

Chairman's Award - Team 2583

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2020 - Team 2583

Team Number

2583

Team Name, Corporate/University Sponsors

IBM/Dell/Reddwerks&Westwood High School

Briefly describe the impact of the *FIRST* program on team participants within the last five years.

All students who go through Westwood Robotics obtain a diverse set of skills, ranging from the fields of engineering to accounting to marketing. Our team makes a supportive network for new and old members to explore opportunities. 2 members have won the KIA Motors Design Challenge. Most importantly, Westwood Robotics is a family. Members develop long-lasting bonds with robotics and their teammates - 6 former members mentor the team, and 75% of current members compete/mentor in FTC & FLL teams.

Describe the impact of the *FIRST* program on your community within the last five years.

Westwood Robotics has done many things to impact our community, including government advocacy to state legislators in order to increase funding for engineering and robotics in Texas, adding robotics classes to the STEM curriculum in our district, and soon throughout the state. Our members have over 6000 hours in volunteering at FLL and other robotics competitions and over 1000 hours of mentoring and teaching robotics to primary and middle schoolers, including daily visits to schools.

Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.

Westwood Robotics hosts annual summer camps, where kids from all over Texas attend to learn about FIRST robotics and aerospace engineering. RoboCamp has had a steady increase in attendance since its founding in 2016, giving kids an interactive way of learning robotics and engineering. We have created a book that allows kids with dyslexia to easily read and learn about robotics, making information more available to them. There are more installments coming this year and soon in the future.

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

We recently redesigned our team structure in order to spread responsibility to more people, adding additional officer positions in each of the branches of our team. This not only allows us to be more efficient but also to inspire more members to work harder to gain a position in the team. We also run 4-5 FIRST events a year, where our members assist and serve as mentors and role models to students who participate in competitions.

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

Westwood Robotics is focusing on starting another FRC team within the club/school and starting FRC teams at the other 6 high schools in our school district, as none of them have FRC or FTC teams. We are talking with the district board of directors about giving funding to all schools specifically for FIRST activities. We have also created a program called 'Rural Robots,' in order to service students in rural areas across America, giving them funding and mentorship to create FRC teams.

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

We have started two FTC teams within Westwood Robotics this year, and there are 3 more coming next year, including an all-girls team. These teams are created in order to help underclassmen and upcoming high schoolers gain experience in FIRST while being helped by older robotics members. In just the last year, we have started 7 FLL teams at elementary and middle schools, with over 15 teams being started in the last 5 years.

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

Our team hosts several Lego League and FTC competitions in our own facilities each year, with team members accruing several thousand hours of volunteering over the last 5 years of these events. We also assist these teams by giving them kits of parts whenever needed, and they can rent them for the season whenever they need to. 4 local FTC teams are hosted and mentored by us in our workshop, and we mentor 13 local FLL teams.

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)

We mentor teams through skype, calls, periodical e-mail checks, and in-person mentorship. Our FRC members work with FTC teams, and take members of FTC teams to daily volunteering opportunities, mentoring kids on FLL teams. We also work with other FRC teams to mentor FTC kids on our team and others. Summer workshops are hosted on our premises to help students learn FRC, FTC, and FLL skills.

Describe your Corporate/University Sponsors

Sponsors of the Robowarriors include IBM, National Instruments, Seagate, Texas Workforce Commission, Round Rock Independent School District, and Northwest Austin STEM and Robotics Association. These companies provide Team 2583 with parts, mentors, and monetary support.

Describe the strength of your partnership with your sponsors within the last five years.

Maintaining good relationships with our sponsors and others that support the Robowarriors has always been a priority for our team. We understand that sustaining a team requires a diverse group of sponsors. Sponsorships are maintained through periodical updates, representation on the team's merchandise, pit design, website, and robot, as well as help from students' parents who work at sponsoring companies.

