



MICHIGAN ELECTRIC RACING

2018–2019 Sponsorship Packet



INNOVATION.
IT'S WHAT WE DO.





Dear Mentors and Colleagues,

Michigan Electric Racing is a multidisciplinary team composed of student engineers and leaders. Each year we aim to create a real-world engineering experience for our members through the design, manufacturing, and testing of a Formula-style race car. We use cutting edge-technology and industry standard fabrication, project management, and testing and validation techniques to prepare members for successful careers after their tenure on the team. We believe the welcoming and merit-based environment that the team strives to create offers a unique opportunity for members to explore new fields and further develop their passions and interests.

This year we are looking to apply the team's seven years of experience designing hybrid vehicles for the Formula Hybrid Competition to build an all-electric vehicle for competition in Formula SAE Electric. By reducing powertrain complexity, we hope to spend more time optimizing specific components of the vehicle, gain more testing time to better understand possible failures, and ultimately improve our overall performance on the track. We are considering attending multiple competitions, but are committed to racing at Formula SAE Electric in Lincoln Nebraska in June of 2019.

The success of this team has only been made possible through the generous support of our sponsors and the University of Michigan. The donations of resources, materials, and services by sponsors of the team has enabled us to continue building race cars and offering the unique experience we have created to any student at the University. In return, our sponsors receive exclusive access to the most valuable resource we have to offer: our members. We truly believe that our team represents the most talented and capable students at the University of Michigan, and we hope to build relationships with our sponsors through recruitment and collaboration. We are very grateful to our sponsors and partners for their support of the team and for making Michigan Electric Racing possible, and look forward to working with you in the future. Please feel free to reach out with any questions about sponsorships opportunities, the team, and any information contained in this packet.

Sincerely,

Grace Stridick and Joseph Saginaw

2018-2019 Co-Captains

Michigan Electric Racing is a student design team at the University of Michigan College of Engineering, supported by a faculty advisor and numerous corporate sponsors.

Mission

To build a formula-style electric race car while utilizing and developing the top students and engineers at the University of Michigan.

Team History

Michigan Hybrid Racing was founded in 2011 with the goal of racing a formula-style hybrid race car at the Formula Hybrid Competition in New Hampshire. A full team history is viewable at our previous website, <http://mhybrid.engin.umich.edu>. In early 2018, the team decided to build an all-electric race car for the 2019 race season, and compete at Formula SAE Electric events.



Finance

In order to build race cars year after year and develop the next generation of engineers and leaders, the team relies on corporate sponsors and the University of Michigan to fund our endeavor. Our major expenses include materials and components to build the car, manufacturing services, and costs associated with registering for and attending competition.

Timeline

Michigan Electric Racing will operate on an 18-month build cycle, but we will race a car multiple times every 12 months. The team finishes manufacturing and testing the vehicle in Spring, while beginning design and planning for the following year. After competition in early summer, design ramps up and finishes in the Fall, when manufacturing begins. The cycle then repeats, and each vehicle is designed with insights gained from testing and competition.



What We Build

The Formula-style race car we construct is roughly $\frac{1}{3}$ the size of an F1 race car. Historically, our team has manufactured most parts in-house, including the chassis, aerodynamics packages, powertrain components, suspension, and much more. The high voltage battery pack is limited to 300V, and the maximum electrical power that can be delivered from this pack is 80kW.

Overview

Formula SAE Electric is part of SAE's Collegiate Design Series. From sae.org: "SAE International's Collegiate Design Series (CDS) competitions take students beyond textbook theory by enabling them to design, build, and test the performance of a real vehicle and then compete with other students from around the globe in exciting and intense competitions." More can be found at www.sae.org/attend/student-events.



Static Events— 375 points

Technical Inspection - No points Teams are required to build safe and robust cars, ensured through rigorous technical inspections. These include an electrical and mechanical inspection, a tilt test, startup procedure test, a rain test, and a brake test, which must be passed before competing.

Cost and Manufacturing - 100 points A cost report is submitted by each team, which is designed to teach students about proper Bill of Materials management and design for manufacturing.

Presentation - 75 points Members of the team must present their prototype to panel of "executives" from a company interested in mass producing and selling the vehicle on a large scale.

Design - 200 points In the Spring, an eight page design report is submitted by the team, and at competition judges evaluate the teams vehicle based on engineering effort and intent of design.

Dynamic Events— 625 points

Acceleration - 100 points A 75m straightaway designed to test the vehicles straight line acceleration.

Skid Pad - 75 points Figure-eight designed to test the vehicles constant-radius cornering capability.

Autocross - 125 points Tight turns and slaloms designed to test the maneuverability of the vehicle.

Endurance - 275 points Similar to the autocross track but with longer straights, and driven for 22 kilometers. Designed to test the overall performance, durability, and reliability of the vehicle.

Efficiency - 100 points An energy meter determines the most efficient vehicles during endurance.

