



REBEL ROBOTICS

**GREAT NECK SOUTH
HIGH SCHOOL**

***FIRST* TEAM 2638**

TEAM HANDBOOK



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1.0 Introduction

Our mission statement, which was established when our team was first founded in 2008, is “changing the culture one nut and bolt at a time.” This motto drives our team in both the actual construction of our robot, and, in a broader sense, the methodical way in which we have approached growing and sustaining our team. With each small step, we continue to build onto the foundation that we have created. This motto, printed on every individual competition T-shirt, is something that we take pride in and of which we wish to remind others. It is our goal every year to build awareness of STEM “one nut and bolt at a time.” The four fields that represent STEM are fundamental not only to our robotics team, but in our team management as well as many other activities. Reaching out to others, mentoring, educating, and inspiring all build a foundation for the culture within our team, in the community, and in society as a whole that focuses on the vital importance of the sciences, technology, engineering and math. Both our robot and our team development serve as a model and as a driving force to implement the changes we value within society.

FIRST (For Inspiration and Recognition of Science and Technology) was founded by Dean Kamen in 1989, serving “to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.”

1.1 History

In September 2007, mentors John Motchkavitz and Matthew Corrigan founded our team, Rebellion. Team 2638 resides within Great Neck South High School. In 2007, there were eight initial registered members. In order for us to effectively build a robot and complete our other initiatives such as outreach, education, mentoring, community service and fundraising, it is essential that as a team we are organized and efficient. Team 2638 has always dedicated itself to having student members be hands-on designers, builders, and visionaries. The members are the true driving force behind the building of our robot and our team itself. Team 2638's mentorship involves a collaboration of school staff, professional engineers, team alumni, and non-engineering mentors. While the team's initial focus was primarily on the construction of the robot, due to the team's extensive efforts in recruitment, outreach and education, non-engineering mentors also guide the team with concerted efforts in fundraising, publicity, planning and organizational management. We have grown into a sophisticated, multi-dimensional organization where every member can be both effective and given a range of opportunities to acquire new skills and grow. At the beginning of the fall 2019 season, the team rebranded itself to Rebel Robotics. This rebranding reflects the transformation of the team from a small, mentor-focused leadership to an organization with numerous leadership and decision-making opportunities in our diverse committee structure.

1.2 Awards

2008

- SBPLI Rookie All-Star Award

2009

- SBPLI Safety Star of the Day – Natasha Banchik
- SBPLI Regional Winner
- SBPLI Industrial Safety Award sponsored by Underwriters Laboratories

2010

- SBPLI Safety Star of the Day – Bob Tobias
- SBPLI Chairman's Award
- SBPLI Industrial Safety Award sponsored by Underwriters Laboratories

2011

- SBPLI FIRST Dean's List Semi-Finalist – Joshua Graber
- SBPLI Industrial Safety Award sponsored by Underwriters Laboratories

2012

- SBPLI FIRST Dean's List Semi-Finalist – Joshua Graber
- SBPLI Engineering Inspiration Award

2013

- Chesapeake Safety Star of the Day - Haley Strongin
- Chesapeake Industrial Safety Award sponsored by Underwriters Laboratories
- Chesapeake Regional Winner
- World Championships Industrial Safety Award sponsored by Underwriters Laboratories
- SBPLI Industrial Safety Award sponsored by Underwriters Laboratories

2014

- SBPLI Team Spirit Award sponsored by Chrysler
- SBPLI Industrial Safety Award sponsored by Underwriters Laboratories

2015

- Chesapeake Woodie Flowers Finalist Award - John Motchkavitz
- SBPLI Safety Star of the Day - Haley Strongin
- SBPLI Entrepreneurship Award sponsored by Kleiner Perkins Caufield & Byers
- SBPLI Industrial Safety Award sponsored by Underwriters Laboratories

2016

- Finger Lakes Chairman's Award
- Finger Lakes Safety Stars of the Day - Clara Goldberger and Avery Strongin
- SBPLI Industrial Safety Award sponsored by Underwriters Laboratories
- World Championship Industrial Safety Award sponsored by Underwriters Laboratories
- World Championship Safety Stars of the Day - Clara Goldberger and Avery Strongin

