



THE SPARTAN RACER

GO GREEN! GO WHITE! GO FAST!

MARCH 2020



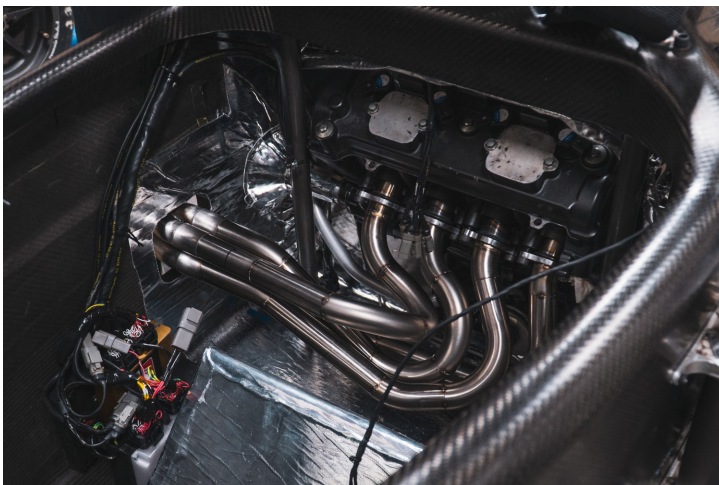
Team Updates

Final Assembly Week

Final assembly, the period of manufacturing where the team puts all the pieces of the puzzle together, has just wrapped up! From hand-fabricated suspension control arms to the powertrain's exhaust system, team members were at the shop to make sure that the team's important deadlines were hit and not a single part was missing. Final assembly is often regarded as the toughest week on the team for many, but the reward of seeing the car drive at the end is incomparable to anything else.



Even though our car may look glamorous, powertrain lead, Justin Yan, can tell you that things can get a little messy sometimes...



Brand new exhaust primaries were bent by Woolf Aircraft and welded in-house



38, SR-20's car number for FSAE Michigan, adorns protective masking tape during final assembly



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Team Updates Cont.

First Drive and Spring Break

First Drive marks the official ending of final assembly week. It's typically at some unreasonably-late hour of the day, and this year was no different. SR-20's first drive officially took place in the MSU Engineering Research Center parking lot on March 1st, 2020.

There wasn't much time to celebrate, as the team was eager to head to Florida for the annual testing session with the University of Florida Gator Motorsports Team! The trailers were packed soon after, and the team embarked on an 18-hour journey down south.

We can't show entire car just yet, but perhaps a few teasers will hold you over until the official unveil ceremony.



SR-20 gets loaded up into the trailer on the team's way to the first drive!



SR-20 is already our fastest car to date, and it'll only get faster as the season progresses



SR-20's left rear corner, taken during a testing session with Gator Motorsports



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Featured Team Members

Name: Mitch Clark
Role: Driveline Lead
Hometown: Mahopac, NY
Major: Business
Class Standing: Sophomore
Years on the Team: 2



What is your favorite memory from your time on the team so far?

My favorite memory so far has been first drive this year. It was a very surreal experience to see the drivetrain system that I had designed and manufactured function flawlessly for the first time. I'm sure watching the car drive at competition will also be near the top of my list! SR-20 is the fastest car that we've ever built, and I'm glad to have helped in the process.

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

My favorite part about being a member of this team is having the opportunity to design and build a race car as advanced as ours is. The support we receive from our sponsors is truly something special, and it enables us to participate in something that we, as a team, are extremely passionate about. Most people don't get the chance to do what we do and I'm incredibly grateful for the experience.

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

When I'm not at formula I enjoy being outdoors, going for runs, and working on my personal vehicles.

Name: Anissa Sant
Role: Chassis Member
Hometown: Wixom, MI
Major: Mechanical Engineering
Class Standing: Freshman
Years on the Team: 1



What is your favorite memory from your time on the team so far?

