

Chairman's Award - Team 1511

Team Number

1511

Team Name, Corporate/University Sponsors

Harris Corporation/Snooky Kurtz&Penfield High School

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2016/2017 year and the preceding two to five years

95% of our alumni go to college; 88% pursue STEM careers. They've been successful: mentoring and starting *FIRST* teams, working at NASA, Harris, and Toyota. Focused on technical skills: CAD, programming, documentation, mechanical; students also gain leadership, speaking, interviewing, time management, problem-solving, and public relations skills. Mentors learn to manage, network, collaborate and volunteer at *FIRST* events. We start as teammates and leave as leaders excited to change the world.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2016/2017 year and the preceding two to five years

In 5 years we've done 150+ community services and demos: CHD Bravery Bags, Children's Hospital demo, IRI backpacks. We've printed 44 prosthetic hands for kids with disabilities through e-NABLE. In 6 years our MEGADrive collected 77 blood donations, 2885 food items, 11980 kids' books, 104 toys and 7000+ lbs of electronics to be recycled! We've raised over \$16k for charity. We welcome home veterans from Honor Flight. We've done it all, from soup kitchens to senior homes to pet adoption centers!

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

To create a wider impact, we invite other teams to demo with us to all audiences: parades, semi-pro sports games, schools, state and county fairs. In 2013, we were a National Make a Difference Day Honoree for our MEGADrive with FRC340, featured in USA Weekend Magazine reaching 22.5 million households! We host public robotics events: a Week 0 event, an offseason, a rookie Champs event and 2 FLL events, publicized in the media. Even our red camo pants are a conversation starter for *FIRST*!

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

Our combination of outreach, leadership, technical emphasis, marketing, hard work and enthusiasm makes us an example to others. We use our resources to help teams grow and be successful via workshops, materials, mentorship and funding. We work with teams to help spread *FIRST* to make a bigger impact on all of us. We run our own events, start new teams, and volunteer/mentor all levels of *FIRST*. Other teams know they can count on us for anything. We've helped 1,016 FRC teams in 13 years.

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

The \$10k we won from USA Weekend magazine was used to start and sustain 6 FRC/FTC teams. Our many events promote *FIRST* to various audiences, including the 4H rural community, inspiring the start of FRC4203. We network all over the country and the world to spread the word of *FIRST* and start new teams. We have mentored 23 FRC teams, and helped a former 1511 mentor start his own team, FRC5433, having their students join our meetings and lending them a robot to compete in our offseason competition.

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

1511 has a successful program to form FLLJr/FLL/FTC teams, sponsoring 204 teams in our 13 year history, 31 this year. Our 4 LEGO camps in East and West Rochester reach over 100 kids per summer inspiring them to join or start teams. We offer FLL team grants, resources on how to start FLL teams, a sample curriculum, provide in person help, mentoring and training. We brought FLL to all 5 Penfield schools, started Penfield FLLJr, and formed our first FTC team 4 years ago.

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

1511 emphasizes team sustainability. We host trainings for all levels of FIRST. Globally, we help teams with team structure, recruitment and fundraising. We have many resources on our website for teams to use. We have 6 sources in the FIRST Fundraising Toolkit. We fund team supplies and registration fees. We run and volunteer at FIRST events and created the Penfield FLL Qualifier. 1511 students inspire FLL/FTC grads to join 1511 and FRC. FTC6996 is our feeder team with a total of 15 recruits.

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)

Our students have mentored 45 FLLJr/FLL/FTC, and 23 FRC teams in 13 years. We provide rookie resources, tools and hands-on help. The events we host help teams prepare for competition. We've held trainings for inner-city mentors, opened our Leadership Boot Camp to others, and hosted a FIRST workshop for FRC Teams. We invite teams to our FIRST outreach events to create a bigger impact, like organizing FLL, FTC, and FRC teams for a large FIRST exhibit at the Rochester Mini Maker Faire.

Describe your Corporate/University Sponsors

We have several types of sponsors. Harris, our main corporate sponsor, is a high tech supplier of military communication systems, public safety, government and commercial customers. Our Patron Drive sponsors, 60+ a year, provide a local connection, and range from small family-run businesses to international companies. Some sponsors: Chamtek, Drelick Welding, and Debbie Supply, provide us with gifts in kind, making or donating parts and services. We also consider our school as an amazing sponsor!

Describe the strength of your partnership with your sponsors with special emphasis on the 2016/2017 year and the preceding two to five years

Harris provides more than funds: 11 engineers this year, student-designed parts, military-grade tablets, tours for our FLL teams and mentor recognition! The Director of Finance visits during Build and competition. Mentors work year-round, involved in school curriculum and team building. Other sponsors provide late-night welding and parts. We invite them to our events and send them newsletters and thank-yous. Our school is a big supporter, providing us endless time, space, tools and 3 advisors.

