THE SPARTAN RACER

OCTOBER 2022

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U P D A T E S

A Weekend Up North

The Toronto Shootout is an annual autocross event hosted by the Formula SAE team at the University of Toronto (UofT). The event takes place at Brechin Motorsports park, which is approximately thirty minutes north of Toronto.

This year, the event was split up into two parts. UofT hosted the beginning of the day, before Formule ETS stepped in and hosted for the second half of the day where teams had the opportunity to run their cars on track and compare times.

The weekend began late on Friday night after the team arrived from their six-hour drive from East Lansing to Brechin Motorsports Park. Everyone had the chance to make a few late-night adjustments and repairs while stretching their legs and meeting other teams.

Team driver, Nick Coubard prepping for egress

The next morning, all teams stepped in to help provide fair and in-depth technical inspections for all teams. Here, new leads had the opportunity to experience their first technical inspection, providing some insight and preparation for competition in May 2023.

With the track opening at 1:00 pm, the team had opportunities to work under pressure and troubleshoot throughout the day, giving new leads even more experience with thinking on their feet and problem-solving with short notice.

Troubleshooting before sending SR-22 out on track

As the team continued working and prepping to get the car on track, leads were able to learn from some electric teams that attended the competition, gaining information to help make the team's transition to an EV fluid.

Although an issue on track cut the day short, leads were able to gain important competition experience that will prove invaluable upon competition at MIS in May.

SR-23 on track at Brechin Motorsports Park

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A New Home for the team

On October 6th, the team had the opportunity to attend the ribbon cutting ceremony for the new Demmer Engineering Center, located at the corner of Mt. Hope Rd and Farm Ln on campus. This new building will host MSU Formula Racing alongside six other student design teams at Michigan State.

Unfortunately, this move means that the teams time at the Jolly Rd shop off campus will soon be coming to an end. As the team operated here for decades, many memories will be left behind as the team moves in to the new Demmer Building.

MSU Formula Racing along with the six other teams housed in the building

However, the timing of this move couldn't be more fitting, as the new building is an opportunity for the team to have a fresh start upon it's transition to an electric platform.

As an upgrade, the new Demmer Building will have a dedicated high voltage workspace for any teams that use high voltage electronics, ensuring the safety of all teams working in the building.

2022 Homecoming Parade

The 2022 Homecoming Parade took place on Friday, October 14th this year. The team was fortunate to attend with a strong and exciting presence.

As an unique change of pace, SR-22 was fitted with a straight piped exhaust making it much louder than usual. Although the team's work is always able to turn heads, SR-22 was also heard all the way down Grand River Rd this year.

SR-22 on display at the Homecoming Parade

Homecoming is always a rewarding time of year, where the team gets to show off their hard work to everyone on campus for the parade. As the weather gets cooler and the team settles in to design SR-23, it's always nice to showcase the teams latest creation for the Spartan community to see.

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MEMBERS

Name: Ronak Patel
Role: Powertrain, Suspension
Hometown: Burr Ridge, IL
Major: Mechanical Engineering
Class Standing: Junior

What does your role of Driveline and Outboard Assemblies entail?

My role as a driveline and shifting lead involves the maintenance and tuning of the current driveline system, from the clutch pack to the transmission, drive sprockets, differential, and half shafts. In addition to this, it is my responsibility to design various components of the system that we make in-house. As the outboard assemblies lead, I am responsible for uprights, hubs, and various sub-components that make up the entire assembly. My job is to provide a structure that the driveline, brakes, suspension, and wheels can connect in a cohesive manner.

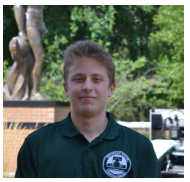
What do you find most challenging about being a member of the team?

I find the most challenging this about being a member of the team is time management. Being a full-time student while committing 40+ hours to the team has definitely been tough. In addition to this, trying to coordinate plans with friends can get tough as there are a lot of moments when I simply say "I can't. I'm going to the shop." However, I do not consider this as a negative. I think that this forces me to have better time management skills and so I see this challenge as something that benefits me and will help me in the future.

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

Some of my favorite activities outside of the racing team include drawing, playing volleyball, and hanging out with friends. I have always been decent at art, so on days that I do not have school or formula work, and if I cannot go outside or see friends, I like to stay in and draw. On days I can get outside or see friends, we try to see if we can organize some sort of volleyball match, usually at one of the many sand volleyball courts around campus or at IM West.

Name: Emre Celik
Role: Suspension
Hometown: Northville, MI
Major: Mechanical Engineering
Class Standing: Sophomore



Why did you choose to join Michigan State Formula Racing?

I joined formula because I love racing. Ever since I was young, I would always be eager to watch races on the weekends or simply look at videos online. As I got older, I started to help my dad with his cars and that just made me want to pursue anything related to cars/racecars. I was interested in what goes into building a racecar. When I was doing research on what colleges to go to, I found out about Formula, and knew that's what I wanted to do when I saw the car in Sparticipation. I wanted to further my knowledge in racecar engineering and use that knowledge in the industry. So far, Formula has been really fun and I'm learning not only about racecar engineering, but life skills as well.

