

Chairman's Award - Team 1369

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2021 - Team 1369

Team Number

1369

Team Nickname

Minotaur

Team Location

Tampa, Florida - 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.

FIRST exposes our members to vital skills, like leadership and operating tools, that lead us towards successful futures. Over the past 3 years, 100% of our seniors have graduated, with about 80% majoring in a STEM field. The diversity of FIRST has helped drive many of these decisions. Further, our students are inspired to participate in related extracurriculars and competitions after discovering these interests. The program also provides an on-campus family and an afterschool outlet.

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

Our team is based in a Title I school with a surrounding low income area. Therefore, we have directed our efforts to help those in our own backyard. We host regular supply drives for the homeless and local nonprofits, offer free summer STEMinars for kids in low income communities, and advocate gender equality. Further, we build community and business connections to address specific needs. For example, we advertise our programs and scholarships to traditional students at our school.

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?

Through the implementation of file sharing apps like Google Drive, we are able to share and save documents for future reference. We organize folders for continued and new events, like our summer STEMinars, apprenticeship programs, etc. with flyers, spreadsheets, and more. We are continuously making new roles, like Vice President of Outreach and Recruitment/Retention Lead to keep up with our goals, while also focusing on training our next group of leaders through delegation.

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

In the last 3 years, we have reached over 600k people in our community through demos, workshops, drives, and more. Our members reach out to local schools to assist them in creating and actively mentoring teams. We work closely with FTC teams 4997 and 3846 to organize outreach in the community showcasing our robots at nearby schools and events. Further, our team hosts annual summer camps to spread STEM awareness, and this year we took it virtual, releasing videos on our YouTube channel instead.

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

Our school's robotics club encompasses 2 other FTC teams, who we work closely with for training and brainstorming. We have helped local schools and community groups start FLL teams, such as FLL 43934, 23878, and 30648. We have also added leadership roles specifically focused on outreach, recruitment, and retention. Our summer STEMinars have inspired students to start and/or join teams around them, later applying the skills learned there to their own teams.

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?

Minotaur students instruct summer STEMinars on engineering, robotics, and STEM skills for students in grades K-8. Our apprenticeship program allows middle school students to experience an FRC build and competition season. Many go on to use their skills in other competitive environments like CADathons, with some former team members even starting a BattleBots team, Extinguisher and attending prestigious universities.

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

During the off-season, we provide training and documents for members to reach out to potential sponsors. Throughout the year, we invite our sponsors to engage with our team by attending meetings and competitions. Our business sponsorships allow us to work with professional mentors while our community partnerships help us extend our outreach efforts. At the end of the year, we host a banquet to show our gratitude towards our sponsors and present our work and accomplishments.

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

Our team appeals to all backgrounds, genders, and ages by maintaining judgement-free and hate-free zones. To increase inclusivity, we work with school groups like SWE and our school administration to recruit a more diverse group of skill sets and mindsets. Through a strong connection between our mentors and students, our adults are able to keep behavior in check and resolve conflicts. We ensure major team decisions are made by a variety of students and/or mentors to ensure equity.

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

For years, Minotaur has used an app called Telegram in order to communicate information to team members quickly and in a format more familiar to teens compared to email, which we do still use. In the future, we plan to start using Monday.com to manage and track our progress throughout the build season. A major focus for build and competition season is transferring information and decision-making to our younger students to build a sustainable cycle.

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

Recently, we created a standardized Sponsor Brief powerpoint and flyer, and started holding short training sessions to explain how to recruit potential sponsors. Throughout the year, we invite representatives from our sponsors to attend our meetings and competitions so they are aware of our progress. We also hold a sponsor banquet at the end of the year to display our accomplishments and work throughout the year and thank our sponsors for their support.

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

Our training efforts during the off-season can be improved to provide hands-on projects and experience before build season starts. In 2019, we had over 15 new members and needed a more organized system for instruction. We need to focus on developing official training videos and documents that will help members learn more about other sub-teams for interdisciplinary work. Training new members guarantees that we will continue to have a functioning team in the future.

