

We are 1511 Rolling Thunder from Penfield, NY. From our 20-year history we have 156 alumni and 42 current students. Our mission is to transform our culture to value STEAM by creating student leaders, starting and sustaining teams, and ensuring access for everyone. To fulfil our mission, we empower our students to become effective, self-confident leaders. Through our Rolling with 1511 system, we start new FIRST teams and guarantee their sustainability. We then develop and advance opportunities to connect all individuals to STEAM. We're involved in activities from local outreach events to STEAM advocacy, creating a better future for everyone.

BUILDING SELF-CONFIDENT LEADERS

We empower our students, transforming them into self-confident, effective leaders. Students are leaders on our team. Our student leadership subteam meets year-round to manage team events and activities. Leadership positions are saved for new students to keep them engaged and they provide fresh ideas. We provide opportunities for each student to become a leader (subteam leaders, advocacy champions and outreach event organizers). The application, interview and speech process they go through to earn their role develops communication skills and self-confidence. ThunderTech, our annually updated preseason curriculum, ensures all our students develop real-world technical and interpersonal skills through 7 subteams who meet weekly, allowing students to specialize in their areas of interest. Beyond ThunderTech, our Thunder & Lightning system facilitates veteran and new student mentorship pairs to quickly onboard new members.

Another way our team encourages student engagement is through our Achievement System. When a student participates in a team meeting, event, or fundraiser, it reduces their travel costs. Our Achievement System breaks down financial barriers while encouraging team involvement. One Achievement is our Patron Drive, a fundraiser where students ask local businesses to support our team. This teaches students to professionally communicate with local businesses owners to promote 1511 and FIRST, effectively increasing our partnerships.

Starting from one student's idea to combine their love of music and FIRST, our annual Grateful Red Music Festival has grown into our signature event, where we show off the robot to 200+ attendees while they enjoy live music and food trucks. Each year we raise more money for our team and a selected charity: Autism Up, Ronald McDonald House, and this year, Nucor House, which supports veterans. Despite heavy rain, our 2023 festival was our most successful to date, raising \$4292. All the bands and vendors plan to return next year! Developing student leaders creates a culture where innovative ideas can be freely shared and become reality, inspiring even more leaders.

EXPANDING AND SUSTAINING FIRST

Our "Rolling with 1511 System" promotes and expands FIRST by starting teams and guaranteeing team sustainability. This system consists of all our sustainability-focused documentation, which we make available to support other FIRST teams. Our system focuses on how teams can create a continuous stream of students and mentors in addition to diverse financial support for all levels of FIRST. To make our events sustainable, we document the process to be replicated and improved upon. We sustain FIRST globally through our rookie resources, leadership training, FLL camp curricula, and giving workshops and Champs conferences on Impact, outreach, sustainability, advocacy and leadership.

Running FIRST events in our community helps keep teams at all levels sustainable. The FLL and FTC Qualifiers we run make competitions more accessible locally. This year, 87% of volunteers at these competitions are 1511 members. To recruit students for FLL and FTC, we hold 6 annual events: 4 FLL summer camps, a FIRST Info Session, and FIRST Night, which educates students and parents about all levels of FIRST and how to start and join teams.

This year, we started and mentored 15 FLL teams. To help these teams with their upcoming season, we host a FLL Kickoff event to teach them about the game, programming, judging, and the Innovation Challenge.

Because of 1511, every school in our district has a FIRST team. All our district's elementary schools have FLL, which feeds students into our FTC middle school team, 6996, that we started 10 years ago and continuously mentor. To encourage members to move on to FRC, we involve them in our community engagement, such as the Maker Faire FIRST Exhibit, Penfield Ambulance Demo and STEAM Day. In the last 3 years, over 60% of 6996 students joined 1511.

Our area is saturated with FRC teams, so we create our own FRC events to sustain them and keep them engaged. Rah Cha Cha Ruckus is our offseason event we run for 30+ teams to help them retain new members and train drive-teams. This event inspired teams to create their own events to support their local teams. We taught FRC4039 how to start and run their STEMley Cup event. This year, we improved Ruckus by holding it in a larger event space in partnership with a local college.