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

FIRST was created to break cultural norms, inspire students to consider STEM careers, and look up to STEM professionals as role models. It prepares students to be the world's future leaders with ideals like Gracious Professionalism. Every year, the game is different to test student's limits on creativity and practical applications. It exposes students to different career paths, from engineering to marketing to math. Students gain STEM knowledge and life skills from professional mentors.

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

We want to change society. We need to lift each other up, not pull each other down. That's why our higher level goals are to help teams reach their full potential, be all inclusive, and encourage leadership in others. The leadership structure that we have developed was able to sustain the team when we changed Team Leaders in 2009 and when two lead mentors were unable to participate fully in 2016. We try to inspire teams to adopt these same ideals and make them their own.

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

Austin Meyer

Essay

An idea rolling in the minds of a young engineer and two parents grew to FRC1511, a team who is driven by extreme amounts of passion. We're the team that builds robots, relationships, our community and each other. We're the team that helps everyone. We'll try anything, stick with it, make it better, make it grow. We are every team and every team is us. We are Rolling Thunder. This is our story. Led by a FIRST alum, our aspirations started high and we built a strong foundation our first year. We started with Rochester Rally: a Week 0 scrimmage. Yearly, we host about 20 teams who test their bots on our full field and use our shop and tools. FLR was our first competition and fueled our passion for FIRST. Now, we're a go-to team for FLR and have 1511ers on the planning committee. They asked us to do demos at TEDxRochester, Robot Quick Builds, VIP tours and present to sponsors. We brought back the FLR social in 2014 and have run it since. We even got up early before school to do in-studio news interviews to promote FLR!

We stormed into Champs as rookies and started Rookie Meet & Greet, hosting 20+ teams each year to network and get info on sustainability. We won Champs Rookie All-Star and the storm intensified!

We finished our first year strong, hosting our own off-season event, Rah Cha Cha Ruckus. It's grown from a school gym to a concert venue, from 15 to 40 teams, who use Ruckus to recruit and train. We organize a committee of FIRSTers to run it and our team volunteers! As with all our events, news outlets cover it each year, spreading FIRST in our community.

Louder together, we joined forces with FRC340 to create FIRST MEGADrive in 2011. Two years later, USA Weekend Magazine featured us as Make a Difference Day National Honorees. We won \$10,000 that we used to start and sustain 6 FRC/FTC teams to continue "making a difference." In 6 years we donated 15,000+ kids' books and clothing, food, toys, and recyclable electronics.

We've always picked causes that hit close to home, like the LLS Light the Night Walk for Rachel, the JDRF Walk for Jordan, the CF Walk for Kyle and made CHD Bravery Bags for Leo. For Honor Flight, we wrote letters and proudly welcomed home war heroes. In 2016, we were challenged with an out-of-this-world project! We repaired the Rochester Museum and Science Center Challenger Probe exhibit, where kids learn about space. We're adding more interactive elements and problem-solving scenarios!

3D printing prosthetic hands with e-NABLE combines two of our passions: using our technical skills and helping others! We've made 44 hands so far, for children with disabilities around the world. Some of our hands went to Iraq! We hope to present this project at Champs to get more teams involved.

Our 13 year partnership with Harris has been vital for our success. They provide engineers, make student-designed parts and hold an annual mentor lunch. We support them with demos at events like the Rochester Engineering Society Gala and Take Your Child to Work Day.

We organize fundraisers, like selling FIRST LED bulbs, car washes and pancake breakfasts. We raise \$10,000 yearly with our Patron Drive. We visit 100+ businesses who enjoy our newsletters, events and demos. Our model has made other teams more sustainable.

We impact all levels of FIRST: FLL 13 years ago, FLLJr 8 years ago, FTC 4 years ago. With student-raised funds, we've sponsored a total of 204 FLLJr/FLL/FTC teams, 31 this year, and mentored 50. By 2012, the District approved teacher stipends, we provided funds and the building blocks to get teams off the ground. At last, FIRST was in all 6 Penfield schools! This created a high density of Penfield FIRST teams. FIRST's VP of Digital Marketing contacted us to learn how we formed an "exemplary adoption of a robotics program" to create "more districts like Penfield across the US." With our reputation in FLL, programs like the YMCA and our library contacted us to start teams. For 12 years, we've run FLL coach seminars and summer camps for 100+ kids. Every year we hold help sessions for presentations, team-building, robot attachments and programming. We volunteer at FLL Qualifiers and local Champs. We run 2 FLL scrimmage style events, and the Penfield FLL Qualifier that we created 3 years ago.

