

# Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching

THIRTEENTH ANNUAL MEETING  
**HIGHLIGHTS**



**ALIGNMENT, BALANCE, AND CONNECTIONS:**  
The ABCs of the Texas Regional Collaboratives

June 27-29, 2007  
Hilton Austin Airport Hotel  
Austin, Texas

## THIRTEENTH ANNUAL MEETING HIGHLIGHTS

### Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching Conference Focuses on Alignment, Balance, and Connection - July 13, 2007

Structured around the theme of “Alignment, Balance, and Connection,” this year’s Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (TRC) conference, held June 27-29, celebrated the power of the ongoing research-based professional development the Collaboratives offer science and mathematics teachers around the state.



*Texas State Senator Kirk Watson*

Each year the conference showcases outstanding science instruction techniques and lessons, features workshops, offers professional development credits and honors exceptional science teachers, as well as the business, government, community and higher education partners who make the Collaboratives a success.



*Texas State Representative Geanie Morrison, Chair of the House Higher Education Committee*

From astronomy to robotics and genetics to geo-diversity, the three-day conference offered an informative and stimulating program of teacher presentations and scientific demonstrations that vividly illustrated the alignment of TRC activities with state standards and the synergistic balance of content and pedagogy. In workshops and discussions on topics as diverse as podcasting and art/science integration, the TRC’s direct focus on workforce development, everyday technological applications, and fast-evolving scientific advancements was highlighted.

“Right now the most important economic asset is ideas and people,” said Texas State Senator Kirk Watson, who addressed attendees, “and the only way we are going to succeed in a global community and economy is to educate our students so that they are ready to compete. I want to thank the Collaboratives for doing such an excellent job of this.”



*(l to r) Mike Gula, Senior Manager, New Century Education Corporation; Raymond Hartfield, AT&T Education Advocate and Round Rock ISD Board of Trustees; Peggy Carnahan, Project Director, Our Lady of the Lake-San Antonio Regional Collaborative; and Dr. Kamil A. Jbeily*

“What comes out time and time again in education-related discussions around Texas,” said Geanie W. Morrison, Texas State House Representative and Chair of the Higher Education Committee, “is the importance of science and math. To compete globally, we have to bolster these areas. The Collaboratives have gotten this right – by providing participating science teachers with current, relevant, hands-on professional development opportunities and then having those teachers go back to their districts and share the knowledge with even more teachers. Thousands of Texas teachers have benefited from this remarkable resource. We need to replicate this for every other subject that’s taught – what the Collaboratives accomplish makes our teachers strong, and Texas is very proud and grateful.”

## ALIGNMENT, BALANCE, AND CONNECTIONS

Highlighting the three-day conference was a showcase, reception, and dinner at which Morrison, Watson, UT College of Education Senior Associate Dean Marilyn C. Kameen and Texas Education Agency (TEA) Director of Student Support Initiatives Gina Day spoke to over 425 Collaboratives participants and partners, and during which the TRC 2007 Distinguished Service Award was presented to Day.

“The Texas Education Agency was looking for the best science and math professional development model to use,” said Day, who represented TEA at the event, “one that would maximize the money that was available. We realized that the TRC is the highest-quality pipeline for delivery of these services, and we feel that every bit of support we’ve given Dr. Jbeily’s network has been worth it.”



*Dr. Jbeily and Gina Day,  
TRC 2007 Distinguished Service Award recipient*



*Gloria Moritz, Foundation and Corporate Giving with  
El Paso Corporation, and John Stevens, Executive Director  
of the Texas Business Education Coalition*

Also recognized during the dinner were the AT&T Foundation, Toyota USA Foundation, El Paso Corporation, Shell Oil Company and The Cynthia and George Mitchell Foundation, all generous supporters of the Collaboratives and sponsors of the TRC’s Distinguished Teaching and Mentoring Awards. Representatives from the newly-formed Louisiana science regional collaboratives and New Mexico’s Sandia National Laboratories were recognized as well.

Preceding the dinner, guests had an opportunity to view an expansive, hands-on showcase of science exhibits designed by representatives from the 35 regional science collaboratives.

The TRC, which was founded at TEA over 16 years ago and has been headquartered at The University of Texas at Austin since 1996, is housed in the College of Education’s Center for Science and Mathematics Education. “Mentoring and networking are two of the key strengths of the Collaboratives,” said Dr. Manuel J. Justiz, College of Education dean, “and the annual conference highlights the power and effectiveness of both. Science and math teachers who are involved in the Collaboratives throughout the year can come together, share best practices, learn new strategies and be recognized for the successes their hard work has yielded.”



*Luis de la Garza, Vice President of Toyota USA,  
and Dr. Jbeily*

## THE ABCs OF THE TEXAS REGIONAL COLLABORATIVES

In March 2006, with a historic \$1.0 Million gift from Shell Oil Company, two Louisiana Regional Collaborative prototypes were established. The Louisiana Collaboratives are modeled after the TRC and stress a strong ethic of service to Louisiana science teachers.



*Science teachers in the Collaboratives showcase lessons they created based on TRC professional development training.*

The Collaboratives have been responsible for developing the knowledge, skills and leadership capacity of around 14,000 science teachers and 5,000 mathematics teachers, and enhancing the learning experiences of over one million students from 206 counties out of the 254 counties in the state.

In July 2006, the TRC launched a new initiative supported by TEA's Math and Science Partnership funding, to provide high quality professional development to mathematics teachers across Texas.



*(l to r) Dr. Jbeily; Frazier Wilson, Social Investment Manager with Shell Oil Company; TRC Professional Development Coordinator Marsha Willis; Kirk Watson; and Mark Kamil Jbeily*



*Dr. Kamil A. Jbeily, founder and Executive Director of the TRC*

"It is such an exciting time to be involved in science and mathematics education," said Dr. Jbeily. "Everyone recognizes the importance of skills development in these areas and acknowledges that students who develop these skills will keep Texas and our nation economically prosperous and secure in the future. Working with the Collaboratives is an unequivocally rewarding endeavor because all parties benefit – corporate sponsors like Shell, AT&T, Toyota, and El Paso Corporation generously support us and in turn they gain highly-proficient employees who will contribute to communities all over Texas."

