



**BRUIN**:  
**RACING**

**Information for Partners & Sponsors**

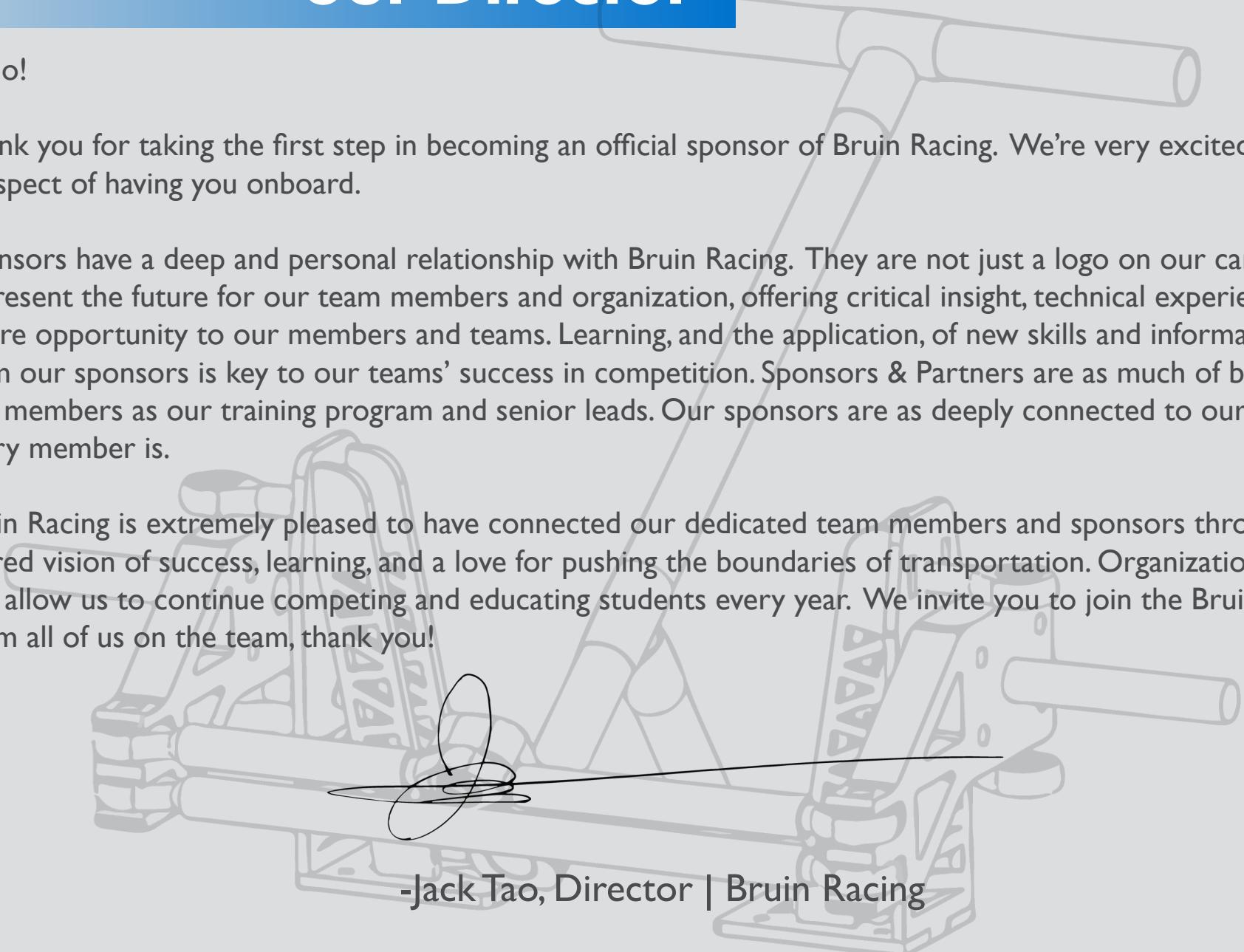
# A Letter from our Director

Hello!

Thank you for taking the first step in becoming an official sponsor of Bruin Racing. We're very excited at the prospect of having you onboard.