2014 was a busy year as we also helped organize the first Rochester FTC Qualifier. We are on the planning committee, volunteer in major roles and publicize it. In 2012, we helped form FTC6996. We help them with programming, CAD, 3D printing robot parts, critiquing their engineering notebook and presentations. Our Week 0 event inspired them to host their own scrimmage in 2014. We're so proud of them; they made States all 4 years and hosted the Qualifier this year! They're the Oncoming Storm to our Thunder: 15 recruits in 4 years!

This year, we doubled the size of our team by recruiting through FLL/FTC teams, demos at schools, Club & Activity fairs, morning show and tech classes. New students are integrated with team building activities like bottle rockets, mock VEX competitions and getting lost in a corn maze! We learn tech skills and time management by dividing into 7 subteams that meet weekly. This year we added community service and FLL/FTC subteams. We used to have a program to get girls involved, but we realized we didn't need it as we have a culture where everyone feels welcome and can be equally involved!

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We need to lift each other up by helping other teams reach their full potential. We've helped teams grow and be self-sustaining through talks at Champs and Regionals on topics such as safety, STEM legislation, starting teams, running events and leadership. We provided mentor training to FRC73, provided FRC5254 leadership tools to start their own program and jump-started FRC5433. Our handbook and safety program are used by many teams. We held an all day FRC workshop for 12 teams with talks from 5. We've helped teams from 17 countries; from a Mexican rookie team's business plan all the way to Israel translating files. We're an open-source team with a Build Season webcast, online engineering notebook and vlogs. Teams named our pit ThunderMart because we share everything! Pit admins send teams directly to us for help. We lend game pieces and field elements to teams. In 2016, we helped fund FRC1405's way to Champs and they became World Finalists. We've assisted 1,016 FRC teams in 13 years!

Giving back to FIRST is a priority. We've beta-tested control systems for 8 years. We have 6 resources in the FIRST Fundraising Toolkit. Our CAD is featured in FIRST Robots: Behind the Design. Need event volunteers? We supply FTAs, MCs, refs, judges and more!

Our robot brings smiles to 20+ demos a year: a children's hospital, food truck rodeo and city schools. We love to demo with all levels of FIRST at places like FIRST Night at the Ballpark and ImagineRIT. We dove into the Maker movement 3 years ago when the Rochester Mini Maker Faire started, organizing the FIRST booth with a half field. Last year we

demoed at the PHS Faire and this year we added Barnes & Noble. We run high-impact demos like EcoFair, Monroe County and NYS Fairs, sharing FIRST with over 2 million people over the years.

We couldn't have achieved so much without the leadership skills we learned by running our major events, demos, fundraisers, community services and subteams. We lead summer projects like revamping our robot cart and building drive bases. Elected students run meetings and organize recruitment, team building and training. 6 FRC teams attended our annual Leadership Boot Camp to learn public speaking, personal development and communication. Camp materials are used in a PHS leadership class.

Once a FIRSTer, always a FIRSTer; our alumni continue to impress us! Mo, Jackie and Mark are FRC lead mentors on 4930, 2340 and 1836. Josh, Vaughn, Ben and Jason mentor us, and many volunteer! Shauna did a communication exercise with us that she learned at NASA. 88% of our alumni have pursued STEM majors, earned \$296,000 in FIRST scholarships and work at places like Harris, Toyota and NASA. The 1511 Alumni Association tracks our 85 alumni.

We all hope to have that one adult in life who resonates with us like no other, who teaches us life skills we don't know how we ever lived without, who is a friend, a coach and a teacher: our mentors. They help us apply for scholarships, write recommendation letters, advise on school engineering projects and inspire us to pursue a variety of careers. Our parents are also an integral part of our team. We could not be successful without them; they feed our entire team, form our advisory board, do administrative tasks and mentor.

PHS is the final rivet in our success. Our superintendent insisted we attend the FIRST National Advocacy Conference (NAC) although it was during finals. The District provides 3 teachers and equipment like 28 Lego kits for middle school tech classes. We use the school year-round for events, robot builds and LAN parties. School staff wear red camo to competitions and on Spirit Days. We thank the School Board with demos, presentations and handmade awards! STEM advocacy is one of the best parts of our high school career because we directly impact our government. We've attended the FIRST NAC for 3 years and are co-organizing it this year! We work with our representatives year-round to pass STEM legislation such as the Every Student Succeeds Act that funds afterschool programs like FIRST. These reps visit our school and events to talk with us and see what FIRST is about. At FLR, we co-host an advocacy info session to get more teams involved. We do Dean's Homework every year; last year, we advocated for the Christa McAuliffe commemorative coin in DC.

For 13 years, we've experienced hardships and love, death and life, but we're always there for each other. Our team is like Thunder; it doesn't just affect those who hear it, it creates a sound so powerful that it can be felt miles away. The Thunder keeps getting louder!