



Duke University Motorsports

Sponsor Handbook

2023

About **Formula SAE**

The Formula SAE competition is a series of events showcasing formula-style vehicles designed and built by university teams from across the world. The competition is split into static and dynamic events, allowing teams to demonstrate the interdisciplinary aspects of their vehicle, as well as the well-roundedness of their teams. These events assess the vehicle from an economics, design, and performance perspective, pushing students to create a racecar that excels both on the track and on the market.

Static Events	Dynamic Events
Business Presentation	Acceleration
Engineering Design	Skid Pad
Cost Analysis	Autocross
	Endurance
	Fuel Economy

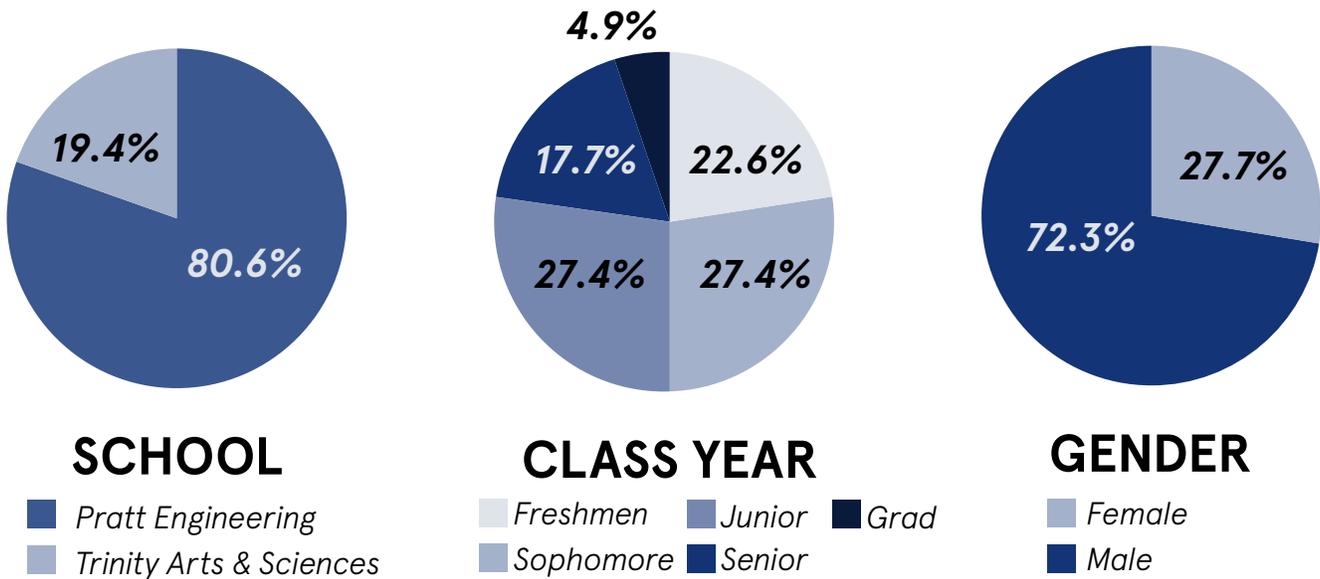
Duke University Motorsports

Duke University Motorsports is committed to continuing to provide one of the most hands-on and iterative engineering design project experiences to complement a rigorous engineering undergraduate curriculum. The skills developed, both technical and interpersonal, prepares students to be active leaders and problem-solvers in future endeavors. Members work with faculty and student advisors to complete individual projects that produce a complete competitive vehicle from the ground up.

Outside of the immediate benefits to members, Duke University Motorsports maintains regular involvement in student activity fairs, student showcases, and volunteering opportunities within the Duke and Durham community. The team also represents Duke Engineering when partnering with regional universities for scrimmages and at FSAE Michigan, where the team networks with students from around the globe and industry professionals.

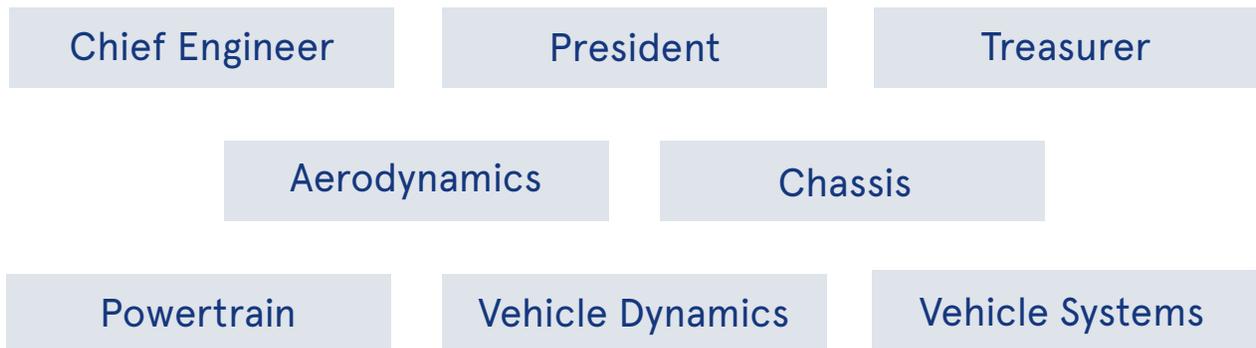


The Team *By The Numbers*



Team Structure

The workflow of the team is streamlined by delineating key subsystems within our race vehicle. Our team is managed by the president, chief engineer, and treasurer, and our design and manufacturing is split amongst five major subsystems. While each subsystem is responsible for the major production of certain vehicle systems, our leadership emphasizes inter-subsystem communication and collaboration so every member has a complete and holistic view of the vehicle.



