

## **2015 - Team 597**

### **Team Number 597**

#### **Team Name, Corporate/University Sponsors**

The Boeing Company/USC-MESA/Google/Vertirbi School of Engineering/Dr. Judy Flesh Rosenberg/Raytheon/AutoDesk/Amgen/NASA/Computers for Youth/Kissick Family Foundation/Los Angeles Trade Tech/Most Valuable Majors/L. A. City Councilman Bernard C. Parks/Iridescent/Project Lead The Way/Zoe & Steven Green/Board of Education Member, Margaurite Poindexter LaMotte, District 1/Supervisor Mark Riddley-Thomas/X-treme Solutions/The Roddenbery Foundation/The William C. Bannerman Foundation/Alcoa - SkillsUSA/DirectTV/Friends of Foshay Robotics Team 597/Office of Dr. George McKenna LAUSD & FOSHAY LRN CENTER

#### **Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2014/2015 year and the preceding two to five years**

Student members have 100% grad rate compared to 94% school and 67% district. 100% attending college & 90% majoring in STEM. Learning leadership skills such as resource allocation & project management. Learning even with minimum amount of resources you can still solve big problems. FIRST has taught our students to "Think Globally, Start Locally". FIRST directly responsible for brand new PLTW Manufacturing/Engineering Academy k-12 which will include our 4 local feeder elementary schools.

#### **Describe the impact of the *FIRST* program on your community with special emphasis on the 2014/2015 year and the preceding two to five years**

SHARED the joy of STEM by hosting NASA Summer STEM camps 2010-12 for over 1500 middle school kids. SHARED joy of technology by helping 400 needy families receive a free computer and provided 8 hours of computer instruction support. Members are ROLE MODELS in the community and leveraged as leaders in many community events. SHAREing joys of FIRST recently at LA Trade Tech STEM Fair, Comikaze Expo, LA County Board Supervisor, State Assembly Member STEM Camp and LAUSD School Board and more.

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

Average 16 robot demos per year. SHAREing joys of FIRST at USC home football games where 350,000 people are exposed to FRC robotics each year. SHAREing joys of FIRST by being featured in US News & World Report STEM Article, Nationally Televised LA Lakers Game, National Geographic documentation about FRC, LA Times, La Opinion and SHAREing "10 Easy Steps Guide to Starting FRC, FTC and FLL Teams in an Urban Environment" PPT-sent this PPT to over 100 Principals in school district.

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

Student team members SHAREing a tradition of mentoring 44 FLL Teams over the last 7 years. SHAREing joys of STEM and FIRST by hosting after school Mission Science program, providing Math Tutoring to middle school students, SHAREing joys of ROVs by mentoring 8 Sea Perch middle school underwater robotics teams, SHAREing FIRST Vision of Community Service by completing over 6000 hours of volunteering each year as a team.

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

Lead Mentor participants on Los Angeles Robotics Board which makes it a priority to bring "Robotics" to all of LA. Board promotes and encourages others to develop FRC teams. Our Principal is SHAREing FRC programs at District Principals meetings and SHAREing "10 Easy

Steps to Starting an FRC, FTC, FLL Teams in an Urban Community". Team 597 is SHAREing FIRST Mission by helping to start 5 FRC teams in last 6 years. Goal is to start 2 FRC teams/year.

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

SHAREing and mentoring 6 FLL Teams each year. SHAREing with "Beyond the Bell" and helped create additional 6 new FLL teams in LAUSD. SHAREing "I <3 Robotics Day" during Valentines exposes 700 middle school kids to FLL. Organized "A Day of Robots with the CA Science Center and exposed over 600 kids & parents to FLL. New Engineering Academy allows us to SHARE to 4 feeder schools who will be doing FLL in 2015

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

SHAREing by providing Robot Work Shops, Programming Work Shops, and Kit Bot Build Day that has supported 34 FRC teams the last 3 years. SHAREing limited machining facilities with teams. SHAREing with teams by skyping, facebook, or in person. Team 597 has a top Safety program and continues SHAREing safety practices with every team at Regional competitions by giving out safety manuals, providing safety kits, and laminated robot trouble shooting cards.

**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)**

Mentoring and SHAREing with other teams is one of our family values. We have SHARED a safety app, and safety interactive book for other teams to follow. SHAREing through skype assisting 4 Mexican teams with programming and business plan. Mentors from other teams have joined our efforts as work shop presenters at our Robot/Kitbot/Programming workshops. SHAREing and supplied materials, parts and mentorship to Teams 4964, 5089, 5647.

**Describe your Corporate/University Sponsors**

Our primary sponsor is USC which provides space to build, machining facilities. Raytheon, Northrop Grumman, Boeing provide mentors, funding or both. Strong partnership established with "Friends of FOSHAY Robotics" which provides significant funding to our team. Archdiocese Youth Employment, Iridescent Education, the Aerospace Corporation have provided internships to both students and mentors. In the past, ParagonTEC/NASA has provided internships. District Board Member provided funding this year.

