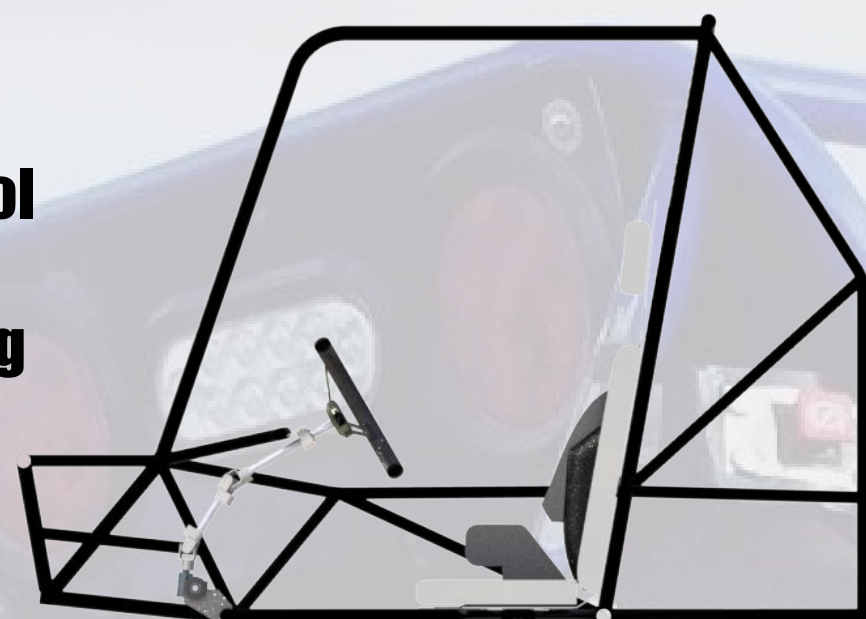


HUMAN INTERFACE

- Double U-Joint steering column for smooth lock-lock transition
- Ackerman steering for better control and reduced tire slip
- Bump steer reduced to 1" at steering wheel

