

## Chairman's Award - Team 1515

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2019 - Team 1515

**Team Number**

1515

**Team Name, Corporate/University Sponsors**

Enterprise/BHHS Career Technical Education/BHEF&Beverly Hills 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**

FIRST has encouraged its participants to pursue career pathways in STEM fields and entrepreneurship, as well as taught robotics teams about teamwork and empowered them to become leaders among their peers. MorTorq is a shining example of FIRST's success as our most recent alumni have been accepted into prestigious universities such as Yale, Cornell, and CalTech, to pursue majors in entrepreneurship, biology, computer sciences, and other STEM fields.

**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**

It is crucial that we spread the importance of STEM to the youth in our community. Following the message of FIRST, MorTorq has pushed to design events promoting STEM in daily life. Our annual Celebrating STEM event, for example, took the theme of medical science last year and exposed children to the wide variety of STEM jobs. We have kept this event a consistent favorite throughout our community to develop the interest of every individual student who attends.

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

Our team hosts an event called Robomania which is geared towards teaching children under the age of 10 about the many different aspects of STEM. It is intended to provide these children with the knowledge to strive to pursue STEM in their future. We also partnered with our school's Medical Science Academy to put on an event called Celebrating STEM, which taught the community about science. Additionally, we created a robotics team for middle schoolers to create robots and compete.

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

We make sure to advertise to students in our school that there are no prerequisites to be in any division of our team whether it is business, build, or programming. Students of different experience levels collaborate with one another to learn the necessary skills for their division. This collaborative work environment provides a nurturing space where students are able to grow and take after their fellow, more experienced, team members to hone their skills.

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

Within the past year we have created a middle school team, where we teach youth about robotics. After six weeks, we set up an in-school competition to put their skills to the test. A majority of the participants of this competition last year have joined MorTorq in high school. Through our involvement in the middle schools, students were able to find and experience their passion at a younger age, which will give them many opportunities to become future leaders in STEM and entrepreneurship.

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

MorTorq helped Team 4019, Mechanical Paradise, become established and successful team. Our strong support of Team 2576, Corazon de Chileno, led to their creation of two new teams in Chile: Team 4960, Polibot San Carlos and Team 4966, Condor Force Robot. Also, we met with Team 6404 from Brazil at kickoff and helped them with their plans to be a successful veteran team.

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

Last summer, our team helped to generate public support throughout our community for the Afghanistan All-Female Robotics Team to enter the US and compete in the FIRST Global Challenge in Washington D.C. The petition was a success, and the members were granted visas to compete. We also reached out to many rookie teams, such as Team 6891 in Oklahoma, to provide mentorship and support for their fundraising campaigns.

**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 actively look for other teams to mentor and assist. We assisted team 6404 from Brazil with planning for their competitions. We also helped Hamilton High School's robotics team with their business team. We showed them what to shoot for during the year and how to work with their communities. We also kept in contact with the teams in Chile and continued an open dialogue on how to best spread STEM and FIRST.

**Describe your Corporate/University Sponsors**

Sponsorships and grants we have earned this year have ensured our participation in a regional competition and the continuation of future STEM events and activities. We have earned partnerships with Solidworks, PTSA, BHUSD, Enterprise, BHEF, and Career Creators. We have also received generous supply donations from Alpert and Alpert Iron and Metal. In addition, we have mentorships from officers of the UCLA Bruin Racing team who are experienced FRC alumni.

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

MorTorq has very strong relationships with our sponsors. Some of our major monetary sponsors from the last five years include Disney, Enterprise, and NASA. We also have sponsors that donate materials and tools, such as safety glasses and drill bits. As a token of appreciation, we feature our sponsors on the back of our shirts and on our robot. Every year, we make it our priority to inform all of our sponsors about our successes, invite them to our STEM events, and host a banquet in their honor.

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

FIRST is an organization that aims to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs. The organization sets up several competitions year-round which ultimately causes this vision to come to life. Additionally, FIRST aims to mentor students and young people on business and entrepreneurship to empower them to choose career paths relating to these.

