

## Chairman's Award - Team 4327

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2020 - Team 4327

### Team Number

4327

### Team Name, Corporate/University Sponsors

Rosler/Musashi/Post Consumer Brands/DENSO/Advantage Sintered Materials/Magna Cosma Casting/Bowers Aluminum Anodizing&Lakeview High School

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

Through leadership, Q Branch Robotics evolved from one FRC team across all of our school district to a K-12 program. During the fall, our K-8 FIRST teams are mentored by high school leaders. Because of our team's commitment, members contributed over the past five years 1,800 hours of community service. This year alone we completed over 600 hours, which is more than our team has ever done. Since 2015, some alumni became part of the workforce for our sponsors as well as mentors for our team.

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

Through the spirit of FIRST, we use community outreach robots to showcase our program across Battle Creek. To showcase Q Branch everywhere, we created a t-shirt cannon robot, Heavy Metal, to launch shirts at Lakeview football games and our homecoming parade. We also built Hugbot, a pneumatic teddy bear that we used in book fairs and other indoor events. We partnered with BCUnlimited and the Calhoun Visitors Bureau to help with our hosted events allowing more teams and people to visit our city.

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

To help spread FIRST, we utilize our three different hosted events. We bring in not only competitors from all levels, but we showcase FIRST to local politicians. For our sixth-time hosting the Michigan FTC State Championship, Representative Jim Haadsma officially declared our event days "Robotics Days". We got creative and brought FIRST into our community; we modified our 2019 competition robot to serve cereal at the World's Longest Breakfast Table in downtown Battle Creek.

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

Everyone has a spot on our team, but experienced persons of Q Branch function as role models and mentors to our lower level teams. Returning members are expected to volunteer more hours helping our community and teach the first-year members the cultural message of "This is How We Robot". At events, we rotate students in the numbers crew who function as cheerleaders for teams who may not have enough members to have their own spirit section. We share our time, knowledge and passion with others.

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

Part of "How We Robot" is learning from others and aspiring to be a team from which others learn. In 2017 when 3658 acquired a new coach, we mentored them by teaching programming skills and invited them to practice with our field elements. In 2018, we started and mentored rookie team 7209 who went on to win our hosted FRC District Event. In 2019, we started team 7811 as well as helped them build and program their robot by opening up our build space when they did not have sufficient resources.

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

During the last five years, we set out on a goal to put a *FIRST* team in every school in our district. By the end of 2017, we became one of the first fifty school districts in the state to be recognized as offering *FIRST* programs K-12. Today, we have at least one FLL, Jr. team in each of our four elementary schools along with two FLL and two FTC teams at Lakeview Middle School. Evolving our program to be K-12 grew our membership by over 500% and showed everyone "This How We Robot."

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

With every building having their own *FIRST* teams in our district, we knew we needed to encourage students to continue in *FIRST*. To help with this, we added the expectation of all subteam captains and strong returning members to mentor our lower level teams. Additionally, by hosting FLL, Jr. and FTC competitions, we are able to not only connect FRC students with lower level teams, but also showcase our robots to them and inspire students to continue through the progression of *FIRST* programs.

### **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)**

We connect Q Branch students as mentors to the lower teams to teach skills and build connections. Our lower level teams are connected to at least one leading member of FRC Team 4327 who volunteers their time to serve as a mentor. Additionally, we work with area rookie FRC teams to help them get started on their journey in *FIRST*. We publish documents such as our "Guide To Robots" which can be accessed through our official website to make technical knowledge of an FRC program available to all.

### **Describe your Corporate/University Sponsors**

Student members reach out to sponsors on behalf of the district. Team members meet with businesses in our local Fort Custer Industrial Park such as Musashi, Rosler, and DENSO and other major manufacturers to request sponsorship. Sponsorship donations increased by \$15,000 over the past five years. Rosler Metal Finishing started as a mid-level sponsor in 2015; they since doubled their contributions to become a field sponsor at our Michigan FTC State Championship as well as a district-wide sponsor.

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

Overall, most of our sponsors are local manufacturing businesses and they take great interest in what we do at Q Branch. We take the initiative to tour their facilities with our robot to introduce the team to a STEM workplace and perhaps their future environment. Touring our sponsors' facilities gives our team perspectives on how their FRC skills will apply in a professional setting. Our sponsors not only provide financial support, but also many of our mentors and volunteers for events.

