

FIRST Team 1511 Rolling Thunder 2018 Chairman's Essay

All it takes is the flap of a butterfly's wings in the past to change everything in the future. Rolling Thunder's wings first flapped in 2005 but quickly grew to "a sound of thunder." Every year we evolve and make a bigger impact.

This year's focus was to grow our impact with e-NABLE, an organization that 3D-prints prosthetics. We started by printing 48 hands and now we're partners. We invited 2 leaders of e-NABLE to join us for our conference at Champs 2017. We instantly connected and they became honorary team members. They invited us to present and help run e-NABLECon 2017 in DC where we made an advocacy video for e-NABLE to use as an educational tool for students. We also met with Representative Takano's staff at this event and talked about how kids can advocate for what they believe in. Our e-NABLE efforts skyrocketed: we helped them become a non-profit, 4 of our mentors are now active members, including one on the Board, two of our students helped found an e-NABLE international youth advisory board and so much more!

Another creative way we spread FIRST is our advocacy. We're no strangers to Capitol Hill, advocating for STEM education the last 4 years at the FIRST National Advocacy Conference. New in 2017, we co-hosted NAC and created a promotional video. We work with our representatives year-round to pass STEM legislation like the Every Student Succeeds Act that funds afterschool programs like FIRST. We invite these reps to our school and events and we teach them what FIRST is about so they know why it's important to support STEM funding.

We're working with NY teams to pass Bill A5736, an initiative started by FRC340, for a \$250k grant to start new NY FIRST teams. Three of our reps signed on to the Bill after our meetings with them. We met with the governor's office several times last summer to put the Bill into the budget.

From our government to our community, we've spread FIRST to an estimated 2 million people. This year we've had 17 demos, 105 total over the past 5 years. We demoed at our school's Maker Faire to spread FIRST through our school. We also demoed at the NYS Fair introducing FIRST to people all over NY,

and inspiring a 4-H club to start an FLL team. Since 2014, we've organized a large-scale demo of all FIRST levels at the Rochester Mini Maker Faire. At these demos, we explain that FIRST is an organization that educates students about STEM by competing with robots.

We make a large impact in our community and our participation exposes us to new interests and opportunities. We are truly inspired by our veterans' sacrifices, so we write letters to thank them and welcome them home from Honor Flight. We raise money for different causes with a personal connection like the CF walk for Kyle, LLS walk for Rachel and JDRF walk for Jordan. The first year, we raised \$3,000. Now, we've helped raise over \$22K, increasing our impact on these important causes. This year, we joined FRC578 in their FIRST Robotics Relay for a Reason walking overnight and raised over \$1250 for Camp Good Days.

For 7 years, we've joined forces with FRC340 to run FIRST Mega Drive at RahChaCha Ruckus. Our efforts were recognized by USA Weekend Magazine and we won \$10K that we used to start and sustain 6 FRC/FTC teams rather than spend it on ourselves. Over the years, we've collected over 17K items like kids' books, food and recyclable electronics to donate. 784 items were collected in the first year. This year we collected 2718 items.

1511 founded and chairs the Ruckus Committee, half of which is made up of other FIRST mentors with whom we have built strong bonds. Ruckus is our Halloween-themed offseason event that grew from 15 to 42 teams in 13 years. It allows teams to introduce new students to competition and lets them test their drive teams. Like all our events, we invite the press and the public, further spreading FIRST in our community. New this year, we had FRC5606 from China attend, and held Bot-O-Ween to promote STEM to kids while touring the pits.

For 14 years we've held Rally, our week 0 scrimmage at PHS where local teams can test out their robots on a full field we build. They have full access to our shop, tools and mentors.

Because the Finger Lakes Regional is our home regional we try to make it the best. Our lead mentor is on the planning committee. During the event, we host

conferences on advocacy and Chairman's. We brought the Team Social back in 2014 and this year it is at Skyzone! We also give VIP tours, this year one will be with Congresswoman Slaughter. We also ship the Rookie All-Star's crate to Champs.

At Champs, we do more than compete. Since our first year, we've hosted All-Rookie Meet and Greet where rookies can network. We provide information on sustainability in hopes that teams will stick around and make their own impact. We've also given talks at Champs on topics such as e-NABLE, starting teams, running events and leadership.

