

FEBRUARY 2023 ISSUE



# ***UP 2 SPEED***

THE OFFICIAL NEWSLETTER OF SJSU  
SPARTAN RACING



# Table of Contents

- 1: Meet the Team
- 2: Holley High Voltage
- 3: Tesla Factory Tour
- 4: Subteam Updates
- 5: Powertrain Updates
- 6: Electronics Updates
- 7: Chassis Updates
- 8: Aerodynamics Updates
- 9: Suspension Updates
- 10: Our Sponsors



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# Meet the Team



**Ashwin Viswesveran**  
Chief Engineer



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Suspension Lead



**Aaron Hylton**  
Treasurer  
Business Lead



**Kanishk Varun**  
Aerodynamics Lead



**Alyssa Froelich**  
President



**Rahul Shetty**  
Chassis Lead



**Clarence Choi**  
Media Coordinator



**Gabriella Khanitsky**  
Strategy & Vehicle Dynamics L



**Kai Rehbinder**  
Project Manager



**Damion Chau**  
Electronics Lead



**Shinika Balasundar**  
Safety Officer  
Software Lead



**Esaud Vargas**  
Project Manager

# Holley High Voltage



Holley High Voltage Experience is a two-day celebration of EV technology that takes place every year at Sonoma Raceway in Sonoma, California. Spartan Racing took the opportunity to showcase SRE-6 in both autocross and drag race events.



Randy Pobst checking out the car

The focus of the event is a showcase of everything EV from home built conversions of classic cars, the latest and greatest from major manufacturers, and of course electric FSAE teams showing off their EV race cars.

Spartan Racing met up with UC Berkeley and Cal Poly's FSAE teams, showing off previous year's cars and developments.



# Tesla Factory Tour



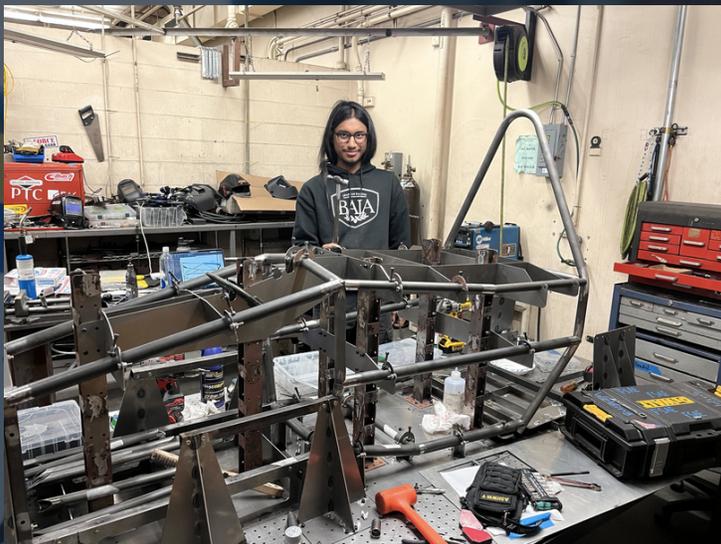
Members of Spartan Racing were given an opportunity to visit and take a tour of Tesla's assembly plant in Fremont and to get an in depth look into how their cars get manufactured on the assembly line. We would like to thank Tesla for the opportunity to see the factory in person and see how they operate.



# Subteam Updates



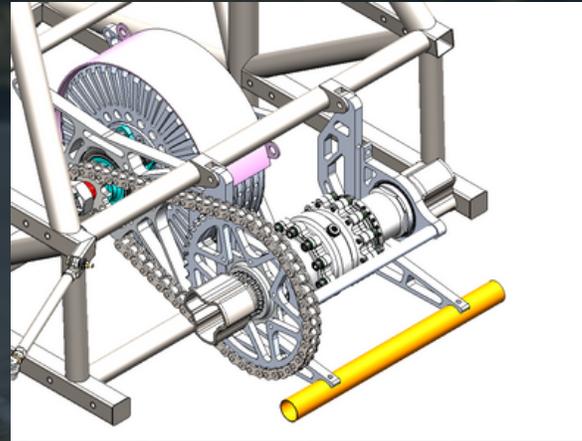
Our subteams are hard at work putting together SR-14. This season, Spartan Racing and SRE have been merged into a single team to create one cohesive Spartan Racing team solely focused on a single electric race car.



