

Research and Education Opportunities

UTCRS Summer Camp RE for Undergraduates for Teachers

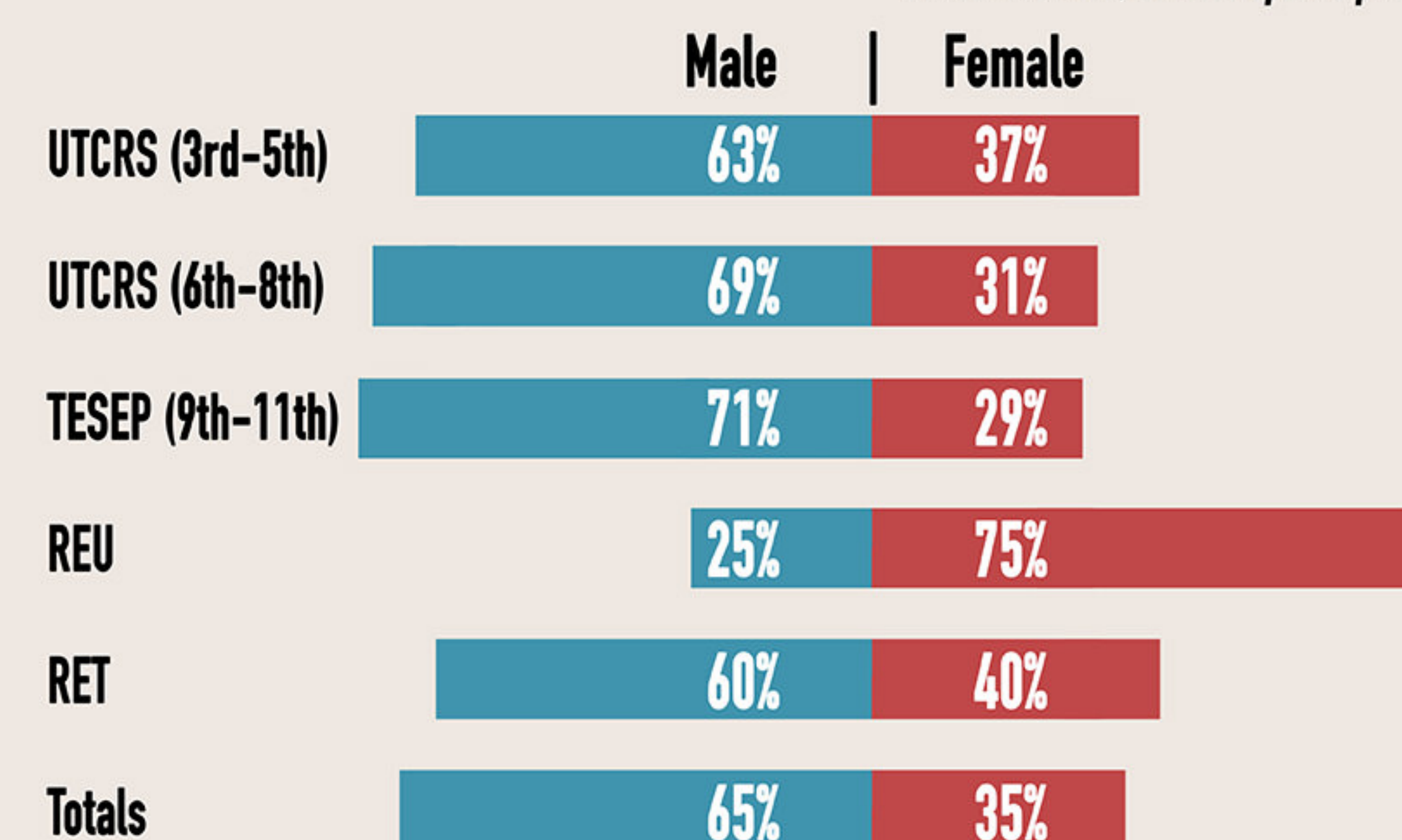
REU

Research Experience for Undergraduates

The UTCRS organized a summer Research Experience for Undergraduates (REU) program in which a team consisting of six female and two male undergraduate students were selected to join the two consortium institutions to work alongside faculty and students on transportation engineering and railway safety related research projects as part of building a bridge to graduate studies. As a result, five of the eight REU participants have already applied to graduate school at the partner institutions and one has already committed to joining the Civil Engineering graduate program at UNL in Spring 2015, signifying a successful beginning to this endeavor.



