

Chairman's Award - Team 329

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2019 - Team 329

Team Number

329

Team Name, Corporate/University Sponsors

Zebra Technologies & Patchogue-Medford 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

Many of our team members pursue STEM careers after FIRST. Over 90% chose a STEM college major and have pursued STEM related internships, including four student internships at Zebra over the last five years. FIRST has fostered not only a greater interest in STEM, but personal growth in all of our team members. Our team provides a supportive environment where team members find themselves building strong relationships, developing leadership skills and expanding their identity.

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

We strive to make our diverse community a better place by focusing our attention on the children within it. Our presence in the local soup kitchens, festivals, food drives and other events is intended to help inspire kids to become interested in STEM. Combined with programs like JEP, coding club and our Girls STEM seminars we have seen an increase in FLL, FTC and FRC participation as well as H.S. STEM class enrollment, especially among girls

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

For the past three years, our Junior Engineering Program has been engaging all 160 elementary classrooms in our district with STEM-based challenges. JEP has grown to include wheels and translations to Spanish. With our FIRST STEP program, we house international teams such as 1156 and 7673 so they can compete in the U.S. and experience American culture. Our STEM Seminar for Girls introduces female middle school students to STEM through a hands-on program run by female Mohawks and mentors.

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

Our team believes in leading by example both locally and internationally. We start the season by hosting a Long Island FRC "Mentor Meeting" to discuss the challenge, strategies and assist newer teams. We invite these teams to our lab to help them build and program as well as transport robots to regionals. Our STEP program has started to serve as an example, with other FRC teams now hosting lesser funded or international teams in their homes and schools to help them compete in more regionals.

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

We have always encouraged local school districts to form an FRC team and we freely share information about our team and Booster Club to assist them. We have found it difficult in a geographical area where there are 50 FRC, and hundreds of FTC, FLL and JFLL teams to start new teams. So instead we focused our efforts on helping ALL of them by convincing our primary sponsor, Zebra Technologies, to provide multi-year co-sponsorship support to FIRST Long Island and thus ALL Long Island FIRST teams.

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

We have spread our dedication to FIRST and STEM to all 3 Patchogue-Medford middle schools, as well as the 7 elementary schools. After encouraging and aiding the principles of these schools in their implementation of FIRST programs at the FLL and JFLL levels, we expanded our efforts by assisting with the establishment of an FLL team at our local public library. Mohawks ensure the sustainability of these programs by mentoring the students and creating a passion for FIRST in each member.

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

We support FRC teams through our STEP program, where we invite teams to our homes and school and provide use of our lab to help alleviate the costs of competing in our local regionals. In addition, we offer to transport several international teams' robots, batteries and equipment to competitions, some which we do not even participate in. Mohawks have also created a "pit crew" and transportable station responsible for helping other teams and sharing tools in a more effective manner at regionals.

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)

We have worked closely with many other FRC teams, such as Team 601, where we provide use of our lab, materials, experience, and fields. We mentored Rookie Award winning Team 6746 in the build and programming of their robot and dedicated a section of our lab to them. This season we are mentoring Team 7673 from Taiwan and have had numerous video conferences to assist them on their build season. We have also produced videos on YouTube that assist new teams in getting started in FRC.

Describe your Corporate/University Sponsors

Zebra Technologies and the PMHS Robotics Booster provide most of the funding and support for our team. Zebra provides financial support and at least five mentors year round to aid our team and are present daily during build season when we assist them in testing their DART System. Our Booster Club has become the model other FRC teams use to help fund their teams. We have developed tutorials and provide direct assistance to FRC parents of other schools that wish to start a booster club.

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

We were the first team Zebra mentored (2007) and their support for our team and FRC has grown tremendously over the last 3 years. In fact, some of our past graduates have gone on to work at Zebra and come back to us as mentors. Given their positive experience with our team, Zebra now has dedicated more of their corporate resources on robotics and FRC with 27 Zebra employees mentoring 15 FRC teams (including Team 7673 from Taiwan) and becoming a major co-sponsor for both our local regionals.

