

FIRST Impact Award - Team 1796

2023 - Team 1796
Team Number
1796
Team Nickname
RoboTigers
Team Location
Queens, NY - USA
Describe the impact of the <i>FIRST</i> 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 <i>FIRST</i> programs as mentors/sponsors.
With our team's 100% high school graduation and college enrollment rate compared to our school's 82% and city's 86.1% rate, it's safe to say that the impact of the FIRST program is apparent. FIRST provides us with career exposure and memorable experiences that shape who we are today. This drove 98% of our alums to pursue a STEM-based field and 20% to be still involved with FIRST today. By sharing FIRST's impact, we acquired supportive sponsors that believe in our team's mission.
Describe your community along with how your team addresses its unique opportunities and circumstances.
Our community, which has a 94.8% school minority population and an 82% economic disadvantage rate, comprises first-generation Americans and immigrants who lack established networks that would allow them to access opportunities in specialized labor industries. By participating in robotics, we are proactively creating a movement to question the status quo. We are determined to address the lack of opportunity, access, and exposure in our community through FIRST.
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?
Prior to our FIRST involvement, a STEM career was not at our forefront. FIRST changed our story & sparked our passion for change. In 2018, we started #ChangeTheStory, an initiative similar to FIRSTs most recent hashtag, #IAmMoreThan. #ChangeTheStory features stories of under-represented individuals in STEM, increasing awareness & exposure. In 3 years we have shared 34 stories, and witnessed a trending interest for STEM through our #makeSTEMviral movement totaling 300+ pledges in over 2 years.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
FIRST selected our team and robot to represent FRC students, alumni, and mentors worldwide in promotional marketing materials, including their website. We are a highly competitive team in NYC with

11 regional wins total. We share our success and provide assistance to other FIRST teams through our RTESS program. We supported 10+ local FIRST events to ensure that they are capable of running. Alumni continue their FIRST journey by volunteering, starting, and mentoring additional FIRST teams.

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

Our team has mentored 2 FRC teams, assisted 100 FRC teams & collaborated with NYC FIRST to start 13 FLL & 6 FTC teams. RTESS holds 1:1 meetings for teams to get help. Using our sponsor's waterjet, we were able to cut one set of Everybot climbing hooks to distribute with design guides to all 87 teams at our 2022 Regionals. The experience of being a part of our team inspires alumni to start their own teams (8739), revive inactive teams (1880) and volunteer at local FIRST events.

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?

We planned STEM discovery days with local libraries, and started a non competitive robotics club at a local middle school. Our #ChangeTheStory initiative to inspire underrepresented youth reached over 2500 individuals. We advocated at a borough conference to get more funding for technology programs in our area. We visited Ecuador bringing kits for a STEM challenge for over 100 kids. Our website hosts published resources for those starting out in STEM including Scratch and Tinkercad tutorials.

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

Partnered with our sponsor Boyce to make prototypes of ventilators with FRC parts that went on to get FDA approval. Partnered with Letters of Destiny to write over 50 fun letters to kids battling cancer. Partnered with the Brooklyn Coalition to introduce 100+ elementary kids to FIRST, making history. Partnered with Queens Public Library to run 2 community STEM events and 1 event for their FLL team. With FRC 1880 we coordinated a Thanksgiving food drive. With our school we ran community events.

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

Our team is composed of people of color and a 1:1 ratio of women and men; we constantly encourage diversity in STEM and equity in FIRST by promoting FIRST values and enlisting the support of others through social media. Our #makeSTEMviral campaign seeks to broaden awareness and accessibility, and our #ChangeTheStory campaign aims to increase representation in STEM by showcasing role models from underrepresented groups, revolutionizing the world of STEM.

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

Meaningful initiatives are impactful and sustainable. These two elements are only possible with team members that truly embody the team's mission. This is coordinated through our Brand Management subgroup called C2T (Cubs 2 Tigers). They ensure that our initiatives' purpose and philosophy are explained, incorporated and then supported by passionate members carrying on generations of RoboTigers, creating manageable sustainability.

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

In 2020 we acquired one of our most impactful sponsors yet, Boyce Technologies. Boyce is the only custom manufacturing company in our community. They emulate our passion for improving the community and believe in the impact of FIRST on our lives. Our involvement in community activities is our top way to build our team's network. We emphasize nurturing our sponsor relationships through volunteering together, appreciation awards and industry partner nights at the school.