Sponsors have a deep and personal relationship with Bruin Racing. They are not just a logo on our cars, they represent the future for our team members and organization, offering critical insight, technical experience and future opportunity to our members and teams. Learning, and the application, of new skills and information from our sponsors is key to our teams' success in competition. Sponsors & Partners are as much of benefit to our members as our training program and senior leads. Our sponsors are as deeply connected to our team as every member is.

Bruin Racing is extremely pleased to have connected our dedicated team members and sponsors through a shared vision of success, learning, and a love for pushing the boundaries of transportation. Organizations like you allow us to continue competing and educating students every year. We invite you to join the Bruin family. From all of us on the team, thank you!



-Jack Tao, Director | Bruin Racing

# What is Bruin Racing?

Bruin Racing is an undergraduate student organization that designs and builds vehicles for competition while educating, training, and providing hands-on experience for future engineers. We are comprised of four constituent clubs: Mini-Baja SAE, Formula SAE, Hyperloop, and SuperMileage Vehicle. Each of these teams work to meet specific design goals, devising innovative solutions to the problems that arise when constructing a prototype vehicle. By taking on these challenges, our members learn how to work as a team and thrive in a fast-paced, demanding engineering environment.

Outside of competitions, Bruin Racing promotes interest and experience in STEM by showcasing at campus events to encourage younger students to pursue careers in engineering. Additionally, we host a training program in machining and computer-aided design practices to build the skills needed of engineers. Additionally, the Bruin Racing Business Team provides students with the opportunity to gain experience in accounting, procurement, and management while learning how to communicate with partners in industry. All teams are open to any UCLA student, and actively recruit students from a broad variety of majors.

Through our constituent clubs, we aim to provide a real-world, team-oriented, and project-based experience to UCLA students while preparing them to contribute immediately in industry upon graduation. Bruin Racing is the source for responsible, capable, multi-talented engineers, scientists, and business-people ready to contribute to industry.

Our Formula Team-



# Training Program

Here at Bruin Racing, our team places a strong emphasis on education. These programs not only teach students the skills to be effective team members, but also provide accelerated hands-on experience. Our program easily complements the theoretical knowledge learned in the classroom and provides students with a well-rounded education.

Beginning with training in practical tools such as SolidWorks and machining, new students are guided by experienced members through the design and manufacturing of vehicle subsystems. The program is tailored to members with no experience and the course itself spans ten weeks with a final design challenge at the end.



# Our Administrative Members



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Christian Hurley  
Managing Partner  
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# Mini-Baja Model XVIII



