

Chairman's Award - Team 2403

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2019 - Team 2403

Team Number

2403

Team Name, Corporate/University Sponsors

General Dynamics/The Boeing Company/Bluemedia/Hunter Contracting/SolidWorks & Family/Community

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

Currently, our teammates are able to take skills they learn in school and refine them with real world design and build experience. Most develop a passion for STEM while a part of Plasma and choose technical degrees in college. 100% of our graduates in the last 5 years have gone to college or into the military and together have received over a million dollars in scholarships. Our alumni have gone on to run robotics companies, work as rocket scientists, and even inspire as a Disney Imagineer.

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

Outreach and volunteer activities have allowed Plasma to impact our community in a positive way. From building a robot to teach the dangers of tobacco use, to packing food for hungry children around the world, to being non-aggressive role models for kids at the Child Crisis Center, we have worked hard to make a difference. Besides helping people, we try to inspire disadvantaged youth to learn about their potential in STEM fields by going to outreach events in areas with less opportunities.

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

Plasma's goal is to spark interest in *FIRST* wherever we go. We decorate our robots in costumes to get more attention and find ways to make our outreach interactive. We started a program, Catapult Into STEM, where we send engineering kits to underprivileged students and have partnered with a team from Mexico to expand and sustain the program internationally. We have been on 4 Arizona TV stations spreading knowledge of *FIRST* and we have a large social media presence that we use to share our ideas.

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

Spreading kindness in the *FIRST* community is important to Plasma. After hurricanes in Texas and Florida, we wrote letters to over 50 teams, offering support during this hard time. At competitions, Plasma helps teams in need get their robots ready to compete. Plasma made a kindness board to lighten spirits and encouraged others to participate. At AZ West, we co-hosted a "Woman in STEM" event where women voiced their experiences and helped create a local network of FRC girls.

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

Plasma has had the opportunity to help start several teams. In 2014, we helped team 2478, Westwood Robotics, restart by donating supplies and tools. In 2015, we helped team 4565, Skyline Robotics, start by giving them a workspace, a sponsor, tools, and advice. In 2017, we helped start team 6372, Chi-Squared Robotics, by helping recruit members, providing a drive train kit, inviting them to our build space to build their robot and answering any questions they had about running an FRC team.

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

One of the benefits of the engineering pipeline that Plasma works to advance is that we have a wide base of students to expose to FIRST programs. At the schools we work with, we provide information and help support their teams. We provide driver's licenses to kids that drive our robots with information on the back about the different programs. Recently, we've even been able to provide information to a school in Washington so they could get funding to start 3 FLL Jr. and 1 FLL team next season.

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

Over the years, we've learned that kids who compete in other FIRST programs make great future Plasma members. We use our robots to gain exposure and introduce our members to younger teams to inspire them to continue progressing. We invite older FLL members to come try out FRC on weekends. We hold summer camps, practice sessions in our build rooms, and run scrimmages and competitions at all 3 levels. Once we spark interest, we try to assist teams so they may continue to enjoy their experience.

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)

Helping teams is a part of everything we do. When we build game pieces to practice with, we build extra to give to other teams. We bring younger teams into our buildroom to work alongside us and then assist them when needed. We go to several schools to help assist their FLL teams. We present workshops at FLL and FRC kickoffs. For 7 years, we've run and hosted an FLL regional and we volunteer at the State competition. We also help expose kids to FLL and FLL Jr through summer camps and programs.

Describe your Corporate/University Sponsors

For many years, we have enjoyed working with several large sponsors, including Boeing, Bluemedia, General Dynamics, Hunter Contracting, and our Booster club, Parents of Plasma. Sponsors support us with money, mentors, materials, outreach opportunities, and offer summer internships. We have many smaller sponsors that provide services and food during build season. This year we worked to partner with a new university, Mesa Community College, and are looking forward to expanding our relationship.

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 have a strong relationship with our sponsors and often invite them to our service and fitness events. Bluemedia gives our team parts and provides many of our signs. The Diamondbacks invite us to their Science of Baseball night and have even showcased our robot on their giant screen during the game. We've supported General Dynamics, by attending their "Bring Your Child to Work Day." One of our Sponsors, Hunter Contracting, partnered with Plasma to provide summer internships to our Alumni.

