

Program or Project Description

- Faculty and Staff in the Department of Mechanical Engineering are engaged in a variety of outreach projects. Here we highlight three areas:
- ECS Lab Tours at Sac State for Elk Grove Unified School District (EGUSD) Students in the Career Technical Education (CTE) Program
- Outreach by Dr. Sarvenaz Sobhan as part of her STEM-NET project: *Towards Sustainable Development Goals: Advancing Informal STEM Learning and Clean Energy Integration for Communities of Concern*
- Dr. Ray Tang demonstrating robotics and controls at Open Sauce in June 2024 at Cow Palace in Daly City with 20K attendees. Formula SAE and Advanced Manufacturing students participated.
- The overarching objectives of these activities include: recruitment of future engineering students for Sacramento State, assistance to community partners in educating and informing young minds about engineering careers and education, and raising awareness and opportunities for education in underserved communities.

Demonstrating Experiential Learning to Our Community Partners



Dr. Rustin Vogt explains the work he is doing with Sac State students to build and instrument an off-road racing vehicle during an EGUSD tour. Dr. Vogt and Dr. Ray Tang have been accepted to give two presentations at the next ASME IMECE conference in Nashville, TN in Nov. 2025. (left)



Dr. Sarvenaz Sobhan describes her work to K12 students at the Sacramento Adventure Playground in February 2025. This socially engaged practice is collaborative and participatory, working toward a common goal of raising awareness about clean energy in the community. (right)

Promoting Student Success in College and Technical Careers



Stingers Up! EGUSD students from the CTE program visit the ME machine shop in TEB.



Dr. Ray Tang demonstrates robots from his Sac State lab at Open Sauce in June 2024.



Dr. Sobhan discusses clean energy careers at Cordova High (left) and Dr. Tang shows EGUSD projects in the MADLAB in TEB (right). These students are future hornets.



K12 students get a deep dive with Hornet Racing students about the car and the life of an ME major (left). Another K12 group sees Dr. Tang's robotics lab in TEB.

Community Impact

Thank you so very much for taking the time to introduce your programs to some of our future engineers last week. The rain wasn't helpful, but your demonstrations and discussions were certainly engaging and inspirational for the students! We are incredibly grateful to you in joining our efforts to provide relevant CTE experiences to our future workforce. – Wendy Wisdom, EGUSD CTE Coach

Thank you for taking time out of your schedule to give my students a tour of your Engineering labs. My students enjoyed the tour, seeing the facilities and equipment and especially hearing from the students in the racing and aerospace club about what their college experience was like. Experiences like seeing your students and professors working together on their projects makes a big impact on my students and helps with our recruitment. – Marc Wheeler, Engineering Teacher, Sheldon High School

Campus Community Impact

- After providing four lab tours for EGUSD, Mechanical Engineering faculty and staff, including Mike Newton, Troy Topping, Ray Tang, and Toby Gloekler were asked to attend the bi-annual EGUSD advisor meeting for Career Technical Education (CTE). Topping and Tang participated on April 3.
- Dr. Ray Tang has influenced future students with his engagement at Open Sauce programming events with his robotics demonstrations – raising the profile of Sacramento State.
- Dr. Rustin Vogt and Dr. Ray Tang have two abstracts accepted for their work involving control systems on the baja vehicle in the MADLAB, managed by Mike Newton.
- Dr. Sarvenaz Sobhan is influencing communities of concern with her partnered outreach to classrooms in the Folsom Cordova Unified School District.

This multidisciplinary [STEM-NET] project aims to achieve the optimal renewable solution for the target community through transient climate simulation. Our goal is to cultivate high-quality skills while propagating awareness of renewable energy solutions among the community and students. By doing so, we aim to prepare individuals interested in this field for their prospective careers, while promoting sustainability efforts here at Sacramento State. – Dr. Sarvenaz Sobhansarbandi