## Chassis

Gross Frame Weight: 53lbs

CNC Bent and Notched

TIG Welded

Aluminum Body Panels

## Drivetrain

10hp Briggs & Stratton OHV Intek Model

19:19L2320054-GI engine

Gaged Engineering GX9 CVT

Custom Gearbox with lockable differential

## Suspension

11.5" Ground Clearance

10" Wheel Travel with 4" Static Droop

45:55 Lateral Weight Transfer Distribution

33:67 Wheel Rate Distribution

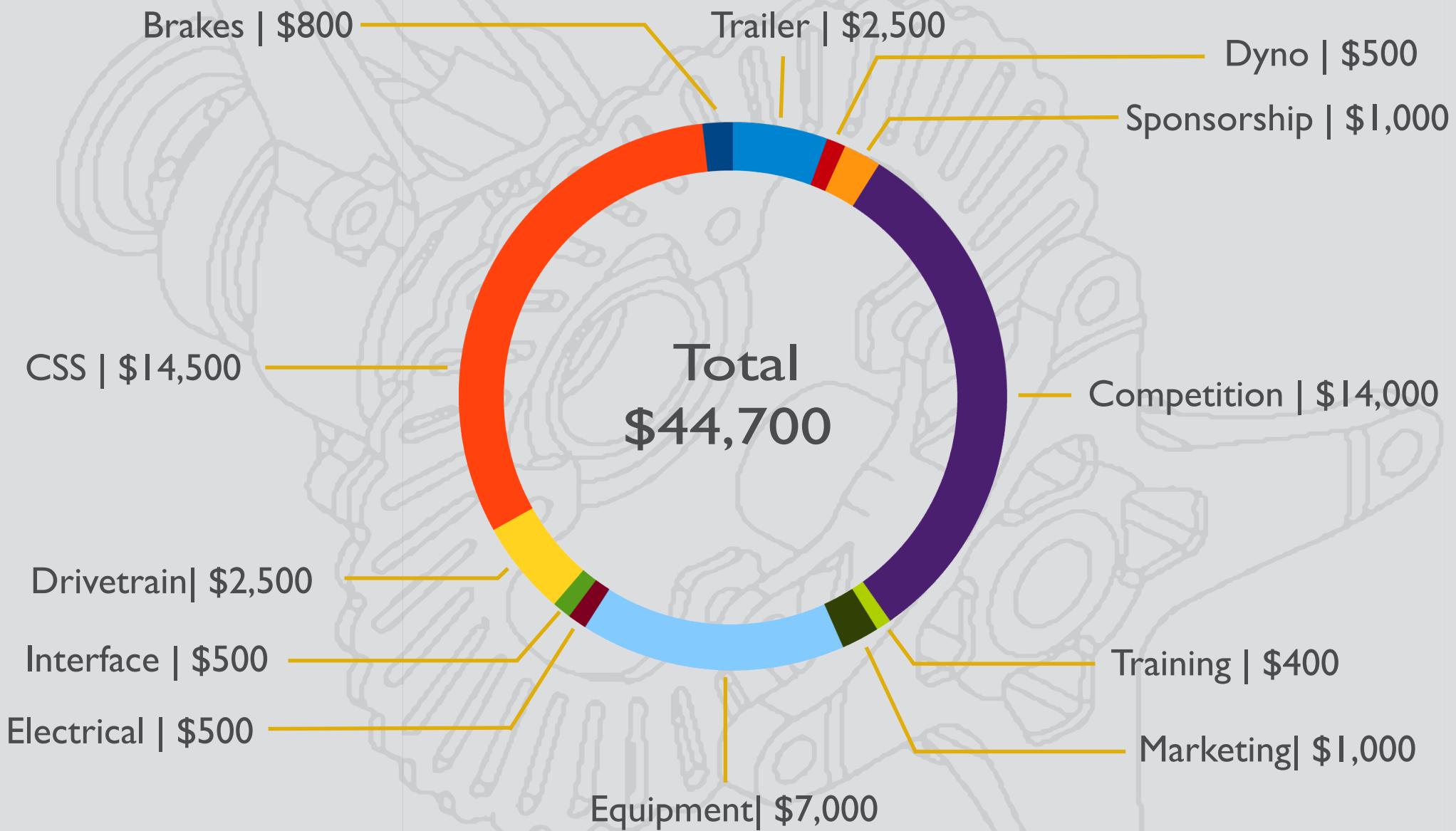
## Steering & Brakes

Fast Ratio Steering (2:1)

7.5' inside turning radius

Turning brake

# Mini-Baja Budget 2015-2016



# Formula Model III



## Chassis

Carbon Fiber Nose, Panels and Sidepods  
CNC Bent and Notched Chromoly Tubing  
Total Weight: 390lbs

## Powertrain

2017 Yamaha YZ450FX Engine  
Fuel Injection TBD  
Koso 32mm throttle body  
Custom 3D printed nylon intake  
Supertrapp muffler

## Drivetrain

Drexler FSAE Differential

## Steering & Brakes

Full Floating Steel Rotors

Wilwood GP200 and PSI Calipers

7' Inside Turning Radius

Short-ratio Steering Rack (1.96:1)

## Suspension

1.25" Ground Clearance

1" Wheel Travel with 1" Static Drop

47-53 F-R Weight Distribution (wet)

