

## Chairman's Award - Team 5816

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2020 - Team 5816

### Team Number

5816

### Team Name, Corporate/University Sponsors

The Maker Effect Foundation/OCPS Foundation/Duke Energy/Lockheed Martin/Comcast / NBC Universal/U.S. Open Karate Tournament at Coronado Springs Resort/Tropical Ford Orlando/Walt Disney World Resorts/State of Florida/Rockwell Collins/Gra-V Family and Friends/Walmart Community Grants&Orange Technical College

### Briefly describe the impact of the *FIRST* program on team participants within the last five years.

The FIRST program has provided the members of our team an education in STEM. Many of us don't have access to the equipment required for creating robots. It has allowed us to grow in STEM - offering us knowledge and experience that isn't usually provided in our schools. Being on a FIRST team provides students with those opportunities.

### Describe the impact of the *FIRST* program on your community within the last five years.

Through our community involvement, we have been able to attract new members through the Summer Robotics Institute (SRI) and Maker Faire. We have also participated in the US Department of State's Empowering Women Leaders in STEM Visit, where we get to interact with exceptional women from the international STEM community and explain to them the importance of FIRST in our community. This gives these women the chance to learn about how to implement FIRST into communities of their own.

### Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.

We spread FIRST through several outreach events such as I/ITSEC, Maker Faire, and Otronicon. However, our most creative outreach is by far working with AT Makers. Through our involvement in this organization, we have made many toys, hosted and presented at events, and one of our students has even partnered directly with a family through AT Makers, especially through our newest project Freedom Wing Adapter.

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

Gra-V members mentor our younger FIRST teams by modeling how we practice FIRST core values. We invite our younger teams to sit in on our planning meetings, ask questions about the teams, and show them how we work together. We also sit in on their practice award presentations and provide them feedback to prepare them for competitions. We have participated in various outreach events with our younger teams so they can see how we present to the attendees and give them an opportunity to do the same.

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

Gra-V has helped start multiple FRC teams over the last two years. We helped start teams 6527 Short SirKit and 7450 oTECH Aimbots. We were able to accomplish this by showcasing our helpful spirit through the team's annual off-season training and official Central Florida FRC Kickoff. The more events we attend and run, the more people learn about FIRST and are inspired by what we have done.

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

Gra-V strives to be inclusive, allowing any student with a desire to explore STEM into the build space. This led us to adopt FIRST LEGO League (FLL) team 7714 Battle Droids and FLL team 7715 Droid Deca in 2017. In 2018, Gra-V created a FIRST Technical Challenge (FTC) team, 14418 Constant Chaos. In 2019, Gra-V created another FTC team, 16733 Sprocket Scientists. Later that year, after the adopted FLL teams were retired, Gra-V created FLL team 44589 Crashing Cosmos and FLL team 44590 Eclipse.

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

We assist different FIRST teams in Central Florida by hosting different competitions such as FIRST Technical Challenge tournament, the Tesla Meet 3, and a FIRST LEGO League qualifier. We also provide the fields and have our team fill the volunteer positions for multiple events. We also host a FIRST LEGO League Coaches Conference to help new and old coaches connect with the local community.

**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)**

Some Gra-V members have joined our FIRST Technical Challenge (FTC) team 14418 Constant Chaos to mentor the members on that team. Using their experience from FRC, they are able to show these members how to build the robots and gain the experience to later pass on to younger kids. We mentor our younger teams along with teams outside of our organization. For example, we helped FTC Team PiEaters with their awards and provide many other teams with any advice they may need.

**Describe your Corporate/University Sponsors**

Gra-V has teamed up with companies such as Lockheed Martin, Olive Garden, Tijuana Flats, and Tropical Ford, creating lasting partnerships. These partners help support our team every year by donating anything they can. These donations are usually food, parts, materials, and money. Sometimes, these donations are not necessarily physical, they can also be internships and scholarships.

**Describe the strength of your partnership with your sponsors within the last five years.**

Gra-V has developed strong partnerships with Maker FX, Tropical Ford, and Lockheed Martin. These are three companies that have been supporting our team for several years, they provide constant support and have even attended some of our events to see us compete. Maker FX has invited us to present at several different events and are planning more events for us to attend during the 2019 build season. At the end of each season, we like to thank our partners by sending them personalized gifts.

