

# Chairman's Award - Team 3015

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2021 - Team 3015

**Team Number**

3015

**Team Nickname**

Ranger Robotics

**Team Location**

Spencerport, 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.**

-FIRST provides 3015 students with real world skills such as communication, leadership, confidence, and problem solving -100% of our members graduate high school and 93% attend college. 79% go on to have careers in STEM and 75% of students who do not continue onto college join a trade -100% of 3015 members mentor students in younger programs -Ranger Robotics is a family. Members build meaningful relationships with one another as well as mentors that help them long past their high school career.

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

-It is a privilege to live in a close knit community that is extremely supportive of our program. From car decals to t-shirts, our logo can be seen all over town. Support is shown in all different ways such as sponsoring, mentoring or cheering us on. -To give back we started a Chalk the Walk Event to share positive messages and support the American Cancer Society. -We gathered goggles from local schools, created and delivered stem kits and made blankets which were donated to 3 local hospitals.

**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?**

-To showcase the opportunities FIRST offers all 27 Ranger Robotics teams, we created Robopalooza. Community members of all ages experience fun STEM activities, drive the robot and participate in interactive stations -We shared FIRST robotics at the NYS School Board Association Conference, Monroe County and EdCamps. Reaching 1500+ attendees: inspiring them to start FIRST teams in their schools -We see measurable results by the # of students involved and teams we are able to start and maintain

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

-Our team organizes and runs FLL Qualifiers. Students fulfill all roles from referees to sound crew so the event runs smoothly -We host FRC kickoffs and make it fun for attendees by adding breakout sessions, chairman's chat, and door prizes -Our female members started a club called GEMS (Girls Empowered in Math and Science) where elementary school girls learn about basic engineering concepts -We run an annual STEAM Day where members lead hands on science lessons for all K-5 district students

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

-We helped start FRC 6490 in Geneva and 7299 in Mexico, mentoring them both for 3 years -We have started 25 FIRST teams in Spencerport over the past 3 years and mentor all of these teams. (new: 10 JrFLL, 4 FLL in 2018, 6 JrFLL, 4 FLL, 1 FRC in 2019) -Hosted workshops at our local kickoff sharing all aspects of FIRST, helping to connect with local teams -We invite others to come to build sessions, the WAREhouse, RoboPalooza, and competitions to learn more about starting their own FIRST teams

**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?**

-We engage students through STEM lessons, GEMS club and STEAM day. These initiatives have led to an increased number of students excited to learn and interested in joining one of our FIRST teams -To reach kids outside of our district, we sent 30+ STEM Starter Kits to teachers across the US. Each kit had instructions and all materials needed to do the lesson -Our YouTube channel was created to showcase STEM videos we produce to explain how to use the kits, as well as teach science lessons

**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**

-We value our partnership with Team 7299 from Monterey, Mexico. Over the past 3 years they have traveled here to practice and compete with us. Using whatsapp and slack, we brainstorm mechanism design and improvements, starting STEM clubs in schools, how to find new sponsors and more. The partnership has resulted in enduring friendships - Another unique partnership is our WAREhouse with 340 and 6868. Our schools rent the space, share work space and invite other teams to practice on our full field

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

-Knowing FIRST's impact and the challenges schools face starting teams, we invited students from UPrep, a Rochester city school to join and become members of our team -We are proud to say that over the years we have worked to recruit and maintain female participation on our team. In 2019 we hit an all time high of 54% female students and have worked to maintain this involvement with 58% this year -All students on team 3015 have an equal opportunity to be a leader or play a vital role

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

-To ensure every student joining 3015 is equipped with the skills needed for the upcoming build season, we created a series of classes called Ranger Reboot. At each session they learn about topics such as CAD, marketing and scouting - Throughout our district "FIRST is the thing to do" and we have worked to make sure FIRST programs are available to students at every grade level. As kids move through each program they build upon their skills, knowledge and learn about FIRST's values

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

-It is important to maintain relationships with our sponsors. We invite them to a recognition brunch and students share how they were impacted by FIRST which was made possible thanks to their generosity -To keep our sponsors engaged they are invited to and attend Saturday build sessions as well as gatherings at WAREhouse. Skype calls are made weekly with non local sponsors to keep them up to date -Thank you notes, twitter shoutouts and photo gifts are just some fun ways 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.**

