

FIRST Impact Award - Team 2637

2025 - Team 2637
Team Number
2637
Team Nickname
Phantom Catz
Team Location
Rolling Hills Estates, CA - USA
Describe the impact of the <i>FIRST</i> program on team participants within the last 3 years. Think about percentages of those graduating high school, attending college, in STEM careers, leadership skills, and serving as mentors/sponsors in <i>FIRST</i> programs.
Our team has a 100% graduation rate, with graduates pursuing STEM careers or majors related to their subteam, at top colleges - USC, Stanford, MIT, Purdue, Carnegie Mellon, and UCLA. Every year, members of our team have been selected for Boeing internships. Currently, 6 alumni mentors are active on the team. Past President, Artie Levine, a Boeing employee, has been a sponsor for the Boeing grant for the last 2 years. Our team has 20 mentors, including 5 who have no children on the team.
Describe your community along with its unique opportunities and circumstances. Think about your geographic region, diversity of town/school, language barriers, socioeconomic barriers, and cultural expectations.
Our community's distinctive makeup has driven our commitment to promoting diversity and equity in STEM for underrepresented groups. We have partnered with national organizations to achieve this goal. Our location enables us to serve as a hub for FRC, VEX, FLL, and Underwater Robotics teams. Proximity to LAX helps us assist overseas teams through Catz Care. We've raised over \$14,000 in grants and fundraisers to keep our programs free. We are the #1 provider of FIRST in our community.
Describe the team's methods, with emphasis on the past 3 years, for spreading the <i>FIRST</i> Mission in ways that are effective, scalable, sustainable, and creative.
Phantom Catz Sustainable Systems (PCSS) ensures sustainability by partnering with national or state organizations with local connections. We focus on introducing FIRST to underrepresented and new groups. This year, we reached out to a new group, partnering with Luna Peak, a cancer survivor group. Our strategy begins with STEM courses, which serve as a foundation for forming FLL teams. We have conducted 55 STEM courses, including 29 in the past 3 years and 10 online courses during COVID closures.
Describe your team's goals and the progress you have made towards them to fulfill <i>FIRST's</i> Vision.
Our goal is to ensure that everyone finds a place in FIRST and discovers joy in STEM. We systematically crafted programs such as PCSS, PCFA, STEM courses, and Catz Care to achieve these goals. Every

year, we introduce FIRST to new communities and create pathways for students to explore STEM. This year, we partnered with Luna Peak, an organization supporting cancer survivors. Another focus is promoting coopertition through Catz Care, providing resources and work areas for robotics teams.

What impact has your team seen from your efforts described in the above question? How does your team measure impact?

One of the greatest joys is seeing students return for our STEM courses or join our FLL/FRC teams. Watching their passion for STEM grow each year, along with their height, reinforces the impact of our outreach programs. A teacher from Holbrook shared that students were eagerly asking when FLL would start. Mr. Chin, a former FLL parent, became an FRC mentor, showcasing our FLL program as a pathway for recruiting mentors. We are entering our 4th year of collaboration with partnering organizations.

Please provide specific examples of how your team and team members act as role models within the *FIRST* community with emphasis on the past 3 years. How do you share these best practices with other teams?

10 FRC team members actively mentor FLL teams 54040, 30713, 30714, and a team in Uganda. Our female members support 2 all-girls FLL teams, our female manufacturing lead, mentoring team 2852. Our team has volunteered at 8 FRC events, conducted 2 outreach workshops and FIRST Ambassadors. Dr. Tran, a mentor, has volunteered at 7 regionals, as Pit Admin and Field Logistics. Our strong alumni mentoring program includes Kan, a former president, who continues to mentor design and strategy from UMich.

