

FIRST Impact Award - Team 1796

2025 - 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. Think about percentages of those graduating high school, attending college, in STEM careers, leadership skills, and serving as mentors/sponsors in <i>FIRST</i> programs.
FIRST significantly impacts our team's participants. Within the last 3 years, 73% of our members were first-generation students. 100% of our members graduated high school compared to the graduation rate of 85% within our borough. 98% of our members pursued STEM careers accumulating over \$2.5 million in scholarships at institutions like Princeton, NYU, and NYIT. RoboTiger experiences empower alumni to find success within leadership roles at Boeing, Raytheon Technologies, Apple, and Makelab.
Describe your community along with its unique opportunities and circumstances. Think about your geographic region, diversity of town/school, language barriers, socioeconomic barriers, and cultural expectations.
We embody the belief: If we can do it, so can you. As a Title I NYC public school, 82% of students are Hispanic/Latino, 85% are economically disadvantaged, 33% are English Language Learners, and 254 students have disabilities. In our borough, blue-collar work is prevalent, which makes STEM fields seem less accessible and relevant. Limited public school funding in NY State restricts STEM program access. This deficit drives us to find creative ways with our resources to change the status quo.
Describe the team's methods, with emphasis on the past 3 years, for spreading the <i>FIRST</i> Mission in ways that are effective, scalable, sustainable, and creative.
Before joining our team, 89% of our members lacked access to STEM. To increase STEM opportunities for students like us, we created #makeSTEMviral. We have gained 1000+ pledges and distributed 275 STEM kits. We fundraised to provide these low-cost kits across NY, Ecuador, Canada, and Mexico. Our partnership with the NYC DOE's SONYC program brought kits to at-risk students, offering real-world STEM Lessons. We're actively recruiting ambassadors and ensuring sustainability by training our members.
Describe your team's goals and the progress you have made towards them to fulfill <i>FIRST's</i> Vision.
Our team goal is to #ChangeTheStory by embodying ROAR: Representation, Opportunity, Advocate, Reach. We represent by participating in FIRST, showcasing diverse perspectives. We create

opportunities through initiatives like #makeSTEMviral and RTESS, providing accessible experiences. We advocate for increased funding for STEM programs. Through these efforts, we reach individuals who never thought STEM could be for them, inspiring innovation and fulfilling FIRST's vision of a more inclusive future.

What impact has your team seen from your efforts described in the above question? How does your team measure impact?

We measure the impact of our ROAR initiatives by tracking demographics and increased STEM interest. Notably, our female-to-male ratio shifted from 1:1 to 2:1, with females taking the lead. 85% of students using our #makeSTEMviral kits reported increased STEM interest. We've assisted 101+ teams, hosting 250 workshop participants. #ChangeTheStory reached 4,600 people in 90 days, amplifying diverse voices. As we shift this notion we create a community where inclusion drives innovation.

Please provide specific examples of how your team and team members act as role models within the *FIRST* community with emphasis on the past 3 years. How do you share these best practices with other teams?

Over the past three years, we've acted as role models through RTESS and #makeSTEMviral. Teams look up to our robot designs and team culture. We offer design reviews to share our lessons learned. With RTESS, we provide resources, tools, and support to teams at events. Our #makeSTEMviral initiative has gained FRC Teams 333 and 2869 as ambassadors, reaching over 275 students across Mexico, Ecuador, and Canada. Our workshops, video tutorials, and robot tours all lend to sharing our best practices.

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

Through RTESS, we've assisted 101 teams worldwide. We've held 1:1 online meetings with 11 teams, providing both technical and non-technical support. We dedicate personnel and equipment at competition, supporting 57 teams throughout our 2024 events. We have donated \$1k worth of components and loaned tools to 75 teams. We've started FLL teams 64441 & 64442 and mentor FRC teams 1880, 10229, and FTC team 11453. 40% of our Alumni continue to volunteer in FIRST and 14 have become mentors of FRC teams.

What other initiatives have you created, grown, sustained, or participated in (*FIRST* or otherwise) to help inspire young people to be science and technology leaders and innovators? What outcomes have you seen from your efforts in the past 3 years?

Our goal is to bring STEM accessibility to young people in NYC through FIRST, but with only 8.4% of NYC schools participating in FIRST, merely 0.2% of students have direct access to it. Because of the high expense associated with participating we advocated for bill A.3445A/S.1576B. The bill would allocate \$250k to STEM education in NYC schools. We've met with 6 Senate offices, lobbying for funding to bring FIRST and high-quality robotics programs to NYC schools.

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

We partnered with Queens Public Library (2022-2024), reaching 1000+ students, and Sunnyside Community Services (2022-2024) to introduce FIRST to 150 rising 9th-graders. We've supported

community initiatives like Cards for Hospitalized Kids and collaborated with FRC 1880 on community events (2024). Our partnership with Turner Construction provided site visits to 30 students (2024). These collaborations demonstrate our commitment to outreach and making a positive impact beyond the FRC field.