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

Our team has been actively working to improve the STEM culture while building competitive robots. Finding balance is hard so our development team worked to make a homemade biometric sign-in system to keep track of our student hours. Through this system, at the end of week 4 we have contributed 3,388 hours, 150 hours individually on average, in 2023. To improve time management we implemented a weekly goal planner with estimated times to complete more tasks on time and prioritize impactful tasks.

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

Our team's organization is equal regardless of gender, background, and societal norms, embodying #morethanrobots. Our members volunteer at various events such as FLL & FTC competitions, and 100% of our members volunteer at our STEM organized events, continuing our mission of promoting & supporting STEM education. Aligning to FIRST's initiative #togetherweinspire, we advocate for marginalized communities to believe that anyone, no matter their background, can succeed in a STEM field.

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.

Just like our robot, our team has shortcomings that require maintenance. We reflect on our actions with constructive criticism & help the development of our team every year to further improve ourselves. To facilitate this, team members participate in end-of-year & start-of-year interviews and event debriefs, to share their experiences & provide feedback on areas for improvement. This has caused Alumni mentors to use their experiences on our team as a guide to influence their own teams.

Essay

BACKGROUND

We are FRC Team 1796, The RoboTigers, and we ROAR. Our team is based out of Queens Technical CTE HS located in Long Island City, NY. We are a sustainable and competitive FRC team on a mission to make STEM education accessible and inclusive for underrepresented communities through FIRST.

ROAR

Representation, Opportunity, Advocate and Reach (ROAR) are our team's four core pillars. These pillars define who we are, what we do, and why we do it.

We REPRESENT by participating in FIRST embodying our philosophy of, if we can do it you can too. You don't need to look a certain way or come from a certain background to participate in STEM.

We create OPPORTUNITIES for people to experience success within FIRST because the small successes we experienced from the help of others motivated us to keep growing.

We ADVOCATE for FIRST because in our low-income community generational hardships and broken homes take priority making it harder for us to break the poverty cycle.

We REACH individuals by representing, creating opportunities, and advocating for FIRST to create a lasting impact. We find viral and creative ways to share our work, reaching people who might not normally be exposed to STEM.

REPRESENTATION

We surveyed to measure our impact and team demographics. Our team of 30 has a 1:1 ratio of members identifying as female and male. We are 67% Latinx, 21% Asian, 10% Black or African American & 2% Pacific Islanders.

Before joining FIRST, 88% of members did not know of STEM and the opportunities that exist within. One source of this problem is a lack of representation. Identifying this concern gave us the courage to shift the STEM culture towards inclusivity and accessibility by creating our #ChangeTheStory initiative.

#ChangeTheStory (@_changethestory) is our Instagram platform that features under-represented individuals in STEM. In the last 3 years, we shared 34 stories, reaching 2,454 accounts in the last 90 days. Our platform is effective because we receive testimonials from people in our community. "Being able to see someone that looks like me gave me the confidence needed to explore STEM," said Brian Jian.

Don Bossi once stated "...31% of FIRST participants are female, 18% are African-American or Hispanic." As a team who represents marginalized communities, we consider it important to model success in FIRST by building highly competitive green robots. Our team has worked hard to win 7 of the last 8 regional competitions we've attended and won 11 regional events total. We believe we can not only represent by participating but leaving a lasting impression through our robot performance and team image.

OPPORTUNITY

Our survey concluded that 95% of RoboTigers live in minority-populated areas, 53% of the team lives in single-parent households, 79% of our parents don't know how to help us when it comes to college, and 90% of our parents don't know what STEM is.

After becoming a member of our team, 98% of our alumni pursue a career within the STEM field - proving the lack of STEM exposure that exists in our community and what can happen when opportunities are offered. We address the issue through our Alumni Association and RTESS programs.

Our Alumni Association has two levels of involvement: alumni or alumni coach. Alumni receive team updates, and college and career opportunities. Alumni coaches assist students with career development tasks including the college application process.

20% of our alumni are still involved with FIRST after graduating. 6 of our 8 full-time mentors are alumni. In an effort to expand our reach 2 of our alumni started FIRST teams. Mohammed Hossain started FRC team 8739 & FTC team 16798. Brian Green became head mentor of FRC team 1880 and mentored FLL Teams 18186, 18183, 18190, 18187 & 7611. We have mentored both Mohammed and Brian's teams. In addition we collaborated with NYC FIRST to start a total of 13 FLL and 6 FTC teams from the connections made at local outreach events. As rookies in 2006, we were picking up robot and bumper pieces from the field after a match. We had spent hours on our robot just for it to barely function and do more harm than good to our alliance partners, that was discouraging. The veteran teams around us were able to provide us with enough insight for us to experience some forms of success. Wanting to give back and ensure no team ever felt discouraged from FIRST or STEM, we created RTESS in 2012 (RoboTiger Emergency Service Squad) to assist teams with any technical issues they faced at competition.