Summer Design *June-August*

From the conclusion of competition until the start of the Fall semester, Duke FSAE works on vehicle design for the upcoming competition season. This is composed of addressing 2022's Michigan design review, as well as a complete redesign of the chassis, suspension, and aero package.

Season Timeline **2022-2023**

Alumni Review *August*

At the end of summer design, the team will invite motorsports alumni to provide guidance and critique on the new 2023 car design. At the presentation, the full team will prepare a preliminary design review (PDR).

Iterative Manufacturing *September*

With the start of the semester, our subsystems will begin prototyping, testing, and manufacturing. In addition, the aero design will be finalized.

Rolling Chassis *November 24*

By Thanksgiving, the team will have a rolling chassis—a vehicle frame with fully assembled suspension and wheel systems, but without bodywork.

Driving Car *December 9*

By winter break, the team will have a driving vehicle ready for testing and driver training.

By the end of winter break, the team will have prepared the Critical Design Review (CDR) examining and justifying decisions and components for every subsystem.

NCCAR Test Day *January*

In January, Duke FSAE will go to the North Carolina Center for Automotive Research (NCCAR) for a comprehensive testing and drive day to validate vehicle design.

Scrimmage *March-April*

Over the Spring semester, our team plans to host a scrimmage with local university FSAE teams. The team will continue fine tuning vehicle design and setup in the months leading up to competition.

FSAE Michigan *May*

In May the team will compete in the annual FSAE competition.

Season Goals

For the 2023 FSAE season, Duke University Motorsports is looking ahead to push the boundaries of the combustion racing vehicle. On top of providing exposure and experience to a growing team of engineers, we also hope to expand our understanding of new manufacturing techniques, increase our testing scope, more thoroughly validate our designs using driver performance as a metric, and strengthen our transfer of knowledge by leaving behind a well-documented design year. In addition, we hope to accomplish the following:

- Complete a successful endurance round.
- Build a vehicle under 400 pounds.
- Place in the top third at FSAE Michigan

Why Support Us

Each year Duke University Motorsports designs and builds an FSAE race chassis as part of the SAE Collegiate Design Series to compete in May at Formula SAE Michigan. Team members are given the opportunity to join subsystems and work with fellow undergraduate subsystem leads to learn about the engineering design and manufacturing processes that go into automotive design and optimization. Within each subsystem, members conduct research to design, manufacture, and test all components that go into building the vehicle.

Funding from sponsors will be used to support our five subsystems in their respective annual design, manufacturing, and testing of components that will ultimately represent Duke University in the Collegiate Design Series at FSAE Michigan.



2009



2011



2015



2022

Sponsorship

Although Duke University and the Pratt School of Engineering provides us with many resources to build our workspace, we can't reach our goals without the help of corporate sponsors and individual donors. We welcome monetary sponsorships as well as in-kind donations.

Sponsorship Tiers

Bronze \$500+

- Name on Duke Motorsports website
- Social media shoutout
- Access to team newsletters
- Small logo on competition vehicle

Silver \$1,500+

- All Bronze perks, plus:
- Logo on the Duke Motorsports website
- Medium logo on competition vehicle

Gold \$5,000+

- All Silver perks, plus:
- Team apparel
- Invitation to vehicle rollout
- Large logo on competition vehicle

Platinum \$10,000+

- All Gold perks, plus:
- Access to the team resume book
- Invitation to campus test sessions
- Extra large logo on competition vehicle

Blue Devil \$25,000+

- All Platinum perks, plus:
- Invitation to FSAE Michigan
- At-request showcar demonstration at company events
- Extra large logo in a primary location on competition vehicle

How to Donate

Thank you so much for your consideration of support towards Duke University Motorsports. There are two possible ways to support us.

All donations are 501c3 tax deductible through the Pratt School of Engineering.

Via Check

- Checks mailed to:
Box 90271
Pratt School of Engineering
Durham, NC, 27708
- Checks must be made out to Duke University, and the memo line should specify "Duke University Motorsports"

Online Donation Form

- Visit gifts.duke.edu
- Click "Search for an area" and enter "Pratt Formula SAE Care Team Fund"
- Enter gift amount and continue to payment



Your name here

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Contact Us!

Duke University Motorsports thanks you again for your time and consideration. Please feel free to reach out to our team president and chief engineer with any questions or concerns.

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