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

FIRST is an international robotics organization that attempts to get students to recognize STEM education throughout different programs for grades K-12. FIRST helps students interested in STEM continue that passion into future careers. When involved with FIRST, students are given access to millions of dollars in scholarships for any college of their choice.

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

Gra-V is working to develop a FIRST In Florida License Plate. Students wrote a draft for the bill. All funds generated will be distributed to all levels of FIRST. The initiative is well on its way and will continue to develop in the coming months.

**For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.**

N/A

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

Daniela Perez

## Essay

A long time ago, in a city far, far away, five mentors joined forces to combat the socio-economic barriers that blocked the local youth. To light the way, these mentors created a FIRST Robotics Competition (FRC) Team called Gra-V Robotics in 2015. Their leadership transformed high school students into a diverse team. Today, students from 12 schools come together year-round to change lives with STEM.

Gra-V believes the best way to inspire young kids is by creating a space for them to explore the world around them. In 2017, Gra-V adopted and mentored two existing FIRST Lego League (FLL) teams, 7714 and 7715, who lost their build space. After embracing them into the our build space and providing mentoring and funding, Gra-V further supported the teams by volunteering at their events. To further Gra-V's mission of spreading science and technology, FIRST Technical Challenge (FTC) team 14418 Constant Chaos was formed. The following year, Gra-V won a grant to start and mentor FTC team 16733 Sprocket Scientists. This same year we expanded our efforts by establishing and mentoring FLL team 44589 Crashing Cosmos and FLL team 44590 Eclipse. Gra-V students light the way to become amazing leaders and mentors by honing these skills with the FTC and FLL teams. In turn, Gra-V is inspiring a new generation of leaders.

Without the help of FRC teams 1902 and 1592 during Gra-V's rookie year, we wouldn't be the team we are today. This sparked our light to assist FRC teams 1649, 5842, 6409, 6527, 7450, and 7566 with our resources, time, energy, and effort.

Since 2016, students have built a practice field to share with the FRC community. Gra-V invites teams to practice on one of the last Saturdays of February. This is known as the Annual Central Florida FRC Scrimmage. In 2016 and 2017, Gra-V's fields were donated to be used as practice fields at the Orlando Regional. Gra-V also hosted and co-ran the official Central Florida FRC kickoff for the past 3 years with FRC team 1902. Through this, Gra-V hosts workshops for 18 FRC teams on kickoff day. Starting in 2018, Gra-V hosted and co-ran with team 1902, an annual FRC off-season training day to help teams prepare for the build season. At this event, teams from all over attend workshops to help with challenges they may experience. In the past year, 12 FRC teams and 3 FTC teams were impacted through this event.

Since 2018, Gra-V has been coordinating all logistics for the Central Florida Tesla League in FTC and a year later for the Renaissance CFL in FLL by transporting fields, kits and materials to all 21 FTC and FLL tournaments in Central Florida. Gra-V also runs a myriad of events ranging from the FLL Coach's Conference to the FTC Tesla League Kickoff. Gra-V has made a mark on the younger generation of FIRST in Central Florida and continues to increase our impact year after year.

Gra-V is dedicated to ensuring that all students are able to participate on the team to the full extent of their capabilities, without any financial obstacles. Gra-V does this by having low dues and also by organizing meals for team members during build season. Additionally, Gra-V raises the funds for all team travel through creative fundraising and grants to pay for each member's expenses.

All that a student needs to join Gra-V is an interest in any aspect of FIRST. Gra-V's open-door policy has allowed the team to become a diverse representation of tomorrow's technological workforce. In terms of race, Gra-V is about 10% African-American, 25% Asian, and 35% Hispanic. Each student brings a unique perspective to the team to enlighten those around them. Six foreign languages are represented on Gra-V and students on the team use that to connect to others around the world. Thanks to our diversity, Gra-V was able to aid Brazillian FRC team 7566 with mechanical issues that held up their build season.

Beyond the various technical and non-technical skills that students nurture on Gra-V, our alumni now study at MIT, Yale, UF, UCF, and many other outstanding institutions. Gra-V has nearly a 100% college matriculation rate, and we make it a priority to help all of our students reach their dreams.