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

Minotaur's mission has developed around experiences. We focus on preparing our students for future education and careers, increasing STEM awareness, and decreasing the gender gap. Through our Summer STEMinars, we reach the younger generation. Our leadership team prepares underclassmen for future leadership opportunities through various situations. We also utilize our current partnerships to increase inclusivity. Over the past 3 years, we have increased female representation by over 6%.

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.

One major method of recruitment is through the reputation we have built throughout our school and community. We enjoy the camaraderie and network we build through daily team dinners during build season, fun trips during build season, and the singing and dancing during technical difficulties. Our spirit committee organizes a spirit day where we all come together and design helmets and other themed accessories, along with our big holiday party for the club.

Essay

Who We Are

FRC Team 1369 Minotaur was founded in 2004, bringing a robotics club to Middleton Magnet High School, a STEM academy with engineering, biomedical sciences, computer systems information technology, and game design magnets. Originally, the team partnered with the University of South Florida, a nearby college, for funds, resources, and mentors. Since then, the team has continued to grow in size, mentors, partnerships, and scope. We are located in a low-income community and have made it our mission to help those around us. Our motto is to "think globally and act locally to inspire the next generation".

Expanding the Club

In the inaugural year of Minotaur, there was only 1 robotics team at the school, and the club consisted of 15 students and adults. Over the next few years, FTC and Vex Robotics Competition teams were formed, and our club has expanded to additionally include two FTC teams - 3846 Maelstrom and 4997 Masquerade - and two Vex Robotics Competition teams. The Middleton Robotics club now consists of over 175 students and mentors, and counting. Minotaur continues to heavily collaborate with teams within our club, allowing us to make the most use of our students' knowledge and expertise. Senior students earn leadership roles where they are training incoming members, ensuring the club's sustainability and growth.

Branching Out

As a school club, our members were originally limited to students attending Middleton High School. However, we soon recognized that there are others in our community interested in STEM and robotics who don't have access to the opportunities of being on a FIRST team. Thus, the apprenticeship program was born, originally designed to provide an opportunity for students from other high schools to join the team. Since 2015, we have had 21 students from high schools and homeschool groups across the community join us as full-fledged members of the team.

Three seasons later, our apprenticeship program migrated to provide opportunities for 7th and 8th grade students interested in joining a competitive robotics team. This further allows the expansion of FIRST into our community through the inclusion of middle school students as full-time members. For the past 3 seasons, our team has included 12 middle school apprentices, the majority discovering their love for STEM and several of them returning for future seasons in high school. An estimated 50% of our club's members had been reached by Minotaur's outreach efforts prior to attending the school.

This program has allowed more students within our community to expand their horizons through FIRST, giving them a chance to discover their passion through a unique program. We are able to reap the benefits of being a mix between a high school and community team - Minotaur receives school support (teachers, mentors, build and storage space), while also extending beyond to recruit a more diverse student population.

Cultivating the FIRST Community

Like FIRST, Minotaur believes robotics is an exciting, interactive way to expose the younger generation to STEM's most fruitful ventures. Minotaur takes this mindset to the next level - not only do we have mentors to teach FRC students, but their expertise and guidance allows us to create leaders. With over 50 students devoting 3000+ hours across 75 FIRST-related outreach events over the past 3 seasons, we ensure that plenty of opportunities are provided, and nobody gets left out. This is extremely important due to the location of our team. Although we are based in a low-income area, Minotaur has come together to thrive, and is sharing this prosperity with others.

Within the past 9 years, FIRST events such as our recurring FLL Workshops and Tournaments, an FTC Kickoff, and an FTC Tournament have been hosted by Minotaur. At the Workshop, stations are set up similar to the layout of an official FLL tournament, but without the pressure. Teams are able to receive feedback on their strengths/weaknesses, allowing them to improve before competitions. Come competition season, Minotaur hosts an FLL tournament, predominantly run by our robotics club, assuring a smooth event. A handful of FRC members are FLL alumni, and, as such, are able to offer valuable experience as judges at both of these events. Our team also organizes FLL field-kit and trophy builds each year to ensure their tournaments have all necessary resources for success.

Minotaur students miss no opportunity to show support for our sister FTC teams, and are always ready to volunteer at FTC tournaments they attend. This boosts team morale, camaraderie, and is another way for us to expand our reach with FIRST.

