FINE TUNING

RFR16 became better prepared for the road this month with tremendous technical support from Rich and Ricardo of Motorcycle Mall in Belleville, New Jersey. Motorcycle Mall is a one-stop shop for all of your motorcycle and all-terrain vehicle needs. The incredible complex consists of not only a vast dealership and parts department, but also a chassis dyno! Chassis dynamometer (chassis dyno, for short) is a test rig that not only helps gauge a vehicle’s powertrain performance, but also provides an smaller, in-house environment for fine-tuning both carbureted and electronic fuel-injected engines. Imagine a treadmill for your mean machine. RFR team members shadowed Rich and Ricardo as they worked their magic on MoTeC to get the car idling and driving better. And so, ‘a big thanks to Motorcycle Mall for sponsoring our team with time on the “rolling road” and invaluable experience in a real-world powertrain test engineering facility.

ON THE ROAD AGAIN

RFR is burning rubber, baby! The RFR 16 was previously out of commission to be featured at several show-casing and recruitment events, to repair several powertrain components, and to configure a new (awesome) MoTec Electronics Package. The new package was redone from the ground up and features an M-150 ECU complemented by a C-185 Datalogger. The past few Sundays, the team has headed out to High Point Solutions Stadium West Lot to give the RFR16 a shake-down! What we’ve learned from overcoming obstacles implementing the package on this car will be invaluable to the team when building the RFR17. Aside from starting from scratch on a complete calibration and wiring harness, we’ve overcome issues relating to insufficient fueling at high load/high rpms, loss of shifting at random intervals, and other minor hiccups. This is the first working implementation of a data acquisition unit for the RFR team in several years and, through telemetry collected about the vehicle and the driver, has already given us an insight into how the car handles and how we handle it. Since the last drive day, we have also installed linear travel potentiometers for the dampers, brake temperature sensors, and several new buttons for driver input to the dash. This data will help us validate and confirm design criteria for the RFR17. The team was also able to capture a great deal of footage for the promotional video we are working on and involve new members in race-day roles. Another drive-day is in sight, and more time will be spent driving the car progressively harder, training drivers, and teaching new members how to record data and maintain the car between runs.
EAGER MINDS

CARS & COFFEE - NEW CANAAN

Ever since mid-September, our new proteges at Rutgers Formula Racing have been working hard on new member projects, training, and various fundraisers...in addition to their homework and exams! To unwind, Rutgers Formula Racing headed up to Waveny Park in New Canaan, Connecticut to witness one of the greatest concourses of automotive enthusiasts: Cars & Coffee. The October 16th event was the 2016 season-finale for folks of all walks of life who truly love a few things in life: cars, the work (or babying) they put into them, and their ownership stories. It was a great opportunity for RFR members who wanted to learn more about automotive design and technology. For many, it was the first time seeing such rare machines as the 1971 Citroen DS, an LP400-type Lamborghini Countach, and even a Porsche 917 homologation special (civilized version of a race car made and sold to qualify for professional races). A great highlight of the day was listening to a vintage Harley Davidson enthusiast walking through all of the old-fashioned engineering quirks of a 1936 “Knucklehead”, while the rider of a brand-new Zero S all-electric motorcycle sat in the back, smiling as he tuned into the lecture.

NEW MEMBER TRAINING

Rutgers Formula Racing began training new members in hands-on skills that are necessary for build-season. This includes university-mandated lab/biohazard safety training, SolidWorks (modeling, drawings, and FEA), and carbon-fiber composite lay-up’s. Senior leaders James Vertes and Justin Russo have also started RFR-exclusive machine shop training sessions taking place throughout November, just in time for the team’s manufacturing season. The session includes safety and operation training on both the manual milling machine and toolroom lathe.
REPRESENTING EXCELLENCE

Rutgers Formula Racing delights in Cars & Coffee; we also delight in Cars & Cocktail Hour. This past month, RFR was given the honor of displaying at the Medal of Excellence Dinner. The event recognizes Rutgers University School of Engineering graduates who have distinguished themselves professionally in industry, academia, government, research, business, and/or continued involvement with the university. Representatives of RFR enjoyed meeting Rutgers alumni who have earned incredible executive and lead-engineering positions at major corporations including Comcast, Exxon-Mobil, and Raytheon—a United States defense contractor. The team hopes to continue attending these events, and even more, to warmly welcome past students to the university again, and to remind everyone of the incredible education and professional experiences offered at Rutgers University, and through Rutgers Formula Racing.