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

I like the hands-on experience on the team. Whether it be working on the car, machining parts, or making setup changes, I love the amount of experience I can gain through formula. I also love working with the software and learning about vehicle dynamics on the team. I also like being on the team with my friends and having fun together while designing a racecar.

What do you find most challenging about being a member of the team?

Attending the Pittsburgh Shootout has been my favorite memory thus far. This was the first time I was able to participate in a competition and see the car drive competitively. It was interesting being able to talk to the other teams, learn more about their cars and the different ways that they were designed. Overall, the competition was a great team bonding experience and a great way to see the clear dedication each team put into their cars.

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ALUMNI

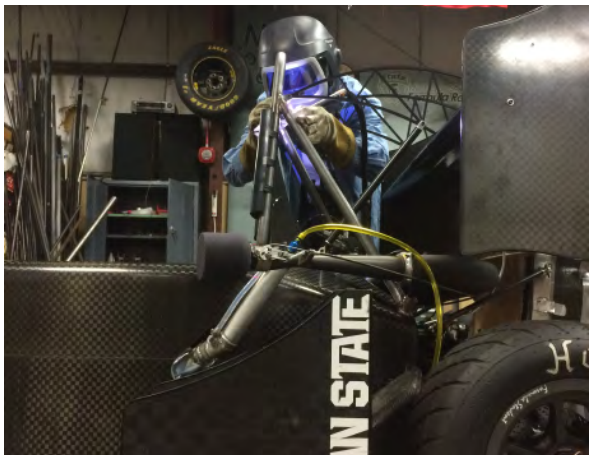
Name: Brandon Miller
Hometown: St. Clair Shores, Michigan
Degree: B.S. Mechaincal Engineering (2018)
Years on the team: 2014-2018
Roles: Team Welder (17-18), Project Manager (16-17), Powertrain Member(14-16)

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

There are two contributions that come to mind, and both couldn't have been done without the support of our operations team. First is the expansion of our corporate sponsors, including new carbon suppliers that were critical to the manufacturing Car 5. Second is the annual karting fundraiser, which I hope makes a comeback for 2023!

What is your favorite memory from the team?

My favorite memory from the team was getting to drive the car in the 2017 Homecoming Parade. Sharing what we built with the entire MSU community was a surreal experience and a perfect ending to the 2017 season.



Brandon welding rear wing tabs for Car 16

How did your experience as a member of Michigan State Formula Racing help shape your future

My experience on the team helped shape my future by providing me with the technical skills and emotional grit to be successful in any industry.

Brandon posing with car 16's fully welded rear box

What is your current professional role?

Currently I am a Powertrain Calibration Engineer at Toyota. I mainly focus on EFI calibration and evaluation in vehicle, but I've also gotten the opportunity to work on engine bench calibration and competitor benchmarking over my past 4 years in this role.

What is one piece of advice that you would give to current members of the team and why?

The advice I would give to current members of the team is to remember that building a FSAE car is a marathon, not a sprint. While there may be times when an all night effort is required, don't make a habit of it. Focus on proper planning and quality work to get the job done once and done right.

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SPONSORS

Name: RCO Engineering
Location: Roseville, MI

RCO Engineering has operated since 1973 as a company that designs, builds, tests, and produces prototype components for various companies. The company is family owned and operated, they work within the Defense, aerospace, and automotive industries and collaborate with countless trusted brands.

In 2010, RCO Engineering was recognized as The General Motors Supplier of the Year. RCO Engineering was recognized for its contributions to efficient staffing services that helped establish success in several programs.

RCO Engineering's support is crucial to the success of MSU Formula Racing. This year, they provided pre-impregnated carbon fiber that will allow the team to manufacture a carbon fiber monocoque and iterate upon its carbon fiber wheel design. MSU Formula Racing is proud to have a relationship with RCO Engineering, and the team is excited to represent them with a competitive vehicle that is manufactured with materials from their great company. Thank you, RCO!

Name: ZF
Location: Friedrichshafen, Germany

ZF is a tier 1 automotive supplier founded in 1915. The company was founded in Friedrichshafen, where they remain to this day. The company originally made Zeppleins, before branching out into automatic transmissions for cars. Currently, ZF operates primarily in the automotive industry, doing work in rail transport, marine engineering, and aviation.

As a proven innovator in the automotive industry ZF debuted the world's first ever 7-speed manual transmission in 2012. And, in March of 2019, ZF acquired the majority of shares in 2gethere B.V. a company that uses electric and autonomous systems for transport. Showing their commitment to the future of autonomous and electric vehicles.

ZF's contributions are greatly appreciated by the team, their monetary donation allows the team to be dynamic with how they make advancements and continue to operate at the highest level possible. Thank you, ZF!

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