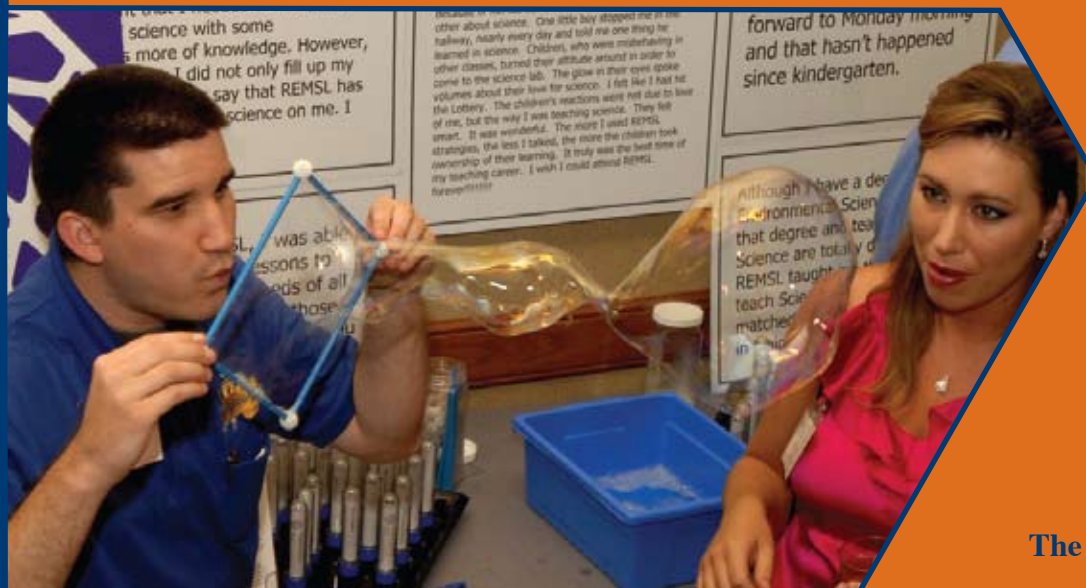


TEXAS REGIONAL COLLABORATIVES FOR EXCELLENCE IN SCIENCE AND MATHEMATICS TEACHING



Dynamic Partnerships for Twenty-First Century Science and Mathematics Education



*Headquartered at the
Center for Science and
Mathematics Education
College of Education
The University of Texas at Austin*

BRIEF HISTORY

In 1990-91, major science education reform activities were underway in Texas. Changes necessitated that teachers adopt new methods of teaching and teach a wide variety of sciences for which they were not prepared. Dr. Kamil A. Jbeily, then at the Texas Education Agency (TEA), initiated a series of regional meetings across the state to explore ways to create ongoing regional support systems of professional development for Texas science teachers. The meetings included representatives from education service centers, colleges and universities, school districts, and community leadership. The goal was to create partnerships that are built on collaboration, cost-sharing (using Eisenhower funds as seed money), and synergistic relationships to provide science teachers with relevant, meaningful, sustained, and high-intensity professional development that will have positive impact on student achievement. The partnerships gave birth to the Texas Regional Collaboratives for Excellence in Science Teaching.

On March 2, 1996, with the reorganization of the Texas Education Agency, and under a TEA-UT partnership agreement, the statewide administrative office of the Texas Regional Collaboratives was moved to the Science Education Center (now Center for Science and Mathematics Education) at The University of Texas at Austin. The program now enjoys support from a wide spectrum of local, state, and national partners.

In July 2006, the Texas Regional Collaboratives (TRC) launched a new initiative funded by the Texas Education Agency to provide high quality professional development for Texas mathematics teachers. After a competitive process, grants were awarded to 20 partnerships across Texas to establish the Texas Regional Collaboratives for Excellence in Mathematics Teaching.

Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching



Who We Are

The Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (TRC) is an award-winning statewide network of sixty P-16 partnerships that provide sustained and high intensity professional development to P-12 teachers of science and mathematics across the state. This infrastructure of over 46 institutions of higher education collaborating with the Texas Education Agency, education service centers, school districts, and business partners, has a 17-year track record of designing and implementing exemplary professional development using research-based instructional models, materials, and best practices.

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

- Served over 1.5 million students across Texas through improved instruction and performance of participating teachers; developed the leadership capacity of approximately 16,000 Science Teachers Mentors (STMs) through sustained and high intensity professional development. These STMs are in turn sharing their experiences with thousands of teachers through mentoring, peer coaching, technical assistance, and workshops at the campus, district, and regional levels. In addition, over 16,500 mathematics teachers have received training in mathematics professional development modules sponsored by the Texas Education Agency. Science and mathematics teachers in almost all of the State's 254 counties have been the beneficiaries of this extensive statewide network.
- Transformed the culture of professional development into one that commits to a high quality, sustained, and results-driven support system that has a positive impact on teacher performance and student achievement.
- Received commendation from U.S. Department of Education, National Science Foundation, policy makers, legislators, and business partners; inducted into the Texas Science Hall of Fame, and recognized by the Governor, the Senate and House of Representatives for distinguished achievements and contributions to supporting excellence in science education.

Values

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

Science Regional Collaboratives



Physics for All

For seventeen years, the Texas Regional Collaboratives (TRC) program has provided professional development in science to K-12 teachers. The TRC continues to offer Professional Development Academies (PDAs) in science content areas and at grade levels consistent with state priorities and student achievement data. The content and instructional strategies acquired during these PDAs are shared with teachers through Professional Development Programs designed and implemented by the local Regional Collaborative institutions.

The 2009-2010 grant year will provide funding for 36 Science Collaboratives. Science Collaboratives recruit a minimum of 25 teachers who then participate in a minimum of 105 hours of science professional development. These

teachers are referred to as Science Teacher Mentors (STMs). Each Collaborative will serve at least 100 additional teachers (referred to as Cadre Members/CMs) through mentoring and other outreach activities. Two Instructional Team Members per Collaborative will be involved in the Jackson School/Shell-TRC Partnership TXESS (Texas Earth and Space Science) Revolution project, an NSF funded geoscience professional development program.

Through 2010, each Science Regional Collaborative will continue to focus on providing chemistry, physics and earth science training to teachers. A special emphasis will be placed on preparing more teachers at the secondary level to teach the rigorous science courses of the 4X4 Recommended High School Program.

2009-2010 PROGRAM GOALS

Numerous large-scale studies have identified teacher quality, more than any other factor, as a key determinant of student success. Studies have consistently documented the important connection between a teacher's verbal ability/content knowledge and student achievement.

Research suggests that in order to have a positive and lasting impact on classroom instruction and student learning, professional development should be sustained, intensive, and classroom-focused. The TRC is committed to assisting partnerships in providing high quality professional development in support of teachers' efforts to raise student achievement. Successful programs generally include:

- Summer institutes coupled with follow-up training over a sustained period throughout the school year to support classroom implementation and schoolwide dissemination.
- Distance learning programs using curricula that are innovative, content-based, and based on scientifically based research that is current and can address instructional delivery problems, particularly in rural areas.
- Ongoing opportunities for enhanced professional development that improves teachers' subject matter knowledge and promotes strong teaching skills.

The design of professional development at all levels of the TRC network centers on content knowledge, the principles of effective instruction and student learning, a commitment of time and resources for implementing development over an extended period of time, and the employment of professional development styles that engage teachers collaboratively rather than only focusing on them as individuals.

SCIENCE PDAs

Chemistry (8-12)

Addresses five major content strands through hands-on activities written in 5E (Engage, Explore, Explain, Elaborate, Evaluate) instructional model format. This is a continuation of the 2008-2009 program.

Chemistry (K-5)

Hands-on instruction to build conceptual understanding of chemistry in elementary schools using high quality instructional materials.

TXESS (Texas Earth and Space Science) Revolution

A rigorous, high quality, 5-year geoscience professional development program for high school teachers who teach or are preparing to teach an Earth Science course.

Early Childhood Science/Mathematics Integration

Activity-intensive professional development based on Pre-K standards and focused on the process skills to teach science and mathematics to pre-school children.

Physics (8-12)

Focusing on the physics content of electricity.

Engineering is Elementary (K-8)

Hands-on instruction to build understanding of engineering design principles.

