

Chairman's Award - Team 5427

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2019 - Team 5427

Team Number

5427

Team Name, Corporate/University Sponsors

Dell/Oceaneering/Lowe's/Exxon/Mobil/The Hydrographic Society of America - Houston Chapter&Obra D. Tompkins High School

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2018/2019 year and the preceding two to five years

FIRST and our dedicated mentors guide us to become future leaders in the world of STEAM. 100% of our seniors and alumni say their experience as a Steel Talon has given them a competitive advantage with college applications, internships, scholarships, and job opportunities. While many students enter college unsure of their major, our 18 graduating seniors will testify that being a part of FIRST has deepened their passion and given them a clear and confident vision as they enter college.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2018/2019 year and the preceding two to five years

FIRST inspired KatyISD team 624 to advocate for the development of a \$5 million center that offers a collaborative FRC environment and an exciting experience for thousands of children. FIRST provides a life-changing opportunity for students to explore their passion in robotics and the games have made their way into our school's engineering curriculum. The excitement of FIRST has brought awareness to the need for more women in STEM and has increased the number of girls on our team from 4 to 43.

Team's innovative or creative method to spread the *FIRST* message

The Steel Talons developed a diverse marketing team that has created numerous outreach campaigns to spread the FIRST message. We feel our 4 most effective methods have been Elementary STEAM nights (over 5,000 families), The Steel Talons FIRST Blueprint (2,500 copies), The Art of Robotics (direct mail to 12,000 homes), and our local Scarecrow Festival (8,000 attendants). These 4 strategies have allowed us to reliably spread the FIRST message to over 25,000 people.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

We aspire to inspire other teams through our creativity, team spirit, and meaningful partnerships. Our team is proud of our efforts to put the A in STEAM through our award-winning enthusiasm and creative endeavors. Our partnerships with local sponsors and businesses have taught us the importance of mutual support, and we have prioritized finding creative methods for our sponsors to help us in our extensive business plan and ways for us to show our gratitude in turn.

Describe the team's initiatives to help start or form other FRC teams

Recognizing the need for a clear and innovative introduction to the world of FIRST, our team developed The Steel Talons Blueprint that outlines the stages of FIRST for local families and the mentoring role that our team offers to teams of all levels. We have established partnerships with the primary FIRST representatives in Ecuador, Ireland, and Colombia. Each of these countries currently offer FIRST up to the FLL level. We are working to guide and mentor their growth to include FRC teams.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

We have multiple approaches to inspiring the formation of new FIRST teams. These efforts include robotics camps, parent meetings, STEAM nights, community partnerships, social media, and international outreach. We have successfully formed FTC team Marz Starz in California; FLL teams Rover-7C in Texas, RemaRobotica, and Alosi ALTEC in Ecuador. This year we expanded our STEAM night showcases to include our FRC robots as well as FLL EV3 robots to increase awareness of FLL level teams.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

Our team has provided support and welcome baskets to rookie teams at every competition that we have attended. This year, we reached out to the rookie teams a month in advance to see how we can assist with their needs leading up to and during competition. We continually assist the teams that we have formed and those that share our workspace with mechanical, electrical, programming, and creative support. Our programming team gave Nuts'N'Bolts our code at competition after theirs got corrupted.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

Our team provided weekly mechanical and programming support to FTC teams the Golden Gears and Marz Starz prior to their competition season. We continue to do weekly check-ins with FRC teams Nuts'N'Bolts and Roborams. We have been working on mechanical, programming, and creative competition strategies, including team image and spirit wear design. Our mentors have also volunteered to provide additional build hour support for Nuts'N'Bolts.

Describe your Corporate/University Sponsors

We work to establish reciprocal partnerships that allow us to accomplish more than simply fundraising. Our team has partnered with over 20 corporate sponsors, most notably Lowes, Oceaneering, Texas Workforce Commission, Code Ninjas, Rockwell Automation, and Hydrographic Society of America. We also developed a one-of-a-kind, full color coupon book that increased sales and provided free local advertising for 50 small businesses. This community coupon book raised in excess of \$8,000 for our team.

Describe the strength of your partnership with your sponsors with special emphasis on the 2018/2019 year and the preceding two to five years

We are most proud of our partnerships with Lowes and ARTS. We showcased our robot at Lowes' grand opening and that partnership became a creative collaboration that contributed to us winning 3 back-to-back Spirit Awards with no monetary donation. ARTS was a newly-formed STEAM center in our community; we approached them before the studio even opened. We helped develop their robotics business model and are raising approximately \$4,000 for each 8-week program being split equally between us and ARTS.