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 has founded and mentored 4 FLL teams, cumulatively 185 students, while supporting every (4) FLL team in our community, We also assist local FRC teams 5285, 2297, 3473, 4201, and 2710, by providing resources and access to our practice field. We assisted Taiwanese team 9564 to reassemble their robot at our school. This year, we launched Catz Care PitStop, offering tool cases, facilities, and batteries to global and rookie teams, supporting 6 teams: 8015, 5515, 4711, 6553, 6191 and 8861.

What other initiatives have you created, grown, sustained, or participated in (*FIRST* or otherwise) to help inspire young people to be science and technology leaders and innovators? What outcomes have you seen from your efforts in the past 3 years?

Since 2017, we have been expanding STEM education in our community through STEM camps (now known as courses). We have reached over 1,200 students locally and internationally, including in Korea, Mexico, and Uganda. Team members actively participate in teaching and planning, developing the ability to lead programs. These courses serve as a pipeline to our FLL and FRC teams, with many members first introduced to our program through them. Our STEM outreach strengthens our community relationships.

Describe the partnerships and relationships that you've created with other organizations (teams, sponsors, educational institutions, government, philanthropic entities, etc.) and what you have accomplished together, with emphasis on the past 3 years.

We believe FIRST for all. To ensure the success of our programs, we provide wrap-around services, including funding, materials and mentorship. An example is Holbrook, where we supplied the resources and mentorship to create a successful program. We wrote several grants that have covered everything

from FLL registration to competition t-shirts and new FLL robots. We've extended this wrap-around support to all our programs, eliminating any barriers for organizations to participate.

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

30% of our current leadership is female. Our all-girls FLL team, mentored by female members, creates a pathway for girls to join our FRC team. We offer specialized STEM courses for special education students and STEM programs for schools in Uganda and Holbrook, where we also established FLL teams. Each year, we seek new groups to support, Luna Peak, Boy Scouts, and Salvation Army. Our commitment to diversity was recognized with a \$4,000 FIRST Equity and Access Grant.

Explain how you ensure your team and the initiatives you have created will be sustainable.

With a large team of 65 members, sustainability and knowledge transfer are top priorities. Structured into 7 subteams, leads ensure tasks are evenly distributed. In preseason, we focus on training, where new members learn technical and operational aspects from senior members. 6 active alumni mentors share their experience and expertise, strengthening our team's foundation. We take pride in how our alumni mentoring program has evolved, with nearly every subteam having an alumni mentor.

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

With a large team, we occasionally lack organization and task management. We use ClickUp and GANNT charts to organize and document our tasks, which helps subteams understand the progress of other subteams. During the beginning of each meeting, our team collectively reviews progress and plans to establish a clear goal for each meeting. We hold weekly review meetings with leadership members and mentors to discuss productivity and action items to take going forward.

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, particularly noteworthy, or had a large impact.

In response to the LA wildfires, our team hosted a donation drive at our facility, collecting necessities for those who lost their homes. We collected over 4000 items, with people from all over our community donating. This year, we held our first FLL Scrimmage for local teams. A new program, Catz Car PitStop, is helping 6 teams to get ready for competition by providing a space to reassemble their robot, plus tools and batteries.

Judge Feedback

- Are there any other communities that the judges think we should reach out to?
- An area the team has an opportunity to improve.
- Something that really impressed the judges.

Essay

Our Team - Founded in 2008 and based in Palos Verdes, CA - the Phantom Catz began with just 5 members and has grown to 65 members. Our team is composed of 7 subteams: Mechanical Design,

Programming, Electronics & Pneumatics, Manufacturing, Strategy & Systems Design, Business & Marketing and Outreach & Awards. Each subteam has a Lead to oversee and train its members. We have 20 mentors, 6 of which are alumni. Advocating for FIRST in our school district, the FRC program became an official class with a letter grade.

Our team culture emphasizes coopertition and teamwork within and across our subteams. Through our numerous outreach programs and events, we aim to create a sustainable path to STEM in our community and abroad. Our commitment is to raise funding so that all our programs are free to eliminate any economic barriers. We are proud to be the #1 provider of FIRST to our community. We believe that FIRST is for all.

