WEST TEXAS

EDUCATE TEXAS
a public-private initiative of Communities Foundation of Texas

TEXAS REGIONAL STEM DEGREE ACCELERATOR

STEM PATHWAY: ENERGY

Regional Team Members:

Western Texas College: *Lead Institution*

Cisco College

Howard College

Midland College

Odessa College

Ranger College

Texas Tech University

Texas A&M University

Roscoe ISD

Snyder ISD

Ector County ISD

Midland ISD

Region 14 Education Service Center

West Texas Energy Consortium

Workforce Solutions of the Concho Valley

Workforce Solutions Permian Basin

Workforce Solutions of West Central Texas

OVERVIEW

About West Texas: While Texas has six of the largest cities in the country, it also has the largest population of rural students. In West Texas – which includes some of the most rural areas of the state – students travel an average of 39 miles and up to 141 miles to reach an institution of higher education.[1] The six community colleges on the West Texas regional team (all of which are classified as Hispanic Serving Institutions) are seeking to ensure that educational resources are aligned with regional job opportunities.

Why Energy: The challenge of geography is also an opportunity for West Texas, where the vast expanses of land fuel a regional economy based on agriculture and energy. This project is expanding on the West Texas Energy Consortium's existing partnerships between K-12, higher education, and workforce. These partners are aligning regionally to build and sustain a pipeline of skilled workers for high-demand energy occupations.

STEM PATHWAY PLAN & INTERVENTIONS

Rural schools face significant challenges as they attempt to prepare students for college and careers. The goal of this grant is to increase student success overall and persistence in the math courses required to pursue STEM careers. The West Texas regional team will accomplish this by redesigning and aligning math gateway courses, providing professional development for faculty in targeted math gateway courses, and providing critical interventions and support for STEM students.

MAJOR ACTIVITIES:

1. **Infuse AVID into program curricula across all community colleges on the regional team:** Advancement Via Individual Determination, or AVID, is an organization that uses research-based strategies to develop critical thinking, literacy, and math skills across all content areas
2. **Expand the Charles A. Dana Center's New Mathways Project across West Texas:** The New Mathways Project is a systemic approach to increasing the number of students who complete math coursework aligned with their chosen program of study.
3. **Develop a Virtual STEM Resource Center** that provides STEM education and career information tailored to the needs of different stakeholder groups.

PROJECT IMPACT:

This project is anticipated to accomplish the following outcomes:[2]

- **Train** 360 college faculty and 200 high school teachers
- **Serve** 28,000 college students and 11,000 high school students
- **Produce** 3,300 certificates and 2,800 Associate degrees

[1] Postsecondary Completion in Rural Texas: A Statewide Overview, (2015). Texas A&M University. [2] Self - Reported Data.

HIGHER EDUCATION

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TEXAS REGIONAL STEM DEGREE ACCELERATOR

The Texas Regional STEM Degree Accelerator initiative is developed in alignment with priorities for education and workforce outlined by the Texas Higher Education Coordinating Board and the Texas Workforce Commission. This initiative is funded through the generosity of The Leona M. and Harry B. Helmsley Charitable Trust, The W.W. Caruth, Jr. Foundation, Council for Regional Economic Expansion and Educational Development, Greater Texas Foundation, JPMorgan Chase, and The Kresge Foundation.

BACKGROUND & OVERVIEW

Texas is projected to have approximately 9% of the nation's future STEM opportunities, the second highest in the country.[1] At the same time, the state's rapidly changing demographic mix will pose challenges as Texas's growing, economically disadvantaged, minority students have less than a 10% postsecondary completion rate.[2] Therefore, the urgency to identify policy and programmatic strategies to meet this need is critical.

The Texas Regional STEM Degree Accelerator (STEM Accelerator) initiative is focused on supporting regional teams of education and workforce partners to increase the number of students who will earn a STEM credential.

PROJECT GOAL AND STRATEGY

The goal of STEM Accelerator is to assemble regional teams who will ensure that up to 100,000 students earn STEM degrees and certificates (both two-year and four-year) that meet regionally-identified workforce needs. Regional teams will accomplish this by examining data, identifying the STEM pathway(s) in which they plan to work, and engaging faculty and workforce to:

- Redesign gateway courses in STEM pathways (re)aligned to workforce and/or
- Provide professional development for faculty to support improved and innovative methods of teaching and learning (such as active learning or project-based learning)

EXPECTED IMPLEMENTATION OUTCOMES AND DELIVERABLES

The two major outcomes of this project are to:

1. Increase retention in STEM pathways by ensuring that STEM teaching practices are engaging and supportive.
2. Ensure that institutional policies and systems support retention and completion of STEM pathways, particularly among underrepresented students.

[1]Schleicher, A. (2012). Education At a Glance: OECD Indicators.

[2]National Center for Higher Education Management Systems (2012). A new measure of educational success in Texas.
The Texas Tribune (2014). Higher Ed Outcomes. Austin, TX.