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

FIRST is a program where you can build robots, yes, but it's not just robotics. It's also volunteering, serving, teaching kids about STEM, and creating bonds with people and mentors that will last a lifetime. Through FIRST, we are able to build relationships, to further expand our knowledge, and to gain real world experience. This will help us in not only high school, but also in college and beyond. It will give us something to build upon that we definitely won't forget.

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

Helping teams make connections is something that Plasma has spent a lot of effort on. We encourage networking among Arizona teams by planning and advertising events such as Robo-homecoming, our annual Ultimate Barbecue, and movie nights. We also invite teams to our fitness and service activities. One of our biggest projects over the past 3 years has been expanding the FRC discord server so more teams can have their members connect and build relationships with other teams from all over the world.

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

Paige Lottman

Essay

Captain's Log, Stardate 2403.12

Today is our 4,397 day in FIRST space. We have accomplished a great deal since the start of our mission 12 years ago. We've taken our fledgling crew of 7 and developed it into an experienced fleet of 45 dynamic members. Together we learn, build, serve, and continue the charge issued to us by command: To Boldly Go Where No Team Has Gone Before.

To improve conditions in FIRST space, we have worked hard to help our community. Five years ago, STAND, an anti-tobacco awareness organization, asked us to design, build, and program a robot to spread an anti-tobacco message. Once the robot was built, we toured with STAND around Arizona. We then gave other teams a chance to be a part of this event and wrote a maintenance manual and user instructions for other teams to follow as the robot continued to travel.

Expanding upon our outreach program, we also participate in monthly and daily service through our Plasma Forward program. We encourage our members to constantly look for ways to help. One way we emphasized the ease of simple service is through a "dollar challenge," where we gave everyone a dollar and asked them to help someone. In December, we fulfilled 17 acts of service as a team in appreciation for people who donated to us on #givingtuesday. We thanked teachers, ate with new people, and opened doors, among other things. Though these acts were minor, they taught that anyone make a positive contribution to those around them. Besides personal acts of service, we also participate in monthly team service projects. We've served at United Food Bank, Feed My Starving Children, and the Child Crisis Center. We've also collected school supplies, clothes for children in the Philippines, and written letters to the military.

We continue to look for new life forms as we charge forward through space and have made FIRST contact with many new teams the last 5 years. We supplied Westwood, Skyline and Chi-Squared Robotics with assistance and sent them on their own journeys. We have also reached out intergalactically. When German exchange students visited our school, we showed them around our build space and were able to light a FIRST spark. After returning to Germany, they contacted us to help them start their own team. We also work to expand our Federation of Teams by extending our reach to younger students. Over the last 5 years, we have mentored more than 20 FLL teams on their own voyages. We have also hosted and run an FLL regional for the last 7 years. Our members volunteered at other FLL regionals and the State Tournament. We collaborate with ASU Engineering Outreach to provide assistance when needed. We've run FIRST booths at ASU events and we present a workshop at FLL kickoff each fall.

For the last 5 years we've invited teams from all over the galaxy to come to our "Ultimate Barbeque." This event allows the 15 teams who have attended to socialize while we play Ultimate Frisbee and eat. We've even had teams as far away as the California galaxy attend. Later in the season, we use these contacts to collaborate and provide assistance. For example, last week we were able to donate a practice habitat game piece to Degrees of Freedom, fleet# 6413. We continue networking throughout the year with events like "Halloween Haunt" where we encourage teams to surprise other teams with treats. We invite other teams to help us with service projects, such as our operation gratitude candy drive. This year we've instituted a new program, FIRST Fridays. We plan something FIRST related the first Friday of each month. We've watched a space movie in the park, built FLL kits for tournaments, and attended FRC workshops.

Out in FIRST space, we've learned to value fitness. We find that a healthy body promotes a healthy mind. Fitness can become repetitive so we find creative ways to expose our members to exercise through our #FIRSTgetsFit program. Some of the activities we have done include ultimate frisbee, aerial yoga, basketball, Zumba, soccer, kayaking, hiking, and goat yoga. We also like to bring our robot to participate in local races by passing out water and encouraging participants. We've been to the Mesa Turkey Trot, run4K, and Holiday Jingle Run. In 2016, we even organized our own fun run with over 100 attendees. Always looking for ways to inspire others, we bring fitness to competitions by hosting ultimate frisbee during lunch and invite other teams to some of our Saturday fitness events.