-Having FIRST programs in all grade levels has increased the amount of students that join our FRC team. In 2016 we reached 100 students, making it harder to keep everyone engaged. To solve this problem we started Ranger Force, a second FRC team at our school specifically for 8-9 grade students. This provided the opportunity for more students to take an active role. When students move up to 3015 they will have more confidence, experience and skills to jump right in

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

-Our team embraces the motto "All of our kids can go pro". This statement reinforces FIRST's mission of inspiring the next generation of STEM leaders. Our students use what they are learning in classes in a practical and fun way. They learn effective communication and become confident creative problem solvers. Our students explore potential career paths, continue their interest in STEM fields long after high school and seek mentorship and internships with robotics sponsors

**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.**

-Our marketing team has worked hard over the past 3 years to develop our brand and have a distinct social media presence. We have used posts to spread information about our initiatives and events, thank mentors and sponsors, highlight alumni and showcase seniors. During the pandemic our YouTube channel inspired students to participate in weekly lego build challenges. Currently it is allowing us the opportunity to still teach STEM lessons without physically being able to go into their schools

## Essay

### OurMission

Team 3015's mission is more than building robots; it's about life-changing experiences. Our progression of programs combine STEM, creativity, critical thinking and collaboration to awaken the problem solver inside every student. We work year-round to cultivate community relations and support charitable activities.

We are Ranger Robotics, Team 3015, and we would like to take the next 9,569 characters to tell you about the things we're most proud of and what makes us unique. FIRST coined the phrase, "change the culture of robotics," so here's our story of how we have done this in Spencerport and beyond.

### Building a Program

Ranger Robotics began in 2009 with a single FRC team and 17 members. With success, excitement and interest, robotics has become the "thing to do" in our schools. Now in 2021, our progression of programs includes 27 FIRST teams: 17 Jr. FLL, 8 FLL and 2 FRC. Numbers alone show rapid growth, sustainability and the enduring size of our program. The students who comprise these teams are far more important than the numbers. They are athletes, musicians, mathematicians and leaders who make up 9% of the district's student body. We unite with a common purpose.

Our newest addition is FRC 2716. With 100+ members on 3015, our mentors brainstormed how we could offer more opportunities for hands-on learning. We decided it most appropriate to start a second FRC team, knowing that it was the option that would benefit our students the most, allowing their ideas to come to fruition. Although 2020 never provided a competition for them to show their robot, they flourished as a rookie team, raising the bar for younger students' role in designing and creating a competitive robot.

Our team has worked to inspire female interest in a male-dominated arena. Of our 47 Varsity members, females comprise over 55%, an increase from 20% five years ago. Ranger girls are integral on 3015; they make decisions and lead our team. Girls are an essential part of the design process and have an unequivocal voice.

### Mentorship

Ranger Robotics has been blessed with amazing mentors. From family members, to sponsor employees, people have joined us to teach, lead, inspire and build relationships. Mentors long outlast their children's final years in the program, remaining a vital part of the team. We feel that the best way to carry on their wisdom and acknowledge their countless hours of hard work is to take what we have learned and pass it on. When in season, students mentor all 25 younger Ranger Robotics teams on a weekly basis and assist other FIRST teams. In July 2019, we led nine summer camps, sparking interest in 157 kids. In November 2019, students ran a qualifier event for 18 FLL and 17 JrFLL teams, working as referees, emcees, junior judges and ambassadors. Mentoring gives us the opportunity to ignite student interest, increase confidence and skills, and make younger students feel like valued members of our robotics family.

### #weteachkidsSTEM

In an attempt to increase STEM education, we started teaching lessons to elementary students in our district in 2014. Teachers appreciated not only the help in conducting hands-on experiments, but they also cherished the time we spent helping students become problem solvers and critical thinkers. Everyone loved the experience and begged us to come back! Each year, we work to increase our teaching efforts. What began as STEM lessons expanded into starting Girls Empowered in Math and Science (GEMS), a club where girls are given engineering challenges, and they work together to build, test and make iterations.

In November 2019, we held our second annual STEAM Day, where 3015 taught all 1,560 K-5 Spencerport students at hands-on science stations. Seniors lead each teaching experience, planning the lesson and making sure it meets science standards, preparing supplies, and working with host teachers. We then made our lessons into kits and brought them to the hospital, so that students unable to go to school could have this fun experience.

