

Chairman's Award - Team 4201

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2018 - Team 4201

Team Number

4201

Team Name, Corporate/University Sponsors

Raytheon/Society of Women Engineers/Wiseburn School District/Northrop Grumman/The Boeing Company/Institute for Creative Technologies, USC/SpaceX/Elite Technologies/MiCIAN/Embrace Apparel & Da Vinci Science

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years

40% of DVS students come from low-income families. *FIRST* gives them the opportunity to enhance their engineering and leadership experience through hands-on learning. It influences our students to become leaders in their community in both engineering and community service clubs. We mentor young girls and inspire them to pursue a career in STEAM through STEAMineers. Our students are huge influencers and positive role models for these low-income girls.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years

This year, our team packed up our bags and moved from our original home into a new larger building. Our new campus houses our original school, Da Vinci Science, and our sister schools, Da Vinci Communications and Da Vinci Design. This new dwelling has allowed our team to bring others into our home. Our new campus is going to host future engineering events for the community including the Chevron Design challenge FLL qualifying tournaments.

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

We have empowered students to spread the message of STEAM, representing *FIRST* robotics by playing a central role on an episode of *The Fosters*, which was aired to 6 million people! This year, our family was honored to participate in the Google Dress Code event which combined technology and fashion. There were around 400 underprivileged kids at the event and it was streamed to thousands of people. The children were in awe looking at the designs because they had never seen anything like it before.

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

With our team's new facility, we set an example of *FIRST* values by welcoming everyone into our new home. Last year, our team heard that our friends from Team 330 needed a new home. We invited them to our home and they and now use our facility to work and practice. We set up a full field and opened it up to our local teams which was helpful to several teams in our region. By opening our doors to our local teams, we are exhibiting *FIRST*'s values of collaborating and being gracious to other teams.

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

In this past, our team has helped rookie FRC teams, like 5851, get started by hosting programming and electronics tutorials for them. This year, our team was excited to start and guide the new rookie team 6904, The TeraWatts. Their 100% minority team is from the city of Watts, CA where 97% of the population are below the poverty line. Our team is sharing our experience and FIRST's message by inspiring disadvantaged students to pursue STEAM careers in Watts.

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

Through designing and hosting our own FLL-inspired summer robotics camp, our team aims to expose kids to FIRST and encourage them to form their own teams. In 2015, 4201 founded our first FLL team, 16555, through our sister K-8 school, Da Vinci Innovation Academy (DVIA). Now, our team continues to mentor 16555 along with two other FLL teams, 23970 and 24718. Our team hopes to start more FLL teams at DVIA and Dana Middle School to inspire students in our local community to become Vitruvian Bots.

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

Throughout the year, our team hosts other FIRST teams at our pre-season team meetings to help them organize and operate their teams. Team members visit rookie teams during build season to help with their design and manufacturing. We also love inviting all local FRC teams to use our full field in preparation for regionals. Our rookie care packages at each regional are a hit with essential competition materials like duct tape and zip ties!

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)

All our team members have volunteered at over 20 FLL events in Los Angeles for the past five years as judges, referees, and field resetters. During the summer, our team serves as mentors for FLL teams and we have also been dedicated to being camp counselors during our own 2 week Summer Camp. By mentoring 5 FLL and 2 FRC teams, we create a unified bond between our teams. We teach them about robot design, coding, and leadership in order to prepare them for National Championships.

Describe your Corporate/University Sponsors

We are grateful for our corporate sponsors who contribute their time, food, and money. This includes companies such as SpaceX, Raytheon, Boeing, Northrop Grumman, SWE, Mician, Jersey Mike's, DropBox, Prodco, Elite Technologies, Danger Research, Haimer, Industrial Metal Supply Company, Ralphs, Fakespace Labs, Embrace Screen Printing, and Chick-Fil-A. Industrial Metal Supply made a large in-kind donation of aluminum and other metals, and SpaceX generously provides our team meals every Friday.

Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years

We've established a strong and beneficial relationship with all our sponsors by doing our part to publicize their involvement in STEAM development. Our sponsor partnerships create a pipeline for our team members to intern with leading aerospace companies like SpaceX, Boeing, and Northrop Grumman. Our team presents our robot in our sponsors' campuses several times a year to build employee engagement in FIRST.