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

Along with safety in the woodshop, this year we aimed to focus on Mental Health. With all the stress during build season and other rigorous academic classes team members usually feel overwhelmed. As a team we focus on maintaining a stable mindset. We want our students to be energized and prepared to succeed. We have weekly talks to help ensure the team knows we care about all its possibly pressuring emotions and feelings and offer a support system.

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

Eva Danesh

## Essay

MorTorq Team 1515 strives to enrich our students with the knowledge of robotics and works to develop and nurture our members into future leaders of society by creating a "launchpad" for their success. As an active participant in FIRST robotics for over 13 years, our team embodies FIRST's mission by spreading our love of S.T.E.M. beyond robotics in order to foster a multi-generational change. From our middle school teams to our S.T.E.M. events, we have created a culture that revolves around S.T.E.M. for our team and fellow community members and shows them how to reach for the stars. With the help and guidance of our mentors, sponsors and FIRST, we can create these events and programs to introduce young students in our community to different S.T.E.M. concepts that they otherwise would not have seen. This early exposure to engineering skills can start giving them a background in technology that makes them better equipped for the future.

Our team puts a strong emphasis on our students' futures, and prepares them for careers in S.T.E.M. and business, and helps develop them into active leaders of society. MorTorq is primarily student-run, which motivates members to create their own events, plan meetings and develop vital leadership skills. We do our best to foster an inspiring and informative environment that prepares our team members for a successful future.

To continue fostering future leaders, last year we created an after school workshop for middle schoolers. We have taught these students all about robotics including how to build a robot, safety in and out of the woodshop and what it means to function as a team. After six weeks, we set up a school competition to showcase their skills. This competition consisted of four groups who had to create a robot with a claw that would function on the vertical and horizontal axes. The goal of the competition was to search for a deadly device in a restricted amount of time. The judges and mentors were MorTorq member. A majority of the participants last year went on to be a part of MorTorq through joining our robotics team and participating in future events. The students were able to find and experience their passion at a younger age, which will give them the motivation to pursue a career in S.T.E.M. or entrepreneurship.

To reach elementary and middle-school students in our district, we host our annual "Celebrating S.T.E.M." event that is open to the public. This event's purpose is to reach, spark interest, and introduce both parents and students to our high school robotics program. Last year we partnered with our school's Medical Science Academy to create a medical and technology theme. Dr. Virginia Mattis, one of our speakers, works at Cedars-Sinai Regenerative Medicine Institute and discussed technology in S.T.E.M. cell research. We also had Jennifer Terrell, who works at MidaTech Pharma, who discussed the value of robots in medicine. Our keynote speakers relayed their personal paths to working in their respective fields, as well as gave our attendees advice on how to get more involved in S.T.E.M. and highlight potential careers.

"Next Night" was started by the Beverly Hills Chamber of Commerce as a fun way to expose the community to advances in technology around the city. We have created a partnership with the event organizers and have had a booth at this event for the past two years showing the community our robot and teaching them about FIRST and robotics in our high school. Parents, children, and various community members get to witness what our team has to offer and how our team works to make progress in the future.

One testament to the success of MorTorq is our current Business mentor, Justin Brezhnev. Mr. Brezhnev joined MorTorq in 2006 in his freshman year of high school and through hard work, became Business Plan Captain. After attending UCLA, he founded multiple successful startups, including Hacker Fund, which empowers young technologists to make social change using technology to help the disadvantaged, educate the broader community, and protect the environment. This year, Mr. Brezhnev joined our team yet again and became our Business teacher and mentor, largely due to his belief that MorTorq helped him pave the pathway to his career. It made him realize that entrepreneurship is an actual career and that "there is entrepreneurship in everything." By being a supporter of youth in S.T.E.M., Mr. Brezhnev has provided an environment for his students that fosters the use of S.T.E.M. and business as a "launchpad to success."

