

Chairman's Award - Team 3654

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2022 - Team 3654

Team Number

3654

Team Nickname

TechTigers

Team Location

Middletown, Connecticut - USA

Describe the impact of the *FIRST* 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 *FIRST* programs as mentors/sponsors.

Despite the challenges of Covid-19, the TechTigers continue to achieve the mission of FIRST by embracing and supporting new and past students. This season, we have 9 new freshmen, some coming from Lego League teams, who are excited to face new challenges in the more challenging and advanced level. In the 2019-20 season, we recruited 14 members and last year we added 7 more. 90% of our graduating members pursue STEAM studies and many receive scholarships, including a FIRST scholarship in 2020.

Describe your community along with how your team addresses its unique opportunities and circumstances.

We advocate for STEAM in our community despite changing school practices, a pandemic, and restrictive beliefs of what girls can do. As our school changed, we advocated for STEAM classes. During COVID, we assisted healthcare workers and shelters through making and distributing masks, ear savers, and face shields. We also donated food and coffee makers to 3rd shift nurses. We also show the world what girls can do through demonstrations at fairs, open houses, camps, and Scout meetings for all.

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 team is always looking for new ways to share our compassion and ingenuity with the world. This stood out during the pandemic and we adapted our outreach. During COVID, we donated 216 masks, 39 ear savers, 47 face shields, and 39 pizzas to hospitals. We adapted our annual GirlUp events to be COVID safe, switching from movie nights to jean days. This year our jean day raised over \$1000. We know our efforts are successful when they change the lives of those we help and the members of our team.

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 support our community, always carrying the spirit of gracious professionalism. On and off the competition field, we strive to share FIRST's mission. We regularly support positive team interactions through our annual "Friendship Scavenger Hunt", and often mentor teams of all FIRST levels. We founded FRC teams 8167 of Coginchaug High School, as well as 7694 of Northwest Catholic High School, and our mentors and students alike often volunteer at FRC, FTC, and FLL competitions.

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 continued to support FRC team 5658 and 14105 JPII Lego Lion 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 uses 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 have inspired young people to be leaders and innovators through local events such as summer camps, day presentations, and our partnerships with Films on Foss, Girls Who Code, and Collins Aerospace. On the global level, we have worked with GirlUp to raise money towards ending gender-based violence, and provide school supplies to girls in third-world countries to give young women the opportunity to learn and expand their horizons.

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

The TechTigers strive to create and maintain strong relationships with our sponsors and associated organizations. We have been invited to company tours, to present at sponsor events, and to present to our school's Board of Trustees. We keep our sponsors and fellow teams engaged through updates via our newsletter, social media platforms, and website. We also invite sponsors to competitions, send thank you gifts and letters, and invite sponsors to tour our shop.

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 inclusivity. The team is a safe space for students and mentors to stand out and express their unique perspectives. We advocate for women through organizations like GirlUp that motivate girls like us to pursue STEAM careers. This year, we expanded our outreach and subteams to all our students to gain perspectives and input from a larger faction. These varied viewpoints enable us to diversify our outreach portfolio with various activities and creative approaches.

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

Our team is typically run by 2 co-captains, a safety captain, and the elected leads of our 4 subteams, superstructure, electrical, business, and programming. Superstructure runs the major subsystems of the robot and special projects that our more experienced members are prepared to handle. Electrical is in charge of wiring and technical problems. Programming works with coding and business manages outreach and general planning.

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

As a team we prioritize maintaining solid connections with our sponsors. Whether it's their first time donating or they're returning for the new year. We mail them letters asking for their support and thanking them for their donations, as well as sending thank you gifts from our shop and invites to our competitions. We also provide tours of our facilities and demonstrations. We like to maintain personal contact through our newsletter and social media platforms to keep them engaged and involved

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

We have been rattled by the pandemic. Members have left, service opportunities were lost, and the lack of traditional competition has left the majority of our students with no competition experience. We are proud of our dedicated team, but there have been hardships in having predominantly freshmen in areas where experience can be helpful. However, we are working to revamp our community outreach programs, such as our partnership with GirlUp, and to provide hands-on training to our new members.