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

FIRST is a fun and collaborative robotics competition that empowers young children and adults to learn and apply engineering concepts to real-world applications. It allows ambitious students to be original with their work as they innovate and create something physical from their imagination. FIRST promotes business, communication, and a whole spectrum of skills that do not just involve engineering. It encourages students to grow in leadership, creativity, collaboration, and teamwork skills.

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

Last year, our team participated and won the FIRST's parody contest with our entry "My Bot". This year, we parodied Bruno Mars' "That's What I Like". This video was unique by including scribble-style animation that interacted with the dancer. Producing high quality content shows our potential, communication, and ability to work together on a creative project; it gave us the chance to create an inspirational songs which has collaboratively been viewed over 25,000 times!

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

Amanda Galley

Essay

This is home. In our home, we have meals, spend our weekends, struggle, collaborate, support one another, share our victories and failures, and never experience a dull moment together. As a family, our team prioritizes inclusiveness and welcoming others into our home.

Our family began in a cramped closet in 2012. Our first 2 mentors wanted to provide students with real world STEAM experiences and managed to recruit 10 kids during our rookie year. Over time, our community saw our hard work and dedication which allowed us to become Da Vinci School's signature program. We have slowly grown from just 10 to now 50 members across 3 schools! Our original home contains so many memories which will last forever, but creating new memories and beginnings is exciting for our growing family.

In November of 2017, we packed up our bags and moved from our original home into a new, larger building. While we may be in a new space, our family is still the same. Our new campus houses our original school, Da Vinci Science, and our sister schools, Da Vinci Communications and Da Vinci Design. We are excited to expand our family under the same roof to create a bigger impact within our community. This new dwelling has allowed us to bring others into our home. We were lucky enough to secure a grant that allowed us to procure a full FIRST Robotics Competition Field! We have set up the field within our new home and opened it up to all our local teams. This was especially helpful to over 2 dozen rookie and veteran teams in our region who didn't have access to proper resources.

Last year, we were informed that our close friends Team 330, The Beach Bots, needed a new space their team could call their own; they accepted our invitation to move into our home. We have learned so much from our new neighbors through their award-winning experiences in FIRST, and their members have had more opportunities to partner with us on outreach activities.

This year, our family was also excited to start and guide the new rookie team 6904, The TeraWatts, whose team demographics consist of 100% minorities. Our family has visited them in their hometown which was an eye opening experience as we witnessed how fortunate we are. In the city of Watts, 97% of the population are below the poverty line and 95.5% of students qualify for free or reduced lunch. Since only 2.9% of residents in Watts, aged 25 and older, have a 4-year degree, we are sharing our experience and FIRST's message by inspiring disadvantaged students to pursue STEAM careers. We welcomed the TeraWatts into our home, and they were happy to be a part of the FIRST culture. Although our families come from different upbringings, we have and will always take care of one another. This has truly become a second home for our local teams.

Our family has reached out to other underrepresented areas of the world including Japan, Hawaii, Sri Lanka, and Indonesia. During a student exchange trip to Japan, one of our members noticed that students in Osaka didn't have access to that many STEAM opportunities. Our family members took the opportunity in Japan to talk about FIRST, its mission, and show them videos of our robot. The students in Osaka were so inspired by our message, that they flew all the way to California to visit our school. We hosted a special event, just for them, to expose their team to our robotics program. We sparked a new passion in the students to pursue and promote STEAM in their own home. Our efforts to advance STEAM engagement has reached under-represented communities in our own country, like Hawaii! Being an island state, it's much harder for students in Hawaii to get access to STEAM resources. We now have an alumnus who mentors Team 4270, the Crusaders, as a drive coach. By taking the lessons learned from our team, he has effectively helped them grow their robotics program and their outreach activities.

Unfortunately, many women in third-world countries aren't raised with the mindset of pursuing a career, especially in a STEAM field, so our family has taken initiative to make that change. In a recent trip to Sri Lanka, some of our mentors engaged with local middle and high school students and started laying the groundwork to start FLL and FRC teams in that country. They talked to students and teachers about the benefits of a robotics curriculum and the impact it has on students, especially young girls. In Indonesia, our mentors brought their love for robotics into people's homes by showing videos and talking about competitions. We are excited to embrace these students into our global home, providing them the support and guidance they need to start their own journey. We are proud to say we now have extended family in several different regions of the world.

