The Southeast Regional T-STEM Center

UTMB
The University of Texas Medical Branch

Leadership for Change

SRT-STEM Center Core Team

Dr. Clifford W. Houston, UTMB, Project Director
Dr. Rosalinda Barrera, Texas State University-San Marcos, Project Co-Director
Dr. Roland Smith, Rice University, Project Co-Director
Dr. Marguerite A. Sognier, UTMB, Director of Strategic Planning, Public Relations, Financial Resources
Dr. Deborah L. Jensen, UTMB, Director of Programming & Implementation
Dr. Monique Micheaux-Gordon, UTMB, T-STEM Consultant
Dr. James Young, Rice University, Team Associate
Dr. Michele Marquette, UTMB, Team Associate
Denise Morris-Galletti, UTMB, Program Assistant
Toby Smith, UTMB, Web Developer

The SRT-STEM Center is sponsoring a conference for the enhancement of STEM education communities as they prepare all students for success in college and careers. The study strands for talks and workshop sessions are:

1. Leadership for Change

2. STEM Education: School Strategies That Work

3. Informal STEM Education: Out-of-School Experiences That Make a Difference

4. STEM Education for 21st Century Careers

Student Programs

Engineering Design Competitions Using LEGO® Robotics
Secondary students meet design challenges and compete using LEGO® *Mindstorms* kits, while concurrently building literacy skills.

High School Summer Research Program
High school students perform a research project in a UTMB laboratory under the direction of a faculty mentor and interact with UTMB faculty, graduate students, and post-docs for 8 weeks; then they present results of their research in oral presentations at a poster session and at their home campuses.

Biomedical and Health Careers Academy
High school students in this summer program have the opportunity to explore a wide array of biomedical and health sciences careers. Students gain hands-on experiences in different disciplines including medicine, allied health sciences, nursing, and scientific research.

Advanced Mathematics Academy
(pending funding) This is a 4-week summer enrichment program for high school students with a long successful track record as Project Grad.

www.utmb.edu/tstem

The University of Texas Medical Branch
Galveston, TX

STEM Education for the 21st Century

Center Vision

To meet the challenges of the 21st century, the SRT-STEM Center will:

1) Serve as an agent of change for STEM education systems which will prepare students for academic success;
2) Enhance the development of the future STEM workforce; and
3) Increase the STEM literacy of the K-12 community.

Mission

The mission of the SRT-STEM Center is to transform and promote STEM education through the creation and implementation of innovative, best practices-based educational strategies and programs that culminate in improved student understanding and achievement in math, science, technology, and engineering. The Center seeks to serve as a vital educational resource for the regional school districts, Education Service Centers, and T-STEM Academies. The Center's work is being realized using a dual approach that involves both professional development experiences for administrators and educators as well as STEM enrichment experiences for students.

Website
www.utmb.edu/tstem

Location

SRT-STEM Center
UTMB-Galveston
301University Boulevard
Galveston, TX 77555-1056
Phone: 409-772-7839

The center continues to capitalize on the resources found at UTMB, including:

1. An active STEM research center with latest technology;
2. State-of-the-art distance learning center;
3. Strategic location to serve diverse K-12 populations representative of the population of Texas;
4. New National Laboratory for Biodefense and Infectious Diseases Center; and
5. The diverse student enrollment of UTMB's School of Medicine, School of Nursing, School of Allied Health Sciences and Graduate School of Biomedical Sciences.

Science Technology Engineering Mathematics

The SRT-STEM Center Partners

Business and Industry Partners:
Galveston County Economic Alliance
Galveston Economic Development Partnership
Bay Area Houston Alliance.
National Society of Black Engineers (NSBE), Houston and NASA chapters

T-STEM Centers:
East Texas STEM Center
T-STEM Centers Coalition

Museum Partners:
The Houston Museum of Natural Sciences
Moody Gardens in Galveston

Federal Partner:
NASA Johnson Space Center

Texas Regional Collaboratives Partner:
Galveston County Regional Collaborative

Workforce Development Partners:
Gulf Coast Workforce Board
East Texas Area Health Education Center
Gulf Coast Workforce Board

SRT-STEM Center Advisory Board

Dr. Alvin LeBlanc, Board Chair
Galveston Academic Excellence Booster Club
Jim Reinhartsen
Bay Area Houston Economic Partnership
Donald Gartman
Galveston County Economic Alliance
Andrea Kelly
The Boeing Company
John A. Zendt
Moody Gardens
Dr. Annette Scott
Galveston Independent School District
Dr. David A. Watson
Texas Women's Hospital Houston
Dr. Kathy J. Shingleton
Gulf Coast Workforce Development Board

Professional Development

CONNECTED SCIENCE, TECHNOLOGY, ENGINEERING, & MATH WORKSHOP SERIES

Connected Science Workshop Series
Schools and teachers choose workshops according to campus needs. Activities are TEKS-based with a special focus on interdisciplinary applications and technological skills. Workshops include Mathematical Modeling of Science Systems, Smart Medical Systems Technology, The Chemistry of Life, and Space Connections: Biology and Physics.

Connected Math Workshop Series
Schools and teachers choose the workshops according to campus needs. All workshops incorporate the TEKS and best practices with a special focus on interdisciplinary applications and technological skills. Workshops include TEKS-Aligned Calculator Activities for Algebra I, Algebra II,and Geometry; Math Interactive Website Exploration; and Materials fo rSuccess in Algebra I and Algebra II.

Physics for All & Chemistry for All
The SRT-STEM Center utilizes its strong partnership with the Galveston County Regional Collaborative to offer additional best-practices and TEKS-based PD opportunities for secondary science teachers.

GIS for Schools: Exploring Real World Geospatial Problems with Math & Science
Geographical information systems are used to make decisions that impact everything from community health issues to commercial development planning. Participants receive a handbook and software.

Equitable Instruction Institute: School Leadership & STEM Classroom Practices
This workshop provides research-based instructional models, individualized resources, and materials to provide equitable instruction for all students in science and mathematics classes.

Engineering Design and Literacy Using LEGO® Robotics
Teachers of secondary students explore a combination of design challenges using LEGO® *Mindstorms* kits with techniques for building literacy skills. Follow-up is participation in regional student exhibitions and competitions.

Engineering Design for Teachers at Rice University
(pending funding) Teachers experience a PBL-based course in engineering design, programming, and control systems. Follow-up is participation of school teams in the MIT *InvenTeams* competition for technology development grants.

ONLINE EXPERIENCES FOR TEACHERS IN STEM EDUCATION

Online Portfolio and Photo Album
Individual investigations and reflective activities prepare teachers for STEM instruction. Activities include posting text & pictures to characterize successful STEM instruction.

COMMUNITY-BASED STEM CURRICULUM DEVELOPMENT

PBL Activity Development
Teachers develop interdisciplinary PBL activities for secondary science. One PBL activity for each 6 weeks grading period in IPC and biology will be classroom tested and edited during the 2008-2009 academic year.