

Chairman's Award - Team 3044

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2020 - Team 3044

Team Number

3044

Team Name, Corporate/University Sponsors

Ballston Spa National Bank/GLOBALFOUNDRIES/Town of Malta Community Foundation/Saratoga Chamber of Commerce/Stewart's Shops Holiday Match /Technical Building Services/CSArch/TCT Federal Credit Union/VFW Post 358/Bechtel/Curtis Lumber /Momentive Performance Materials&Ballston Spa High School

Briefly describe the impact of the *FIRST* program on team participants within the last five years.

Many of our students have been raised in our FIRST family, from our FLL summer camp, to FLL, FTC, and finally FRC. 100% of our team members graduate and continue on to college, with numerous students being awarded FIRST scholarships. Our students have learned how to become mentors to younger students, how to organize events, and how to engage the community to support a cause. Our alumni return to mentor FRC teams, as well as volunteer at FRC and FLL events.

Describe the impact of the *FIRST* program on your community within the last five years.

We have provided hundreds of school supplies to K-12 students in our district. We are combating food insecurity by collecting food for Scotties Pantry, the Robot Rumble food drive, and by supporting the Scotties Backpack program. We have volunteered at Scotties Closet impacting over 2300 people. We run Parents as Partners STEM Enrichment nights. In 3 years we have collected over 3000 items for deployed service members overseas. We are sending care packages to local military deployed in Jordan.

Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.

We spoke to people involved in the communities we wanted to help in Afghanistan to best address their needs. We created 120 STEM activity kits with reusable materials to increase longevity of learning potential. We have created summer camp and FLL curriculum in English, Pashto, and Dari, and FTC curriculum. We drove our robot at our pep rally of 1200 students. We volunteer in diverse areas including at our firehouse and community days and helped a girl scout troop earn their robotics badge.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

3044 students are actively involved in mentorship for younger students in our district, ranging from K-8. Many of our FRC members remember being mentored by our 3044 alumni. We invite our FTC teams to volunteer at our FLL tournament with us to give students a friendly face to look up to and feel supported by. We share all of our resources and welcome everyone to "our house," because a FIRST team cannot become sustainable without a support network, and we try to help create that with teams.

Describe the team's initiatives to help start or form other FRC teams

We have utilized the preseason and our competition robot at our offseason Robot Rumble to help pre-rookies through training, and helping them develop a plan for how to navigate their FIRST experience. We invite teams to use our workshop and provide all of our technical and non-technical materials, as well as help with design and fabrication. We work diligently to help areas build a FIRST pipeline so that they will have a sustainable foundation of recruitment when they are ready for FRC.

Describe the team's initiatives to help start or form other FIRST teams (including Jr.FLL, FLL, & FTC)

We have started FLL Jr. teams in Ireland and Japan. We sent LEGO mindstorms kits to Afghanistan. We provide support using lesson plans and via calls. We started and sponsored all 5 FLL and 2 FTC teams in Ballston Spa. We have given FLL missions to and mentored a robotics club in Cambridge and introduced them to FLL and FLL Jr. We have worked to integrate robotics into 4th grade classrooms through mentoring, and producing and filming instructional videos to expose more students to robotics.

Describe the team's initiatives on assisting other FIRST teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the FIRST program

For 7 years we have run a 1 week FLL summer camp which introduces our students to FLL. We have run and hosted an FLL Jr. exhibition for 5 years, an FLL tournament for 6 years, and FRC offseason Tech Valley Robot Rumble. We have also run FLL and FTC kickoffs. 3044 has also volunteered at the New York Tech Valley Regional. We have assisted 2 FLL Jr. teams and an FLL team from Schenectady. At outreach events, we share how we have established a sustainable FIRST pipeline and share our resources.

Describe how your team works with other FIRST teams to serve as mentors to younger or less experienced FIRST teams (includes Jr.FLL, FLL, FTC, & FRC teams)

We mentor our FLL Jr teams in Ireland and Japan via phone calls utilizing our curriculum as a guide. All 3044 students mentor our 5 FLL teams and FTC teams. This includes mentoring at afterschool meetings, during FRC meetings, and running collaborative workshops on Saturdays. We held a mock FLL tournament to help our FLL students prepare for competition. For 2 years, we have helped 7651 design and build their robot and shared our workshop and all of our resources. We previously mentored 6484.

Describe your Corporate/University Sponsors

0xBE4 is proud to have a strong connection with our corporate sponsors, who have remained committed to helping support our team. We have been fortunate to maintain 3 original sponsors: BSNB, CSArch, and SSP from our rookie season 12 years ago. BSNB even displays our achievements in their branches and on their website. Our school district has provided financial support, offered classes that support FIRST and have helped us as we work to integrate robotics into elementary curriculum.

