

## Chairman's Award - Team 399

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2019 - Team 399

### Team Number

399

### Team Name, Corporate/University Sponsors

NASA/NASA Armstrong Flight Research Center/Department of Defense/U.S. Air Force/Antelope Valley Fair Association/Lancaster West Rotary/Antelope Valley Union High School District/AndyMark/ITEA (International Test and Evaluation Association)&Lancaster 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

Internships, transferable skills, and college opportunities are all factors that shape a student's future. Team 399 members have gone on to attend institutions like Univ. of Michigan, Kettering, and Rensselaer, and have interned with NASA and Lockheed. Because of FIRST, our students developed the skills of managing finance, engineering, designing graphics, public speaking, and more. Students have become volunteers with FIRST, and held positions of influence in both industry and the military.

### 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

Team 399 gives back to our community and shows that FIRST is "more than robots." Through efforts like 399 pounds, we donate winter gear and canned food items. Through our Happy Healthy Robotics initiative, we supply toiletries to homeless veterans. And through Laps for Literacy and Robot Read Aloud, we promote reading. With initiatives such as "Bots for Tots" and Special Education outreach, we are serving our community and bringing FIRST to new audiences.

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

Through Robotics Roadshow, we spread the FIRST message by putting FRC driving in the hands of the public. We make this message easy to replicate by providing other teams with PurplePrint (budgets, CADs, and instructions on how to start their own Roadshow). We also spread FIRST through promotion in both traditional media (newspaper, national TV shows) and social media. With YouTube, Facebook, Twitter, and other platforms, we regularly reach our thousands of followers with the FIRST message.

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

Last season, our team ran a Chairman's Exchange at the Aerospace Valley Regional, where teams were able to practice and receive feedback prior to their actual presentation. This has since helped inspire other FRC teams, such as Team 3390 to do the same and run their own exchanges. First started by the CocoNuts (2486), our Chairman's Exchange inspired others to excel as well. We also frequently host other teams (FRC, FTC, and FLL) in our shop to share best practices, and help train others.

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

After helping a former team member start FRC 7260 in Arkansas last year, we have collaborated with our local school district in California to form a robotics coalition with all local high schools. This new alliance is known as the A.V. District Coalition of Robotics Educators (C.O.R.E). This year alone we have helped start 2 FRC teams: 7437, and 7607. We are also mentoring and collaborating with the preexisting teams within our school district, making our coalition 6 FRC and 2 FTC teams strong.

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

With FIRST-based events like Eaglets and FIRST 4 Girls, we inspire others to begin their FIRST journey. We help start new teams by sponsoring others or finding sponsors. We sponsored a lego kit for a new FLL team at a local tutoring center. We also wrote a STEM Equity grant for all schools in our district, which would help fund two FTC teams in our area. By creating a coalition of local FIRST educators, we are ensuring new teams will have a network of support.

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

Since 2006, we have hosted and run the High Desert Lego Tournament, a practice FLL tournament for local teams. Team 399 also runs a qualifying tournament called the Antelope Valley Techno Classic. Furthermore, we have sponsored FLL kits for kids in Spain and locally as well. Reaching out to students in Japan, we discussed FTC principles and the differences of robotics in our countries. Our CORE alliance houses 2 FTC teams which we help support.

**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)**

Team 399: Eagle Robotics has mentored FLL teams at Amargosa Creek Middle School, as well as providing a regular network of support for FLL teams in our area through two tournaments we run: High Desert Lego, and the AV Techno Classic. We also help support newer or lesser experienced teams in our area: FTC 5011 and 13144. Additionally, we helped our school district hire paid Robotics Tutors this year, in order to mentor the development of newer teams' skills.

**Describe your Corporate/University Sponsors**

Sponsors of Team 399 include organizations that range from local businesses to large companies. Being in an Aerospace Valley has helped us receive sponsorships from NASA, Northrop Grumman, Lockheed Martin, and the Air Force. We also receive support from small shops on our city boulevard, and larger organizations such as Walmart and College of the Canyons. We are proud that our sponsors come from different industries that recognize the importance of STEM and trust us to spread that message.

**Describe the strength of your partnership with your sponsors with special emphasis on the 2018/2019 year and the preceding two to five years**

The relationships we've sustained with our sponsors in the past five years have been incredibly helpful towards advancing our work. In return for all they do, we go to events such as the Poppy Festival and we've also brought Robotics Roadshow to NASA's Family Day. Working closely with the Antelope Valley Fair Association, our team members relieve the vendors every year at the AV Fair. We're also sure to send our sponsors newsletters, and recognize them on our team shirts and at public events.

