

Chairman's Award - Team 589

[Print](#)[Close](#)**2019 - Team 589****Team Number****589****Team Name, Corporate/University Sponsors**

NASA/Jet Propulsion Laboratory/Walt Disney Imagineering/Meggitt/J's Maintenance/Mechanical Concepts&Crescenta Valley High

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

Our membership has doubled since 2014, allowing us to inspire even more people. As well as providing a safe, welcoming environment for establishing new friendships, we help students develop communication, engineering, and networking skills. We often invite speakers from multiple organizations to talk to us about their careers and opportunities for high school students. Alumni have gone on to careers in industry-leading STEM organizations such as Microsoft, NASA/JPL, and DreamWorks.

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

Since 2011, the relationship between 589 and our community has flourished, allowing us to foster a significant rise in awareness of STEM. We have had 220 team members mentor 1,032 kids on 127 FLL and after-school robotics teams, 46 of which were Girl Scout teams. We seek novel opportunities to engage potential partners and sponsors, and participate in five to six community events per month. Last summer, our team members created a week-long programming camp for kids at our local county library.

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

589 employs a face-to-face, personalized approach to spreading the FIRST message. In our 68 outreach events last year, we interacted with community members one-on-one. We have become familiar faces in our community, having our robot deliver roses to our Homecoming Court, walking for 24 hours (with our robot) at a local Relay for Life, hosting a booth at science and Maker Faires events, and more. The community relationships we establish enable us to spread FIRST ideals and inspire others.

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

On 589, veteran team members grow into their roles as subsystem leads. We foster a culture of mutual respect, collegiality, and leading by example. The veterans of our team help teach and encourage the novice members to learn all sorts of skills, from programming to welding. When we have troubles, our teammates are there to help and support us. More importantly, the newer members become part of the 589 family, as well as gain a passion for engineering and FIRST.

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

In 2016, a Swiss exchange student, Christian, joined our FRC team. He was so inspired by his experience with us that when he returned home, he convinced his school administration to support him in starting the first FRC team in Switzerland: FRC 6417, The Fridolins. 589 and 6417 have networked via email and Skype. Our teams compete in the same regional, with 589 families hosting Fridolin students for the two weeks before. At competitions, we share tools, supplies, and our mutual passion for STEM.

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

There is simply not enough gender diversity in engineering and technical fields. We recognize this problem, and we want to fix it. Eight years ago, we began a partnership with Girl Scouts of Greater Los Angeles to create all-girl FLL and FLL Jr. teams in order to provide opportunities for young women to become engaged, impassioned, and inspired in STEM. Today, it is our largest mentoring program, with 308 girls inspired. Through Girl Scouts FLL, we have encouraged more girls to explore STEM.

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

589 members work directly with youth in our community by mentoring FLL/FLL Jr. teams. 589's FLL program started in 2011 with 2 teams and 6 high schoolers, growing in size and scope each year. This year, 38 high school mentors worked with 12 teams at 5 school and community sites. Many alumni of FLL teams become mentors, so profoundly impacted by their experiences that they want to give others the same inspiration they received, thus ensuring the survival of our program for years to come.

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)

This year, we opened our workspace to FRC 5089 when they were locked out of their shop due to the LAUSD strike and aided them with their build season efforts. Additionally, 589 alumna Heather began mentoring rookie FRC team 7468. We have established a friendship with them by sending them a good luck package and sharing driver strategies. 589 also partners with FRC 2429 by sending our team members to serve as judges and referees at their FLL tournaments.

Describe your Corporate/University Sponsors

Our new sponsors, Mechanical Concepts, Meggitt Control Systems, and J's Maintenance, inspire us with their achievements in cutting-edge STEM technologies, and provide us with critical resources to help our program thrive. 589's legacy sponsors, NASA/JPL and Walt Disney Imagineering, supply critical grants to cover our registration in two regional tournaments. The most invaluable resources our sponsors provide are the outstanding engineering and technical professionals who serve as mentors.

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 celebrate our long-lasting partnerships with our sponsors by taking annual field trips, visiting their technical shops to showcase our robot, share the mission of FIRST, and learn about professional opportunities in STEM. Most importantly, when we visit them, we thank them for their generous support of our team. We also invite members of their technical teams to speak about their research and careers to both our team and our FLL teams.

