



Michigan State University
Formula Racing Team

2020-2021 Sponsorship Proposal





Friends,

Michigan State Formula Racing welcomes you into a brand-new year of competition! Our team proudly represents Michigan State University in Formula SAE—the world's largest collegiate design series with over 550 teams competing worldwide. FSAE challenges students to design, manufacture, develop, and compete a small, open-wheel race car every year.

With a history of over thirty years, Michigan State Formula Racing has been providing undergraduate students with an unparalleled opportunity to apply knowledge acquired in the classroom, as well as learn a plethora of skills that are only instilled through hands-on experience. Consequently, those who graduate from the team enter the global workforce with a matchless understanding of the design, manufacturing, and management that is required to take an idea from concept to reality.

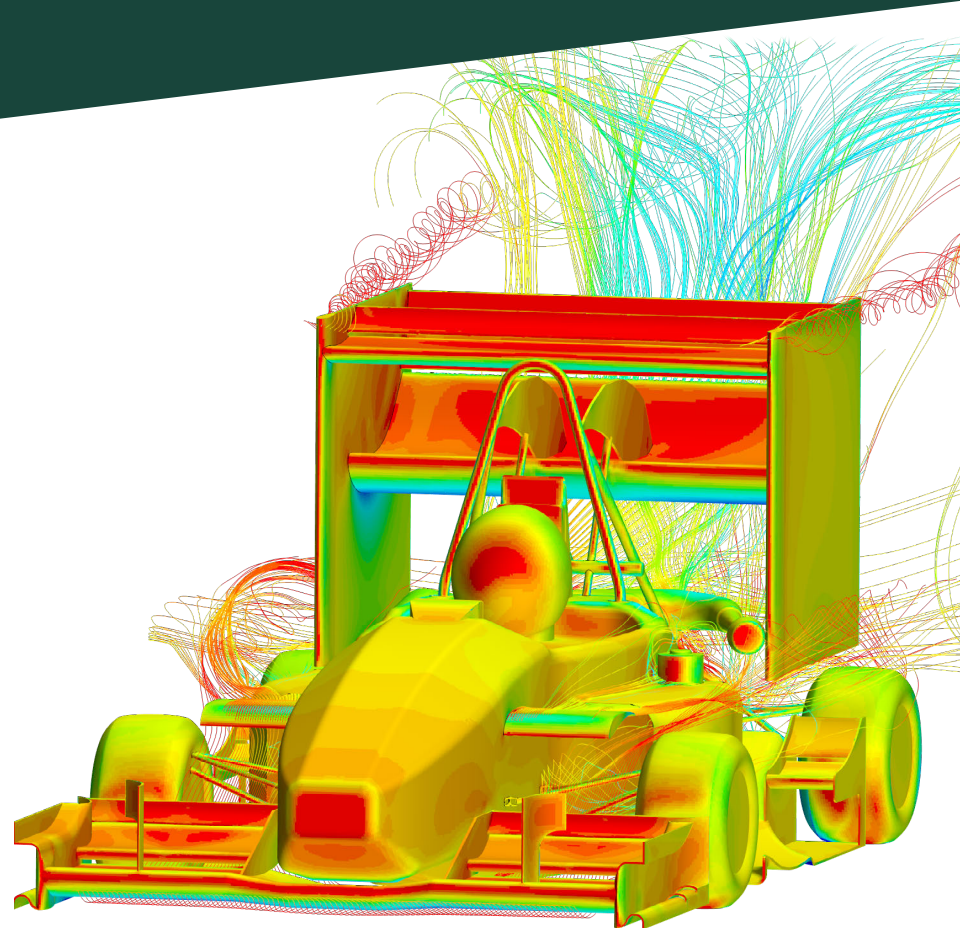
Every year, a new and improved vehicle rolls out of the workshop as a product of devoted, passionate, and driven team members. However, without your help, the MSU Formula Racing Team would not be where it is today. With the 2020-2021 season well underway, we thank you for your continued generosity, and we hope that you'll support us on our journey this year to a first-place finish.

Go green, go white, go fast!

Dave Yonkers
Project Manager

Engineering

Every season, MSU Formula Racing Team members collectively spend over 10,000 hours designing and optimizing the upcoming year's vehicle platform



Students use engineering principles from many disciplines...

- Dynamics & Kinematics
- Thermodynamics
- Fluid Mechanics
- Structural Mechanics
- Mechanical Vibrations
- Control Systems
- Material Science
- Embedded Software
- Electronics & Circuits
- Artificial Intelligence & Machine Learning

Manufacturing

Over 85% of the MSU Formula Racing Team's vehicle is manufactured in-house by students every year

Students learn conventional fabrication methods, such as...

- Hand & CNC milling
- Hand & NC lathing
- TIG welding
- Stamping & bump-forming
- Soldering, crimping, & wire looming
- PCB etching
- 3D printing
- Composite molding



The Result: SR-20

Track Width 50 in
Wheelbase 60.5 in
Weight 425 lbs
Tire Hoosier 16x6-10 R25B
Engine 2007 Honda CBR600RR
Oil System Two-stage dry sump
Fuel 93 Octane gasoline
Cooling Dual side-mounted radiators
Shifting Electro-pneumatic
Drivetrain Drexler limited slip differential
Electronics MoTeC M400, Bosch C50
Custom Modules PDM, ATCC, Telemetry
Driver Display Custom
Frame Carbon fiber monocoque
Suspension Double A-arm
Brakes Twin-piston Brembo
Power 85 hp
Torque 45 lb-ft
Downforce 290lbf @ 45 mph
L/D Ratio 3.30
0-60 mph 3.2 s
Lateral Acceleration 3.3 g
Braking Acceleration 2.8 g



