

**2023-2024**

# **SPONSOR HANDBOOK**



**ZIPS RACING**  
**ELECTRIC**



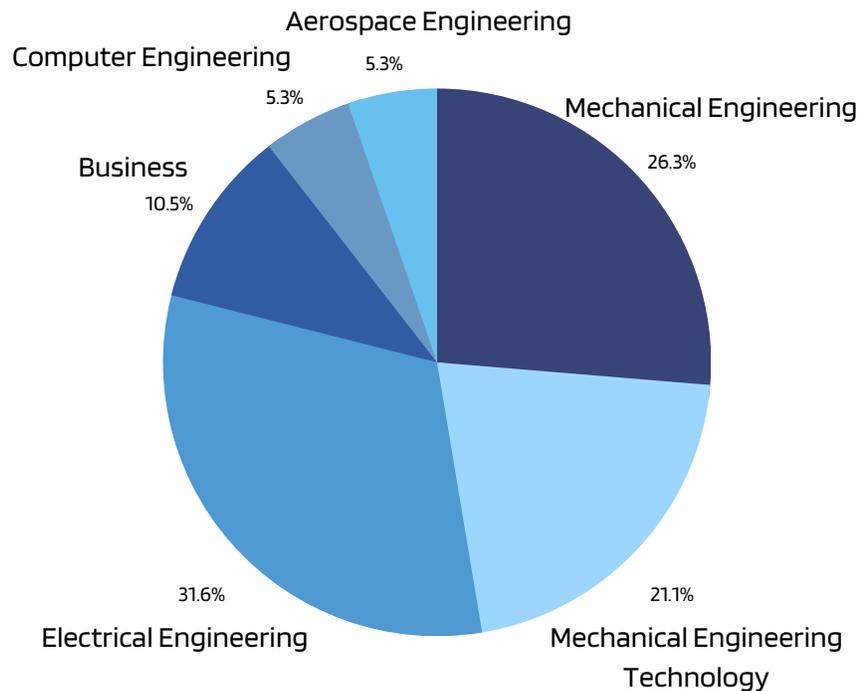
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# WHO ARE WE?

Zips Racing Electric is a dedicated group of around 20 undergraduate students, who work to produce a formula-style electric car. Every year, we design, manufacture, and race our newest car and compete against more than 60 universities at the June FSAE event at Michigan International Speedway. 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 students excel in their future careers.

## OUR MAJORS



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.



# FSAE AND OUR HISTORY

1981



First Formula SAE competition is held in Austin, TX. The competition featured road racing with only four combustion cars competing.

2013

32 years later, FSAE develops its first electric car competition. With six teams competing, the Michigan event is the start of a legacy of electric student teams in the United States.

2018

Zips Electric Racing as we know it is established in 2018 as the sister team to the university's combustion car. This is where our team's journey begins.



2019



Our first official car, ZER19 Veronica debuts at the FSAE North competition, placing 5th of 30 teams, and 6th of 21 at FSAE Michigan.

2020

COVID-19 brings our 2020 season to an end before competition. The team rebrands to Zips Racing Electric.



2021



Leading the charge out of the pandemic, our '21 car, ZRE21 Karen, places 3rd overall at FSAE Michigan, placing top 3 or better in all dynamic events.

2022

After facing supply chain issues, our 2022 car, ZRE22 Eileen, and competes at Pitt Shootout. It was a huge improvement, and was our most powerful car at the time.



ZRE continues to rebuild after a fall in participation and budget cuts due to the pandemic. We began a two-year design cycle in 2023. After just one year, ZRE24's design is already the lightest car at competition. The team plans to reevaluate design choices and become even lighter and faster before hopefully sweeping the competition at FSAE Michigan in 2024.

# ZRE24 CHRISTINE



**WEIGHT:** 387 lbs (175 kg) without driver

**POWER:** 170 ft-lbs (230 Nm), 107 hp

**TOP SPEED:** ~80 mph

**MOTOR:** Emrax 228 Medium Voltage

**BATTERY PACK:** 378V, 8 kWh, 108 lbs (49 kg)

**CHASSIS:** 4130 Chromoly Space Frame

**SUSPENSION:** Front pull-rod, rear push-rod

**ELECTRONICS:** Custom PCBs, BMS, and ECU

**AERO:** First full package in design

# OUR GOALS

## FOR ZRE24:

Aim to place top 5 overall, with main focus on dynamic events and design.

