

## Chairman's Award - Team 2485

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2019 - Team 2485

### Team Number

2485

### Team Name, Corporate/University Sponsors

Qualcomm/TE Connectivity/WowWee/DoD STEM/Trestle Energy/Rhodes River Ranch/Evolution Projects/New Blue, Inc./Paper Clip Engineering/Medtronic/General Dynamics NASSCO/Cooler Master/Miramar Water Jet/Community Werks/MakerPlace/Environmental Lights/SolidProfessor/SolidWorks/GitHub&Francis Parker

### 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 showed me an entirely new world for me to explore. Thanks to FIRST, I am now a product design major at Stanford University, a field I would never have been exposed to without Team 2485" (Liam Fay, Alumnus). FIRST inspired us to create our 101 and 1-on-1 program, where team members like Liam and 261 others have learned skills that they can use beyond the team. FIRST inspires us to give back to our community; we've completed 6000+ service hours since 2014, with 3000+ from 2485 outreach.

### 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

Our mission is to make STEM accessible to people of all backgrounds. We provide programs such as Robo.camp and Orion Ed: Hands-On Robotics, which supply engaging environments to learn about STEM. Since 2014, we've waived 15 students' registration cost to our annual 1-week Robo.camp, which grew to 39 participants last summer. Our Hands-On Robotics program, where members of 2485 inspire curiosity for STEM among K-6th graders, has reached 2500+ students in the past 5 years.

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

We strive to spread FIRST's message throughout our local and global communities. W.A.R. Lords promote FIRST by participating in events such as the NDIA Gold Coast Conference and Navy Fleet Week. Our annual Hackathon has taught programming and teamwork skills to 50+ students for the past 4 years. In co-hosting an FRC showcase in Tijuana last year with Team 5627 we brought together 7 teams and spread FIRST's message to local sponsors with over 500 people in attendance.

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

Team 2485 serves as a role model in a variety of ways. Our WOW program inspires girls to gain confidence in STEM, and we have expanded WOW to 6 other teams globally in the past two years. We've co-hosted Battle at the Border, the longest-running off-season event in Southern California, introducing new members to FIRST. Our annual Hackathon inspires students to gain an interest in programming. We also mentor 9 rookie FRC teams through FullCircle, a program started by Team 6814 this off-season.

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

In 2012, we started FRC team 3925, Circuit of Life, from Ventura, California, and helped them with design, code, and fabrication. We helped found FRC Team 5883, the first team in Poland. We provided them with access to CAD and taught them how to use the program. Last summer, 5883 visited San Diego where we introduced them to our team's shop. Our TJ Showcase introduced 40+ students from the Tijuana region into the FIRST community and encouraged the formation of Teams 7752 and 7753.

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

We founded FTC Team 10092, the Green Griffins, who we continue to host at our shop and mentor. Working with FRC Team 5883, over the last year, we helped to found 14 new FLL Jr. and FLL teams in Poland and Ukraine, some of the first for both countries. We also founded 3 FLL teams, including one all-girls team, which we continue to provide student mentorship for in our middle school. 39 of our current members come from these FLL teams, increasing this connection.

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

Under our mentorship FTC Team 10092, The Green Griffins, has strengthened their program and now compete at a high level. Our team also hosted 3 FTC league meets at our school this year and mentored 3 FLL teams based out of our middle school. Our OrionEd: The Secret to a Better Robot workshop has improved 80+ teams' culture. 2485 has assisted 100+ teams since 2016 with help ranging from graphic design to machining. We use our mini machine shop at competitions to create parts for other 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)**

Battle at the Border co-hosted with Teams 1538 and 5025 is the perfect opportunity for new teams to experience a regional competition before their first build season. We also incorporate smaller, younger teams into our scouting alliance with more experienced teams to provide data they would otherwise not be able to collect. This year, we joined FullCircle, an international rookie-mentoring project started by Team 6814 that provides 9 rookie FRC teams with student mentors from 12 veteran teams.

**Describe your Corporate/University Sponsors**

We secure sponsorship from multinational corporations, such as Qualcomm, and local companies, including NewBlueFX. We receive in-kind donations from enterprises such as SolidWorks and a few companies support us through mentorship, such as General Dynamics NASSCO. Of our current sponsors, we introduced 13 of 18 to FIRST (including Ovrstream, now a partner with FIRST). While many of our sponsors are STEM-based, several others, such as Rhodes River Ranch, are not traditional STEM companies.