2017

- Finger Lakes Johnson & Johnson Gracious Professionalism Award
- Finger Lakes Industrial Safety Award sponsored by Underwriters Laboratories

2018

- Smoky Mountains Entrepreneurship Award sponsored by Kleiner Perkins Caufield and Byers
- Smoky Mountains Industrial Safety Award sponsored by Underwriters Laboratories
- SBPLI 1 Woodie Flowers Finalist Award - Matthew Corrigan
- SBPLI 1 Regional Finalists
- SBPLI 1 Wildcard

2.0 Team Structure

2.1 Leadership Council

1. Awards Liaison (1)

a. Job Description

- Work with team mentor to complete online applications for competition awards.
- Collaborate with other students to produce five, printed team books representing team activities and accomplishments.
- Collect and analyze team demographics and other pertinent data.
- Assist in the production of video that accompanies award submission.
- Represent team in judges' interview at regional competitions.

2. Competition Liaison (1)

a. Job Description

- Assist in the preparation for competition.
- Provide all types of support at the actual regional events (i.e., setting up and breaking down pit area, running errands, assisting at hotel location).
- Ensure smooth execution of all plans.

3. Design and Building Liaison (1)

a. Job Description

- Design the team's robot and other items using CAD.
- Assist in the construction of mock-up competition game pieces.
- Construct the team's robot using various machines, tools and devices (CDC machine, 3D printer, etc.).
- Maintain the robot's systems during the competition.

4. Digital and Social Media Liaison (1)

a. Digital Media Job Description

- Take videos and pictures of the team at work in the shop, during events, and at competition.
- Work with team members and mentors to create and produce a video to be used as a component of the Chairman's Award submission.
- Develop additional media for the school community, public and donors that can be used to showcase the team.
- Maintain master file of team pictures.

b. Social Media Job Description

- Develop, monitor, and maintain team's online and media presence through social platforms (Facebook, Instagram).
- Promote team through newspaper and other forms of printed media.

5. Fundraising Liaison (1)

a. Job Description

- Work with other committee members and mentors to raise funds.
- Identify new strategies to raise money or obtain necessary support from donors (in the form of money or goods and services).
- Run regular bake sales (at least one per month).
- Assist in already established fundraising events (Parent Social, sale of bricks at trailer area garden, etc.).

6. Merchandising Liaison (1)

a. Job Description

- Design, purchase, publicize and sell team merchandise (clothing, accessories and other items).
- Maintain inventory of merchandise and initiate re-ordering as needed.

7. Outreach Liaison (1)

a. Community Action Job Description

- Participate in off-site activities to promote STEM and robotics at community events (street fairs), organizations (COPAY) and school events (STEM fairs; elementary, middle and high school visits) both in and out of the district.
- Conduct workshops concerning disaster readiness in elementary schools.
- Volunteer to assist in community activities in order to increase the team's public profile.

b. Charitable Action Job Description

- Identify and help organize and carry out activities that link our team with charitable organizations (hospitals, scouting, shelters, charities).
- Develop innovative strategies and partnerships with the assistance of mentors to give back to our community and make our team a presence on Long Island and abroad.
- Participate actively in school fundraisers and outreach initiatives such as Lunch with Santa, St. Baldrick's, and Midnight Run .

8. Programming Liaison (1)

a. Job Description

- Work with mentor and other students to program the robot to achieve the competition's goals.

9. Promotion and Spirit Liaison (1)

a. Job Description

- Work collaboratively with other committees and team mentors to help promote the efforts of the team within and outside the school environment.

- Develop new strategies to create a positive profile for our team.
- Design and make signs, buttons and handouts.
- Organize spirit/promotion efforts at competitions.

10. Safety Liaison (2)

a. Job Description

- Work to monitor and improve safety in the shop and at competitions.
- Track First Aid/AED/CPR certification for team membership.
- Monitor safety at competitions.
- Reach out to other FIRST teams and the community to promote safety.

11. Scouting Liaison (1)

a. Job Description

- Analyze and utilize team data before and during competitions to identify compatible teams for playoffs.
- Develop strategies for competition game matches.
- Speak with teams at competitions to build collaborative relationships and to identify potential technical items/systems on other robots that our team can use in the future.

