

***FIRST* Impact Award - Team 3654**

2024 - 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.
FIRST has had immeasurable impacts on our team. Our team has gained five new TechTigers this season, ranging from freshmen to juniors. 100% of our graduated seniors from the class of 2023 went on to pursue STEM careers. Robotics has helped many of our alums realize their passion for STEM and take the leap to pursue higher education. Three of our alumni are mentoring and leaving their mark on FIRST teams; they all discovered their love of robotics from their time on our team.
Describe your community along with how your team addresses its unique opportunities and circumstances.
Even in 2024, a gender imbalance exists in STEAM fields, but we continuously work to give other girls a voice. From fighting to maintain and add STEAM classes to inspiring younger girls with demonstrations like SWE and Girl Scouts, we girls consistently spark change in the next generation. Our members break through stereotypes by founding and taking leadership roles in clubs such as BEAM (Black Excellence at Mercy), All Are Welcome (AAW), MYARC (Middlesex Youth ARC), and Girls Who Code.
Describe the team's methods, with emphasis on the past 3 years, for spreading the <i>FIRST</i> message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?
Knowledge is key which is precisely why we spotlight STEAM education. We showcase our experiences within FIRST through our mentorship of local Girl Scouts and Scouts of America. Through our work with Girl Up, we make significant annual contributions by raising money and awareness for the education of girls around the world. Additionally, our team directs sustainable events like annual fundraisers and menstrual drives to ensure girls within our school community know they can make an impact too.
Please provide specific examples of how your team members act as role models within the <i>FIRST</i> community with emphasis on the past 3 years.
Our members consistently volunteer at FIRST competitions of all stages. We prioritize establishing and maintaining strong connections within FIRST, like when we participated in FIRST University last year. Similarly, we emphasize educating new members on how to support other teams with the spirit of

Gracious Professionalism. Another aspect of FIRST that we've successfully upheld is safety; our safety captain won Safety Star of the Day in multiple competitions 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.

Recently, we've started teams at all levels of FIRST. We've continued to support FRC team 5658, FTC teams 24467 and 4557, and FLL team 14105. We assisted these teams by providing advice, mentorship, sponsorships, and tools. We also help all-girls FRC team 5975 in Portland, Oregon, mentoring via email. Members have mentored Vex Robotics teams, such as 11111 Saint Bridget School, this past year. 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?

We ignite youth STEAM innovators through local initiatives like summer camps and collaborations with Girls Who Code and Girl Scouts. Globally, our efforts with Girl Up aim to empower girls in underdeveloped regions by providing them with the resources to combat gender-based violence and school supplies to pursue STEAM education. We mentor the JPPI FLL team, and former LegoLions members have gone on to join the TechTigers. Our team strives to foster a future of diverse women in STEAM.

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

We prioritize our robust connections with sponsors and affiliated groups through company tours, presentations at sponsor events, and addressing the school's Board of Trustees. We ensure continuous interaction through newsletters, social media, and our website, as well as invites to competitions, appreciation gifts, letters, and exclusive tours of our shop. In partnership with our LATICRETE Safety Sponsor, we discussed safety culture. Together, we've created a unique network of female innovators.

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

We take pride in our team's status as a safe space for students and mentors to stand out and express their unique perspectives. We promote equality through organizations like Girl Up, which advocates for women and motivates girls to pursue STEAM careers. Our team fosters inclusiveness in our community by founding and leading clubs such as BEAM and AAW, which spotlight the importance of diversity and provide equity-related service projects within our community.

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

Two elected co-captains run our team; this year they are a junior and a senior. We also have two safety captains and elected leads for each of our four subteams: superstructure, electrical, business, and programming. This year, we are making sure our team's knowledge is passed down. Each of our leads has an understudy who is learning crucial skills from the lead. We also revived our "Tiger Cub" initiative, allowing prospective 8th graders to join our team a year early.

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

Our team emphasizes maintaining solid connections with our sponsors, whether they are first-time contributors or returning sponsors of over a decade. We regularly mail letters asking for their support and thanking them for all their contributions. We send gifts made in our shop and invites to our competitions as a thank you. We maintain personal contact with sponsors through our newsletter and social media platforms. We emphasize keeping our sponsors updated and engaged with our team.

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

Our work with Girl Up has long benefited our worldwide efforts; we have donated tens of thousands to the organization. We constantly seek to increase our global influence. Our FLOWER (Fun Learning Opportunities With Engineering & Robotics) program is under development to provide STEAM education to Makati High School in the Philippines. We are testing the program at a pilot school in Hartford. We are finalizing the website, contacting sponsors, and prototyping kit components for STEAM kits.

