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Innovations

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College of Engineering at The University of Texas at San Antonio Online Magazine

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College of Engineering students Josephine Dike, Chelsea Moussini, Kyle Lamoureux, Thanh Tran, and Andrew Wattereus have been volunteering their time mentoring students at Douglass Elementary School, which is located just east of downtown San Antonio. "It has been great having the UTSA mentors in class," said Eric Asel, a technology support specialist at Douglass Elementary. "They're enthusiastically involved in what the kiddos are doing and will get down and engage the students at their level, lots of times literally on their knees. Our students are always so excited to see them and ask their advice on the projects they are working on."

Education + Engineering = Success

ATE brings service learning opportunities to COE

The College of Education and Human Development's Academy for Teacher Excellence (ATE) and the Center for Civic Engagement have partnered with the College of Engineering (COE) to bring service learning opportunities to students in a whole new way.

Through a Title V for Hispanic Serving Institutions (HSI) grant from the U.S. Department of Education awarded to ATE and a National Science Foundation (NSF) grant awarded to COE, 34 students in Dr. Pranav Bhounsule's Fundamentals of Robotics course are completing their 10-week required service project at one of ATE's 10 after-school robotics clubs. They began working in the elementary and middle schools in mid-September.

"What we want to do is to have sustained science, technology, engineering, and mathematics (STEM) mentoring in schools," said Bhounsule, assistant professor of mechanical engineering.

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"If the UTSA students go every week, the students in the schools will realize their potential in STEM and hopefully become interested in science."

Once a week, the UTSA students travel to schools throughout the San Antonio area to mentor 227 elementary and middle school students at 10 different campuses, and teach them how to work with LEGO robotics kits. They are also helping the elementary and middle school students prepare to participate in the first LEGO League, a national-level robotics contest for schoolchildren. "I teach using LEGO robotics kits, and the UTSA students can take their classroom skills to mentor young kids in the community," said Bhounsule. "The close interaction with young children allows the UTSA students to enrich their learning experience while instilling a sense of civic responsibility. That's exactly what service learning is about."



Through the NSF grant, Bhounsule will be able to provide a stipend to support the UTSA students' travel to and from these schools.

"Reciprocal collaborative efforts across departments and colleges at UTSA, like the one we have created with the Department of Mechanical Engineering, are imperative for us to better serve our English learners, Latino, and other

culturally and linguistically diverse learner populations," said Dr. Lorena Claeys, executive director and research associate for ATE. All of the schools served by ATE's after-school clubs are in underserved areas around San Antonio. The funding for the clubs has been made possible through ATE's resources and funding from its Title V - HSI and Title V - HSI STEM grants from the U.S. Department of Education.

"This partnership is also about making our UTSA students role models to these children and create a college-going culture at these low-income schools," said Deborah Chaney, ATE education specialist. "Our UTSA students can talk about the importance of a college-going culture and how exciting it is to be an engineering or STEM student."



The partnership is also serving as a way for ATE and Bhounsule to showcase the efforts UTSA is making in encouraging young students to pursue STEM career paths, including STEM education. "The National Science Foundation is interested in increasing the number of Americans who follow STEM careers," said Bhounsule. "We are placing these UTSA students as role models in the community. My hope is that the students in the schools who do the robotics club will say, 'Hey, this is something that I really want to pursue as my dream career.'"



Since its inception, ATE has been working with schools in local districts to strengthen their university-school-community relationships and collaborative efforts. As a result, ATE has been able to provide field experiences and service learning opportunities to teacher candidates and other undergraduate students through its informal learning clubs.

"In addition to science and other STEM careers, we are also promoting STEM education across the P-20 spectrum through our informal learning clubs, like our robotics clubs," said Claeys. For the past two years, ATE has worked with Bhounsule's students to provide volunteer opportunities through their robotics club. The fall cohort is the largest group of student mentors ATE has had. This is due in large part to the course's service learning designation from the Center for Civic Engagement, the first designation of its kind for the College of Engineering.

"For me, the excitement is about the mentorship that is going to happen," said Brian Halderman, director of the Center for Civic Engagement. "We know that you need that sustained period of time to really develop a mentorship relationship with young people. It is important for those young students to see college-aged students who are excited about what they are doing at UTSA and passionate about what they are studying and to be willing to share their knowledge and skills with those students."



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