Astronomy at the McDonald Observatory

Preparing participants to co-facilitate a science workshop via videoconferences in 2009-10.

All training is aligned with science TEKS and TAKS.

Mathematics Regional Collaboratives

In July 2006, the TRC launched a new initiative funded by the Texas Education Agency (TEA) to provide high quality professional development for Texas mathematics teachers. After a competitive process, grants were awarded to 20 partnerships across the state. During the grant year 2007-08, 22 Mathematics Regional Collaboratives were funded and in 2008-09, two additional Collaboratives joined to make a total of 24.

In 2008-09, each Mathematics Regional Collaborative provides 75 hours of in-depth professional development to a minimum of 25 teachers, referred to as Mathematics Teacher Mentors (MTMs), as well as a minimum of 12 hours to 150 additional teachers, referred to as Mathematics Cadre Members (MCMs).

The 2009-2010 grant year will provide funding for the current 24 Collaboratives. The Collaboratives will continue to recruit a minimum of 25 teachers who will participate in a minimum of 75 hours of mathematics professional development, and provide mentoring and other outreach activities.



High School Geometry

2009-2010 PROGRAM GOALS

Each Regional Collaborative designs its program based on the needs of teachers in the region. All professional development must have a research base that shows effective strategies for improving students' learning.

During the program year, Collaboratives must also have in place an assessment plan that evaluates teachers' mathematics knowledge growth as a result of their participation in the program. Three focus areas have been selected for the 2009-2010 year: algebra, geometry, and measurement.

Algebraic Reasoning K-12

This focus area addresses the development of algebraic reasoning through problem solving approaches. Utilizing a problem solving approach allows students to make important connections between models, representations and algebraic statements. These connections promote understanding of functions and relationships. Making these connections meaningful to students prepares them to be successful in algebra, which is sometimes described as the "gateway" to higher mathematics and sciences.

Geometry-Algebra Connections 8-12

Algebra and geometry are often taught as completely separate topics, when in reality they are closely related to each other. Through modules like MTC-Geometry and the GeoGebra electronic graphing tool, teachers can learn to address algebraic concepts through geometry, and geometry teachers can make better use of algebraic concepts to teach geometry.

Measurement Concepts for K-5

Children in elementary grades need extensive experiences in measurement. Research on children's thinking shows that children's invention of measurement tools supports the learning of measurement concepts. Measuring objects, recording measurement data, and making interpretations of measurements also supports other math topics such as counting, multiplication, division and proportional reasoning.

GRANT STRUCTURE

"Each Mathematics Teacher Mentor (MTM) is expected to take the mathematics content knowledge, classroom skills, and leadership skills back to their respective campus, district, or region and provide mentoring, technical assistance, peer coaching and leadership to additional teachers of mathematics (MCMs)."

-RFA 2008-09

MENTORING

Description of the role of Mathematics Teacher Mentor.

1. Mentors participate in a minimum of 75 hours of mathematics professional development.
2. Mentors use their knowledge and understanding of teaching and learning mathematics to support other teachers of mathematics in a variety of ways:
 - Serve as a leader in mathematics instruction for their campus or district, particularly in small, rural districts that do not have mathematics curriculum specialists in administration
 - Encourage mathematics teachers to join in Collaborative professional development activities
 - Share research-based lessons and strategies with peers

Description of the role of the Mathematics Cadre Member.

Cadre members participate in the Collaboratives by attending 12 or more hours of professional development. In some cases, they attend workshops along with mentor teachers, and in other cases, they receive the training directly from the mentor teachers. This mentor-cadre relationship provides a venue for key ideas on mathematics teaching to scale up throughout the schools.

PROFESSIONAL DEVELOPMENT ACADEMIES (PDAs)



High School Physics PDA: “Kinematics and Dynamics”



High School Chemistry PDA



Grades K-5 PDA: Children’s Thinking in Measurement

Professional Development Academies (PDAs) serve professors of science and mathematics, instructional specialists, science and mathematics education professors, and master teachers.

PDAs enhance the participants’ knowledge and skills necessary to develop, sustain and facilitate high quality professional development programs.

PDAs activities are aligned with state standards and priorities.

PDAs afford providers of professional development across the state opportunities to, themselves, model life-long learners.

PROFESSIONAL DEVELOPMENT PROGRAMS (PDPs)



Geosciences PDP: “Change Over Time”



K-2 PDP: Math TEKS Connections



PDP: “Come Play With Me” - Simulation of Moon phases as seen from Earth

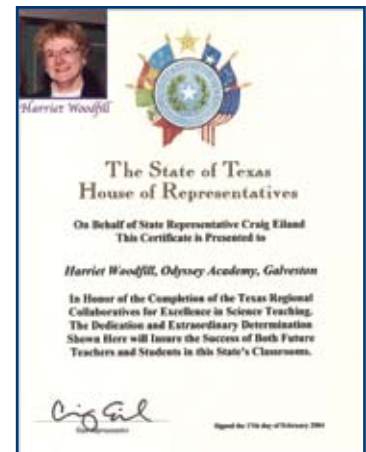
Professional Development Programs (PDPs) at each Regional Collaborative provide a comprehensive set of research-based experiences for Science and Mathematics Teacher Mentors. Mentors are supported by their schools, districts, and the Regional Collaborative to serve other teachers in their districts.

The mentorship design is validated by research that confirms that the effectiveness of extended sustained professional development for teachers results in actual change in teacher content knowledge and improvement in students’ understanding of subject matter content and applications.

HONORING THE TEACHERS

These regional events recognize and honor participating teachers and engage administrators, policy makers, legislators and business leaders in the program.

Through these events, the Regional Collaborative leaders thank business partners, celebrate the partnerships in the community, acknowledge support of administrators, and publicize the program through media outlets in the region.



Teacher Leaders receive certificates from The State of Texas House of Representatives



(l to r) **Dr. Brenda Weiser**, *Project Director*, UHCL/EIH Regional Collaborative, **Angela Ruggeri**, *Teacher*, Pasadena ISD, **Senator Mike Jackson** at UHCL/EIH Regional Collaborative Honoring the Teachers (2006)



LaJuan Garrett, *Teacher*, Simms ISD, and **Representative Stephen J. Frost**, District 1, at TAMU Texarkana Regional Collaborative Honoring the Teachers (2008)

Celebrating the Partnerships



Senator Florence Shapiro and Dr. Kamil Jbeily at UNT Regional Collaborative Honoring the Teachers (2006)



(1 to r) Bruce Connery, Vice President of Investor and Media Relations, El Paso Corporation, Dr. James Barufaldi, Principal Investigator, TRC, Dr. William Staples, President, University of Houston-Clear Lake, Dr. Carl Stockton, Provost, UHCL, Leticia Konigsberg, Educational Program Coordinator, Corporate Foundation, El Paso Corporation, and Dr. Jbeily at the UHCL/EIH Regional Collaborative Honoring the Teachers (2007)



Patricia Kehler-Moncur, Teacher, Houston ISD, and Representative John Davis, District 129, at UHCL/EIH Regional Collaborative Honoring the Teachers (2006)



(1 to r) Dr. Jbeily, Missy Wooley, Teacher, Lincoln Parish, LA, Representative Hollis Downs, Louisiana House of Representatives, Dr. Frazier Wilson, Manager, Social Investment, Shell Oil Company, at the Louisiana Tech University/Grambling State University Regional Collaborative Honoring the Teachers (2007)

HONORING TEXAS TEACHERS

In Honor of Distinguished Charter Members of the Galveston County Regional Collaborative for Excellence in Science Teaching