12. Treasurer (2)

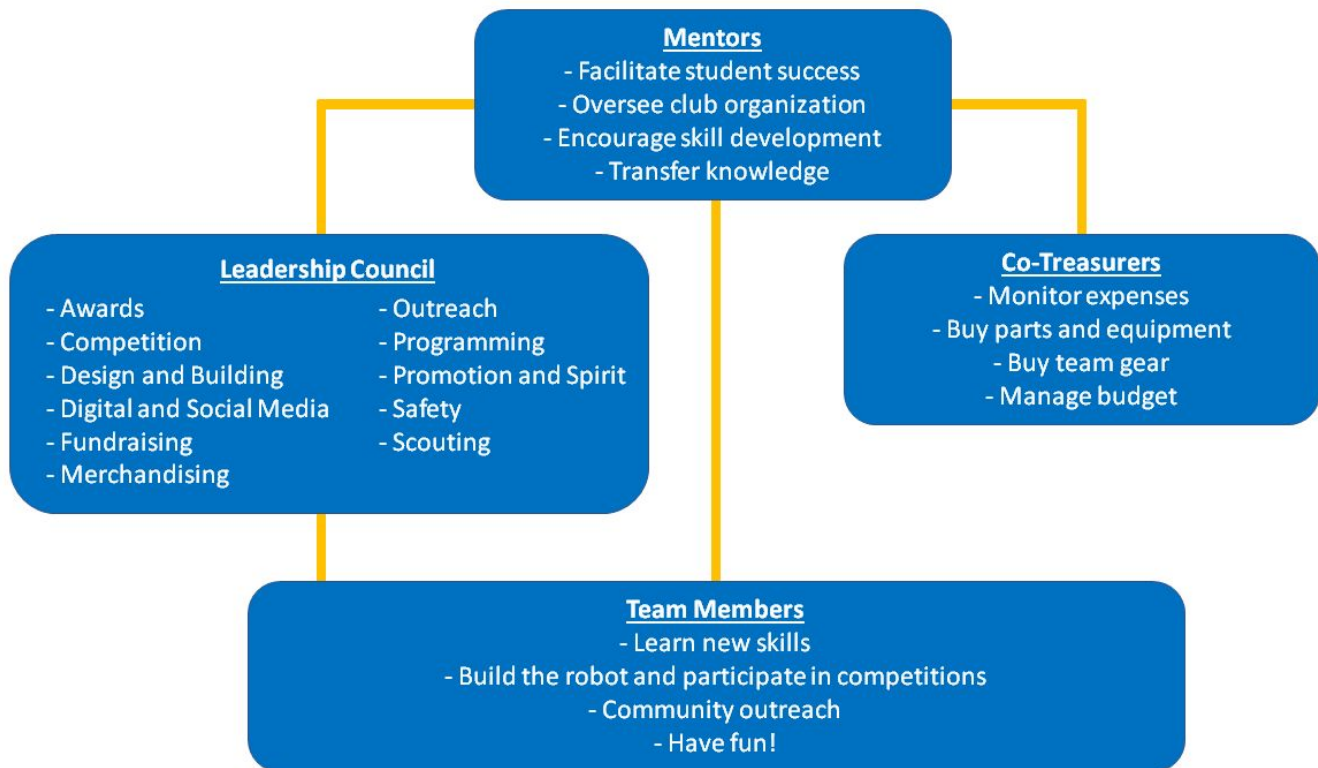
a. Requirements

- 1 year of membership on team.
- Attended a minimum of 2 FIRST sponsored competitions (including off-season events).

b. Job Description

- Work with mentors to monitor team financial expenses.
- Document income and manage budget expenses.
- Buy parts, equipment and gear.

