

Announcement: RFA for Texas Engineering Experiment Station (TEES) Renewable Microgrid STEM Education & Colonias Outreach Program

Brief:

The intent of the TEES Micro-grid STEM Education & Colonias Outreach Program is to implement a Science, Technology, Engineering, and Math educational program in schools located in the 28th Congressional District of Texas. Students will create renewable energy powered micro-grids for educational projects with the purpose of satisfying the CTE course, Engineering Design and Problem Solving (PEIMS# 13037300). This course also satisfies the 4th year science graduation requirement.

Funding/Support:

- \$5,000 for schools to be used for, but not limited to, travel costs, stipends for training, substitute pay, and other supplemental materials. Cost reimbursement.
- Components required to complete student prototype design (e.g., generator, solar panels, etc.); \$5000 value, provided by TEES.
- Engineer mentor provided to support classroom implementation (\$3000 value).
- An in-kind cost share of \$14,200 will be required from the selected schools which may be developed from proportional teacher salaries; proportional facility usage costs; proportional supplies costs, etc.

Deadline for Submission: March 31, 2012.

School Requirements:

- The public school district or private school institution is preferred to exist in the 28th Congressional District.
- The school must be offering *Engineering Design and Problem Solving* as a 4th year science credit during the 2012/2013 school year.
- The school must have a teacher with one of the following certifications:
 - Any secondary physics certificate
 - Any secondary science or science composite certificate
 - Any Technology Education, Industrial Technology, or Industrial Arts certificate
 - Master Science Teacher (Grades 8-12)
 - Mathematics/Physical Science/Engineering: Grades 8-12
 - Physical Science: Grades 8-12
 - Physics/Mathematics: Grades 8-12
 - Science: Grades 8-12
- Teacher must attend 30 hr training during summer 2012, location to be determined. (June 11-15, 2012)

Implementation Priorities:

- First Priority:** Is to institutions within the 28th Congressional District.
- Second Priority:** Rural schools emphasizing STEM education and/or Project-Based Learning (PBL).
- Third Priority:** Remaining rural schools.
- Fourth Priority:** All other schools offering *Engineering Design and Problem Solving* course as 4th year science credit in 2012/2013.

Review of Proposals and Effective Date of Awards:

The TEES Micro-grid Program Application will be reviewed when the application is received by the Transformation 2013 T-STEM Center. The application will be reviewed by both Transformation 2013 and the Texas Engineering Experiment Station. Notifications of awards will be sent to the school contact person by or on April 16, 2012.

Application Submission and Assistance:

Questions and Application may be returned via mail, fax, or e-mail to:

Adrian Gutierrez
Education Service Center, Region 20
adrian.gutierrez@esc20.net
210.370.5454 [office]
210.370.5753 [fax]
1314 Hines Avenue, San Antonio, TX 78208-1899

Joules Webb
Education Service Center, Region 20
joules.webb@esc20.net
210.370.5497 [office]
210.370.5753 [fax]
1314 Hines Avenue, San Antonio, TX 78208-1899

TEAM BACKGROUND

Transformation 2013 T-STEM Center

Transformation 2013 T-STEM Center is a partnership between Education Service Centers, Region XIII (Austin) and Region 20 (San Antonio). Transformation 2013 T-STEM Center serves central Texas and El Paso T-STEM Academies and other schools focusing on innovative Science, Technology, Engineering, and Math (STEM) instruction.

The goals of Transformation 2013 are to:

- Provide sustained, research-based STEM professional development and instructional coaching focused on project-based learning, integration of engineering into math and science, and robotics.
- Provide a catalog of Project-Based Learning Units (PBLs) that help teachers create real world context for math and science instruction.
- Provide professional development in research-based strategies that support STEM education for underrepresented minorities, women, and diverse learners.
- Support school administrators in leading campuses towards integrated STEM education.
- Collaborate with business and higher education partners to improve the transition of students from high school to the workforce or college, particularly in the areas of math, science, technology, and engineering.
- Collaborate with other T-STEM Centers to provide a complete package of professional development and services for all schools in Texas so that teachers have access to quality professional development that helps them create 21st Century learners.