In our desire to have more of an extensive impact, we launched our first science web videos on YouTube in March 2020. The goal was for 3015 students to help teachers implement the core concepts of the Next Generation Science Standards into their classroom projects and curriculum. Starter kits with materials used in the video lessons were sent to over 30 schools in 14 states, Madagascar and South Africa. A week later, our school, robotics competitions, and essentially the world went into quarantine. Unable to make videos together, we came up with weekly LEGO build challenges to post that kept our community interested in STEM while we couldn't be together.

### Local Outreach

## **Essay - page 2**

In June 2012, a Spencerport family tragically lost their four-year-old son, Drake. They started Dreams from Drake, a nonprofit organization to give support to children and teens who have lost a family member. By fate, 3015 members happened to be at the same location as the foundation's first meeting. A conversation that began as an expression of condolence turned into the linking of one group's purpose with our commitment to helping the community. From that day on, we have provided volunteers for their two main fundraisers every year - the Birthday Bash and Winter Gala. We work with the family to send invitations, promote attendance, write thank you notes and lead activities at the fundraisers to help make the events successful. Drake's siblings are now part of the Ranger Robotics family. Our robot will be part of their Healing Circle of Hope and demoed at their summer camp when it reopens.

Spreading love and positively impacting others can begin with something as simple as a piece of chalk. Each October, our team shows up in the village of Spencerport and "chalks the walk," writing inspirational messages along the sidewalks throughout the village. At night, we hold a luminary walk to raise money for the American Cancer Society. Noted as an advocate for FIRST Robotics, Spencerport Neighbors Magazine chose to highlight our team in their February 2020 edition. This publication features student and mentor interviews, with highlights about our team and the impact we've had. It was shared with an audience of over 3,000 households.

### **RoboPalooza**

When you have had an experience that has been life-changing, you shout it from the rooftops. That's what we do with FIRST robotics; we tell everyone about our experience and help them learn more. One way we do this is through RoboPalooza, an event we organize in the spring to showcase all aspects of our program. Children, parents, potential sponsors and curious future supporters move throughout the gym, exploring each station. They drive robots, learn about coding, build paper flashlights, make buttons and try their hand at scouting. Students, mentors and sponsors from all levels of FIRST lead each station. The 600+ guests are always amazed by the scale of our program; seeing the level of participation across all grades exceeds expectations. Attendees feel the excitement, and are eager to sign up for summer camps and FIRST teams.

### **WAREhouse**

Years of lobbying for space to expand robotics at our district's Board of Education meetings paid off in 2019 as our school district teamed up with FRC 340 and 6868 to rent a warehouse. Appropriately named the Western Area NY Robotics Experience (WAREhouse), it has become a common ground for us to work together when social distancing allows. The day after kickoff all hands are on deck as a full practice field is built with the help of parents and mentors. Often occupied till all hours, our teams run matches, make iterations and retest all in one environment. Knowing how crucial this space has been to our success, we open our doors. Teams from across NY have come to the warehouse to practice and work together. This promotes coopertition and improves the level of competition in NY.

### **Making Connections Across Borders**

Back at the World Championship in 2017, a 3015 student ambassador met a teacher from Mexico. After the tour, she encouraged him to come to the stands and meet us, where he stayed and learned about necessary FIRST paperwork, machinery and tools. Upon his return to Mexico, we stayed in close contact, and FRC team 7299 and FTC team 12680 were started. Over the course of their first year, we helped them establish a name, design a logo, gain sponsors, and mentored them. In 2019, our team president had a great idea: invite their team to Rochester so we could meet and compete together. Nine members and two mentors joined us for a week. Highlights included a welcome dinner, hosting them in our classes, practicing at the WAREhouse, bowling and snowball fights. It was a fun-filled week that we were sad to see end. Students from both teams are now friends and keep in touch through social media. Sharing a Slack channel between our teams provides a way to disseminate resources and brainstorm ideas. We were disappointed when their 2020 trip was canceled, but we still keep in touch, and hope they will be able to make a trip to Rochester in the future.

### **Feel the Love**

The robotics program, community and sponsors make up more than just a team, they complete our family. We don't just build robots, we build relationships. This is what we are passionate about. This is why so many students and mentors want to be a part of 3015. Ranger Robotics has become a household name, embraced wholeheartedly by our community. We work tirelessly to create a learning environment passionate about FIRST and STEM. We connect via Zoom during the pandemic, placing mental health and relationships at the top of our priorities. Adjustments had to be made, but our connections remain strong and true to our mission. These are the reasons why we believe 3015 has not only met FIRST's goal of changing the culture of robotics, but we are also building a reputation for excellence and service to have a measurable impact here in Spencerport and beyond.