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

*FIRST* is a program that uses robotics competitions to give the opportunity for students to find their best self. Students collaboratively work together to tackle an issue bigger than themselves in a manner which emulates the real world. *FIRST* is beyond innovation and preparing students for the future; it's about how the team will make the community a better place through a positive group effort which fills the culture surrounding the team. *FIRST* showcases what is possible when we are relentless.

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

Thanks to our recruiting efforts, we have had 17 different international students bringing their unique perspectives and cultures to our team. We actively recruit female students to join by speaking directly to classrooms with a majority of female students. Last year we had four female members and now seven this year. Three of our alumni are currently coaches at both the FTC and FRC level ensuring our culture of "This is How We Robot" will last beyond the current membership and build space.

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

Since our inception, Q Branch robotics evolved from a single high school team; no sponsors, no alumni, a tiny amount of technical skill, a single mentor, and no community service in 2012. Today, we have many gracious sponsors giving over \$20,000 in total, over 150 FRC alumni, 11 district-wide *FIRST* teams, three different hosted robotics events at multiple levels bringing thousands to Battle Creek, the most experienced team ever, eight relentless mentors, and over 600 community service hours.

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

Dominik Kerschbaum

## Essay

We are FRC team 4327 and "This Is How We Robot." We help one another whenever we are in need. As a team, we work together relentlessly towards a common goal of showing our community the value of FIRST and what is possible through teamwork. At FIRST events, we strive to be a source of inspiration and an exemplar for other teams to emulate. In our community, we are a source of positive change.

Q Branch Robotics created the mantra "This Is How We Robot," to encompass our values and make clear what we do. Many teams throughout FIRST and the city of Battle Creek recognize our members by our vibrant power pink color and the large Q logo on our shirts. The impact of our branding and our mantra motivated other teams to learn about our program. No matter who you are or where you are from, we are your team.

As a team, our mission is to cultivate intergenerational connections, employable skills, personal empowerment and community engagement in Battle Creek via STEM innovation and the principles of FIRST.

In 2017, we made our first mentor and member recruitment videos which were featured on our high school's Channel 101 program in an effort to reach more students. We also attended the Lakeview school registration recruit new members. We welcome anyone on our team and aim to recruit students who wouldn't think of STEM as a career choice.

Q Branch uses social media platforms for recruitment and to give our sponsors updates.

New members learn "How We Robot" by building their knowledge and skills in the preseason. Our skill camps provide season preparation where veteran members teach newer members basic robotics principles. All members are immersed in over 12 hours of training where they learn the skills necessary to be successful on CAD, Controls, Mechanics and Chairman's subteams. Members are given a chance to select their preferences on which subteam they would like to participate. The implementation of this program pays off during the build season with more students able to actively participate and are more engaged in the design and build processes.

Our team asks students to contribute annual dues of \$20, but we waive the fee for any student who cannot afford the cost. This is the only mandatory financial cost to students as we believe socio-economic status should not dictate the opportunities for students. All veteran members engage in 16 hours of preseason volunteer work which includes the mentoring of lower-level FIRST teams while our rookie members volunteer six hours of service in the community. As the six-time running host of the Michigan FTC State Championship, all members volunteer their time to help run the event. Along with the Michigan FTC Championship, everyone on the team volunteers at our FLL Jr. Expo and our FRC Event. We recognize the importance of education, thus members are required to maintain at least a 3.0 GPA throughout the entire season. In an effort for all students to maintain this requirement, we connect struggling students struggling with teachers to help them improve their GPA.

We adopted a Gantt Chart for our build season to help track our progress and later adopted one for our Chairman's team. Starting in 2017, we documented the Strategy Development & Engineering Process to help build institutional knowledge from which to learn in future years. We also created a "Guide to Robots" to help newer teams understand how we relentlessly tackle FIRST challenges.

Five years ago, our Lakeview School District's FIRST program began the journey of growing from one FRC team to 11 FIRST teams in 2019. Our leadership members serve as mentors to inspire over 80 younger students and show them "How We Robot." Our district of Lakeview in Battle Creek was one of the first fifty districts in the state to offer FIRST K-12. We have two FTC teams and two FLL teams at our middle school as well as six FLL, Jr. teams with at least one at each of our elementary schools. We are proud to say that any student at any level can take part in FIRST here in Lakeview.

Our international members get engaged with FIRST through Q Branch and then take their knowledge with them home. Each fall, we reach out to these students directly by working with the international coordinator. Over the past five years, our team was made stronger through more than a dozen students from Italy, Japan, Vietnam, and more.