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

We are committed to modeling the FIRST mission on local and global scales. Every TechTiger graduates as an accomplished leader who exemplifies gracious professionalism and excellence in STEAM. We advocate for STEAM courses in our school and spark inspiration in the community through impactful outreach. 90% of our alums earned scholarships and awards, establishing themselves as leaders in STEAM. Globally, our collaboration with GirlUp reflects our dedication to promoting girls' education.

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.

A big focus of our team is actively attending outreach events in our community. We participated at the Durham Fair and hosted local Scout troops. We also reinstated our "Tiger Cub" program this season. This program lets 8th graders interested in STEAM and our school join our team to learn about robotics. Our team's mission is to share FIRST with as many community members as possible. We introduce robotics to our school through presentations, open house days, and a Parent's night.

Judge Feedback

Who/When	Feedback
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Apr 06, 2024 11:44:51 AM EST	Our outreach is a major component of our team culture. We are well established locally in our community and globally, but we are looking for national programs to join or support to promote women in STEM. Do you have any suggestions? An area the team has an opportunity to improve. Something that really impressed the judges.
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Essay

When NE FIRST initially contacted Mercy High School to start a robotics team, nobody could have imagined the ripple effects that rang out from that one phone call. What began as ten girls and three

teachers has quickly expanded into a resounding symphony of 21 members and 13 mentors, with nearly 100 alumnae and 25 returning sponsors. For fourteen years, we have marched to the beat of our own drum, driven by our mission to champion the message of FIRST and empower girls in STEAM. When a TechTiger joins the team, she is introduced to a new world of opportunities for personal growth. This is shown not only by academic success but also by the amplitude of experience that she will be able to share with our school, community, FIRST, and the world. A noteworthy aspect of our team is our team structure. The team as a whole is conducted by two co-captains. Following this, our organization is divided into three collaborative subteams: Technical, Programming, and Business, each guided by a student leader. These leaders work seamlessly together to guide our team. Our leads are elected through our distinct voting system, a scaled questionnaire that ranks each candidate on attributes that the team has deemed effective leadership qualities. This allows for selection based on performance as opposed to popularity or grade level. Our largest subteam, Technical, is split into two smaller branches: Electrical and Superstructure. By having dedicated leads for each branch, we can better allocate resources, delegate tasks, and ensure all aspects of the robot are addressed. The Electrical lead is responsible for overseeing the design and implementation of all electrical systems, while the Superstructure lead is in charge of the design and construction of the physical frame and structure of the robot. The Programming lead oversees the coding and CAD-ing of our robot, which are handled promptly and effectively by our Programming subteam. The Business subteam covers marketing, finances, art, sponsorship, and award submissions for the team. On our team, mental and physical health is a priority. To align with this, we choose safety captains to foster a positive safety culture. Our safety captains gently remind members and mentors about self-care with regular mental and physical health check-ins. The TechTigers also provide safety pamphlets at competitions with information about battery spills, hydration, PPE, first aid kits, emergency exits, and more. Additionally, our safety captains frequently ensure that everyone follows proper safety protocol, whether in the pits or in our workshop. This year, the TechTigers met with our Safety Sponsor from LATICRETE International to discuss all things safety regarding working in a workshop and beyond. After our meeting, we further discussed our team's safety culture to ensure we utilize what we learned to keep our team safe and our workshop accident-free. The TechTigers have directed STEAM-related events in our school community, such as talks and demonstrations at our school's open house, student orientations, board meetings, and summer programs for prospective students. Also, within our school, we have helped start and continue to aid the running of clubs like Girls Who Code, Girl-Up, Black Excellence at Mercy (BEAM), All Are Welcome (AAW), Justice and Peace, Choices Matter, and the Ecology Club. By orchestrating such events, we work to inspire and engage current and prospective students to pursue careers in science, technology, engineering, arts, and mathematics. We are consistently advocating for STEAM education within our school. Due to our advocacy, Mercy has added seven new science classes, five computer classes, 67 total science classes, and five science-based clubs. Through this increased support of STEAM classes, our students have received awards such as the Advanced Placement Capstone, AP Computer Science, and AP Computer Science Principles Female Diversity Awards. The skills that each TechTiger learns continuously echo throughout the rest of their lives. 100% of our graduates pursue post-secondary education, and over 90% of them go on to study in STEAM fields. TechTigers also earn around an average of \$15,000 more in STEAM-related scholarships compared to Mercy graduates in similar majors. With their leadership, academic excellence, and outstanding community service, TechTigers have been recognized for their efforts in the form of awards. Over the past few years, TechTigers have received 10 National Center for Women in Information Technology awards, 6 Rensselaer medals, 14 Society of Women Engineers Certificates of Merit, 1 Wellesley book award, 1 WPI STEM Leadership book award, and 1 COPSA Memorial Scholarship. Outside of school, the TechTigers embrace every opportunity to give back to their community. We dedicate our time to local events, even during build season. We have teamed up with