SCIENCE TEACHER MENTORS

<p><i>Goldalpe Hernandez IV, Galveston ISD</i></p> <p><i>Walter H. Hays, Galveston ISD</i></p> <p><i>Carla Adams, Galveston ISD</i></p> <p><i>Martha Elaine Burchett, Clear Creek ISD</i></p> <p><i>Claudia Brooks, Galveston ISD</i></p> <p><i>Diana Barnett, Galveston ISD</i></p> <p><i>Danaa Byrd, Galveston ISD</i></p> <p><i>Shelley Chabwick, Odyssey Academy, Galveston</i></p> <p><i>Nina Lynn Coffey, Sunset School, Galveston</i></p> <p><i>Judy Green, Galveston ISD</i></p> <p><i>Jessica Garcia-Rosales, Clear Creek ISD</i></p> <p><i>Edwarda Gonzalez, Pasadena ISD</i></p> <p><i>Susan Garcia, Clear Creek ISD</i></p> <p><i>Susan Larson, Clear Creek ISD</i></p>	<p><i>Judy Lee, Clear Creek ISD</i></p> <p><i>Walter Hays, Clear Creek ISD</i></p> <p><i>Kim Williams, Galveston ISD</i></p> <p><i>Carlotta Ryan, Aliso ISD</i></p> <p><i>Nancy Schalk, Galveston ISD</i></p> <p><i>Carol Jorgensen, Clear Creek ISD</i></p> <p><i>Debra Spivey, O'Donnell High School, Galveston</i></p> <p><i>Hilary Valente, Clear Creek ISD</i></p> <p><i>Barbara Van Hous, Clear Creek ISD</i></p> <p><i>Chad Vance, Clear Creek ISD</i></p> <p><i>Shirley Wallace, Santa Fe ISD</i></p> <p><i>Marion Woodruff, Odyssey Academy, Galveston</i></p> <p><i>Jessie Woodruff, Sunset School, Galveston</i></p>
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Rick Perry
 Governor of Texas

Galveston County Regional Collaborative
 CELEBRATING EXCELLENCE
 Dr. Thomas D. Butler, Founder
 Dr. Gerald Pagan, PE, Galveston College
 Dr. Judy Wren, Co-Director, Texas A&M Galveston
 Dr. Margaret Ripstein, Co-Director, UHCL

Rick Perry
Governor of Texas



Representative Alma Allen, District 131, Tracy Ward Whatley, Teacher, Pasadena ISD, at UHCL/EIH Regional Collaborative Honoring the Teachers (2008)

ANNUAL MEETING

This statewide event brings together teachers, education and business leaders, policy makers and legislators to celebrate and recognize the achievements of the Collaboratives. The meeting provides opportunities for interregional sharing of ideas, collaboration, and networking. Participants learn about state-of-the-art trends and recent developments in science, technology, engineering and mathematics (STEM) education.

Fourteenth Annual Meeting

July 9, 2008



**Texas Representative
Donna Howard**

“As I travel around the state, I ask teachers and administrators in schools that receive excellent ratings what makes the difference, what gives them that extra boost in achievement? They all concur that strong professional development is key, and then second in line is sustainability of the professional development training and support. The TRC excels at this.”

“We have to continue to get better and better at teaching our children critical thinking skills, collaboration, and how to innovate. We must focus on these 21st Century skills because those are what jobs and a global economy demand. We’re just so thankful for what the Texas Regional Collaboratives do – you’re ensuring our future.”

Thirteenth Annual Meeting

June 27, 2007



**Texas Senator
Kirk Watson**

“I want to thank the Collaboratives for doing such an excellent job in educating our students to compete in a global community and economy.”

“Thousands of Texas teachers have benefitted from this remarkable program. 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.”



**Texas Representative
Geanie Morrison**



*Distinguished speakers and guests at the 2006 Twelfth Annual Meeting included, from left to right:
UT College of Education Dean Manuel J. Justiz,
University of Texas at Austin President William C. Powers, Jr.,
UT System Former Chancellor Mark G. Yudof,
Shell Oil Former President John Hofmeister,
and TRC Founder and Executive Director Dr. Kamil A. Jbeily*



*Science Project Directors
Fourteenth Annual Meeting*

Engaging Policy Makers, Business & Education Leaders

Distinguished Service Awards Winners



2003

The Honorable Geanie Morrison
Texas House of Representatives



2006

James Barufaldi, Ph.D.
Director, Center for Science and Mathematics Edu.
College of Education
The University of Texas at Austin



2007

Gina Day
Deputy Associate Commissioner
Texas Education Agency



2008

Nancy Schultz
Science Teacher Mentor
Galveston Science Regional Collaborative

Nationally recognized education leaders speak on trends and systemic reform in STEM education. Teacher leaders and community partners are recognized and honored with distinguished teaching and service awards.

Twelfth Annual Meeting



William C. Powers, Jr.
President
The University of Texas at Austin

Twelfth Annual Meeting



The Honorable Mark Strama
State Representative, District 50
Texas House of Representatives

Fourteenth Annual Meeting



The Honorable Drew Darby
State Representative, District 48
Texas House of Representatives

Eleventh Annual Meeting



John Hofmeister
Former President
Shell Oil Company

Ninth Annual Meeting



Sandy Kress
Former Senior Advisor
to President Bush on Education

Eighth Annual Meeting



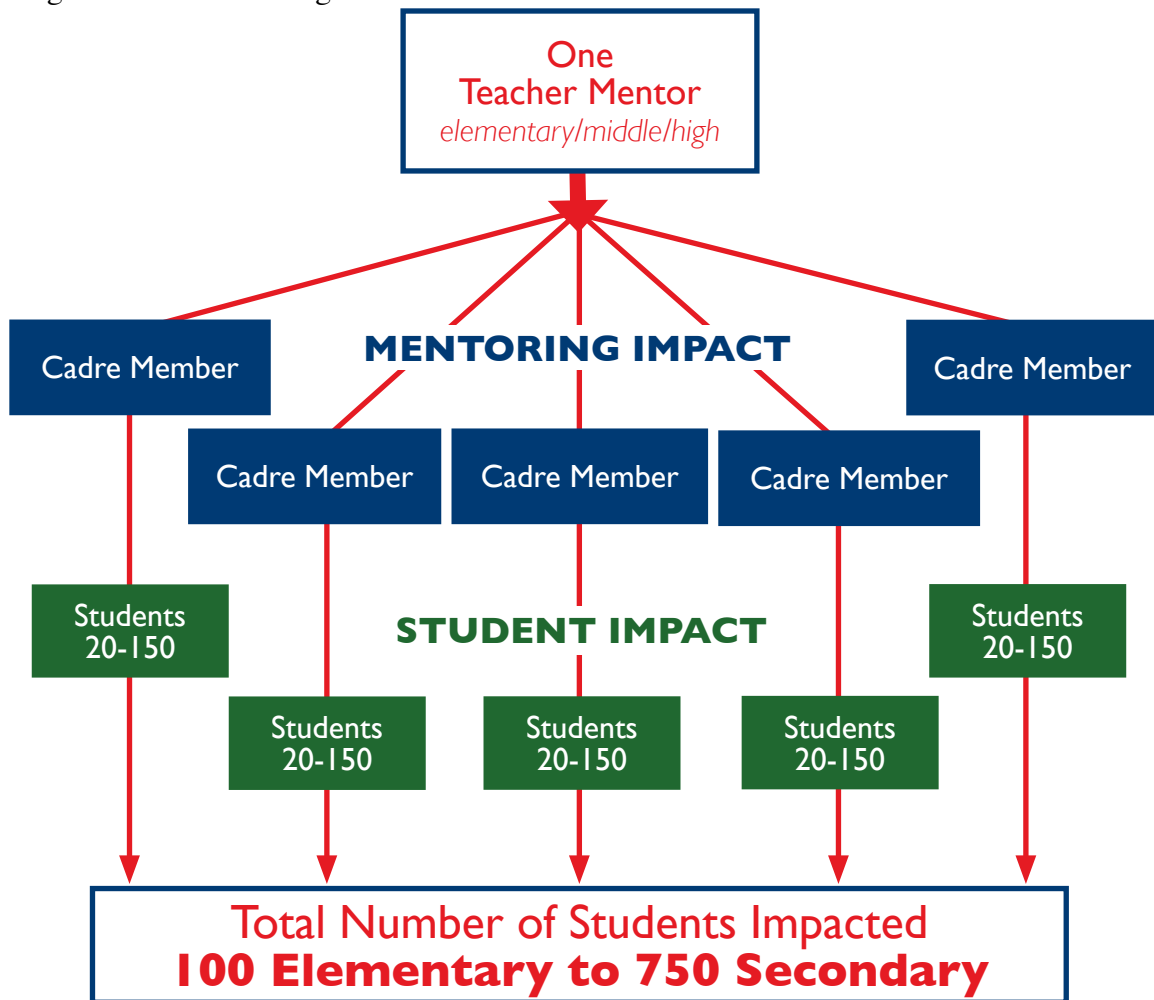
Dr. Larry Faulkner
Former President
The University of Texas at Austin

Teachers Mentoring Teachers



Sharing Instructional Strategies

TRC innovative professional development programs prepare teachers to mentor other teachers. Science Teacher Mentors (STMs) and Mathematics Teacher Mentors (MTMs) extend the reach of TRC programs far beyond their immediate impact. The programs nurture learning communities within schools and support networks among P-12 schools, community colleges, and universities. These connections develop and retain beginning teachers while rejuvenating experienced professionals.

