To our generous sponsors:

Bruin Racing has successfully designed and assembled four vehicles in the 2017-2018 school year. The opportunity to apply ourselves and get ahead on learning the engineering design process is all thanks to your support. Without your generous product, service, and monetary donations, Bruin Racing would not be the organization it is today. As a student group, we provide a space where future engineers can not only apply what they learn in the classroom, but also bring an idea into existence. As our sponsors, you provide the exact opportunity for us to do so. By positively impacting the learning of more than 150 students, you allow us to grow into proper engineers. We are fortunate to have been given the chance to develop our skills and gain valuable experience.

We sincerely thank our sponsors for their contributions towards our goal to become better engineers.

Thank you.

Aimee Pak
Bruin Racing External Vice President

**BAJA**

This year the Baja team has made a number of innovations to improve upon past years’ models and increase the overall functionality of the car, including floating rotors for better cooling, a carbon fiber composite hood and a locking differential. Most notably we implemented an Electrodynamically-Actuated Continuously Variable Transmission (E-CVT) system. Based on the success with the hood we are going to implement full carbon fiber body panels in the coming year. Though we did not have sufficient testing time to run the E-CVT at the competitions, our controls team has been working this summer on testing and tuning the E-CVT. Furthermore, the lockable differential proved vital in our completeion of the endurance race at Oregon. While we did not perform as well as we had hoped at the competitions, placing 39th overall in Oregon and 41st in Kansas, we improved over last year and are optimistic for the 2019 season. Our team has expanded due to a high retention rate among new members and we aim to leverage this workforce to expand the technical depth of our design process, cut vehicle weight and increase our focus on testing.

**FORMULA**

Bruin Formula Racing successfully designed, fabricated, and competed with its fourth student formula car, Mk. IV. The focus this year was to reduce weight, justify designs with simulation and data analysis programs, and have more run time. The largest addition to the team was introducing aerodynamic components to Mk. IV, namely a fully composite undertray for more downforce. Mk. IV also features a chassis with greater torsional stiffness, a resonator to reduce car noise, and a digital dash display. At the
Formula SAE Lincoln competition, the team placed 11th in the sales presentation and 16th in the cost report. For dynamic events, the team placed 27th in Skid Pad and 43rd in Acceleration. Overall, the team placed 47th out of 80 teams. For the first time in the team’s history, we were able to compete in Acceleration and Skid Pad -- two dynamic events that teams could only participate in if they passed technical inspection early. The team continues on an upwards trend towards building a reliable race car. For the next year’s car, we plan to further develop the car’s aerodynamic components, reduce overall weight, implement a hanging differential, and redesign the steering system.

SMV

The Supermileage Vehicle team at UCLA embraced the challenge of creating and competing with both an internal combustion vehicle and a battery electric vehicle at the Shell Eco-Marathon competition this year. The battery electric vehicle competed placing 8th out of 24 teams in the battery electric category at its first competition attendance. Unfortunately, the internal combustion vehicle was not completed for competition due to concentrated team effort in the battery electric category. However, internal combustion vehicle systems were still improved upon, most significantly reducing the vehicle weight from 97 to 85 pounds. Some other significant accomplishments from this year include constructing a new male mold using expanding urethane foam and wood and making a new body for the electric vehicle, integrating both vehicle teams together under one structured organization, and designing an electric vehicle from scratch. We hope to implement a brushless motor controller for the battery electric vehicle next year. For the internal combustion vehicle, we hope to implement a proper EFI system and construct a new monocoque with further weight reduction. We are very thankful for all of our sponsor’s help and support. Without it, we would be unable to gain this invaluable experience designing and constructing supermileage prototype vehicles. Thank you!