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

We have made it our mission to embody the *FIRST* mission locally and globally while preparing our graduate students to be successful leaders that model gracious professionalism and excellence in STEAM. We have pushed for STEM classes in our school and inspired locals through our community outreach. 90% of our students who have majored in STEM have received scholarships, awards, and gone on to work in field leaders such as NASA. Globally, we have worked with GirlUp to promote 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.

We strive to be active by attending outreach events. This year, we attended the Durham Fair, the Electric Drive Week Middletown CT EV Show, and hosted a local Scouts troop. Our mission is to share *FIRST* to outsiders, urging families of our team members to get involved. We presented at our school's open house and our Parent's Night. Despite the

limitations due to COVID-19, we were able to participate in the Bash at the Beach scrimmage event. We also donated over \$1000 to the GirlUp organization.

Essay

As we fly into the new competition season, the TechTigers continue to embrace and promote the mission of FIRST as we have over the past 12 years. To us, transportation means elevating students from teammates to leaders in STEM and building new routes to education and opportunity for girls around the world. What began as an initiative to increase the participation of girls in New England FIRST through the formation of an all-girl team in 2010 has developed into an organization that inspires young women to pursue not only academic success, but also success in global change. When a TechTiger joins the team, she is launched into a new world of opportunities for personal growth with the help of our wonderful mentors and innovative team structure. Our team is organized into 4 collaborative subteams, Drive, Business, Programming, and Technical. Each subteam is under the guidance of a Student Leader, with 2 Student Leaders for the largest team, Technical, as it is split into two smaller groups called Electrical and Superstructure. The team's mental and physical wellbeing is cared for by the Safety Captain, and the team as a whole is piloted by two Co-Captains. Each elected position is determined by our unique voting system where students rate the leadership qualities of each candidate. This system provides members with many opportunities to lead and learn from peer role models while also fostering a cohesive team where anyone can be a leader.

TechTigers join the team with an interest in STEM, art, or business, but leave with machine skills, leadership qualities, gracious professionalism, and the courage to use these skills for social change. This empowerment has carried TechTigers to new levels of post-graduate success as 100% of team members pursue post-secondary education with 90% studying in a STEAM field. TechTigers also earn an average of \$15,000 more in STEAM related scholarships than Mercy graduates in the same majors. TechTigers have also earned many awards for leadership, academic excellence, and outstanding community service. In the past 3 years, TechTigers have received 3 Rensselaer medals, 6 Society of Women Engineers Certificates of Merit, and 6 awards from the National Center for Women in Information Technology. This brings us to a total of 6 Rensselaer medals, 14 Society of Women Engineers Certificates of Merit, and 9 awards from the National Center for Women in Information Technology in the last 6 years.

TechTigers have moved the Mercy High School community towards a modern curriculum that sends students on a trajectory towards excellence in STEAM. Due to our advocacy, Mercy has added 7 new science classes, 5 computer classes, 5 science-based clubs, and participated in the annual American Region Math League where we placed first in Middlesex County for four years in a row. Through this increased support of STEAM classes, Mercy has received awards such as the AP Computer Science A and AP Computer Science Principles Female Diversity Awards. TechTigers have also volunteered within our school community to promote STEAM at Mercy open houses, student orientations, school marketing materials, board meetings, school summer programs for middle school girls, and through our donation of an educational STEAM toy box for the school's annual Yellow Rose Auction.

