

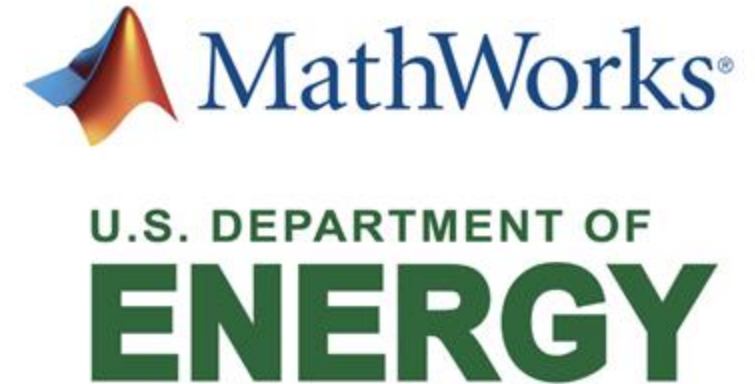


EcoCAR UC Davis

Team Introduction

EcoCAR EV Challenge

- Student competition amongst 15 universities across North America to modify the propulsion system and add autonomous capabilities to a Cadillac LYRIQ
- The competition is sponsored by US DOE, General Motors, and MathWorks among others!
- GM will be donating a 2024 Cadillac LYRIQ to each team to use as a platform for developing these systems
- UC Davis is 1 of 2 schools from California participating in this competition



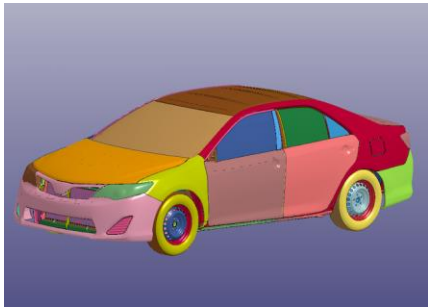
Vehicle Development Goals

- Develop an **energy efficient** powertrain that enables **safe driving** in a variety of operating conditions
- Create a **robust** platform on which extensive controls and autonomous capabilities can be developed
- Design and implement an **autonomous stack** capable of collaborative adaptive cruise control, lane-centering, and automatic intersection navigation



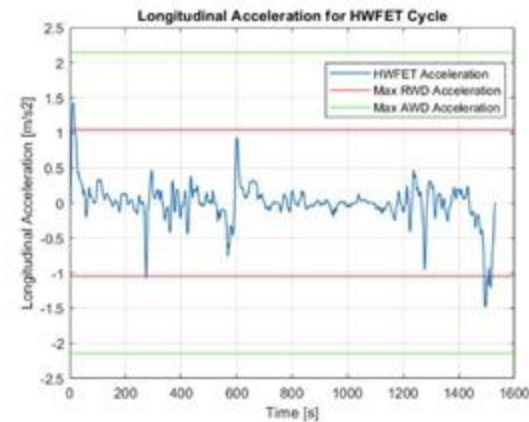
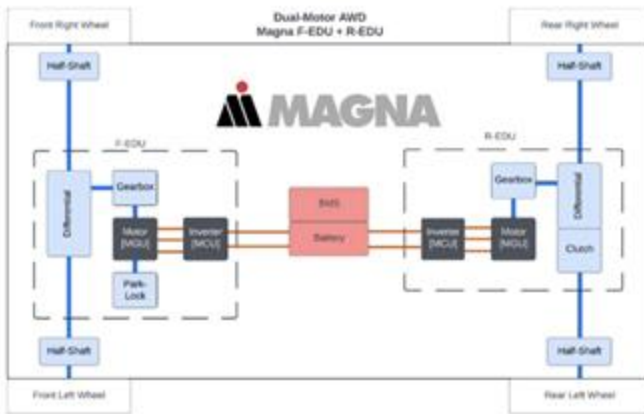
Year 1 - Targets

- **Modeling & Simulation** – Vehicle Development
- **Establishing Organizational Infrastructure**
- Understanding principles of **Diversity, Equity and Inclusion**
- **Establishing Partnerships** – University, Community, Industry and Government
- **Outreach Activities**



Modeling & Simulation

- Propulsion system hardware and controls development
- Perception system design and autonomous algorithms development
- Extensive modeling and simulation of vehicle



Organizational Structure

Facilities & IT

- Working with university to build up a garage and office spaces
- Setting up and maintaining workstations and compute infrastructure
- Establishing a safety and training program for the team

Project Management

- Maintaining and executing tasks within a timeline
- Onboarding and maintenance of other processes
- Software tooling

Sub-teams

- Propulsion, Controls and Modeling
- Connected and Autonomous Vehicles
- System Design and Integration
- Diversity, Equity and Inclusion
- Communications



DEI Goals

- Tracking and maintaining team roster by setting recruitment goals, pipelines and processes
- Finding and providing foundational training for all team members in terms of implicit bias, DEI in the workplace, etc.
- **Equity in Mobility Challenge** – understanding the inequities in the surrounding communities in terms of transportation and establishing partnerships with organizations to help better understand the challenges

Outreach Activities

K-12

- Developing activities and material to get students interested in **STEM** and particularly **Electric Vehicles**
- Conducting events and information sessions

University Relations

- Establishing an online presence through **social media**
- Club collaborations and building a network of mentors

Community

- Engaging surrounding communities to improve EV Awareness
- Establishing a relationship with the local government and surrounding organizations

Our team has grown to ~60 members, 6 paid, and the rest volunteers, over the past 7 months (even without a car)!



Girl Scouts Outreach



Our request

- We are looking for community based organizations that work in underserved communities that we can partner with for education and outreach next year. Please reach out with your suggestions!
- We are looking for grant opportunities to help support our students and research. Please reach out if you have any ideas!
- Wish us luck! Year 1 Competition is May 21 - 26