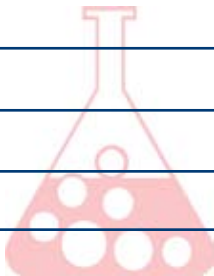



Mentoring Multiplies the Reach of TRC

SCIENCE

2007-2008

MATHEMATICS

	37	← COLLABORATIVES →	22	
	784	← DISTRICTS →	818	
	2,324	← CAMPUSES →	2,153	
	7,894	← TEACHERS →	8,033	
	497,322	← STUDENTS →	433,782	

One Year Data: August 1, 2007 - July 31, 2008

Student numbers based on an average student/teacher ratio of 63:1 in science and 54:1 in mathematics



High School Chemistry

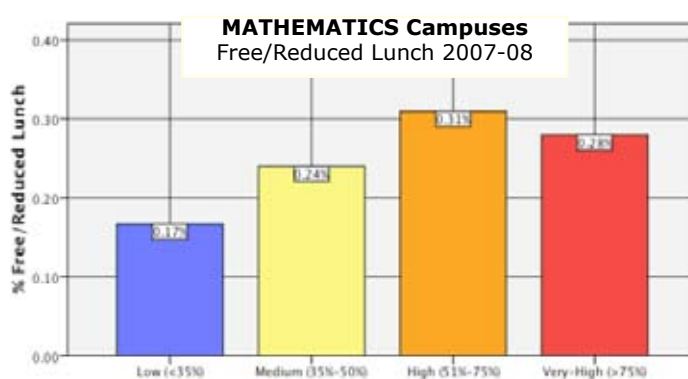
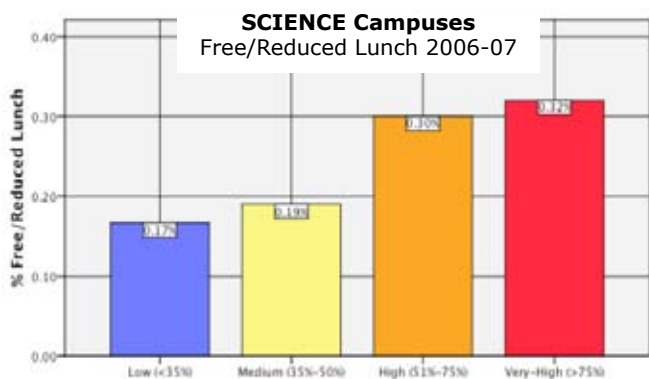
For over twelve years, Texas Science Regional Collaboratives have used a mentorship model to conduct extensive professional development for science teachers.

SCIENCE Collaborative programs require STMs to commit to over 100 hours of professional development. These professional development offerings allow teachers the opportunity to learn new subject matter content, and conduct field experiences and science explorations.

The Mathematics Regional Collaboratives are also adopting this model. As the mathematics programs develop their capacity to support a mentorship model, required hours for MTMs will continue to increase.

MATHEMATICS Collaborative programs require MTMs to attend over 75 hours of professional development. The mathematics professional development helps teachers deepen their content knowledge through problem solving, investigations, and connecting what they learn to the lessons they deliver in their classrooms.

Socio-economic Levels of Participating Campuses 2006-2008



TRC teachers work primarily with high needs schools in both Science and Mathematics Regional Collaboratives.

Effectiveness

The bottom line in measuring the effectiveness of teacher professional development is the impact it has on student achievement.

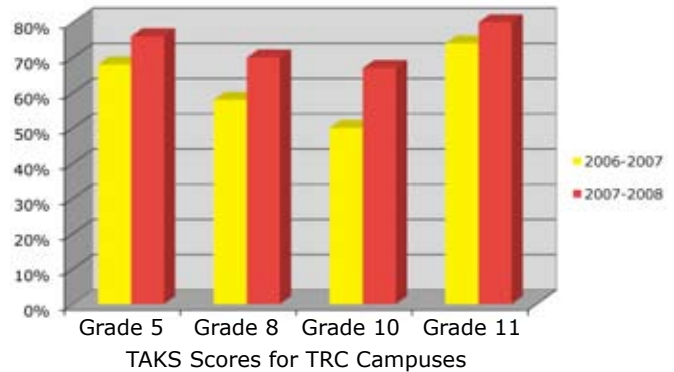
Research data indicate a positive correlation between Texas Regional Collaboratives teacher participation and student achievement.



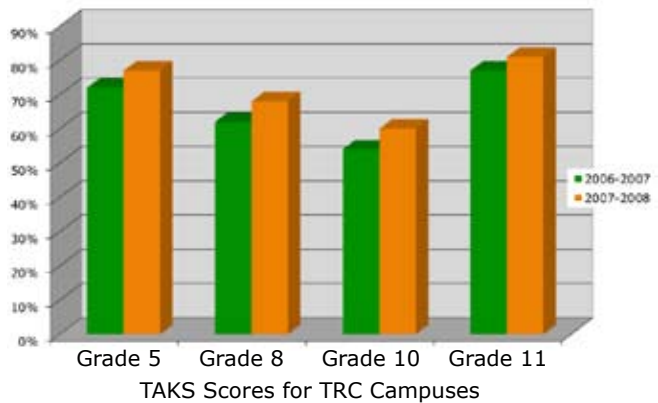
Elementary Mathematics

Science TAKS Testing 2007-2008

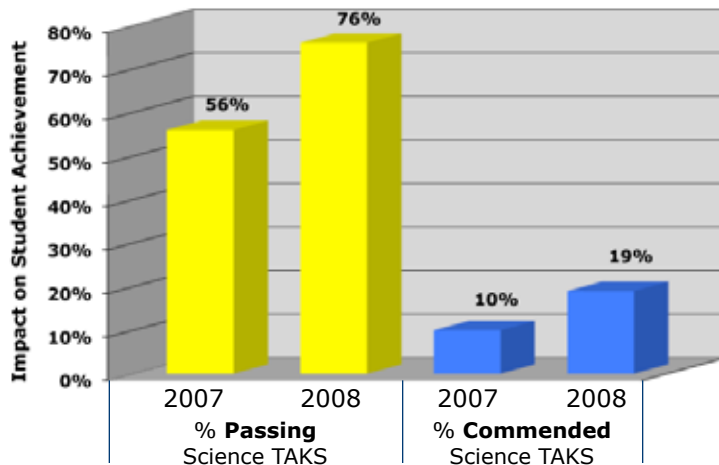
Region 18 Collaborative



Region 9 Collaborative



Hutto ISD Elementary Schools Grade 5 Science TAKS 2007-2008 (N=3)



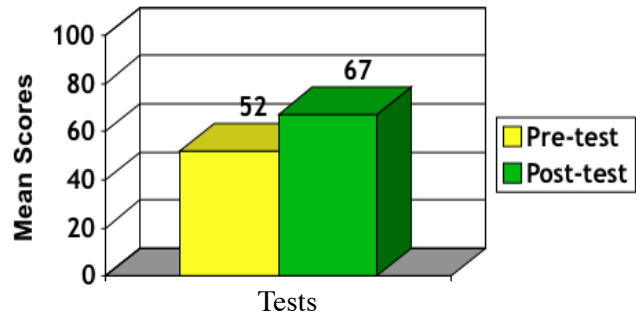
Hutto ISD schools participated for the first time in the ACC Regional Collaborative during the 2007-2008 school year.

Passing percentage increased by 20 points and commended by 9 points after teacher participation in the TRC.