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

FIRST is a means by which people can work to refine the edges of one's character, capabilities, and self-confidence. Through the instrument of STEM, FIRST develops students into the future leaders of their generation, while inspiring those younger to follow in their footsteps. Via the connections and educational foundation established with FIRST, students will be able to carry on and build themselves into resolved individuals with ambitions to make contributions to the world around them.

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

FIRST has always been instrumental in promoting STEM education and careers but we have witnessed the impact it has had in other areas such as individual communication, written skills, confidence, teamwork and leadership. Team members are challenged to be pushed outside of their comfort zone to develop other skill sets that will be beneficial to them in college and their future careers. Amazingly, many of our team leaders claim they never envisioned being leaders when they joined the team.

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

Ishika Patel

Essay

Intro

Our predecessors changed our name from Raiders to Mohawks to signify a shift in the attitude and objectives of the team members at that time. They were no longer content with just being considered nerdy robotics kids, they wanted to be viewed as leaders, role models and catalysts for change within the school and district that struggled academically. Their ambitions for the team live on within each of us today. We are especially proud that our alumni have moved on to have successful college and professional careers, yet still feel such an attachment to the team that they return to volunteer and mentor us. Our team grows stronger every season because of the effort that our team, mentors, and sponsors have put into the program, and most importantly, the community that embraces us and the individuals that shape it.

Our program represents the desire to not just win today but to create a team culture that strives to improve every year by helping to develop students in elementary and middle schools, supporting our community and lending a hand or home to those that need it.

Individuals Shaping STEM

The individuality brought by team members is nurtured by our focus on making a change. Without the drive of our members, our district would lack the emphasis given to STEM education, and the international FIRST community would be just a little bit smaller. Mohawks take their passion and experiences to engineer a change they want to see in our district and in the FIRST program.

Many of us reflect on the lack of STEM programs in elementary school as a source of inspiration for changes they can make with the help of other Mohawks. Meghan O'Leary, our Visions systems leader, launched and supports an educational program at our elementary schools called Coding Club in order to motivate students to get involved in programming at an early age. To compensate for the opportunistic inequality of student participation in STEM extracurriculars, Anson Zhou, a robotics veteran, collaborated with several Mohawks, to successfully expand the Junior Engineering Program (JEP) recess curriculum. In the 2015-2016 school year, all 160 of our school district's elementary school classrooms were provided a LEGO® kit, tailored to the specifications of our custom-designed challenges. Anson recognized the increasing demographic of Hispanic students in our school district and translated each of the 50+ challenges to Spanish, ensuring that language is not a barrier to STEM education. Mohawks continue to expand this program by adding more materials and challenges to keep students excited about STEM.

Beyond these programs, the Mohawks establish an approach that impacts children of all ages. Ishika Patel, a leader on the programming team, used her experience of being on what was initially a male-dominated robotics team to encourage middle school female students to take an interest in all Robotics has to offer. For the past 3 years, Ishika, with the help of other female members and mentors, organizes our FIRST STEM Seminar for Girls. The girls participate in hands-on activities in the areas of electrical, CAD, programming, and mechanical. By developing these seminars we were able to expose an underrepresented group of individuals to the STEM fields and a program that many now wish to be a part of. This season, due to this program, Team 329 experienced its greatest enrollment of female rookies.

Jay Ahir, our mechanical team leader, sought to share the basics of STEM to anyone who had a passion for it. With the aid of other Mohawks, he implemented a series of YouTube videos that go over basics in our mechanical, programming, electrical and CAD teams. These introductory videos provide lessons to anyone interested in understanding robotics, and helps promote the the disciplines and safety principles of FIRST.

Legacy Within the Team and Zebra Technologies

Beyond the individuals making an impact on our team, we are a stronger organization because of our legacy. The participation of younger siblings on the team increases every year as students come in exposed to what FIRST is and what they can expect to accomplish in this dynamic environment. They see the impact Team 329 has had on their older siblings and are somehow even more committed to making FIRST a household name. The younger siblings who have joined the team this year have already proven to follow in the model set by veterans, by mentoring our middle school FLL program and taking charge of community outreach events. The only legacy that matches this familial one is that of Zebra Technologies, our oldest and most committed sponsor. Their support over the last 13 years has provided us with both the financial resources and mentorship we needed to be successful and grow the program.