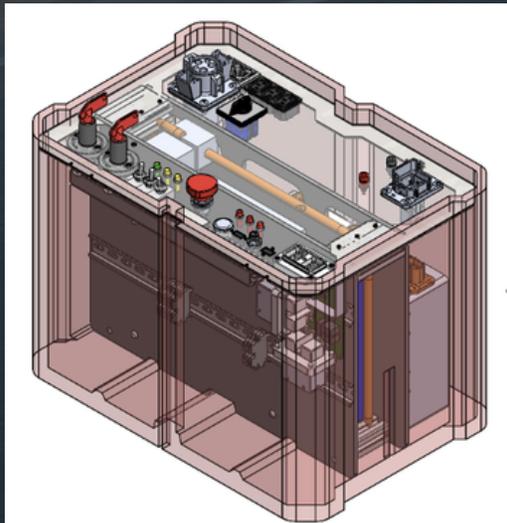
# Powertrain



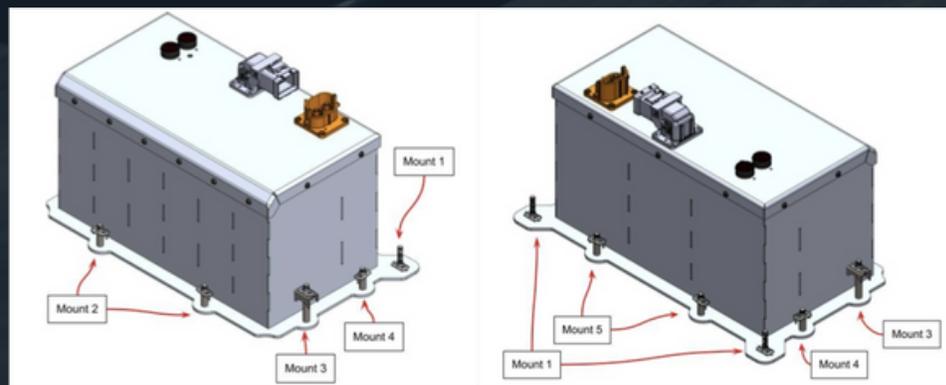
In order to create a successful and reliable EV race car, the final drive team has been hard at work creating a completely drivetrain system to better address the tractive force needed for a fully electric race car from the Emrax 228 motor. This season's final drive system should be a great leap forward in regards to reliability and ease of maintenance.



The subteam is currently in the process of working on the manufacturing of the powertrain assembly, testing performance cells, and making sure all lithium components are stored properly.



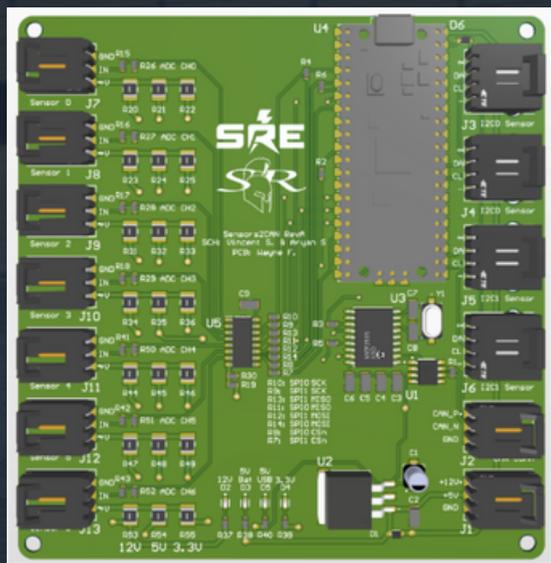
Work is currently going towards testing cells, putting together the cooling and charging systems, and putting work into the design and manufacturing of the accumulator.