"Our teachers gain the tools they need to do their job well, and their students' academic achievement steadily improves because the training we offer is aligned with federal and state standards. The TRC has proven that you can scale up your activities, bridge the student achievement gap and efficiently serve an ever larger number of teachers."

*Press Release by Kay Randall  
Office of the Vice President for Public Affairs  
The University of Texas at Austin*

For Press Release, visit: [www.thetrc.org/am07](http://www.thetrc.org/am07)

For Annual Meeting Details, visit: [www.thetrc.org/trc/thirteen.html](http://www.thetrc.org/trc/thirteen.html)

**EVENING PROGRAM**

**SHOWCASE AND RECEPTION**

6:00 - 7:00 p.m. - Bergstrom Ballroom Lobby

**DINNER**

7:00 p.m. - Bergstrom Ballroom

**Introduction and Overview**

**Dr. Kamil A. Jbeily**

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

**Welcome**

**Dr. Marilyn C. Kameen**

*Senior Associate Dean, College of Education  
The University of Texas at Austin*

**Greetings and Remarks**

**The Honorable Kirk Watson**

*Senator, District 14  
Texas Senate*

**The Honorable Geanie Morrison**

*Representative, District 30  
Texas House of Representatives*

**Gina S. Day**

*Director of Student Support Initiatives  
Texas Education Agency*

**Distinguished Service Award**



*Dr. Kameen and Representative Donna Howard*



*Region 1 Collaborative/Edinburg Exhibit*



*Region 18 Collaborative/Midland Exhibit*



*Region 15 Collaborative/San Angelo Exhibit*

## SHOWCASE, RECEPTION, AND DINNER



*Round Rock Superintendent Dr. Jesús H. Chávez and his wife Martha, Luis de la Garza, and Dr. Jbeily*



*Dr. Jbeily and a group of TRC Project Directors*



*Region 4 Collaborative/Houston Exhibit*



*UT-Brownsville Collaborative/Brownsville Exhibit*



*UT-Dallas Regional Collaborative/Dallas Exhibit*

# TEACHING AND MENTORING EXCELLENCE AWARDS



**AT&T Foundation**  
Distinguished Teaching Award



**Pam Enderby**  
*Elementary School Science Teacher*  
Era ISD

North Central Texas College Regional Collaborative/Gainesville

**AT&T Foundation**  
Distinguished Mentoring Award



**Brian Grunkowski**  
*Elementary School Science Teacher*  
Frisco ISD  
UT Dallas Regional Collaborative/Dallas

**The Cynthia and George Mitchell Foundation**  
Distinguished Teaching Award



**Eduardo Guevara, Ph.D.**  
*High School IPC and Biology Teacher*  
Houston ISD  
Galveston County Regional Collaborative/Galveston



**El Paso Corporation**  
Distinguished Teaching Award



**Marcia Neimeyer**  
*High School Chemistry Teacher*  
Midland Christian School  
Region 18 Collaborative/Midland

**El Paso Corporation**  
Distinguished Mentoring Award



**Sally Wall**  
*Middle School Science Teacher*  
Clear Creek ISD  
UH-Clear Lake/EIH Regional Collaborative/Houston

**UT Center for Science and Mathematics Education**  
Distinguished Mentoring Award



**Sheri Carson**  
*Middle School Science Teacher*  
Pittsburg ISD  
TAMU-Texarkana Regional Collaborative/Texarkana

## 2007 AWARDS RECIPIENTS



**Shell Oil Company**  
Distinguished Teaching Award



**Craig Weart**  
*High School IPC Teacher*  
Weslaco ISD  
Region 1 Collaborative/Edinburg

**Shell Oil Company**  
Distinguished Mentoring Award



**Genny DeVoe & Renee East**  
*Elementary School Science Teachers*  
Amarillo ISD  
Region 16 Collaborative/Amarillo



**Toyota USA Foundation**  
Distinguished Teaching Award



**Tracie Wetzel**  
*Elementary School Science Teacher*  
Fairfield ISD  
Region 12 Collaborative/Waco

**Toyota USA Foundation**  
Distinguished Mentoring Award



**Olga Garcia**  
*Elementary School Science Teacher*  
Edgewood ISD  
Our Lady of the Lake University Regional Collaborative/San Antonio



**OPENING LUNCHEON  
PROGRAM**

**Introduction**

**Dr. Kamil A. Jbeily**  
*Executive Director*  
Texas Regional Collaboratives

**Greetings and Remarks**

**Texas Education Agency**

**Julie Harris-Lawrence**  
*Director, Math and Science Partnerships*  
Texas Education Agency

**State of Science Education in Texas**

**Chris Castillo Comer**  
*Director of Science*  
Texas Education Agency

**Cyndi Louden**  
*Science Assessment Manager*  
Texas Education Agency

**Communities Foundation of Texas**

**Micah Sagebiel**  
*Assistant Program Officer*  
T-STEM Centers

**Distinguished Teaching and Mentoring Awards**  
*(Please see recipients on Page 4 & 5)*

**Lunch Speakers**



*Julie Harris-Lawrence*



*Chris Castillo Comer*



*Cyndi Louden*



*Micah Sagebiel*

**\*TRC/T-STEM Summit Agenda**

Wednesday, June 27, 2007 -- 2:30 - 4:30 p.m.