In January, when the FRC game is released, Minotaur pairs with FRC Team 5276 Edgar Allen Ohms in order to quickly construct the new field at the AMRoC Fab Lab. All Florida teams are invited to freely use the field for testing, driver's practice, friendly competitions, etc. Many students are active via online communication methods, such as Reddit, Discord, and Chief Delphi, to answer questions and share knowledge with others. Minotaur also plans out the pit schedule to dedicate time towards assisting rookie or struggling teams. Additionally, at Regional tournaments and the World Championship, Minotaur's student mentors volunteer as student ambassadors to educate and spread awareness of FIRST. We have formed a strong presence at World Championships (most notably with FLL) due to the abundant amount of student, mentor, and parent volunteers that help out.

Summer Enrichment STEMinars

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Born in the summer of 2016, our camp had a mere 38 participants. Throughout the years, interest has flourished, and attendance has swelled to 127 students. We continue to advertise the camps to k-12 students at robot demonstrations, causing the numbers to continue to rise. In order to compensate for this increase in interest, we have expanded the sphere of our programs to cover everything from STEM Science (simple experiments explaining chemical reactions) to Robotics 101(providing hands-on experience with FTC and FRC subsystems).

Reinforcing the idea of opening opportunities to people in the surrounding neighborhoods, we are partnered with Suncoast Credit Union, in order to offer scholarships to all campers (scholarships range from partial to full, but all students receive some financial assistance). Our robotics members earn program director positions and sign up as volunteers and camp counselors; this past year, 54 members contributed to its organization, planning, and management. A few examples of the curriculum include, but are not limited to: introduction to the scientific method and basic experiments/activities, use of FLL kits, use of VEX kits, in-depth explanation of high school level robot systems, use of computer aided design, and the application of robotics experience to train/inform new members. This past summer, to accommodate for the pandemic, Minotaur transferred all content to YouTube videos and raised digital awareness for increased accessibility and safety. Altogether, this camp draws together students from various demographics and backgrounds to provide equal opportunities, igniting the passion and lighting the way for the younger generation.

New Initiatives

Last year, our team's Chief Information Officer and club's Vice President of Outreach have been cooperating to further extend our outreach efforts.

We have been diligently working with FRC Team 1902 Exploding Bacon as ambassadors to extend their #FIRSTLikeAGirl social media movement, by conducting interviews of females on our team and spreading the hashtag on our social media accounts.

Keeping in tune with staying local and developing our community, Minotaur has extended a hand to our local homeless population by reaching out to homeless shelters to provide resources. The Tampa area has one of the highest homelessness rates in the nation, and nearly 41% of the 1,650 homeless people in Tampa Bay are unsheltered.

Homeless care packages aim to provide resources to improve hygiene, sanitation, and quality of life for them. Our care packages organize the collection of donations, then reach out to homeless shelters and people in an attempt to improve their quality of life. We continue to host year-long drives and collect in-kind sponsorships to create these packages for distribution. We fundraise separately for this cause, using the donations to bulk order materials suggested to us by several homeless shelters.

In the future, STEM workshops will be organized to be held at libraries once a month. Currently, we have plans for curriculum and have discussed potential options with local libraries. They will be hosted by Middleton Robotics students and advertised at those libraries, elementary schools, and middle schools within the vicinity. Some summer camp materials and plans can be built on for expanded curriculum.

With mentors in the medical field, our focus has widened to include working with children's hospitals to host STEM workshops and leave science kits, brain games, or puzzles for them to be working on while we are not there. This will help us inspire and open up the world of STEM to those in special conditions with lower access.

Further, some of our team members used their 3D printers to print and assemble PPE for healthcare and frontline workers to assist during the pandemic. We also have members working on space exploration legislation and lobbying with our congress representatives.

But in the end□

We are 55 kids who sing the alma mater every morning, no matter where we are. Who don't always rivet right. Who are learning every step of the way.

We are an FRC team. An on-campus family. A group of students and mentors looking to create a better situation for those around us.

We play to our strengths, reducing the weaknesses of our community.

We strive to think globally and act locally to inspire the next generation.

Together, Minotaur is a force for change.