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- UTC Railway Safety Consortium Institutions
- Educational and Outreach Activities
- Professional Development Activities
- Research Efforts
- Benefits and Impacts
Consortium Institutions

• University of Texas-Pan American (UTPA-Lead)
  – Research Focus: Mechanical Components Safety
• Texas A&M University (TAMU)
  – Research Focus: Railway Infrastructure Safety
• University of Nebraska-Lincoln (UNL)
  – Research Focus: Railway Operations Safety
UTCRS Summer Camp

- Summer 2014: the camps served 700 students (300 elementary, 300 middle school, and 100 high school students) from over 130 schools representing 26 school districts in the Rio Grande Valley (RGV).
- Summer 2015: committed camp enrollment is 900 students (400 elementary, 400 middle school, and 100 high school), again distributed among RGV school districts.
Benefits and Impacts

• A major goal of the UTC for Railway Safety is to encourage students from groups traditionally underrepresented in transportation to consider careers in transportation-related fields. The summer camps supported this goal as there were approximately 700 camp participants, of which over 80 percent were Hispanic and over 35 percent were female.
Elementary Students

- 3rd-5th grade students took part in inquiry-based activities to learn about science and engineering concepts in relation to transportation safety.
- Students designed and built a magnetic levitation train system to explore dynamic motion concepts and safety measures to prevent collisions.

Elementary camp participants discuss their daily lesson plans with UTCRS director Constantine Tarawneh.
Middle School

• 6th-8th grade students learned about transportation engineering and railway safety through project-based curriculum focused on robotics.

• Students built and programmed various types of vehicular robots designed to obey traffic lights and railway safety signs and signals.
High School

- 9\textsuperscript{th}-12\textsuperscript{th} grade students took part in a number of challenging competitions that included designing and programming an efficient vehicular robot as part of collaborations with TexPREP and an NSF-STEP grant.
Research Experience for Teachers (RETs)

- In 2014: 66 K-12 STEM Teachers
- In 2015: 80 K-12 STEM Teachers
Research Experience for Undergraduates (REUs)

- In 2014: 8 students (2 men, 6 women)
- In 2015: 12 students selected (4 men, 8 women)
- All historically underrepresented
Research Activity

• Research Covers all aspects of railway safety: physical systems; operations and planning; and human factors
• 18 Projects to date
• 30 Bachelor’s
• 15 Master’s
• 9 Doctoral
Questions