

FIRST Impact Award - Team 3654

2023 - Team 3654
Team Number
3654
Team Nickname
TechTigers
Team Location
Middletown, CT - 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.
TechTigers is a growing team that supports FIRST values and promotes women in STEAM. From 2021–2023, we have added 17 new students and 10 new mentors. This year one of our new mentors is a TechTiger alum who just graduated with a degree in Information Technology. 100% of TechTigers pursue post-secondary education, 90% of our graduates choose STEAM majors in college, and many of them receive significant scholarships due to being involved with FIRST.
Describe your community along with how your team addresses its unique opportunities and circumstances.
We are based in CT, which has a large presence of FRC teams, but we are the only all-girl team in New England. We inspire women to challenge the stigmas faced in a male-dominated field. We promote STEAM in our community, encouraging women to pursue careers in STEAM. We advocate for additional science and technology classes in our school and have started clubs such as Girls Who Code and GirlUp. Every day we break down barriers with our motto “Girls can do anything!”
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 mission is to focus on girls' education and empower young girls to pursue STEAM opportunities. Every year we host events to show young girls the incredible things they can accomplish with robotics. We have a collaborative relationship with the all-girls BSA troop in our area and have hosted them multiple times, including for a Robotics Merit Badge day. Several of our new students joined our team because they developed a passion for STEAM after participating in one of our outreach events.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
The TechTigers uphold gracious professionalism and support our FIRST community by spreading its mission. We mentor other teams including FRC team 8167 and FLL team 14105. Annually, we create a "Friendship Scavenger Hunt" that we share with other teams at competitions to promote inter-team

cooperation and to make new friends. We always attend FIRST University where we collaborate and learn from other teams; this year we gave a presentation on the Chairman's award and our team's outreach.

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

The TechTigers have founded FRC teams such as team 8167 at Coginchaug High School and 7694 at Northwest Catholic High School. We continue to support FRC team 5658 and 14105 JPIL Lego Lions by providing advice, mentorship, sponsorships, and tools. We were also able to participate in a long-distance mentoring via email with fellow all-girls FRC Team 5975 in Portland, Oregon. We always offer teams use of our workshop and make ourselves available to answer any questions.

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?

The TechTigers foster young leaders through summer camps, our partnerships with BSA, and Girls Who Code. We also work with GirlUp to advocate for girls in third-world countries to have the chance to expand their horizons. We provided school supplies to 1.5 Guatemalan villages and school fees for 89 Ugandan girls. We also provided 40 Liberian girls with resources to combat gender-based violence. Our new initiative is to provide STEAM kits for girls in the Philippines.

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

This year we are collaborating with the Armored Artemis's 16008 to start our new initiative STEAM kits for kids in the Philippines. We also work with our safety sponsor Laticrete to promote a safety culture in our team and to lead by example at competitions. We have put together presentations for sponsors, such as Howmet Aerospace, and to our school's Board of Trustees. We have lasting relationships with both the United Nations program GirlUp and the BSA scouts.

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 encourages members to be authentically themselves and works to be a safe space. We participate in events like the Middletown Pride Parade Cleanup and our members have helped to found clubs that promote inclusivity, like "All Are Welcome" and "Black Excellence At Mercy." We encourage and invite the girls in our school to participate in the STEAM field. The input of all teammates is valued regardless of seniority, age, or experience.

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

Our team is run by 2 co-captains and leads for each subteam: safety, superstructure, electrical, business, and programming. A main part of their job is to teach new students. Every year, we create a fall project where upperclassmen pass on technical knowledge to our new members. We created a GirlUp club in our school to extend our initiative outside of our team. We also started the Girls Who Code club so students are able to continue learning about programming.

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

We prioritize creating connections with our sponsors. We mail personalized letters asking for support and thanking them for their donations. We often invite our sponsors to competitions, send thoughtful thank-you gifts, and invite them to tour our shop to ensure they know how they've helped our team. We have an "Earn Your Stripes" rewards program for sponsors with incentives such as adding their logo to our robot. We keep our sponsors engaged through updates website and social media platforms.

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

Our team is mostly underclassmen who are new to FIRST and robotics. We only have four upperclassmen and sometimes struggle to ensure that all new members get the proper training. However, we have multiple initiatives to share knowledge with new members including creating fall projects such as our "pneumatics challenge program." We hold a summer program for prospective and incoming students. We support hands-on learning and ardently encourage all members to run for leadership positions.

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

We embody the FIRST mission by making STEAM and education accessible to others on both a local and an international level. We work with GirlUp internationally to assist girls' education and have raised over \$3,000 for girls in Guatemala, Uganda, and Liberia. We started an FLL team at a local middle school and FRC teams 8167 and 7694, who we continue to assist and support. Over the past 3 years, our team members and mentors have accumulated over 1000 hours volunteering for FIRST.

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.

Our team is defined by a spirit of generosity, and we give back by volunteering in our community. Annually, we attend the Durham Fair and the Middletown Electric Car Show where we demonstrate our robot as well as teach others about our team and FIRST. During competitions and off-season events, we are always there to lend a hand, as well as officially volunteer. We additionally give our time to local robotics events such as judging at the St. Paul's School VEX Robotics schoolwide championship.