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

FIRST ("For Inspiration and Recognition of Science and Technology") is a program that introduces people of all ages to robotics. Whether it be as a mentor, coach, volunteer, or team member, all are involved in teams that compete at various levels in robotics competitions. Through four different leagues, students ages K-12 are challenged to work together to solve problems and learn 21st century skills including computer science and robotics. FIRST inspires students to learn about STEM.

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

Team 399 is intentional about ensuring that our representatives know who we are and understand the importance of FIRST to us. We recently hosted California State Senator Scott Wilk in our shop, and have reached out to U.S. House Representatives Katie Hill and Kevin McCarthy (our local representatives) to urge them to co-sponsor H.R. 500, a bill to honor astronaut and teacher Christa McAuliffe. We recognize the importance of advocating for STEM and FIRST, and will continue to do so.

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

Eric Castillo

## Essay

### Growing from Strength

Team 399 has devoted 20 years to helping advance FIRST in exciting ways. While we are deeply rooted in the FIRST community, we are branching out to reach new students and communities with our enthusiasm for science and technology.

### Helping FIRST Grow

We are currently changing the culture of our local community and beyond by spreading an awareness of FIRST and helping to establish new FLL, FTC, and FRC Teams. Last year, we helped start an FLL team at Innovation Education, a local tutoring center. This year, we regularly assist Gregg Anderson STEM Academy, home to two new FLL teams. And due to the success of our robotics club, our school district now offers robotics classes at two local high schools, introducing students across our valley to FIRST. With help from a Team 399 alumnus, we even assisted in starting FRC team 7260 in Arkansas.

### Strengthening our CORE

This school year and last, we began branching out in a huge way by establishing the Antelope Valley Union High School District Coalition of Robotics Educators (what we call the "CORE"). In the Spring of 2018, two of Team 399 student leaders petitioned our school district leadership and presented about FIRST to all local high school principals. Through these efforts, we secured tens of thousands of dollars for local teams, and created a network of both experienced and new FIRST teachers and administrators. The CORE consists of Team 399, two experienced teams we assist (FTC 5011 and FRC 5869), two new teams we assist (FTC 13144 and FRC 7453), one experienced team we mentor (FRC 2339), and two brand new teams we started just this season (FRC 7437 and 7607). By helping to secure funding, providing an open shop, helping to manufacture parts, providing lessons on team structure, and assisting in brand creation, we are working to ensure these FIRST teams thrive. Additionally, we hosted the first ever CORE Kickoff. Together, we watched the 2019 game reveal, discussed design and strategy, and helped create a schedule for a busy build season.

To ensure these teams also develop strong roots, Team 399 wrote a STEM Equity Grant that would benefit all teams in the Coalition. We are proud that we serve students in high poverty areas and seek to ensure equity for underserved and underrepresented groups. We even facilitated the hiring of paid Robotics Tutors to serve all active teams in our district. All tutors are alumni of Team 399, a testament to the lasting impact we have in the lives of individual students and the programs they go on to influence.

### Hitting the Road

Beyond the schools in our district, we are reaching out to the general public with our latest project - Robotics Roadshow. For Robotics Roadshow, we designed and built an easily transportable field and a small FRC-style robot. We take FIRST on the road to places such as our local fair and baseball stadium, and give the public an interactive experience of what it's like behind the glass of an FRC match. As people drive the robot through an obstacle course and earn their "driver's license," they learn about FIRST in a hands-on way. We debuted Robotics Roadshow this past summer and have already attracted hundreds of new drivers. We even drew the attention of the Air Force Rocket Lab, and were encouraged to apply for the US Air Force Enspire Grant. Since learning that we won this grant, we have made plans to add more robots and obstacles, and even expand Robotics Roadshow to other teams through what we call "PurplePrint." This initiative will help FIRST teams create their own Robotics Roadshow, and provide them with CAD, sample code, a budget, and instructions on how to build and assemble the field.

### Representing FIRST in the Media

We are also putting FIRST in the forefront of our culture by ensuring coverage in news, television, and social media. While we have long held a presence in our local paper, we hosted Spanish language television show "Acceso Total" in our shop for the first time ever this past summer. Through this outlet, we introduced the viewers of Telemundo across the country to FIRST. One of our alumni then went on to audition and receive a spot on The Science Channel's "MythBusters Jr.!" Again, this national coverage for youth in STEM validates our efforts. Locally, we make frequent appearances in our community paper, covering events such as our Summer Robotics Workshops and our Robot Rollout.

