Presentation to: Department of Education
Office of English Language Acquisition

Public & Private Partnership Best Practices in Establishing an Outreach Program for Majority English Learners

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DREAM Background

Founded in 2007 to provide role models to underrepresented high school students

Mission:
To foster achievement through mentorship of underrepresented groups toward higher education in STEM fields

Design project used as mentoring catalyst
• Active learning via hands-on design projects
• Physics concepts as basis of projects

60 volunteer university mentors from Rice

Expanded from 1 to 3 campuses in 2009
• Austin HS (AHS)
  - after school 1 hour five times a week
• Chavez HS (CHS)
  - during school for 50 minutes two times a week
• Knowledge is Power Program (KIPP) HS
  - Co-Curricular (CCO) sessions for 1 hour 2 times a week

Collaboration between Rice, HISD, and private entities and organizations

Rice Mentors

Austin HS
95%

Chavez HS
79%

KIPP HS
84%

Hispanic
African American
Caucasian
Asian
Pacific Islander
DREAM Model – Academic Semester

Recruit University Mentors

Kick-off Meeting at High Schools

Define Design Criteria

Prototype Build & Testing
- Mentees use points earned to rebuild designs via cost structure
- Test designs and make improvements until DREAM Day

DREAM Mentoring Sessions (8-10 Weeks)
- Students create groups of 3 with 1 Mentor
- Physics Based Lecture each session ~10 min
- Design building time ~50 min each session
- Mentors provide feedback on efficient designs and engineering principles

Fall Semester
- Seniors College Application Mentoring

DREAM Day

DREAM College Admissions Summer Session (Introduced 2010)
3 Strategic Areas to increase STEM awareness in ELs

- **Economic**
  - dispel incorrect perceptions of higher education costs
  - provide guidance on financial aid

- **Academics**
  - enrollment in upper level math and science electives
  - promote SAT/ACT preparedness
  - physics understanding

- **Engineering Perception**
  - earning potential of career
  - STEM in every day life
DREAM Partnership Model

Outreach
• Establish buy-in from local administrators, students, parents, and teachers
• Implement data driven research based best practices
• Increase number of mentors from underrepresented groups
• Expand to middle schools using high school mentors
• Invest in mentees throughout high school with scholarships
• Implement across university-K12 partner schools
• Focus on low-cost program high-yield STEM throughput

Partnership Structure

Research
• Maintain metrics for program effectiveness
• Develop DREAM curricula on pre-engineering concepts
• Demonstration of impact to STEM pipeline
• Establish replicable best practices
• Establish an advisory panel with
  • industry reps
  • education admin
  • researchers
  • teachers
• STEM Awareness in other cohorts
  • Parents/guardians
  • Teachers
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