**Welcome and Introductions**

Dr. Kamil A. Jbeily, *Executive Director, TRC*

**TRC Statewide Program Overview**

Dr. Carol Fletcher, *Assistant Director/  
R&D Coordinator, TRC*

**TRC/T-STEM Regional Dialogues**

**Regional Reports and Future Directions**

*T-STEM representatives met with TRC Project Directors and Instructional Team Members in each T-STEM region to share mutual goals, objectives and activities, and to brainstorm ways of collaboration and coordination for synergistic operation of both programs.*



*Dr. Carol Fletcher facilitates the TRC/T-STEM Summit*

# WEDNESDAY PRESENTATIONS AND WORKSHOPS

## SESSION 1

### 1. Engineering for the Elementary Classroom

**Cheryl Farmer, *The University of Texas at Austin/Kathleen Crowe, Pflugerville ISD***

Today's educators strive to make science, technology, engineering, and math education fun and exciting through the use of hands-on learning activities. Come explore how engineering design provides opportunities for teachers to deliver core content in new, exciting, and challenging ways. Be ready to roll up your sleeves and have fun!

### 2. Elementary GLOBE

**Sara Flusche, *North Central Texas College Regional Collaborative***

Elementary GLOBE is designed to introduce K-4 students to the study of Earth System Science (ESS). Elementary GLOBE forms an instructional unit comprised of five modules that address ESS and interrelated subjects including weather, hydrology, phenology, and soils. Each Elementary GLOBE module contains a science based storybook, classroom learning activities that complement the science content covered in each book, and teacher's notes.

### 3. Interested in Teacher Training for Astronomy?

**Art Schneider/Larry Smith, *ESC Region 16***

The 3 Rivers Foundation is building a 500-acre campus under the very dark skies in near West Texas to be used for teacher workshops, fieldtrips, and conferences. Experience fun, hands-on demonstrations that can be easily used in the classroom and learn about free or low cost workshop opportunities.

### 4. HEADS UP: Exciting Students about Science and Health Science Careers

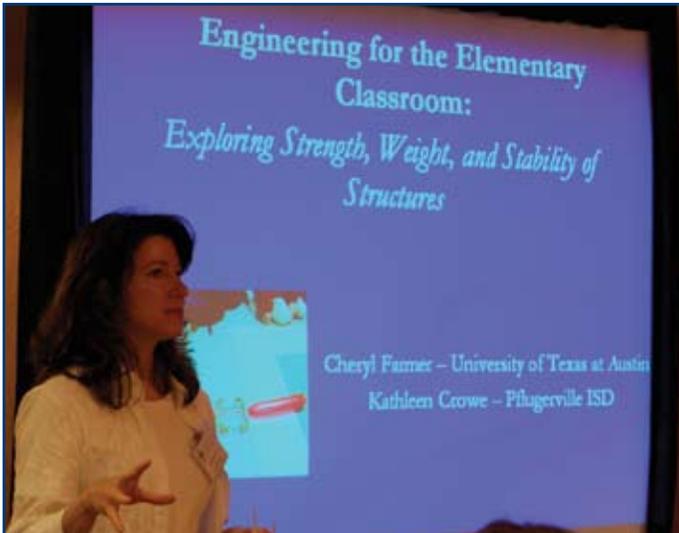
**Nancy G. Murray, Ph.D./Nathalie Sessions, *University of Texas Health Science Center at Houston***

This session will highlight the HEADS UP Advanced Genetics module which explores the exciting world of regenerative medicine. Topics include animal models, gene therapy, and stem cell therapy, plus ethical and policy-making considerations. Designed by field experts and teachers for pre-AP 8th graders and high school biology students, the module features award-winning videos with student and scientist role models, classroom activities, and more. Participants will be guided through an activity to gain better understanding of DNA components and leave with their own DNA keychain!

### 5. Newton Energized!

**Lucinda Presley, *The Discovery Science Place***

Newton Energized! is based on current research that demonstrates the importance of learning that is student-centered, concept-based, and arts integrated. This workshop immerses participants in the concept of forces and motion. Learn to energize your forces and motion units with fun and higher-level thinking skills while stimulating effective learning! Based on curriculum proven to increase student learning and engagement, this hands-on workshop immerses participants in an integration of inquiry and the arts. This concept-based workshop also features strategies for integrating motion with other science disciplines in addition to math and language arts.



*Engineering for the Elementary Classroom*



*Elementary GLOBE*



*Newton Energized!*

## SESSION 2

### 1. The Air-O-Dynamics Curriculum

**Sally Wall, Clear Creek ISD**

Air quality has been a hot topic for many years. Come and get lab activities that you can integrate into your curriculum all year to address the issues involved in this complex topic. These integrated science activities cover life sciences, earth sciences, and chemistry.

### 2. Get Your Game On

**Robyn Fender/Jana Beth Parker, Lytle ISD**

Finally – a way to utilize those game pieces you’ve been saving for a rainy day! Play and learn games and activities to reinforce TEKS/TAKS concepts for elementary science. Experience “Connect Four Food Chain,” “Don’t Break the Ice – Science Safety,” and more. Masters to recreate the games at home will be provided.

### 3. Simple Connections

**Mike McClure, Blanco ISD**

Come learn about the investigation that stumped some graduating college electrical engineer students. We will investigate several different electrical connections (circuits) using various batteries, bulbs, and wires and then draw, in our “journals,” the connections they make to better understand circuits.

### 4. Wonderful World of Plants

**Nathan Steenport, Pflugerville ISD/Christine Laurie, Texas State University Student**

This session focuses on authentic, engaging learning opportunities for students to show through creative arts an understanding of plant needs. Emphasis will be placed on active learning and conceptual understanding as participants complete three fun, hands-on lessons about plants aligned to the TEKS.

### 5. Measuring the Temperature of the Sun

**Christopher Long, Garland ISD**

This hands on lab activity, paired with an Excel® Spreadsheet will allow participants to accurately measure the surface temperature of the sun using only a Styrofoam cup, a meter stick, beaker, and thermometer. Probeware could be used but certainly isn’t required.

### 6. Science Makes History: The Archaic Indians of the Lower Pecos

**Scott Walters/Cassandra Walters, Gustine ISD**

Enter the world of ancient Texans to discover how the history of these ancient people is revealed through modern science. Learn how their artifacts, art, and way of life can be used across the curriculum to generate high student interest while improving academic performance. Participants will receive a 5E archaic artifact activity.

