Chairman's Award - Team 2638

Print Close

2022 - Team 2638

Team Number

2638

Team Nickname

Rebel Robotics

Team Location

Great Neck, New York - USA

Describe the impact of the *FIRST* program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in *FIRST* programs as mentors/sponsors.

The FIRST program expands members' awareness of STEM and develops their technical skills. 67.3% of team members are planning to pursue a STEM major, and 69.4% of members felt they gained teamwork and communication skills through their involvement in 2638. Rebel Robotics also positively impacts young women interested in STEM through the educational, motivational, and social activities of our affinity group SHE (She Has Empowerment), which gives young women a "safe space" to pursue STEM passions.

Describe your community along with how your team addresses its unique opportunities and circumstances.

Located in a diverse suburb of New York, 2638 belongs to a competitive school district where 98% of students attend college. Close community ties enable collaboration with the local Fire Department, Rotary Club and Boy Scouts. 2638's success inspired increased staffing and funding for STEM in our district. We took advantage of the Covid environment by hosting a PPE drive, Operation Get Well (cards for Covid patients), virtual team meetings and socials, and book drives for charity.

Describe the team's methods, with emphasis on the past 3 years, for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?

Our team's social media and website play an active role in promoting FIRST online. We have 528 Instagram followers and have had over 20,000 visitors to our website. To raise public awareness of FIRST, we display our robot at public events such as our town's street fair. We also employ unique fundraising strategies with fun merchandise (i.e. bucket hats) featuring our logo. We collect quantitative data through evaluation forms and anecdotal data through feedback groups/debriefing sessions.

Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.

2638 team members aim to act as role models by spreading knowledge within our strongest skill areas. We established a CAD self-study program for our team and shared it with the Gold Coast Alliance. At a roundtable event with 45 members from 5-6 local FRC teams, the leader of our Scouting Committee did a presentation of our Scouting App, which is available to other teams on the App Store. To spread our expertise in safety, we gifted safety kits to all the attendees at our FTC event last year.

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

We have mentored FRC teams at North Shore (3950), Seaford (4567), and Mineola (6806). We helped our sister school, GN North High, start an FTC team by providing technical assistance and hosted an FTC event with them in 2020. We collaborated with the Cub Scouts to start a Jr. FLL team; we also were involved in starting 4 Saturday/Sunday FLL teams within our district this year. Our team established the Gold Coast Alliance, a network of 14 FRC teams on Long Island that actively support one another.

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

Last fall, our gender-equity initiative She Has Empowerment, SHE, held a virtual panel of female GNS STEM teachers to share their experiences, challenges and advice for pursuing STEM. Embodying this commitment to inclusivity, members created and delivered a 3-week Java Course to 7 students from Tajikistan in 2020; this was expanded upon in 2021 by adding Computer Aided Design for 19 girls across Tajikistan, Egypt and Algeria. We enabled girls to explore areas crucial to future endeavors in STEM.

Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years

Our last 3 Gold Coast-Lake Success Rotary Club fundraisers raised $16,000, but Covid halted our usual events. We created the Gold Coast Alliance, a supporting network of 14 FRC teams and hosted an FTC event, reaching 550 individuals and 40 teams. Our members mentor local FLL teams weekly. This month, our North High mentee placed first in their regional. Through team food drives, we consistently contribute to the St. Aloysius food pantry, supporting food-insecure families in our community.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.

To promote gender equity and inclusion, the team launched a female affinity group, She Has Empowerment (SHE), that holds programs within the team, school, and community. We also hold technical workshops for new members and encourage them to join committees to ensure that younger members, 47.1% of the team, are included. As for diversity, our team is proud to be composed of members with backgrounds from 31 different countries, with 78.8% of members representing diverse ethnic and racial groups.

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

In 2018, our team was restructured into 13 different committees, headed by leaders and co-leaders, to ensure strong leadership and effective communication in each skill area (building, CAD, safety, etc.). We also established a peer mentor program in 2019, matching 13 team members with 80 new members for stronger influence on first year members. To ensure our team's sustainability, we built relationships with middle school students by helping their FLL teams and hosting an Hour of Code event.

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years

When recruiting sponsors, 2638 identifies those with aligned interests and networks through cold calling. We present our sponsors with awards, feature them on our website, and visit them to create enduring ties. The Gold Coast-Lake Success Rotary Club exemplifies our sponsor engagement: they host our fundraiser, identify our students for awards, and we work together on charity efforts. This year, we received a NASA Program Growth Grant of $5,000 to cover regional registration costs.