Describe how your team would explain what *FIRST* is to someone who has never heard of it

FIRST Robotics is a worldwide STEM program that provides millions of students with a vision and pathway for their future. The robots inspire you, but the program changes you. The mentorships, real-world experiences, and the bonds that you make leave a lifelong impact that inspires you to do the same.

Briefly describe other matters of interest to the *FIRST* judges, if any**Team Captain/Student Representative that has double-checked this submission.**

Colin Weil

Essay

The Steel Talons have grown from a rookie team of 5 friends to over 130 students who have been encouraged, motivated, and impacted by FIRST Robotics. Several years of planning, dedication, and creativity have gone into building an award-winning brand, UIL championship robots, impactful community partnerships, and family connections that will last a lifetime. In one of our first meetings, our team adopted the idea that "To whom much is given, much is expected." We used this as the foundation for our vision to "Build a Legacy" created by the Steel Talons and inspired by FIRST. A LEGACY can only be called a LEGACY if it leaves a Lifelong Impact.

L - LIFELONG IMPACT

In one year, FIRST has had an impact on 18 senior Steel Talons, who have spent a combined 67 years discovering the world of STEAM and having their passions come to life. These passions include Aerospace Engineering, Chemical Engineering, Civil Engineering, Mechanical Engineering, Architecture, Computer Science, Physics, and Neuroscience. Every one of these seniors believes that being a part of FIRST has given them clarity, competitive advantages, and certainty about their career choice.

Akshat Jain, a four-year Steel Talon programmer, applied for an internship at HPE along with hundreds of other applicants. He was awarded the internship, and they shared with him that it was his involvement with his high school robotics team that gave him a competitive advantage. Akshat will attend UC Berkeley and study computer science.

Colin Weil, an eight-year FIRST robotics participant, has left his legacy by starting the Steel Talons LEGO robotics training programs and new team outreach. Hundreds of students have been introduced to the life-changing FIRST program under his leadership. Colin will be attending Rice University and study physics.

Mrs. Cohee, a Steel Talons mentor, loves to tell the story of how FIRST has changed the life of her son Blake and positively impacted their entire family. This story is so compelling that it inspired her to start "Project Ayllu Bot" and take a team of Steel Talons to Ecuador and share the LEGACY of FIRST.

E - ECUADOR

First has inspired us to serve, inspire, and build around the world.

Our journey began as we touched down in Quito on July 1, at 11:55 pm. We arrived in Machachi, the first of 6 destinations, at 3:00 am. Our first day of camp was scheduled to begin in 5 hours. We got to work and started teaching basic electronics concepts to 35 children, by the end of the day that number grew to 42.

Only half of our team could speak Spanish, but we didn't let the language barrier prevent us from teaching and inspiring. As the first day of camp drew to an end, we all anxiously awaited the return to our hotel for some much-needed rest. At 4:30 pm a parent pleaded with us go to their school where the administrators were staying late hoping to meet us. We would soon learn that rest was something we would get little of in Ecuador, and this incredible enthusiasm to hear all about "Project Ayllu Bot" would follow us everywhere.

Our 28 days were packed with basic engineering, Arduino electronics, LEGO robotics, and art classes. We connected with and inspired over 300 children and 20 academic administrators. The people of Ecuador could not hear enough about the Steel Talons and the FIRST program that inspired the visit to their country.

As we learned more about the limited resources in the communities we served and saw the immense passion for learning about robotics, we became concerned about inspiring them but not being able to provide an end goal...a FIRST competition experience. We kicked our research into high gear, found, met and partnered with SEK, the FIRST representative for Ecuador. The 9 new teams we inspired would now have an opportunity to compete.

The journey, experiences, children, connections, and 2,500+ service hours created lifelong memories and left the lives of many steel talons, and a country changed forever.

G - GROWTH

First has inspired us to thrive as a team and grow others alongside us.