### 7. Cousin Who? Cousin Al!

**Marcia Butcher, Wharton ISD**

Want to teach your students to understand the organization of family relationships in the Periodic Table? This activity encourages use of logic to identify the “missing cousin” based on his or her position relative to other family members. The skills learned can also be applied to find other patterns and trends in the Periodic Table.

### 8. How to Make Your Local Science Fair a Success

**Kelly Bordner/Angie King, Robinson ISD**

Participants will be provided with information and resources to help prepare for a successful and less overwhelming local science fair. Examples of books, science fair forms, judge’s sheets, prizes, web sites, and other resources will be given. Handouts will be provided.



*Raised Coral Reef: Using Geochemical Data to Determine Tectonic Uplift*



*Simple Connections*



*Cousin Who? Cousin Al!*

# MORNING PRESENTATIONS AND WORKSHOPS

## SESSION 3

### 1. Science Journaling: Mastering Science Concepts Using Reflective Writing

**Patty McLelland/Lara Heine, ACC Regional Collaborative**

Explore how journaling gets students to write about inquiry-based science experiences, transferring “3D to 2D” knowledge in an authentic way that allows them to reflect and internalize concepts. Participants will walk away with various ways to engage their students in journaling.

### 2. Station Mania: Balancing the Content

**Stef Paramoure/Ron Rychel, Comal ISD**

Station Mania is a strategy to create a balanced classroom plan in which the hands-on, minds-on practice of science process skills are incorporated all year long. Learn how to use mini-science stations to boost student achievement through mastery and test resiliency and to combat the “out of sight, out of mind” mentality!

### 3. Making Connections Between Science and “Real Life”

**Suzanne Phillips, Belton ISD/Angie King, Robinson ISD/Carey Quick, Salado ISD**

“If it is not relevant, we don’t remember.” Strategies that work best with today’s students include the use of student journals as a means of creating ownership and commitment in the student. Examine ways to make science meaningful through the use of a personal science journal and/or science scrapbooks.

### 4. Roy G. Biv: The Keeper of the Rainbow

**Debbie Yarger, Fort Worth ISD**

Come and see the beauty of the rainbow as Roy G. Biv tells his story of the rainbow. An easy way to teach the color spectrum to elementary students.

### 5. Science Field Day

**Jennifer Clapp, Abilene ISD**

How can you fit together multiple science concepts, hands-on activities, and student discussion while teaching across the curriculum? Have a Science Field Day!

### 6. Making Connections with Environmental Science

**Sheri Carson, Pittsburg ISD**

See how our middle school has enhanced its science program by using environmental science as an elective class. Cornell’s *Classroom Feeder Watch*, Texas Parks and Wildlife’s *Amphibian Watch*, *Project Greenhouse*, *Junior Master Gardener*, *Square Foot Gardening*, and soon-to-be implemented GLOBE are all components of this unique class.

### 7. Who Stole the Grand Champion Roses?

**Jean Dyer/Audrie Garza, La Joya ISD**

Participants will work in cooperative groups, use scientific process skills to test chemical and physical characteristics of soil samples, investigate careers that are linked to soil, and gain experience searching for useful information in the Internet, and make and test predictions—all while solving a crime!

### 8. The Tongue Twister Experiments

**Don Densmore/Jayme Duckett, Waco ISD**

The Tongue Twister Experiments presents a strategy to improve student success in Objective 1 and critical thinking skills, K-12. The teacher edition and student workbook will be used to present, in a hands-on setting, how tongue twisters can be used to energize students to get excited about experimentation.



*Not Your Typical Classroom Holiday!*



*Get Your Game On*



*Station Mania: Balancing the Content*



Station Mania: Balancing the Content



Turn Favorite Activities into 5E Inquiry



Engineering for the Elementary Classroom

## SESSION 4

### 1. Tough to Teach TEKS

**Wallace Dominey, Rice University Regional Collaborative/  
CJ Thompson, Houston ISD**

Teacher Interns who spent one full day each week training in the Rice University/Houston ISD Elementary Model Science Lab and Rice Lab staff will present lessons used to teach several of the more difficult science TEKS concepts. Three lessons will be presented; each lesson will be aligned to one of the three content TAKS objectives.

### 2. Eggs, Eggs, and More Eggs

**Amy K. Phillips, Clear Creek ISD**

A fun, eggsciting way to work with eggs! Teachers will learn about different animals that hatch from eggs as well as making connections to food chains using the GEMS Guide Eggs, Eggs, Everywhere. Teacher will also use plastic eggs to identify mystery items.

### 3. Project WILD - Elementary

**Martha Alexander, Region 18 Collab./Sandra Love, Midland ISD**

Project WILD is a K-12 interdisciplinary environmental and conservation education program emphasizing awareness, appreciation, and understanding of wildlife and natural resources. It has been correlated to the TEKS and TAKS. Project WILD is sponsored by Texas Parks and Wildlife Department.

### 4. Living / Non-Living

**Claudia Tristan, Socorro ISD**

Classifying living things as animals or plants and classifying non-living things as solids, liquids, or gases.

### 5. Turn Favorite Activities into 5E Inquiry

**Sue Ann DeCuir, Pflugerville ISD**

Learn how to redesign a science activity or demonstration into a complete 5E inquiry that creates connections for students and supports English Language Learners. Workshop content includes use of digital cameras, Guided Language Acquisition Design strategies, and the new KLEW chart.

### 6. Journaling Through the Amazon

**Bea Long, Houston ISD**

Go on a virtual field trip through the Amazon and learn about the flora and fauna that was observed on trip that was offered through the EIH/UHCL Collaborative. Get a first-hand account of the flooded rain forest and receive a complimentary CD that contains the presentation. Learn how to get your students excited about journaling.

### 7. Hands on Technology in the Classroom for All

**Jim Roberts, University of North Texas Regional Collaborative**

We will show how to measure, balance, and connect data through the use of graphing calculators and computers to make sense of graphing as maps. This demonstration will address the issue of collecting data with different kind of probes, inputting the data, and the meaning of such data.