FUNDING THE DREAM

To achieve further excellence, sustainability, and leveled performance with other more heavily-supported Formula SAE teams, Rutgers Formula Racing began planning another crowdfunding campaign through the Rutgers Foundation. Like last year’s, our donation campaign will consist of a crowdfunding web-page and a promotional video. For the first time, Rutgers Formula Racing has opened some of its activities and tasks to journalism students. Christy Manderano and Morgan Sanguedolce of Rutgers School of Journalism and Media Studies are on-board to help produce and manage crowdfund web-page content, and screen-write, produce, and edit the promotional video.

PROMOTION

FUELING YOUNG MINDS

Rutgers Formula Racing was invited to another GSET event this month. GSET is New Jersey's Governor's School of Engineering and Technology, a prestigious program that puts together the top few seniors from high schools throughout the state in college-level engineering courses and activities. We were happy to meet new and familiar faces from the summer's GSET Luncheon. Some parents even attended the information session! We presented our program’s mission, activities, and professional benefits in hopes that these GSET students not only decide on Rutgers University, but also decide on joining Rutgers Formula Racing.

Medal of Excellence Dinner

Fueling Young Minds

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Patrick Jakubowski

Drivetrain Lead
Jr. Powertrain Lead

Major / Year
Mechanical Engineering
Sophomore

Dream Job
Automotive Component System Design

Favorite Car
Lancia Stratos

Why did you join RFR and what have you learned during your first year?

My brother joined Rutgers Formula Racing while I was in high school, and I loved the concept of the program when I heard about it. With some experience doing maintenance on cars, and an interest in racing and automotive design, there was nothing more intriguing to me than being a part of a student run engineering team set out to build and race a formula car. I asked questions, came around to observe manufacture, design, and testing and only further built my interest in the team and the Formula SAE competition as a whole.

As I grew with the team throughout my freshman year, I watched a couple of simple ideas turn to individual parts, then turn to subsystems, then a full computer model of a race car. I involved myself in manufacture, as played a role to turn that computer model into a final finished product. When I look back on where we were and where we are now, it’s only more exciting to look ahead to where we’ll be - with new ideas, new members, and finally a new car.

Umur Selek

Subteam Lead
Vice President
President

Major / Graduation Year
Industrial Engineering - 2012

Work History
2012 - 2014
Transmission Quality Engineer at Honda Precision Parts in Georgia

Favorite Car
Rauh-Welt Begriff (RWB) Porsche 993R

Rutgers Formula Racing has set the foundation for the project and time managing skills that I use every day at my job. Working together with a very diverse group of people to produce a competitive product was a valuable experience that I am glad to have been a part of.

Memorable FSAE Competition Moments

The 2011 FSAE California and 2012 FSAE Michigan Competitions were the highlight of my Rutgers Formula Racing experience. The team pushed through the technical difficulties and completed all events at the competition. Despite all the testing, the 2011 car almost ran out of fuel at the endurance event and the 2012 car had only been driven twice before the competition, leading to many malfunctions at the event. Nevertheless, we have learned a lot in both events.

Advice to Today’s Rutgers STEM/Business Students

RFR’s best output is the people that experience it. The car is the product of many collaborative hours, frustrations, problem solving and teamwork. My advice to the students is to get involved in student organizations as much as you can to expand your knowledge and network. You will not have the same opportunity after you graduate.