Impact on Students and Teachers

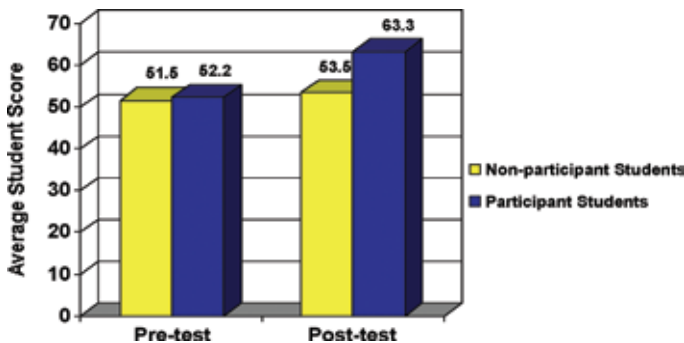
Teacher Science Content tests correlate with the science TEKS. Science Teacher Mentors complete a test prior to, and again following 105 contact hours of professional development. Pre-test and post-test data indicate steady, significant improvement in science content knowledge.

Average STM Science Content Knowledge Gains 2007-08



Summary of 36 different tests of science content knowledge administered to classroom teachers. Test content covered a range of topics including physics, chemistry, biology, earth science, and science process skills.

Collaborative vs. Non-Collaborative Teachers

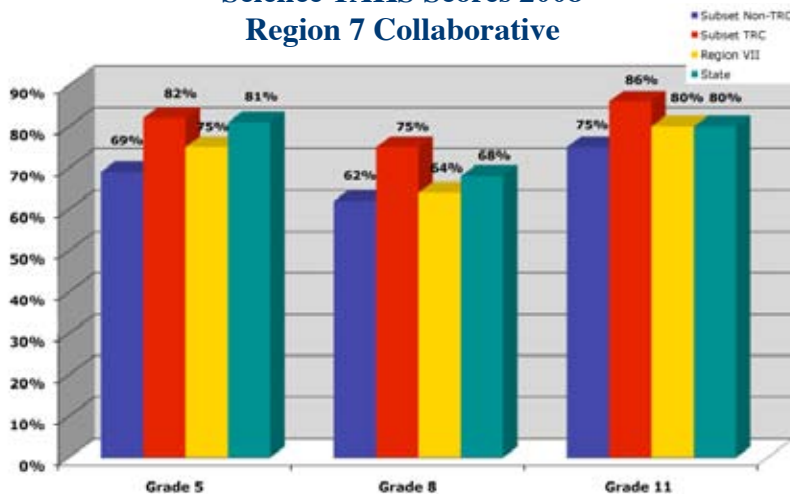


Students taught by teachers in the Rice University Regional Collaborative showed significant improvement as compared to non-participant teachers in the same school district on a test consisting of items from the Third International Math and Science Study (TIMSS) and released state test items.



High School Chemistry

**Science TAKS Scores 2008
Region 7 Collaborative**



Schools with TRC-trained teachers in Region 7 (red) outperformed schools that did not participate in the TRC (purple) and exceeded the state and regional averages at every grade level.

Commendations



Mark G. Yudof
Former Chancellor
The University of Texas System Administration

“Your special efforts on behalf of The University of Texas at Austin and K-16 partnerships and collaborations are greatly appreciated. Keep up the good work!”

“We, at The University of Texas, have placed a special emphasis on the University’s role in supporting schools and teachers in schools to allow them to improve their effectiveness. An important part of that is the Texas Regional Collaboratives, led ably by Kamil Jbeily.”



Dr. Larry Faulkner
Former President
The University of Texas at Austin



Dr. Manuel J. Justiz
Dean
College of Education
The University of Texas at Austin

“The Collaboratives advance the professional development of science teachers throughout our state, and ultimately improve the quality of science instruction of thousands of children in our state.”

“The Texas Regional Collaboratives are a prime example of how The University of Texas is reaching out to the entire state. As I spread the word about how much UT does for the people of Texas, the outstanding science teachers that we’re helping, the Collaboratives are always first on my list of examples.”



Gwen Grigsby
Associate Vice President
Governmental Relations
The University of Texas at Austin

Texas Science Hall of Fame - January 16, 2001

Recognition by the Texas Senate, the Texas House of Representatives and Governor Rick Perry.



In the Senate Chamber from left to right:

Former Senator David Cain (resolution sponsor), Dr. Bernard Harris, Charles Duke, Dr. Jack Christie, Dr. William C. Davis, Dr. Manuel P. Berriozabal, Former Lt. Governor Bill Ratliff, Dr. Robert F. Curl, Dr. Gerald D. Skoog, Jack S. Kilby, Arleen Lawson, Dr. Kamil A. Jbeily, John Blaha, and Eugene A. Cernan

State, Federal, and Corporate Partners

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

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

Statewide Corporate and Foundation Program Officers



James Lydon
*Executive Director
External Affairs
AT&T*



Leticia Konigsberg
*Community Relations Manager
El Paso Corporation*



Dr. Frazier Wilson
*Manager
Social Investment
Shell Oil Company*



Yrthya Dinzey
*Assistant Manager
Philanthropy
Toyota USA Foundation*



Meredith Dreiss
*President
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, Kenedy Memorial Foundation,
Morehead-Welborn LLP, Robert Gooch, Rockwell Fund, Sam E. and Ann Barshop,
Scott Taliaferro, Jr., Sydney E. Niblo, Walter F. Johnson,
William Wright Jr., Zachry Group, Inc.

Significant Contributions



Texas Education Agency

“TEA has been pleased to support the Texas Regional Collaboratives for over 17 years. The content-rich, data-driven training and mentoring provided by the Collaboratives has a strong record of effectiveness that should be a model for science partnerships between colleges, universities, education service centers, and school districts across the country.”



Robert Scott
Commissioner of Education

Robert Scott



Gina Day

“Working in partnership with the Texas Regional Collaboratives has been an extraordinarily rewarding experience. Their history of service to Texas science teachers and long, established partnerships among science leaders are making possible the delivery of high quality staff development in proven strategies for over 30,000 science and mathematics teachers across Texas.”

Gina Day
Deputy Associate Commissioner



El Paso Corporation

“El Paso Corporation proudly supports the TRC whose efforts provide math and science teachers with the support systems and professional development needed to achieve excellence in the classroom. Kamil and his team have had a positive impact on teacher performance and student achievement throughout the state. It is incumbent upon the business community to ensure that the TRC continues to empower educators and offer the resources needed to help develop the next generation of scientists and engineers.”



John Sousa
Vice President for Corporate Communication and Community Relations

John Sousa

Government and Business Joining Forces



“It takes collaborative efforts and commitment of industry and academia to educate and train the workforce of the future. For that reason, Shell is pleased to support Texas Regional Collaboratives programs that enhance teacher skills and student understanding of math and science. These two disciplines are critical to addressing the energy and environmental challenges of the future.”



Marvin Odum

Marvin E. Odum
President, Shell Oil Company



AT&T Foundation



Don Cain

“Today’s classrooms hold our future employees, customers and community leaders. That alone is sufficient reason to be an active partner in providing our teachers with the tools they need to make that future a bright one. It is only natural to partner with a quality organization that shares our reach and our concern for quality education. AT&T is proud to work with Dr. Jbeily and the Texas Regional Collaboratives.”

Don Cain
President, AT&T-Texas



Toyota USA Foundation

“The Toyota USA Foundation is proud to support quality programs that improve the teaching and learning of mathematics, science, and environmental education. The Texas Regional Collaboratives network has shown years of success by creating innovative programs that are broad in scope, incorporate inter-disciplinary learning, and use ‘real-world’ classroom applications.”



Patricia Pineda

Patricia Pineda
Group Vice President, National Philanthropy and the Toyota USA Foundation

Projects

The TRC Podcast Network

The TRC has established a statewide podcast network, funded and supported by El Paso Corporation, Toyota USA Foundation, and AT&T Foundation. This new content delivery system is used to support face-to-face professional development programs with follow-up mentoring and access to content experts. The network may be defined as:

- A growing library of online professional development content,
- Cohorts of Collaborative podcast specialists who train others in the use of podcasts for learning, and
- A select number of Collaborative members who author podcast content.



Our initial challenge is to equip educators and teachers with the skills required to use this online medium. This is being accomplished by providing Podcast in Education Professional Development Academies.