### 8. The ABCs of Podcasting - Experience the Power of Multimedia Education!

**Keith Mitchell, TRC/Stef Paramoure, Comal ISD**

What is a podcast? How could it help in my science class? What equipment do I need? Is this another technology fad? How will it help my students? Is it hard? Where do I start? This session will introduce the ABCs of podcasting. A – Amazing and Accessible. B – Broad and Breathtaking. C – Content that is Connected.

## AFTERNOON PRESENTATIONS AND WORKSHOPS



*Journaling through the Amazon*



*Transferring Student Knowledge from 3-D Learning to 2-D Performance*



*Hands on Technology in the Classroom for All*

### SESSION 5

#### 1. Rock Your World

**Angie Tiscareno/Yolanda Martinez, Ysleta ISD**

Participants will use the 5E model to lead into the discovery of Earth science.

#### 2. Fat Science!!! Maximizing Science Time in the Elementary Classroom

**Thelma Rose, Linda McClure, Marcia Dodd, Michelle Mikeska, Rogers ISD**

With all the wonderful things you are doing in your classroom each day, do you find that your science instruction time is limited? Learn how some Rogers Elementary School teachers make science instruction time "fatter" by incorporating it into many different subject areas throughout the day and the week.

#### 3. Project Director Forum

**Carol Fletcher, TRC**

Project Directors and ITMs will discuss the challenges and successes they have experienced over the past project year. All Project Directors and ITMs are invited to participate.

#### 4. Love That Lava Lamp! A Focus on Physical Properties: DPS

**Samantha Youts, Clear Creek ISD**

This workshop will introduce/reinforce the physical properties of density, polarity, and solubility (DPS). The presentation is targeted for IPC or 8th Grade and provides participants with an uncomplicated approach to teaching the physical properties of matter and an opportunity to create their own lava lamps, without the lava or the lamp!

#### 5. Bluebonnets

**Sujata M. Chaitanya/Kakoli Mukerji, North Forest ISD**

Receive information that will educate your students about the environmental necessity, economic values, and natural beauty of bluebonnets.

#### 6. Science Expo

**Martha C. Guerra, Socorro ISD**

A great way to enhance science inquiry is through a Science Expo. It is an excellent way for children to conduct science inquiry and share their findings with their peers and other children at different grade levels.

#### 7. The ABCs of Science Manipulatives

**Susan Ellis, Little Cypress ISD/Jennie Knapp, Mauriceville ISD**

This will be a make and take session. Presentations will include manipulatives for punnett squares, circulation of the heart, frog dissection, and much more.

#### 8. Science Literacy for the 21st Century

**Laura Saenz/Terri Smith-Chavira, Region 3 Collaborative**

This workshop will focus on high school science TAKS objectives 2 and 4 as the model for implementing "best practices" in reading and science. Learn how to create a regional reading and science network in your area.



*To the Moon, Mars and Beyond*



*Not Your Typical Classroom Holiday*



*Be resourceful...Go Natural!*

## SESSION 6

### 1. Making Connections Using Critters

**Jennifer Jordan-Kaszuba, Region 13 Collaborative**

Using critters to help students make connections will engage their minds and imaginations in the science classroom. This session will introduce you to some easily-cared-for critters that can be used throughout the curriculum.

### 2. To the Moon, Mars, and Beyond – Let's Have Fun!!

**Christine Graham/Wanda Stuart/Patricia DuMar, Bryan ISD**

Hands-on and interactive! Experience human sun webs, planetary Venn diagrams, and stellar songs. TEKS are the focus. Adjust and integrate into your curriculum. Make and takes, yummy models, & investigations.

### 3. Project WILD - Middle/High School

**Martha Alexander, Region 18 Collab./Sandra Love, Midland ISD**

Project WILD is a K-12 interdisciplinary environmental and conservation education program emphasizing awareness, appreciation, and understanding of wildlife and natural resources. It has been correlated to the TEKS and TAKS. Project WILD is sponsored by Texas Parks and Wildlife Department.

### 4. Region 11 Collaborative – Impact on Cleburne High School

**Marcia Sloan/Carol Jenkins, Cleburne ISD**

The principal and two STMs from Cleburne High School present an overview of the Region 11 Science Collaborative, its impact on teacher training, and student and teacher performance in the classroom. Participants will take part in a hands-on Inquiry Institute activity from the Exploratorium, which can be used for teacher training and in the classroom.

### 5. Not Your Typical Classroom Holiday!

**Glinda Hagood, Frenship ISD/Sammie Von Hoene, Texas Tech Univ.**

Come experience holidays in a new and exciting way in the classroom through science using intriguing experiments that are easy to prepare, TEKS inspired, and exciting for your kids! Each of these lessons can be connected to other content areas such literature, math, social studies, and health.

### 6. EAA- Experimental Aircraft Association

**Emmette Craver, Region 12 TRC Partner**

This presentation will detail some of the low cost or no cost aerospace/flight sources for teachers to obtain to use in their classroom. We will demo activities that are great motivators in the classroom.

### 7. Raised Coral Reefs: Using Geochemical Data to Determine Tectonic Uplift

**Kathy Ellins, UT Institute for Geophysics**

Uplifted coral reefs provide evidence of tectonic uplift where several plate boundaries meet. Experience an activity that asks learners to combine radiocarbon dates corresponding to the time when the reefs were uplifted with their current elevation and calculate rates of tectonic uplift for 30 sampling locations. Finally develop a conceptual model to explain the pattern of uplift for the last 10,000 years.

### 8. Connecting with ELL Hispanic Students Using the Student-centered Sheltered Instruction Approach Model (SSIA™).

**Eduardo Guevara, Houston ISD**

To meet the needs of our ELL Hispanic students, best teaching practices must be combined with parental involvement. This SSIA™ approach recognizes diversity and promotes experiential hands-on, inquiry-based, cooperative learning focused in high order thinking coupled with parental involvement. Handouts provided.