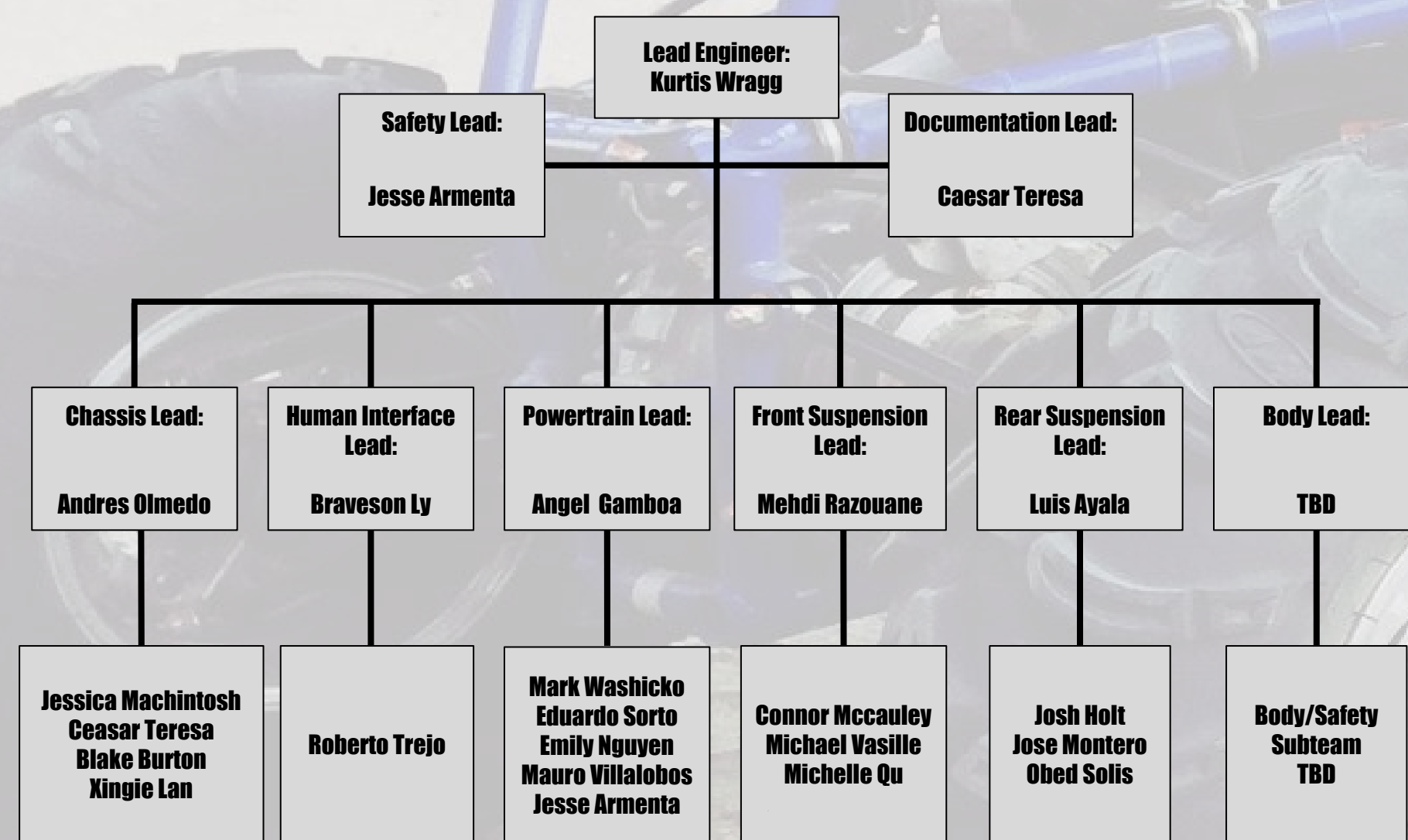


FRONT SUSPENSION

- Improved Camber and Toe change over travel for <math><2^\circ</math> bump steer at wheel
- Maintain 12" of travel (8" up, 4" down from ride height)
- Reduce scrub radius to <math><0.5''</math> to reduce loading seen into steering system



ORGANIZATION



Advisors:

Prof. Michael McCarthy, Robert "Smitty" Smith, Phil Chipman

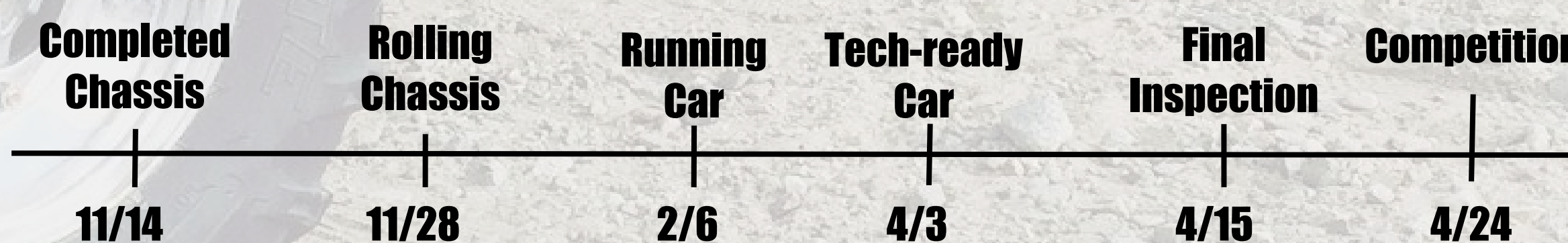
GOAL - REFINEMENT

The 2016 vehicle was evaluated based on its placing at competition events and data collected during testing. The key characteristics necessary to place among the top 20 teams were identified and resulted in the following design criteria for BANDIT for 2017.

Requirements:

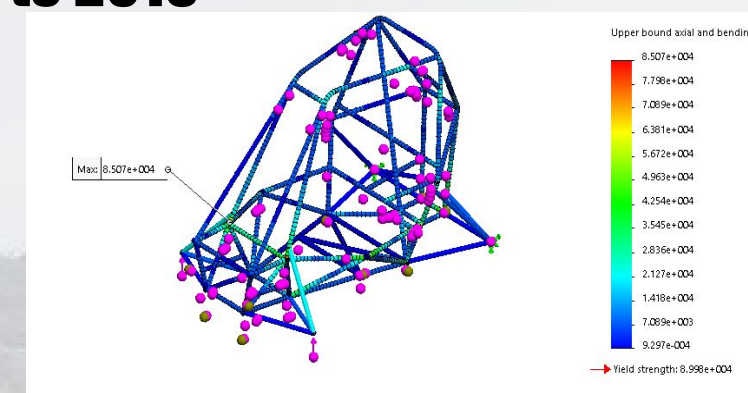
- Reduce weight (Target: 430lbs → 375lbs)
- Reduce wheel base (Target: 66" → 60")
- Change suspension characteristics (Reduce bump steer and ackerman steering)
- Increase top speed (Target: 28mph → 32mph)

TIMELINE



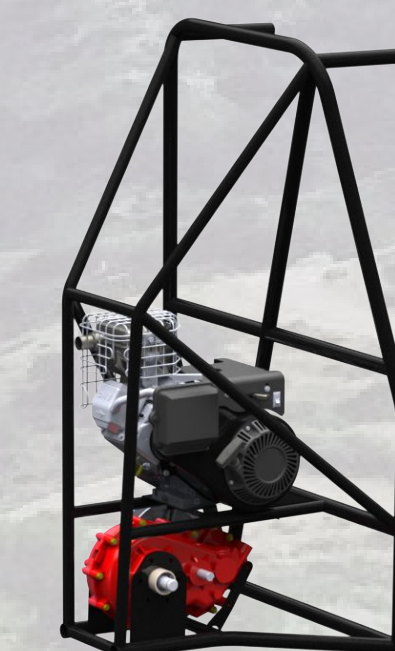
CHASSIS

- Reduced weight by 15lbs compared to 2016
- Shorten Chassis length by 9"
- Maintained Driver Comfort
- Rigidity validation through FEA



