The Competition

“For the purpose of the Formula SAE competition, teams are to assume that they work for a design firm that is designing, fabricating, testing and demonstrating a prototype vehicle for the nonprofessional, weekend, competition market.”

“The vehicle should have very high performance in terms of acceleration, braking and handling”

Static Events:
- Design Presentation
- Cost Presentation
- Business Presentation

Dynamic Events:
- Acceleration
- Autocross
- Endurance

MK.1 Vehicle Specifications

- Dual Zero Motors Z-Force motors (134 HP combined)
- 100V, 66kWh accumulator
- 12 Nissan Leaf LiMnO2 battery modules
- 12s1p configuration
- 2 Sevcon Gen4 motor controllers
- 600lb dry weight
- Top speed of 60mph
- 0-60mph in 3 seconds
- Full multilink rear suspension
- Chain drive steering
- Independent rear wheel drive
- Fiberglass body panels
- Team designed battery management system (BMS)
- Delphi connectors
- Worked with General Motors Global Battery Systems Laboratory
- Manual service disconnects (MSDs)
- Main pack disconnect

Electric System

- Dual motors for independent rear wheel drive
- Test bed for torque vectoring
- Full multilink rear suspension
- Ohlins TTX25 MkII dampers
- Hoosier 20.5 x 7 13 R25B tires
- OZ Racing rims
- Moving from dual motors to one motor with a differential
- Using more energy dense, high current cells to reduce accumulator size and weight
- More modular electrical system for more efficient debugging
- Better electronics enclosures to allow for easier access to components

About the Team

- 30 active team members
- 8 leadership team members
- 2016 was our first year competing in Formula SAE
- Previously built an electric go kart and electric reverse trike
- Fundraising goal ~$50,000

Our Next Car: Mk. 2

Goals

- Start design from tire data
- Lighten everywhere possible
- 425lbs target dry weight
- Moving from dual motors to one motor with a differential
- Using more energy dense, high current cells to reduce accumulator size and weight
- More modular electrical system for more efficient debugging
- Better electronics enclosures to allow for easier access to components