Rochester Rally is a scrimmage for local teams to test and improve their robots before competition. To provide more practice time, we expanded it this year from 1 day to 6 days.

At the All Rookie Meet and Greet we run at Champs, we provide rookie teams with opportunities to network with other teams via a scavenger hunt. We provide them with our sustainability materials so they continue to be successful in accomplishing FIRST's mission.

We recruit mentors from our sponsors, community members, parents and alumni. We have 32 mentors; 8 from sponsors, 7 alumni and 9 parents of alumni. Take-Your-Kid-To-Work Day at L3Harris is our largest sponsor demo and grew to 2 locations this year. There we promote all levels of FIRST to potential students and mentors. Last year, to sustain our 3 teacher advisors, we advocated to the School Board to successfully increase their stipends.

For financial stability, our 57 sponsors sustain our team allowing us to avoid relying on a single funding source. We have a mutually beneficial partnership with each sponsor where we receive financial support in return for promoting their business and giving them access to future interns and employees. To further promote team sustainability, we raise \$15K annually through student-led fundraisers: Trivia Night, Can Drive and selling 1511 swag. These fundraisers eliminate the need for student dues and increase student engagement.

CONNECTING INDIVIDUALS TO STEAM

We develop and advance opportunities to introduce and connect all individuals to STEAM. To excite our community about robotics, we run interactive robot demos for all ages. We ran 32 demos this year, at diverse events such as FIRST Day at Rochester Red Wings baseball, Cameron Community Ministries, and Light the Night charity walk. We built a long-term partnership with the Rochester Museum & Science Center, demoing 3 times this year and we are scheduled to return for a 3-day demo for the solar eclipse. To promote STEAM in our school, we demo our robot throughout the year, from Homecoming to the Academic Showcase. During our town's 4th of July Parade, cheered on by 10,000 spectators, teams from all levels of FIRST march alongside our float and robots. To promote these events to a broader audience, we invite local news channels and we've given several interviews.

To ensure everyone has access to STEAM, we became intensely involved in advocacy in our local, state, and federal governments. We're the only team to attend all 10 annual National Advocacy Conferences and have co-organized since 2020. We learn and teach effective advocacy strategies and meet with elected representatives. We advocate for increased support of STEAM bills like the CHIPS and Science Act that provides funding for robotics and STEAM programs. Our annual New York Advocacy Conference (NYAC) we started in 2019 had 3 FRC teams last year and grew to 11 FRC and FTC teams in 2023. We train students from across New York to be effective advocates and build relationships with their state legislators.

A key result of our advocacy happened in 2022, when November 8 was proclaimed NYS STEAM Day, and we were recognized on the House floor for our efforts. One of our most successful, long-term partnerships has been with NY Assemblymember Jen Lunsford, who has become a champion of FIRST, and introduced Bill A3445. We also worked with Senator Samra Brouk who introduced a similar bill, S1576, into the Senate. These bills will allocate grants to start and sustain FIRST teams in Title I schools.

In May 2023, we organized 3 FRC teams to showcase their robots at the NY Capitol Building in Albany. Then we coordinated meetings to discuss these bills with the Senate Finance Committee and the Assembly Committee on Education.

As a follow up to NYAC, we hosted Lobby Day in January 2024 during NYS budget negotiations to increase the likelihood the bills would be passed. Teams had virtual meetings with their representatives to advocate for FIRST in all NY schools. As a direct result of our efforts and partnerships, both bills are now in their respective committees.

To celebrate NYS STEAM Day, since 2022, we presented to 2,000+ students at all 4 of our elementary schools about the power of STEAM for their future. We showed off the robot and answered a TON of questions. Our efforts inspired our school district to make it a week-long event and purchase STEAM Kits (we picked out and sorted) for every K-5 student to expand the concepts we taught into a classroom enrichment activity.

WE ARE CHANGING THE CULTURE

By creating student leaders, starting and sustaining teams, and ensuring access for everyone, we transform our culture to value STEAM. We've seen the outcomes and impact of our efforts in ourselves, FIRST, and our community, driving us to continue to innovate and grow year after year.

The Thunder just keeps getting louder!