Over winter break, I spent many hours helping with the carbon-fiber chassis layup. After the final cure, popping the chassis out of the mold was something that I will remember forever. It's hopefully the first of many chassis that I will help design and manufacture.

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

The most challenging part about being on the team is time management. Learning to effectively manage time is an incredibly important skill, and it's one of the many soft skills that being a member of the team teaches you.

What is your dream job upon graduation?

My dream job upon graduation would be working in the automotive industry working on high performance vehicles. I really like what I'm doing on the formula racing team now, and I hope that it will give me a jump start to my career!

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

One of my favorite hobbies outside of formula is painting while listening to music!



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Featured Team Alumni

Name: Colton Knopf
Hometown: Canandaigua, NY
Degree: BS Mechanical Engineering (2018)
Years on the Team: 2014-2018
Roles: Suspension Member (2014-2016)
Chief Engineer (2016-2018)
Suspension Team Lead (2017-2018)

How did you contribute to the advancement of MSU Formula Racing?

My junior year on the team I improved the team's use of closed loop simulation software. We had received a lap time simulation software (LTS) from Pratt & Miller but had not really used it to benefit the team. Much of my time was spent correlating and adjusting various parts of the vehicle model to ensure accuracy. Once the model was deemed accurate, the team was able to use the software to aid in design. The largest benefit from having an accurate LTS was performing a competition points study to guide high-level design decisions such as engine selection. My senior year, this software was used by Nic Wiggins, the simulation lead at the time, to perform a track width and wheelbase study. From this study, we went against the "trend" in FSAE and ended up increasing the vehicle's track width.

What is your favorite memory from the team?

I would say my favorite memory on the team is finishing 2nd place overall at Lincoln my senior year. I still remember watching the car cross the finish line and feeling the reward of all the work the team had put in throughout the year. We had struggled a lot during competition and to finally have it all come together was amazing. That 2nd place finish is the best finish in team's history, but I know that will not last for long.



What is your current professional role?

Currently, I am in a rotational program at Ford Motor Company. My first few rotations have been centered around brake controls. The brake controls group is responsible for the software and calibration of the stability control system within Ford and Lincoln vehicles. My tasks include running open loop and closed loop simulations to test and validate our software, in vehicle software testing and calibration, and interfacing with our suppliers on software and hardware. My next rotation will be with Ford Performance Motorsports where I will be working on a high-performance electric vehicle.

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

The MSU FSAE team has greatly impacted my future from both the opportunities it has brought me, to the lifelong friends I have gained during my time on the team. I gained an enormous amount of hands on engineering experience that normal students just do not get in the classroom. I believe this is what sets FSAE students apart from the rest and is the main reason I ended up at Ford Motor Company.



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Featured Sponsors

brose
Excellence in Mechatronics

Name: Brose
Location: Auburn Hills, MI

We would like to welcome Brose onboard as our newest sponsor! Headquartered in Coburg, Germany, Brose is the largest family-owned automotive supplier in the world! Their monetary donation to our team will ensure that we make it to all three competitions this summer—FSAE Michigan, North, and California. We can't thank them enough!

Brose is a key supplier for window regulators, doors, seats, motors, and drives to virtually all automotive OEMs. Their U.S. headquarters is located in Auburn Hills, MI, and is continually expanding. Thank you for your continued support of Spartan Engineers!

THE FIRM
Florida International Rally & Motorsport Park
RallyPro
Performance Driving School at The FIRM

Name: Florida International Rally and Motorsports Park
Location: Starke, FL

As mentioned previously in the newsletter, the team is currently in Florida testing our 2020 challenger, SR-20. We wouldn't be able to do so without the generous support of the FIRM and their driving facilities.

Our friends at Gator Motorsports have been graciously sharing their track time with us during spring break. Testing time is essential in building a fast and reliable car but is also a rare commodity. We consider ourselves extremely lucky to have been given the opportunity to test at the FIRM. The 80°F weather is also a nice treat! Thank you for supporting our team!



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