

# SPONSORSHIP HANDBOOK



**ZIPS RACING**  
**ELECTRIC**  
**2022-2023**

# WHO ARE WE?



Zips Racing Electric is comprised of around 30 undergraduate students from a variety of different majors. We work together to design, build, and compete with a formula-style electric car in competitions against other university teams hosted by the Society of Automotive Engineers. Many members contribute an immense amount of time to the team, contributing personal and in-class knowledge to the car, all while developing valuable skills to help the students excel in their future careers.

# What is FORMULA SAE?

Zips Racing Electric is a team of dedicated and enthusiastic students from the University of Akron that design, build, and race a Formula-style electric race car.

The  
University  
of Akron



We compete in the Formula SAE Design Competition, hosted by the Society of Automotive Engineers (SAE). The competition gives young engineers an opportunity to practice and demonstrate their engineering ability, giving them the tools and insights to launch successful careers in engineering industries.

Every aspect of our team, from leadership, project management, outreach, design, manufacturing, and racing the car is 100% done by undergraduate students in their free time.



# OUR HISTORY

2019



**ZER19/Veronica**

## **FORMULA SAE MICHIGAN**

5th overall / 30

Fuel Efficiency: 2nd

Acceleration: 4th

## **FORMULA NORTH**

6th overall / 21

Skidpad: 3rd

2021



**ZR21E/Karen**

## **FORMULA SAE MICHIGAN**

3rd overall / 6

Acceleration: 2nd

Autocross: 2nd

Endurance: 3rd

Skidpad: 2nd

Although our first competition was only a few years ago in 2019, Zips Racing Electric has had huge success. The team continues to get better and better with each design, and we hope that we can continue to become even stronger in the years to come.

# OUR DESIGN PROCESS



## Research Phase

- An investigation into past designs and current data in order to get a basic understanding of the task at hand.

## Documentation Phase

- A compilation of knowledge learned during research, rules requirements, and design standards.

## Design Phase

- Drafting, selecting materials, optimizing, and CAD modeling of the design. Using software to analyze data on efficiency and safety.

## Design Review

- Reviewing knowledge learned in research and documentation phases. Collaborating with other team members to create a well-integrated product.

## Manufacturing and Testing

- Machining, assembling, and driver testing. Data analytics to inform new designs.

# '22 CAR SPECS

**ZR22E/Eileen**



**Power:** 107 hp, 170 ft-lbs

**Weight:** 450 lbs w/o driver

**Top Speed:** 85 mph

**Motor:** Emrax Liquid-cooled axial flux PMSM

**Battery Pack:** 378 V, 8 kWh, 100 lbs

**Chassis:** TIG-welded steel tube-frame

**Suspension:** Double A-arm, Pull-rod Dampers

**Tires:** Goodyear DS2704 Slicks, DS2703 Wets

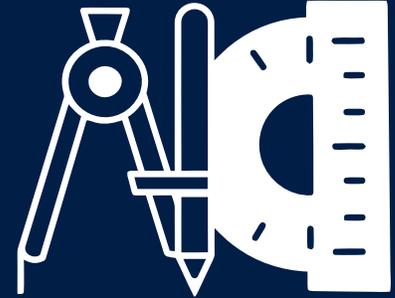
**Electronics:** 13 Custom PCBs, in-house ECU and Battery Management System



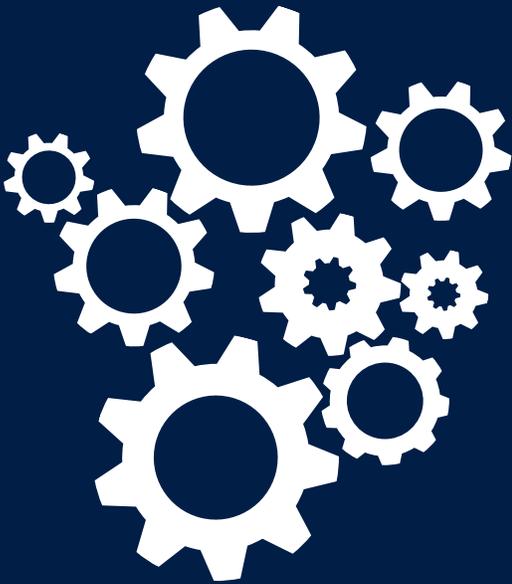
# FUTURE PLANS

Our team is always working to improve our designs and safety standards. Here are some of our goals for this

season:



- Increase reliability and testing efficiency with a new Vehicle Dynamics sub-team
- Manufacture and implement a full aero package designed by our aerodynamics and composites sub-teams
- Leverage the use of 3D metal printing and composites in optimizing suspension performance
- Take a novel approach to debugging through the use of a new dashboard interface
- Increase reliability with new wiring harness manufacturing techniques and re-worked electronics
- Use VR and driver sims to ensure good ergonomics and drivability



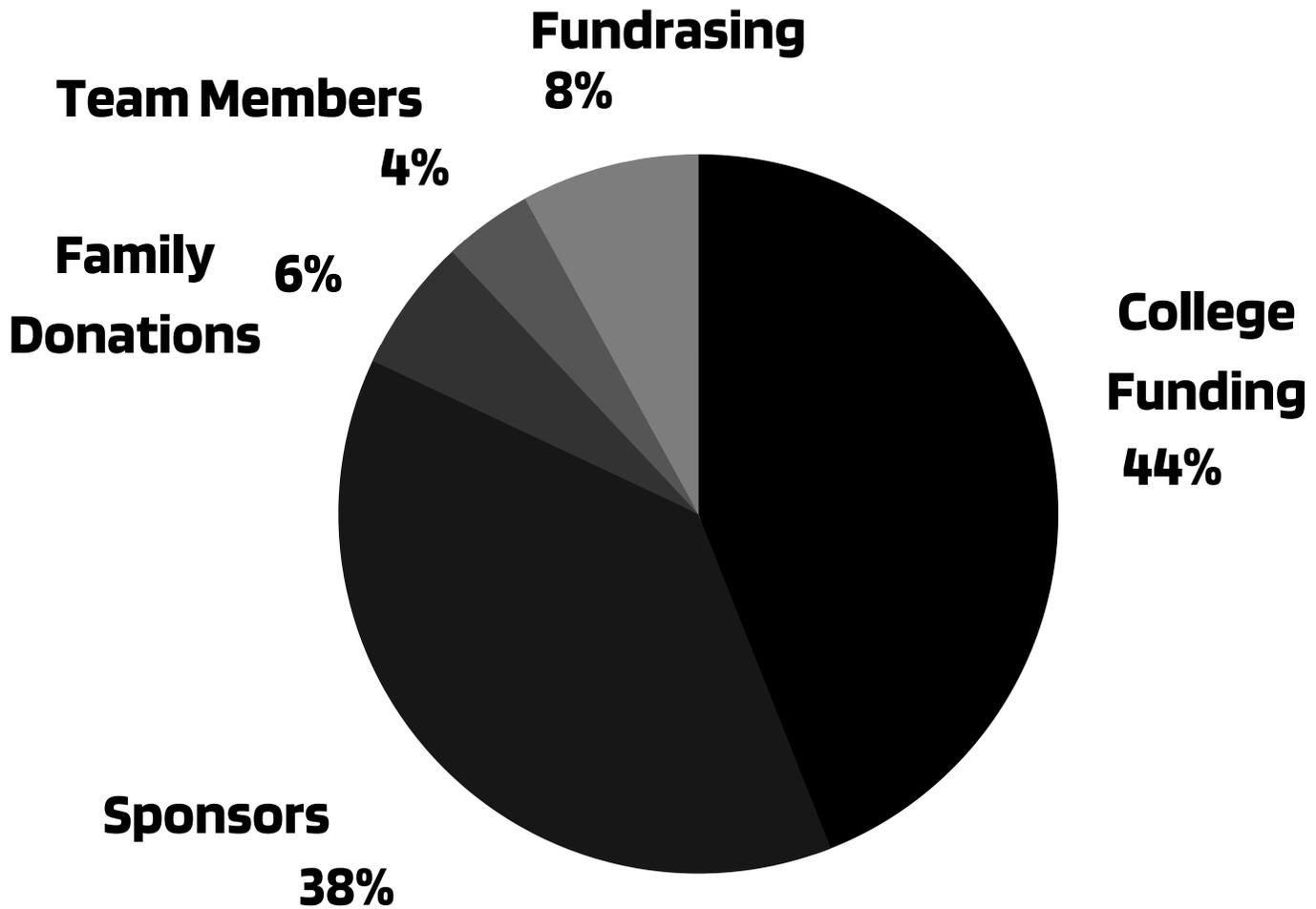
# STUDENT LEARNING

Students on the design team are the engineers of the future. We foster a competitive learning environment that not only helps students learn more about engineering and design, but also build soft skills that will be beneficial to them for their entire lives. Students work to develop their professionalism, project management, team work, budgeting, marketing, time management, and so much more.





# OUR BUDGET

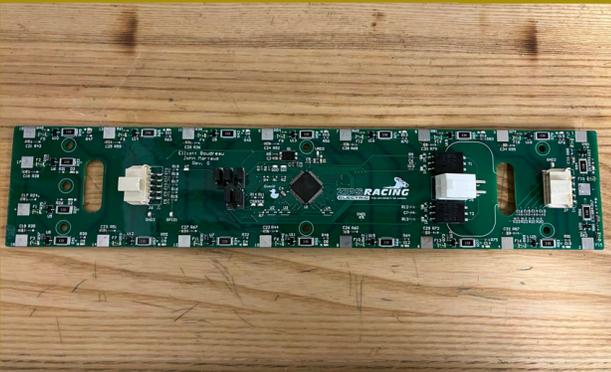


Our sponsors are extremely important to our development as a team. The support we receive from our community makes up a significant portion of our budget.

Without it, we would never be able to be a competitive design team, and students wouldn't be able to have the quality learning experiences that come with the competition.

# TYPES OF SPONSORSHIP

We understand that not every sponsor is the same. There are many different ways that you can sponsor us. In the past, we've had companies provide access to their software, donate their products, perform quality machining, or give discounts on their products, materials, or services. We are thankful for any contribution that our sponsors can make to our team!