These hands-on training opportunities for Podcast Specialists equip attendees with the knowledge and skills required to be consumers of podcast content for science and mathematics, and introduce basic concepts of planning and authoring podcast content.

To date, over sixty TRC podcast in education specialists have been prepared. These specialists have served approximately 1,000 teachers and educators through mentoring, technical assistance, presentations, and workshops.



In addition, a comprehensive web resource has been published to support regional training:
http://thetrc.org/trc/podcast_ed.html

Sponsored by: Toyota USA Foundation, AT&T Foundation, and El Paso Corporation



UT-Austin Jackson School of Geosciences/Shell-TRC Partnership



TXESS Revolution (TeXas Earth & Space Science) Cohort 2 - 2009-2010

Educators across Texas are preparing for the new capstone course, Earth and Space Science by participating in the TXESS Revolution. The program, headquartered at The University of Texas at Austin, received \$1.48 million from the National Science Foundation with additional funding from the Jackson School for Geosciences and the Shell-TRC partnership.

In addition to professional development training, the teachers are involved in many outside enrichment activities. Teachers are working on a National Science Foundation Seismic Investigation with SIDECAR (an Earth Scope project led by Jackson School scientists), developing water resources curriculum for the Texas Water Development Board, and reviewing and implementing curriculum developed by TERC as an NSF sponsored project. A TXESS teacher will sail on a three-month expedition to study Cenozoic sea-level fluctuations in the Canterbury Basin off New Zealand. The results of this expedition will be shared with other TXESS and TRC teachers.

Sponsored by: TRC, NSF, and Shell



Interstate Activities



Louisiana Regional Collaboratives for Excellence in Science and Mathematics Teaching



The Louisiana Outreach Project Two Regional Collaboratives Funded Through the Shell-TRC Partnership

LSU/Southern University Regional Collaborative

The LSU/Southern University Regional Collaborative has enjoyed outstanding success! The Collaborative has received excellent reviews from participants and more and more teachers are finding out about it! Overall, the program has provided 84 hours of leadership/professional development, added another dimension to the Southern University and Cain Center education outreach activities, and served as a catalyst for other professional development programs at the two universities. The Mentor/Mentee model, on which the program is based, has proven to be immensely effective and is building capacity among the Mentors and Mentees. Leveraging funds from existing programs has substantially enhanced Collaborative efforts.



Dr. Kamil A. Jbeily, *Executive Director*, Texas Regional Collaboratives, **Paul Pastorek**, *Superintendent*, Louisiana Department of Education, **Dr. James P. Barufaldi**, *Principal Investigator*, Texas Regional Collaboratives, **Dr. Exyie Ryder** and **Brenda Nixon**, *Project Directors*, Louisiana State University/Southern University Regional Collaborative



Honoring the Teachers
Baton Rouge, Louisiana - May 23, 2007

Louisiana Tech University/Grambling State University Regional Collaborative

The Louisiana Tech University/Grambling State University Regional Collaborative program has had a significant impact. A total of 368 teachers participated in professional development programs offered through the Collaborative. Matching funds of approximately \$109,700 supported Collaborative activities. Twenty-eight outstanding science teachers from across northern Louisiana were honored at an Honoring the Teachers banquet.



Dr. Kamil A. Jbeily, **The Honorable Hollis Downs**, Louisiana House of Representatives, **Dr. Frazier Wilson**, *Manager, Social Investment*, Shell Oil Company, **Bob Otom**, *Commissioner*, Louisiana Department of Agriculture and Forestry, **Linda Ramsey**, *Project Director*, Louisiana Tech University Regional Collaborative



Dr. James P. Barufaldi, **Dr. Danny Hubbard**, *Project Director*, Grambling State University Regional Collaborative, **Dr. Connie Walton**, *Dean, College of Arts and Sciences*, Grambling State University



Dr. Robert M. Nixon, *Provost and Vice President of Academic Affairs*, Grambling State University, **Dr. Danny Hubbard**
September 25, 2008 Honoring the Teachers in Grambling, LA

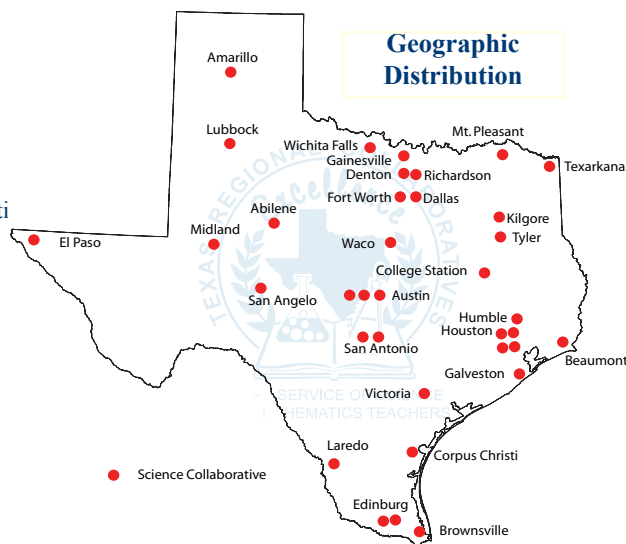
36 Regional Science Collaboratives

REGION SCIENCE COLLABORATIVE NAME

Project Director / Phone Number / Email

- 1 **Region 1 Science Collaborative/Edinburg**
Elda Christian / 956-984-6230 / echristian@esc1.net
Julie Reynolds / 956-984-6247 / jreynolds@esc1.net
UT-Pan American Regional Science Collaborative/Edinburg
John McBride / 956-381-3401 / jwm1303@utpa.edu
UT-Brownsville Regional Science Collaborative/Brownsville
Rey Ramirez, Jr. / 956-882-7255 / reynaldo.ramirez@utb.edu
TAMU International Regional Science Collaborative/Laredo
Elizabeth Greninger / 956-326-2687 / egreninger@tamiu.edu
- 2 **TAMU-CC/ESC 2 Regional Science Collaborative/Corpus Christi**
Sheryl Roehl / 361-571-4153 / sheryl.roehl@tamucc.edu
Linda Simpson / 361-561-8570 / lsimpson@esc2.net
- 3 **Region 3 Science Collaborative/Victoria**
Laura Garrett / 361-573-0731 x291 / lgarrett@esc3.net
- 4 **Region 4 Science Collaborative/Houston**
Deborah Linscomb / 713-744-8186 / dlinscomb@esc4.net
Rice University Regional Science Collaborative/Houston
Wallace Dominey / 713-348-5461 / wdominey@rice.edu
Galveston County Regional Science Collaborative/Galveston
Marguerite Sognier / 832-216-0001 / masognie@utmb.edu
Michele Marquette / 409-772-6972 / mlmarque@utmb.edu
Lake Houston Regional Science Collaborative/Humble
Kimberlea De La Cruz / 281-641-4465 / Kimberlea.delacruz@humble.k12.tx.us
Paul Edwards / 281-641-8346 / paul.edwards@humble.k12.tx.us
UHCL/EIH Regional Science Collaborative/Houston
Brenda Weiser / 281-283-3960 / weiser@uhcl.edu
Aldine ISD Science Collaborative/Houston
Linda Scott / 281-985-6416 / lscott2@aldine.k12.tx.us
- 5 **Region 5 Science Collaborative/Beaumont**
Becky Collier / 409-923-5421 / bcollier@esc5.net
Roxanne Minix-Wilkins / 409-923-5445 / rminix-wilkins@esc5.net
- 6 **TAMU-College Station Regional Science Collaborative/College Station**
Carolyn Schroeder / 979-458-4450 / cschroeder@science.tamu.edu
- 7 **Region 7 Science Collaborative/Kilgore**
Donna Wise / 903-988-6700 / dwise@esc7.net
UT-Tyler Regional Science Collaborative/Tyler
Fredericka Brown / 903-565-5828 / fbrown@uttyler.edu
Michael Odell / 903-565-5881 / modell@uttyler.edu
Kristian Trampus / 903-565-5881 / ktrampus@uttyler.edu
- 8 **Region 8 Science Collaborative/Mount Pleasant**
Karen Phillips / 903-575-2675 / kphillips@reg8.net
TAMU-Texarkana Regional Science Collaborative/Texarkana
David Allard / 903-223-3131 / david.allard@tamut.edu
- 9 **Region 9 Science Collaborative/Wichita Falls**
Leslie Patrick / 940-322-6928 x340 / leslie.patrick@esc9.net
- 10 **Region 10 Science Collaborative/Richardson**
Deborah Brendel / 972-348-1512 / deborah.brendel@region10.org
Doni Cash / 972-348-1352 / doni.cash@region10.org
UT-Dallas Regional Science Collaborative/Dallas
Barbara Curry / 972-883-4008 / barbc@utdallas.edu