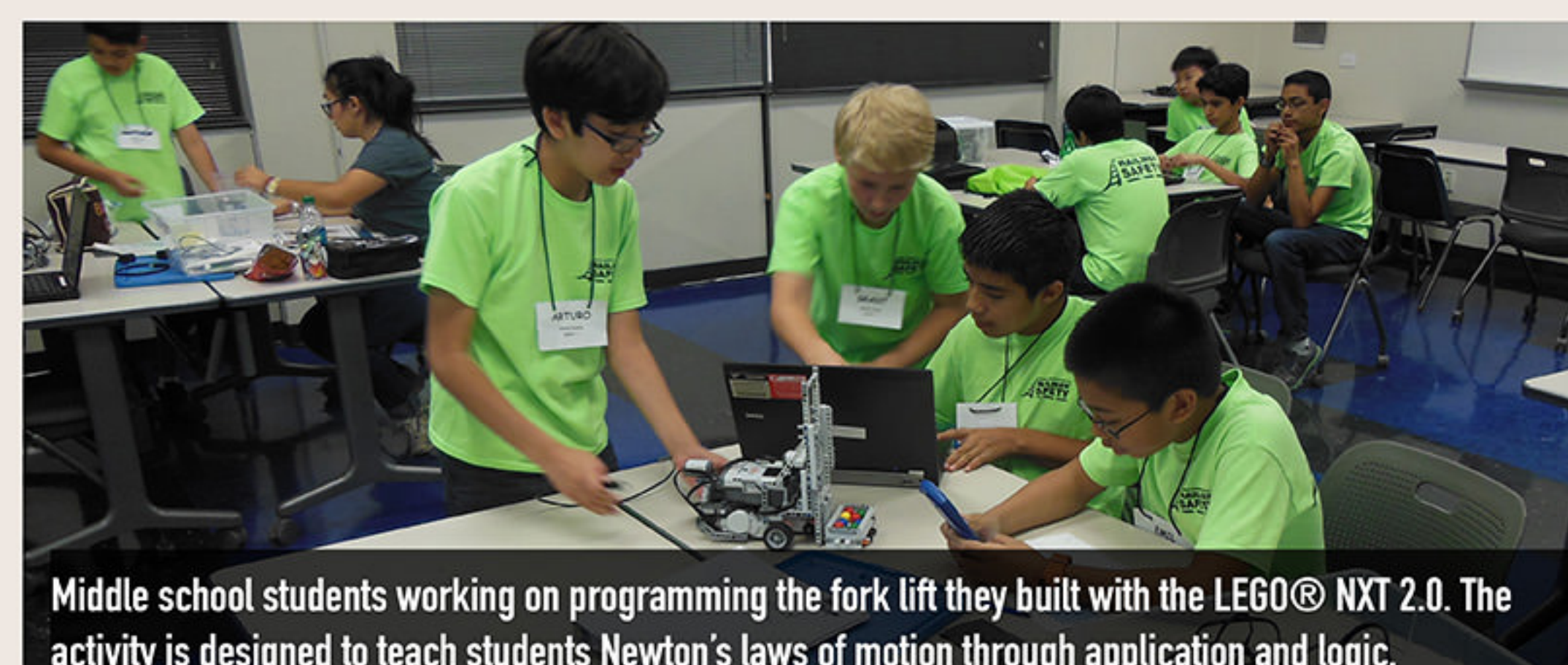
"The REU opportunity has influenced my future academic and career path in transportation engineering. I'm incredibly grateful for this great opportunity with the UTCRS."
—Cassandra Sias, UNL REU participant



THE LARGEST STEM CAMP EVER held at UTPA was hosted by the UTCRS, along with its consortium institutions, Texas A&M and the University of Nebraska-Lincoln during the summer of 2014. The camps served 300 elementary, 300 middle school, and 100 high school students from over 130 schools representing 26 school districts in the Rio Grande Valley.



Elementary students took part in inquiry-based activities to learn about science and engineering concepts and how they related to transportation safety. Students designed and built a magnetic levitation train system to explore what happens during collisions.



Middle school students learned about transportation engineering and railway safety through a 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.



This poster is a joint effort among Constantine Tarawneh, UTCRS Director, Carmen Pena, UTCRS Educational Coordinator, Wendy Fowler, UTCRS Diversity Coordinator, Angela Chapman, UTCRS Curriculum and Instruction Faculty and Bryan Cancel, UTCRS Undergraduate Research Assistant and Graphic Designer.

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.