We influence our community through the use of outreach robots. This is shown in our ten-barrel t-shirt and candy launching cannon known as "Heavy Metal" which appears at outdoor events such as Spooky Science at Kingman Museum and the Lakeview Homecoming Parade/Game. Our approachable "HugBot", a giant actuated teddy bear mounted to a chassis, is showcased at indoor events like the Lakeview book fair and the Calhoun County fair to motivate our community with pneumatic-powered hugs. This past June we modified our 2019 competition robot to serve cereal to hundreds of members of our community at the World's Longest Breakfast table annual event in downtown Battle Creek. FRC Team 4327 makes itself and FIRST known through social media sites like Facebook, Instagram, Twitter, our website, and our local newspapers. Using our team website for all documentation, we keep our community informed by writing blogs about what is happening throughout the season including pictures of the day, information about upcoming events, district-wide program information, and team achievements.

**Essay - page 2**

Q Branch doesn't stop at build season with outreach for robots and we don't stop within our district; we always seek volunteer opportunities to help improve our community. In total for our 2020 pre-season, 27 team members volunteered over 600 hours of service. Since 2017, we volunteered as a team to help man the Binder Park Zoo's annual Halloween "Zoo Boo" event with various stations where guests create projects and go trick-or-treating. Also, in partnership with three other FRC teams, we constructed an interactive FIRST display at the Calhoun County Fair. Over a two day span, Q Branch committed a total of over 50 hours inspiring the community and sharing stories of innovation through friendly gameplay of the 2016 FRC challenge Stronghold. Additionally, in 2018 we took our "Power Up" competition robot to the Michigan Maker Fair at the Battle Creek Area Math and Science Center. We showcased our season-long work to educators from across the state to show the teachers what is possible if their students learn "How We Robot".

In the spirit of spreading the FIRST, Q Branch reaches out to start new teams in nearby schools. In 2018, we mentored our rookie team from Homer, FRC Team 7209, by showing them what we do during the preseason and teaching them team management. In 2019, we started and mentored the rookie team from St. Philip Catholic, FRC Team 7811. This meant getting funding and bringing them to our build space to work both before and during build season. We gave them our space, our knowledge, our tools and our relentless commitment to developing FIRST in and around Battle Creek. This is on top of our established K-12 program in Lakeview. We did not stop at our district; we want FIRST in all schools in Calhoun County.

Q Branch is proud to show "How We Robot" by being the six-time host of the Michigan FTC State Championship, five-time host of our Lakeview FRC District Event, and two-time host of our FLL, Jr. Expo at Lakeview High School. In total, we host up to 150 FIRST teams in a given year. Our events help increase the visibility of FIRST by bringing politicians such as former governor Rick Snyder, state senator Dr. John Bizon, and state house representative Jim Haadsma to address the crowd of future problem solvers. This year, we received a certificate at our FTC State championship from representative Haadsma declaring that the 13th and 14th of December as "Robotics Days" because of our event. Running and hosting events is one way we show the FIRST community and Battle Creek "How We Robot."

At these events, all members function alongside alumni as volunteers. When the Michigan FTC State Championship grew too large in the number of teams for our high school gyms, we helped move the event to Downtown Battle Creek inside Kellogg Arena so we could continue hosting in our community. Outside of our own events, we annually help team FRC 4381 with their district event via set-up and tear-down. Our efforts to bring in over one hundred teams and their thousands of students to our community feature Battle Creek as a hub for FIRST.

We demonstrate our achievements when our members graduate and become FIRST mentors, join the workforce of our sponsors, or pursue STEM education beyond high school. Five years ago, we did not have alumni members fill mentorship roles and now we increased to five. Numerous students who were involved in our FIRST program utilized their STEM skills to attain employment with our sponsors. Our recent alumni now work for local sponsors Musashi, DENSO, and Rosler. Many alumni pursued their interests in STEM in academia at universities such as MSU, UM, Michigan Tech, and MIT.

Q Branch robotics works to show our members, our school and our community exactly "How We Robot." Whether this is through volunteerism, hosting some of the largest events across the state, or competing at the highest levels of play, we look to learn from and inspire others. We spread FIRST in our community by shooting t-shirts, giving mechanical hugs, and sharing our stories through social media. Our relentless attitude motivates us to continue working until all students at all schools in our area can be a part of something bigger than themselves.

"Being on this team has been a life changing experience. To all of our members, both past and present who have stuck with the team and helped us succeed, our mentors, our families who support our team, and our sponsors I say thank you, and go Q Branch!" - Josh Dunlap (2017 Q Branch Alumni & Mentor)