In addition, MorTorq has generated countless other alumni who have pursued careers in S.T.E.M., such as Angel Say who continues to develop InsiteVR, Alex Kern who recently sold his software to Coinbase and Yu Jin Kim is currently a Sophomore at CalTech. Lastly, Michael Simozar, a former MorTorq Build president, who, since earning a Mechanical Engineering degree, has been working at NASA's prestigious Johnson Space Center. Our alumni highlight our efforts to align our objectives with FIRST's principles. In the words of current Stanford computer science major and past programming president, Ben Heller, "MorTorq helped shape my passion for S.T.E.M. and programming, and the skills I learned are fundamental to my future."

Our sponsors have collectively helped us thrive in the FIRST community and they serve as the backbone of our team. We have earned partnerships with Solidworks, PTSA, BHUSD, Enterprise, BHEF, Alpert and Alpert Iron and Metal, and Career Creators. In addition, we have mentors from the UCLA Bruin Racing team who are experienced FRC alumni. Some of our major monetary sponsors from the last five years include Walt Disney Imagineering, Enterprise, and NASA. We also have sponsors that donate materials and tools, such as safety glasses and drill bits. As a token of appreciation, we feature our sponsors on the back of our T-shirts and on our robot. Every year, we make it our priority to inform all of our sponsors about our successes, invite them to our S.T.E.M. events, and host a banquet in their honor.

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Additionally, our mentors and sponsors play a significant role in our success. With their support, we were able to give back to our community. Our programmers improved our integrated MorNetwork system. Our first application within this network, MorTeam, is an all-in-one organization and communication program to more efficiently manage our team. MorTeam is available through a web browser and as an application download in the Apple and Android app stores. In the spirit of citizenship, teamwork, and collaboration we have made our app available to all FRC teams. With our app, FRC teams can efficiently organize tasks, take attendance, manage files, chat with members, and make announcements. Through the process of developing our MorTeam network, our programmers are able to teach new members valuable programming skills. This year, we added inter-team communication to the MorTeam platform, enabling teams to interact with one another. As a result, teams using MorTeam are now able to chat, share files, and send announcements to other FRC teams. We have utilized this function to invite fellow FRC teams around the Los Angeles area to attend our various events. Another application our programmers have developed is MorScout, a match scouting application that our programmers track and update after every match at our regional competitions. We have also made this application available on the Apple or Android app store for everyone to use. Any FRC team can see competition data such as rankings, points, and penalties on their phone- even if they are not present at the competition. To complement our MorTeam network, our programmers added MorMap, an interactive map that shows all FRC teams around the globe. The information is maintained and updated by our programmers constantly. The goal of our programming group is to innovate and continue to add valuable functionalities to our MorNetwork. For this reason, our programmers have begun developing a new feature called MorParts, a robot build process management tool that helps teams track their inventory of parts, and can provide visual depictions of how parts assemble together to form the team's desire robot. MorParts gives teams easy part identification, inventory management, and facilitates understanding of how small parts come together to make major components. We believe this is a valuable feature not just for our team but for all FRC teams who use MorNetwork.

At MorTorq, we make it a priority to support and foster all of our team members, especially all females on our team. Firstly, our programming and business leaders are all females, who teach programming and lead in fundraising for our team. These roles are indispensable to our team and help to make our team competitive. Over half of our business team is female, and we are gaining more girls on our build team as well. Our build and programming teams are 34% female, which is 4% higher than last year. Our amount of female programmers has increased by 100%. We encourage female involvement as much as possible, and we have a special initiative called S.T.E.M.inism to encourage feminism within S.T.E.M. We advertise for females to join our team, and teach them all the skills needed to be successful, from leadership skills to how to use the drill press. We want to allow these girls to build a strong foundation that they can use to blast them into success for the future.

MorTorq strives to develop the future leaders of tomorrow. Beginning with students from a young age and nurturing their interests throughout high school, we strive to make an impact on our team members, our community, and society at large. The work we accomplish during our time on the team helps us to learn skills in leadership, technology, and science, that acts as a launch pad to prepare us not only for our futures, but also to change the future our world and beyond.