Achieve the status as the lightest car at FSAE Michigan.

Continue data collection and validation of current systems for continuous improvement.

## IN THE FOLLOWING YEARS:

By the end of this year, increase participation to fully develop a business and cost team.

Implement hub motors with torque vectoring within the next 2 years

Continue to increase competitiveness and expand to European competitions within the next 3 years.



# OUR DESIGN PROCESS



**DESIGN**

**BUILD**

**COMPETE**



A lot of time and effort is dedicated before the first CAD model is made. We work with different resources to get a good conceptual understanding before moving to modeling and simulation analyses.

Each subsystem must pass three design reviews before moving onto manufacturing. Each review covers system requirements, preliminary design, and critical design respectively.

At manufacturing review, we communicate with university faculty and sponsors to create parts that match manufacturer capabilities. All parts are easily machinable, require minimal time, and are cost-effective, benefiting both the team and the machinist.

A lot of our manufacturing is done in house by our manufacturing subsystem. We have several students that have passed training to operate manual mill, lathe, and CNC, and are able to do custom PCB assembly. However, due to the precision requirements in our manufacturing process, we still outsource some tasks.

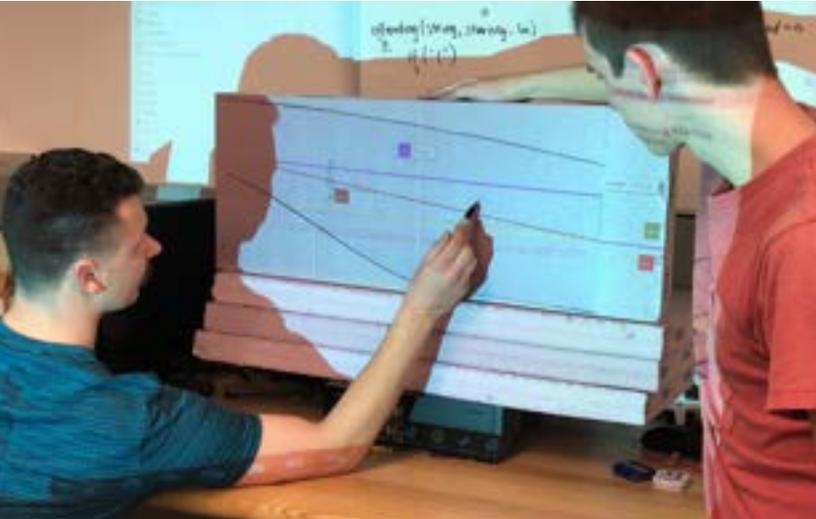
Ensuring that the car is functioning properly and safely is essential. A lot of our time is spent performing data collection to analyze our strengths and look for ways to improve our vehicle's performance and safety standards.

Finally, we take our car to events across the country. Our main events include the June FSAE Michigan event and the Toronto shootout. But, we also leave plenty of time to share our abilities and love for racing within our community as well. Car shows, STEM design showcases, and our annual sponsor and family event are some of the most important and fun days of the year for our team.