2008-2009 Regional Science Collaboratives Sites (36)



Across the State of Texas

REGION SCIENCE COLLABORATIVE NAME (continued)
Project Director / Phone Number / Email

- 11 **Region 11 Science Collaborative/Fort Worth**
Becky Yarbrough / 817-740-7635 / byarbrough@esc11.net
North Central Texas College Regional Science Collaborative/Gainesville
Lisa Bellows / 940-668-4252 / lbellows@nctc.edu
Sara Flusche / 940-668-4254 / sflusche@nctc.edu
University of North Texas Regional Science Collaborative/Denton
Jim Roberts / 940-565-3022 / roberts@unt.edu
- 12 **Region 12 Science Collaborative/Waco**
Laura Calhoun / 254-297-1133 / lcalhoun@esc12.net
Judy York / 254-297-1130 / jyork@esc12.net
- 13 **Region 13 Science Collaborative/Austin**
Jennifer Jordan-Kaszuba / 512-919-5368 / jennifer.jordan-kaszuba@esc13.txed.net
Capital City Regional Science Collaborative/Austin
David Guffey / 512-414-4662 / dgguffey@austinisd.org
Kipi Condit / 512-414-3162 / kipi.condit@austinisd.org
Carl Seagren / 512-414-4222 / cseagren@austinisd.org
ACC Regional Science Collaborative/Austin
Saad Eways / 512-223-3219 / seways@austincc.edu
Margaret Reid / 512-223-3313 / mreid@austincc.edu
- 14 **Region 14 Science Collaborative/Abilene**
John Lineweaver / 325-675-8667 / jlineweaver@esc14.net
- 15 **Region 15 Science Collaborative/San Angelo**
Amy Rutherford / 325-658-6571 x140 / amy.rutherford@netcx.net
Cynthia Holcomb / 325-658-6571 x123 / cynthia.holcomb@netcx.net
- 16 **Region 16 Science Collaborative/Amarillo**
Susan Smith / 806-677-5173 / susan.smith@esc16.net
- 17 **Region 17 Science Collaborative/Lubbock**
Kristin Whittenburg / 806-281-5884 / kwhittenburg@esc17.net
- 18 **Region 18 Science Collaborative/Midland**
James Collett / 432-563-567-3220 / jcollett@esc18.net
Sandy Casimir / 432-567-3208 / scasimir@esc18.net
- 19 **Region 19 Science Collaborative/El Paso**
Carmen Imai / 915-780-5069 / cimai@esc19.net
- 20 **Region 20 Collaborative/San Antonio**
Kelly Reifenberg / 210-370-5452 / kelly.reifenberg@esc20.net
OLLU Regional Collaborative/San Antonio
Peggy Carnahan / 210-434-6711 x2743 / carnp@lake.ollusa.edu
Tom Gadsden / 210-434-6711 x2233 / tgadsden@lake.ollusa.edu

2007-2008

COLLABORATIVES	37
DISTRICTS	784
CAMPUSES	2,324
TEACHERS	7,894
STUDENTS	497,322

One Year Data: August 1, 2007 - July 31, 2008

Student numbers based on a student/teacher ratio of 63:1

24 Regional Mathematics Collaboratives

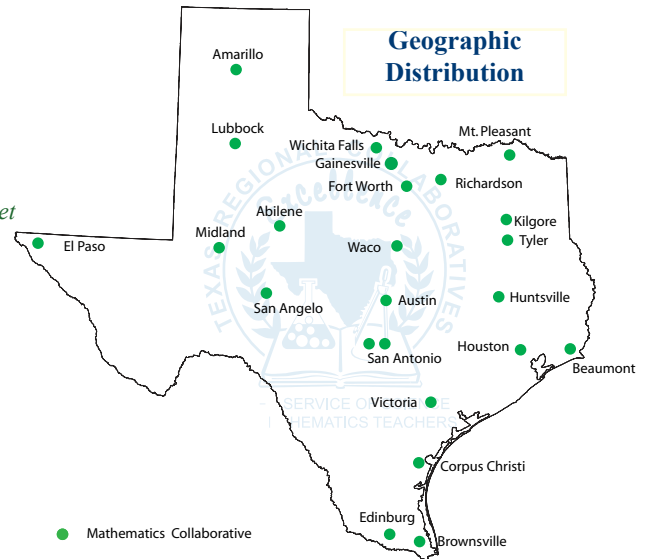
REGION MATHEMATICS COLLABORATIVE NAME

Project Director / Phone Number / Email

- 1 **Region 1 Mathematics Collaborative/Edinburg**
Gerbie Rodriguez / 956-984-6114 / grodriguez@esc1.net
UT-Brownsville Regional Mathematics Collaborative/Brownsville
James Telese / 956-882-7669 / james.telese@utb.edu
- 2 **Region 2 Mathematics Collaborative/Corpus Christi**
Gaye Glenn / 361-561-8569 / gaye.glenn@esc2.net
Toni Norrell / 361-561-8572 / toni.norrell@esc2.net
- 3 **Region 3 Mathematics Collaborative/Victoria**
Kelli Cox / 361-573-0731 x296 / kcox@esc3.net
- 4 **Region 4 Mathematics Collaborative/Houston**
Sharon Benson / 713-744-6815 / sbenson@esc4.net
Shelley Bolen-Abbott / 713-744-6521 / sbolenabbott@esc4.net
- 5 **Region 5 Mathematics Collaborative/Beaumont**
Kay Olds / 409-923-5412 / kolds@esc5.net
- 6 **Region 6 Mathematics Collaborative/Huntsville**
Susan Bohan / 936-435-8211 / sbohan@esc6.net
- 7 **Region 7 Mathematics Collaborative/Kilgore**
Liz Scott / 903-988-6768 / lscott@esc7.net
Jane Silvey / 903-988-6796 / jsilvey@esc7.net
UT-Tyler Regional Mathematics Collaborative/Tyler
John Lamb / 903-566-7390 / jlamb@uttyler.edu
- 8 **Region 8 Mathematics Collaborative/Mount Pleasant**
Kay Stickels / 903-575-2730 / kstickels@reg8.net
- 9 **Region 9 Mathematics Collaborative/Wichita Falls**
Gary Browning / 940-322-6928 / gary.browning@esc9.net
- 10 **Region 10 Mathematics Collaborative/Richardson**
Debbie Dethrage / 972-348-1368 / debbie.dethrage@region10.org
- 11 **Region 11 Mathematics Collaborative/Ft. Worth**
Patty Copeland / 817-740-7528 / pcpeland@esc11.net
NCTC Regional Mathematics Collaborative/Gainesville
Sara Flusche / 940-668-4252 / sflusche@nctc.edu
Lisa Bellows / 940-668-4252 / lbellows@nctc.edu
- 12 **Region 12 Mathematics Collaborative/Waco**
Jenny Dixon / 254-297-1272 / jdixon@esc12.net
Charla Rudd / 254-297-1126 / crudd@esc12.net
- 13 **Region 13 Mathematics Collaborative/Austin**
Jo Peters / 512-919-5227 / jo.peters@esc13.txed.net
- 14 **Region 14 Mathematics Collaborative/Abilene**
Kathy Hale / 325-675-8679 / khale@esc14.net
- 15 **Region 15 Mathematics Collaborative/San Angelo**
Susan Kerbow / 325-658-6571 x150 / susan.kerbow@netxv.net
Marifrances Mackey / 325-658-6571 x307 / marifrances.mackey@netxv.net
- 16 **Region 16 Mathematics Collaborative/Amarillo**
Angie Watson / 806-677-5135 / angie.watson@esc16.net
- 17 **Region 17 Mathematics Collaborative/Lubbock**
Karen Marshall / 806-281-5806 / kmarshall@esc17.net
- 18 **Region 18 Mathematics Collaborative/Midland**
Jim Collett / 432-567-3220 / jcollett@esc18.net
Warren Koepf / 432-567-3233 / wkoepf@esc18.net
- 19 **Region 19 Mathematics Collaborative/El Paso**
Veronica Hernandez / 915-780-6512 / vhernandez@esc19.net
- 20 **Region 20 Mathematics Collaborative/San Antonio**
Rachel Morales / 210-370-5496 / rachel.morales@esc20.net
OLLU Regional Mathematics Collaborative/San Antonio
Karen Harrower / 210-434-6711 / harrk@lake.ollusa.edu

