Chairman's Award - Team 3309

Print Close

2019 - Team 3309

Team Number

3309

Team Name, Corporate/University Sponsors

The Boeing Company/Hamrock/Apple/McLaren/Google/Ganahl Lumber/Serra Laser/Raytheon/The Stump Family/First American Title/VXB Bearings/Will-Mann/SoCal Devs/Reliable Sheet Metal&Servite High School&Cornelia Connelly School&Rosary 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

Through FIRST, ingenuity and a willingness to take risks are encouraged. 3309 students and alumni are equipped with the skills they need to pursue the major or career of their choosing. 2014-18 alumni awarded $5.4M in merit aid 3 full-tuition STEM scholarships in 20183309 alumni work at Google, Twitter, Facebook, Vision Miner, Boeing, Apple. 3309 alumni attend Harvey Mudd, WPI, Santa Clara, UC Davis, UCI, Berkeley, UCLA, Cal Poly SLO, CSULB, Johns Hopkins & Babson.

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

"Meeting Team 3309 at Fleet Week sparked my desire to pursue my interest in robotics." John Paul - Age 13 Organized LA Fleet Week Battleship Blast: Free 3-day competition for 30 FRC teams.450K attendees over 2 years. ABC7 News coverage of event reached 367K viewers62 public demos have reached > 500K in 5 yearsOC Regional: Over 2700 volunteer hours. Beach Blitz Off-season Competition: 1190 hours; 14,850 people impacted;97 teams 53 workshops, 800 volunteers trained in 3 years

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

"Battleship Blast was a fabulous experience for our team because it both enabled them to increase their FRC/Robotics skills & training, & see how their robots related to real DOD robots & other high-tech equipment and ships!"- FRC 2710 "Thank you so much for sponsoring a wonderful event that showcases the talent and hard work of the youth in our STEM community."-FRC 2637 "Great showing off our hard work from our last season build. The team enjoyed demonstrating what FRC is all about."-FRC 702

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

3309 works year-round to build partnerships that help all FIRST teams in our community. We have represented FIRST at Disney Imagineering and Boeing to recruit mentors & volunteers & joined with LA Fleet Week to promote STEM via Battleship Blast.OC Kickoff & Pancake Breakfast (3 years)Provided VR Experience at Kickoff Mock Kickoff for mentored teams & rookiesFIRST College Signing Day for 3309 seniors3 Dean's List Finalists2 FIRST Scholarship Recipients1 WFFA Mentor

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

We mentor teams & provide resources like our practice field for scrimmages and testing. We create no-cost & low-cost events such as Battleship Blast and Beach Blitz for veteran teams so they can show new members what FIRST is about and to attract new mentors. Started & Mentored 4414 High-Tide, 5419 Natural Disasters & 7157 MuBotics - OCR Rookie All-Star 2018.Mentor 6955 Los Chilis - OCR Rookie Inspiration Award 2018 & FinalistMentored 6554 Phoenix Robotics- OCR Rookie All-Star 2017.

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

At every demo or 3309 event we aim to connect anyone who demonstrates an interest in the FIRST program with a local team or the information to create a team. Our extensive outreach allows us to explain the various FIRST programs & inspire youth and adults to either join an existing team or start one. For FLL, we created Six Steps to FLL Success, a pamphlet detailing how to start an FLL team that we hand out at every 3309 robotics demonstration & hosted an FLL Information Night at our facility.

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

To support local FLL teams we created FLL Preview Night at Friends Christian School for teams to practice their Robot-Project-Core Value presentations. We viewed presentations and provided feedback. Each year we invite FTC 542 to Boeing Demo Days to attract more mentors and generate interest in FTC. This season we will have an FRC regulation field we will utilize for scrimmages and also make available for local teams to practice and collaborate with one another.

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)

Beach Blitz has provided and livestreamed 53 workshops and panel discussions by elite teams and mentors for the benefit of both new and returning teams. This year at Kickoff we offered a seminar to guide rookie teams through the Kit of Parts and offered programming tips and help using the WPILib software resource. We enjoy supporting international teams such as 6955 & 5512 from Chile when they compete locally. In 2018 we provided them with batteries, tools, and parts during their stay.

Describe your Corporate/University Sponsors

3309 has a variety of institutional, corporate and individual sponsors who provide our team with financial support, mentors, or in-kind donations. Hamrock, Inc.: 10 yrs/Fabrication & Mentorship. Servite: 9 yrs/ Location & 50k/year. Boeing: 8 yrs Regional Fee & Annual Monetary Donations + 4 demos at Boeing Facilities. Raytheon: 10 Yrs/Monetary. WillMann: 6 yrs/Fabrication. Apple: 3 yr/ Regional Fee. Google: 2 yr/ $5k donation. McLaren: 1yr/ $4k. Airgas: 1yr/Monetary, Mentoring, Supply Donation

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 proud of the new and long-standing relationships we have with our sponsors.Hamrock, Inc.: Mechanical mentor, fabrication & powder-coating services.Servite: Provides 3 buildings for facilities & 4 STEM faculty & feature 3309 in admissions videos & recruiting materials.Boeing: 3 mentors. Alumni internships.Blizzard Entertainment: Software mentor & meeting spaceVision Miner: Internship program for students & alumni. Beach Blitz sponsor. Featured our 2018 robot in a company commercial.