Aside from the news media, our social media outlets have had a large impact. Platforms include Instagram, Facebook, Snapchat, and Twitter, where we update our world of FIRST supporters and attract several thousand followers. Our YouTube channel has garnered the most attention, receiving a total of 105,000 views across build season updates and robot reveals, as well as event and regional recaps.

### Garnering Support

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Our effort to raise the profile of FIRST and make STEM a top priority is paying off. Newly elected Katie Hill (CA-25) expresses her enthusiasm and support for our team's initiatives, as she is now serving on the Science, Space, and Technology Committee in the House of Representatives. She has assured us that her legislative team will explore her possible co-sponsorship of H.R. 500, to honor Christa McAuliffe and benefit FIRST.

### Bringing FIRST Together

Our team also strives to unite the existing FIRST community. We created RoboProm in 2007 for students who were missing prom at home while attending Championships. It has evolved to much more over the years, bringing together teams from all over the world in a fun and festive atmosphere. Through RoboProm, we have awarded thousands of dollars in scholarships to FIRST students. And last year, RoboProm Houston was even covered on FIRST's official Twitch channel. We see RoboProm as our way of helping to bring the FIRST community together, and contribute to the ideal that FIRST is "more than robots."

Another way we bring FIRST together is through several FLL tournaments. Every year, we host and run the High Desert Lego Tournament (HDLT), a practice FLL competition for FLL teams all over our valley. Through HDLT, we sharpen the skills of experienced teams and attract and train new teams. Local FLL teams then go on to compete in the Antelope Valley Techno Classic (AVTC) qualifying tournament, which we also run at a nearby middle school.

### Broadening Audiences

In 2017, we made it our goal to revamp our outreach efforts and intentionally head in a new direction. As a result of this focus, we have reached out to new audiences over the last several years, reaching more people with FIRST than ever before. In addition to our established practice of setting up at large local events like the Poppy Festival, Salute to Youth, and the LA County Airshow, we expanded initiatives such as FIRST 4 Girls. Through FIRST 4 Girls, we demonstrate to young women all aspects of being on a FIRST team and show them glimpses of their future in STEM.

We also started our Foster Youth outreach, inspiring new audiences to believe in themselves and the impact FIRST can have on their lives. With our new STEM for Special Education series, we teach students basic computer skills. And our "Bots for Tots" initiative allows toddlers to interact with our robots and prepare for their future in FIRST. We believe that attracting audiences from various backgrounds and ages to FIRST will give more and more people a chance to succeed in STEM.

### Growing FIRST Through Sustained Events

Additionally, we attract local youth to FIRST through our sustained events. At both our Eggstronaut and Bottle Rocket workshops, we go through each step of the design process (teaching students the importance of planning), and then walk students through the fun of testing their creations. To celebrate the use of media technology and graphic design, we provide Mastering Media. Here we teach elementary and middle school students how we use technology to create a public image, from videos for the Chairman's Award to brochures to give to the general public. At our monthly Robot Read Aloud, we emphasize the importance of literacy to young children. By passing these skills down, we are showing children what it means to be on a FIRST team.

### Reaching Across the World

And to branch out to others across the globe, we've leveraged our connections with our alumni and others who can help us spread the message of FIRST. By skyping with students in Japan, we introduced them to FTC principles and exchanged cultural stories about robotics in our countries. We made another international exchange when we sponsored an FLL kit for a class in Spain, introducing a rural community to robotics for the first time. Due to the success of our CocomNuts (2496) inspired Chairman's Exchange at the inaugural Aerospace Valley Regional, we've begun assisting Turkish Team 3390 to coordinate their own Exchange at the San Francisco Regional. Mexican Team 6666 Regibots also reached out to us for support with team structure and tool instruction. Sustaining these international relationships is vital for us to understand different cultures, and advance the FIRST mission around the world.

### Creating Equity

We believe that this focus on new audiences and global citizenship is showing in our team demographics as well. This year, our team is the most ethnically diverse it's been since its establishment in 1999. And we are proud to say that this year's large influx of rookies includes many young women interested in advancing their involvement in FIRST and future STEM-related careers. We are committed to equity, and to practices that appeal to diverse audiences.

### Creating the Future

Team 399 is changing the culture of our valley and beyond. By starting new teams, supporting teams, creating new fund streams for robotics in our area, creating strategic relationships with our representatives, and sustaining strong outreach both in our community and abroad, we are expanding the impact of FIRST and elevating the role of STEM in our society.