1. Describe how resources are aligned with the campus strategic plan, which includes Engagement, Service, and the Public Good; Welcoming and Inclusive Campus; Student Success; and Academic Distinction.

Funding from IRA awards supported 21 ECST student team projects. These student projects introduce students to team building skills, effective project management, leadership, and exposure to working with multi-disciplinary teams, to name some. Student teams are active in public outreach through collaboration with industries, sponsors, alumni, and the Los Angeles community. As an example, the Hands-Hearts-Minds-on Design project focuses on serving the needs of people with disabilities. The goal of making the campus more accessible and inclusive of students with a wide range of abilities was addressed. The team refined a beach cruiser and built an all-terrain wheelchair for a GeoScience undergraduate student with mobility challenges. Another student team, ACM, collaborated with local high schools and community colleges whereby each team is to design and implement algorithms to solve practical problems. The CSLA student team was mainly responsible for administering the Progfest competition and served as judges. Participation in these activities demonstrated organization and management skills. Then, there’s the EcoCAR competition team. The EcoCAR competition team is multi-disciplinary and represents students from Electrical and Mechanical Engineering, Industrial Technology, Computer Science, and members from Business and Economics, and Arts and Letters. Through activities and collaboration on campus, the student team held events on and off campus at various venues to promote advanced plug-in hybrid vehicle design technology to K5-K12 students and the community at large. With the skills acquired through team building, hands-on analytical design experiences, many students become leaders in science and engineering.

2. Provide key performance metrics to measure and sustain success.

There are various metrics to success for these student teams. For the Baja SAE team, success comes from how well the team performs against their competitors in the annual competition and how many members received job offers before graduation. For the CubeSat club, success came in way of the 8-member team winning best
poster presentation award at the poster session for the RSCA Research Symposium. Robosub’s measure of sustain success comes from student involvement. In their second year, the team saw an increased in students participation for 2017-18. Fourteen students from Cal State LA represented our school in the International Robosub competition. Up to now, ECST has provided training to more than 50 engineering students in the program and working on increasing participation to 100 students on an annual basis.

3. Describe program outcomes and results. Identify challenges encountered.

Two BME students participated in a local biomedical design competition an won first place (IEEE BMEBiotech Student Contest). The research and design was on mobile fitness app for individuals in wheelchairs. With a constrained budget, the FSAE team elected to participate in the annual competition once every two years. Beginning with 2017/18, their project race car had to undergo major modifications in order to be competitive. Then, there’s the GeoWall team tasked with designing and building a model mechanically stablizied earth (MSE) retaining wall and winning 1st place in the national geowall competition and another sister team, built an effective water treatment system and received 2nd place. A great achievement from our Cal State LA engineering students.

Most of the teams made it clear that funding was insufficient to support their activities. Some other identified challenges were: for the Robosub team, a lack of an underwater testing facility. There was limited access to using the university swimming pool which also incurred costs (paying for life guards); the ASME team had to deal with limited access to facilities (space) for them to work on their competition projects; BOOST also had an issue with funding. The issue with BOOST was not knowing whether their project will be funded or not as all the activities for the BOOST program occur during summer but the award allocation doesn’t get disseminated after the end of summer and sometime award notifications don’t get out until early part of Fall semester.