2.2 Team Organizational Chart



2.3 Build Season Focus Groups

1. Build

a. Fabrication and Assembly

- i. Manage quality and control practices
- ii. Logistics, work sequencing, and build schedule
- iii. Inventory
- iv. Shipping, bag and tag
- v. Foster education of team members
- vi. Fabricate parts
- vii. Build mechanical aspects of structure
- viii. Assemble subsystems

2. Programming
 - a. Robot programming
 - b. Electronics
 - c. Sensors
 - d. Applications
3. Design
 - a. Build and inspection rules
 - b. Design and CAD
 - c. Bill of Materials
4. Scouting
 - a. Strategy
 - b. Game Rules
5. Nontechnical
 - a. Awards
 - i. Award submissions expertise
 - ii. Chairman's Award preparation, essay, and delivery
 - iii. Business Plan/Entrepreneurship Award
 - iv. Woodie Flowers essay
 - v. Dean's List Award
 - b. Media
 - i. Social media management
 - ii. Pit design
 - iii. Pit media
 - iv. Outreach media
 - v. Website management
 - vi. Slideshows
 - vii. Videos

- c. Business
 - i. Business plan
 - ii. Team budget
 - iii. Sponsor relations
 - iv. Fundraising and grant applications
 - v. Maintain a schedule for financial deadlines
- d. Spirit
 - i. Cheers
 - ii. Giveaways
 - iii. Parades
 - iv. Pep rallies
 - v. Student recruiting
 - vi. Uniform/clothing design
 - vii. Internal communications

3.0 Team Member Expectations

3.1 Participation

Robotics requires many hours beyond time in the classroom. Every team member is expected to participate in team work sessions, meetings, events, and activities.

1. Team Meetings

- Outside of school, the team meets every Wednesday after school in the Robotics room (207) at 2:40.
- During build season and competition season, from January to April, the team will meet every day in the Robotics room (207).

2. Events

- Pre-season, team members may participate in demonstrations, fundraisers, team-building activities and mentorship opportunities.

- Members must attend a minimum of 20 roll call events (meeting or fundraising event) to attend a competition with the team.

3.2 Conduct

Team members are expected to act in a manner that positively reflects our team and high school. All members are expected to do the following:

1. Follow the school's Code of Conduct
2. Be respectful and professional towards all people they encounter
3. Act in the team's best interest
4. Promptly and completely finish all tasks assigned

Failure to comply will result in a warning meeting with lead mentor, followed by exclusion from team events if students do not correct their behavior.

4.0 Safety

1. Wear safety glasses at all times in the workshop and pit area
2. Follow all instructions from the safety captain
3. Pass the safety test and safety project
4. Wait for a school-employed mentor to use any power tools
5. Attend the CPR, AED, HazMat, and First Aid certification classes

5.0 Competitions

If privileged with the ability to attend an off-season event, regional, and/or championship competition, team members must promptly and completely make up all missed work. Students are legally excused from school for these events but must act in accordance with the Code of Conduct above.

6.0 Travel Requirements

In order to travel to regionals with our team, students must:

1. Be passing all classes
2. Contribute to the team in a positive way
3. Meet attendance requirements
4. Understand the robot's function and the competition challenge
5. Understand the team's purpose, goals, and procedures

7.0 Parent Expectations

Parents are encouraged to actively participate in our events and competitions. Our team requests dinner and snack donations throughout build season. Parents are expected to transport their children to and from any meeting or event when transportation is not provided by the school. Parents should help their children in fundraising, sponsorship development and provide support to all members of the team. All parents are expected to do the following:

- Register their child for FIRST Dashboard on the website provided after they receive the email that their child has filled out all necessary information
- Email Mrs. Dressner (gnrobotics@aol.com) to be added to the robotics parents' email list and inquire about the NEMO team (Non Engineering Mentor Organization)

8.0 Resources

8.1 Team Resources

Website <https://www.gnsrobotics.com>

Facebook <https://www.facebook.com/gnsrobotics/>

Instagram <https://www.instagram.com/gnsrobotics2638/>

Mentor emails

Mr. Motchkavitz (Motch) jmotchkavitz@greatneck.k12.ny.us

Mr. Corrigan mcorrigan@greatneck.k12.ny.us

Ms. Zinn azinn@greatneck.k12.ny.us

Technology department (516) 441-4841

8.2 Organizational Resources

FIRST FRC <http://www.usfirst.org/roboticsprograms/frc>

FIRST Dashboard (Go To Login) <https://www.firstinspires.org/>

Chief Delphi <http://www.chiefdelphi.com>

The Blue Alliance <https://www.thebluealliance.com/>

9.0 Further Information

For more information, please talk to a board member or mentor.