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

Responding to a female members feedback group and mentors' observations, we began a gender-equity initiative to raise female membership by 10% each year until we reach 50%, boost female leadership, and connect girl members with STEM professionals. SHE was created to achieve these goals by organizing interviews with women working in STEM, career development workshops, programs with middle and elementary school girls, and creating safe and supportive social spaces for female students.

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

2638's goals to fulfill the FIRST mission include spreading STEM awareness while emphasizing diversity and gracious professionalism. Through our affinity group SHE's programs (i.e. panel discussions with female STEM majors), we aim to increase the participation of women in STEM. Embodying gracious professionalism, we have collaborated with numerous FLL, FTC, and FRC teams and helped them expand their technical/safety skills. Through our participation in FIRST, we strive to be a force for change.

Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.

In accordance with 2638's concern for physical and emotional safety, a health survey was conducted for team members. We found that 65.9% experience anxiety over school, 53.2% experience anxiety over life issues, 34% find it difficult to relax, and 57.5% feel they do not sleep enough. These results demonstrate a need for programming and resources to educate and assist members. Mentors are currently meeting to see in what ways, both within the team and systemically, students can be helped.

Essay

Team 2638's mission is to act as a force for change and growth of STEM in our community and in the world at large. Hence, our team adopted the motto "changing the culture one nut and bolt at a time." Our internal and external efforts advance our team and increase awareness of STEM in our world. Since our start in 2007 with 10 members, we have diversified our breadth of activities and increased our membership by 1450%. Inspiring, mentoring, and promoting diversity are the strategies we use to accomplish our mission.

EDUCATION - Our team is committed to developing members' technical and interpersonal skills. Cultivating leadership skills is vital to our team's success; our seminars instruct students on leadership styles, organizational dynamics, and communication skills.

We arrange meetings in September to teach new members via tours of the workshop and basic equipment. Leaders teach new members how to prototype, use CAD, and handle machinery. Seeing how vital CAD is to our team and the future of technology, our district approved a CAD elective available to all students, changing the educational culture within our district. Female members are encouraged to join Girls Who Code (founded by two team members), a club focused on computer science, presently a male-dominated field.

Our philosophy centers around responsible conduct and safety. In collaboration with the Great Neck Alert Fire Company, we ensure that every team member is certified in CPR, AED, and First Aid. A safety test is required to handle machinery and tools, and we mandate the use of safety glasses at all times.

Our safety measures extend into local and FIRST communities. As a three-time international safety award winner, we work to elevate the safety standards of fellow FRC teams. With our guidance, the Huntington High School team went on to win a regional safety award. To keep our district safe, representatives attend a monthly district-wide safety conference and spread safety education in elementary and middle schools. To promote mental health awareness, our team conducts member surveys (assessing stress and personal health habits) and puts up posters to promote mental health education. At competitions, we embody safety by: creating an evacuation plan; equipping our pit with devices/instructions to prevent and handle accidents; instructing other teams on safety procedures; and gifting safety items and awards to FRC competitors.

2638 brings STEM to the community in many ways. In 2019, we showcased our robot in our town's street fair to over 3,000 attendees. The FTC event we hosted in 2020 brought STEM awareness to 550 community members. Because of the success of robotics, the school administration created a new position: district-wide coordinator for STEM; thereby, establishing a cohesive and standardized approach for infusing STEM into our schools. Given his expertise in STEM education, team mentor John Motchkavitz was selected for this position. The district also demonstrated their overall commitment to promoting FIRST within the school community by spearheading our Robotics lab's recent renovation. A total contribution of $15,900 was made towards new LED lighting, floor replacement, painting, new windows, garage door weatherproofing, and new carpeting for field set up. Summer 2022 will bring about the complete overhaul of the team's prototyping/woodshop area costing $250,000 and 25 new computers will be purchased for our lab at a cost of $55,000.

INSPIRATION - Inspiring others is vital to our team mission; one way we do this is by pursuing charitable efforts. During lockdown, team members organized Operation Get Well, sending 2,638 personalized cards to hospitalized Covid patients. Our PPE initiative raised and donated $550 worth of essential equipment to hospitals. In 2021, we 3D-printed 150 face shields to donate to essential workers. In 2020, 855 books were collected and donated to a local charitable literacy organization. Last year's book drive netted over 600 donations. Another book drive is currently being held with over 500 books already collected. Pre-2020, our annual Lunch with Santa event raised $10,167 for local charities. In its place, Ugly Sweater Contests were held to raise school spirit and $1,150 in gift cards for veterans. We engage in Midnight Runs each year, collecting and distributing supplies to the homeless in NYC, and plan to host our next drive this February. Working with the Rotary Club, we packaged 16,000 meals for the needy. Many team members shave their heads to raise money for St. Baldrick's, a charity supporting childhood cancer research, raising $33,912 over the past three years.

