

Chairman's Award - Team 1511

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2022 - Team 1511

Team Number

1511

Team Nickname

Rolling Thunder

Team Location

Penfield, New York - USA

Describe the impact of the *FIRST* program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in *FIRST* programs as mentors/sponsors.

Since 2019, 100% of 1511 students graduate, go to college and pursue STEAM careers. 1 in 5 alumni are mentors: 11 mentor 1511. Alumni work at NASA, Toyota, and our main sponsor L3HARRIS. We develop leaders through outreach, advocacy on Capitol Hill and 1511 curricula. We train in CAD, 3D printing, project management and public speaking. Lifelong friendships grow from team traditions: LAN parties, shamrock shakes and breakfast for dinner. Our strong foundation prepares STEAM and FIRST leaders.

Describe your community along with how your team addresses its unique opportunities and circumstances.

Penfield is a suburb of Rochester, NY with the largest wealth gap border in the US between us and the city. We use our resources to provide underserved groups STEM opportunities such as robot demos, programming EV3s, STEM kits, STEM Nights, FLL camps & FLL team mentorship. Through our partnership with Bombas Socks we donated 8500 sock pairs with our STEM kits to a city shelter. We run 20 outreach events/year. Our Make a Difference Day drive donates 1000s of items throughout Greater Rochester.

Describe the team's methods, with emphasis on the past 3 years, for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?

We are known for our offseasons and official events for FLL/FTC/FRC, and presence at community events: Maker Faire, parades, fairs and baseball games; bringing FIRST to thousands of people in-person and around the world through live streaming. Grateful Red Music Fest and Robot Cage Match are innovative events to share FIRST with our community and our school faculty. We measure impact by tracking people reached, \$ given, and student advancement - ex. 80% of our FTC students move on to 1511.

Please provide specific examples of how your team members act as role models within the *FIRST* community with emphasis on the past 3 years.

We expect all members to be role models. Our 8 Dean's List Finalists, student leaders, advocates & mentors are examples of this. We create a professional environment where students are empowered to lead projects, robot building & events. We run & volunteer at 7 FLL/FTC/FRC events that wouldn't happen without us. We incorporated FIRST programs into every Penfield school. As an open source team, our resources are on our website and we share our knowledge at conferences, trainings and 1:1 meetings

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

We mentor all levels of FIRST & assist worldwide. This year, we mentored FIRST Global teams Seychelles & Uruguay weekly in their Economics Division projects (Seychelles ranked 10th out of 174!). In 3 years, we mentored 36 FIRST teams at weekly meetings 3 days/week; started 42 FLL/FTC teams; awarded over \$11,000 in grants for FLL/FTC/FRC teams. NY Advocacy Conf. teaches FRC teams how to lobby for funds to grow NY FIRST. We host an annual All-Rookie Meet & Greet at Champs to help sustain rookies.

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

During COVID, our "We Can Robot" YouTube series taught kids 3D printing, CAD and programming, to continue promoting STEM and FIRST. We had 1100+ views across 7 videos. We do STEM Nights at a local housing development for refugee families to increase access to STEM. We developed a Scout Badge curriculum helping over 100 scouts earn robotics badges and started one FLL Jr Scout team. We are at every Penfield school event demoing the robot, resulting in 42 new FLL teams, and FLL/FTC qualifiers.

Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years

Creating partnerships is what we do best! Our 73 sponsors give us stability and connections. Lead committees: offseason event Ruckus, FRC/ FTC/FLL qualifiers. Giving partners: AutismUp, Mega Drive, Golisano Children's Hospital. Youth Programs: Science Museum demo, Scout Badges, STEM Camps. Large FIRST exhibits: Maker Faire, NYS Fair, RIT. FIRST Teams: Speaking at 771's SWATposium and 2468's TX Advocacy Summit; Running Robotics Relay for a Reason with 578 and Rochester Recharge with 578 & 1559.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.

1511 accepts all team members who want to join and help them find and develop their niche. They represent many learning and physical abilities, races, and gender identities. We are members of PHS' LGBTQ+ Alliance and both FIRST's LGBTQ+ Alliance and FIRST For All. Our Achievement System allows students of all economic backgrounds to travel to competition. We provide access to STEM to underserved youth in our community through trainings, super fun activities, Science Nights and STEM kits.

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

We ensure our team's sustainability by empowering our students to shape THEIR team by incorporating their ideas, with student leaders focused on teaching younger members. Mentors work in areas of the team they are passionate about. We have an extremely low turnover of mentors with an average tenure of 11 years, 9 of which are parents of alumni. We maintain our year round events through our SOPs on our online Wiki, forms, trainings, committees and archive data to secure the future of our events.

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years

FIRST Fundraising Toolkit features OUR annual Patron Drive, where students formally present to local businesses to promote 1511 and discuss sponsorship opportunities. We distribute monthly newsletters detailing our events to sponsors and release a Patron Book with an end-of-season publication including advertisements for our sponsors. In an effort to support our sponsors, we purchased hundreds of meals from them to give to essential workers at five different locations to show our appreciation.