# THE STUDENT EXPERIENCE

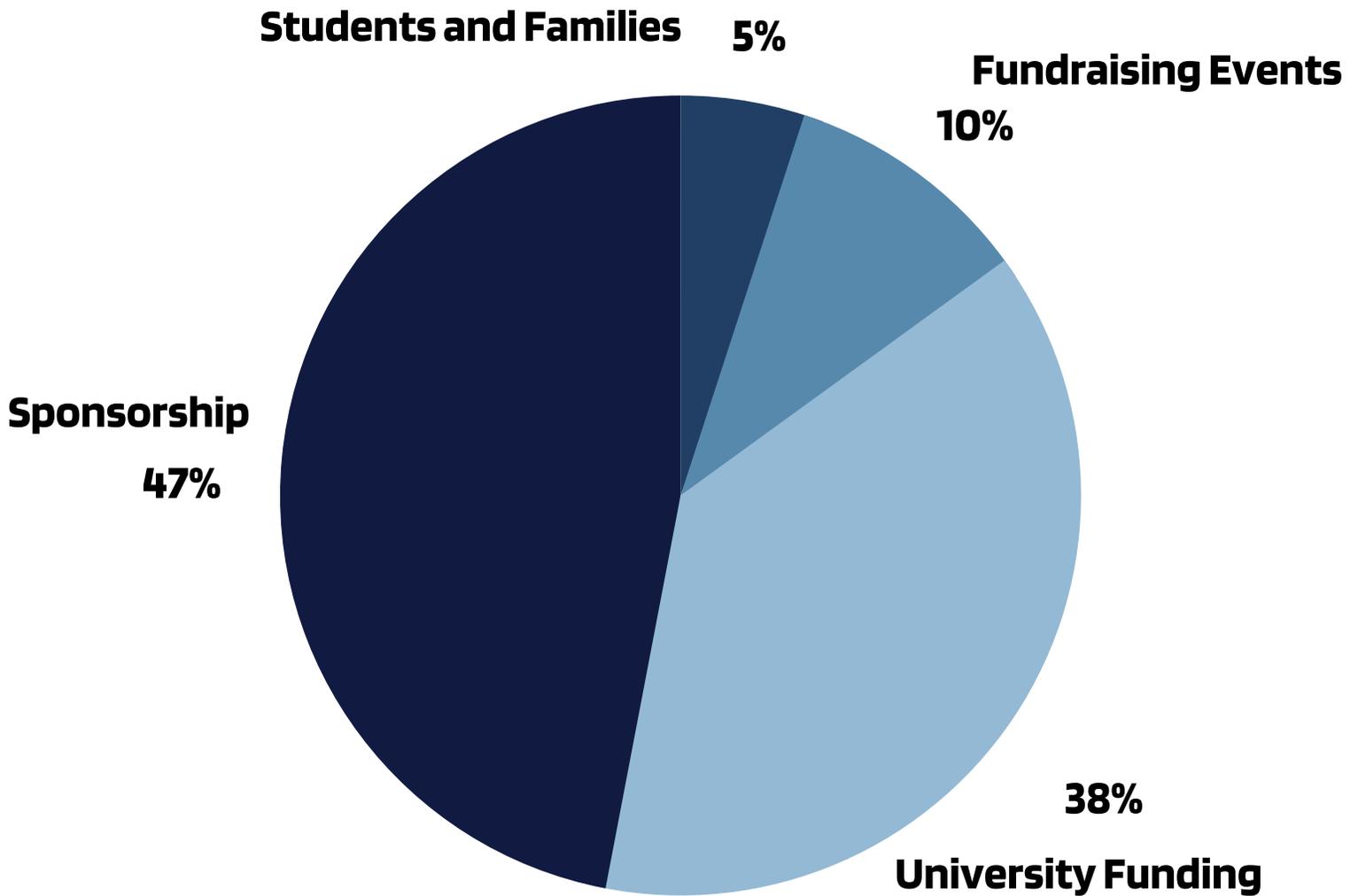


Every aspect of our team is 100% done by undergraduate students in their free time. We foster a challenging learning environment that builds essential skills, greatly benefiting students in their future careers.

In addition to engineering, students learn marketing, problem-solving, teamwork, project management, budgeting, professionalism and so much more. Our team's dedication in building towards the future serves as a driving force in our pursuit of success.



# OUR BUDGET



Sponsors are incredibly important to our team's growth and development because it ensures students' access to high-quality learning experiences. The generous support from our community constitutes a large portion of our budget, and without it, maintaining our competitive edge would be impossible.