1:1.8 Wheel Rate Distribution

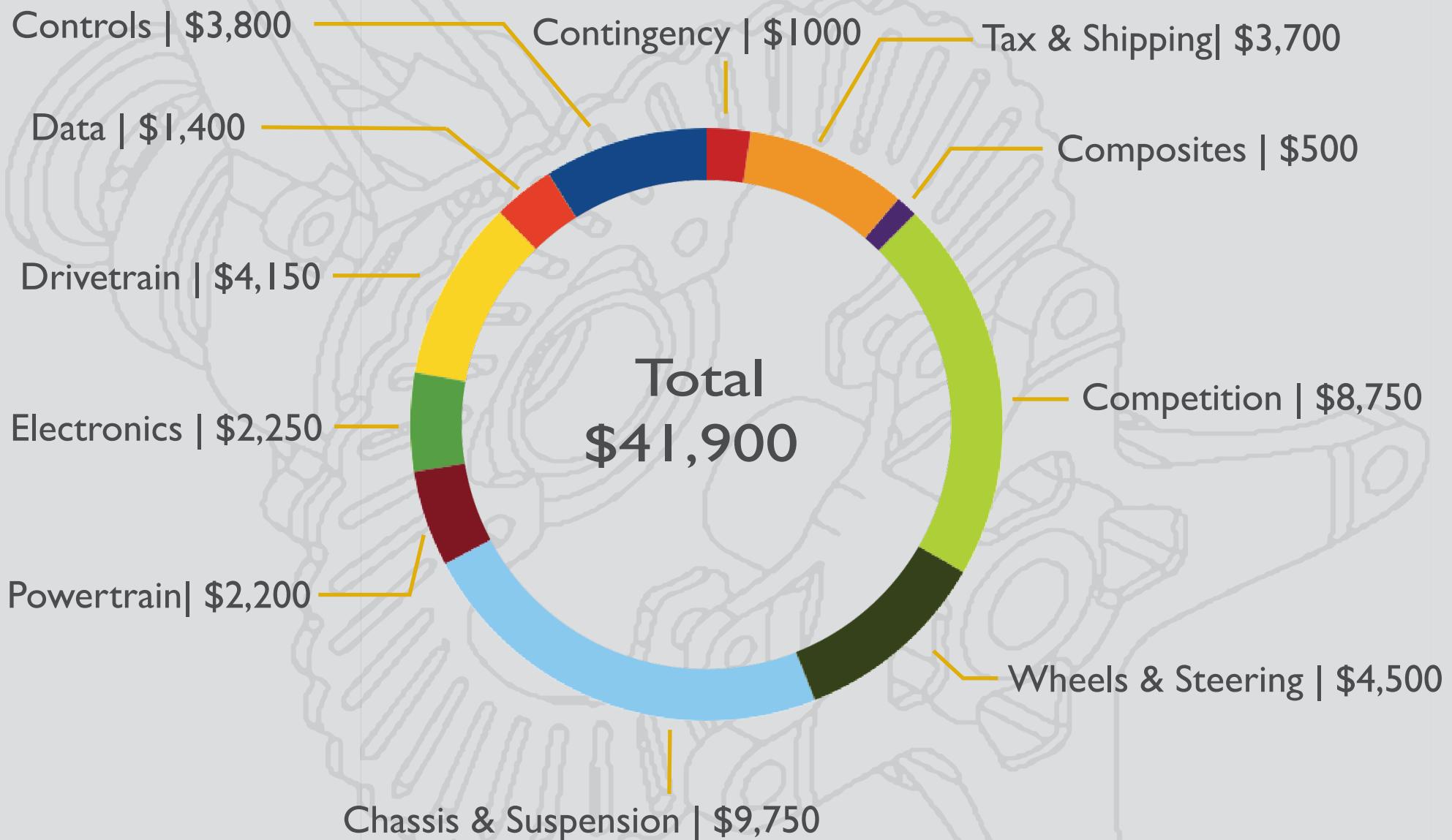
## Controls

Custom Pedal Box Assembly

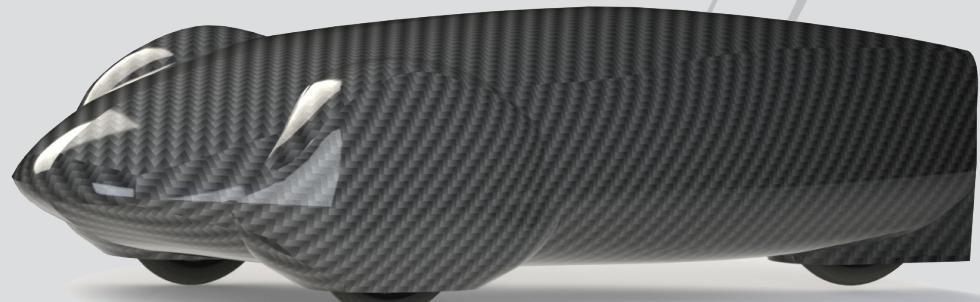
Rekluse Z-Start Pro Clutch Kit

On-Board DAQ

# Formula Budget 2016-2017



# SuperMileage 2016



## Structure

21 lb gross weight carbon fiber monocoque

Teardrop aerodynamic shape

Drag coefficient: 0.11

Total length: 8.5 feet

Total weight: 95 lbs

## Drivetrain

Dual engine compatibility: (1) & (2)