We are excited that over the last few years the relationship has become more symbiotic and that our success as a team has led Zebra executives to invest more resources into other FRC teams and FIRST. Three years ago, a team alumnus, Matt Boehm, who is now an engineer for Zebra and mentor for our team led a presentation to his management. In it, he stressed the success of our team, the importance of FIRST to their industry and the benefits of expanding Zebra's investment. As a result of their relationship with our team, 27 Zebra employees now mentor 15 FRC teams and co-sponsor both Long Island FRC Regionals. As more Mohawks aspire to seek employment at Zebra and mentor FRC teams, we hope to reward the expansion of their investment even more.

Local, National, & International Impact

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Giving back to the community plays just as big of a role on Team 329. Through our community service events, we are able to help those in need, protect the environment, and promote participation in FIRST. Many Mohawks regularly volunteer at the St. Francis Soup Kitchen every Saturday morning. Alongside our attendance, we host food drives to collect nonperishable goods that are distributed to those in need and are able to sustain the soup kitchen for months at a time. Since 2011, we have helped our community with our annual Holiday Luncheon, in which we provide 200+ meals to struggling families, along with a gift to each child that is collected from the annual 5K Toy Trot. The Patchogue Kiwanis club, a sponsor of Team 329, hosts community events at which Mohawks volunteer. One of our first community service events of the year is our annual e-waste and paper drive, where we encourage our community to come together and recycle an average of over 13,000 lbs of used electronics and paper. Moreover, Team 329 attends Fall Fest every year, a seasonal tradition that allows us to support local vendors and showcase our robot and team to the community.

We have found it difficult in a geographical area where there are 50 FRC, and hundreds of FTC, FLL and JFLL teams to start new teams. So instead, in the true spirit of Cooperation and Gracious Professionalism, we focused our efforts on helping ALL of them by convincing our primary sponsor, Zebra Technologies, to provide multi-year co-sponsorship support to FIRST Long Island and thus ALL Long Island FIRST teams. Our team also hosts an annual Long Island Mentor's Meeting at the beginning of each build season, bringing together 20+ FRC teams to share ideas on robot design, interpret game rules, and exchange strategies. These teams are invited to utilize our lab, field and other resources to complete their robot. In 2017, we assisted all-girl Team 6746, the Mustangs, with their robot construction and programming, they then went on to win the Rookie All-Stars award. Team 329 members continue to work with the Mustangs, teaching them about industrial design and code while assisting them with their robot. This year, Mohawks have mentored FTC Team 14440 in order to help them develop a sustainable program and teach them technical skills. Our team is also dedicated to mentoring our district's 7 JFLL and 3 FLL teams. In addition to this, team members allocate their time to volunteering at several FIRST events during and after our build season.

While introducing new people to FIRST is a very important focus of our team, we also want to help existing teams that lack resources that need our assistance. In 2014, Team 1156 from Brazil lacked the financial resources for travel expenses to the SBPLI regional. Our team took the initiative to host their members in our homes to save them money. We realized the impact hosting has had over the course of several years and developed FIRST STEP (Support & Team Exchange Program). STEP is a project designed to aid teams in the process of attending and succeeding in regional competitions. Mohawks have created an outline for teams to follow in order to implement this program and are excited to see teams emulating it. Team 329 has since hosted Team 1156 as well as met with Team 6414 from Shenzhen, China at our lab. We have since established a relationship with them through an expansion of our STEP program. This year, the Mohawks are excited to further promote international cooperation by mentoring and hosting Rookie Taiwanese Team 7363, as they compete at our local regional.

Conclusion

Mohawks build robots, but they also build character. By participating in an organization that stresses the importance of changing lives and minds while giving back to the community, we have shaped not only talented engineers, but well-rounded leaders - leaders who value responsibility, creativity, and communication. Mohawks learn the value of belonging to a team and a family. They contribute to this program not only with their technical skills, but also by dedicating hundreds of hours year round fundraising for the costs necessary to implement our outreach initiatives. The Mohawks continue to produce hard workers who returned to the program that set them off on the road to success. The programs we create will continue to impact those in FIRST and beyond.