To Sponsors, Friends, Family, and everyone else who has supported us,

This year, the team reached new heights in design, presentation, and overall growth. The 2015-2016 race season car saw a complete redesign from previous years, including such features as a lighter one-cylinder Yamaha engine, a full aerodynamics package, center-locking wheel hubs, and an increased focus on quality of manufacturing. With the high annual cost of design and manufacturing behind a single Formula SAE race car, we never would have been able to complete such an undertaking without your help.

What may seem like a contribution towards a race car is also a contribution to something greater. Rutgers Formula Racing is a technology start-up environment centered around the Formula SAE competition for all Rutgers University students who wish to practice crucial skills in their majors--from STEM, to business, to journalism and human resources. Through your products, resources, and services--you have generously invested in the image and reputation of a fine academic institution, and to future, potential talent who aspire to work in various industries.

Thank you for taking the ride with us this past year, and we expect bigger and better things to come in the 2016-2017 race season.

Sincerely,

Byron Chiu
President
A majority of graduating seniors have begun the first-phase of their senior design project: designing and manufacturing 1-piece carbon fiber wheels in motorsports applications—specifically Formula SAE.

NEW ONLINE PRESENCE

To accommodate a growing team and knowledge, RFR has adopted Google Drive for file storage. Rutgers University’s Scarletmail Google accounts offer unlimited Drive space, making it the preferred choice for storing all of the team’s engineering, business, administrative, and media files. The Drive also now serves as a growing “alumni library” of automotive design research papers and other technical documents, initiated and first populated by Michael Black of the Class of 1990, now a body engineer with Ford. Additionally, the team needed a fresh, connected way to track progress. With demands of kanban-style project management environments, RFR has adopted an academic group account with Asana, a world-famous project management software.

WEBSITE UPGRADE TO DRUPAL 7

To enhance RFR’s online image, the team’s website has been significantly redesigned with the latest Drupal website architecture, backed by the team’s newest Website & Media division. The new website is a great place to learn about our organization, Formula SAE/SAE, annual build progress, meeting/involvement opportunities, and professional benefits to our program.

MOTION WITH MOTEC

Rutgers Formula Racing’s first major engineering equipment change this year is the team’s upgrade to MoTeC System products. With the help of Chris Moritz and Richard Pittman at MoTeC Systems-East in North Carolina, RFR has been running on the MoTeC M150 engine-computer unit (ECU) and C185 driver display with built-in data logger. This powerful duo was carefully selected with user-friendliness, precision, slim-packaging, out-of-the-box usability, and future-applications in mind. The massive amounts of online technical and friendly customer support was also a plus!

NEW TALENT

RFR kick-started the year with a fresh group of new members! The first team-wide general meeting and sub-team meetings took place around mid-September. In addition to meetings regarding sub-system design, engineering concepts and introductions to hands-on skills, RFR implemented its first New Member Packet. Involvement in a Formula SAE program can get complicated, so a New Member Packet was created to guide new members in all aspects: candidacy requirements, learning about Formula SAE design and competition rules, and design/manufacturing training. Through October and November, new members will work on FSAE-related design and business assignments, work fundraisers, and attend training sessions for Solidworks, lab safety, and metal or composites manufacturing.
FUNDRAISING & OUTREACH:
As a relatively small organization without as many resources and local industry connections as other Formula SAE teams, Rutgers Formula Racing puts in significant effort towards raising annual funds and interacting with new and potential members. Since our last update, we were featured on Rutgers Student Affairs’ involvement fair highlight (middle) and our fundraising and outreach schedule has taken the team to three weekend-long music festivals (top), the New Jersey Governor’s School, a racing event, The New York International Auto Show, and the traditional Rutgers Football home games (bottom)!

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<tr>
<th>EVENT NAME</th>
<th>ACTIVITY</th>
<th>TIME</th>
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<tbody>
<tr>
<td>New York International Autoshow</td>
<td>Outreach</td>
<td>April</td>
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<tr>
<td>Optima x USCA: Ultimate Street Car Challenge</td>
<td>Fundraiser</td>
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<td>Rutgers Student Involvement Fair</td>
<td>Recruitment</td>
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<td>Made in America Music Festival</td>
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<td>Rock Allegiance</td>
<td>Fundraiser</td>
<td>September</td>
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<td>The Meadow Music Festival</td>
<td>Fundraiser</td>
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<td>New Jersey Governor’s School Information Sessions</td>
<td>Outreach</td>
<td>August, October</td>
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<td>Rutgers Football Home Games</td>
<td>Fundraiser</td>
<td>September-November</td>
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<tr>
<td>Rutgers University SOE Alumni &amp; Industry Representatives Gala Dinner</td>
<td>Outreach</td>
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<td>Rutgers Foundation Crowdfund Project</td>
<td>Fundraising</td>
<td>October-March</td>
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**Meet the Team**

**Rajan Patel**  
*Jr. Electronics Lead*  
**Major / Year**  
*Electrical Engineering*  
*Sophomore*  
**Dream Job**  
*Developing robotic prostheses*

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

I joined RFR primarily to pick up the practical skills and experience that I knew I wouldn’t get through the regular curriculum. In classes, I’ve learned many theories that go into electrical engineering and in labs I’ve watched those theories in action. But once I joined RFR, I truly utilized those theories to design components myself. There’s a huge difference between a word problem that you know is supposed to be solved in a certain way and a real life problem that has no answer key.

As a freshman, I did more research and design for RFR than for all my classes combined. I learned about theories and formulas that I normally wouldn’t have been taught until my junior year, but more importantly I learned how to apply them to real world problems. In addition to learning design, I learned about the practical side of engineering, which is once you design something, you have to build it. I learned about wire gauge, wire routing and management, connector selection, and far more. Just as a first year general member, I acquired skills you would never learn in any class. As part of RFR, I’ve learned to machine parts, to model parts in CAD, and a substantial amount of mechanical engineering and vehicle dynamics.

**Martin Alabanza**  
*Former President*  
*Biomedical Engineering*  
*Weiss-Aug*

**Michael Nelson**  
*Former Suspension Lead*  
*Mechanical Engineering*

**Ely Nazar**  
*Former Chief Engineer*  
*Mechanical Engineering*  
*Cell Biology and Neuroscience*

**Rob DeSimone**  
*Former Ergonomics Lead*  
*Mechanical Engineering*  
*Marotta Controls, Inc.*  
*Rutgers University Masters of Science Program*

**Where has RFR helped you in your career thus far?**

This summer I worked at Trumpf Photonics, Inc. in Cranbury, NJ as an Automation Engineering intern. My job was to automate the assembly and testing of laser diode devices. I worked extensively with 4- and 6-axis robotics devices and developed machine vision software to accomplish these goals.

Working with RFR gave me a lot of skills to deal with the professional engineering environment. I learned to communicate with my peers and superiors, as I was already familiar with working alone on a single modular part of a larger collaborative product.

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**Visit us at our newly refreshed website:**  
*RFR.RUTGERS.EDU*

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