

FIRST Impact Award - Team 2714

2023 - Team 2714
Team Number
2714
Team Nickname
 BBQ 
Team Location
Dallas, TX - 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 been a catalyst for our team members, providing them with an in-depth exposure to STEM and opportunities to pursue careers in it after they graduate. All our alumni from the past three years have enrolled in STEM degrees after high school. Four of them are pursuing STEM careers, notably our programming lead working at Netflix and our mechanical lead working with one of our sponsors, Venture Research. Alumni also return to mentor our team and provide their insights.
Describe your community along with how your team addresses its unique opportunities and circumstances.
BBQ is a true 'community' team, with our members representing several different reaches of the DFW area and coming together with a shared love for robotics. We've used our wide scope to focus on positively impacting our communities through starting teams such as #20039 and #20040 at a local high school, partnering with companies in our area such as REV Robotics and Venture Research, and doing city-spanning outreach events that have spread the message of the power of FIRST programs to thousands.
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?
Staying true to our 'community' roots, we want to spread the FIRST vision in ways that are personable and meaningful. We take initiative by organizing small-scale events of 10-50 participants, so each one of them can see, in-depth, what FIRST is about. We also project our message on a larger scale, through citywide events where we connect with hundreds. We measure our results through not only statistics of people reached, but also the qualitative overall experience our participants have.
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.
BBQ seeks to be a role model within our FIRST community through our mentorship of various teams at all levels of FIRST. To all the FTC and FLL teams we mentor, we stress the importance of being a

Gracious Professional alongside our other curriculum. We also embody the FIRST core values and Gracious Professionalism at any competition or event BBQ is represented at. Though we are competing with other teams, we never hesitate to lend a hand when they are in need in the spirit of Coopertition.

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

Our team started the first FIRST program in CISD through our establishment of FTC teams #20039 and #20040 at New Tech HS. We have assisted them during weekly meetings since their rookie season and have seen results in the various awards they have won, including an Inspire win for 20039. We mentor FLL Challenge team #55693 and have coached them through their transition from FLL Explore. Additionally, we assist FTC team #21474 with robot design in their rookie season.

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?

Our presence at events in our local community, such as Kaleidoscope, the Coppell 4th of July Parade, and Durga Puja, has connected with over 3100 people who were able to interact with our robot or watch it in action. We have been able to meet with the Coppell mayor, Chamber of Commerce, and school board to speak about our vision for STEM expansion. Our ideas were heard on a national level at NAC, where we lobbied for the support of STEM after-school programs through a bill to 6 congresspeople.

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

As a community FRC team, we highly value the connections we have created. Notable among our strong partnerships are REV Robotics and Texas Instruments, who are significant sponsors and mentors for our team. BBQ is a proud member of #TeamREV, collaborating to spread FIRST through social media. Organizations we join forces with include the Rotary Club of Dallas-Uptown and FIRST itself, with members of our team contributing significant volunteer hours to FLL and FTC events in our region.

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

We incorporate a diverse group of members from 10+ schools in the DFW area. We not only focus on diversity in a traditional sense, but on including our members' unique skill sets and ideas in our discussion. Outside of our team, we focus on seeing barriers broken by groups underrepresented in STEM through our mentorship initiatives. The FTC team we started in Vizag, India (whose 15 members are almost all female from an underfunded school), and the all-girls FLL team we mentor are examples.

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

BBQ had an extensive onboarding process during the 2021-22 offseason, where we admitted and trained 16 new members to ensure a pipeline of dedicated students for the coming years. The offseason was spent helping our new members advance mechanically and in programming. They have proven that they are capable of supporting the team during build seasons as well as the larger initiatives we are pursuing in our community, such as our mentorship of our teams in India and at New Tech High.

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

BBQ lists 18 sponsors for the 2023 season, retaining major sponsors such as REV Robotics, Lockheed Martin, and Texas Instruments over three years. We seek to integrate each of our sponsors into our BBQ community, prioritizing regular interaction with each of them. Our initiatives to express our gratitude to our sponsors include customized thank-you cards with input from the entire team, t-shirts sent as a small token of appreciation, and advertising space on our banners and social media.