**Describe the strength of your partnership with your sponsors with special emphasis on the 2014/2015 year and the preceding two to five years**

Lasting partnerships include 15 years with USC-MESA, 12 years with Raytheon, 9 years with Iridescent Education, 8 years with "Friends of Foshay Robotics", 6 years with Boeing and others. New partnerships include Xtreme Solutions, ALCOA/SkillsUSA, Bannerman Foundation, & DirectTV. Created newly formed "Advisory Board" that meets and provides input to teachers and administrators to ensure Team 597 is using up to date industry equipment and other current protocols.

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

FIRST is the promotion of character-building, ingenuity, and fun all at the same time. SHAREing passion and vision that comes together to create a reality for teenagers and their environment. Where resourcefulness and creativity are celebrated. Finally, FIRST is the network of individuals who will create a FIRST Golden Age of a hard-working next generation STEM Work Force.

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

Manufacturing-Engineering Academy K-12 a reality due to SHAREing FIRST vision and mission with Principals from several feeder schools. Hosted a Kitbot Build/Programming Workshop for 14 teams (6 Rookie Teams). Several girl team members have won 2014-15 National Center for Woman in Information Technology Computer Awards due to FRC involvement. Team helping to better community by with over 6000 hours of volunteering service each year.

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

Jason Mares

**Essay**

Ana has been part of the FIRST family at our school for 7 years. She participated in FLL for 3 years and has been part of FRC for 4 years. The last two years, Ana has served as one of Team 597's Student Captains. Recently, Ana was a recipient of several technology awards including the prestigious NCWIT Aspirations in Computing National Award. Last year she was flown to Seattle and given a tour of APPLE Inc and honored for her achievements in technology. She and other young ladies were recognized at a special dinner, and Ana was one of the guest speakers at the event. During her speech, Ana spoke about how many young people in her community come from underserved & disadvantaged backgrounds and that about 82% of the families live at or below the National Poverty level. Moreover, 63% of students live in single-family households. However, Ana's experience with FIRST has taught her that even with a minimum amount of resources you can still solve big problems. After Ana finished her speech, the audience had several questions. "What is FIRST?" someone asked. Ana responded: "The Six Week Solution to America's long term STEM Crisis. Young people using critical thinking and problem solving skills to create, engineer and program robots that compete in an international competition known as the FIRST Robotics Competition." "It's a great program that builds confidence and skills needed for the 21st Century STEM work force". Another question: "What is the one word that describes your FIRST experience?" Ana thought and she responded "Three words come to mind that describe my FIRST experience - Family, Volunteering, and SHAREing," "but if I had to pick one of those 3 words it would be SHAREing." "Why SHAREing?" the person asked and Ana said let me explain: We are all part of a family and families SHARE. My robotics team is a family and we love to SHARE-(Show How Awesome a Robotics Education is.) Team 597 members include former students, engineering mentors, teachers, administrators and parents whose key contribution is to ensure everyone associated with Team 597 find personal success through SHAREing. Our Mentors SHARE knowledge and teach student members about the engineering design process, brainstorming, systems engineering, the mechanics of robotics, CAD, LabView/Java programming, wiring, pneumatics, and prototyping. Student members also become versed in those intangible such as resource allocation, time management, habits of mind, project management, personal accountability, information accessing, creativity, innovation, problem solving, commitment, and "Gracious Professionalism." Because we are passionate about SHAREing, team members are nurtured so we can develop to our fullest potential. SHAREing means we strive for diversity. Student members include the highly gifted, soccer players, marathon runners, basketball players, theater arts, debaters, band, special needs/special education students and many more. Our halls of SHAREing are open to everyone. Many student members are veterans of the 44 FLL teams that Team 597 has started, and mentored over the last 7 years. Furthermore, SHAREing has allowed members to develop a support network of passionate female mentors who ensure that the young ladies on the team have opportunities to learn machining, electronics, hands on robot building and designing. The female student representation

has increased from just 23% to a majority 55% in the last 9 years. We have been SHAREing and building partnerships with engineering mentors and support personnel from our school, and with Raytheon, Boeing, Northrop Grumman, the Aerospace Corporation, Iridescent Education, NASA JPL, Paragon TEC, LA Trade Tech, El Camino College and the University of Southern California. These companies and university associates quickly became part of the FIRST culture of SHAREing and to this day, most continue to provide funding, engineers, in-kind services and internships. Many of these partnerships are over 10 years old and we thank all partners/sponsors by hosting a Parent/Sponsor SHAREing Recognition Dinner every December. SHAREing the FIRST vision and mission has allowed us to establish relationships with over 25 partners/sponsors from industry, local businesses, and the university level. Recently our SHAREing has resulted in a newly formed Advisory Council made of engineers and local businesses who will provide advisement to teachers regarding the latest equipment trends as we continue to build our newly formed k-12 Manufacturing/Robotics Engineering Academy for the 2015-16 school year. We make SHAREing a priority by mentoring and supporting new FRC teams. Within the last 6 years, we have started 5 FRC teams and mentored 8 FRC teams. Currently, we are SHAREing, mentoring and providing support to FRC Teams 606, 4964, 5089, 5647. In November 2013, Team 597 SHARED and hosted the Los Angeles SCRRF Robotics Workshops. Over 150 people from 12 FRC teams attended the event. Presenters came from Teams 330, 294, 1197, 691, FIRST Senior Mentor, industry partners and Team 597. Several FRC teams could not afford the \$150 work shop fee but we waived the cost of the registration fee for those teams. Furthermore, in January 2012, we hosted a LabView work shop in conjunction with the Aerospace Corp for 15 FRC teams-including 6 Rookie Teams.