We love to spread the idea of FIRST and STEM to unique places and audiences through many outreach events and activities. This year alone, we've been involved in more than 40 activities in places that range from the Phoenix Zoo to local school STEM fairs and homecoming events. We turned one of our robots into Pikachu and took it to the park to hand out water to Pokemon players out in the summer heat. We look for ways to help our local school in plays and concerts. We have had robots perform in dance concerts and built robot props every year, such as a robotic bird for Mary Poppins, a robot dog, a hamster, and a Pinocchio nose that grew. One of our favorite places to take our robots is to the Arizona Diamondbacks Science of Baseball Night. For the last 4 years, we've educated and entertained students and attendees with our interactive robot exhibits. We've been featured on the jumbotron and in their promotional videos. We work to extend our reach even further, to people who wouldn't usually be interested in STEM.

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Not only do we look for unique outreach, but we work hard to make our robots interactive and entertaining for people. For the last 4 years, we've dressed up our robots to help them stand out and spark interest. Over the years our robot has ranged from a reindeer to a ghost to a dinosaur and everything in between. We participate in many of the Phoenix Zoo's themed nights such as the event, "Dinos After Dark", where we caught the attention of the Arizona Museum of Natural History. We were then invited to participate in "I Love Science" day. Along with dressing up our robots, we give people the opportunity to learn about STEM in a hands on way. In our eye catching display, we have a target for people to shoot frisbees into, and we use our robots to pass out items and play fetch with kids. After people have visited our booth, we give them a robot driver's license with information on the back about all 4 levels of FIRST. Through these efforts, we hope to provide a more lasting experience.

Creating an engineering pipeline for students interested in STEM has been a major objective of Plasma. We have started and mentored Junior FLL, FLL, FTC, and FRC teams and hope to expand our connections in the future. We encourage students to progress through FIRST and prove that anyone can participate in STEM at any age. We are working to spread STEM to underprivileged kids in our community and across the world. To accomplish this, we have started an initiative called "Catapult Into STEM." Through this program, we send low-cost engineering kits with lesson plans to underprivileged schools, making it easy for teachers with little STEM experience to teach about engineering. We also spread FIRST through summer camps for elementary and Jr. high students. Through creative STEM activities we encourage participation in FIRST. We bring our robots to underprivileged areas like South Phoenix in hopes of lighting a spark of inspiration. We hope to allow all kids the chance to discover a passion for STEM.

Our mission for the future is to further expand connections with other FIRST fleets. Soon after Championships in 2016, we helped develop the FRC Discord Server and have since continued to work on its positive influence. Our members have served as Administrators, Moderators, and active participants, helping expand the original 100 participants into a thriving and inspiring community of 7000+. Through Discord, all are able to talk, share information and make long lasting partnerships throughout the world. These friendships extend out of the screen, with annual meetups at Championships allowing friends from Israel to Australia to finally meet in person. In the future, we hope the FRC Discord will continue to allow us and others to expand our communication, help each other, and develop friends for a lifetime.

Moving to a new starbase this year has magnified opportunities. We have been able to initiate many new FIRST contacts with sponsors, and some have grown into partnerships. One new sponsor, MC Engineering, was a contact we made from our new build room open house in October. Since then, we've partnered to learn more about CNC through their Titans of CNC program. They've offered their assistance in fabricating many of our Plasma designed parts, as well as, providing a summer internship to one of our members. Another FIRST contact that we made this year was the Red Mountain Mesa Community College. After we reached out to them, they were excited to partner with us to provide a location for our FLL Regional. We've since agreed to continue hosting our FLL events on their campus and developing more events that we can run. They have asked us to help present workshops at events they host for local middle schools which will help expand our engineering pipeline even further.

In just the last 5 years of this journey through space, we have spent more than 15,000 hours reaching out past the galaxy we call home, serving our community and exposing millions to STEM. We've been able to spark interest in the students we've worked with and have witnessed many become leaders of their own fleets. We have seen alumni graduate from college and become STEM professionals and mentors themselves. Service, teamwork, and fitness have become a permanent part of our daily lives. We've learned, worked, and gained valuable experience that we consistently apply in our lives as we continue to strive forward in our ultimate goal: to Live FIRST and Prosper.