

Baja SAE Racecar: *Raider*

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

Background

The Baja SAE competition series is an annual intercollegiate challenge set forth 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 30 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

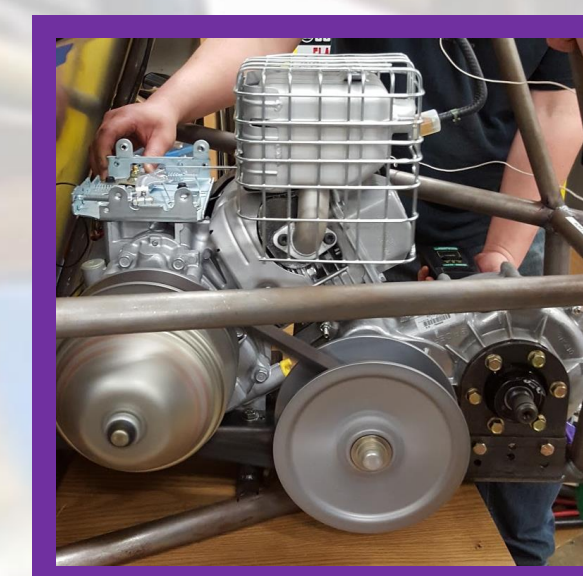
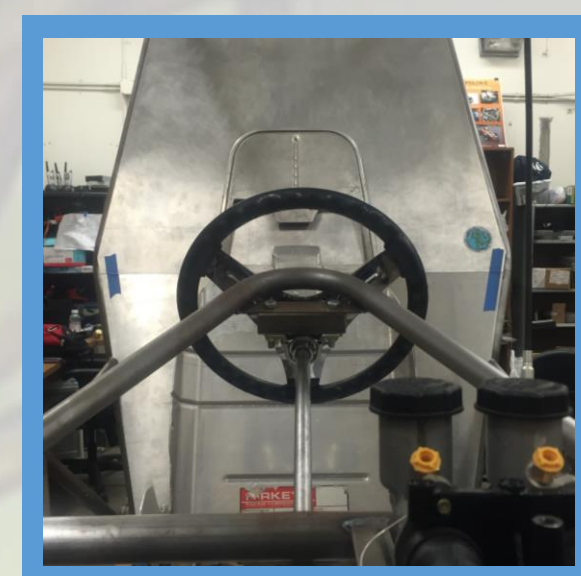
Competition events

Dynamic:

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

Static:

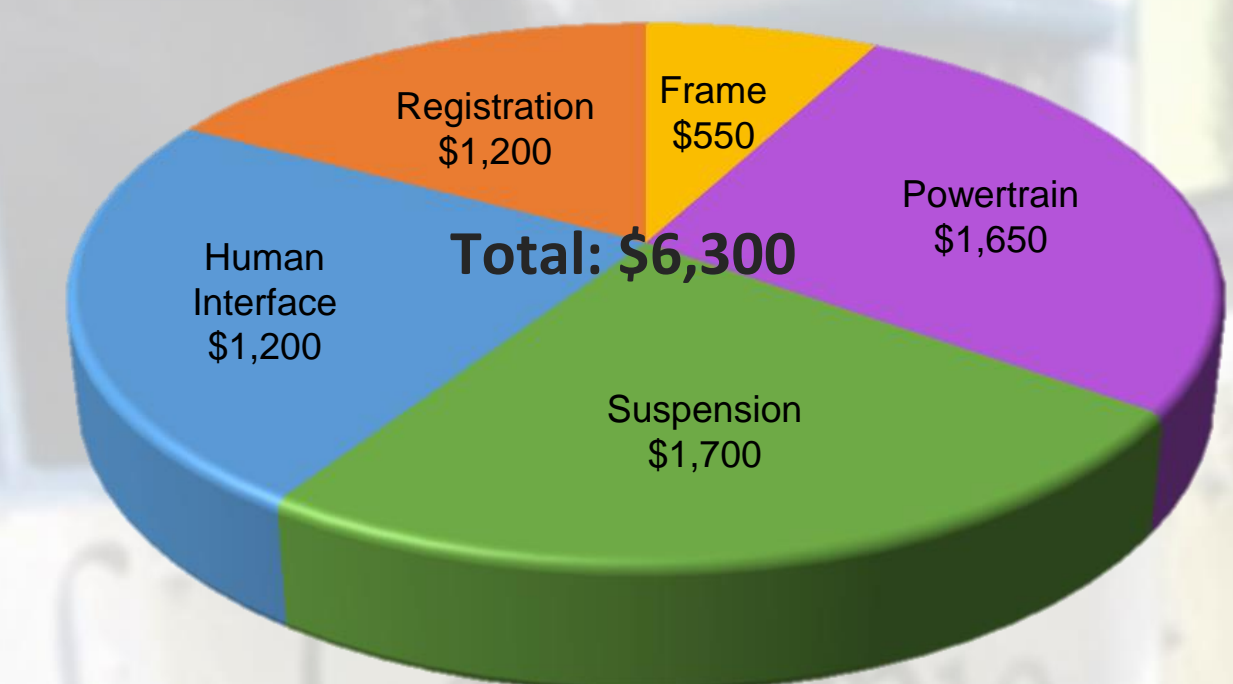
- Design review
- Sales presentation
- Technical inspection



Milestones

- | | |
|------------------------|-----------------------|
| - Design phase | Fall, Weeks 1-8 |
| - Design Review | Fall, Weeks 8-9 |
| - Manufacturing begins | Fall, Week 8 |
| - Frame design check | 1/18/2016 |
| - Cost report | 2/29/2016 |
| - Vehicle completion | 3/27/2016 |
| - Design report | 4/5/2016 |
| - Competition | 5/19/2016 - 5/22/2016 |

Project Cost



Team Structure

Team Captain:
Danny Kim

Chassis

Lead: Kurtis Wragg

Andres Olmedo
Andrew Marshall
Angel Gonzalez
Erik Blaser
Isidro Calderon
John Pena

Human Interface

Lead: Kaitlin Robinson

Chirantha Kaluthan
Jason Yee
Melvin Lucas
Zachary Pearce

Powertrain

Lead: Danny Kim

Cheri Chomchuensawat
Jacob Gumke
Medhi Razouane
Xavier Dedenbach

Suspension

Lead: Ryan Roach

Jitian Lu
Luis Ayala
Miguel Blanco
Tiancheng Wang
Triet "Scotty" Tran
Xiaoqian Wang

Program Manager:
Nawid Mehrzai