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

FIRST is an impactful, interactive, experience-driven, and most importantly, really fun way of helping students of all ages learn important engineering, programming, volunteering, financial, and communication skills. FIRST not only inspires hundreds of thousands of students to learn, grow, and innovate but also encourages and enables them to form lifelong bonds with other FIRST team members, all while participating in an interesting engineering challenge every year.

Briefly describe other matters of interest to the *FIRST* judges, if any

As a team that has existed for over 10 years, but only recently gained real footing, helping other teams become established quickly is very important to us, especially on the local scale. This not only allows us to benefit students in the community but build a pipeline to Westwood Robotics to create sustained success for the team and community surrounding it.

For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.

In our 12 years of existence, we have prioritized helping our community. Our team strives to promote the success of students in our locale through outreach. We have given many other FIRST teams in our area to volunteer at robotics events, and allowed many to use our facilities in order to help people interested in engineering in our community.

Team Captain/Student Representative that has double-checked this submission.

Parth Matalia

Essay

Our Mission and Vision

Our mission is to spread the FIRST message by inspiring students to pursue their passions and fostering their interests in STEM fields, not only in our community but around the world. Our method for promoting STEM-based learning is simple: introducing children to STEM early on in their life and continuing to mentor them every step of the way on their journey to higher education. By reaching out to our community, facilitating the entrance of many students into FIRST programs, and supporting their interest in FIRST through both monetary and scholarly support, we hope to inspire a new generation of STEM and FIRST alumni.

Our Team

In 2018, we were working out of our club president's garage, desperate for change and a better situation. Through many planning meetings and extensive hours put in by team members, we made it to the FIRST Championship for the first time.

In the off-season following, we entered talks with our district board to gain funding for a maker space in our school, marking a new chapter in the story of Westwood Robotics, as well as enabling us to accomplish our goals of achieving excellence in robotics and outreach. Additional space also allowed us to expand our team, with new FTC teams and space for teams that we mentor to work.

Student Success

The growth and success of our team members is very important to us, which is why established Operation Educate, a program that facilitates students in our school being mentored in robotics and academics by experienced members of the club.

Westwood Robotics boasts an academically successful group of students, with 100% of Westwood Robotics alumni entering postsecondary education, 95% of which study in a STEM major.

Methods For Spreading FIRST

For each of the past 4 years, our team has held a week-long robotics themed summer camp at our high school. Open to kids of all ages, our summer camp encourages curiosity and interest in science and engineering. From building model rockets to LEGO EV3 programming lessons, to breadboard activities, these students get the opportunity to explore the vast world of STEM with the help of our dedicated team members.

In addition to our annual summer camp, the members of our club worked together to create an illustrated children's book in order to teach kids with learning impairments about some of the same concepts. We are currently working on expanding our project by writing another book as part of an ongoing series.

Our team members also make weekly visits to local elementary schools to teach students about FIRST Robotics. By introducing kids to concepts of programming and engineering, we can help them become acclimated to robotics at a young age. We also engage in demonstrations of different robots in order to spark a passion for STEM in younger students.

Outreach

Along with making many visits to elementary schools to introduce them to FIRST, our members have met with several middle schools in our area to speak with students about their interests, and advise them about STEM courses in high school.

Team members create a different demo robot every year to showcase some of the possibilities of engineering and innovation. We show our yearly Demo Bot to several elementary and middle schools. Building a Demo Bot also gives our club members a chance to learn about robotics and spread FIRST concepts of innovation and learning.

Hosting Events

Our team often hosts events on our premises, along with external volunteering. Our team has logged over 6000 hours of volunteering, 2800 of which are from FLL competitions alone.

We have hosted a number of First Lego League regional and district competitions, as well as FTC competitions at our high school. It is important to us that young students can gain valuable competition experience and develop a positive relationship with STEM. We also often send members of our club to volunteer at other FLL competitions in our area.

FIRST Expansion

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We have created 9 elementary school FLL teams, 4 middle school FTC teams, and helped establish 2 FRC teams internationally. We are currently mentoring and providing financial assistance to 16 FLL teams.