## FRIDAY PRESENTATIONS AND WORKSHOPS

### SESSION 7

#### 1. Connecting Our Campus Through Science

**Renee East/Genny Devoe, Amarillo ISD**

Learn about our whole campus science/literacy connections using Inquiry Science and the 5E model. Training provides our teachers with ready-to-go science kits that include literature connections. Student-generated technology and science products will be exhibited and financial and administrative support ideas will be discussed.

#### 2. Be Resourceful...Go Natural!

**Amy Rutherford, Region 15 Collab./Howard Miller, San Angelo ISD**

Be Resourceful...Go Natural! will focus on alignment of Earth science objectives in grades K-8 with TEKS addressing natural resources, then connect to IPC and Biology with environmental issues that impact energy sources. Participants will receive a CD of all materials presented.

#### 3. Evolution, the Disconnect – What Me Worry?

**Mike McClure/Kirk Beckendorf, Blanco ISD**

Participate in a FOSS Models and Design activity and view a video clip from *The Howard Hughes Holiday Lecture Series on Evolution* to appreciate that good science is built on good models and that we should never feel intimidated to teach evolution.

#### 4. Ecology Activities for Everyone

**Sarah Joy Anderson, Frenship ISD/Cheryl Mosher, Lubbock ISD**

This presentation will provide hands-on activities for teachers of varied grade levels to enhance vertical alignment of content concerning the ecological role of living things and the evolutionary adaptations that allow organisms to flourish. Interdisciplinary connections will be addressed. GLOBE processes and technology are incorporated into the activities.

#### 5. Ten Tips to Tweak Any Lesson Towards Inquiry

**Ann Barlow, Round Rock ISD**

Inquiry is not a four-letter word! Learn 10 tips that can be used to move traditional lessons toward inquiry. The content of this session is heavily influenced by Marzano's *Classroom Instruction that Works*, and includes authentic examples of how learning changes when inquiry strategies are implemented.

#### 6. Rigor, Relevance, and Relationships

**Rebecca Neill, Aldine ISD**

Learn how to deliver science instruction through hands-on activities using strategies that address multi-modalities of today's learner styles. "Rigor, Relevance, and Relationships" uses familiar knowledge while encouraging the application of that knowledge to help make explicit the relevance of learning to the real world.

#### 7. Classroom "Critters"

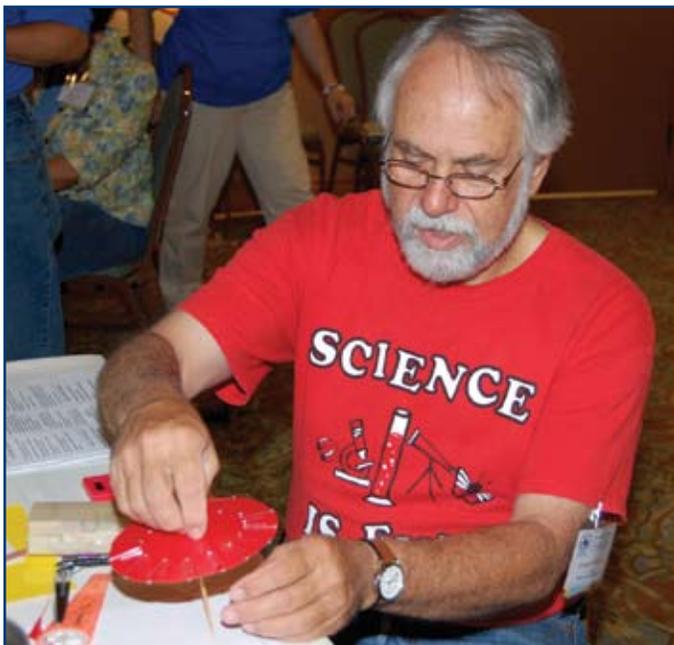
**Jo Williams, Round Rock ISD**

Teachers will experience a hands-on lesson that can be used as a performance assessment for an adaptation/camouflage unit. Using what they have learned about adaptation and camouflage students create a classroom "critter." Targeted grades are 4 and 5, but could be adapted to fit grades 6 and 7.

#### 8. Podcast Connections: Multimedia Science

**Stef Paramoure, Comal ISD**

Podcast authoring is a unique bridge to capitalize on the digital age in creating a solid learning experience that immerses students in multimedia production. This workshop will focus on connecting podcasts to science remediation using student lesson templates, organizational set-up, pre/post assessments, and resources.



*Impact on Cleburne High School*



*Elementary GLOBE*



*Engineering for the Elementary Classroom*

## GENERAL SESSIONS

### Transferring Student Knowledge from 3-D Learning to 2-D Performance Thursday, June 28

**Dr. Barbara ten Brink**, *Science Specialist*, Austin ISD

How can we ensure that our elementary students will transfer their knowledge from the instructional practices we implement in the classroom to the state assessment in science?

In the spring of 2003, I was called to a campus that was not performing well on the district's benchmark assessments. When I met with the principal and the team of fifth grade teachers, they cried. They assured me, "We do lots of hands-on, but the students cannot transfer their knowledge to the test." I had one of those rare and wonderful "aha" moments. I said, "I know how to fix it!" We would design instruction so that the students would have opportunities to transfer their learning in 3-dimensional formats to 2-dimensional performance.

The campus averaged 18% passing on the district's Texas Assessment of Knowledge and Skills (TAKS)-like benchmarks at grade 5. After a lab practical, the campus scored 86% on the TAKS – Elementary Science 2003. The teachers had improved their students' performance 68 points from the benchmark to the TAKS and the campus had out performed the state on the science TAKS by 12 points.

3-D to 2-D extrapolates the success of this case study and applies elements to instructional strategies to improve student performance on the TAKS. This session addressed the following questions: What is 3-dimensional? What is 2-dimensional? How can students transfer their knowledge to successful test performance?



*Dr. Barbara ten Brink*

### Whyville – A Case Study in Virtual Educational Worlds and Career Exploration for High-Tech Industries Friday, June 29

**Cliff Zintgraff**, *Director, Applications Development*, Numedeeon, Inc.

Whyville was launched in 1999 by Numedeeon, Inc. to apply over 20 years of research in education and cooperative learning to develop new web-based tools for education.