(1) 50cc Honda GXH50 2.1HP

(2) Custom 53cc Briggs & Stratton Junior 206

Gear ratio: 1:10.7

In-house built EFI system

## Steering and wheels

20" BMX wheels

Michelin prototype tires

Ceramic bearings

Ackermann steering system

## Electric Vehicle

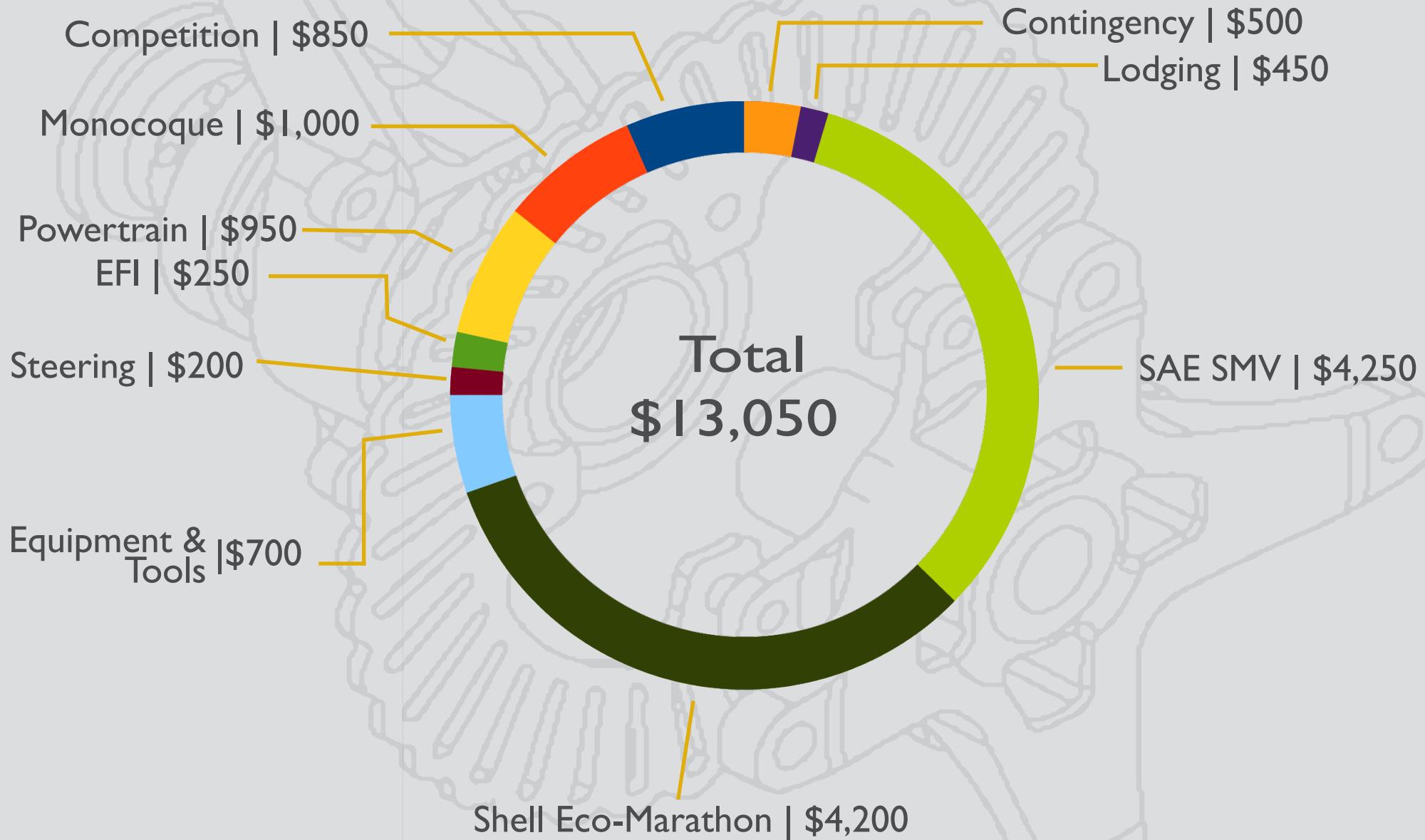
500W rear geared hub motor

48V Li-Ion battery

Custom BLDC motor controller

Integrated BMS

# SuperMileage Budget 2016-2017



# Hyperloop Model II

## Magnetic Levitation

10 Halbach Arrays

13 x  $\frac{1}{2}$ " Magnets (1.48T)

3mm Clearance from Subtrack

Initiates Levitation at 10m/s

## Braking

Non-Contact Magnetic

Actively Disengaged

8 Halbach Arrays

9 x  $\frac{1}{2}$ " Magnets (1.48T)