This year, we were honored to participate in the Google Dress Code event which combined technology and fashion. At this event, there were around 400 underprivileged kids that came from a variety of communities that don't have active robotics programs. Our members created a prototype of a shoe with a detachable phone charger which gained a lot of interest. The children were in awe looking at all of the designs because they had never seen anything like it in their community. This event was streamed to thousands of people around the world. In addition, our family also organized a showcase at the Girls Academic Leadership Academy to introduce FIRST and STEAM to middle school students. There were over 50 girls at this event, giving them the opportunity to see FRC robots up close and drive them with us. After being inspired by our family's warmth, the school is now planning to create a series of FLL teams in the upcoming season and eventually an FRC team as well! Our Vitruvian family is happy to know that we inspired many young kids that may have not considered STEAM careers in the past.

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Our family works with our local Society of Women Engineers (SWE) group to grow young girls' passion and confidence for participating in STEAM fields. Together, we have planned field trips to local aerospace firms, provided weekly SWE mentoring to young girls from 6th to 8th grade, and hosted presentations by professional female engineers. We also host monthly STEAMmineers Day, where we teach young girls, ages 5 through 14, how to use robotic components, set team goals, and practice STEAM-based projects. For over 2 years, more than 80 girls participate each month and continue coming back to our family because of our nurturing culture. Encouraging STEAM to young females in our community is something we love to do.

Not only do we want to support young girls in our community, but also inform the general public about our family's message of promoting inclusiveness and overcoming difficulties. In 2016, we were invited to star in a special FIRST-themed episode of Freeform's diverse show, *The Fosters*. The episode centered around females participating in an FRC STRONGHOLD competition. Our members were cast as an all-girl FRC team called "Baby Got Bots." We were thrilled to bring our message of encouraging girls to participate in STEAM-related fields to over 6 million people! In addition, our family has created two award winning FIRST Song Parodies which have been viewed over 25,000 times on YouTube and shared with millions of people through social media.

In our home, we started the Da Vinci Science Robotics Camp in 2014: a summer program led by our own family members. Every year, our campers are excited to attend our robotics camp. They return summer after summer, bringing their friends and enthusiasm, which encourages us to make each year better than the last. Last summer, we welcomed over 200 elementary and middle school campers to create robots for a competition and incorporated the FIRST STEAMWORKS theme. Through interaction with our members, many students are inspired to create their own FLL teams and join our FRC family. Over the years, we have had the pleasure of mentoring a dozen FLL teams and have connected with over 200 local FLL teams through volunteering at FLL qualifying tournaments and the Los Angeles Regional Championships.

Along with teaching the youth, our family promotes our message within our local communities. Every year, we present our robot at several community events. You can catch us dunking our principal in the dunk tank with a ball thrown by our robot at our school district's annual Rock Around the Block fundraiser or demonstrating our robot to the general public at the Makerbot fair. You can also find us showcasing our robot at companies like SpaceX and Raytheon. Knowing that our family has successfully shared our message with hundreds of members within our community is rewarding for each of us.

Before each of our family members move out, they leave as well-rounded individuals through the variety of opportunities our Project Lead The Way certified school offers including: concurrent enrollment through a local community college and amazing summer internships with SpaceX, Boeing, and Northrop Grumman. The industry has also partnered with individual courses in our curriculum like Boeing, Cal Poly SLO, Aerospace and Raytheon. Many of our members have participated in various STEAM challenges such as: Chevron Design Challenge, Northrop Grumman Innovation Challenge, Raytheon's Engineering Games, and Herndon Design Challenge. Our family members are lucky to have the resources to help each of us grow into our full potential and leave our home with necessary life skills.

The Vitruvian family is excited by what we've already accomplished in such a short time, and proud of the home we've created. Our home is a place to learn, a place to grow, and a place where everyone is welcome. Our mission isn't just about building robots, it's about building an inclusive, diverse family and giving all students a place they call their own. Because in our home, and in the future we're creating, family is FIRST.