Researchers have identified the middle school years as a time when children, especially girls, lose their interest in math and science. Studies suggest that exposure to engaging educational, and in particular, scientific activities during this critical period can substantially influence future academic and career choices.

We launched Whyville as a virtual city, which engages young people in constructive educational activities while promoting socially responsible behavior. It is an outgrowth of the company's extensive research and practical experience related to learner-centered, hands-on, inquiry-based education.

Today, there are countless learning games and activities on Whyville, which is probably one of the reasons Education Daily states that Whyville is one of "edu-gaming's biggest successes."



*Cliff Zintgraff*

## 2007 NITA BETH CAMP LEGACY AWARD

*In 1985, doctors told Nita Beth Camp her life was over. Facing such a grim outlook, it would have been easy for the longtime science teacher to give in to the breast cancer that had invaded her body. But Nita Beth had other plans.*

*“A lot of people think cancer is a death sentence, but I think it’s a life sentence because you live every day to the fullest,” Camp said from her office at the Region 7 Education Service Center in Kilgore. “My doctor said I am a medical anomaly. I should not be alive. All of the studies say I should not have lived this long,” Camp said. “God has a plan for me, and I’m supposed to be here.”*

*“I take my chemo and come on to work every day,” she said. “If you’ve got something else to think about, like coming to your job, that puts your illness at the back of your mind.”*

*These quotes embody the attitude and optimism that characterized Nita Beth Camp, founder and former Project Director of the Region 7 Collaborative for Excellence in Science Teaching in Kilgore, Texas.*

*For over 21 years after her diagnosis with cancer and with her passing, Nita Beth Camp continued to be an inspiration for thousands of Texas educators and teachers.*

*With great respect and admiration to her memory, the Texas Regional Collaboratives dedicates the Nita Beth Camp Legacy Award.*



*Nita Beth Camp  
(2007 )*



*Donna Wise, Project Director, Region 7 Collaborative/Kilgore,  
receives the Nita Beth Camp Legacy Award from Dr. Kamil A. Jbeily*

### **The 2007 Nita Beth Camp Legacy Award is presented to Donna Wise**

*“When I started at the ESC, I was told that I wasn’t expected to keep up with Nita Beth. Her dedication and drive for excellence made every moment with her a learning experience. She fought every day not to let her illness interfere with her mission in life. Her mission, of course, was to educate and she was the ultimate educator. Her greatest gift was her ability to teach you something without you even knowing it.”*

*Donna Wise*

## PARTICIPANTS FEEDBACK



*Thelma Rose*  
Science Teacher, Rogers ISD  
Region 12 Collaborative/Waco

“The Science Collaborative has changed my life. I have been teaching for a long time, but only been in the Collaborative for a couple of years. The things that I have learned, I have been able to put into practice in my classroom in all areas.

At this stage of my life, I never realized I would just now be honing and becoming the kind of teacher that I want to be.

Coming to this conference is such an exceptional experience. Every single session I attended had something of just wonderful value that I can apply immediately to my classroom, and that I can share in such an easy way with all the teachers I work with. It’s made me so much of a better person. I would like to see everybody I know becoming part of this.”

*Thelma Rose*

“The Collaborative has empowered my teachers to be able to step up, because they are great teachers that just needed that little nudge; they didn’t need it from me, they needed it from themselves. The Collaborative has allowed my teachers to realize they do some cool things.”

*Cayla Cielincki*



*Cayla Cielincki*  
Core Science Specialist,  
Amarillo ISD  
Region 16 Collaborative/  
Amarillo



*Nancy Cavallin*  
Science Teacher, St. Mary's  
Academy Charter School  
TAMU-Corpus Christi/ESC 2  
Regional Collaborative/  
Corpus Christi

“I have been involved with the Collaborative for two years now, and before that, I was struggling with and getting 30 or 40% on my TAKS tests. My scores, this year, were 95% for my 5th grades, with half of them commended, and my 8th grades were 100%. I could not have done it without the Collaborative. I’ve come to this meeting for

the last two years, and it’s like all the best practices are brought here, and I get to take notes on it, and take it back to my classroom.”

*Nancy Cavallin*

“Every new teacher should be part of this. I wish I would have heard of it when I first started. I have been a teacher for eleven years, and during the first couple of years, I was wondering what I had gotten myself into. Since I got involved with the Collaborative three years ago, I have gotten so much information and support. I want to say how much I appreciate it, and I am going to be a teacher forever.”

*Jim Lair*



*Jim Lair*  
Science Teacher, Sunnyvale ISD  
UT-Dallas Regional  
Collaborative/Dallas

To view videos of participant feedback at the Annual Meeting, please visit the following link:  
<http://thetrc.org/video07>

## PARTICIPANTS FEEDBACK



*Robin Fender  
Science Teacher, Lytle ISD  
Region 20 Collaborative/  
San Antonio*

“I don’t think I’ve ever been to a conference, a meeting, anything related to education where you are made to feel so special and so important, as what the Collaborative does. My hat’s off to all of you.”

*Robin Fender*



*Wanda Pagonis  
Science Teacher, Lytle ISD  
OLLU Regional Collaborative/  
San Antonio*

“I’ve been coming for a long time. Every year, I don’t think it can get better, but it does. All the workshops I have been to this past couple of days have been great!”

*Wanda Pagonis*

As part of an anonymous evaluation, participants were asked to share their favorite part of the Thirteenth Annual Meeting. The following are some answers to the question:

“Everything was great. What I really enjoyed were the presentations that dealt with hands-on instruction. It was just magnificent. Many of the activities were fantastic and I will be able to take back and share with our teachers. Thank you so much! :-). Great Conference! The general conferences were also Great! The food was also very good.”

*Curriculum Coach*

“The workshops! I always enjoy attending the workshops and learning new strategies for helping my students succeed! Every workshop I attended was high quality! Never a dull moment!”