Breaking Force: 4464N

## Aerodynamics

Drag Coefficient: 0.00799

Aerodynamic Drag at Cruise: 109.2N

## Propulsion

4 x 120mm Fans

Powered by 6500W AC Motors

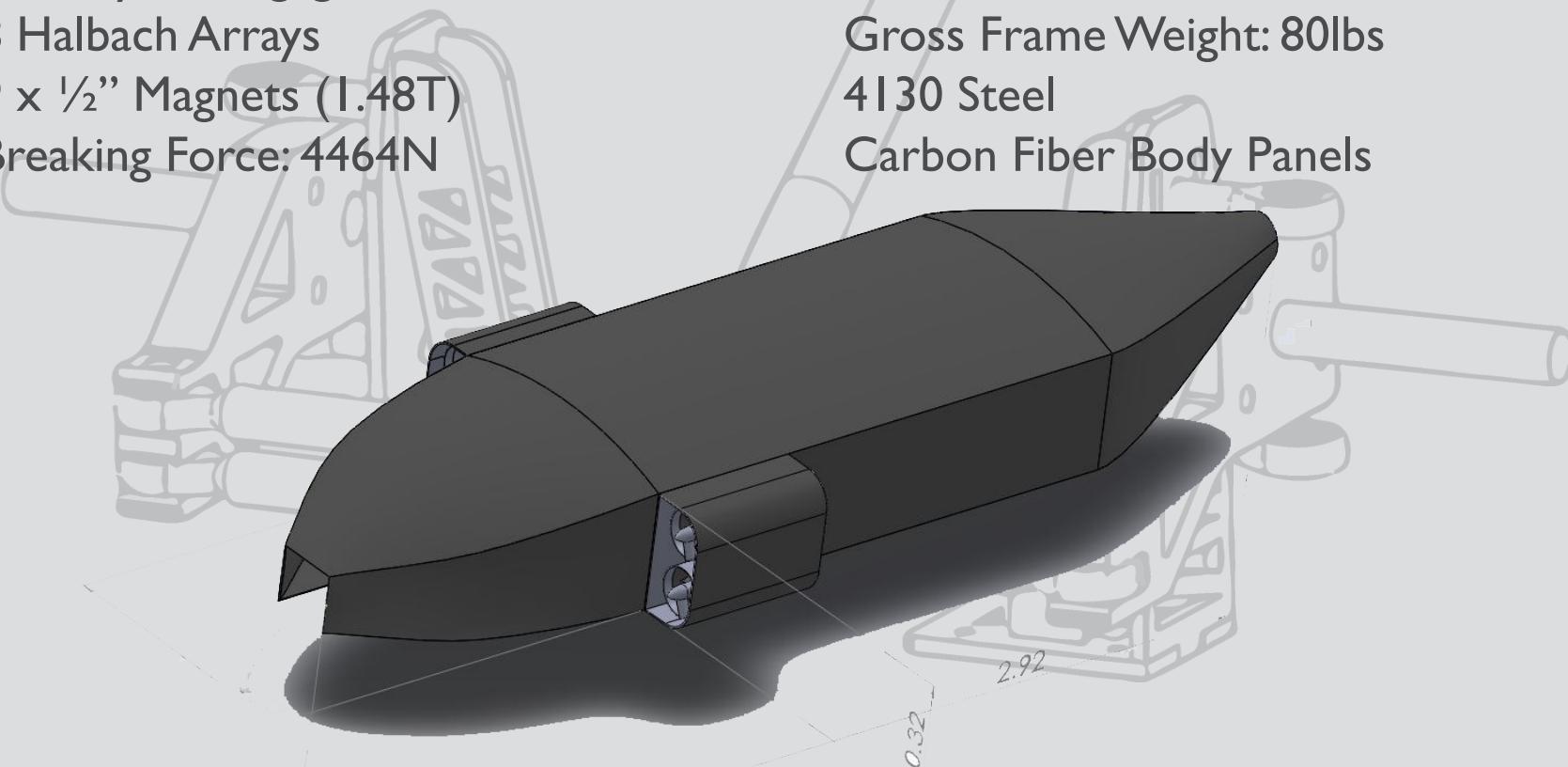
Thrust: 292N

## Chassis

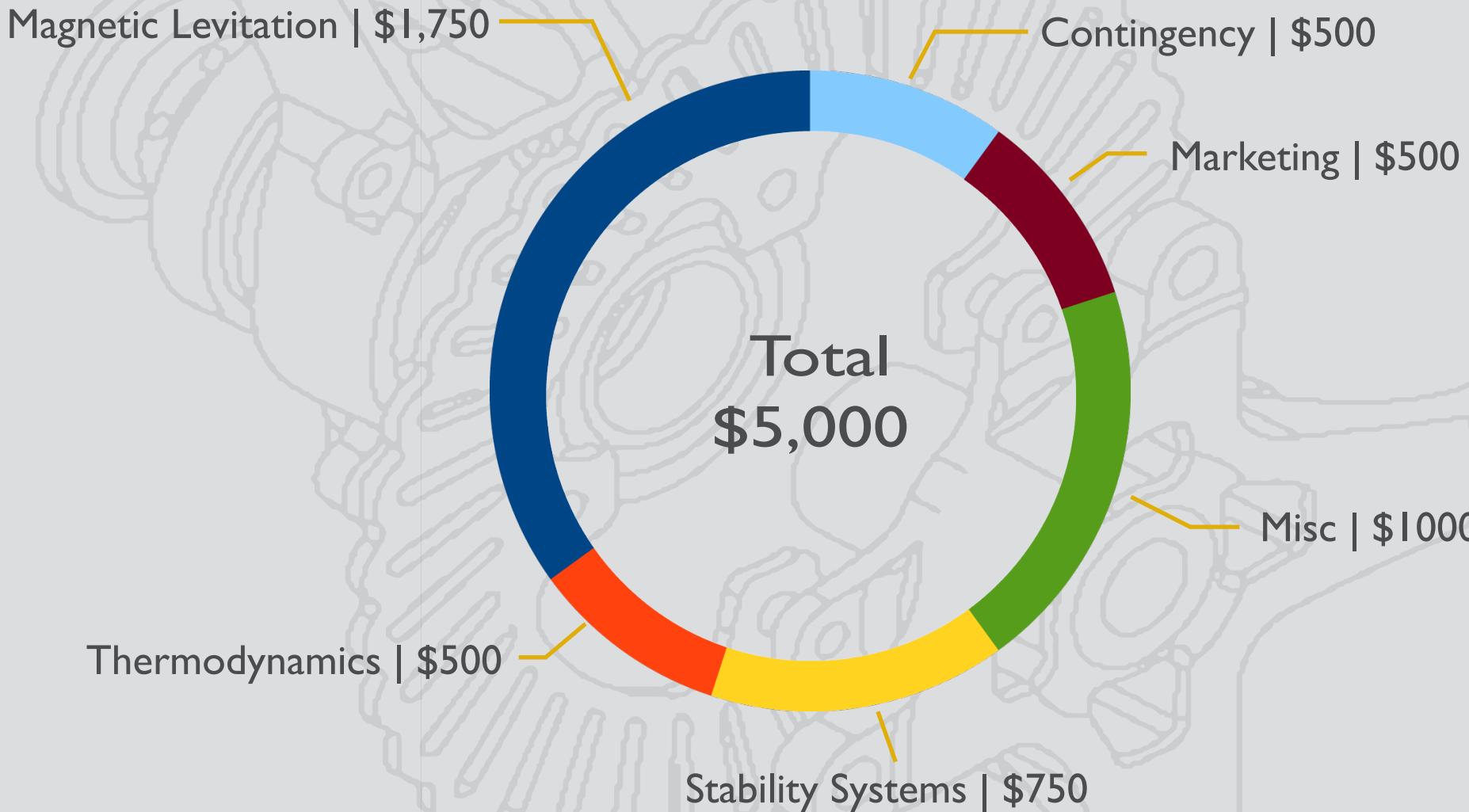
Gross Frame Weight: 80lbs

4130 Steel

Carbon Fiber Body Panels



# Hyperloop Budget 2016-2017



# Our Sponsorship Plans

**Platinum** | \$10,000 and up

Decal on team trailer, appreciation pack, and all other benefits

**Gold** | \$7,500 to \$9,999

Logo on team banner, photo opportunity with race vehicle(s),  
all benefits below

**Silver** | \$5,000 to \$7,499

Info Session with Bruin Racing, resume book upon request, all  
benefits below

**Bronze** | \$2,500 to \$4,999

Decal on race vehicle(s), team photograph, all benefits below

**Carbon** | \$1,000 to \$2,499

Recognition on website, all benefits below

**Friends & Family** | up to \$999

Invitation to annual Bruin Racing Dinner, personal networking  