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

We want to improve our STEM outreach into our community. Part of our team legacy is community service projects that we are passionate about and helping others. Now we want to help the community while bringing FIRST to them. What we've done: This year we rebranded our community service subteam as our FIRST Outreach subteam. They look at previous events while planning new initiatives to involve STEM education. We've hosted multiple STEM-oriented community service events to achieve our goal.

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

Our goals include FIRST Program Development, Student Leadership Training and STEM classes/training. We run weekly FIRST programs year-round which gets STEM to kids of all ages. This led to the start of 42 FLL/FTC teams in the past 3 years. By graduation, every student has planned/led events, worked on the robot, given presentations and promoted FIRST. Our strong alumni base provides a constant flow of FIRST volunteers. Our 54 events this past year have created a community that values FIRST/STEM

Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.

The thunder keeps getting louder! Our efforts to make FIRST available to every student by active STEM advocacy at all levels of government are having an impact. We have strong relationships with state representatives; one spoke at our NY Advocacy Conference. She invited us to speak before the NY Assembly Education Committee to lobby for a Bill to provide funds for new FIRST teams in NY. We are creating real change: Our NYS STEM Day Proclamation was scheduled for 1/24/22! (Postponed due to COVID)

Essay

Our mission is to share our enthusiasm for STEM to motivate everyone we meet to become champions for FIRST. We do this by providing a strong foundation for our future STEM leaders, inspiring our community through STEM awareness & empowering teams to guarantee FIRST's success. Our long-term partnerships with our sponsors, school, FIRST teams & community allow us to connect with kids of all ages, abilities and backgrounds, leading many through all levels of FIRST to become successful alumni.

We provide a strong foundation for our future STEM leaders

1511's strong foundation starts by getting kids as excited about FIRST as we are. We brought FIRST to all Penfield schools, as well as homeschoolers. We partnered with Town Rec Dept. to introduce FLL to the community. In the last 3 years, we started 42 FLL/FTC teams, mentoring 36 at our weekly help sessions, giving them resources to be sustainable. We revamped our FLL camp curriculum to add exciting challenges. More importantly, these camps are low cost and spread across Rochester to bring FIRST to underserved & refugee kids.

We don't settle for the status quo; each year students champion new ideas that evolve 1511. Leadership roles are created by students based on interest and current team needs. With mentor guidance, we have authority to make team decisions from t-shirt design to robot strategy. By doing the work, we learn skills that will make us successful in future endeavors. We hone these skills by presenting to the Board of Ed, event planning, and developing relationships with local businesses for support through our Patron Drive fundraiser.

Our innovative preseason curriculum, ThunderTech, features CAD, Safety & Tools Trainings, Engineering Design Process challenges, Mock Build Season and a summer swerve drive project. Team rapport is built through fun challenging activities: corn mazes, tennis ball launcher designing, laser tag & team picnics.

Our Achievements System rewards effort. Students reduce their costs for competition by participating, such as organizing outreach events or attending weekly meetings. This gives every 1511 student equal opportunity to compete without financial worry.

Our alumni add a new level of mentorship because they understand our perspective. Alumni aren't just mentors; they share advice, expertise and 1511 lore. Our 1511 Alumni Association helps us support them when they mentor & volunteer at FIRST events. 1 in 5 of our alumni are FIRST mentors; 11 mentor 1511. 90% of our alumni have gone on to STEM majors, working at Toyota, NASA & L3Harris. In memory of an amazing 1511 alum, we created the Tommy Murphy Scholarship, which has helped 7 students in the last 3 years pursue STEM education.

We inspire our community through STEM awareness

1511 plays an active role in integrating FIRST into our community. Our newest innovative event, Grateful Red Music Fest, mixes rock and robots at the town amphitheater. We demo our robot while bands play for an excited crowd of hundreds. We partner with AutismUp and Ronald McDonald House because of our personal team connection to them, raising \$2000. "The event was such a success in its first couple of years that we plan on having the event held again every year."-Town Rec Director.

1511 provides access to STEM virtually. "We Can Robot" is our informative 7-part YouTube series that kept the community engaged in STEM during COVID with topics like programming, simple machines & advocacy. It had 1100+ views and was shared by FIRST! Our events reach a wider audience because they're featured on local news and streamed on Roku, Apple TV, Spectrum TV, Penfield TV, Twitch & YouTube, reaching 9500+ people in 29 countries.

We focus on high-impact interactive demonstrations to promote FIRST to the masses. We run a FIRST expo at the Rochester Maker Faire, inviting teams from all levels of FIRST to showcase their robots for 1000s. At NYS Fair (10 yrs), we run exhibits in 2 different buildings for 2 days. We talk to as many of the 250,000 visitors as we can about how to start & join teams. NYS Fair introduces FIRST to a large non-STEM audience, as do demos at the NYS School Boards Assoc. & Red Wings baseball games. We share FIRST with 40,000 attendees at our demos at Imagine RIT, Penfield & Rochester STEAM fairs, Girls in STEM fair and St. John Fisher College Day of Science. We average one STEM promotion event per week!

