics S	Ad'-ucation in Science. How to Get Kids to "Buy..." S	Cookie Book of Science S	Using Multi-meters to Measure Voltage, Current, Resistance... S	REALLY Virtual Lab-Achieving Excellence in a Novel... T/S
10:30 - 10:45 a.m.	<i>Break</i>					
10:45 - 11:45 a.m. SESSION 3	Understanding by Design-Physics <i>For leaders who attended UbD</i> M/S	Under Water Robotics - A Summer Camp M	Successful Strategies for Engaging MS ELL Students... S	Mastering Multiplication through Manip... M	Teachers: Patrons of Creativity in the Classroom L/S	Teaching Geometry Through Foldables and Activities M
12:00 - 1:45 p.m.	Lunch General Session: <i>Crafting Creative Thinkers: The 5 Elements of Effective Thinking</i> , Dr. Edward B. Burger -- Grand Ballroom					
12:45 - 5:00 p.m.	TRC/SHELL Energy Symposium Field Trip -- <i>Meet in the Lobby at 12:45 p.m.</i>					
2:15 - 3:15 p.m. SESSION 4	Successes and Challenges: Project Directors' Panel L	Making the Most of Your Composition Books... S	PLCs: How to Start (and Continue) the Conversation L	Fostering Algebraic and Geometric Thinking... M	QR Codes and the Human Body System T/S	Notebooks + Foldables = Notebook Foldables M/S
3:15 - 3:30 p.m.	<i>Break</i>					
3:30 - 4:30 p.m. SESSION 5	Using Mobile Technology to Support Teacher Prof. Dev. L	Going Digital: Using Computers and Personal Devices... T/S	Cells: Not Your Cell Phone-Integration... CTE/S	Enhancing Math Learning Through Anchor Charts and Songs M	Get Up and Go with Middle School Geometry! T/M	STAAR: Investigate the Impact... L
5:00 - 7:00 p.m.	Vendor Fair - <i>Light Refreshments will be served</i> -- Rio Grande B, <i>Lower Level</i> TAME Trailblazer (until 8:00 p.m) - <i>Finger-food will be served</i> -- Parking lot/Access via Trinity Patio					
FRIDAY June 29	A	B	C	D	E	F
	Wedgwood Main Floor	Bosque Main Floor	Concho Main Floor	Frio Main Floor	Guadalupe Main Floor	Nueces Main Floor
7:00 - 7:45 a.m.	Breakfast -- Grand Ballroom, <i>Main Floor</i>					
8:00 - 9:00 a.m.	Leadership Sessions Science: <i>TRC Resources for Hands-On Biology Lessons</i> -- Trinity, <i>Lower Level</i> Mathematics: <i>Understanding the Role of Teachers' Math Knowledge in the TRC Prof. Development</i> -- San Antonio, <i>Lower L.</i>					
9:30 - 10:30 a.m. SESSION 6	Understanding by Design M/S	Science Through the Core Content Areas... S	Rigor Does NOT Mean MORE WORK!! M	If You Are Not in the Box-Why Get Out? T	Build Me a Mountain... Topographical Maps... S	Energize Your Science Curriculum! S
10:30 - 10:45 a.m.	<i>Break</i>					
10:45 - 11:45 a.m. SESSION 7	Using Inquiry and Problem Based Learning... STEM	It's Not What You Think! STEM	Discovering Science in Literature STEM	Activities in Algebra M	Foam Friends! A Creative Approach to Chemistry S	Chocolate Rocks II S
12:00 - 2:00 p.m.	Lunch -- Grand Ballroom, <i>Main Floor</i>					

LEGEND

L	Leadership	T	Technology	S	Science	M	Mathematics
----------	------------	----------	------------	----------	---------	----------	-------------

Texas Regional Collaboratives - Eighteenth Annual Meeting

G	H	I	J	K	L	M	N
Brazos <i>Main Floor</i>	San Antonio <i>Lower Level</i>	San Marcos <i>Lower Level</i>	Sabine <i>Lower Level</i>	Pecos <i>Lower Level</i>	San Saba <i>Lower Level</i>	Trinity <i>Lower Level</i>	Glass Oaks <i>Via Main Floor</i>
Retro-Teaching Mathematics Using Techn... T	Elements of Success: Constructing the Periodic... S	Fun Ways to Teach Math and Science... M/S	Statistics with Origami Jumping Frogs M	Rocking Robotics: Making Physics Connections... S	Shell Pre-trip and Energy Talk <i>For field trip participants</i>	The Mystery of the Mummy Brothers S	

G	H	I	J	K	L	M	N
Brazos <i>Main Floor</i>	San Antonio <i>Lower Level</i>	San Marcos <i>Lower Level</i>	Sabine <i>Lower Level</i>	Pecos <i>Lower Level</i>	San Saba <i>Lower Level</i>	Trinity <i>Lower Level</i>	Glass Oaks <i>Via Main Floor</i>
Using Technology to Flip Your Classroom T	TRC Projects DataCenter for 2012-13 L	Research Lessons: The Core of Lesson Study M/S	Overview of First Steps in Mathematics L/M	Is Concept Mapping a K-12 Science/Math... T/M/S	Crossing the Euler Line: Geogebra vs. Patty Paper M	Using Wall*E as an Educational Resource S	Amarillo College-Renewable Energy... STEM
Astronomy Labs on a Budget S	How Does the Brain Learn Mathematics? M	An Eighth Grade Math Immersion Model... L	Science Notebooks as Assessing Tools S	<i>Muffles' Truffles</i> Integrated Literacy M	Teaching the Lunar and Tide Cycles Don't Phase Me! S	Creating Confident Readers in Your Science S	
iClassroom-Incorporate the iPad in your Daily... S	The NSTA Learning Center... S	Providing a Habitat for Butterflies S	"Building-up" from Area to Volume M	Sustainability in the Wild: Student and Classroom.. M/S	Digging into Earth Science S	Magnifying Your Perspective S	TAME/TRC Family Math and Science... STEM
"Animorphosing" The Animation of... T/S	Teachers TryScience Expands Its... STEM	Investigating Inflatable Interpretive... STEM	Putting the Rigor in Math with Patterns... M	OnTRACK for College Readiness: Math M	Explore OnTRACK Science S	Empowering 21st Century Science Students... T/S	

G	H	I	J	K	L	M	N
Brazos <i>Main Floor</i>	San Antonio <i>Lower Level</i>	San Marcos <i>Lower Level</i>	Sabine <i>Lower Level</i>	Pecos <i>Lower Level</i>	San Saba <i>Lower Level</i>	Trinity <i>Lower Level</i>	Glass Oaks <i>Via Main Floor</i>
"Spring, Sprang, Sprung..." M/S	Using iPads in the Elementary Classroom T	Dual Language Foldables ... M/S	Making Science Fun with Sorts! S	Chemistry for Grades 3-5 S	Properties of Quadrilaterals M	Curriculum Integration that Works!... M	
Investigating Newton's Laws... S	iLearn with QR Codes T	Groceries, Stamps and Measuring... M	Identifying Core Planning and Teaching... L	Don't Throw That Away!... M	What's all that Physics Equipment... S	Numeracy for All M	

	Elementary
	Elem./Middle School

	Middle School
	Middle/High School

	High School
	All Grade Levels



**Texas Regional Collaboratives
for Excellence in Science and Mathematics Teaching**

Center for STEM Education

College of Education

The University of Texas at Austin

Mailing Address: 1912 Speedway STOP D5500

Physical Address: Sánchez Building, Suite 340

Austin, Texas 78712

Tel: 512-471-9400 Fax: 512-471-9244

www.thetrc.org