

Chairman's Award - Team 2637

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2021 - Team 2637

Team Number

2637

Team Nickname

Phantom Catz

Team Location

Rolling Hills Estates, California - 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.

The FIRST program has drilled love for STEM into many of our team members. 100% of our 2018 and 2019 graduates are pursuing STEM careers at a 4-year college. 91% of our 2020 graduates are pursuing STEM fields, while the other 9% are majoring in a business field at a 4-year college. Nearly all alumni watch kickoff unfold with our team and help our students brainstorm possible robot designs or potential season fundraisers.

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

Our community revels in after school programs and continuous growth of knowledge. The community's keen desire for continuous learning sanctions us to run and host many STEM camps. Especially in 2020, our community prayed we would host STEM camps for their children. We clutched this fortuity and hosted 12 virtual outreach events. With their financial and physical support, we have grown our outreach width immensely.

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?

Our team ensures sustainability in the school district by reaching three different levels of education: elementary, middle, and high school. We host STEM camps for most of the primary schools in our district. We also present our robot yearly at all the local middle schools to inspire the eighth graders to join our team the following school year. Plus, we expose our team throughout our high school by collaborating with ASB and twirling our robot at Pep rallies alongside the cheerleaders.

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

Everyone on our team inspires each other on a daily basis. One example is our team president. Not only has he devoted hundreds of hours to our team, but he goes above and beyond to strive towards his engineering endeavors. He participated in the summer Boeing Internship and runs an ROV team at a local primary school. Many members mirror this enthusiasm for STEM everyday and inspire the rest of us to be creative and resilient.

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

In 2017, we founded 2 FLL teams at our local middle school and have spread STEM education to our surrounding community. We intend to create FLL or FTC teams at the two other middle schools in our community. Additionally, we intend to start a Jr. FLL team at one of our local elementary schools since the students thoroughly enjoy our STEM camps.

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?

We participate yearly in our community's Christmas parade. Through this event, over a hundred young innovators and leaders get a glimpse at the opportunities FIRST provides to students of all ages. We believe that by displaying our robots to the younger generations, a wave of them will be inspired to join Team 2637. With FLL, we have a nearly 100% transfer rate from their FLL team to our team.

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

In 2008, Peninsula Education Foundation made a generous donation to our team and we have maintained a close relationship by supporting their annual STEM Symposium, participating in community outreach, and demonstrating our robots at fundraising events. Additionally, our long lasting relationships with Boeing, Raytheon, and John Deere have aided us towards going to more competitions and giving us some of our long lasting mentors.

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

All leadership opportunities are open to new and returning members. Currently, our leadership team consists of 6 women and 7 men. In order to promote inclusion in our community, we run STEM camps for the underprivileged, such as our STEM Camp in Guasave, Mexico. We also noticed a lack of opportunity for the special education community; thus, we held a virtual STEM camp with some students who were seeking a fun extracurricular activity.

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

Since our launch, we have been inspiring others to get involved in STEM activities. We use our robots to expose younger students to STEM, share with parents the positive impacts of team participation, and expanded team membership from 5 students to 73. Through our mentoring of FLL teams, teaching of our elementary STEM camps, participation in the annual STEM Symposium and FRC competitions, we estimate that we connect about 3,200 people to our robotics team annually.

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

We send potential sponsors letters or emails regarding who we are, what FIRST is, and the benefits of sponsoring us. We then categorize sponsors based on their donation level (platinum, gold, silver, bronze, friend). Each level has unique benefits. For instance, only platinum sponsors' company logos are on our competition robots. To express our gratitude, we send them weekly newsletters, thank you cards, invite them to our lab, and demonstrate our robot at their corporate family picnics.

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

Having a 73 member team invites poor communication. We design our team structure to help tackle this issue. Each team member must report to their lead any updates, who then reports it to their director, who then reports to the president, and then our mentors. We also use Trello to organize our tasks. Before every meeting, the entire team goes through each to-do list for all the subteams. During these sessions, questions or concerns are brought up before we commence our work day.

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

Each member's goal is to leave behind a legacy that Woodie Flowers and Dean Kamen would be proud of. Each meeting is pursued with passion for STEM and FIRST. We all try to be innovative and build-off of our predecessors' accomplishments. The community has gifted us with limitless support; thus, everyday we work towards creating or hosting events to give back to the community we love so dearly.

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 has conducted itself entirely virtual since March of 2020. The technical side of our team has faced the grand challenge of engaging students and retaining that engagement. Our leadership and mentors brainstormed various ways to work hands-on while still following safety protocols. Thus, our programming and electronics team decided to work with Arduino kits, and the Manufacturing and Mech Design teams have robot rotations with strict and safe protocols to disinfect the robot and tools.

Essay

At the start of every season, the Phantom Catz reconvene to face the FIRST world anew. With great ambition and motivation for the new season, we prepare to spend our days building off of our prior season's accomplishments. Our intense desire to improve every year is represented numerically with most members reaching up to 300 hours in just one season, surpassing the 180 hour benchmark to receive class credit. In fact, our current president was recognized for his devotion to FIRST and our team last year by winning Dean's List Finalist at the 2020 Da Vinci Regional Competition. Although Phantom Catz work vigorously, we have learned over time that it is more important to work smart and meticulously.

