

# BAJA SAE

CALIFORNIA STATE UNIVERSITY, LOS ANGELES



2020  
SEASON

# CAL STATE LA BAJA SAE

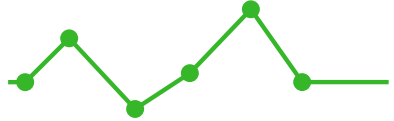
Rugged Eagle Motorsports is a 40-year-old student-run organization made up of mechanical, electrical, and computer engineers from diverse backgrounds. Each year, our team designs and builds a new vehicle from scratch, then travels to compete against hundreds of universities with the help and mentoring of staff, alumni, and sponsors. Not only do we compete at a high level of excellence, but we gain hands on experiences and skills that propel us into the Engineering and Science fields.



**Our mission** for the team is to have our members gain knowledge of automotive design and building, business avenues, engineering experience, and exposure to working on a multi-disciplinary competition team. Most importantly, we aim to have fun while making lasting relationships with our teammates and support network. With the knowledge and relationships built through this team, we hope to become leaders in creative innovation.

# SPONSORSHIP

*How you benefit!*



- Year-long social media exposure for your business on our Instagram with 1,000+ followers
- Showcasing your banners in our lab, SoCal Car Expos, and SAE events
- Advertising your logo on our Baja vehicle for thousands of spectators, college institutions, and students
- Provided tax-exemption forms
- A chance to inspire and contribute to a team of tenacious and passionate future innovators!



*2019 car at CSULA City of Orgs*



*2018 car at Long Beach Grand Prix*

# COMPETITION

## ▶ DAY 1

**Engine Check Day:**  
*Briggs & Stratton  
inspection and  
sales presentation*



## ▶ DAY 2

**Static Day:**  
*technical inspection, brake  
check, and design  
presentations*



## ▶ DAY 3

**Dynamic Day:**  
*acceleration,  
maneuverability,  
suspension & traction or  
rock crawl, hill climb*



## ▶ DAY 4

**Endurance Day:**  
*four-hour race with up to  
one hundred vehicles on  
the track at once*



Baja is an off-road racing competition held annually in west, midwest, and east regions of the U.S. It was founded by the Society of Automotive Engineers (SAE) with the purpose of inspiring the next generation of engineers. The competition consists of designing, planning, and manufacturing, which is applicable for engineering industries to produce new commercial products. Baja SAE judges rank the cars based on the four day events.

# DONATE TODAY!

Your contribution would greatly alleviate the financial burden and allow us to focus on the mechanical designs of competition, ultimately helping our team run more efficiently!

**\$100+**

*enables us to obtain...*

Brake/Electrical components  
Nuts and bolts

Test weekend  
Engine  
Tools

**\$1,000+**

Drivetrain components (CVT, gearbox)  
(1) Competition registration  
Trailer refurbishment

**\$2,000+**

Aluminum/Composite/Steel materials  
Power equipment (air compressor, generator, plasma cutter, welder)

Suspension  
and shocks

**\$3,000+**

Lab machines upgrade (lathes and milling machines, vertical and horizontal band saw, sander/grinder)  
(1) Baja SAE competition (housing, travel, and food)

# MEET LUIS

2017-18 Captain, Cal State LA  
Alumni (3.5 years in Baja),  
currently an Electronic Hardware  
Integration - Design Engineer,  
MANAGEMENT & SYSTEM  
TEAMS at **Cummins INC**



**What kind of opportunities, knowledge, or experience has Baja opened up for you?**

"I can honestly say that if it wasn't for Baja **I would not have the great position I have here at Cummins...** I was able to **jump into work a lot sooner than most of my coworkers** due to being familiar with the engineering process."

**What valuable skills did Baja teach you that has carried over beyond graduation?**

"I could answer that the machining skills, CAD skills... [From Baja I had] the ability to be a part and **manage a team of different backgrounds and mentalities...** the stages you go through [in Baja] **roll over**. Only difference now is that there is a customer at the end of the cycle.... and a paycheck."

**Would you recommend other students to join Baja, why?**

The best advice I can give... is that [Baja] is not an easy project... But **the doors that opened with this project is well worth it**. So [it] does not matter if you are a freshman or a senior, **this program will help you if you are dedicated.**"



# MEET SERGIO

2018-19 Drivetrain Lead, (1 year  
in Baja)



**What does Baja provide for you that a typical class in your major doesn't?**

"Up to this point in my studies **I have not had a class that has gone in depth as to the manufacturability of the designs we create.** Some of our designs are CNC'd, 3D Printed, or machined on a mill or a lathe... **Without Baja I would not have that type of experience.**"

**What kind of hands-on experience are you getting in the club?**

"Manufacturing is the **most hands-on experience that I am getting** in [Baja]. Using mills and lathes become the norm in the club. This coming year I will be **learning and using a 3-Axis CNC machine** to manufacture our drivetrain gearbox case."

**Do you think joining Baja was worth it? why?**

"Absolutely, when I graduate, **I will leave with an advantage compared to other students who have not joined the club.** I can offer to an employer the skills that do not come with typical engineering class curriculum. The hands-on experience that I am getting in the club will be the edge I have... **I am grateful to the Baja Club for the wealth of knowledge that it has provided me.**"



# MEET KRYSTAL

2018-19 Software Lead, (3 years  
in Baja)



What kind of opportunities has Baja opened you up to that you would not have received elsewhere?

"Baja is an **interdisciplinary club**, so I had the opportunity to **learn mechanical and electrical engineering skills**, as well as manufacturing, which **my curriculum would never have exposed me to**. I was required to produce competition level designs and results in my projects and work with a team"

Do you feel well-prepared and confident to obtain a full-time job post grad in a job you majored in?

My field of computer science usually expects students to go into software development, however **I was able to develop skills for a physical computing and robotics** job, which I feel better prepared for.

How has Baja impacted your time at CSULA and what kind of relationships or networks did you build here?

At school I have a **network of alumni** that I met through Baja, and I was able to have **more interactions with professors and advisors** that I would not have a reason to otherwise.



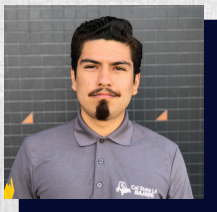
# MEET *the* TEAM



**Juan Cortes**  
Captain, Front Suspension  
Lead



**Reggie Lau**  
Co-Captain, Treasurer, Rear  
Suspension Lead



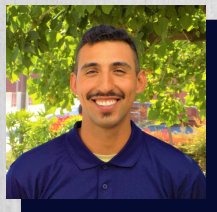
**Rafael Bitro**  
Ergonomics Lead



**Javier Martinez**  
Brake Lead



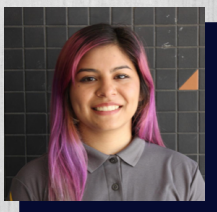
**Sergio Perez**  
Drivetrain Lead



**Raymond Farias**  
Frame Lead



**Ronald Carranza**  
Electrical Lead



**Krystal Bernal**  
Software Lead



**John Christopher Bachman**  
Faculty Advisor  
[john.bachman@calstatela.edu](mailto:john.bachman@calstatela.edu)



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