# SPONSORSHIP BENEFITS

By sponsoring our team, companies can network with talented engineering students from the University of Akron, foster innovation and growth at Akron, and potentially recruit top talent for future employment opportunities. Sponsorship grants access to the following benefits:



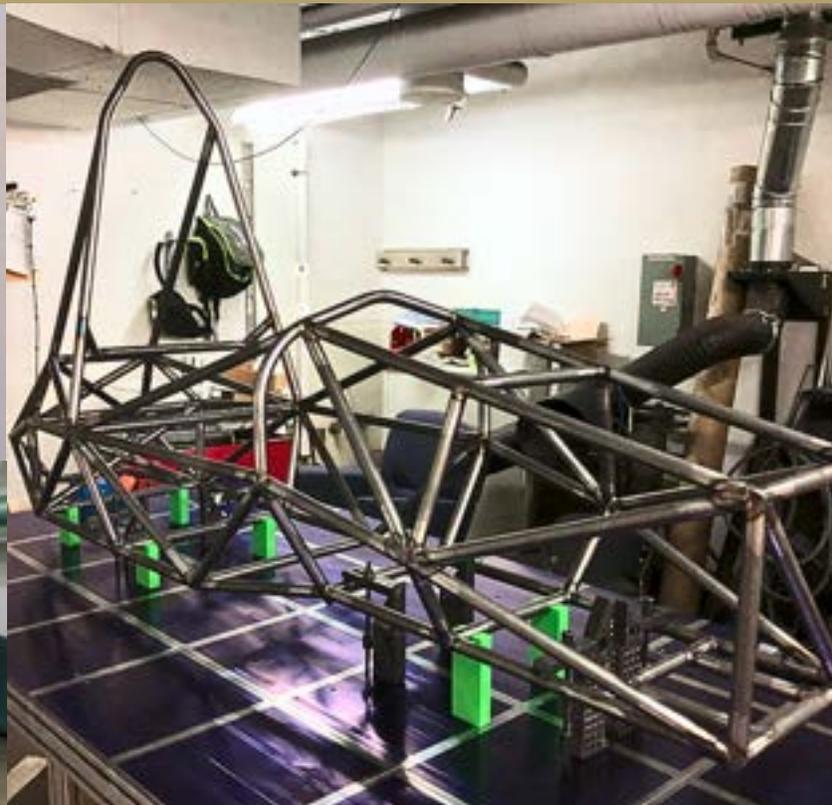
	<b>BRONZE</b> <b>(&lt;\$500)</b>	<b>SILVER</b> <b>(\$500+)</b>	<b>GOLD</b> <b>(\$2500+)</b>	<b>TITLE</b> <b>(Top two financial donations)</b>
*Or equivalent value				
Thank you package, and logo w/ link on our website	✓	✓	✓	✓
Logo on car	SMALL	MEDIUM	LARGE	TITLE Location
Access to team resumes		✓	✓	✓
Social media and product promotion			✓	✓
Invitation to tour privately and discuss engineering design w/ team			✓	✓