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

FIRST teaches valuable skills and inspires young minds to think creatively, be trailblazers, and become immersed in science and technology. FIRST fosters innovation, problem solving, teamwork, and collaboration in all aspects of the engineering process. It provides participants with hands-on opportunities to experience the practical applications of STEM to solve real-world problems. FIRST programs build confidence, character, and a drive to succeed.

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

589 is inclusive. We believe inspiration is found when we keep our doors open, without limits of required attendance or mandated level of contribution. We give everyone the same opportunities. We are a richer team because of our size, diversity of thought, and varied levels of experience. Inspiration comes in many forms, and we firmly believe that everyone who comes through our doors will change our team in the same way we believe our team will change them.

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

Sanaya Bhadha

Essay

What do you remember from 589?

"The sense of community, the feeling of belonging to something bigger, the rush of competition, the shared emotion of the team, the drive to continuously get better." Justin Park, 2013-2016.

On 589, we don't just build good robots—we build good people. We provide members with important skills for competition, but we also provide them with the skills needed to succeed beyond their time on the team. Now, in our 19th year, 990 students have come through our doors.

"Having people to look up to and people I have aspired to be like has given me so many skills, not only technical but also interpersonal and lifelong skills." Sam Linkhorst, 2014-2017.

Although our members must eventually leave through those same doors, they are always welcome back. Our team is guided by 17 senior mentors, including 7 alumni from companies such as JPL and Dreamworks; these mentors volunteer to develop our engineering and technical skills. In addition, we have 6 recent graduates we call Mentors-in-Training. No amount of theory can compare to having real-world, hands-on expertise. Mentors offer advice and guidance, but also empower students to develop their leadership skills by teaching their peers.

We have team members from 5 schools, and our open door policy allows anyone to join our team, regardless of experience level or commitments beyond robotics. At any given meeting, a large portion of the team can be found working tirelessly in the shop—a testament to our passion. We accept members throughout the season and welcome everyone, from actors and athletes to students from schools 20 miles away, no matter their schedule. As a result, students come and learn when they are able, allowing us to reach students who otherwise might never hold a soldering iron or write a single line of code. The more passionate a student is, the more often they attend, and the larger their role on the team will be. We also allow students to choose their own path and pursue their interests through a diverse array of subsystems, ranging from pneumatics and fabrication to business and visual strategy. We even have a subsystem dedicated to coding a video game for our pit. Everyone, whether welder, artist, CAD-er, or coder, has a place on 589.

"I've seen all of the kids that were on FLL teams become leaders in the community themselves. The amount of kids that have had their minds jump-started by 589 is staggering." Tanner Bloks, 2012-2013.

Members of the team take what they learn and use it to teach younger students in the community. In 2011, 6 team members founded our FLL program starting two teams, one at a nearby elementary school and the other with a local Girl Scout troop. Since then, we have reached 127 teams and mentored 1,032 students. Eight years later, about 61% of our students have joined 589 after being mentored by older members. 49% of these legacy students give back by mentoring FLL and after-school robotics teams because their time in the program was so formative that they want to pass that experience on. This year, 38 high schoolers have stepped up as mentors, 14 of whom are new. We mentored 12 teams at five school and community sites, 4 of which were Girl Scout teams. Although women are currently underrepresented in STEM, seeing nearly all girls in the GS FLL program leave with a new passion for the field gives us hope that this will change.

"I have become more confident in myself... before I was on the team I was terrified to talk... and now I talk to strangers like they were friends." Angela Snyder, 2014-2017.

589 emboldens its members to do things they never would have dreamed of doing. Many alumni fondly recall learning how to work as a team or discovering a new field that turned into a career. In the past two years, current team members have utilized the skills they learned on 589 to pursue their own external projects.

Alyssa and Ricky started two after-school classes to teach middle schoolers how to code. Alyssa credits 589 for giving her the skills necessary to educate others and Ricky says he was motivated to share the sense of discovery he felt when he joined the team.

Ally, inspired by her time on 589, founded an after-school astronomy club at her former elementary school.

Shyla earned her Girl Scout Gold Award by founding a local library program called WeDo to introduce younger kids to robotics.

Rohin used his experience from our electronics subsystem to develop a sensor system and web-based platform for 5 villages in India. His system electronically monitors water flow and sends texts to subscribers, notifying them when they have access to clean water.