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This past January, FRC introduced a brand new control system -the RoboRio. Many teams wanted training on the RoboRio. Because FIRST has taught our team the importance of SHAREing, we organized and hosted a Programming/Kitbot Build Day which was attended by 15 FRC teams (7 Rookie Teams). We SHARED our building space, computer lab, machinery, and expertise. By the end of the day, 9 teams went home with a working chassis. For 9 straight years, Team 597 has volunteered as Field Assembly/Disassembly, Robot Inspectors, Safety Advisors and Website Evaluators. More than 1200 hours has been donated to the Los Angeles, and Las Vegas Regionals. SHAREing and providing manpower to regionals will continue this year at the Inland Empire, Los Angeles and Las Vegas Regionals. Likewise, for the last 7 years over 1000 plus volunteer hours have been donated supporting FLL competitions at the Mahanttan Beach FLL QT, Helen Bernstein FLL QT, and the Los Angeles FLL Championships as Judges, Referees, Runners and Field Set Up/Disassembly. Our SHAREing convinced principals from four different feeder elementary schools to join us in the quest to establish our newly formed k-12 PLTW Manufacturing /Robotics Academy in which over 200 high school, middle school, and elementary students will have the opportunities to participate in activity-based learning that makes concepts relevant in real world applications using the PLTW engineering curriculum. In addition, during the Summer of 2015, we will be SHAREing with new 9th and 10th grade members providing opportunities to learn machining and programming. SHAREing Community Impact Highlights: \*NASA Summer of Innovation (SOI)-Ran weekly STEM camps Summer 2010-12. Educated and serviced over 1500 undeserved children using NASA STEM curriculum and STEM careers. \*Our team puts an enormous amount of emphasis on community outreach and volunteering. Member are required to do at least 200 hours of community service with numerous charity events such as Aids Walk, Toys for TOTS, Say No to

Drugs, Breast Cancer Awareness Walks, Read to Achieve, Banking on Your Future, blood drives, canned food drives, and much more. At the Gobble, Gobble Give affair, we have helped serve over 16,000 meals the last six years.\*Partnered with LA Metro Link Safety and helped educate hundreds of youth about Rail SafetyTeam 597 SHAREing Highlights:\*Planned and organized a Day of Robots and introduced FLL Robotics to over 600 adolescents and parents at CA Science Museum\*Mentoring 60 middle school students in the design and fabrication of ROVs robots for US Navy Sea Perch Challenge (2015)\*Exhibitors at the Los Angeles Trade Tech College STEAM Expo in which over 5000 people had the opportunity to see our FRC robots and 3D printer.\* Exhibitors at one of the largest Pop Culture events in America-Stan Lee's Comikaze -over 65,000 people attended.\*CA Science Center Reggie Thomas-Sawyer STEM Camp-Educated about 100 disadvantaged youth using robot demos and NASA STEM activities\*Providing a Hands on Science experience through Mission Science for middle school studentsSHAREing FIRST Message Highlights:\*Demo Robots at USC Home Football Games and exposed over 350,000+ people to FRC each year. \* Featured in LA Times Article\*Featured in Spanish newspaper La Opinion\*Interviews on MPR Radio\*Featured on Estrella TV Noticias Channel 62\*Featured in 2014 National Geographic Documentary about FIRST\*Featured in US News & World Report STEM Article May 2012.\*Robot shot free throws against a fan at Los Angeles Lakers Game Oct 2012 in front of 15000+ people on Nationally televised game.\*Featured on the Will.i.am special "Science is Rock n Roll." The segment focused on a Team 597 student member who was involved in gangs but saw a future in STEM because FIRST had INSPIRED him enough to want to attend college.\*LA Times Festival of Books (over 100,000 people attend)As Ana exits the stage her closing remarks were: My FIRST Robotics Team and other FIRST Teams are "Changing the Equation" by Igniting Passion and Building Excitement about STEM and STEM Careers despite limited resources through SHAREing (Showing How Awesome a Robotics Education is) because at Foshay FIRST Robotics Team 597 "We Build More Than Robots, We Build Character!"