This initiative is a component of Educate Texas, formerly the Texas High School Project (THSP) whose mission is that all Texas students graduate from high school ready for college and career success and prepared to be contributing members of their communities. Created in 2003, this is a public-private alliance that includes the Texas Education Agency, Office of the Governor, Texas Legislature, Texas Higher Education Coordinating Board, Bill & Melinda Gates Foundation, Michael & Susan Dell Foundation, Communities Foundation of Texas, National Instruments, Wallace Foundation, Greater Texas Foundation and Meadows Foundation. www.transformation2013.org

Texas Engineering Experiment Station (TEES)

The Texas Engineering Experiment Station (TEES) is the engineering research agency of the State of Texas. TEES researchers conduct quality research and provide practical answers to critical state and national needs. We partner with industries, communities and academic institutions to solve problems to help improve the quality of life, promote economic development and enhance the educational systems of Texas. We also promote new technology education and investigate problems in health and the environment. We serve as a catalyst for collaborations that position Texas to be especially competitive for federal dollars and play a major role in strengthening research leadership across the state.

tees.tamu.edu

TEES Micro-grid STEM Education & Colonias Outreach Program Overview

Objectives and Scope

The Objectives and Scope of the TEES Texas Engineering Experiment Station Renewable Micro-grid STEM Education & Colonias Outreach Program is to:

- Provide STEM outreach and education at eight high schools to encourage secondary students to select science and engineering fields as a career by providing a year-long engineering-based problem-solving experience involving renewable energy systems, such as photovoltaic (PV) panels.
- Partner a school with a mentor engineer, who with the teachers will be trained to provide support to the teacher and students.
- Use the TEA approved CTE course, Engineering Design & Problem-Solving, as the primary form of delivery to students to provide a fourth year science course required for graduation.
- Have students spend one school year to develop a prototype micro-grid system.

Eligibility

- Schools that are in a district that exists within the 28th Congressional District of Texas, including private institutions, are given priority.
- Schools must offer at least one section of the TEA course Engineering Design & Problem-Solving (PEIMS# 13037300) of each semester during the 2012/2013 school year.
 - Minimum class size: 8 students
 - Maximum class size: 15 students

What schools will receive:

- A mentor engineer to provide on-campus mentoring for teachers and students.
- One week of teacher training from June 11th - 15th, 2012. Teacher stipend available.
- Instructional materials for course implementation, including necessary materials to complete prototype (\$5000 value).
- \$5,000 for schools to be used for, but not limited to, travel costs, stipends for training, substitute pay, and other approved supplement materials.

Awards

- Application must be received no later than March 31, 2012 from applying schools.
- Selected schools will be notified by April 16, 2012.
- A formal contract with the Texas Engineering Experiment Station will be negotiated with the selected schools to provide funding and document in-kind cost share. A sample contract with anticipated terms and conditions is attached for information.

TEES Micro-grid STEM Education & Colonias Outreach Program Application for Schools

Region			
School District			
School Name			
School Type (Check all that apply)	<input type="checkbox"/> Public High School <input type="checkbox"/> Charter High School <input type="checkbox"/> Private Non-profit High School <input type="checkbox"/> T-STEM Academy <input type="checkbox"/> Rural School <input type="checkbox"/> Urban School		
School Address		City	Zip
School Telephone		FAX:	
School contact person			
Telephone		Email:	
<p>Does the applying school have the support of campus administration to fully implement this course?</p> <input type="checkbox"/> Yes, the school will be offering Engineering Design & Problem-Solving in 2012/2013. <input type="checkbox"/> No, the school will not be offering Engineering Design and Problem-Solving in 2012/2013.			
_____ Principal Signature			
<p>What is the Congressional District of the applying School?</p> _____			
<p>If you do not know your congressional district, use the following link to find it:</p> <p style="text-align: center;">www.govtrack.us</p>			

Please complete the following questions and return to either Adrian Gutierrez or Joules Webb by March 31, 2012.

How do you plan to market the course to your students to ensure the required enrollment of 8-15 students?

Please describe the qualifications of the teacher selected to facilitate the course.

Please list any engineering firms or companies in the nearby area. If a current relationship exists, please describe.

If applicable, please describe what STEM education currently looks like on your campus.

Do you have the support and availability of taking two or more field trips as part of the course, e.g. to visit the Colonias, during the 2012/2013 school year?

- Yes, the school will offer and financially support at least two field trips in 2012/2013.
- No, the school will not offer and financially support at least two field trips in 2012/2013.

FOR Transformation 2013 T-STEM Center USE ONLY			
Application Received:		Proposal Number:	
Approved:		Not Approved:	
Notification Sent:			