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

BBQ places an importance on being a student-led effort. Due to this, our team requires a lot of structure and organization to run. At times, we struggle with clearly defining the tasks we have at hand and creating a timeline to follow. To mitigate this issue, we utilize project management softwares as Trello and Monday to create and work towards manageable goals. We also make communication our #1 priority and always make time for team discussions to make plans, address concerns, and debrief.

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

We've taken steps to ensure that the next generation of children find their passion to become science and technology innovators. At the Chess Tournament we held at our local library, we introduced a group of 25 kids to robotics through the game of chess. Our Intro to FTC workshops acted as springboards for students to delve into robotics, with 12 participants per session for a personal, in-depth approach. Through these sessions, we aim to involve children with STEM and FIRST at every level.

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 started the pioneering robotics program in Vizag, India, by establishing, funding, and continually mentoring the FTC Team 'Andhra Achievers', which consists of 80% female members in an underprivileged school. We have biweekly virtual sessions, covering everything from Onshape and programming lessons to assisting with their business and outreach plans. They are registered for the regular season as team #22383 and are the only FIRST team in the state of Andhra.

Essay

BBQ Impact Award:

While they may seem vastly different at first glance, the FRC community and a barbecue have a surprising amount in common. Both share a similar sense of camaraderie and friendly competition. At Team 2714 BBQ, whether we're cooking up a robot for the season or helping out around our FIRST and local community, our mission is to empower students. We strive to guide our members in gaining self-confidence and becoming leaders, collaborators, and critical thinkers while fostering a culture of STEM celebration through robotics. We put our philosophy in action by strengthening our own program to support our students becoming enthusiastic learners and leaders, as well as inspiring our broader community to discover their passion for the wide world of STEM.

BBQ team members played a fundamental role in the founding of the FTC program at New Tech High School. Through coordination with the school's computer science teacher and the school district, we were able to register, thoroughly establish, and secure a funding pipeline for FTC teams #20039 and #20040. These teams consist of over 30 students from grades 9 to 12, and marked the beginning of the FIRST program in Coppell ISD. We assist both teams with design and mechanical lessons during their weekly meetings as well as with awards and their Engineering Notebooks. We are proud to have seen them win the Inspire Award (#20039) and the Connect and Judges Choice Awards (#20040) at qualifier events, as well as place in several other award categories.

In addition to founding a FIRST program in a local school district, we actively mentor a girls-only FLL team (#55693) through regular sessions, teaching block coding, basic design principles, and sensor usage. We also assist a rookie FTC team (#21474) with working through design concepts during monthly sessions.

We take an innovative and fun approach when we grill up our outreach programs and events, believing that hands-on experience excites the minds of young innovators. Our Open Chess Tournament, which we organized at our local library, was held to introduce robotics to young students. The event attracted 25 competitors as well as 50+ passersby who watched our interactive robot demo and asked questions. Though the event was completely free to attend, we ended up with a total of \$480 in donations. Our team additionally has held two Intro to FTC workshops, each with 12 participants, primarily middle schoolers, who have been enthusiastic to try out robotics. During these two-hour sessions, we explain to the participants how to sign up for an FLL or FTC team in their area. We've also taught mechanical and programming basics through fun and interactive exercises and quizzes.

At the City of Coppell's cultural event, Kaleidoscope, our booth attracted 300+ event-goers whom we invited to drive and interact with our robot. 42 children and their parents expressed interest in FIRST programs via a sign-up form we had created. After the event, we followed-up with an email to explain how they could find and register for a FIRST team in their area. This season, BBQ also hosted a booth at an Indian religious event called Durga Puja at which 600+ attendees stopped by to view our robot demonstration.