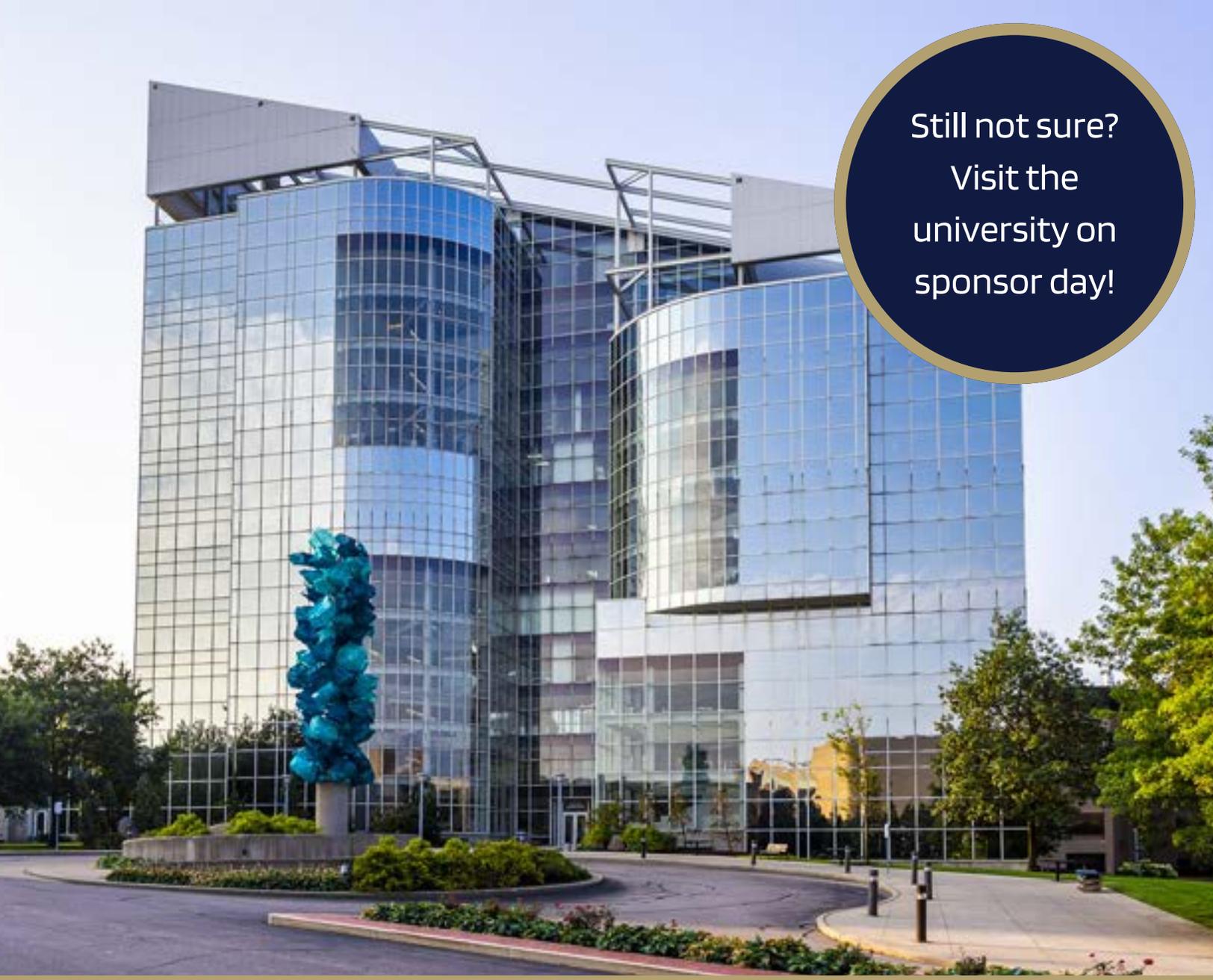


# FORMS OF SPONSORSHIP

We understand that not every sponsor is the same. We are thankful for any contribution that our sponsors can make to our team! There are many different ways that you can sponsor us:

- In-kind donation
- Discounts
- Financial donation
- Access to software
- Manufacturing
- Technical Knowledge
- Services
- And more!





Still not sure?  
Visit the  
university on  
sponsor day!

During our sponsor day, we allow sponsors to visit us and talk about the team in our shop. We even invite sponsors to drive our car! Everyone is welcome, and information will be sent out in the near future. If interested, please message us so we can ensure you get the information as soon as possible. Look for our newsletter around October!



To sponsor or donate, please visit our website and click the gold "donate" button in the upper right corner. **Under design team, enter "Zips Racing Electric"** and fill all other information. Also, feel free to message us at any time using the information below:

**TEAM CONTACTS:**

evracing@uakron.edu  
330-972-3894\*

**TEAM CAPTAIN:**

Dylan Matthews  
dm409@uakron.edu

**TECHNICAL DIRECTOR:**

Brian Glen  
brg43@uakron.edu



\*This number also reaches our combustion team, so be sure to tell them you're trying to reach us!

Follow us online! Sponsors will be featured here:



@ZipsElectric



zipsraceelectric.org



@zipselectricracing

Thank you to our 2022-2023 sponsors!

# SCHAEFFLER CLIFFS



# CLIFFS



## Altium



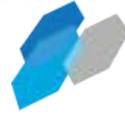
## KEYFACTOR



## rapidHARNESSES



## VECTOR



## FIBREGLAST™

