Chairman's Award - Team 3654

Print Close

2019 - Team 3654

Team Number

3654

Team Name, Corporate/University Sponsors

Bob's Discount Furniture/UTC/A Wizard Did It/Tsunami Tsolutions/Lauren States/FAAE Inc/Arconic Foundation/Solid Works/4-H/Tom and Nancy Clayton/ Michele Ciancola/Swanny Seirup&Mercy High School

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2018/2019 year and the preceding two to five years

FIRST offers team participants the opportunities necessary for developing technical, personal, and professional skills for the post-high school world. The wide scope of FIRST encourages students of all backgrounds and abilities to use what is unique to them toward a common purpose. Team participants feel safe to explore the intersection of young womanhood and STEAM surrounded by other women in the field. Since 2015, approximately 90% of our students have gone on to study STEAM fields in college.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2018/2019 year and the preceding two to five years

Since becoming involved in FIRST, our school has been inspired to add 5 computer science classes to their curriculum, including multiple levels up to AP and 6 science classes. The team is a staple of the school community - demonstrating at the school's open house, activity fair, and summer camps. We partner with the Middletown Youth Services Bureau at community events, Kid City to run STEM activities at the annual Main Street Stroll, and by running activities at the local Girls in Science Camp.

Team's innovative or creative method to spread the *FIRST* message

We promote STEM classes at Mercy High School, participate in DigiGirlz events, and showcase the team and FIRST at the school's summer program. We partner with the Middletown Youth Services Bureau at community events, run Kid City's STEM fair at the annual Main Street Stroll, and lead activities at the local Girls in Science Camp. Globally, we have raised the funds to send 89 girls in Ugandan refugee camps to school and gave bicycles to 15 girls in Malawi so they can go to school.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

In 2018, we restructured our team organization to create more opportunities for students to hold leadership positions; there are now nine positions filled by our students. We created a "Friendship Scavenger Hunt" for FRC events designed to create positive cross-team interaction. We were featured in Strong Magazine for being role models for girls. We use our influence as an all-girl team to encourage girls we connect with at Girls Who Code and Girl Scouts events.

Describe the team's initiatives to help start or form other FRC teams

We founded rookie FRC Team 7694 in the 2019 season at Northwest Catholic High School.The TechTigers have also helped several other teams during their first years. We assisted FRC 4557 at our brother school when they started a team 2 years after ours in 2012 and assisted 5658, inviting them to our workshop and sharing technical strategies, as well as for outreach, sponsorship, and finances.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

Our team inspired Woodrow Wilson Middle School to start an FLL team and we were involved in their startup process. Although they've disbanded due to loss of funding, we are working to re-form the team in the future. We also mentored JPII LEGO LION 14105 during their first season. We are in communication with Corpus Christi and helping to develop a FLL team program in the 2019 Season.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

Our team is always ready to assist others during and outside of competition. Our students and mentors have combined more than 800 logged hours of volunteering at FRC and FLL events during the past 5 years. We offer other teams use our workshop and answer their questions. In 2018, we led an imagery workshop for FRC 4557 and they went on to win the Imagery Award at the NE District Championships. We helped FTC 8152 prepare for competition. During Hurricane Harvey, we sent supplies to Texas teams.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

Via email, we long-distance mentor FRC 5975 in Oregon on the use of pneumatics after we connected through social media. We visit rookie team FRC 7694 weekly, and taught students how to take advantage of CAD in designing their chassis and superstructure. We connected with FTC 8152 Portland Cybernetics and have mentored them with the development of their business plan. We partner with other FIRST teams at many outreach events, including RobotFest, Circus Robotix, several FLL, FTC, and FRC events.

Describe your Corporate/University Sponsors

Our corporate sponsors range from large corporations to small businesses while our school serves as our anchor sponsor, providing workspace and support. In 2017, we were awarded a $20,000 grant from Arconic, and two Surface Pros from Microsoft. We also receive grants each year from UTC and local STEM businesses including volunteer matches from our mentors' employers and our local community. After presenting to the Filipino-American Association of Engineers, we were awarded a $1,000 grant.

Describe the strength of your partnership with your sponsors with special emphasis on the 2018/2019 year and the preceding two to five years

Partnerships with our sponsors are strong and personal. We participate in company events with Henkel and Pratt and Whitney, as well as participating in many company tours. We also host sponsors in our facilities for demonstrations and discussions. Connections are a high priority - we update our sponsors through social media and our team's newsletter. We presented to our school's Board of Trustees, and one of our students outreached to the Filipino-American Association of Engineers.