Describe the strength of your partnership with your sponsors within the last five years.

We have been allowed to place collection boxes for donation drives at their businesses, and been invited to demo our robot at events held by our sponsors. Our sponsors have volunteered and visited us at our offseason Robot Rumble, have come to our workshop, and actively engage with us on social media. 2 of our former students were awarded scholarships by our sponsors last year. Our sponsors also provide mentorship and 11 of our alumni have been offered internships or full-time careers.

Describe how your team would explain what FIRST is to someone who has never heard of it

FIRST provides a safe space for students to not only explore STEM education, but gain confidence and a sense of community as they work with fellow students to improve the world through outreach and volunteerism. FIRST is a family that allows students to connect in a way that leaves an impact beyond your time on a FIRST team. It allows students to learn to think critically as well as developing their leadership skills.

Briefly describe other matters of interest to the FIRST judges, if any

It is important to our team that all FIRST programs remain completely open and accessible to students. In a district with approximately 4100 students, 32% of our students qualify for free or reduced lunch. Since our inception, our team has been and will remain fee-free for students. Our team consists of 60% freshman and sophomores. We have volunteered serving fish fry dinners at our firehouse to raise money for local charities. We have created and shared our STEAM varsity letter resources.

For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.

0xBE4 has focused on improving access to opportunities in STEM education to students in rural communities. We have demonstrated how to create and sustain a FIRST pipeline in our district, and we are working to help others develop FIRST programs that they will be able to maintain sustainably. We have been able to help in the integration of FIRST into our school's curriculum and have been able to sustain outreach projects not only locally but internationally, impacting 6 countries.

Team Captain/Student Representative that has double-checked this submission.

Maddie West

Essay

Creating Opportunity

Creating effective change begins with inciting passion and establishing a strong sense of community. Team 3044, 0xBE4 from Ballston Spa is a team of 24 students working to create sustainable opportunities to access STEM education as well as the basic resources that people need to thrive. We believe that no matter who you are or where you come from, everyone should have a chance to create their own future.

Team 3044 has created a sustainable family of FIRST programs in our school district to ensure that students have the opportunity to have a strong support system from elementary through high school. We remain committed to our mission for all FIRST programs to remain fee-free, allowing all students to participate regardless of socioeconomic background. 3044 has started, sponsored, and mentored all FLL teams in our district. For 12 years, we have sustained 5 FLL teams each season in our elementary and middle schools. Every week, our students travel to the teams as well as run "FLL Saturdays," where we help students with building, programming, and testing missions. We also held brainstorming sessions for the Core Values and Project Presentation components. This year, we ran a mock tournament, where our students served as judges and allowed teams to practice their presentations, helping to alleviate the students' nerves before competition. For 7 years, 3044 has run a 1 week FLL summer camp impacting over 210 students in grades 4-6. We have created lesson plans which we use to teach and run interactive activities in building, programming, and teamwork skills to accomplish past FLL missions. Our camp has been attended by current 3044 students and alumni, and each year inspires new students to join our FLL teams.

0xBE4 started FTC 6945 7 years ago for grades 7-8 and FTC 12870 3 years ago as a high school course. We sponsor, mentor, and share our workshop with both teams. Our students mentor every week afterschool and during our FRC meetings. This creates a strong connection between our FTC and FRC students and has led to a high retention rate of students throughout our FIRST programs.

Our goal is to integrate FIRST programs and STEM initiatives in rural areas to help children with limited access to STEM education.

3044 is currently mentoring a new robotics club at the Cambridge Library that includes students from 3 school districts as well as home school students ranging from ages 5-13. We provided advice on finding sponsors, gave them FLL kits to use during their meetings, and have gone to meetings to provide building and programming help. We have also introduced them to FLL and FLL Jr. and they plan to compete in the upcoming year. For 5 years we have run an FLL Jr. exhibition which includes interactive activities including a chance to learn about FLL. In addition, we have attended the Burnt Hills FLL Jr. Exhibition for 4 years, exposing over 75 teams to the FIRST pipeline.

For 6 years we have run and hosted an FLL tournament with all 3044 students volunteering in roles such as referees, judges, and MCs. We invite the FTC team to volunteer with us, providing our FLL teams with support from everyone in our FIRST program during their big day. In previous years we have also hosted FLL and FTC kickoff events.

For 2 years we have mentored Team 7651. Our house has become their house, and they have worked side by side with us in our workshop. We help them during the design, fabrication, and building of their robot and have shared everything ranging from CAD files, technical and business documentation, robot parts, and our weekend dinners. We have also previously mentored Team 6484. Similarly, we started mentoring them as a pre-rookie, and continued through build season and competitions in design and strategy for 2 years.