Strategy - To ensure long-term impact, our outreach strategy prioritizes sustainability. We observed that programs often fade when members or mentors leave, so we developed the Phantom Catz Sustainable Systems (PCSS) to create a sustainable framework. The Phantom Catz FIRST Alliance (PCFA), STEM Development Courses, and Catz Care form the foundation of our outreach.

Phantom Catz Sustainable Systems (PCSS) - The primary goal of PCSS is to create sustainable, long-lasting outreach programs. PCSS ensures our team partners with national or state organizations that have strong local connections. Organizations like We Are Brave Together, Luna Peak, Living Hope for Children, Holbrook Indian School, and Go Baby Go are all linked through local residents that are actively involved in them. These connections help establish lasting partnerships.

Holbrook - An example of PCSS is our work with Holbrook Indian School, which serves economically disadvantaged Native American students in Arizona. Through a local connection, we introduced our STEM courses and later established an FLL team, Team 30713 Phantom Mustangz, through grants from Arizona State University. For two years, our FRC members mentored them online and joined them at their first competition last year, where they won the Breakthrough Award. We hosted fundraisers to alleviate their travel and program costs. This year, Holbrook independently applied for a grant to start a robotics program, marking a significant step toward self-sustainability. Because of this relationship, a former Holbrook teacher reached out to us to start a similar program at Glenview Adventist Academy, which serves underrepresented students.

Uganda - We implemented the PCSS strategy at Mary Kathryn Cox Memorial Primary School in Uganda through Living Hope for Children. Following the PCSS model, we began by offering STEM courses online and shipping STEM kits for free. A school supply and laptop donation provided additional support. An unofficial FLL team was formed. Shipping to Uganda was expensive, so we found an innovative solution. Alumni mentor, Holden, a pilot, transported laptops and school supplies to Chicago. Then the visiting principal took the donations back to Uganda. Our student mentors meet several times a month with over 50 students.

Phantom Catz FIRST Alliance (PCFA) - Our FLL network spans 2 states, 2 countries, and 8 teams. Within our district, our FRC students directly mentor two teams: a jr. high team (30714) and an all-girls elementary team (54040). A secondary goal of the PCFA is to increase gender diversity, which motivated us to start/mentor our all-girls elementary FLL team. It was a priority that they were mentored by women leaders from Phantom Catz. Both teams have won the Core Values Award. Team 30714 has twice qualified for the Southern California State Championships. This year, 30714 won Tournament Champion, 1st place in the Innovation Award, and qualified for State.

We mentor Team 30713 in Holbrook, Arizona, and an unofficial team in Uganda. Our impact extends to 3 FLL teams at Miraleste Middle School—62535, 62436, and 52437, and an FLL all-girls team - 2852. Our team assists these teams with resources and advice. This year, we are helping to launch 2 FLL teams at St. John Fisher School.

FLL Scrimmage - To further strengthen the local FLL community, we hosted an FLL Scrimmage at our school, which was open to the public. Teams received feedback on presentations and game strategy. We held a STEM course for 40 kids. The event drew around 150 people, highlighting our dedication to expanding FIRST and fostering STEM education.

STEM Development Courses - Since 2017, our team has introduced young students to STEM through our STEM Development Courses, teaching concepts through hands-on projects. All our courses are led by our FRC team members and are free of charge. We've taught students internationally, and we've held 54 STEM courses in total, 28 in the last 3 years. Through our courses, we've impacted all 10 elementary schools in our district, 2 schools outside of the district and a school in a foreign country. Our team has reached 1200+ students.

We began hosting modified STEM Development Courses for Special Education students in 2021, partnering with We are Brave Together. We've conducted 6 courses. We consulted a PhD. licensed therapist to ensure our projects are modified to meet students' needs. These courses have become a source of pride for our team and have been recognized by the school board. In our quest to make sure that FIRST and STEM is available for all, we have reached out to new communities this year.