Describe how your team would explain what *FIRST* is to someone who has never heard of it

FIRST is a community invested in giving young people the opportunities and resources to involve themselves in the world of STEAM. It is a multileveled program designed to engage students from grades K-12 in an environment that is fun, safe, and supportive. It inspires innovation and teaches leadership, cooperation, and self-confidence. Students learn how to take their interests, apply them in a professional situation, and then use them to give back to their community and the world.

Briefly describe other matters of interest to the *FIRST* judges, if any

We are partners with the UN Foundation initiative Girl Up, created to bring attention to the global issue of women's education. We were awarded with the 2018 Rookie Girl Up Club award for our fundraising and advocacy efforts. In addition, we hacked and repurposed toys to meet the needs of special needs children. For PIIP Foundation, we manage their fundraising and cultural exchange program between girls in Ghana and USA, and organize multiple collections of STEM equipment and essentials.

Team Captain/Student Representative that has double-checked this submission.

Caroline Kilian

Essay

Impact occurs when two objects come into contact. When FIRST and Mercy High School came into contact, the resulting impact was the TechTigers. Now, we create an impact with everyone we come into contact with on participant, school, community and global scales.

In October of 2010, FIRST contacted Mercy High School about starting an FRC team to increase the participation of girls in the NE FIRST community. Two FIRST representatives sat down with three teachers and ten students on October 25, 2010 and the TechTigers were formed. Today the team has grown to 24 students, 14 teachers and mentors.

Being a member of the team has proved invaluable to alumnae, who have received over $100,000 in STEAM-specific scholarships. When compared to similar students also majoring in STEM, robotics students had an average scholarship contribution of $36,000.00 per year, in contrast to the $20,207.82 average scholarship per year of non-robotics STEM majors. About 90% of our students go on to study STEAM and 100% of our students attend post-secondary school. Four of our students have received the Certificate of Merit from the Society of Women Engineers.

Graduation means moving on - moving away from friends and family and forming a new identity. Being a TechTiger is not something we leave behind. Our alumnae are in frequent contact with the current team and many come back each season to volunteer and cheer on the next generation of TechTigers.

A team is not an inanimate object, it is a living breathing organism that grows with the people in it. The TechTigers have grown with their students' skills and interests through the prominence of student leadership. We are led by two co-captains, a safety captain, leads for each major facet of the team (superstructure, chassis, programming and business), a moderator's assistant, and assorted project managers.

After reviewing our 2018 SWOT analysis, the team changed meeting structure to more efficiently manage our time. Instead of daily formal meetings, the subteams go directly to work. To communicate effectively, we catch up as needed in small groups with formal meetings being reserved for team votes, major updates and other necessary occasions. We communicate on Slack. Decisions are made by vote on a subteam or a full team level depending on the content of the discussion. With this structure, students have control over the content of meetings and future direction of the team. Students grow through leadership opportunities and our supportive team culture, and gain self-confidence while learning gracious professionalism, social boldness, task management, and ability to work in groups.

Beyond students on the team, the entirety of Mercy High School has been impacted by the TechTigers. Since our inception in 2010 the school has put a spotlight on STEAM with the creation of six science classes, five computer classes, five science-based clubs, and annual participation in the Physics Olympics, American Region Math League, and DigiGirlz events. Many classes were added largely due to TechTigers directly advocating for more STEM focus in the school's curriculum to the administration.

Our school has put a greater emphasis on the team in recent years, featuring us at open houses, student orientations, school marketing materials, board meetings, and summer programs. The team has also participated in the school's Yellow Rose Auction, creating STEM-inspired gift card and lottery trees, and a STEAM-themed educational toy box, to be auctioned off during the fundraiser. Through these efforts, we were able to establish relationships with amazing role models like Lauren States, member of the Mercy High School Board of Trustees and alumna, Harvard Fellow, former Chief Technology Officer of IBM Corporate Strategy and who was inducted into Women in Technology International, Women in Science and Technology Hall of Fame in 2014. Upon visiting our workshop for the first time in 2018, Ms. States voiced her admiration for the TechTigers dedication to STEAM and to each other. This year when she revisited us on January 23, 2019, she wore our team shirt and encouraged her fellow trustees to support our mission.