*Teacher*

“Seeing my STMs who have never presented at a conference before take that step and blossom was great. They supported each other and worked as a team - that is truly the Collaborative part of this program that excites me.”

*Project Director*

“I loved seeing the projects and programs all the Collaboratives are doing. They are really bringing science to LIFE through innovative training and unique programming!”

*Partner*

“The quality of the workshops and the opportunities for networking with outstanding professionals. This is one of the premier professional development opportunities in Texas.”

*Museum Educator*

“I was enthralled by it all; the facilities were outstanding and quite conducive to this type of conference.”

*Teacher*

“I enjoyed the wonderful organization and ease of getting to each session I attended. And each session was wonderful. I learned so MUCH!!!!”

*Teacher*

“I walked away with many resources to share with my teachers in my district and Collaborative. I also enjoyed the recognition of the hard working Collaborative members and teachers. This was a special treat. The facilities and organization of the conference were fabulous. Wonderful job to all.”

*Science Specialist*

“I especially enjoyed the reception prior to the dinner. It was a great chance to meet and mingle with other people.”

*Teacher*



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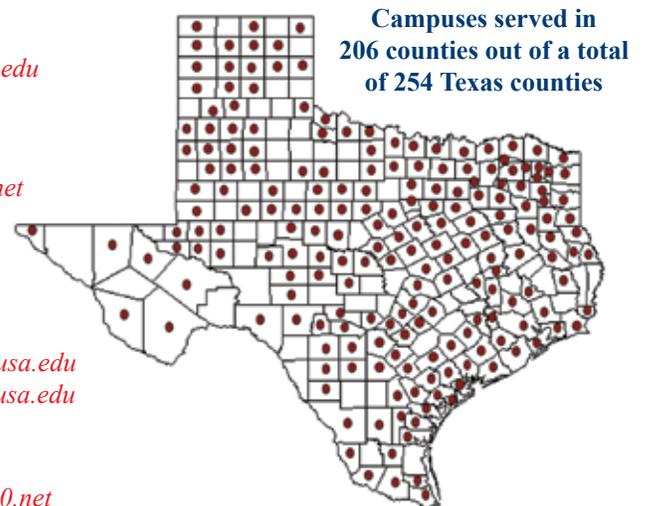
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## 2001 - 2007 County Distribution



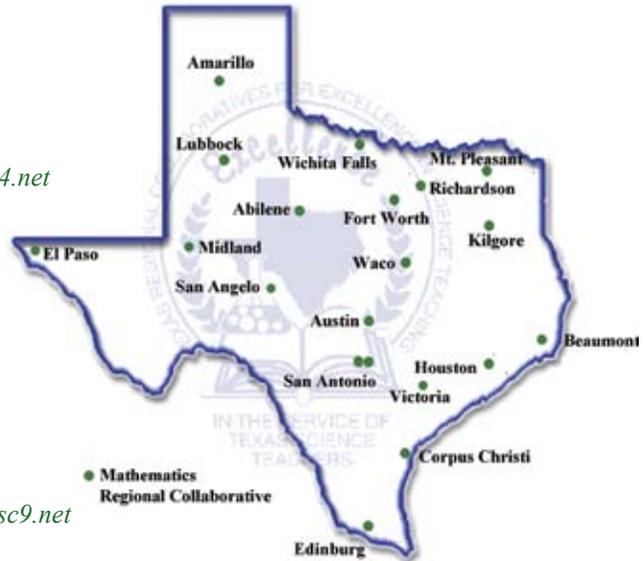
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### Mathematics Regional Collaborative Sites



# TEXAS REGIONAL COLLABORATIVES

## Who We Are

Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching is an award-winning network of P-16 partnerships that provide sustained, high-intensity professional development to P-12 teachers of science and mathematics. This infrastructure of 43 institutions of higher education collaborating with education service centers, school districts, and business partners has a 16-year record of designing and implementing exemplary professional development using research-based methods, materials, and best practices.

## Achievements

We have improved the knowledge and skills and developed the leadership capacity of over 14,000 Texas science teachers and 5,000 mathematics teachers who in turn shared their experiences with other teachers through mentoring, peer coaching, and technical assistance. Over one million students across Texas have benefited through improved instruction and performance of participating teachers.

## Our Mission

To provide Texas science and Mathematics teachers with support systems of sustained, high-intensity professional development, and mentoring to assist them in the implementation of the Texas Essential Knowledge and Skills (TEKS). Our programs equip teachers with the knowledge and skills to engage their students in meaningful science and mathematics learning experiences and prepare them for high achievement on the Texas Assessment of Knowledge and Skills (TAKS) and other measures.

## 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.



## PARTNERS & PROJECT CONTRIBUTORS

### State and Federal Partners

Texas Education Agency  
U.S. Department of Education  
National Science Foundation  
Texas Higher Education Coordinating Board

### Statewide Corporate and Foundation Partners

Shell Oil Company  
AT&T Foundation  
Toyota USA Foundation  
El Paso Corporation  
The Cynthia and George Mitchell Foundation

### Project Contributors

Abilene Education Foundation, Advanced Micro Devices, The Bob Bullock Texas State History Museum, Central West Texas Charitable Foundation/Jack Ramsey, Community Foundation of Abilene/Bob and Maggy Morford, Dian Graves Owen Foundation, Eleanor and Robert Hoppe Endowment DA Fund, J.E. Connally/Virginia H. Boyd, Morehead-Welborn LLP, Robert Gooch, Rockwell FundSam E. and Ann Barshop, Scott Taliaferro, Jr., Sydney E. NibloWalter F. Johnson, William Wright Jr., Zachry Group, Inc.

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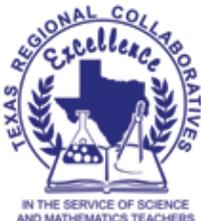
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# **Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching**



## **Background Information and History**

In 1991, tremendous science education reform activities were underway across the state and 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 Science and Mathematics 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, as per a historic \$1.0 Million gift from Shell Oil Company, 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 14,000 science teachers and 5,000 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.