

Rolling Thunder has stormed through the ranks of FIRST for 12 years. With Harris as a sponsor, our school, PHS, behind us and our thunderous spirit, we've built a strong base for continuous growth. We encourage *everyone* to join our FIRST efforts. Our inspiration reaches all FIRST levels across the globe.

For 5 years we've joined forces with FRC340 to run the FIRST Make a Difference Day MEGADrive. Over 13,000 items have been donated: kids' books, food, blood donations, toys and recyclable electronics! In 2013 we were National Honorees and won \$10k used to start and sustain 6 FRC/FTC teams. USA Weekend Magazine featured us in 22.5 million copies nationwide!

Community service is a priority for our team! We are 3D printing prosthetic hands for kids through e-NABLE. At competitions, we donated baby gear in Boston, eyeglasses in DC and LEGOs in St. Louis. We made care packages for Walter Reed Army Medical Center, and collected 32 boxes of toiletries for the homeless at the Open Door Mission. We wrote letters to thank veterans for their services and welcomed them home from Honor Flight. We packed a semi with donated books to be sold in libraries across the US. In honor of affected team members, we've raised over \$11k for Multiple Sclerosis, Cystic Fibrosis, JDRF

and Leukemia & Lymphoma. The Town, County and NYS Senate recognized us for our efforts.

For 2 years, we've advocated for STEM education with FRC27 in DC as the NYS team. We meet and work with our representatives year round to pass STEM legislature. We lobbied for the Every Student Succeeds Act that includes funding for afterschool STEM programs like FIRST. It passed! We plan to go each year to advocate for STEM.

To get more teams involved, we co-host an advocacy session at FLR and hand out info packets. We advocate locally, discussing the value of STEM education with Assemblyman Johns, who came to Rally, and State Senators Robach and Funke. They supported a \$250k grant to start FIRST teams in NY!

To promote FIRST, we ran 21 robot demos this year at festivals, sporting events, a children's hospital and even a food truck rodeo. Our demo at the Science Center Android Exhibit was on the news. We demoed bots with FLL/FTC/FRC teams at FIRST Night at the Ballpark, ImagineRIT and a mall family fun night. We brought our robot to a city school to introduce them to FIRST. We run numerous

high impact demos like at an Eco Fair, the NYS Fair, and Monroe County Fair. An estimated 1.85 million people attended these events over the years.

We make it loud with our many events publicized via local news channels, social media like our daily online newspaper, and press releases. We run a Week 0 scrimmage, an offseason and 2 FLL events. Last year we screened SlingShot at PHS. This year 1511 was in a TV news special where we discussed FIRST and drove our robot. We participate in Maker Faires at the Science Center and PHS. The last 2 years, we organized 4 FRC, 2 FTC and 2 FLL teams to join us at the Rochester Mini Maker Faire with info booths and fields!

We learn to lead by running our 5 major events, 50+ demos, fundraisers, and community services, and leading subteams and presenting designs. As a summer project, students built a new drivetrain that inspired our 2015 robot. Elected student leaders run meetings and organize recruitment, team building activities and trainings. 6 FRC teams have attended our annual Leadership Boot Camp to learn public speaking, personal development and time management! Camp materials are used in a PHS leadership class. Alumni also present at the camp.

Our alumni continue to be leaders. One has a Leadership Master's degree, another is in a leadership program at RIT and a third leads FRC1836. 89% of our

alumni have pursued STEM majors/careers, earning \$295k in FIRST scholarships, and work at Harris, iRobot, Toyota and NASA. Alumni volunteer at events; 6 of them mentor 1511. One did a communication exercise with us that she learned at NASA. The 1511 Alumni Association keeps track of our 80 alumni.

Harris has been our main sponsor since our inception. They provide 11 engineers, make student-designed parts, feature us in their newsletters and hold an annual mentor lunch. Our robot attended Take Your Child to Work Day and was a hit! Harris invited us to demo our robot and discuss FIRST at the Rochester Engineering Society Gala.

During our Patron Drive, we visit 100+ businesses to gain sponsors and spread FIRST. Patrons enjoy our newsletters, event invites and robot demos.

Our mentors work with students on engineering projects in PHS classes. They help us apply for scholarships, write recommendation letters and inspire us to pursue STEM careers. Our parents formed an advisory board to keep us organized.

PHS encourages our success. Our superintendent *insisted* we attend the FIRST National Advocacy Conference even though it was during finals. The District provides equipment and staffing, including 4 teachers for 1511, to become

a K-12 program. We use the school year-round for events, robot building and even LAN parties. The tech wing was renovated, tripling our workspace! School staff wear red camo pants to our competitions and on Spirit Days. We thank the School Board yearly with a robot demo, a presentation and handmade awards!