The Middletown community is impacted by the TechTigers through our outreach. We engage the public with our robot and volunteer at community events like Main Street Stroll, the New England Electric Car Club Car Show, Midnight on Main, and many others. The team was involved in the planning of a Middletown Youth Services Bureau screening of "Hidden Figures" this past summer, where we let kids drive the robot and ran an activity to teach them the basics of binary coding. The event was through the Films on Foss program with which we have previously partnered by demonstrating our robot to children before the movie.

Last year, we were able to use our holiday season to repurpose toys to suit the unique needs of a local girl with cerebral palsy. When she received her new Minnie Mouse doll equipped with a customized button to make Minnie sing, it was love at first sight. We are planning to continue hacking toys next year, inspired by the Santa's Little Hackers program in Denver, CO.

We have mentored a local FLL team, JPII LEGO LION 14105, at St. John Paul II School in Middletown, CT. We have also mentored a Vex robotics team in Wallingford.

We are beyond excited that this season we were able to work with Northwest Catholic School to found FRC 7694, and we are currently mentoring them. We are also mentoring FRC 5975 via email in their first year using pneumatics.

Members of the TechTigers volunteer with the local Girls Who Code chapter and have helped local Girl Scouts earn various STEAM badges.

It is a good feeling when your team earns a positive reputation, but it is better when that reputation provides you the opportunity to help others. The TechTigers are three-time Imagery Award winners, and last year Team 4557 contacted us about us helping them with their imagery plans. We visited their school to lead a workshop about what team imagery means, how to structure it, and why it is important to a team.

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FIRST is unique because it is so much more than a competition; it is a community. In the spirit of community, we have partnered with other teams to participate in joint outreach events such as Apple Pi FRC 2067's Spooktacular, 4-H fairs, the Coast Guard Open House, and many more. We have also sent team members and mentors to volunteer and judge at multiple FLL, FTC, and FRC events, with at least 800 recorded hours of FIRST volunteering from the past five years.
It's a big world out there, and there are a lot of people who need help. 2017 was a landmark year for us as we boldly went where no TechTiger had gone before; to expand our impact to a global scale. A student came to the team with the idea that we could partner with the UN Foundation program Girl Up, designed by women to empower girls in six focus countries; Malawi, Uganda, Guatemala, Ethiopia, India and Liberia. Girl Up is the creator of the WiSci Girls STEAM Camp that works to close the gender gap with access to education, mentorship opportunities, and leadership training in a multicultural environment. There are 130 million school age girls out of school around the world, and we are doing something about it.
In the 2017-2018 school year, we raised $1849.90 for Girl Up's Schoolcycle initiative which provides girls in Malawi with bicycles, bicycle repair kits, and bicycle maintenance training. Transportation is one the greatest obstacles keeping girls out of school in Malawi where only 25% of women finish primary school and 9% finish secondary school. The money we raised helped 15 girls, and was raised by a bake sale and a school-wide dress down day the team organized.
In December 2017, we hosted a movie night open to Mercy and Xavier High School where we screened the documentary Girl Rising to educate our community about the unique challenges that girls face around the world. This year, we repeated the fundraiser with a screening of Mulan. Our proceeds went to the Give Her a Future campaign, supporting girls trying to go to school in refugee camps in Uganda, where education is seriously underfunded. Through a variety of fundraising avenues, we were able to send 89 girls to school.
Last year was the beginning our our partnership with People Investing In People Foundation, who are dedicated to bringing FIRST and STEAM education to underprivileged areas, particularly Atebubu in northern Ghana. To date, TechTigers set up their online fundraising system and run their Girl Up cultural exchange program. The PIIP Girl Up program consists of a weekly video conference with a group of girls living in Atebubu, covering topics ranging from community service projects to career exploration with professionals to basic questions of identity. We also have organized several supplies drives, including one currently underway.
When talking about our team's impact, it is impossible to divorce the team from who we are. We are all girls. When we started in the 2011 season, we were surprising to the predominantly male community. Now in 2019, we are comfortable and accepted in the FIRST community, but this is not the universal attitude. The world needs more women in STEAM, and we are happy to connect with as many girls as possible. Strong Magazine for Girls featured us in their December 2017 issue for being role models and inspirational to a new generation of girls who have the ability to be anything they want to be.
At the end of the day, the TechTigers' greatest achievements are the women our members grow to become and the people we help along the way. We are innovators and leaders, but most importantly we strive to be good people. We know who we are, how we fit into the world, and both the privileges and challenges we face. We choose to look at the world and see how we can make it better one day at a time.