# Electronics

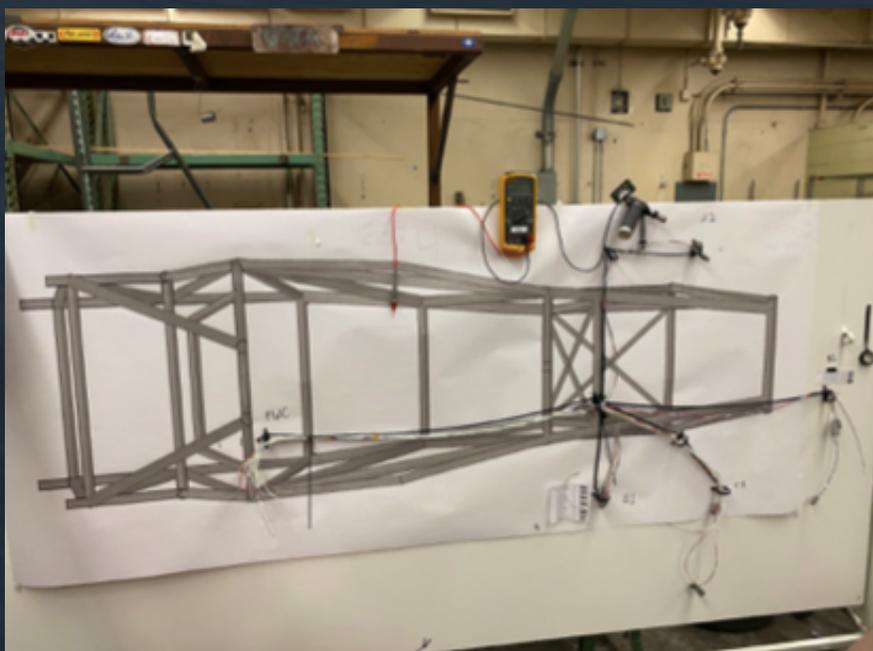


Electronics is now utilizing multiple controller area network (CAN) lines for sensors in the car. This opens up a multitude of possibilities for testing, development, and ease of operation of the car. A new gauge cluster was designed to better convey necessary information for the development of SR-14.



Electronics has been hard at work, testing out a variety of PCBs, finalizing the CAN system, creating the wiring harness for the car.

Furthermore, the team is putting plenty of work into wiring the steering wheel, working on a telemetry system, and creating a working dashboard user interface for the car.

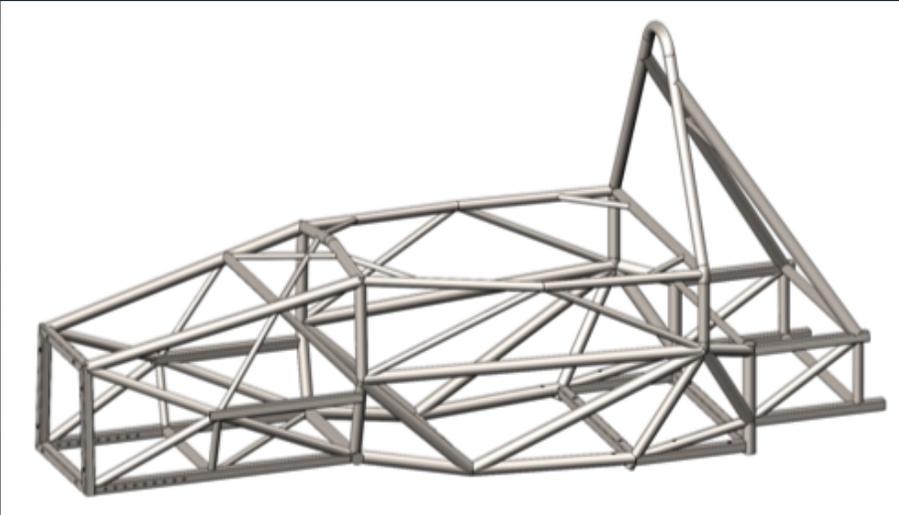


# Chassis



This season features a new, redesigned chassis with an improved front end for SR-14.

The chassis is currently being welded and put together. Chassis has been working day and night welding away and rigging the car.



Speed is always the need, and along with the new Aero package (see next page), the chassis for SR-14 is significantly lighter and looks to improve upon SR-13's overall design to create a race car that is faster and easier to drive.

Along with the decrease in weight, the new design also features a improved airflow to the rear wing, and adjustments to the rear end to better fit the final drive system and cockpit.

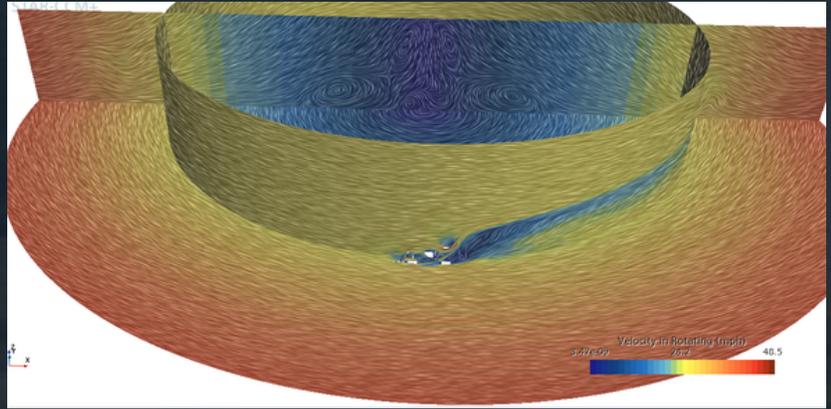


# Aerodynamics

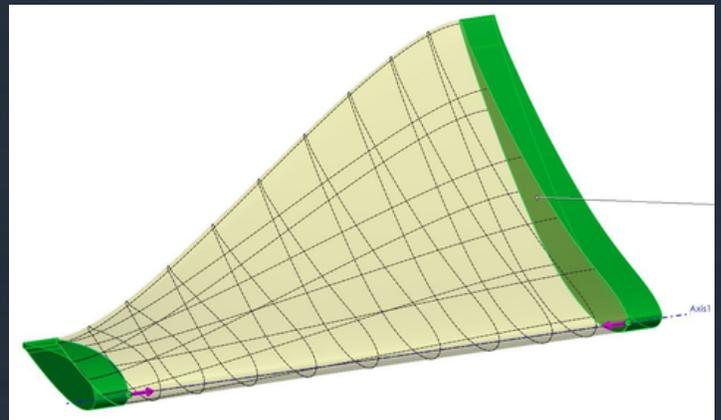


A complete overhaul of last season's aero system is being designed for the 2023 season. Coinciding with the redesigned chassis, this season's aero package will both be lighter and create more downforce than SR-13.