For the City of Coppell's annual 4th of July parade, our team built and decorated a float over the course of two weeks, complete with a raised deck on which we could drive our robot during the event. On the day of the parade we distributed 250+ pamphlets to families interested in FIRST and displayed our robot to a crowd of more than 2,000 people. Our float won us the Best Decorated Award and a place in the Coppell Parks and Rec newsletter, which is distributed to over 40,000 Coppell residents quarterly.

BBQ participated in the NAC (National Advocacy Conference) in June of 2021. We, in collaboration with several Texas FTC, FRC, and VEX teams, virtually presented to the offices of two senators, John Cornyn and Ted Cruz, and three members of the House of Representatives, Van Taylor, Beth Van Duyne, and Michael Burgess. Our presentation was about the bill ESSA Title IV-A, which supports and funds STEM-gearred programs in public schools with the intent of increasing digital literacy in students. The congresspeople and legislative aides to whom we lobbied all supported the bill, and the state of Texas spent approximately \$8 million in 2021 alone on programs that helped develop an effective use of technology within classrooms.

We not only strive to make an impact on our local community, but we also aim to positively influence the global community as well. One of our team members visited an underprivileged school in Vizag, a small city in Southern India, in 2021. Following that visit, our team banded together to establish a FIRST robotics program at the school after the children demonstrated an interest in STEM. During the offseason, we taught these students the basics of programming and helped them develop the first iterations of their logo and business plan. Additionally, we introduced them to skills like designing in Onshape and sketching custom parts. We officially registered fifteen team members under the name Andhra Achievers, and, to date, they are the only FIRST team in the city of Vizag. Currently, through two virtual sessions a week with the students, we work to prepare them for the challenges of FTC.

Even with these efforts, we are always looking for ways to build our own team up to be the strongest we can be. When Covid-19 barred in-person meetings in 2021, we organized a series of virtual STEM Seminars on platforms such as Zoom. These seminars featured industry professionals who held robotics or STEM-related careers within companies such as Amazon, Autodesk, and iRobot. We held 25+ STEM Seminars over the course of two years. Different guest presenters spoke to our team about the intersection between their job and how it relates to what we do as high schoolers in FRC. Through these sessions, we gained awareness of diverse STEM careers to pursue in our future while honing our networking skills.

BBQ places an emphasis on a student-led model for our team. Our aim is to provide students with an open environment in which they can share ideas, expand their creative and problem-solving capabilities, and meet the challenges of the season head-on. Our team has 25 members for the 2022-23 season, 16 of whom joined to sustain the team after several veterans of the team began preparing to graduate in the coming Spring. The 2022 offseason was spent helping them find their place in our family and rigorously training them in their chosen niche. BBQ also attended two offseason competitions as a team, not only to help sharpen rookie members' newfound skills in a competition environment, further preparing ourselves for the build season, but also to get to know each other better as teammates and friends. Through this process and our team bonding efforts, we are effectively and sustainably preserving our community barbecue for many seasons to come.

Furthermore, we enlist our extended community of BBQ alumni, who we call our Student Mentors, to help the team when they are able and to provide their insights to different team challenges. Having benefited themselves from being part of BBQ, they are always more than willing to assist. Our alumni have flourished post-graduation, majoring in STEM fields at prestigious universities such as the Worcester Polytechnic Institute, Washington University in St. Louis, the Texas A&M University College of Engineering, and The UT Cockrell School of Engineering. Some have even founded their own STEM-related nonprofits, one of which has impacted 120k+ students worldwide. Our team is proud of the efforts

of our alumni, who serve as role models and sources of inspiration to each of our students.

As a team, we are proud to be known as BBQ - an innovative and impactful robotics team that is dedicated to empowering students and promoting STEM education by opening our arms to both our local and global communities. Our approach to outreach is playful and interactive, encouraging young people to organically discover their passion for STEM. We are committed to reflecting and improving ourselves as a team, in order to best embody the mission and vision of FIRST. Our focus on student-led initiatives, combined with our dedication to promoting STEM education, means Team 2714 BBQ will be stoking the flames of innovation and technology for years to come.

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