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

FIRST is a competition that is not about winning; it's about learning. Through FIRST, students of all ages have the opportunity to engage with peers and professionals to learn real-world programming, design, and manufacturing STEM skills along with leadership, teamwork and communication. FIRST is a worldwide volunteer community breaking barriers and creating pathways to spread STEM education among youth and inspire the next wave of leaders and innovators to pursue STEM majors and careers.

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

At corporate demos targeting mentor recruitment, we bring our student-created 3309 STEM Kit to show what FIRST teams can do. Using a custom 3309 power control board we had manufactured overseas, several electronic components and 3D-printed parts we can teach others about circuits, programming, and soldering. This kit is part of our 3309 Summer Camp and will also be used for our Family Resource Center STEM Program, an initiative to bring STEM training to low-resource communities in OC.

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

Adrian Machado

Essay

For the past ten years, Team 3309 has worked to become a cornerstone for FIRST Robotics in Southern California, forming an expanding network of sponsors, mentors, and teams to initiate and promote STEM. By executing revolutionary curricula and organizing regional programs, the Friarbots encourage students to pursue science and technology careers and excite teams, mentors and the general public alike.
Home for the Friarbots is Servite High School (all boys) and its two sister schools, Rosary Academy and Cornelia Connelly High Schools (all girls). Robotics and engineering have been flourishing on these campuses since the inception of Team 3309 in 2009. Last year, a full 20% of prospective freshmen visiting Servite listed Robotics as an area of interest. In addition to their involvement on FIRST Team 3309, Rosary and Connelly have now also launched separate all-girl feeder robotics programs. Two Friarbots were selected for the Servite Ambassador Program, and the Friarbots work closely with Servite's admissions department to build interest in STEM. To support this effort, Team 3309 created a small-scale robot which has since been featured at more than 40 school recruitment events, in front of nearly 1700 prospective students and their families. Only Servite's vaunted athletics program generates more interest among prospective students, but STEM is rising fast as a strong #2. In response, Servite agreed to sponsor two new classes, an Intro to Engineering Design, and an Engineering and Programming course, led by four faculty members. Both are now fully integrated into Team 3309's three after-school robotics programs. In 2018, the Friarbots launched FIRST Signing Day, where our robotics program graduating seniors declare their college by signing a letter of intent and then receive an official Servite varsity letter.

To promote youth interest in STEM, the Friarbots hold an annual robotics summer camp attended by over 325 students across five years. From student-designed circuit boards to a new focus on 3D printing and soldering, Team 3309 instructs potential FIRST robotics students. The camp curriculum includes CAD modeling, 3D printing, programming, and electronics. For the final project, students create light displays with 3D printed cases and Friarbot-designed circuit boards which they solder and wire their lamps. Building on the success of the summer camp, the Friarbots looked for ways to expand this curriculum to underprivileged youth throughout Orange County. The team established a working relationship with the OC Family Resource Centers, a network of nonprofit hubs in at-risk communities. The Friarbots plan to assign an individual local FRC team to each center and to provide maker hubs with a 3D printer, filament, a laptop, and CAD software. To advance the program, Team 3309 established a strategy to assist the centers in applying for community grants. In this manner, the Friarbots will spread STEM education at no cost to underprivileged youth in Orange County.
Creating community and changing culture are integral to Team 3309's outreach. The Friarbots have continued to work with 3476 and 4276 in hosting Orange County's premier SoCal FIRST Robotics offseason event: Beach Blitz. This competition has remained an affordable option at only $350 (one-sixteenth the cost of an FRC regional). Team 3309 engages sponsors such as Boeing in printing signs and banners and Cooler Master to provide giveaways. Beach Blitz provides workshops where mentors, alumni, and team members can provide their knowledge to the next generation of engineers. Over the past three years, Beach Blitz has hosted 53 workshops educating nearly 800 students and mentors. Beach Blitz trained volunteers to staff newly formed and existing regional events, with more than 230 volunteers over the past three years. This year, the event received 52 applicant teams, more than could be accommodated by the available facilities.
Seeing the overwhelming interest at Beach Blitz, the Friarbots looked for new ways to address the growing Southern California demand for learning and competition opportunities in robotics. Accordingly, Team 3309 created yet another unique program at LA Fleet Week - Battleship Blast. Team 3309's partnership with LA Fleet Week began two years ago with a five-team demo and has grown into a three-day STEM Expo with 30 FRC teams participating in an off-season event consisting of three single-day competitions. Battleship Blast has brought the FIRST experience to over 450,000 people by providing an environment similar to regional competitions and is available to all teams for no cost. Team 3309's Battleship Blast takes place in an event hall featuring a regulation FIRST field, team pits, a welcome table, and an area for the public to sit and view matches. The Friarbots received feedback from more than half the teams saying they developed incomparable relationships with the public, other teams, and companies such as Amazon. Team 3309 is currently working with LA Fleet Week event coordinators to make Battleship Blast a sustainable offseason event, much like Beach Blitz.
The Friarbots are also committed to promoting robotics and STEM in communities outside of FIRST Robotics. Demonstrations by Team 3309 have become a staple at Science Showtime at Golden West College, reaching over 2000 people. The Friarbots teach youth fundamentals of pneumatics, fabrication, and how to drive a robot. Team 3309 participates in Boeing Demo Days and engages Boeing employees in Lunch and Learns to gain mentors and volunteers for FIRST events.
Within the FIRST community, Team 3309 has supported the Orange County Regional in the three years since its inauguration, providing over 2700 hours of service. At OCR, Friarbots mentors and alumni hold key positions such as Volunteer Coordinator, Referee, Game Announcer, and Webcaster. Since many rookie teams experience challenges their first year, the Friarbots enjoy mentoring teams through their first season. From Mock Kickoff to assistance in the pits, Team 3309 advised OC's 7157 Mubotics (Rookie All Star 2018), and 6554 Phoenix Robotics (Rookie All Star 2017) all the way to World Championships in Houston.