Luna Peak - This year, following the PCSS model, we partnered with Luna Peak, a cancer survivorship organization, to bring our STEM courses to children of cancer survivors. Our goal is to build a lasting relationship with Luna Peak and, using our model, start an FLL team with this group. We are always looking for new groups to introduce to STEM.

Salvation Army - Los Angeles: During the summer, we partnered with the Salvation Army to run STEM courses and demonstrate our robot to over 50 students.

Boy Scout Jamboree - San Diego: At the Boy Scout Jamboree, our team ran the Robotics Merit Badge booth for three weeks. We provided materials needed for the scouts to earn their badges, with 300 scouts successfully completing the requirements.

Go Baby Go - Since 2022, we've worked with Go Baby Go, a program that provides modified ride-on cars for children with mobility disabilities. As our partnership has grown, our team has taken on more complex cases. This year, we modified cars for children using ventilators. We have built and donated 12 cars at no cost to the families. For the last 2 years, Go Baby Go and our team have been featured in the Daily Breeze newspaper, highlighting our ongoing efforts.

Catz Care - Catz Care is a new initiative divided into two parts: PitStop and Hub.

PitStop - PitStop offers resources and support to teams attending California competitions. Last year, Team 9564 from Taiwan visited our facility to assemble their robot. We realized many traveling teams needed help in preparing for competitions - PitStop was born. Teams visiting our facility can use our

practice field, tools, machines, and extra team support. We provide tool cases and batteries for competitions. To promote PitStop, we reached out to teams via email, Chief Delphi, and social media. A tool drive was conducted for equipment. Teams 5515, 8015, 8861, 4711, 6553, and 6191 have already signed up.

Hub - Hub extends assistance to FRC, FLL teams, and community organizations. We share our practice field, tools, equipment, CNC machine, and materials with teams in need. FRC teams such as 2297, 2710, 9564, 4201, 3473, and 5285, as well as FLL teams 2852, 62435, 62436, 52437, 30713, and teams in Uganda. VEX and Underwater Robotics teams have reached out for help. We volunteered at VEX competitions. Phantom Catz has become the hub for support for many teams.

Community Events - SoCal Showdown: Our team is deeply committed to creating STEM opportunities for our community. Last year, we co-hosted SoCal Showdown, an off-season FRC competition created to provide a local competition for Los Angeles County teams, with teams 687 and 4201. Our team contributed to every aspect of the event, with over 90% of our team volunteering, including 10 alumni. We also hosted a workshop on outreach and STEM activities for younger attendees. Although SoCal Showdown didn't happen this year due to facility issues, it is scheduled for October 2025.

Annually, our team holds donation drives for the Long Beach Rescue Mission, Covenant House, and Living Hope for Children, collecting nearly 2,000 items over the past 4 years. In response to the recent LA Wildfires, we conducted a community-wide donation drive, collecting over 4,000 essential items. The vice president of our school board, Dr. Deen, visited our facility to recognize our efforts.

We believe in being active citizens in our community. We hold monthly school clean-ups, participate in school's open houses, and help with community event clean-ups. Since 2019, we've marched in the annual community Holiday Parade, and won the Mayor's Award and Best Rookie. This year, we were honored with the Susan Seaman's Founder's Award.

Additionally, we conducted two workshops on our outreach program at FRC events.

Team Sustainability - Our STEM Development Courses and FLL teams serve as a pipeline to Phantom Catz. Many students from these programs transition to FRC team members and even become mentors.

Our Impact - The Phantom Catz philosophy is that FIRST should be available for all. Through our outreach program, we increased diversity in our STEM community and have expanded to reach out globally. With every meeting and project, our team strives to fulfill our mission statement: To develop a sustainable and diverse FRC team that educates and inspires all generations to learn about Science, Technology, Math, Engineering and Innovation.;