Gra-V empowers young ladies to make their impact on the world. The team is made up of 35% females. Gra-V student leadership is 80% female. Every year since 2017, Gra-V students have elected a female president. The achievements of Gra-V women inspire other ladies to be leaders. Gra-V students helped a Girl Scout troop get their engineering badges at an elementary school by leading an activity where students prototype and build cranes out of household materials. Over the past three years, Gra-V has hosted one stop in the US Department of State's Empowering Women Leaders in STEM Visit with a presentation of FIRST.

At over 100 outreach events, the team has completed over 30,000 community service hours since 2015. For Gra-V, community service is a part of the team's nature. Gra-V's hard work in the community has led to invitations to demonstrate at special events, including the Interservice/Industry Training, Simulation, and Education Conference and Otronicon's VIP Night. Whenever an event is in need of manpower, such as the US Open Karate Tournament, Gra-V has become the team to call.

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Gra-V is passionate about utilizing technology to increase accessibility to a wider community. Gra-V began doing work in assistive technology (AT) in 2016 by partnering with ATMakers and hosting Adapt-A-Thon. This past December, 98 toys were adapted by Gra-V with the assistance of other FRC teams. Gra-V created 200 switches to add larger buttons or specialized interfaces for children with various disabilities. Children who are unable to interact with toys by squeezing or pushing a button can now use the slightest movement to enjoy their toy. Gra-V continues to adapt and has hosted the annual Adapt-A-Thon since 2017.

Gra-V was invited to the Assistive Technology Industry Association (ATIA) annual conference's Maker Day in 2017, where AT companies come together to showcase services to people with disabilities and physical therapists. At ATIA's Maker Day, Gra-V displayed how 3-D printers could be used in communities to provide cost-friendly alternatives to current technology for people with disabilities.

Gra-V has been working on a new project with AT Makers and AbleGamers to create the Freedom Wing Adapter. This allows an individual with a disability to use their personal power wheelchair controller to play Xbox games for the first time in their lives. Going back to Gra-V's values, we wanted to make the Freedom Wing Adapter accessible to as many people as possible. So, in addition to making them for no cost, all of the instructions and resources needed to make one are provided online for free.

Gra-V hosts a summer program called Summer Robotics Institute (SRI), that provides the opportunity for Title 1 students in the community to engage in STEM activities and earn high school or college credit. At SRI, around 50 students per year learn how to build and program using various robotics platforms. SRI has become crucial to Gra-V's legacy as it has led to a majority of our current members joining the team.

Gra-V makes it a priority to spread the message of FIRST. As a result, we have become one of the go-to Central Florida teams to interact and connect with the public at various technology expos and events. Some of which include Otronicon, Maker Faire, and community STEM events. At these events, students speak to everyone from preschoolers to industry VIPs about the mission and impact of FIRST.

Since 2015, Gra-V has created significant connections with partners within the local community. When Gra-V found itself in need of financial support in 2017, students jumped into action by presenting to local businesses. Gra-V was able to grow relationships with companies such as Tropical Ford, MakerFX, Fastenal, Lockheed Martin, Universal Studios, and Walt Disney Resorts. These partnerships light a path of financial success for the team each year. Gra-V views partners as a part of the team, so they are invited to team competitions, family days, and annual parties. In turn, Gra-V is invited to present at partners' offices or to volunteer at company-wide events like Lockheed Martin's Family Day. To show the team's gratitude, custom gifts are presented to each partner at the end of every competition season.

First and foremost, Gra-V is a family: a diverse group made up of students, mentors, and parents helping each other reach a common goal. Since Gra-V's first year, it became a tradition to eat dinner together on build season nights. Gra-V gathers together to connect as more than a team. Students are able to learn about one another's culture and this also ensures that no student goes hungry for the night. In 2018, the team implemented monthly Gra-V Family Days to engage our members. One Saturday of every month Gra-V and the FIRST teams we mentor meet up to bond by playing games and watching movies.

Gra-V breaks down barriers for the underserved, the underprivileged, and the underestimated to not only reach their dreams, but to strive past them. Whether Gra-V students are instilling change in the community, within other robotics teams, or in each other's hearts, we are lighting the way for a better world than the one today.