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Team 3309 has endeavored to serve FRC Teams by hosting FRC events for the past three years. Before the start of Build Season, Team 3309 holds two events. The weekend before Kickoff, the Friarbots host a Mock Kickoff. Team 3309 has developed a curriculum and a game quiz to help other teams compete at a higher level. This module is hosted on the Friarbots' website where it has been accessed more than 400 times. Mock Kickoff introduces teams to methods of prioritizing and prototyping processes, and better equips them for the second event at Servite, the official OC Kickoff, this year. For the past two years, Team 3309 has built game elements for FRC teams to view and interact with at kickoff. For 2019, the team provided a virtual reality experience to allow students to explore the Deep Space competition field. Once the 2019 elements were built, Team 3309 opened up their facilities, inviting local teams to practice, test, and prototype. The teams received valuable data for design modification and game strategy.

Internationally, the Friarbots continue to assist 6955 Los Chilis, (2018 Rookie Inspiration Award, OC Regional Finalists) who are also mentored by a Team 3309 alumnus. In our pursuit of helping others around the world, 2485 WarLords reached out to us about an opportunity to host South African teachers interested in STEM, the Friarbots responded with a facilities tour and demonstration for the visitors.

Since the Friarbots began competing in FIRST ten years ago, Team 3309 alumni have become a beacon for STEM across the nation. They utilize critical skills gained through FIRST to further inspire others and to start and mentor teams in their local areas, such as 5419 and 4414. Nicolas Machado '18 works on WPILib, the programming library used by all FRC Teams. Not too far down the road, another alumnus, Jon Logrippo '18 used his Friarbot skills to start a company as a college freshman. The bonds formed during the FIRST experience on Team 3309 continue in relationships that benefit both students and alumni perpetually.

Friarbot graduates also form relationships with their employers on behalf of FIRST. Vision Miner, an additive manufacturing firm, became a sponsor through the efforts of 2018 Friarbots alumni. During Build Season, Team 3309 receives free printing time from Vision Miner to manufacture durable robot components. Vision Miner also created an internship program with the Friarbots, comprised of two parts. First, The Vision Miner co-founder, Rob Lent, holds Skype calls with students to educate them about the 3D Printing industry. Second, he gives priority to Friarbots when evaluating applications for jobs or internships. This program has led to 6 Friarbot Alumni interning at the company and eventually becoming full-time employees.

Furthermore, Friarbots alumni encouraged Vision Miner to come to Beach Blitz and see the program where their new employees gained all of these critical skills. Vision Miner used their 3D Printing capabilities to offer parts for all participating teams. This was an example of direct influence by Team 3309 alumni in encouraging a sponsor to support the local FIRST community.

The significant growth of Team 3309 over the last ten years could not have happened without the many sponsors, mentors, alumni, and support of member schools. These make up the growing Friarbots family which has empowered the Friarbots to create and expand outreach that will fuel future generations of engineers to follow their dreams. From Anaheim to Orange County, to Southern California, and beyond, the Friarbots are committed to expanding on a decade of growing momentum; to ignite enthusiasm for STEM in all young people with a dream of building a better tomorrow.