Computational Fluid Dynamic testing was conducted in late 2022 to examine the best course of action to the design and creation of the new Aerodynamics system.



Aero has been knee-deep in creating composites out of epoxy for SR-14. This will be the most advanced aero package the team has created, so ensuring everything is perfected is top priority.

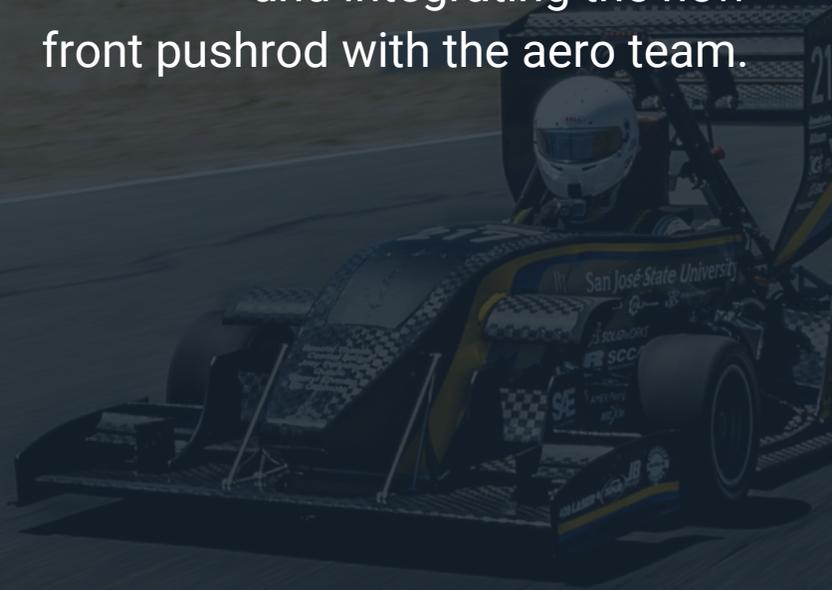
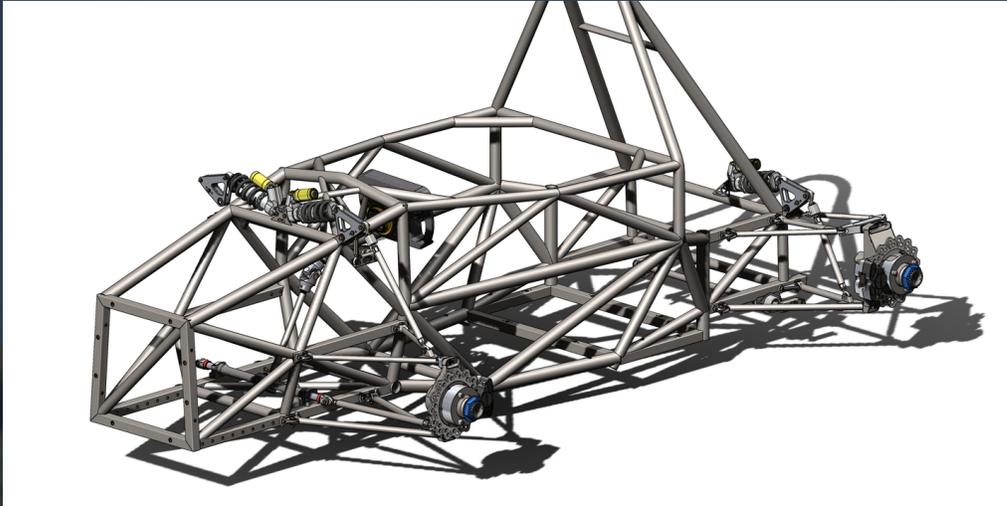


# Suspension



Designs for suspension have been finalized, and the team is currently working on welding and assembling parts in preparation for building SR-14. Custom parts have been ordered to be machined and work is starting to begin.

The new designs for this season are most focused on making the car faster and easier to drive. Big goals of this season are reducing unsprung mass, reducing steering effort needed to turn, and integrating the new front pushrod with the aero team.



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