We provide support and encourage students to pursue their own engineering projects in order for them to become fully-fledged engineers.

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"I was kinda into science and engineering before I joined the team, but once I joined, I fell in love with everything."
Thomas Peev, 2009-2010.

Of course, an important aspect of our members' growth is learning about STEM in the real world. In addition to learning from our mentors, we hold weekly lunch meetings in which invited speakers inspire us through their professions and projects. Speakers include employees of Walt Disney Imagineering, Synopsys, WET, and JPL, and topics range from Mars rovers to alternative energy. Additionally, we take field trips to our sponsors' facilities in order to get an in-depth understanding of what goes on in a STEM workplace. This allows us to cultivate a better relationship with our sponsors and show them the results of their help.

Our most localized impact has been on our school. We've gone from being just "the nerdy robot kids" to being central participants in school functions. At every Club Expo, Back to School Night, and events like LGBTQ+ Ally Week, we show our support and spread awareness of our club by driving our robot and speaking with classmates. 589's integration into school life is evident through our participation in the homecoming parade and assembly. We were even invited to have the robot deliver the valedictorian plaque at Graduation. We have taken on the role of sharing our STEM knowledge and passion with our school through facilitating the JPL Invention Challenge Club and Welding Club.

"589 uses its 18 years of experience to help other teams, from assisting with programming to providing a home" Bryan Ghoslin, 2010-2013.

589's impact spreads to other FRC teams. This year, FRC 5089 was locked out of their shop due to the LAUSD strike. We reached out and opened ours to them through the week-long strike, helping them weld their chassis, write pneumatics code, and assemble their electronics board. We shared tools and ideas, enjoyed meals, and even played games together. Through this collaboration, we were able to turn a difficult situation into a new friendship and have invited them back to practice on our field.

We also co-host the annual Bag and Tag Scrimmage with FRC 2429 where we share our build season efforts, play dodgeball, and have dinner together. Additionally, we cooperate on outreach, driving our robots together in the Christmas Parade and volunteering at FLL tournaments hosted by 2429.

However, our friendships with other teams aren't limited to Los Angeles. In 2016, a Swiss foreign exchange student, Christian, joined 589. He was so inspired that when he returned to Switzerland, he founded FRC 6417, The Fridolins, the first FRC team in Switzerland. Since then, we've continued working with 6417 as our "Swiss"-ter team. We discuss code and design over Skype, and during the competition season, 589 families host Fridolin students, treating them like family. For three seasons, we have attended the same regionals, shared hotel rooms and meals, and placed our pits next to each other so we can collaborate easily. Whether our FRC friends are across the world or in our own backyard, we work together on robots and outreach to further the impact of STEM.

"589 engages with the world around them. Whether it be through mentoring neighboring schools and Girl Scouts, or running food drives, or even engaging with other teams, they really impact their community." Samuel Kim, 2014-2017.

589 is also well known within our community for outreach and service; through volunteering, we spread awareness of STEM and FIRST. 589 can be found setting up chairs, manning checkpoints, and cleaning up trash at the Fourth of July celebration, Montrose Movie Nights, and the Hometown County Fair. We serve as guest speakers at Kiwanis, Delta Kappa Gamma, and LA breakfast club events. We share information about STEM by hosting booths at Entrepreneurs of Tomorrow, Glendale Public Library events, and local science fairs. 589 has grown to be recognized as a volunteer force. It is amazing that when our community needs help, they think to call a robotics team.

589 is far more than just robots—it is an integral part of the community. When we started in 2001, with just two mentors and 13 students, we were scouring for robot parts and building in a janitor's closet. Since then, our team of 83 students guided by 17 mentors has expanded to our school's machine shop, laden with CIMs and actuators, welding tools, and prior years' robots. More so, 589 has expanded our role in the community with outreach and service. 589 started off educating students in our high school, but over time our influence has proliferated through our community and across the globe. Our immense alumni network includes members who use the skills they acquired on 589 to continuously inspire change. Our passion for promoting STEM is what brings out the best in all of us. We are not solely motivated by creating winning robots, but by the community that we create.

What do you remember from 589?

"Almost every person I have talked to on 589 describes it as a family. 589 brings people together and inspires the community with their passion for engineering and getting people involved." Kiran Hamkins, 2015-2018.

This is us. This is 589.