We have an ongoing collaboration with Sunrise Day Camp (a summer camp for children with cancer and their siblings). At their biannual Family Fun Day, we run activities (building challenges, sink-or-float experiments, robot driving) at their STEM Shack. We collaborated with Boy Scouts to develop a piece of land at our school that houses our team trailer and acts as a 9/11 memorial; the site paved with bricks engraved with messages from our supporters.
The award-winning novel Ungifted by Gordon Korman was inspired by and dedicated to 2638. It has been published in English, Spanish, Korean, Japanese, and Turkish.

Essay - page 2

MENTORSHIP - In addition to assisting and mentoring other FRC teams, 2638 also mentors FLL teams (12 in the past 3 years) and 1 FTC team in our district. We also initiated and will be running a Jr. FLL team in collaboration with the Cub Scouts.

In 2018 at the Half Hollow Hills Off-season event, we shared our robot with a new FRC team from Mineola High School to give them practice competing. Moreover, we formed the Gold Coast Alliance, consisting of 14 FRC teams that regularly share resources and support. We currently mentor FRC Teams 3950, 4567 and 6806.

In January 2020, our team was asked to host an FTC event with our sister school's FTC team. Sixty-six team members performed a variety of roles over the two-day event: field resetters, judge's advisors, and fundraising associates. We conducted a raffle and gifted safety kits to each of the 40 teams. Responses to a feedback survey recognized the pivotal role that we played in making the event a success. Our team continues to get involved with local events as team members acted as coordinators for the ZOOM FTC tournament in February.

International outreach focuses on promoting STEM awareness education. Members within our robotics team have embodied our team's commitment to service and sharing knowledge by developing and delivering a 3-week educational course to explore male-dominated STEM fields. Starting with teaching the fundamentals of Java programming to 7 female students from Tajikistan in 2020, this program was expanded to include Computer Aided Design for 19 girls across Tajikistan, Egypt and Algeria this year. A team member also went to Hyderabad, India, as part of the Global Encounters Program to better underprivileged children's quality of life. We collected educational supplies and clothing to provide them with the tools needed for long-term development.

SUSTAINABILITY - To ensure sustainability in light of Covid, we organized a virtual appreciation reception to acknowledge team members' efforts and to thank sponsors for the past two years. Keeping members' spirits up has also been a priority, holding a virtual social and creating a team music video. Last season, we held ZOOM meetings daily to replicate our collaborative work sessions. With the easing of district Covid restrictions, we were able to resume sessions in-person this year.

We work with the middle school, creating relationships with younger students to ensure our team's sustainability. We send experienced team members to the middle schools to help their FLL teams. During Computer Science Week, we hosted an Hour of Code event, introducing middle schoolers to programming and inspiring future generations of 2638 coders. Nine team members worked with the 48 attendees. This year, we plan on hosting an open house event for middle schoolers in the spring, encouraging students to engage with the team before entering high school, offering coding activities, and ensuring our team's sustainability.

During the 2018/19 season, we discontinued a hierarchical leadership structure in favor of 13 distinct committees, from building to outreach. This is more welcoming to new members and allows for the pursuit of personal interests. As a result of information culled from a new-member feedback group, we introduced a peer mentoring program in 2019. In the program's initial year, thirteen veteran members were matched with 80 new members to ease them onto the team and provide them with ongoing support. After evaluation data was collected, we updated the program to be organized on a voluntary basis.

We embraced a gender-equity initiative to offer female members more leadership positions and chances to connect with STEM professionals. As of the 2021-22 season, females account for 46.4% of leadership positions (a 26.4% increase from 2018). A new affinity group, SHE (She Has Empowerment), was introduced in 2020. Comprised of females from 2638, its goal is to advocate for equality in STEM through panel discussions with female STEM teachers, resume writing workshops, and other accomplished female guest speakers.

Good communication is crucial to any organization. The app Discord is our primary communication tool; it allows us to connect in a more organized fashion. We also use social media to post announcements to our supporters and members. Our revamped website, with over 20,000 visitors, makes team updates more accessible and transparent.

Since its barebones beginnings, Team 2638 persists to build both more efficient robots and a greater STEM presence in our local and global communities. To be a force for change□one nut and bolt at a time.