

# Stony Brook Robot Design Team

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## *About Us*

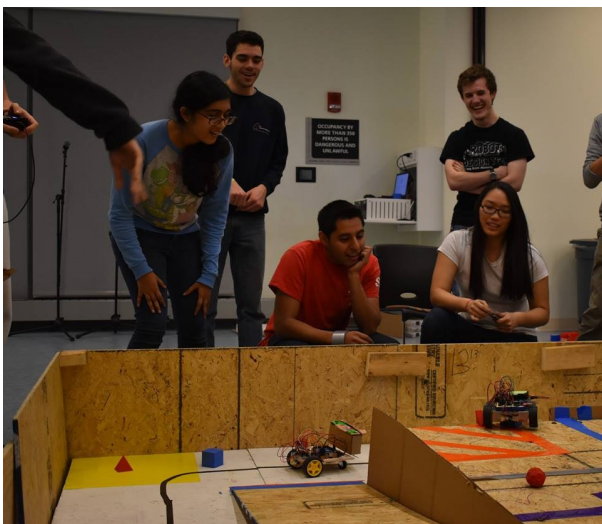
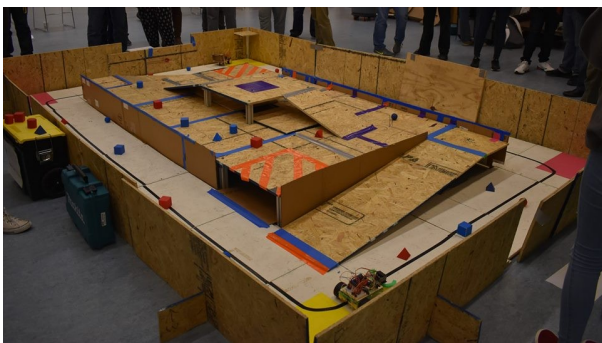
Established in 1996, the Stony Brook Robot Design Team (RDT) has expanded in the last two decades, earning the status of the largest design team on campus. Over the years, the RDT has attracted highly motivated undergraduate and graduate students who share the passion for programming, designing, and building robots. The team welcomes all skill levels and encourages personal growth and learning through hands on experience and technical workshops. With the annual influx of new members and the departure of graduating seniors, new skills, techniques, and ideas are created and adopted every year. The design team participates in two competitions every year: an internal competition hosted on campus, mainly for new members, and an external competition off-campus for both experienced members and new members seeking the challenge.

## *Internal Competition*

Designed for new members with limited experiences in engineering, the internal competition aims to teach valuable introductory skills in mechanical, electrical, and software engineering. In small diverse groups of students, new members compete with each other to see who's robot will come out on top. Students new to the club work with returning members to learn the skills needed to be successful on the team and in their majors. This annual competition encourages perseverance, teamwork, and an understanding of all three disciplines, helping to expose members to the team-based experience needed to work in field.

The 2017 Internal Competition, called Blockbuster, had teams create small robots that could pick up and move blocks to specific locations in the arena. The robots, made to be remotely controlled and optionally autonomous, competed with each other to see who could move the most blocks and score the most points.

The 2016 Internal Competition had members create an autonomous robot that can travel through a wooden maze. The robot that could get through the maze the fastest and without any assistance was the winner.





## *External Competition*

Following student's participation in the Internal Competition, they are encouraged to participate in the annual external competition the RDT participates in. In these competitions, members further develop their newly acquired engineering skills and improve their understanding of robot design and construction. Preparation for the competition involves months of pre-planning, usually beginning in the summer prior.

In 2017, the external competition we participated in was Mech Warfare, part of ShepRobo Fest. The goal of the competition was to build an autonomous robot that can actively fight other university-based robots with an aero-soft gun while also being able to dodge incoming fire. The final product was a four -legged walker robot called "Fred".

## *Outreach*

The RDT actively seeks to be an integral part of the campus and local Long Island communities. The goal is to get other people interested in the field of robotics and engineering via presentation, education, and live demonstrations.

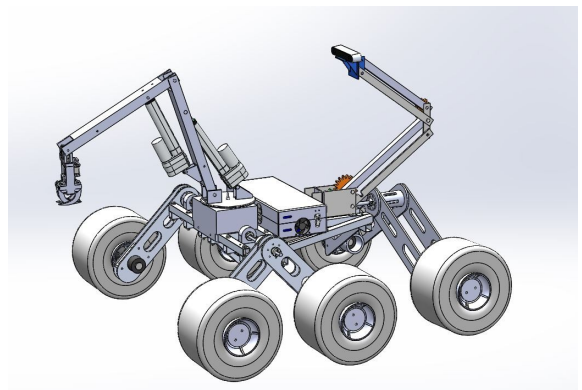
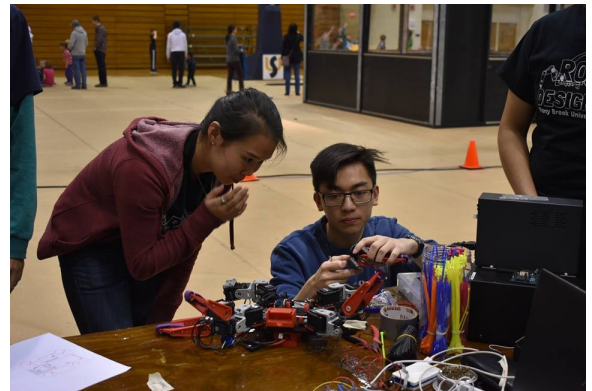
On campus, the team aims to be an active member in our community by participating in different events held throughout the year. From the bi-annual Involvement Fair to Admitted Students Day, we enjoy showcasing our interests to the rest of the student body.

Off campus, the team focuses on traveling to local schools and educating kids about robotics and engineering. In the late Spring of 2017, the RDT was invited to Moriches Elementary School to give a presentation and to showcase our current robot at the time, Fred.

## *The University Rover Challenge*

The next big External Competition that the RDT wishes to participate in is the University Rover Challenge of 2019! This competition challenges students to build an autonomous rover that can analyze and move in it's surroundings and take samples of soil for scientific testing. The University Rover Challenge is, by far, the largest, most ambitious project the Robot Design Team have ever undertaken. Work on the robot began early in the summer and has been underway since then.

Even though the competition isn't until 2019, the prototype of the rover is almost completed and much has been learned throughout the design phase of it. However, even with the amount of progress made, getting the final product of the rover finished and tested in time for the competition will require a vast amount of development, construction, and logistical organization over this next year.



*CAD model of rover currently being fabricated*

## ***To Our Sponsors***

It's important to acknowledge that our achievements and success could not have been a reality if it wasn't for the people supporting our cause. Through the aid of various people and groups we have been able to really flourish and become as big and successful as we are now. We owe a lot to our sponsors and individual donors who have helped to fund and achieve our endeavors.

You too can help us achieve our goals and hit ever new heights! If you decide to become a corporate sponsor of the Robot Design Team, you will have a hand in teaching students important life skills. You will be encouraging students to follow their passion and even allow students to discover their untapped potential. Any and all contributions will have a huge impact on the future of not only the Stony Brook Robot Design Team, but also its members. If you are interested in supporting the RDT, then know that you're helping to shape the future.

If you would like to learn more about The Stony Brook Robot Design Team or are interested in becoming a sponsor, please contact us at [robot.team@gmail.com](mailto:robot.team@gmail.com), or if you'd like to talk to one of our members directly:

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