The TechTigers roots in the Nutmeg state grow deep, so we work tirelessly to stay connected with the Middletown community through our interactive demonstrations at local fairs, the New England Electric Car Club Show, and Films on Foss. We also run a panel at ConnectiCon and conduct presentations to local middle schools through our work with Collins Aerospace, the Mercy High Achievement Program for 7th and 8th grade girls, and St Paul's School. We have also donated menstrual hygiene products to a Middletown women's shelter for victims of domestic violence. On a more personal level, we have worked with members of our community by judging robotics events at the St Paul's School VEX Robotics schoolwide championship and by hosting a Robotics Merit Badge Day for Scout Troop 33. Our members prioritize service not only through FIRST and robotics, but also on their own. Over the past three years, our members have accumulated over 1000 volunteer hours outside of FIRST. In our FIRST community, we have founded 3 FRC teams and mentored a FLL team. Most recently we founded FRC team 8167 the Coginchaug Cognatives in 2019 which we continue to assist with programming and design advice, and currently maintain a mentor-partnership with FRC team 7694 at Northwest Catholic High School. Our team members and mentors also frequently volunteer at FIRST events, amassing over 300 hours in 2019, 190 in 2020 before the COVID shutdown, and 5 hours in 2021. This year we have volunteered for 30 hours so far. We have also partnered with organizations such as 'Call Before You Dig' to sponsor official events and donate safety glasses.

We believe in the message of FIRST that positivity and access to education can travel beyond the boundaries of what people believe young girls can do, even when physical travel is not possible. The TechTigers have pushed to create and maintain a global outreach program over the past three years through our continued partnership with the United Nations Foundation GirlUp. We have helped girls around the world gain access to education, escape gender-based violence, and become inspired to be future leaders. In 2019, we sponsored the education of 89 Ugandan refugees for an entire school year. In 2020, we raised almost \$1800 to equip an entire village in Guatemala with school supplies. In 2021, we raised nearly \$600 towards a fundraiser to diminish gender-based violence in places like Uganda, Liberia, India, and Guatemala. This year, we have continued to fundraise for GirlUp's initiative against gender-based violence. We have raised over \$1000 so far and we plan to raise more this year through school jean days. Our team members have traveled even deeper into Girl Up by attending the Global Leadership Summit in Washington D.C. and serving on the board of the Boston Coalition. In 2019, we partnered with the Boston Coalition to pilot a STEM for Social Good event named "Steminist Saturday." In 2021 we had our TechTigers working through virtual workshops, activities, presentations, and Q&A's, with Girl Up to empower young women to better their communities by connecting science with humanitarianism.

When the COVID-19 Pandemic hit, the TechTigers were forced to change our trajectory and adjust to a new world. We were forced to close our workshop doors as the pandemic made in person meetings impossible, so we adapted to online meetings. During these online meetings, we decided that despite the circumstances around us, we would still work to help others as best we could. We used our machine skills to sew masks, our brainpower to 3D print approved face shields and ear savers, and our hearts to hear that third shift nurses at Middlesex hospital felt unappreciated and to bring them pizza with homemade cards. We sewed and donated over 200 cloth face masks to essential workers at St Vincent DePaul soup kitchen, St. Vincent Hospital, Middlesex Hospital, AMC, and in our local community. We used our 3D printer for hours on end to make dozens of ear savers and about 50 face shields which we donated to Apple Rehab, Middlesex Hospital, St Vincent DePaul Soup Kitchen, and UCONN Health. We also donated 40 pizzas and a new Keurig machine to the third shift nurses at Middlesex hospital. The members of our team, who live all throughout the state, also found and created opportunities to help others in their individual communities in order to spread our outreach as far as possible. Our members spent over 130 hours volunteering in many different ways including screening patients for COVID at doctor's offices, cleaning up litter, and conducting virtual workshops and presentations to promote STEM education. Last year, we worked with Collins Aerospace to host a virtual presentation for elementary school girls to introduce them to STEM and FIRST. This year, we have begun to host in person workshops again such as our Robotics Merit Badge event with Scout Troop 33 and our demonstrations at the Mercy High School Open House.

As we look towards the future, the TechTigers realize that our work in our community and STEAM equity is not done. But, we won't stop until every girl is awarded the opportunities she deserves. As Amelia Earhart so boldly stated, "there's something magical about pushing back the frontiers of knowledge," so too, is it magical to expand the frontiers of the lives of girls everywhere.