Over the summer, our team developed a simple curriculum to teach entrance level robotics team members about FRC, known as Operation Educate. We were able to teach many students about FIRST and the basics of robotics, which helped benefit our team by educating new and future members.

To assimilate more teams and students into the FIRST family, we created The Northwest Austin Robotics Association, a non-profit organization that makes it easier to independently establish a FIRST team in our area, providing many students and organizations with necessary guidance and support.

Education

In collaboration with Texas STEM and the RRISD school board, we created a class pathway specifically for Robotics, for students from 9th-12th grade. We will focus on expanding Robotics classes to students throughout Texas, not just in our district. Our original Operation Educate was also implemented into some of our engineering classes in order to expand in the school curriculum and help students with their careers.

We also founded several specialized engineering clubs in our school, including an Aerospace Club which set a world record for a paper airplane launch, an engineering club that focuses on innovation in technology, and a Girl Space club which provides the opportunity for female students to learn more about STEM.

Advocacy

As a team, our goal is to spread the FIRST message throughout our community. We do that by working with government employees to create foundations and establishments that help create and support FIRST teams. We created a government organization to provide funding and mentorship to new FIRST teams. Our organization also helps our team reach more people in our community who want to participate in FIRST and STEM activities.

Rural Robots

Throughout America, rural communities are severely underserved, with many students in rural areas lacking access to proper STEM and robotics education. Many rural communities lack advanced economic development and education.

It is our mission to help these students, through a program we call Rural Robots. Through contacting schools in rural areas and Native American reserves across the United States, we are laying the framework for a national initiative that will greatly aid students in several states, including schools in Arizona, Idaho, Oklahoma, Texas, and Washington.

We provide these schools with funding, mentorship, and materials that will help them to establish FRC and FTC teams that will be successful for years to come. The Rural Robots program will also connect these teams with each other, creating a network of students spanning the nation, moving the FIRST community to areas where it was previously inaccessible.

Book Series

Our team members are very passionate about helping underserved communities, and children with learning disabilities have faced many challenges in education even in advanced countries.

Our books, created in collaboration with Dyslexie, a company based in the Netherlands that created a font that makes it possible for people with dyslexia to easily read, give graphic and experience-based learning examples to students, giving guidance to members of FRC, FTC, and FLL teams, all while being able to be easily read by those with Dyslexia.

Sponsor Relations

Our corporate and government sponsors have helped us tremendously in our mission to spread FIRST throughout our community. Our financial sponsors provide us with the funding we need to make an impact on those around us. We put company funding not only into materials we need, but also to create funding for underprivileged teams in our area.

We are very grateful to IBM and National Instruments, the companies who assign us mentors to help our team learn and grow. They provide us with valuable knowledge and skills that aid us in achieving our goals in robotics. Due to their support, we can then teach others about FIRST and STEM. Through funding and mentoring, our partners allow us to create countless opportunities for those outside of our school.

What we do wouldn't be possible without the backing of our sponsors, and we are grateful that they support our plan for the future, and help us expand our horizons as well as create opportunities for others.

Broader Impact of Westwood Robotics

In the future, our team hopes to create more opportunities for others to prosper in FIRST and in their careers. After working out of team members' garages for 10 years, we were finally able to move into an official workshop this year. We are passionate about helping others into better positions to succeed, as we struggled to find help in our early years.

After implementing a strong base for robotics in Austin, we hope to expand to other teams all over Texas. We have

already created teams internationally, and the scope of our objectives will only continue to expand.

The goal of the programs we create, the books we write, and the help we give is national recognition that can lead to increased awareness concerning the plight of challenged children and communities, promoting an educational system tailored towards accommodating everyone's needs. We have already published one of our books, and it has had a tremendous impact not only on students who have learning disabilities but also on our community as a whole. Making learning more accessible is one of our primary goals, and we aim to spread the brilliance of FIRST and robotics as a whole to communities where these possibilities were previously untapped.

As a team, we aspire to be recognized as a bastion for growth and learning in the community surrounding us.