For 6 years, 0xBE4 has run and hosted the annual offseason Tech Valley Robot Rumble. Our team members setup and take down the field and the pits, load teams in and out, and setup and coordinate the food drive donations. We open up our workshop and help teams re-fabricate or fix damaged parts. 3044 assists the New York Tech Valley Regional with students volunteering for team load-in, and 5 of our mentors serve on the Regional Planning Committee. Our team has also run a Chairman's Exchange workshop at the New York Tech Valley Regional for 3 years.

Our alumni are actively involved in the FIRST community, with several of our alumni mentoring our team as well as other FRC teams. 3044 alumni also volunteer at local FRC regionals and off-seasons, as well as FLL events.

3044 has provided published resources for teams spanning across FIRST. Our FLL summer camp and FLL curriculum are available on our website in English, Pashto, and Dari. Our FTC curriculum and FRC Chairman's Exchange presentation are also available on our website.

3044 has worked hard to incorporate robotics into the classroom. Some of our members went into a fourth grade class to explain how REV robots function and helped them to build it. Our team has produced and filmed an instructional video that will be piloted and further expanded in to elementary schools.

This year, our team has created STEM enrichment nights in our district. 3044 students teach and engage with not only students but also their parents in several disciplines including programming, science, and engineering. The goal is to make parents an active partner in their child's STEM education. These lessons are incorporating the learning goals of New York State's new STEM K-4 curriculum, which we are also educating parents about.

For 4 years, 3044 students have taught over 400 students in grades 2-6 how to program using Scratch through our Code-A-Thon. In 2019 we sponsored and mentored a Team America Rocketry Challenge team in our middle school, providing them with lessons on the design process and funds for competition.

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In 2017 we started an FLL Jr. team in Ireland. Since then we have mentored the team via Skype and have expanded it to include students from several rural farming communities across 3 counties. This year we have started and mentored an FLL Jr. team with home-schooled students in Okinawa, Japan.

In 2018, we started a LEGO Mindstorms donation drive and sent the kits to children in Afghanistan. Through the use of Facebook Messenger we have mentored the students and worked on their building and communication skills. This year, our team wanted to expand our outreach impact in Afghanistan. We spoke with a Colonel in the U.S Marines and his Afghan counterparts to understand what children in rural communities were most in need of. This led to the creation of our STEM activity package program which has supplied over 120 packages to rural villages. We started by creating a list of simple STEM activities, collecting supplies from our donation drive, and finding translators to translate our instruction guides to Pashto and Dari. These activities include making a scale to compare the weights of objects, Legos for free building, and number games that have numbers written in Pashto, Dari, and English. They are created from sustainable materials so kids can play with their activities for years without a need to replenish supplies, and focuses on developing science, engineering, and language skills.

We believe that the key to the creation of a successful opportunity ensures that it is sustainable for years to come and best addresses the needs of the area in which it is implemented. Sometimes, these opportunities can be as simple as ensuring that children have access to basic items so that they can focus on their education and just enjoy being kids. 3044 created our Scotties School Supply Drive 4 years ago, in which we collect new and gently used school supplies at our high school. We have provided hundreds of students in K-12 the school supplies that they need to be well prepared for the upcoming year, since the program's inception. This year, our students served Chicken BBQ dinners as part of a fundraiser held by local organizations to raise money for the Scotties Backpack Program. The event raised over \$3,000, which will provide 175 elementary school students in our district weekend meals for a year. 0xBE4 has volunteered for the Scotties Closet initiative for 4 years. This event provides free, gently used clothing and books to families facing difficulties in our community and has impacted over 300 individuals just this year. We help to set up and organize all of the clothes, and at the end of the event, sort them so that they can be donated to local shelters. To work to combat food insecurity we have collected food donations for Scotties Pantry for 3 years. This initiative provides our high school students with food to take home during weekends and the holidays. We have also collected over 200 items this year alone for the annual Robot Rumble food drive, benefitting local food pantries.

Our team has been strongly impacted by the military, with both students and mentors having actively deployed or retired family members. We are dedicated to providing support to our military that have sacrificed so much to serve and protect us. 3 years ago, we created our Stars for Heroes program to collect goods to send to service members that are deployed overseas. We have been able to provide a small piece of home by collecting over 3000 items since we started the program. This year, we are also sending care packages to a local unit that is currently deployed in Jordan.

We have reached thousands of people by demonstrating our robot at events such as the Back to School Expo, and local community days. We are fortunate to have strong connections with our school district and sponsors. We communicate with our sponsors by sending thank you notes, inviting them to our events and workshop, and via social media.

Additionally, several of our sponsors have provided volunteers at both our off-season event and as mentors to the team.