



THE SPARTAN RACER

GO GREEN! GO WHITE! GO FAST!



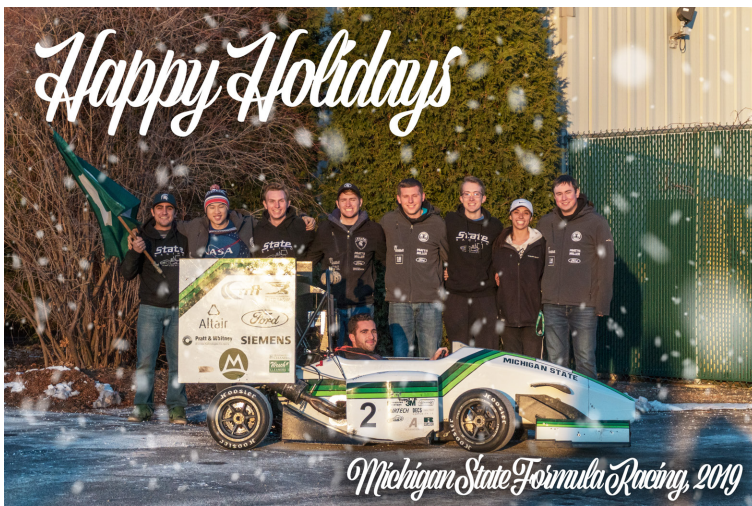
JANUARY 2020

Team Updates

Happy Holidays!

We hope that all our sponsors, fans, friends, and alumni were able to relax and enjoy this holiday season! East Lansing may have emptied out after the fall semester, but rest assured, team members and leaders stayed back to devote 100% of their attention to manufacturing SR-20.

The Winter Break period is essential for our team, as members often spend around 100 hours per week at the shop, as classes are not a concern.



This year's team holiday photo.



Our New Year's Day photo!

If you're not following our Instagram yet, be sure to head over to [instagram.com/msuformularacing](https://www.instagram.com/msuformularacing) so you don't miss the latest team updates and photos! With manufacturing season in full swing, we can't wait to show you parts of our car as they roll out of the machine shop!



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Manufacturing Updates



A team alumus, Vincent Zeng, from Guangdong NanFang Nylon Products Co., machines our rockers every year as pictured above.



Powertrain Lead, Justin Yan, works on modifying the stock engine transmission during the engine rebuild.



Ergonomics Lead, Andrew McNamara, helps machine a tooling board blank for aerodynamics mold CNCing.



The wiring harness has been designed, cut, and twisted. Thanks to BMRS Wired for sponsoring material, and Rapid Harness for design software!



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Featured Team Members

Name: Chris McCloskey
Roll: Project Manager & Chassis Lead
Hometown: Troy, MI
Major: Mechanical Engineering
Class Standing: Senior
Years on the Team: 4



What do your roles at Project Manager and Chassis Team Lead entail?

As Project Manager, I am directly responsible for managing team finances, the procurement of all materials, services, and supplies used during vehicle design and manufacturing, and the recruitment of new team members.

As Chassis Team Lead, I own the design, manufacturing, and validation of our vehicle's primary structure, which is comprised of both an aerospace-grade carbon fiber monocoque, a steel sub-frame, and a steel roll cage.

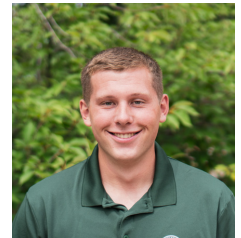
What is your favorite memory from the team?

My favorite memory with the team was placing 4th out of 120 teams in Autocross at FSAE Michigan in 2018. While the competition did not end the way we had hoped due to a failure during the endurance event, it was clear that our vehicle was one of the fastest in the world.

Do you have any professional work experience?

I had the opportunity to intern at Space Exploration Technologies in Hawthorne, CA, where I owned a portion of the StarHopper Test Vehicle's primary & secondary structures. It was an incredible experience, and was a direct result of my dedication to MSU FSAE.

Name: Ty Ebling
Roll: Outboard Assemblies Lead
Hometown: Traverse City, MI
Major: Mechanical Engineering
Class Standing: Sophomore
Years on the Team: 2



What is your favorite part about being a member of the team?