**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 express gratitude toward sponsors by writing Thank You blogs and other forms of communication. In the past 5 years, NewBlueFX has provided 12 paid internships for our students, and alumni have been hired full-time. Grants from Qualcomm and 3M have allowed us to expand our WOW program both domestically and internationally to 6 other teams in 4 states and 2 countries over the past 2 years. We maintain positive sponsor relations, and our average duration of sponsorship from a company is 4 years.

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

Many think of FIRST as only a robotics competition. To our team, FIRST is more than robots; it's a launchpad for students to gain experience ranging from engineering to business; it's a community of passionate innovators who go out of their way to help, give advice, and be your friend; it's a family, from the youngest students in FLL Jr to the veteran high-schoolers in FRC. FIRST teaches you to be a global citizen by developing international friendships. Most importantly, FIRST is our home.

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

Whether it is through helping students get jobs at companies such as Amazon Robotics, or inspiring 80% of our members to pursue STEM majors with our 101 and 1-on-1 courses, our team has been changing students' lives since our inception. We know that FIRST is more than just robots; it has become our inspiration and home. We want to thank you for not only judging this competition, but also for giving us a platform to demonstrate our love of STEM and create meaningful impacts in our community.

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

Jacob Brittain

## Essay

In August 2018, NASA's Parker Solar Probe launched on the first-ever mission to "touch" the sun. Given our home is Francis Parker School, the W.A.R. Lords were excited to learn about the probe and found similarities in our aspirations and efforts. Rather than Houston, our mission begins in San Diego, inside the doors of FRC Team 2485's shop. In our station, we traverse the STEM world while enriching communities, honing our skills and character, and leaving our mark on others along the way. Our station launches us to space, where our programs impact our community and are the tools we need to propel us to our sun— our goal of making FIRST a universally accessible and meaningful experience.

-STATION-

FRC Team 2485 has been the launchpad for nearly 300 students to pursue STEM over 12 years. This year, we are comprised of 71 students and 36 mentors who work towards STEM excellence across 3 departments: Business and Outreach, Build, and Software and Strategy.

We endeavor to foster a team that is both united and inclusive. Our Bigs and Littles program provides a strong connection between rookies and veteran members. This season, we decided to shape our pairings around our departments to further communication and involvement between students as they start their FIRST journey.

The W.A.R. Lords are dedicated to ensuring we are raising skilled student leaders. To do this, all students and mentors are required to take three 101 courses at the start of each season: Shop 101, Team 101, and Safety 101. Shop 101 serves as an introduction to our shop, (our base and workspace). Team 101 acquaints members with the leadership, structure, and expectations for the W.A.R. Lords each year. Safety 101 outlines regulations and reiterates the importance of the shop being a safe environment. Once they have completed the three mandatory trainings, W.A.R. Lords take specialized trainings in our departments. Known as 101s and 1-on-1s, these courses are taught by students during the pre-season to hone their skills such as CAD, Graphic Design, and Java Programming.

Our sponsors are what make all of our voyages possible. For the past 5 years, we have partnered with NewBlueFX to create the W.A.R. Lords internship program. NewBlueFX actively seeks our students for full-time paid internships in programming, marketing, and graphic design, which have turned into jobs. To date, 12 W.A.R. Lords have worked for NewBlueFX for a total of 9 weeks each.

Thanks to the dedication, collaboration, and innovation of our students, mentors, and sponsors, we are ready to launch from our station and journey to space, where the knowledge and resources we have cultivated are in orbit to benefit other FIRST teams and communities.

-SPACE-

A core belief for the W.A.R. Lords is making our resources available to everyone in FIRST. This is the driving factor that led to the creation of OrionEd, our comprehensive educational outreach program designed to educate and inspire elementary, middle, and high school students about STEM. Over the past 6 years, we have hosted 17 Hands-On Robotics, which features demos and interactive stations, reaching more than 2500 students. How To Be A Stemminist is a condensed, middle school version of our WOW program that focuses on engaging and retaining girls in STEM. Recognizing the struggles that all teams face dealing with cohesion and cooperation, we created The Secret to a Better Robot, an interactive improv-based team building workshop, through which we have assisted more than 80 teams in 15 states and 4 countries. We presented this program to the larger FIRST community at the 2017 and 2018 Houston Championships, allowing us to impact even more domestic and international teams and expand our reach among space.

Some members of our space crew begin their training as early as sixth grade with our 3 middle school FLL teams. Mentored by W.A.R. Lords, these programs prepare younger students for successful careers in STEM and teach them the basics of robotics fundamentals. We have had 39 students start on FLL teams and transition onto our FRC team.