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

We recognize the importance of seeing role models who reflect us in STEM. We build representation through our #ChangeTheStory campaign founded in 2018, seeking 104 stories from underrepresented individuals in STEM, striving to #ChangeTheStory for all. With 60% of our #ChangeTheStory followers being women, we're devoted to amplifying more voices. With a 2:1 female to male ratio and 73% female leadership on our team, we're proud to contribute to this change & aim to inspire more diversity in STEM.

Explain how you ensure your team and the initiatives you have created will be sustainable.

Our team operates on a foundation of mentorship, where veteran members guide rookies through our initiatives. Ownership and empowerment develops as rookies transition into veterans. Student-led committees like operations, media, Cubs2Tigers within our Brand Management subgroup provide the organizational structure for strong mentorship to thrive. This builds a culture where students develop a passion for being a part of a cycle of growth on both ends as veterans teach and guide their Cubs.

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

On average 75% of our team are new to STEM and FIRST. The initial learning curve can be overwhelming and even discouraging. The RoboTiger Hub, made by our software team in 2024 works to address this. It centralizes team resources (calendar, part management, outreach opportunities). The hub features a targeted skills tracker for each member letting members track their progress. This fosters a culture of ownership, continuous learning, and empowers members to overcome the initial hurdles.

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, particularly noteworthy, or had a large impact.

We recognized that in our school, outside of our team, there was a lack of STEM opportunities for students so we created a state-approved CTE Pre-Engineering curriculum. The curriculum was inspired by our own team's experiences, and crafted by current and prior members. It emphasizes hands-on learning and fostering a spirit of fun and competition while tackling challenging projects. This state approved program is available for use by others who want to bring similar programs to their own school.

Judge Feedback

- What aspect of our entire Impact Award Entry attracted confusion or the most conversation among judges?
- An area the team has an opportunity to improve.
- Something that really impressed the judges.

We are FRC Team 1796, the RoboTigers, based out of Queens Technical High School, a Public NYC Career & Technical Education (CTE) school in Long Island City, Queens NY. As a CTE school, we have students in pathways including Pre-Engineering, Cosmetology, Electrical Installation, and Graphic Design.

Our team of 35 is composed of 65% Latinx, 20% Asian, 10% African American, and 2% Pacific Islander, with a 2:1 female-to-male ratio. We currently have 8 mentors, 6 of which are team alumni.

As an FRC team our mission is simple, make STEM education accessible to young people. No matter their area code, immigration status, gender identity, or family income we want to ensure that any person can learn about STEM fields and the opportunities within them through FIRST.

Guided by this mission, we foster FIRST's core pillars throughout our team and community.

INCLUSION: If we can do it you can too.

97% of our team is underrepresented minority groups. For us, STEM fields were not actively considered as a potential career. Through participating in FIRST we realized that STEM was not at our forefront because of the lack of representation in our community. This realization fueled our commitment to create inclusive spaces with role models that community members can connect with. We've created representation through our #ChangeTheStory Instagram initiative. On this platform we share success stories of underrepresented individuals within STEM. Over the past three years, we've posted 55 stories, reaching 4.6k profile views. With an effort to grow our engagement we've shifted to not only create Instagram posts but reels as well. We currently have 19 video interviews filmed and in queue to be posted as reels on our social media plan.

To increase awareness of our initiative we've created buttons, posters and signs that we utilize at competition and any outreach events that we attend.

We don't just talk about change; we create it. 60% of our followers identify as women which to us speaks volumes.

DISCOVERY: Breaking barriers to build brighter futures.

The heart of our team is NYC, a city that symbolizes limitless opportunities, yet 73.5% of its youth remain economically disadvantaged. In addition to the lack of representation, socioeconomic status is another barrier our community faces pursuing STEM. To change this we create free opportunities for our community to gain exposure to STEM, we call this DISCOVERY.

In 2023, we partnered with the Brooklyn Mobile Tech Coalition to deliver engaging STEM-based experiences to 250 students in the NYCDOE Summer Rising Program in Brownsville. This pilot initiative was the first event of its kind in Brownsville.

Starting in 2022 we created and hosted a STEM summer bridge program with Sunnyside Community Services. The program introduces 100 rising 9th graders annually to FIRST and STEM through robot demonstrations and STEM activities.

Starting in 2023 we've partnered with Queens Public Library branches to host STEM events such as Discovery Day at Hunters Point. We've hosted events at the Long Island City, Corona, and Jamaica locations as well exposing over 1,000 local youth to STEM.

Our commitment extends beyond STEM, empowering our community through various initiatives and fostering a brighter future for all. We host community outreach events such as breast cancer walks, city harvest can drives, and respect for all week. We've also partnered with our mentee FRC Team 1880 to support their events such as turkey giveaways and volunteering at food pantries to help provide fresh groceries and tackle food insecurity for families in NYC.

INNOVATION: Where access meets opportunity.

Engaging youth in STEM faces significant barriers, particularly for low-income families. With 30% of NYC teens holding part-time jobs and many juggling family responsibilities, pursuing STEM often takes a backseat. This disparity is strongest in technology and engineering, where only 27% of low-income families report their child participates, compared to 44% of high-earning families.

