FIRST Impact Award - Team 59

2023 - Team 59

Team Number

59

Team Nickname

RamTech

Team Location

Miami, FL - 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.

Members use the skills and knowledge they learned and apply it to their future education and careers in STEM. Mentors share any upcoming opportunities in careers and internships they learn of with the FRC team so students get all the advantages they can. All RamTech students graduate from high school and are collegebound, being accepted and admitted to highly recognized schools including but not limited to Duke, Embry Riddle Aeronautical University, Yale, and the University of Florida.

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

Based out of a Title 1 school with a majority immigrant population, math and science have become a common language we use to communicate with our community. RamTech has held showcases at local middle/elementary schools; hosted an annual robotics summer camp; volunteered at schools, hospitals, and community centers; ran robotics competitions such as FLL, at various locations. The overwhelming support and attendance from our community throughout all of our events inspires us to do more each year.

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?

The RamTech Robotics Summer Camp is one of the most prominent ways we spread the FIRST message. Every year, we expand the number of students we allow into our summer camp per week due to the tremendous support from the community and sponsors. Currently, we are at roughly 110 students per week in our summer camp, but we don't just impact our students, we also visit students from middle schools in our community. Here we expose students to FLL, FRC, and gracious professionalism.

Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.

Originating from a community team, we understand the difficulties of being rookies, so we are always going around the pits looking for any new teams that need our help. This persists outside competitions

as facility doors are always open to any team that needs help. Members take pride in using their previous failings to help others avoid making mistakes. And if you can't come physically we have a RamTech Wiki that has all the information a rookie team might need.

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

With mentoring at the heart of the Ramtech Philosophy, we have assisted many teams such as the “Miami Mengs” Team 3410 and “The Unit” Team 7193. At the 2018 South Florida Regional, Team 7193 was the highest-ranked rookie team at 8th place. In 2019, we assisted a new rookie team from Miami Beach Senior High School. In 2020, we mentored team 8104 and team 5329. In the last two years, we began mentoring new rookie teams, South Dade, American Senior High School, and recently Miami Sunset SHS.

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?

Getting more students involved in FIRST and STEM is RamTech's primary future goal. One of the main programs we can attribute to this is the Magnet Ambassador program. Here kids from RamTech visit middle schools in order to show off all areas of steam that our students participate in. As many of our students are involved in architecture, medicine, and art, these young kids are exposed to many new future career paths. 35% of our team is made up of those who have been visited by Team 59.

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

This past holiday season, we held a toy drive initiative to donate STEM-related gifts to underprivileged children of immigrants. This was done in collaboration with the ISERN Tamayo Family Foundation, and together we donated over 100 gifts in a span of 3 weeks. In addition to these efforts, our alumni involvement has expanded to numerous organizations over the last 3 years, including SHPE which provides career mentoring and various networking opportunities to our seniors.

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

The only requirement to take part in FIRST Robotics for Ramtech is to be enrolled in our school. Our members represent multiple minorities, including ESOL students, the LGBTQ community and various religious groups. We promote a multicultural atmosphere where our differences allow us to come together with the common goal of promoting the FIRST Robotics ideals. Our parents take turns bringing homecooked meals from their cultures for our after-school dining program during build season.

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

The RamTech legacy thrives through a recurring mentoring system in which alumni return as adult mentors who supervise, guide, and provide us with knowledge, expertise, and resources. Upperclassmen use these resources to execute FIRST projects. As new underclassmen join RamTech, upperclassmen act as their mentors so that the cycle continues. Finally, our mentors created a

continuously updated Wiki that serves as a hub with resources needed to design, build, and code a FIRST robot.

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

Much of our self-sustainability is due to our sponsors as well. As alumni get hired in the engineering field, they often come back to support us in as many ways they can, including sponsorships and in-kind donations. We have been successful in retaining our sponsors which include but are not limited to Motorola, FPL, FESTO, Beckman Coulter, and Dr. Lee Swanger. They pledge their unwavering support because we continuously demonstrate them how their funding influences upcoming STEM students.

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

We are currently struggling with maintaining a balance between working on our own team's build and dedicating time to mentor other teams. With select members having to shift focus from our own work to help others, it has affected our scheduling and timing, causing some delays as well as imbalance on member's workloads. In order to catch up, we've had to add days to our schedule to meet our deadlines.