Essay

The Mercy TechTigers are always energized regardless of what hardships we encounter. Our energy combined with our passion for equality in STEAM helps us to promote FIRST's mission in all we do. What started as an initiative to increase the participation of girls in New England FIRST has developed into an organization that inspires young women to pursue not only academic success but also success in global change. For the past 13 years, our team has pursued excellence through student-led initiatives and partnerships with people who share our ambitions and we are still pursuing these aspirations today. The TechTigers are one family split into three sub-teams: Business, Programming, and Technical, with subdivisions Superstructure and Electrical. Our student leaders advise each group to promote collaboration as one, strong unit. Leadership positions also teach management skills and inspire confidence, creating an impassioned generation of young women. Two co-Captains are elected each year to guide our team through the ups and downs of the competition season. Our Safety Captain constantly works to support our team's well-being and cares for our physical and mental health, and we recently made a connection with our new safety sponsor, Laticrete, to help our Safety Captain and the team learn more ways to make sure everything we do is simultaneously safe and fun. Each of our student leaders is voted in by the members of our team. We rate each potential candidate's leadership qualities on a scale to limit personal bias. This elective system allows our students to grow in their leadership abilities, and act as role models for fellow teammates. Our framework sparks a well-oiled team and shows members that anyone can be a leader, and introducing new members to the workshop teaches essential skills such as cooperation, leadership, responsibility, and character. Our members are dedicated to success and strive to succeed academically. On average, TechTigers earn \$15,000 more in STEAM-related scholarships than other Mercy graduates in the same majors. Furthermore, 100% of team members pursue post-secondary education and 90% go on to study in a STEAM field. Members of our team have been honored for their work with awards, and in the past 3 years, we have had 2 Rensselaer Medal winners, 6 Society of Women Engineers Certificate of Merit awardees, and 8 National Center for Women in Information Technology award recipients. Our students are trailblazers in their own aspects by advocating for new STEAM-related classes in our school, such as AP Computer Science A, and the preservation of pre-existing classes such as AP Physics 1. Many of our members have also advocated for the creation of clubs involving STEAM, including GirlUp and Girls Who Code, as well as clubs involving equity, such as BEAM (Black Excellence at Mercy) All Are Welcome, and Choices Matter. In the off-season, we spend our time introducing people to STEAM at our school through Mercy's summer programs and displaying our workshop and robots at open houses, student orientations, and board meetings. We try to help out with our school fundraisers and events in our own ways, such as donating an educational STEAM toy box for the school's annual Yellow Rose Auction.

2020 taught us a lot about the value of our local community. When the COVID pandemic was at its worst, we helped screen patients for COVID at local doctors' offices. We 3D printed dozens of ear savers and 50 face shields; we also sewed 200 face masks for essential workers at businesses all over our community, including St. Vincent DePaul's hospital and soup kitchen, Middlesex Hospital, UCONN Health, Apple Rehab, and AMC Services. We gave handmade cards, 40 pizzas, and a new Keurig machine to the third-shift medical staff at Middlesex Hospital. During this time, we accumulated over 130 hours of volunteering. Our work in our community didn't stop once life returned to normal. Our team passionately supports the advancement of equality and sustainability. Our team members are mindful of our environment and frequently participate in local community trash cleanup events. We also partake in large-scale cleanups such as the local Middletown Pride Parade cleanup. We take part in our school's open house each year to demonstrate to the community what girls are capable of. Additionally, we held a

BSA event to enthuse a group of young scouts of all genders about STEAM. We have conducted virtual workshops and presentations with organizations such as Collins Aerospace and SWE to encourage and educate girls about STEAM. We annually do demonstrations and presentations at the Durham Fair and Middletown Electric Car Show. As a veteran team, we have the experience of mentoring teams such as FRC team 7694 at Northwest Catholic High School and the Saint John Paul II school's FLL team. We established the FRC team 8167, the Coginchaug Cognatives, to which we continue to mentor and provide programming and design guidance. We also judged a VEX Robotics schoolwide championship at St. Paul's School. Our team members and mentors have contributed a remarkable 1500+ hours of service to FIRST events over the past 3 years. This year, the TechTigers have expanded our global outreach. Understanding the need for inclusivity from our experiences has influenced the way we campaign for equality in STEAM. We have collaborated with GirlUp to advocate for girls all over the world by fundraising within our school. We have given school supplies, uniforms, and school fee coverage to 89 girls in Ugandan refugee camps in 2020. In 2021, we helped 1.5 villages in Guatemala educate their children for a year by providing them with school supplies. In 2022, we provided 40 Liberian girls with information and services to prevent domestic and anti-female violence and teach them the importance of safe spaces. Through the UN's GirlUp initiative, we hope to increase our outreach by raising money to fund the enrollment of women in India in programs that fight teenage pregnancy, child marriage, and STDs. Our TechTigers collaborated with Girl Up to encourage young women to improve their communities by fusing science and humanitarianism through online seminars, activities, presentations, and Q&As. By pushing our own boundaries and what we are comfortable with, we allow ourselves to reach out universally. In collaboration with the FTC team Armored Artemises, 16008, we have started an initiative called FLOWER (Fun and Learning Opportunities With Engineering and Robotics) The goal is to create and put together STEAM kits for kids all around the world who do not have access to materials for STEAM-related education. Energy flows through a circuit, but only if that circuit is connected properly. Likewise, knowledge can flow if those within it support the flow. To a TechTiger, being charged up means empowering the women in our community to take part in STEAM and share our love of FIRST. ;