We drive INNOVATION by bringing STEM directly to students. School is the easiest place for students to gain access to STEM, thus where we focus our efforts.

We successfully advocated to the NY State Education Curriculum Committee to enhance our school's Pre-Engineering CTE program in 2024. This change updated the curriculum to be robotics-centric, directly impacting all current and future enrolled students by equipping them with cutting-edge skills needed to thrive in today's competitive engineering fields. This state-approved Perkins funding-eligible curriculum is available to schools statewide with the ability to be implemented to similar programs.

Funding remains a critical issue for NYC FIRST teams, and addressing this challenge is key to ensuring the ongoing success and sustainability of FIRST programs. In 2024, we supported Bill A.3445A/S.1576B, advocating for \$50k in funding for FIRST programs in NYC schools to four legislators. Driven to acquire more funding to ensure greater sustainability,, we're actively lobbying for S.379, seeking \$250,000 in funding. We've expanded our advocacy efforts by engaging with six additional legislators to secure the future of STEM education for students across the city.

FUN: Find the joy in the struggle and celebrate every victory.

In today's world, pop stars, models, and athletes dominate the spotlight, while scientists and engineers often take a backseat. Why? Because to many, STEM simply doesn't seem "FUN."

Making STEM accessible is crucial but leaving a lasting impression is key, especially as many students find it intimidating. We shift STEM's perception from challenging to FUN through #makeSTEMviral. What began as a local pledge in 2023 is now a global movement with over 1,000 signatures and an easy-to-implement, low-cost STEM curriculum and kit. In these kits students build engaging projects like Solar Ovens, Static Butterflies, and Straw Rockets while applying physics, engineering, and problem solving skills.

We distributed these kits to NYC Department of Education's SONYC program for at-risk middle school students in 2024 and 275 kits across Mexico, Canada, and Ecuador.

The key is not just providing one time free kits, but the curriculum infrastructure and purpose built low cost kits that are sustainable to be continued. We transform STEM from being portrayed as daunting to attainable, changing the narrative, one "I did it!" at a time.

In 2024, we expanded #makeSTEMviral into an ambassador program partnering with FRC teams 333 and 2869. These teams have embraced the initiative, helping us expand the reach of the #makeSTEMviral pledges through kits, buttons, and signs amplifying its impact. By engaging kids in a FUN way, we prove STEM is something they CAN do.

Robotics is full of challenges, instead of letting it become frustrating, we aim to turn challenges into opportunities for growth and laughter. Every step forward is a victory, and every setback is a lesson learned. By fueling curiosity and creativity, we're proving that when you make STEM FUN, you make it for everyone.

TEAMWORK: When we lift each other up, we all rise together.

Failure can be tough, especially when you're just starting out. As rookies we were no strangers to mishaps, from bumpers flying off to scrambling to collect robot parts after matches. The support from veteran teams kept us going by sharing their expertise and reminding us that we weren't alone. Driven by the same support we received, we're determined to continue this cycle of guidance.

We dedicate ourselves to leveling the playing field to ensure that no team feels incapable through our RTESS program (RoboTiger Emergency Service Squad) in 2012. Through RTESS over the past three years we've assisted 101 teams worldwide, offering both technical and non-technical assistance.

At competition we provide support to teams to get them up and running on the field. We've donated \$1.5k+ worth of components and loaned tools to 250 teams, ensuring they have the resources they need to succeed.

RTESS was so impactful that we decided to extend our efforts to be a year-round service in 2018.

On the technical side, we've offered help with drive train, electronics, and programming, while also assisting with CAD and team management and organization..We've held 1:1 online meetings with 12 teams globally from Mexico, Brazil, India, and Turkey. We have also published 23 online resources, which have accumulated over 6.5k views and have been accessed by over 500 individuals.

Through our Lessons Learned and Beyond The Bot workshops, we've guided over 250 people on programming, competition prep, outreach, and match strategy. Empowering teams to excel by sharing knowledge and building skills beyond robots. Teamwork is the backbone of every successful team both on and off the field.

IMPACT: Be the change you want to see in the world. Passion we've cultivated doesn't end when the competition does, it lives on through our alumni. 40% of them remain deeply involved with FIRST and 14 are mentors of FRC teams. Alumni Brian Green revived FRC 1880 and started two FLL teams, 64441 & 64442. We have mentored all of Green's teams, as well as FTC 11453 and FRC 10229.

As we mentor, assist, and support our FIRST community, we continue this cycle by ensuring every team has a fair and fun chance on the field and prove we are stronger when together.

FIRST empowered us, giving us the confidence to thrive in spaces that once seemed out of reach. Now, we empower the next generation, showing them that STEM is for everyone. Through our collective initiatives, we've reached 70,000 people, making STEM education accessible to all. Being a RoboTiger is more than building robots; it's about shaping the future leaders of STEM. 1796 turns possibilities into realities and proves that small actions can create big changes. ;