Recent Competitions

2019 FSAE Michigan

- T8th Design
- 21st Presentation
- 8th Acceleration
- 15th Autocross

2019 Pittsburgh Shootout

- 3rd Overall

2019 FSAE Lincoln

- T15th Design
- 8th Presentation
- 2nd Acceleration
- 15th Skidpad

2019 Toronto Shootout

- 3rd Overall
- 2nd Driver



The Team

Dr. Gary Cloud
Faculty Advisor

Nicholas Kopec
*Chief Engineer
Electrical Team Lead*

Dave Yonkers
*Project Manager
Software, Simulation*

James Provax
Aerodynamics Lead

Garrett Colasinski
Chassis Lead

Robert Walston
Powertrain Lead

Nick Coubard
Suspension Lead

Miko Parkinson
Aero Structures

John Burroughs
Dynamic Aero Simulations

Calum Walton
Rear Subframe

Anissa Sant
Ergonomics

Andrew McNamara
Composite Structures

Sammy Cohen
Harness

Ronald Hodge
Electrical R&D

Olivia Reyes
Intake & Exhaust

Mitchell Clark
Driveline & Shifting

Justin Yan
Dyno & Calibration

Noah Goldman
Cooling

Bhanu Makkapati
Oiling

Bashhar Byrourthy
Powertrain R&D

Matthew Ajlouny
Brakes





Publicity

Public Appearances

- North American International Auto Show
- Woodward Dream Cruise
- MSU Engineering Colloquium
- Sparticulation
- Formula SAE competitions
- MSU Homecoming Parade
- MSU Engineering Preview Day
- MSU Engineering Design Day

Publications

- The Spartan Racer
- State News
- The Lansing State Journal
- MSU Today
- The Detroit News
- Popular Science
- RACETECH
- SAE Momentum Magazine

Social Media

- @msuformularacing
- @michiganstateu

Community

MSU Formula Racing recognizes the importance of community contribution. Without a helping hand, none of what the team accomplishes would be possible, which is why volunteering at local schools, providing workshop tours, and supporting community outreach remains an important part of the team's mission. From inspiring the next generation of engineers and businesspeople, to lending a helping hand to those who need it: MSU Formula Racing continues to engineer a legacy.



2020-2021 Budget

Chassis

Carbon Fiber	\$18,000
Machining & Tooling	\$24,500
Honeycomb	\$7,500
Adhesives	\$2,500
Consumables	\$2,250
Raw Materials	\$2,250
Film Adhesive	\$3,500
Seat Belts	\$500

Subtotal **\$61,050**

Aerodynamics

Carbon Fiber	\$18,000
Machining & Tooling	\$24,500
Nomex Core	\$500
Ribs & Spars	\$1,500
Structural Foam	\$700
Consumables	\$500

Subtotal **\$25,200**

Suspension

Wheels	\$4,000
Uprights	\$4,600
Hubs	\$3,450
Control Arms	\$2,500
Springs & Dampers	\$3,250
Steering	\$2,500
Consumables	\$1,750

Subtotal **\$21,100**

Brakes

Pedal Box	\$1,000
Master Cylinders	\$1,500
Fittings & Brake Line	\$500
Calipers	\$1,200
Rotors & Pads	\$900

Subtotal **\$5,100**

Powertrain

Engine	\$1,500
Drivetrain	\$6,000
Cooling System	\$1,500
Oil System	\$1,500
Fuel System	\$500
Intake	\$1,500
Exhaust	\$1,350
Shifting	\$850
Raw Materials	\$3,000
Consumables	\$2,000

Subtotal **\$19,700**

Electrical

Data Aq. & ECU	\$14,000
Modules	\$4,700
Sensors	\$2,000
Wire Harness	\$2,000
Consumables	\$450
Battery	\$950

Subtotal **\$24,100**

Testing

Tires	\$4,250
Fuel	\$1,000
Oil	\$500

Subtotal **\$5,750**

Shop Supplies

Tools	\$1,000
Hardware	\$1,000
PPE	\$750
Computers	\$4,650
Software	\$1,000
Office Supplies	\$250

Subtotal **\$8,650**

Competition Expenses

Driver Gear	\$2,200
Tires	\$5,400
Fuel	\$4,000
Food	\$1,200
Lodging	\$7,000
FSAE Michigan	\$2,500
FSAE North	\$2,500
FSAE California	\$2,500

Subtotal **\$27,300**

Contingency Cost **\$10,800**

Total Cost: \$208,750



Sponsorship Levels

	Pit Crew ≤ \$499	Titanium \$500 - \$999	Bronze \$1,000 - \$2,499	Silver \$2,500 - \$4,999	Gold \$5,000 - \$9,999	Platinum ≥ \$10,000
Tax recognition	✓	✓	✓	✓	✓	✓
Promotion of name on msuformularacing.com	✓	✓	✓	✓	✓	✓
Invitation to the team's annual vehicle unveil ceremony	✓	✓	✓	✓	✓	✓
Logo featured in the team's monthly newsletter – The Spartan Racer		✓	✓	✓	✓	✓
Logo in a prominent place on the race car, with size proportional to sponsorship level			✓	✓	✓	✓
Team workshop available for corporate tours			✓	✓	✓	✓
Availability to place corporate banner on display in the team workshop				✓	✓	✓
Access to the team résumé book				✓	✓	✓
Access to team member recruitment presentations				✓	✓	✓
Access to the team race car for company events				✓	✓	✓
Promotion during public appearances						✓
The ability to customize team appearances and sponsorship promotion to maximize exposure						✓

SPARTANS WILL.



Michigan State Formula Racing
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U.S.A.

Thank you for your support!



GO GREEN. GO WHITE. GO FAST!