With an average of 60 Phantom Catz in our clutter, we have dedicated years to perfecting our team's organization to produce the most productive yet simple team structure. While it may seem to be difficult to provide tasks for all our team members, our lovely mentors have helped resolve this issue. With applied experience from Boeing to Chevron to Honda, our mentors have helped us structure our team in a manner that provides a flow of knowledge and specialization for ultimate productivity. We have 5 main subteams: Manufacturing, Technical, Business, Outreach, and Safety. Each of these 5 subteams are run by a director who is aided by a mentor with specific knowledge corresponding to that branch of our team. Underneath Technical, we have 4 more subteams: Electronics, Programming, Mechanical Design, and Strategy and System Design. Each of these 4 subteams are led by leads—each having their own corresponding mentors as well.

New team members or veterans can join whichever subteam they are interested and inspired to learn more about the beginning of the season. During Pre-Season, all leads and directors formulate a training plan with projects, assignments, or challenges that will give the new members a grasp of what that subteam covers and specializes in. All the plans created by the team's student leadership is essential to teaching new members a great deal of information before Build Season. These few months of Pre-Season also harness the transfer of knowledge that is vital to continuing our team's legacy and competitiveness.

Keeping track of each subteam's task may seem daunting and implausible, but we combat a lack of communication by having a team meeting with all team members for 30 minutes before separating into our subteams. In that half an hour, our president goes over each to-do task that is posted on our team Trello board so the entire team and mentors are all on the same page for each subteam's daily goals. For the challenges in the 2021 season, we have specific boards available to the whole team where the people participating in those challenges can list their tasks with detail.

Our amazing 25 mentors met weekly to discuss any challenges within a subteam, logistics, coordinating mentor resources, and necessary safety improvements. The mentors also use this time to catch up and deflate after long team meetings.

With this new virtual environment, our team reflected on everything our community, sponsors, and FIRST community have gifted us over the past 12 years of our team's inauguration. Thus, we developed multiple outreach events that would bring joy, innovation, and curiosity to as many people as possible. We held 12 STEM camps between March of 2020 until December of 2020. Many of the projects involved at-home materials—such as toilet paper rolls, popsicle sticks, and straws. With smaller groups in multiple breakout rooms, we attempted to harvest socialization among the students since socializing with friends has become scarce in this new virtual environment.

This season, however, we saw an extensive need in the Special Education community. They had a lack of opportunity to explore and participate in virtual and educational programs. Through a Facebook group the outreach mentor provided, we corresponded with parents from across the country. By establishing a connection and receiving feedback for what would work best with the students, we curated a special program outline with specific projects for this STEM camp that were challenging yet enjoyable for all the students participating. One of the students even taught his younger brother and sister about the project because he loved it so much! We are extremely proud of this camp and it will definitely become a yearly outreach event.

In 2017, we created our first STEM camp with one local elementary school in our district. Over the past 5 years, we have reached 9 elementary schools—one being outside our district. Our local success motivated us to replicate our STEM camps internationally. We held a day STEM camp in South Korea and a biweekly STEM camp in Mexico. Between these two international events, we reached around 80 students!

Our outreach program, however, isn't limited to just STEM camps. We also started and mentor two FLL teams at our local middle school—30713 and 30714. We meet with them three times a week to aid them and guide them towards a successful season. The Phantom Catz also participate in Fleet Week next to Battleship USS Iowa where we commemorate the armed forces and expose a great percentage of the neighboring cities to our team and FIRST alongside other FRC teams such as 3309, the Friarbots. The Phantom Catz also held a clothing drive in 2019 to gather donations for a local homeless shelter, Covenant House, in Hollywood. We also invite 8th graders from our district yearly to visit our robotics lab to motivate and inspire them to join our team and become a member of the FIRST community. Additionally, we demonstrate prior season's robots at all the local middle schools yearly during a presentation in mid-March for additional exposure to FIRST and our team.

Essay - page 2

Our sponsors are an essential factor in our team's success and our ability to keep expanding our outreach programs. We thank our sponsors as much as possible for believing in us and helping keep our team afloat. We are especially thankful for the sponsors that have continued to fund our team throughout the pandemic. We express our gratitude by sending thank you videos and pictures, thank you letters, and inviting our sponsors to competitions, team meetings, and our end of the year banquet. For certain sponsors, like Kinecta, we attend their company family picnics to provide some entertainment with our robots.

Over the years, our team has recognized the necessity of team bonding. A strong team foundation and connectivity has been the anecdote that has propelled us to great successes. We started hosting team bonding events every Friday 3 years ago, and we continue to hold them virtually till this day. We typically gather at school before a robotics meeting and play games, such as human knot, pictionary, or tag around an empty campus, meanwhile our mentors let us feast on delicious sweets. The new reality, however, has't stopped us from retaining and building off our strong team foundation. We still meet nearly every Friday. We play online video games while talking about life through a discord call. This has proved to be a great method for the students from different subteams to get to know each other. These team bonding events also help us improve our team communication immensely. All the Phantom Catz also communicate through a team group-chat on Snapchat where we send funny photos, videos, or just talk about our life occurrences.

Overall, our team's innovation, outreach, organization, and fun have allowed us to be successful. From earning the honor of Highest Rookie Seed Award in 2008 Los Angeles Regional to winning in 2014 the Creativity Award at the Central Valley Regional to reaching semi-finals in the Carver Division in 2017 and winning two regionals, we have come across many challenges that have made our team stronger. We are extremely thankful for our mentors, sponsors, community, and teachers for helping us reach the point we are at. On behalf of all the Phantom Catz, we vow to improve every day and to continue spreading the message of FIRST to as many people as possible.