2009-2010

Regional Mathematics Collaboratives Sites (24)



2007-2008

COLLABORATIVES	22
DISTRICTS	818
CAMPUSES	2,153
TEACHERS	8,033
STUDENTS	433,782

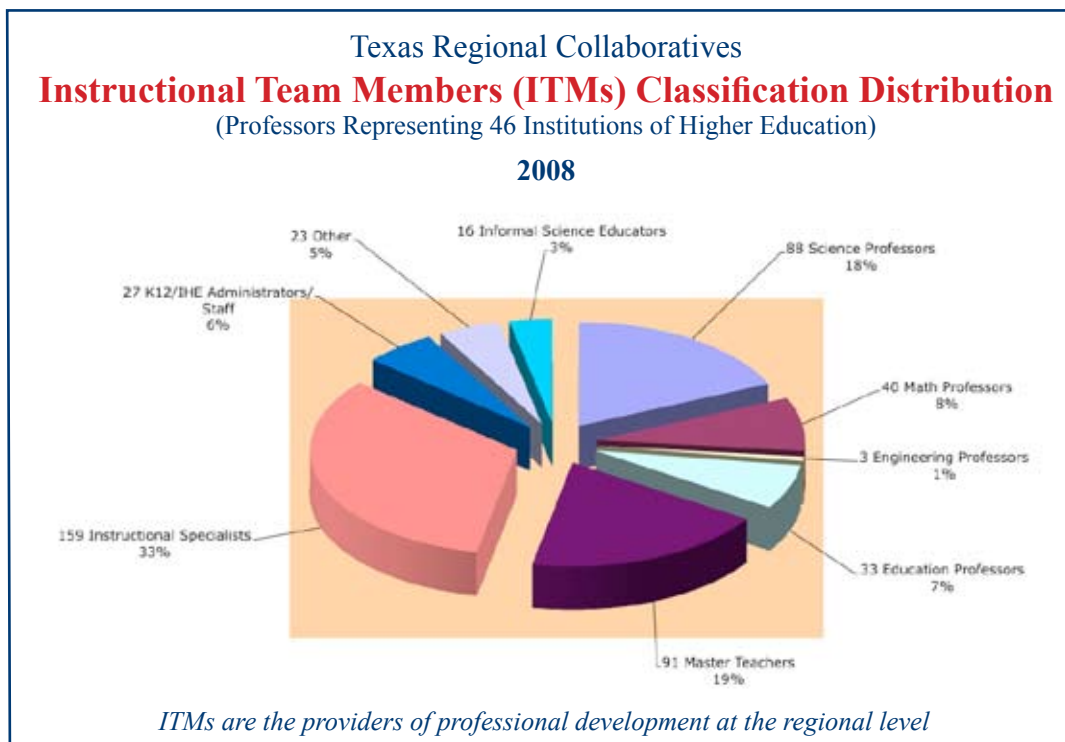
One Year Data: August 1, 2007 - July 31, 2008

Student numbers based on a student/teacher ratio of 54:1

46 Partnering Institutions of Higher Education

Abilene Christian University
 Amarillo College
 Angelo State University
 Austin Community College
 Baylor University
 Concordia University Texas
 Hardin-Simmons University
 Kansas University
 Lamar University
 Lee College
 Lone Star College - Kingwood
 Midland College
 Midwestern State University
 North Central Texas College
 Our Lady of the Lake University
 Rice University
 Stephen F. Austin State University
 Texarkana College
 Texas A&M University
 - TAMU International
 - TAMU - Agricultural Research and Extension
 Center at Beaumont
 - TAMU - College Station
 - TAMU - Commerce
 - TAMU - Corpus Christi
 - TAMU - Galveston
 - TAMU - Texarkana

Texas Christian University
 Texas Southern University
 Texas State University
 Texas Tech T-STEM
 Texas Tech University
 University of Houston-Clear Lake
 UH-Clear Lake/Environmental Institute of Houston
 University of Northern Iowa
 University of Dallas
 University of North Texas
 The University of Texas System
 - University of Texas at Arlington
 - University of Texas at Austin, Bureau of Economic
 Geology
 - University of Texas at Austin, McDonald Observatory
 - University of Texas at Brownsville
 - University of Texas at Dallas
 - University of Texas at El Paso
 - University of Texas-Pan American
 - University of Texas at Tyler
 - University of Texas Medical Branch
 Victoria College
 West Texas A&M University



Texas Regional Collaboratives Team



Kamil A. Jbeily, Ph.D.
*Founder and
Executive Director*
512-471-9460
kjbeily@mail.utexas.edu

*Charter Member,
Texas Science Hall of Fame*



James P. Barufaldi, Ph.D.
Principal Investigator
512-471-7354
jamesb@mail.utexas.edu

*Director, Center for Science and
Mathematics Education
The University of Texas at Austin*

*Rubén E. Hinojosa Regents
Professor in Education*

Nathalie Beausoleil
Documentation Specialist
512-232-6208
nathalie.b@mail.utexas.edu

Jeff Early
Manager of Central Operations
512-471-9279
jaearly@mail.utexas.edu

Carol Fletcher, Ph.D.
Assistant Director/R&D Coordinator
512-232-5690
carol.fletcher@mail.utexas.edu

Ginger Gibson
Manager of External Operations
512-471-9434
ggibson@mail.utexas.edu

Stephen Gray
Webmaster
512-471-9400
stephen.gray@mail.utexas.edu

Mary Hobbs, Ph.D.
Coordinator for Science Initiatives
512-471-8729
maryhobbs@mail.utexas.edu

Debra L. Junk, Ph.D.
Coordinator for Mathematics Initiatives
512-232-0880
junkdeb@mail.utexas.edu

Kris Mason
Assistant to the Executive Director
512-232-6207
kmason@mail.utexas.edu

Angela Milliman
Project Support Specialist
512-232-5279
milliman@mail.utexas.edu

Keith Mitchell, Ph.D.
Coordinator for Technology Initiatives
512-471-6862
keith.mitchell@mail.utexas.edu

Todd Sherron, Ph.D.
Evaluation Coordinator
512-232-8063
todd.sherron@mail.utexas.edu

Amy Werst
Contracts and Grants Specialist
512-471-7450
amy.werst@mail.utexas.edu

Marsha Willis
Professional Development Coordinator
512-232-5015
marshawillis@mail.utexas.edu

Research Assistants

Linda Brown
LLGbrown@mail.utexas.edu

Brian Fortney
bfortney@mail.utexas.edu

Amy Moreland
amy_moreland@mail.utexas.edu

Kelly Mullin
kellymullin@mail.utexas.edu

Pooneh Sabouri
pooneh@gmail.com

Special Projects Assistant

Gail Seale
gails@mail.utexas.edu



Effective Professional Development*

- Focuses on teachers and respects and nurtures the capacity of teachers.
- Reflects best available research and practice.
- Is planned collaboratively with teachers.
- Develops content and pedagogy.
- Enhances leadership.
- Is long-term, sustained, and of high intensity.
- Makes a positive impact on teacher performance and student achievement.
- Requires ample time.
- Promotes commitment to continue inquiry and improvement.
- Is driven by a coherent long-term plan.
- Is evaluated on the basis of its impact on teachers and students, and this assessment guides subsequent effort.

**U.S. Department of Education Principles of Professional Development*



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

Center for Science and Mathematics Education

College of Education

The University of Texas at Austin

Physical Address: 1912 Speedway / Sanchez Building, Suite 340

Mailing Address: 1 University Station D5500

Austin, Texas 78712-0377

Tel: 512-471-9460 Fax: 512-471-9244

www.thetrc.org