

Baja SAE 2016: Raider

Advisers: Prof. J. Michael McCarthy, Robert "Smitty" Smith, Philip Chipman

Background

The Baja SAE competition series is an annual intercollegiate challenge, hosted by the Society of Automotive Engineers, for students to design, manufacture, and validate an off-road racecar prototype by applying their engineering knowledge.

Objectives

- Rules-compliant vehicle
- Complete the four hour endurance race
- Top 50 ranking

Design Requirements

- Maximum width: 64"
- Maximum length: 108"
- Minimum driver helmet clearance: 6"
- Minimum driver body clearance: 3"

Design Goals

- Vehicle weight: 400 lbs without driver
- Wheel base: 65"
- Track width: 51" front, 48" rear
- Steering wheel: 360° lock-to-lock
- Suspension travel: 12" front and 10" rear
- Top speed: 37 mph

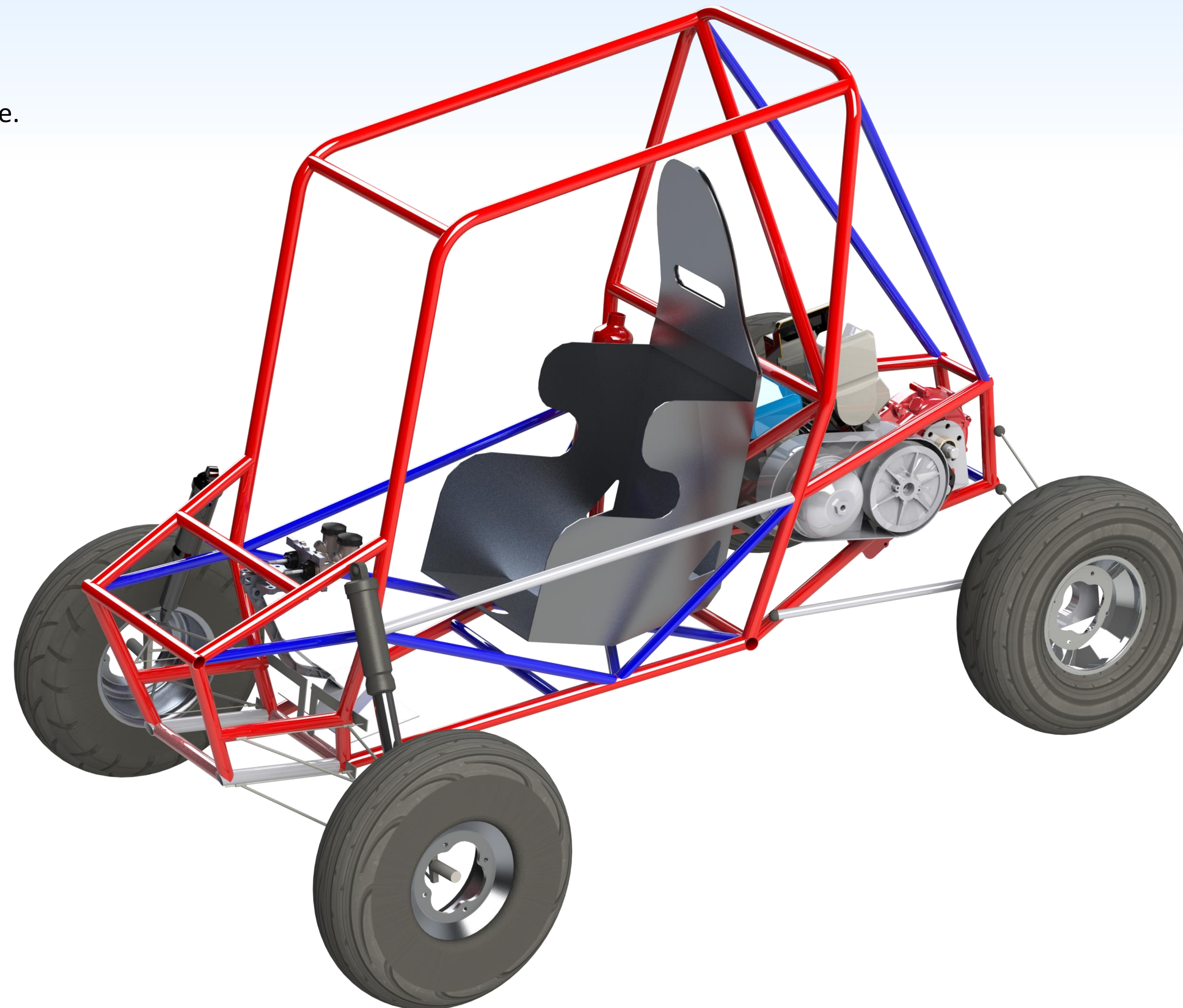
Competition events

Dynamic:

- Acceleration
- Hill climb
- Maneuverability
- Rock crawl
- Four-hour endurance race

Static:

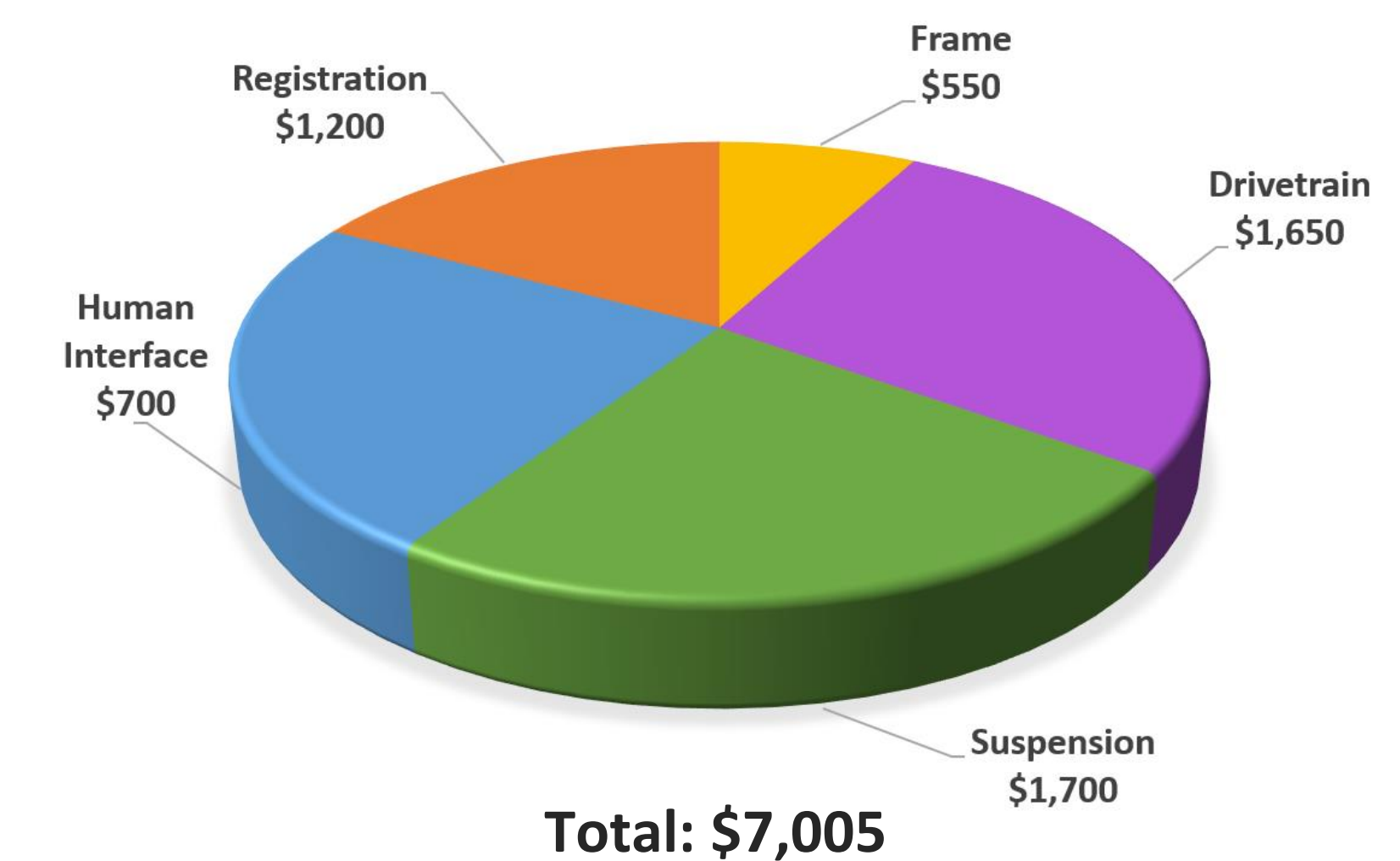
- Design review
- Sales presentation
- Technical inspection



Milestones

- | | |
|------------------------|-----------------|
| - Design phase | Fall, Weeks 1-8 |
| - Design Review | Fall, Weeks 8-9 |
| - Manufacturing begins | Fall, Week 8 |
| - Vehicle completion | 3/6/2016 |
| - Frame design check | 1/18/2016 |
| - Cost report | 2/29/2016 |
| - Design report | 4/5/2016 |
| - Competition | 5/19/2016 |

Project Budget



Team Structure