RTESS has since grown to be a year around operation sharing technical and non-technical published resources and offering email and zoom support. We have assisted 2 FRC teams from Turkey (7840 & 5565) and 3 local FRC Teams (5806, 2872 & 5099) through Zoom. In the past 3 years, we have assisted 100+ teams through our RTESS program. We are passionate about giving back to help FIRST teams thrive, encouraging them to persevere in their STEM journey.

ADVOCATE

Change is triggered through advocating. We advocate for FIRST and STEM through outreach and our #makeSTEMviral initiatives.

We partnered with the Brooklyn Mobile Tech Coalition (BMTc), a consortium of organizations whose mission is to improve the education of young people in Brooklyn. As a pilot with BMTc, we helped develop STEM-based experiences for students in NYCDOE's Summer Rising Program. Through this pilot event, we helped make history for Brownsville, a community emulating ours, where young people struggle to succeed and have limited access to college and career opportunities.

We collaborated with Sunnyside Community Services to design a STEM-based summer program for 85 rising 9th-grade students in our community. Through four sessions, we brought awareness to FIRST with our robot and STEM challenges. After seeing their success, we expanded to the Queens Public Library, hosting STEM Events at Hunters Point and Queens Central Library in Jamaica. We also worked with the

LIC Public Library's FLL Team and assisted them in their work. Through our library and pop-up events, we were able to expose STEM to 200+ local young minds.

After our events we received feedback emphasizing the impact of our lessons on the community. This led us to formalize and publish them as resources. There is now a full curriculum for elementary and middle school and targeted lessons for high school. We've implemented these lessons in our school's CTE classes and our member's past school. We participated in the Queensborough Tech Fair where we were able to unite Queens residents, local business leaders, and politicians to advocate for a more tech-friendly environment. The fair ended with a consensus that more money for resources needed to be allocated to Tech education.

Alongside STEM outreach, we are committed to community service projects that tackle social issues to create a better future. Our team participated in a turkey giveaway hosted by Team 1880, addressing food insecurity by providing fresh groceries to families in NYC. We partnered with Love Wins Food Pantry to restock pantries and donate food to families in need, and also collected 4000 lbs of food with City Harvest. We participate in annual events like the "Making Strides" walk and blood drives, while partnering with "Letters of Destiny" to write letters to children battling cancer. We spread the impact by taking the card materials to scrimmages and asking teams to make a card.

During the pandemic, our team worked with Boyce to develop FDA-approved bridge ventilators to provide breathing support when conventional ventilators were unavailable. We created gearbox ratios and reused FRC components to put together the required combinations for the emergency ventilators. Through this partnership 3,000 ventilators were produced. Boyce became the first non-medical company to be granted FDA approval for use in an emergency. It took 30 days to complete the process and went on to be a product called the Spiro Wave.

While we care about our community we are aware it's not the only community that needs support. Our team visited Santa Ana, Ecuador, a country that some of our members are from and know the economic disadvantages of. We met 100 children and shared our mission to inspire the next generation of STEM leaders. We witnessed the perseverance of the kids as they worked together to build a catapult while learning the engineering design process. Witnessing their sportsmanship, just like at a FIRST event, was inspiring. We left Ecuador hoping that we had ignited a passion for STEM in young minds.

STEM should be a community where everyone and anyone can find their place; an environment where asking questions is valued and encouraged. However, STEM isn't as popularized as it should be due to the lack of exposure in forms that today's youth pay attention to.

We created a STEM pledge as our #makeSTEMviral initiative. A signature translates to one person committing to introducing STEM to as many people as and when possible using the hashtag #makeSTEMviral to spread awareness. There have been 300+ signatures since the pledge was created.

REACH

After dedicating thousands of hours to robotics we often get the question "What do you even do?" To expose new people to the world of FIRST we've run the live stream for the NYC regional since 2012, and uploaded the archived recordings on YouTube. Each year viewers can cheer on their friends and family, sponsors can see the impact of their contributions, or they can organically come across it by browsing

Twitch or YouTube.

65,000+ people were reached through our team's collective initiatives. This number reminds us of the power of increasing FIRST awareness and exposure. If we can impact just one person within STEM then our endeavors are worthwhile.

ROAR is more than just an acronym; it's a movement that defines who we are, what we do, and why we do it. We are proud of the difference we have, and will continue, to make.;