We recruit students through FLL/FTC teams, and demos at schools, Clubs & Activities fair, Freshman Orientation, Talent Shows, Pep Rallies and tech classes. 39% of the team are girls, and to encourage more girls to join STEM, 2 of our female mentors trained 400 Girl Scouts on programming. Our 6 fall subteams meet weekly to develop skills ranging from mechanical to marketing. Veteran students introduce new members to team culture through team building activities like bottle rockets and mock VEX competitions.

We inspire all FIRST programs. In 12 years, we've sponsored 174 FLLJr/FLL teams and mentored 45 FLLJr/FLL/FTC teams. We started FLLJr in Penfield in 2010 and demoed our robot at the RIT FLLJr Expo for 3 years. 1511 put FLL/FTC in all 5 Penfield schools and got the District to buy 28 Lego kits for middle school tech classes. In 2013, we started FTC6996 Oncoming Storm and last year we helped start FRC5433. This year we sponsored 19 FLL and 7 FLLJr teams.

We gave presentations at YMCA and a local Library to help start 3 more FLL teams.

Each year we volunteer at 3 FLL Qualifiers and local Champs. We host 2 FLL events and 2 years ago we started, and still run, the Penfield FLL Qualifier. For 11 years we've run FLL coach seminars, help sessions and summer camps for 100+ kids.

Two years ago we helped organize the first Rochester FTC event and each year we participate in the planning committee, volunteer in major roles and write press releases. FTC6996 has qualified for State Champs all 3 years and we funded their trips. We've competed with them annually to collect food for our local pantry. They are the oncoming storm to our thunder: 14 recruits in 4 years!

1511 has assisted 450+ FRC teams with almost everything. Teams named our pit ThunderMart because they can use our tools, parts and facilities. Pit admins send teams directly to us for help. Last year we lent totes and carpet to teams for their practice fields, and made parts for other robots. In 2014 we funded trips to Champs for 2 Dean's List Finalists and cheered them on. We're an open-source team with a Build Season webcast and online engineering notebook.

We train teams to be self-sustaining. Team members have given talks on PRs, safety, starting teams, running events and leadership at Champs and Regionals. We've provided mentor training to inner-city FRC73. We helped FRC5254 start a leadership program after they attended our Boot Camp. Our handbook and student-designed safety program is used by many teams. We brought a presenter from NI to our high school to teach LabVIEW; it was attended by 7 FRC/FTC teams. We held an all day FIRST workshop for 12 teams with talks from 5 teams. Globally, we've helped teams from 14 countries, like a rookie team from Mexico with their business plan and an Israeli team with mechanical advice and translating files.

Rochester Rally is a Week 0 event we've held all 12 years for local teams to test their new bots on a full field. Sponsors and alumni give speeches. Teams use our shop and tools to fix their bots. We inspired FTC6996 to host their own scrimmage.

Rah Cha Cha Ruckus is an offseason that has grown in 12 years from a school gym to a concert venue, hosting 40 teams. Several news channels cover it each year. 1511 organizes a committee of FIRSTers to run and host it. Teams use

Ruckus to recruit and prepare for next season. Rookies use our extra robot to compete.

We are a go-to team for the FLR committee. They asked us to organize robot demos at TEDxRochester, Robot Quick Builds at Kickoff, presentations to sponsors and give VIP tours. In 2014, we brought back the FLR social, and have been organizing it since! For FLR's 10th year, we made a welcome packet, a video and promoted FLR in a news interview.

We're a FIRST resource. We've beta-tested control systems for 7 years. We beta-tested control systems 7 years, presenting our results at Kickoff and Open Houses. Our Leadership page is on the FIRST website and our Patron Drive is in the FIRST Fundraising Toolkit. Most recently, we were featured for our CAD in "FIRST Robots: Behind the Design." We supply FTAs, MCs, refs, judges, and other volunteers for events. To help rookies network, we've run the All Rookie Meet & Greet at Champs since our first year; 20+ rookies attend each year. FIRST recognized the Penfield District as having one of the highest concentrations of FIRST programs. The VP of Digital Marketing contacted us to use 1511 as a model of how to grow FIRST in other Districts.

1511 inspires our community, other teams and ourselves. We are determined to keep inspiring others by our STEM advocacy and community involvement through FIRST. The thunder just keeps getting louder!