with members, t-shirt.

We also accept sponsorship through manufacturing,  
tooling, composites, complex components, etc.

# Goals & Growth

Bruin Racing is always looking towards the future. We aim not only to improve our competition results and the performance of our cars, but to relentlessly advance our members' experiences, technical ability and post-graduate networking possibilities.

With 99% of our graduating members proceeding on after our club to work in their field or continue their study's in a post graduate degree, our members' success is of utmost importance to our organization. To ensure our members' unremitting post-Bruin Racing success, close relationships with our sponsors is key. After becoming an official Bruin Racing sponsor, expect regular contact from our team as we update you and your organization with our progress, successes and opportunities!

Outside of competitions and members, Bruin Racing also aims to grow our club's opportunity for success, primarily focusing on expanding our financial horizon. While financially one of the largest clubs on UCLA's campus, we still run into budgeting constraints. Our cars and associated expenditures are only increasing as our club increases in size and grows in ability.

We hope that our sponsors can help Bruin Racing achieve and exceed our financial goals.

# Contact Us!

## Visit Us in Person!

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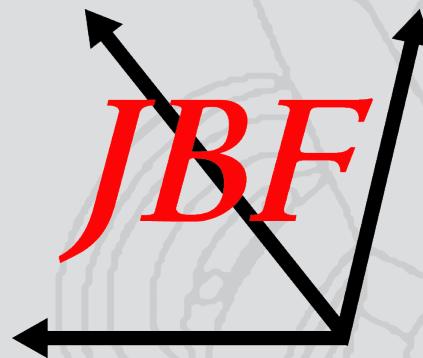


[www.facebook.com/bruinracing](http://www.facebook.com/bruinracing)



[www.instagram.com/bruinracing](http://www.instagram.com/bruinracing)

# Thanks to our Sponsors!



***NORTHROP GRUMMAN***

**Raytheon**

**SPACEX**



Associated Students **UCLA**

*It all comes back to you!*

**UCLA** Engineering

Mechanical and Aerospace Engineering Department

**UCLA** ENGINEERING  
Henry Samueli School of  
Engineering and Applied Science  
*Birthplace of the Internet*