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We partner with our school district to make them a champion for FIRST. Our school presence includes a mural of our robots, teachers wearing our camo pants, the robot at the homecoming football game and plenty of workspace. Our Robot Cage Match had faculty go head-to-head driving our robots to understand FIRST in a fun way! Our new principal became a FIRST fan after attending Kickoff! Our Robotics Board of Representatives works with our school board to revise team policies and make sure we're achieving our goals. We continue to work with our district to provide LEGO kits to our schools and coach stipends.

Our longest running service project is the FIRST MegaDrive for Make a Difference Day. We donate 3000+ kids' books, toys, food items & school supplies each year. As a Giving Partner with Bombas Socks, we made 1194 STEM kits to go with 8500 pairs of socks (their most needed item) and food to the Rochester homeless. The organization said, "Our partner schools are thrilled to have the opportunity to introduce their students to STEM with such hands-on fun!" These events combine outreach with STEM promotion such as Books and Bots at the library (storytime for kids pre-K to grade 3 with robot demo), STEM Nights for refugee families, and Girl Scout robotics badge trainings that resulted in a FLLJr team!

During COVID, we refocused our energy & resources on our community's immediate needs. We 3D-printed 255 face shields that went to 3 hospitals & 2 nursing homes. A hospital professional said of our shields, "The 1511 design was superior as it afforded greater lateral protection and improved comfort. It seems you went over and above the NIH regulations." To thank our frontline workers, we used the money earned at our Trivia Night to purchase 100s of meals from our sponsors, delivering them to 3 hospitals, a nursing home & an urgent care center. We worked with local businesses to provide 9 carloads of coffee and snacks to hospitals and urgent care facilities.

We empower teams to guarantee FIRST's success

In the last 3 years, we assisted 74 FRC teams, mentoring 9. We helped FIRST teams in 19 countries sustain FIRST globally. We sent mentors to China and mentored 4 Chinese teams on all aspects of FIRST. We assisted Turkish team 6838 on robot design and outreach. Last summer we mentored Team Seychelles and Team Uruguay in the FIRST Global Challenge.

1511 keeps FIRST active year-round! In winter we run Rally, a scrimmage for local teams to test and improve their robots before competition. In spring we run All-Rookie Meet and Greet at Champs to help rookie teams with sustainability. In summer we ran Rochester Recharge scrimmage with teams 578 & 1559 to bring FIRST competitions back after COVID restrictions were lifted. In fall we run Rah Cha Cha Ruckus, the only offseason event in western NY, where teams recruit and test new pit crews/drive teams. STEMley Cup and Robot Rumble offseasons were modeled after Ruckus with our resources.

As an open-source team, we help teams be equally competitive and make FIRST stronger so that we can make a bigger impact together. We share all that we know and do: we have 6 resources in the FIRST Fundraising Toolkit, leadership trainings on our website, a team wiki with our designs, our CAD in the book "FIRST Robots: Behind the Design," and a FIRST Updates Now "Behind the Bumpers" video. We've been a control systems beta-test team for 11 years, presenting results at Kickoff. At Champs & Regionals we present on advocacy and leadership. We host Chairman's and Leadership Boot Camps to strengthen local teams. Using our materials, we help them start their own camps.

1511 starts & sustains all FIRST programs. We started FTC6996 at our middle school with 80% of alumni joining 1511. Our grant program has given teams \$11,000 (3 yrs) in addition to travel & registration fees we covered. Rumble, our FLL offseason event, keeps teams excited to continue next year. We run & support local FLL/ FTC qualifiers and FLL Champs every year. We saved the 2021 FLL qualifier by making it happen virtually with 100% of the volunteers from 1511.

Our most significant impact is advocating for legislation that funds STEM programs like FIRST. We train teams to do the same at the National Advocacy Conference (NAC) and our NY Advocacy Conference (NYAC). NAC & Student Assoc. for STEM Advocacy (SASA) founder Steve Hyer, "1511 is an integral piece in building a coordinated STEM advocacy effort. They are a mentor and leader to teams across the United States." Our reputation as an advocacy leader has led to cross-country connections. We are SASA charter members, we shared our NYAC resources with FRC2412 to start a WA state conference, and presented our advocacy efforts in Texas. Our work is leading to real change!

We speak to all levels of government to educate them and make them fans of FIRST, from the Governor's office to the US Secretary of Education! This year we repeatedly met with NYS Assemblymember Jen Lunsford & our representatives to advocate for Bill A1219, which allocates \$250,000 to start NY FIRST teams. Lunsford, "It was inspiring spending time with these engaged young people and I can't wait to host them in Albany."

We are champions of FIRST

To motivate everyone to join the FIRST effort, we create a strong group of students who will become our future STEM leaders. Those students become part of our community so it values and invests in 1511 and FIRST. We help other FIRST teams with our resources strengthening them and FIRST. With everything we do, the thunder just keeps getting louder!