My favorite part about being a member of this team is seeing the car at competitions. We work many long and hard hours each year, and being able to see the car drive at competition and do well is a super rewarding and an awesome experience. I can't wait for SR-20 to be completed, so we can show FSAE Michigan, North, and California what Spartan Engineers can achieve.

What are some of your favorite hobbies or activities outside of the team?

When I was younger, I participated in dirt-track sprint car racing. I loved the thrill of racing and the competitiveness it brought out in people. While I have not raced in a couple of years, I still enjoy to go to the track every once in a while to watch some of the coolest racing there is.

What is your favorite memory so far?

Last year, I had the opportunity to drive the car for the skidpad and acceleration events at Lincoln. After working so hard building the car, driving it during competition was an incredible privilege, and was an experience that I will forever remember!



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Featured Team Alumni

Name: Mitch Egan
Hometown: Downers Grove, IL
Degree: BS Civil Engineering (2019)
Years on the Team: 2017-2019
Roles: Suspension Member (2017-2018)
Wheel Assembly Lead – WHUPS (2018-2019)

How did you contribute to the advancement of Michigan State Formula Racing?

After completing my outboard assembly design and manufacturing, I continued advancing the team's compliance analysis of the assembly.

What is your favorite memory from the team?

As the wheel-assembly lead, I was responsible for mounting tires to our wheels whenever needed. It's a tough job to do by hand, but I loved racing others to see who could mount them the fastest.

What is your current professional role?

Currently, I am a manufacturing Engineer at Rolls-Royce in the turbine engines division. I bring design ideas to life by programming parts, programming CNCs, overseeing processes, and maintaining strict tolerances across 40+ machines.



How did your experience as a member of the formula team help shape your future?

Rolls-Royce is very interested in hiring students who are involved in real world experiences like you get in Formula. A lot of my co-workers are alumni of numerous Formula and Baja teams and they realize how valuable the experience is. In my specific case, they liked my experience learning to CNC and how I was taught by past leaders how important dedication, quality control, and time management skills are in a work environment.



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Featured Sponsors



Name: Woolf Aircraft Products
Location: Romulus, MI

We are extremely excited to have Woolf as a new sponsor for this season! They are generously donating their tube cutting and bending services for our titanium exhaust primaries. The tubes should be showing up at our shop soon enough, and we'll weld them together soon thereafter.

Woolf currently can manufacture all tube assemblies used on tracked military vehicles, medium to heavy trucks, turbine engines, aircraft, diesel engines, automatic transmissions, tractors, automotive and specialized vehicles. They fabricate almost any tube, large or small, from 1 piece through 40,000 piece lot size.



Name: RapidHarness
Location: Boston, MA

New to our electrical team this is year is access to RapidHarness' design software! In only a couple of days, our electrical team went from knowing nothing about the software, to having a completed harness diagram with wire lengths, splices, branches, part numbers, and a BOM ready to go. RapidHarness significantly expedited the electrical harness manufacturing process, and we look forward to a continued partnership in the future!

If you are in need for a better way to design your harness, we recommend trying this software out.



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Name: McCausey Specialty Products
Location: Roseville, MI

Last year, McCausey generously donated tooling board for our aerodynamic element molding. Our sidepods, undertray, airfoils, chassis, exhaust, and numerous other components would not have been possible without their support, and we couldn't be more thankful.

McCausey is a preferred vendor to the automotive, aerospace, marine, recreation, and scaffolding industries, plus wide array of other niche industries. Whether it's high-precision prototyping, shop supplies, lumber, plywood, or even scaffold plank, McCausey has you covered.



Name: Cameron Tool
Location: Lansing, MI

Earlier this year, we reached out to Cameron Tool to see if they would be willing to machine a new nosecone mold for us. For SES & IAD samples to be tested, we needed a quick turnaround. Cameron had the tooling board machined for us in only a few days. Thank you!

Cameron Tool proudly celebrates over fifty years of continuous growth in the sheet metal die building industry. Today, their full-service facility has 85 full time employees, committed to excellence in design, CAD/CAM programming, construction techniques, tryout and inspection.



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