Powertrain

- Stacked engine/gearbox configuration for 60" wheel base
- Overall weight reduction of 7lbs
- Dyno tune system to achieve higher top speed (>30mph)
- Flangless CV Axles with outboard brakes, reduced rolling weight by 4lbs

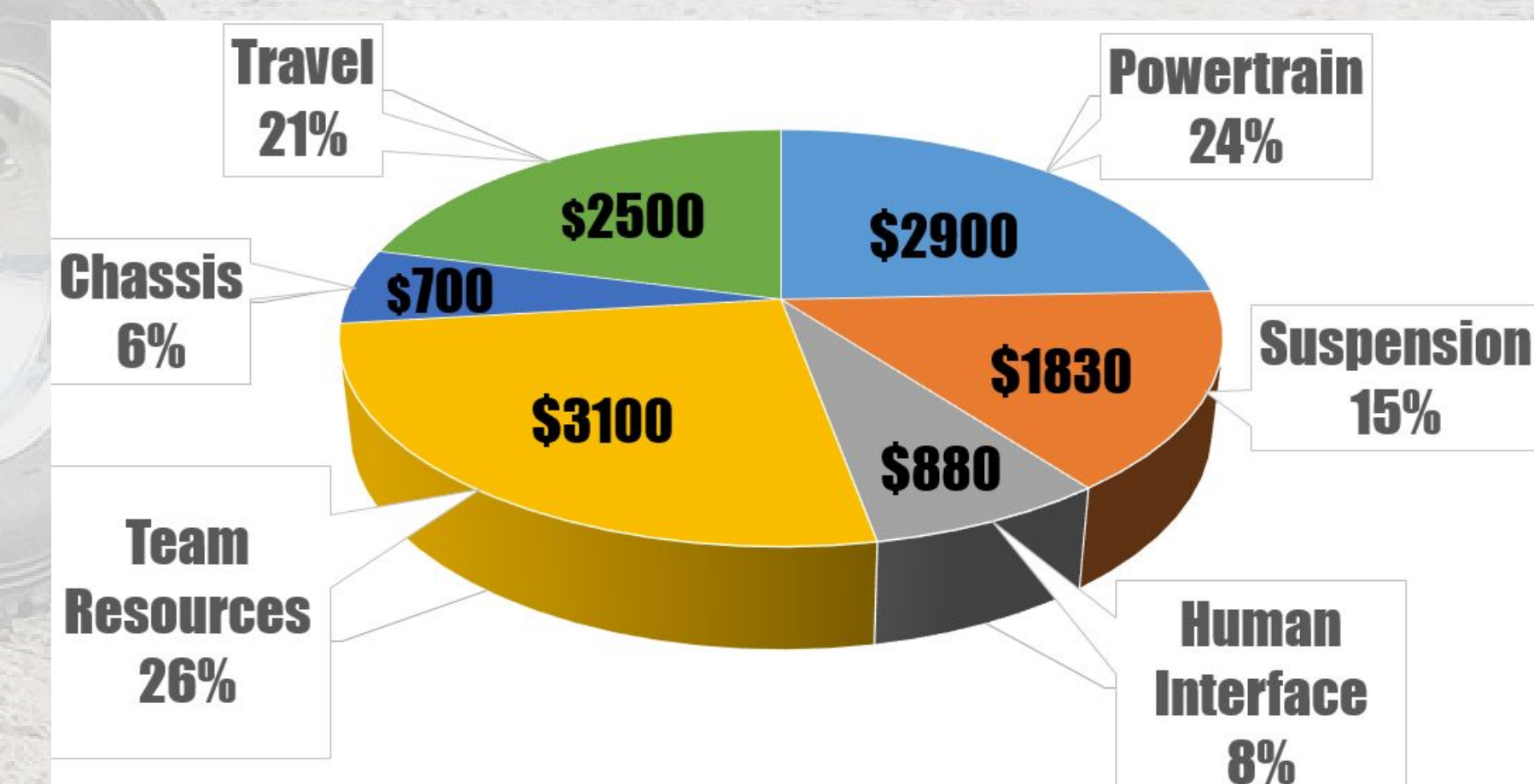


REAR SUSPENSION

- Interlocking plate design to simplify manufacturing process
- Added factor of adjustability using a rod end at pivot location



BUDGET



2016-17 Car Budget = \$9500
 Est. Travel Costs = \$2500
 Total = \$12,000