Our team has experienced phenomenal growth in our membership, build sophistication, safety implementation, brand development, and community exposure. With growth comes challenges; we have had to invest a lot of thought and time into team engagement. Our current build process only allows us to accommodate approximately 40 students at once, leaving us to create more opportunities of significance for as many team members as possible. We expanded our team structure to include 17 leadership positions which oversee Mechanical, Electrical, Programming, CAD Design, Safety, Administration, Scouting, Outreach, Robotics Camps, Fundraising, Creative, Partnerships, Team Building, and International Outreach. By diversifying our team structure, we have been able to increase and sustain team engagement — the greater the involvement, the greater the impact. We take pride in knowing there is something for everyone on our team, regardless of their passion.

One of the most exciting elements of our growth is an increase in female team members from 4 to 43, with 50% of our current leadership team being female. This growth led to the creation of our Girl Power initiative, which has grown into a bi-monthly Girl Power program with our community partner, ARTS STEAM Center. Our passion for girls in STEAM encouraged our team to push beyond the limits to form RemaRobotica, an all-girls FLL team currently residing in an orphanage in Ecuador. We use creative approaches to introduce girls to STEM by appealing to their passion for art.

A - WE PUT THE 'A' IN STEAM

First has inspired us to be creative, think outside of the box, and put the 'A' in STEAM.

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While building our brand, we had to balance creative visions with budget restrictions. In order to achieve the design that we desired for our spirit wear, we had to think outside of the box. We were able to develop a strategy that allowed us to not only have creative flexibility but also to raise money with our spirit wear. We sourced t-shirt and heat transfer vendors and invested in a heat press machine. These efforts cut our t-shirt costs in half and allowed us to customize multiple items in low quantities. It has been immensely rewarding to share this process with other teams who currently struggle with our past challenges.

Taking this creativity to the next level, we designed an incredible pair of eye-catching mascots that people of all ages wanted to take photos with; they also created camaraderie among all mascots at competitions. Thanks to our creative partnership with Lowes, we were also able to design, prototype, and build an awe-inspiring competition booth. Creativity, hard work, passion, and partnerships led to three back-to-back Spirit Awards for the Steel Talons.

We didn't stop there; we decided to participate in our community's annual scarecrow festival that draws a crowd of over 8,000 people every year. What draws these crowds is the exciting display of uniquely themed scarecrows designed by community members. We envisioned and constructed the only robotic scarecrow at the festival. Our award-winning "Cybercrow" brought incredible awareness to our high school robotics team and the FIRST program.

Our partnership with ARTS has by far been our most creative and impactful venture yet. In addition to being financially rewarding for both partners, "The ART of Robotics" has increased the accessibility of our LEGO robotics classes, provided an invaluable opportunity to recruit and form new FIRST teams, and allowed us to expand awareness of the new ARTS STEAM Center, the Steel Talons, and the FIRST program by sending colorful direct mail to 12,000 homes.

C - COMMUNITY

First has inspired us to share our enthusiasm, give back, and impact our community.

We spread enthusiasm by showcasing our robot to thousands of families each year at elementary school STEAM nights and community events. Our team is extremely passionate about inspiring the next generation and developing future Steel Talons. Our training programs have grown from one LEGO camp in the summer to multiple WeDo, EV3, Arduino Electronics, and Technology camps throughout the year and across continents.

As we continue to "Build Our Legacy," we always reflect and remind ourselves that "To whom much is given, much is expected." We take every opportunity to find meaningful ways to give back. We donated a portion of every coupon book we sold to the Buescher Foundation, which supports families struggling with the expense of domestic adoption. We have donated hundreds of toys to Texas Children's Hospital during our annual holiday toy drives. Last year we expanded our toy drive to include teddy bears for the special needs students at our high school.

"To whom much is given, much is expected" became branded in our hearts after the first group of Steel Talons toured the Child Advocates of Fort Bend crisis center. This experience opened our eyes to circumstances we could have never imagined or believed were happening to thousands of children in our community and most likely to one of the students in our classroom. We all agreed that this was the cause that we wanted to invest in and really make a difference. What started as a 5,427 community LEGO drive evolved into the collection of over 40,000 LEGOs and the creation of two new programs. "LEGOs for Birthdays" gives Steel Talons families the opportunity to sponsor a foster child's birthday gift. We took 20,000 of the donated LEGOs and created custom LEGO boxes to start our "Rebuilding Brick by Brick" program. Our custom LEGO boxes are given to children as they graduate from therapy and to accompany them in what can often be a traumatic court appearance.

Our purpose became more than just "Building a Legacy"; we discovered we could make a significant impact by also "Building a LEGOCy."

Y - WHY DO WE DO THIS?

BECAUSE FIRST CHANGES LIVES!