Since 2015, we have hosted and mentored FTC Team 10092, the Green Griffins. Under our mentorship and guidance, they have won 7 awards at the FTC Qualifier, Regional, and Super-regional levels. In addition, 2 W.A.R. Lords members have joined the Green Griffins, bringing our love of FIRST even closer together.

Our annual Hackathon has brought together more than 30 schools scattered across southern California to participate in a programming competition. Since 2015, we have challenged competitors to create a unique program relating to a theme. This year's theme was the Da Vinci Code, with competitors having 12 hours to code a video game relating to music or art. Our participants learn programming and teamwork skills and walk away with generous prizes donated by our sponsors.

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Francis Parker is a great stop for teams to land on their STEM missions, as we host several FTC events. In December 2018, we hosted the FTC league meet competitions for 32 team and another in January 2019. We are also pulling our team efforts together to host the best FTC Regional in the galaxy.

Since 2010, we have worked with FRC Team 1538 to host Battle at the Border, Southern California's longest-running off-season competition. This competition invites 30 teams every year to compete. Because our school is going through construction, we have incorporated team 5025, ensuring that students are still able to get a taste of what competition could be like.

The W.A.R. Lords have extended our love of STEM to elementary students across San Diego through Robo.camp for the past 5 years with the help of team 987. Robo.camp is a 1-week program where we invite 30 students each year to create, build, and compete with robots. To allow for students that would usually not be able to attend this camp, we waive the fee for 3 students with our Robo.camp scholarship, changing the 15 students' lives overall.

-SUN-

The W.A.R. Lords understand the necessity of female engagement and retention in STEM. This inspired us to start our WOW program, which encourages female participation in STEM. To help encourage girls to participate in our shop, we hold WOW Shop Nights. This event gives female W.A.R. Lords the opportunity to gain experience on key machines in a no-pressure, supportive environment. WOW holds bi-monthly "Top Hat" lunches, wherein a mentor reads student-submitted questions regarding their experiences in robotics. In addition, we also host "Fail Fearlessly" lunches that are open to our entire school community, where female guest speakers from STEM fields share their experiences and give advice. Over the past 6 years, WOW has nearly doubled its membership. We are proud to say that 90% of our team's WOW female members have graduated to work in STEM. To further the success of this program, we have expanded WOW into 6 pilot chapters nationwide. With a generous grant from Qualcomm, we are guiding these teams into incorporating a full WOW curriculum by funding these team's lunches, aiding in promotional efforts, and acquiring speakers. Furthermore, WOW has even extended its reach internationally by connecting with Israeli team, 2096, where we helped them adapt the WOW program. We link all WOW chapters through Slack and LinkedIn, creating a network of confident, successful women in STEM that will empower students long past their high school careers.

Despite being based in San Diego County, we have ensured our team uses our skills to improve the lives of others on a global scale. As part of our mission we have traveled to Tijuana, Mexico for the last 6 years, where our students use the robotics skills they learn to build houses for families in need. We have built 13 houses so far, and cannot wait to return next year to build even more. This year, we also co-organized an FRC Showcase at the Business Innovation and Technology Center in Tijuana with the ?-rtz, team 5627. This showcase has brought together 7 teams, where we ran a mock competition that connected local sponsors with prospective new teams.

This offseason, we joined FullCircle, an international rookie mentoring project started by Team 6814. Through FullCircle, we help to mentor 9 rookie teams, including Team 7851, the first FRC team from Ukraine,.

On Team 2485, we are committed to impacting others on an international scale. For the past 3 summers, our team has mentored FRC Team 5883, stationed in Poland. With them, we visited a school association in Lviv, Ukraine and introduced others in Poland to FIRST activities. This summer we helped run a robotics camp with 5883 in Krasnik, Poland. More than 40 children, ages 7 to 14, had a chance to practice various technical skills, from soldering to programming. That was the first ever STEM camp for youth in Eastern Poland. Also, for the second summer in a row, one of our members participated at the First Global Competition in Mexico City as part of Team Poland. With our assistance, 5883 earned themselves a third-place finish for the Einstein Award, an equivalent to FRC's Chairman's Award. We continue to remain in contact with Team 5883 during their build season to assist them in strategizing, translating rules, and troubleshooting.

-FIRST UNIVERSE-

This year, we introduced new international programs and furthered our commitment to improving previous programs, as well as maintaining relationships with our sponsors. Above all, we reify every day that we are operating as the most refined and cohesive team possible. STEM is a universal language, FIRST is its messenger, and Team 2485 is working to launch FIRST worldwide, ensuring that our programs are globally accessible. Just like NASA's Parker Probe, we have started from our station, traveled through deep space, and are on course to touch the sun.