"The UTCRS Summer Camp was an excellent, all inclusive, hands-on experience to help put our children on track for a bright future."
—Cynthia LiVigni, parent to Rebecca, Jacob & Thomas LiVigni (UTCRS camp participants)

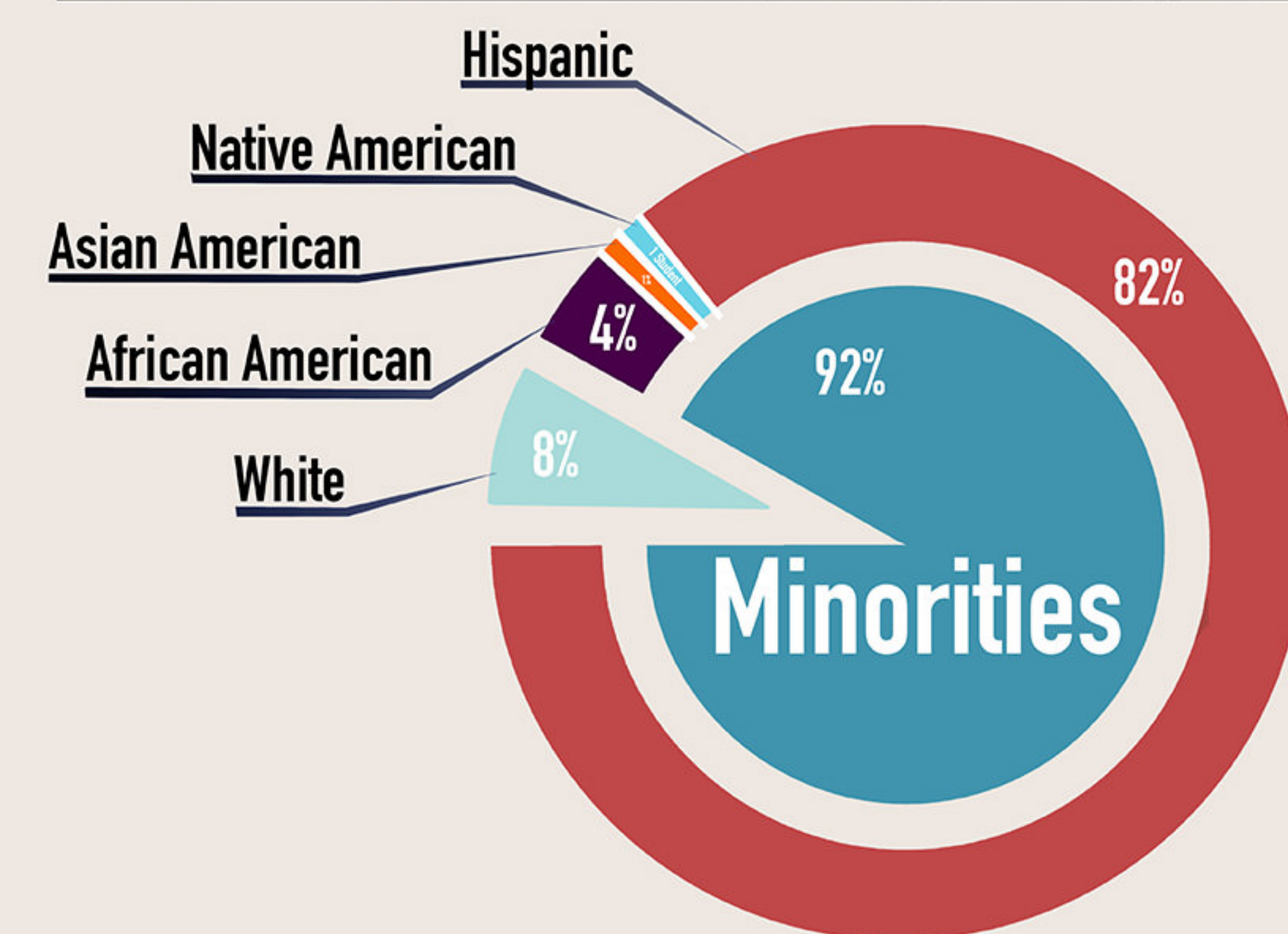


High school students took part in a number of challenging competitions that included designing and programming an efficient vehicular robot as part of collaborations with TexPrep and an NSF-STEP grant.

RET

Research Experience for Teachers

The camps were run by faculty and students from the College of Engineering and Computer Science and the College of Education in collaboration with five STEM teachers who participated in the Research Experience for Teachers (RET) program aimed at providing K-12 STEM teachers with professional development in the fields of transportation engineering and railway safety. The ultimate goal of the RET program is to provide teachers with educational tools and modules designed to introduce STEM concepts using transportation engineering applications.



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