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

RamTech's goal when fulfilling the mission of FIRST is to give back to the community and spread the morals of FIRST. We share, expand and inform our community about STEM at all times as well as offering a place for them to channel their newfound STEM enthusiasm. That is the sole reason for why RamTech hosts so many events on and off campus. Hosting tournaments year-round keeps the message and spirit of FIRST abuzz in the community, which is the pillar of FIRST.

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.

As one of the longest-standing Florida teams, we see it as our responsibility to be the "Older Brother" to our community and try to cultivate a "FIRST Family". With this ideology thoroughly embedded into every member, we often get an influx of alumni who come back to mentor members of our team or even another team that may need help getting on their feet. During the offseason we get our hands on as many events as we can, hosting and planning competitions.

Essay

In 1996, a group of enthusiastic Coral Park mentors and students began an all-new extra-curricular STEM club called RamTech. Excited to find ways of expressing their love of engineering and their desire to learn, RamTech gladly joined Team 37 CordZilla thus officially signaling the start of an exciting journey into FRC. Using the knowledge acquired under Team 37, they split off to form their own team, RamTech 59, which would continuously improve every year, receiving the Judge's Award in 2000 and jumping to Division Champion in 2001. RamTech 59 took a brief hiatus from 2010-2011 when the lead mentor left the team. However, Carlos Delahoz and Carmen Garcia would soon revive Team 59 in 2012. Under our newfound leadership, in 2016 we were granted the Hardship Grant by Argosy to help with funding for our club activities. We also began our relationship with Florida Power & Light (FPL), who has sponsored us that since 2016, all while increasing their yearly donation. Since then, we've also received sponsorships from Motorola Solutions Foundation, Beckman Coulter, and other companies. To secure further funding, the team launched RamTech Robotics Summer Camp in summer 2016, with the mission to create a lasting positive impact on our community. Team members coach school children ages 5 to 14 on the basics of robotics and how these skills will become a prominent part of their future as the world progresses further in all technological aspects. Campers get the chance to problem-solve in a team setting as well as first-hand experiences at designing and building robots. We believe these students are the future of FIRST and fostering their curiosity during their formative years is not only crucial for them, but also for STEM programs in our schools. One notable way we try to leave an impact is by offering free tuition to campers that are financially challenged to advocate for equity for all children, regardless of socioeconomic status. Intrinsically, the experience students obtain from the summer camp invigorates interest in STEM in the youth of the community. It is thanks to resources like the summer camp and our sponsors that RamTech 59 can continue its development. Furthermore, because we are provided with a stable source of income through the camp, we can pursue improvement in our manufacturing shop to buy new equipment, tools and using more time for research/learning. Through this growth, we have expanded our outreach as well as helping and mentoring more teams. With guidance from mentors and help from sponsors, our team qualified for FRC Nationals in 2018's FIRST POWER-UP for the first time since 2006. That year we were given a Wildcard, an award passed down from a team that already received a national championship qualifier to the second-seat team ready to receive that honor, Excellence in Engineering and Regional Finalists. Reaching these accomplishments was certainly a cause for celebration amongst members and it only kindled the team's burning desire to improve. Additionally, as a team that has had to start from square one multiple times, we understand how challenging it can be to face any competition alone. That's why throughout our years, we have taken pride in mentoring and assisting several FRC teams such as Team 3410 Miami Mengs and Team 7193 The Units. At the 2018 South Florida Regional, Team 7193 was the highest-ranked rookie team and ranked 8th overall in the competition. In 2019, we assisted a new rookie group, Team 7652 – MiamiBeachBots from Miami Beach Senior High School. And in 2020, we mentored Team 8104 – Squidworx and Team 5329 – S(A^3)S. We dedicated our efforts into constructing a multipurpose, full-scale robotics outdoor facility so that other teams from all levels and ages in our community could come and have the freedom to practice and strengthen their passions for STEM. Helping other teams achieve success is an act we find incredibly rewarding as it shows the flow and retention of knowledge. The rapport we build with those teams is also of high value to us knowing that they will be able to spread the teachings and information we shared with them to support other teams eager to start in FRC. While RamTech 59 was making a name for itself in the FIRST community, we were also making contributions to our local community. Ramtech 59 partnered with Chipotle Mexican Grill to raise enough money for a toy drive that benefits the children of HCA Florida Kendall Hospital (formerly known as Kendall Regional Hospital). We collected and wrapped STEM-related presents for the children to spread some Christmas cheer along with a semblance of the message of FIRST. In 2020, we 3-D printed, assembled on our