# SPONSOR BENEFITS

**BRONZE**  
**(<\$500)**

**SILVER**  
**(\$500+)**

**GOLD**  
**(\$3500+)**

**PLATINUM**  
**(\$5000+)**

**Thank you package**



**Logo and link on our website and t-shirt**



**Logo on car**

SMALL

MEDIUM

LARGE

TITLE  
Location

**Access to team resumes**



**Invitation to tour privately and meet the team**



**Logo on pit cart**

SMALL

LARGE

In addition to the benefits on the previous page, sponsors have the opportunity of working directly with future engineers. Sponsors are able to meet the team during public shop tours and at our official **Sponsor Day on October 22nd**. Any of our team's designs are also able to be used for branding purposes.



Follow us on our social media pages!

Sponsors will be featured here:



[zipsracing.org](http://zipsracing.org)



[@zipselectricracing](https://www.instagram.com/zipselectricracing)



[@ZipsElectric](https://twitter.com/ZipsElectric)

# HOW TO SPONSOR

**For more information about sponsoring, feel free to reach out to our team using the contact information below.**

**Email:** [evracing@uakron.edu](mailto:evracing@uakron.edu)

**Location:** The University of Akron's Student Design Center, Auburn Science and Engineering Center, Room 108

**Website:** [zipsracing.org](http://zipsracing.org)

Team Captain: Dylan Matthews

Co-Captain: Brian Glen





# THANK YOU TO OUR 2022 SPONSORS!

