Mission
The mission of the Center for STEM Education is to improve the teaching and learning of Science, Technology, Engineering, and Mathematics (STEM) by providing support for, and fostering collaboration among, researchers interested in conducting externally-funded interdisciplinary research on STEM teaching and learning, the conditions that influence it, and innovations that can maximize it. The Center for STEM Education serves as an intellectual hub where researchers and practitioners are able to learn about the latest developments in STEM education research and practice, collaborate with each other to design and carry out research and service projects that will promote equity and improve the teaching and learning of STEM, and then work together to share new ideas, products, and findings.

Values
- Foster collaboration;
- Seek out diverse perspectives;
- Develop the expertise of teachers and researchers;
- Nurture methodological and pedagogical innovation;
- Conduct rigorous research;
- Evaluate practices and progress; and,
- Share ideas widely.

Objectives
- Cultivate cutting-edge, programmatic research in STEM education;
- Build new interdisciplinary and collaborative teams of researchers;
- Help faculty, post-doctoral scholars, and graduate students develop expertise in STEM education research;
- Develop new curricular materials, instructional approaches, and technology-enhanced learning environments that can promote equity and enhance STEM teaching and learning;
- Enhance the knowledge and skills of K-16 STEM teachers and instructors;
- Share new ideas, products, and findings through multiple outlets;
- Develop collaborative partnerships with key constituencies at UT-Austin, in the state of Texas, and throughout the United States; and,
- Obtain the external funding necessary to accomplish the mission of the center.

Center for STEM Education
A Research, Teaching, and Service unit located in the College of Education

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**ACTIVITIES**

**RESEARCH**
- Recruiting faculty from across departments and colleges to join interdisciplinary research teams
- Supporting research teams as they write and submit competitive proposals to fund and carry out large research projects
- Supporting research teams as they write, submit, and present conference papers at research conferences, and submit articles for publication in peer-reviewed journals.

**TEACHING**
- Providing sustained, high-intensity professional development to P-12 STEM teachers
- Developing courses, curriculum materials, instructional approaches, technology enhanced learning environments, and assessment instruments that can be used by P-16 STEM teachers or instructors, STEM teacher professional development providers, and STEM educator researchers.

**SERVICE**
- Providing pre and post award services for faculty and staff, transactional and human resource services for all funded projects
- Coordinating the development of initial UT IRB applications and submitting paperwork
- Coordinating event support, contracted services, and travel for all funded projects
- Providing grant/gift/local accounting
- Ensuring project compliance for faculty and staff
- Providing external evaluation services for governmental agencies, universities, nonprofits and foundations working on education related research.

**EVALUATION**
- Formative and summative evaluation design and implementation
- Rigorous research design and assessment
- Strategic planning; Needs assessment
- Logic model development
- Development of evaluation sections for grant proposals
- Quantitative/qualitative data collection tool development
- Survey administration
- Observation facilitation
- Focus group facilitation
- Key stakeholder interview facilitation
- Database development/data management
- Univariate and multivariate analyses
- Content analyses of qualitative data
- Report development and presentation
- Evaluation-related training and capacity building.

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**MAJOR PROJECTS**

- **Chem+C**
  This project integrates environmental chemistry and computing to advance evidence-based reasoning, problem solving, and computational thinking in middle school students.

- **Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (TRC)**
  The TRC is an award-winning statewide network of 57 P-16 partnerships (Regional Collaboratives) that provide sustained and high intensity professional development to P-12 teachers of science and math across the state.

- **WeTeach_CS**
  WeTeach_CS is a multifaceted initiative designed to increase the number of certified computer science teachers in Texas, and to help CS teachers by providing workshops and resources.

- **Texas Energy Education Project (TEEP)**
  Thanks to collaboration between the Texas Natural Gas Foundation, the State Energy Conservation Office, and the Texas Regional Collaboratives, science teachers will have access to a high quality supplemental curriculum to teach their students about natural gas and other Texas fuels.

- **Responsive Teaching in Elementary Mathematics**
  This research project studies responsive teaching and its development in the context of a professional development design experiment focused on rational numbers in grades 3-5.

- **Pathways of Promise: Middle School Mathematics Project (PoP-MSMP)**
  The PoP-MSMP project aims to provide professional development to middle school mathematics teachers following the TRC model, which includes summer intensive professional development, school embedded follow-up, and creating and supporting mathematics leaders.

- **Fraction Activities and Assessment for Conceptual Teaching (FAACT)**
  Fraction Activities and Assessment for Conceptual Teaching for Students with Learning Disabilities (LD) is a research proposal submitted in collaboration with the Faculty Early Career Development (CAREER) Program.

- **Geometry in Construction (GiC)**
  This program is a professional development program to train teachers to implement the GiC curriculum of integrated Math-CTE learning.

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www.stemcenter.utexas.edu