school's campus, and donated 4,700 disposable face shields to essential workers and first responders in Miami-Dade to promote safety during the COVID-19 pandemic. This was accomplished in collaboration with Coca-Cola and Moonlighter FabLab. Coca-Cola donated the PETG plastic, and between RamTech and Moonlighter FabLab, we manufactured and sequentially 3-D printed/assembled it. Considering our continued attempts to involve ourselves in our community, in 2021 alone, we collectively volunteered 4,750 hours by hosting and organizing competitions, showcasing at schools and events, and overseeing the summer camp. We are often tasked with planning and executing most STEM competitions and events for Miami-Dade County Public Schools, including 12 STEM events for RC cars and drones. Additionally, we are incredibly proud of our involvement in FIRST, thus we take pleasure in showing our community what we do best. We've showcased our robots at non-FIRST related events like the Marlin Tech Day Showcase, the Junior Orange Bowl Parade, Student Magnet Ambassador Showcases at various locations, and the Miami-Dade Book Fair. We also used our robot to film a Rocket Mortgage commercial on October 29th, 2021, that has yet to be released. This was a grand opportunity for us to promote FIRST in the commercial industry. We also advocated for FIRST on November 23rd, 2021, by presenting our FRC team to our former superintendent, school board member, and business professionals from around the county. At the beginning of 2022, FIRST in Florida invited all teams to advocate FIRST to our politicians and we took that chance to propose making FIRST an official Career & Technical Education Student Organization. We wanted and are still striving to make this designation a reality because if FIRST is elected as a CTSO, then they are automatically eligible to earn Perkins Funds (grants of the federal level). This would mean every school participating in FIRST that has CTE personnel would receive funding and increase access to technology for disadvantaged populations of women and minorities. In March 2021, we started an outreach project called SparkTech is a nonprofit organization that provides kids from developing countries a chance to grasp an education of the future. In SparkTech, students from RamTech helped teach students online via Google Meet every Saturday at 8:30 a.m. to teach them different to use software such as TinkerCAD, Sololearn, Onshape, Repl.it, to name a few. When the 2022 FRC season officially began, it was our honor to start and turn our attentions to mentoring and assisting South Dade Senior High School Team 8817 Buccaneers, who won the Rookie All-Star award at the South Florida Regional Competition that year, and American Senior High School Team 8791 Mighty Patriots. That year we were able to advocate FIRST, through a demonstration of our robot, to our new superintendent and school board member. Much like almost every year prior, we also hosted the Ten80 nationals and held our annual summer camp. We also hosted and ran our 2nd annual FIRST Lego League Tournament, where we hosted eight teams. Throughout the fall of 2022, we promoted FIRST Robotics to about 23 middle schools by putting up appealing displays and small performances that catch the eyes of the younger students. As fall marks the official kickoff of so many competitions we are are proud to mention that we have ran, hosted, and supported a multitude of events, all of which include 11 RC cars and drones events, three county robotics competitions and co-hosted and co-ran Pirates Pillage, an off-season FRC event, alongside Team 8817 Buccaneers where a total of 16 teams participated. We find it important to mention that we reached a substantial audience at the Marlins Baseball STEM Day where we were tasked with throwing out one of the first pitches of the baseball season. Additionally, we worked with the ISERN Tamayo fund to create another successful toy drive for St. Catherine as well as participating the Junior Orange Bowl Parade to give kids the joy of interacting with our robots. This year, we have continued to mentor two more teams, Team 9040 Sunset Robo Knights and Community Team MDC Shark Bots. In preparation for the 2023 Season, we held workshops three times a week featuring CAD tutorials, manufacturing demos, and basic coding lessons for any team, so long as they tuned in through our Wiki page. To ease the collaboration between the FRC teams we were mentoring, we developed an FRC Wiki, rtwiki.ramtech59.com, that is readily available to any team and holds information such as a gear calculator, rulesets, tutorials, and other valuable resources.

As the new year started, we hosted a Charged-Up Kickoff event and invited six local teams to generate enthusiasm for the 2023 season. Immediately following the game announcement on January 7, these teams attended small seminars and brainstorming sessions to assist them with their designs. At our 3rd FLL Tournament, we hosted and ran the event where 13 teams competed. We also supported the St. Theresa School FLL Scrimmage/Competition, held last December. We were recently featured in local Spanish-language media outlets, Telemundo and Univision, to reach the community about our endeavors.;