FTC Team 17703 The Fullmetal Peregrines, FRC Team 558 Elm City RoboSquad, and FTC Team 16008 Armored Artemises to demonstrate our robots and promote the FIRST program at the Durham fair. We have also hosted a Local Scouts of America program in our workshop to help them earn their Robotics Merit Badges by setting up challenges to help them learn what FIRST is all about. Aside from that, we have also spent time thanking first responders with cards and candy, hosting a Thanksgiving can drive, making sandwiches for Saint Vincent de Paul church's homelessness program, promoting the small businesses of alumnae and current students through social media campaigns, and volunteering for the Middletown Pride parade clean up. No arrangement could be brought to life without the consideration of our sponsors. We invite them to our workshop and give presentations and demonstrations to show just how much they help us. Through these efforts, we were able to establish strong relationships with Alumna, like role model Lauren States, a Harvard Fellow and former Chief Technology Officer of IBM Corporate Strategy. The TechTigers also always welcome new sponsors and offer tiger-striped tiers for donation amounts; each stripe contains a different reward to encourage sponsors to continue to support our team. FIRST has dramatically enriched us TechTigers, which is why it is crucial to us that we pay it forward. This year, the TechTigers have proudly partnered with FRC Team 1868 Space Cookies in their Menstrual Equity project, serving as FIRST Ambassadors. We provided menstrual hygiene products during competition and continue to advocate for the affordability, accessibility, and safety of menstrual products. Moreover, we teamed up with FRC Team 558 Elm City RoboSquad and FRC Team 178 The 2nd Law Enforcers, sharing our code expertise and aiding the debugging process, all while learning how to do swerve ourselves. This past year alone, both mentors and students have volunteered frequently, accumulating 5,000+ hours of service to FIRST and 3,000+ hours to our community overall. Our volunteering efforts include assisting teams like the Full Metal Peregrines, 11111 SBS Vex Robotics team, and FLL Team 14105 The JPII Lego Lions, as well as presenting about award submissions at FIRST University Day. Lastly, we have embarked on inspiring the next generation with the start of our tiger cub program, which takes in middle schoolers and future TechTigers as honorary members. The TechTigers believe that access to education can travel beyond the boundaries of what people believe girls can do. Our work with the United Nations GirlUp program has extended our reach to girls beyond our backyard by allowing us to give other girls the gift of education. In 2021, we raised almost \$1,800 to provide an entire village in Guatemala with school supplies. We provided services and information that help prevent sexual and gender-based violence to Liberian women in 2022. In 2023, we aided young girls in India by helping them enroll in programs to educate and prevent underage pregnancy, child marriage, and STIs. This year, we are helping to sponsor the education of Ugandan refugees. Enriching young women so they can attain their highest potential is a passion of ours, and it led us to become GirlUp's top individual fundraiser, raising more than 127% of their target of \$625. We also held a Girl-Up menstrual product drive, which we donated to the Diaper Drive of Connecticut in New Haven. We also partner with Girls Who Code, where we learn from women in STEM fields worldwide. The TechTigers have had the privilege of talking to Dr. Tiffany Vora (Vice Chair of Digital Tech and Biology at Singularity University) and Dr. Kat Owens (a UHart professor and a National Geographic explorer/scientist) about their experiences as well-traveled women in STEAM. We are also collaborating with the Armored Artemises on a global campaign to provide STEAM kits to underprivileged countries, with the Philippines being the first. The TechTigers continue to advocate for diversity and inclusion in STEAM fields and inspire more girls to share our passions for science and technology. From hosting presentations to creating educational opportunities and extending STEAM resources for underrepresented communities, we exemplify what girls can achieve in any field. Every student on our team is female- the captains, the drivers, the artists, the finance experts, each an essential key to the future. As we continue to amplify our message of women's empowerment, we are proof that FIRST is for everyone. ;

