TEXAS PREFRESHMAN ENGINEERING PROGRAM
TexPREP
A PROVEN STEM PROGRAM

Dr. Raul (Rudy) A. Reyna, Executive Director, UTSA
AGENDA

- PREP-USA Purpose
- History
- Model
- Curriculum
- Sites
- Results
- Implementation
- Hispanic STEM Initiative
PREP

Purpose

➢ To provide a challenging academic program designed to motivate and prepare middle and high school students for success in advanced studies leading to careers in science, technology, engineering or math fields.
HISTORY

- Founded by Dr. Manuel Berriozábal in 1979
- TexPREP established in 1986
- Proyecto Access established in 1997 (PREP-USA)

Components

- Academic
- Career
- Mentoring

First PREP Class
MODEL

- Seven to eight-week summer program
- Four year curriculum
- Program Assistants/Mentors
- Texas Education Agency credit
- Career Speakers
- Field trips
- Scholarships
CORE CURRICULUM

Year 1
Logic and Its Applications to Mathematics
Introduction to Engineering

Year 2
Algebraic Structures
Introduction to Physics

Year 3
Introduction to Probability and Statistics
Introduction to Technical Writing

Year 4
Water Science
Introduction to Computer Science
CORE CURRICULUM (CONT.)

Year 4
Sites in Houston, Laredo, San Antonio, Ft. Worth and Lubbock offer a 4th year curriculum

All Years
Topics in Problem Solving
Career Component
Research and Study
Field Trips and Projects

Program Evaluation

University PREP
San Antonio – College Credit

Student’s projects are displayed at the Houston PREP Annual Engineering and NASA Days
TexPREP SITES

SAN ANTONIO
- University of Texas at San Antonio (1604 & Downtown Campuses)
- St. Philip's College
- Palo Alto College
- Our Lady of the Lake University
- San Antonio College
- Northwest Vista College
- Northeast Lakeview College
- University of the Incarnate Word (DEC)
- St. Mary's University

DALLAS
- El Centro College
- Richland College
- Mountain View College (2008)
- Eastfield College (2008)
- Cedar Valley College (2008)
- Brookhaven College (2010)
- University of Texas Dallas (2009)
- University of North Texas Dallas (2009)

FORT WORTH
- Texas Wesleyan Univ.
- Tarrant County Southeast

Lubbock

Ft. Worth
- Dallas
- Arlington

San Antonio
- Laredo
- Edinburg
- Austin
- Odessa
- Harlingen
- Brownsville
- McAllen (3)
- Houston, Bay City
- Corpus Christi

2,251 Students in 2007
2,985 Students in 2008
3,474 Students in 2009
4,026 Students in 2010
4,000 Students in 2011
TexPREP RESULTS

Follow-up survey from 2010 indicates:

- 99.9% graduate from high school
- 99% go to college
- 84% graduate from college
- 74% of the college grads are members of minority groups
- 44% of the college graduates are science, mathematics, or engineering majors
- 68% of the science, mathematics, and engineering graduates are members of minority groups

Overall Minority and Gender Results (1979-2010):

- 81% under-represented minorities
- 53% women
- 38% economically disadvantaged
HOW TO IMPLEMENT TexPREP

- Identify a univ/college champion
- Develop budget/funding sources
- Execute MOA
- Meet with superintendent(s)
- Develop budget / funding sources
- Obtain copy of curriculum
- Set up project timeline
- Develop recruitment plan
- Develop Marketing materials
- Recruit and process applications
- Training
TexPREP
Prefreshman Engineering Program Strategy

Elementary School
- Systems Academy For Young Engineers & Scientists
  - Systems Thinking / Dynamic Modeling
  - Robotics
  - Projects

Grade 4 S 5 S 6 S 7 S 8 S (S=Summer)

Middle School
PREP
I II III

High School
- PREP IV – Advanced Science & Engineering
  - Systems Thinking / Dynamic Modeling
  - Information Security / Gaming
  - Gray’s Anatomy
  - University PREP (summer)

Grade 9 S 10 S 11 S 12 S Univ.

PREP PhD
High School through Doctoral Research Component (Proposed)
Background

- The Hispanic STEM Initiative is a network of stakeholder groups and organizations that emerged from a working group that convened at a conference held in April 2007 on the subject of the American Competitiveness Initiative at the University of Texas at El Paso.

- Formally launched in March 2009, the purpose of the Hispanic STEM Initiative is to form strategic alliances between stakeholder groups and organizations in order to maximize education outcomes for Hispanic students in the STEM disciplines, all along the education range.
Hispanic STEM Initiative

Overview

- Working groups formed and convened in June 2009 in Arlington, Texas to establish key STEM education components.
- An Advisory Committee was formed and convened for the first time in September 2009, in Washington, DC.
- The Hispanic STEM Initiative collaborated with the College Board’s Preparate Conference in presenting a set of STEM sessions in 2010 and 2011.
- The STEM Corporate Council formed in June 2010 and presently includes Exxon Mobil Corporation and AT&T.
- In the process of implementing Pilot Programs in Houston, Los Angeles, and Stockton, California.
- In process of forming a Research Alliance with SEDL.
- In process of implementing the PreK-20 Partnership in STEM Project at SWISD.
- Fifty-five organizations and stakeholder groups presently comprise the Hispanic STEM Initiative Network.
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Prep-USA Pilot with PIQE | MESA
Summer Fall 2011 2011

Hispanic STEM Initiative

Stockton, CA

Prep PhD
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