Giving back to FIRST is a priority. We've beta-tested control systems for 9 years. We have 6 resources in the FIRST Fundraising Toolkit and our CAD is featured in FIRST Robots: Behind the Design. At FIRST events we supply FTAs, MCs, refs, judges and more.

We feel we're a role model team because we work with other FRC teams in the spirit of Coopertition. We've helped 1079 FRC teams over 14 years. We share everything, like our CAD with FRC2526 to leadership materials with FRC5254 to start their own program. In 2016, we supported FRC1405's way to Champs and they became World Finalists. Our handbook and safety program are used by many teams. We're an open-source team with an online engineering notebook and blog. We've helped teams from 17 countries; from a Mexican rookie team's business plan to translating CAD files for an Israeli team.

Our latest global outreach has been to China. Two of our mentors went to China last summer to work with students to build a FRC robot for an offseason event as part of the Sino-US United Project. That group was inspired to form 2 FRC rookie teams, 7080 and 7095. We're helping 2 more Chinese teams with logistics, sharing tools and shipping one of their robots to FLR. We're mentoring all 4 teams via WeChat. We've connected them with FRC5606 so they can have Chinese mentorship as well.

We strive to help all levels of FIRST. From student-raised funds, we've sponsored a total of 218 FLLJr/FLL/FTC teams, mentoring 50+ teams in the past

14 years. We helped form 14 FLL teams this year. This past summer we revamped our FLL camp curriculum by adding challenges to the game to make it new and fun. We mentor students at help sessions, hold offseason events, volunteer and judge at competitions, and are part of the FTC Qualifier planning committee. We provide materials, like tools and a game test to FTC9627 and EV3 kits to city FLL teams, 31518 and 6149. In 2013, we helped start FTC6996 and 80% of their students have continued on to 1511. Over the past 2 years we've helped them fundraise over \$1,200.

To fundraise for ourselves, each student is encouraged to organize a fundraiser, from car washes to can drives. Our biggest fundraiser is Patron Drive where we raise \$10K annually by visiting over 100 businesses. Our community involvement helps patrons see the importance of FIRST, our team and why it's beneficial to invest in us.

Our 14-year partnership with Harris has been vital to 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, Take Your Child to Work Day and, new this year, Engineering Week. We've had alumni intern and work at Harris.

Our mentors are some of the most dedicated, kind-hearted people you'll know. They help us apply for scholarships, write recommendation letters, advise on school engineering projects and inspire us to pursue a variety of careers. Our mentors inspire us to work hard and make something of our lives. Our parents are also a key part of our team. We couldn't be successful without them; they feed our entire team, form our advisory board, do administrative tasks and mentor.

PHS is a large supporter, leading us to our success. They allow us to 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 and presentations. Because of our strong relationship with the PCSD, we were able to work with them to incorporate FIRST in all Penfield schools in 2012.

1511 is proud to be a student-focused team. We're in charge of running demos, fundraisers and community service events. Elected student leaders run meetings, organize team building exercises, recruit and train. This enables us to do everything 1511 does like talk to government officials and sponsors. We host an annual Leadership Boot Camp to learn public speaking, personal development and communication. Camp materials are used and taught in a PHS leadership class. Thus, we're impacting students outside of FIRST and helping other students become leaders.

The team impacts our futures. Our alumni have earned \$296,000 in FIRST scholarships. 92% of alumni have pursued STEAM majors. We have alumni working at Toyota, NASA and AndyMark. Our 1511 Alumni Association helps us keep in touch with our 96 alumni which allows them to easily come back to mentor us, or to get 1511 support when mentoring other teams.

1511 has a large impact on our lives. When we join the team we're welcomed by all and immediately feel accepted. There is a place for everyone on the team and different subteams help us build confidence in abilities we will use later in life. The team affords us wonderful life skills and experiences.

Throughout the years of 1511's existence we've had a large impact on the world around us. It's the Butterfly Effect: every small event and interaction leads to a larger outcome and new opportunity. A sound of thunder impacts all who hear it.