SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION AND RESEARCH

The LBJ Institute at Texas State University serves as a leader in creating access to relevant and excellent STEM education for the global community.

Our mission is to transform Science, Technology, Engineering, and Mathematcis (STEM) education in order to increase the participation and success of diverse communities of educators and students through:

- Fostering collaborative communities
- Conducting rigorous research
- Providing evidence based professional development Improving
- STEM teaching and learning

STEM Education Collective Impact

The LBJ Center for STEM Education and Research works toward improving access and opportunity for participation in science, technology, engineering, and mathematics education by facilitating projects that engage multiple audiences at many levels including K-12 students, university students, teachers (current and future) and university professors. With more than $20 million in funding from agencies such as the National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), and the United Stated Department of Education, we are able to provide summer engineering camps for children and youth, develop STEM education curricula and instructional methods for future teachers, offer extensive professional development for teachers and professors, and conduct scholarly research.

Examples of our expertise include STEM career readiness; parental involvement; creativity and innovation; STEM professional identity development; STEM education for diverse learners; digital badging and online learning; and course redesign and instructional delivery for college level courses in physics, chemistry, mathematics, computer science, engineering and engineering technology.

We are most interested in working together toward collective impact and learning from our local and global communities.

TEXAS STATE
LBJ INSTITUTE FOR STEM EDUCATION AND RESEARCH

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CURRENT STEM EDUCATION PROJECTS

K-12 STUDENTS

K-12 Students are children and youth in public and private schools who benefit from improved access, curricula, and instructional methods in STEM education. The Future Aerospace-Engineers and Mathematicians Academy (FAMA) is a collaborative project between the LBJ Institute, NASA MUREP, San Marcos Consolidated Independent School District, and Centro Cultural Hispano de San Marcos designed to study factors that might increase participation and retention of historically underserved and underrepresented students in STEM disciplines, including women and minority groups.

UNIVERSITY STUDENTS

University Students who are majoring in STEM fields learn from projects that explore development of STEM identity, creativity and innovation, and the impact of specific learning models. The Engineering Education Maker Identity Project, a National Science Foundation supported research effort, focuses on discovering key concepts and principles that enable diverse students to experience success in engineering careers.

TEACHERS (CURRENT & FUTURE)

Current teachers engage in professional development and innovative projects that develop strong instructional practices for STEM teaching and learning for their K-12 students. The NASA STEM Educator Professional Development Collaborative is led by Texas State University in collaboration with the National Aeronautics and Space Administration (NASA) and other Minority-Serving Institutions around the nation. This critical initiative is a transformative, comprehensive, diversity focused national network system grounded in educational theory and best practices.

Future teachers participate in extensive professional development opportunities that elevate their practice and improve STEM learning for their students. The NASA MUREP Educator Institutes provide pre-service teachers on-site professional development experiences at NASA Centers and conduct research on educator preparation models than strengthen teacher content and process knowledge in science, mathematics, instructional technology and K-12 engineering education.

UNIVERSITY PROFESSORS

University Professors participate in and benefit from research, leadership, and collective impact projects designed to transform STEM education in schools, communities, and institutions of higher education. Establishing faculty learning communities and encouraging cooperation in research and in the creation and sharing of knowledge, and instructional best practices contributes to the growing knowledge base regarding the long-term impact of related interventions for recruitment and development, ultimately facilitating the development of the next generation of STEM educators.

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