The Wilson Student Team Project Center

Known as “The Wilson Center” to students, this is the University of Michigan’s space for student project teams located on North Campus. There are over 20 student teams who are able to use this space 24-hours a day to design, build, and test their creations. The Wilson Center has spaces for each team, open work areas, and machines and tools for students to use.

Facilities and machines

- Manual Metal Mills and Lathes
- Haas 4-axis CNC vertical milling machine
- Haas CNC lathe with auto feeder
- Metalworking power and hand tools
- TIG and MIG Welders
- Soldering Oven
- Sandblaster
- Paint Booth
- More tools and machines



Staff

Chris Gordon is the Director of the Wilson Student Team Project Center. Chris returned to the University of Michigan after 21 years as a US Navy pilot, safety officer, and operational planner. He earned his BSE in Aerospace Engineering from the University of Michigan and his Master of Aeronautical Science from Embry-Riddle Aeronautical University. Chris is supported by Nick Julius, the Wilson Center Manager.



Michigan Electric Racing strives to build positive, mutually-beneficial relationships with sponsors. We look forward to connecting with and learning from sponsors every year.

Benefits to the team

Crucial funding. The team depends on sponsor donations to buy materials and parts, register for competition, and fund other expenses. Only a portion of the team's yearly budget is covered by the University of Michigan.

Material and resource support. Michigan Electric Racing seeks in-kind donations including parts, services, or access to facilities from sponsors.

Intellectual support. Building a high performance race car is accompanied by difficult problems, and sponsors' experience and knowledge is invaluable to our team when taking on tough challenges.

Michigan Electric Racing is a registered 501(c)(3) non-profit organization. All monetary or in-kind donations are 100% tax deductible.



Benefits to Our sponsors

Various sponsorship rewards. These items are awarded due to the monetary value of total yearly donations to Michigan Hybrid Racing and are listed on the following page.

A concentrated, specialized talent pool. Many members have found internships and jobs with our sponsors, and we look forward to working with you to recruit our team members.

A place in the Michigan Engineering community. The Wilson Student Team Project Center alone is home to many engineering teams, with 300+ active members.

A reputation as a benefactor and supporter of engineering education. Michigan Electric Racing strives to interact with the engineering community at large, and establish positive relationships between our team, the University of Michigan, and sponsors.

We are also interested in hearing about any additional projects your company may have in mind.



Sponsorship Levels

Michigan Hybrid Racing is able to continue to operate with the generous support of our sponsors. To help build relationships and give back however we can, we have established a tiered benefits system.

Platinum: \$15,000+

Benefits include "Gold" and:

- Large logo displayed prominently on vehicle, apparel, and website
- Logo and company profile displayed on team website
- Use of the car for corporate display for up to one week upon request
- Ability to provide banner with logo for all team events, including competitions, and the Wilson Student Team Project Center
- Scheduled recruitment event with the team

Gold: \$5,000-\$14,999

Benefits include "Silver" and:

- Medium logo displayed on vehicle, apparel and website
- Use of the car for corporate display for one day upon request
- Ability to provide banner with logo for Wilson Student Team Project Center
- One information session per semester
- Team t-shirts upon request
- Invitation to team testing days
- Company photo shoot with car at Wilson Student Team Project Center

Silver: \$1,500-\$4,999

Benefits include "Bronze" and:

- Small logo displayed on vehicle, apparel, and website
- Recruiting access through the team's regularly updated resume book and team events
- Team poster

Bronze: \$0-\$1,499

- Small logo displayed on website
- Tour of Wilson Student Team Project Center upon request
- Invitation to unveiling event
- Team photo



MER Event Schedule

Date and Time	Event	Location
September 4th, 2018 11 AM—2 PM	Northfest Engineering Organizations Fair	Murfin Ave. and Bonisteel Blvd., UM North Campus
September 7th, 2018 2 PM—6P M	Festifall Student Organizations Fair	UM Central Campus Diag
TBA	SWE/TBP Fall Engineering Career Fair at UM	Various Engineering Campus Buildings
October 27, 2018	Final Design Review	TBD
TBA	Winter Engineering Career Fair	Various Engineering Campus Buildings
March 8, 2019	MER19 Unveiling	TBD
April 1st, 2019	Track Testing Deadline	
May 2019	Formula Hybrid*	New Hampshire International Speedway
June 2019	Formula SAE Electric*	Lincoln Airpark, Nebraska
June 2019	Formula North*	Barrie, Ontario

This schedule is subject to change. An updated calendar is available on our website.

**Competition attendance has not yet been decided.*





MHR-18 Team photo at Unveiling in March 2018

Contact Information

Michigan Electric Racing
The Wilson Center
2603 Draper Dr.
Ann Arbor, MI 48109
michiganelectricracing@umich.edu

Grace Stridick
Captain
856-938-6477
stridick@umich.edu

Joseph Saginaw
Captain
631-327-5643
josephds@umich.edu

www.umich.edu/~melectric/



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