

Chairman's Award - Team 2341

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2018 - Team 2341

Team Number

2341

Team Name, Corporate/University Sponsors

The Boeing Company/Singletrack Integration/Enviro Systems Inc./HAAS Foundation/EGR Architectural Millworks/DOD STEM/Team Tinker - Tinker OC-ALC&Gordon Cooper Technology Center

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years

FIRST robotics has impacted 2341's members by giving students the opportunity to be involved in programs like the Society of Women Engineers and chances to visit and explore engineering colleges. Our alumni members have earned \$82,000 in FIRST scholarships and many have chosen to pursue majors in engineering because of the training they received in FIRST. 90% of our members have attended college, 66% of those have graduated with a STEM degree, compared to the national average of less than 10%.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years

Team 2341 makes it a priority to make an impact on our community. For 6 years, we have organized a Le'go Your LEGO Drive, where we have donated over 1,350 LEGO kits to children in 7 different hospitals, in 5 different states. We host 28 STEM events each year impacting 25 schools in our community, including: Mother Daughter STEM Night, STEM Day, and SOAR3 student camp. We also participate in local community events like the Family Promise Walk, OKC Regional Food Bank, and the Cancer Bowl-a-Thon.

Team's innovative or creative method to spread the *FIRST* message

Last year team 2341 received an Argosy foundation FIRST grant for \$47,00 to start 25 FLL Jr. teams and throughout this season we have continued to guide them in their journey through FIRST. We spent a week training the coaches, continued to mentor the teams, and then we hosted their qualifier and State Championship. Our team invited them to come to our shop so we could do safety outreach with them, get them involved in our LEGO Drive, and show them their pathway of progression through FIRST.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

As an 11-year team, we have a huge platform to be a role model to other teams. We show Gracious Professionalism by sharing our practice field and machine shop/water jet with around 20 FTC and FRC teams a year. We also host events such as Robot Rampage, Robot Showcase, and a Brainstorming Night to build connections with teams by being an example to follow in FIRST. By starting and mentoring FLL Jr. and FLL teams, we show how Core Values continues to be important as they progress through FIRST.

Describe the team's initiatives to help start or form other FRC teams

Team 2341 works hard to find opportunities to start FRC teams by going out to schools around us and sharing at the Governor's STEM Summit, STEM and Aerospace Day, and the Creativity World Forum. Last year we started and led Team 6464 through their rookie season and this year we have done the same for Teams 6891 and 6900. We meet with the teams on a regular basis to teach them about FIRST, help them build and program, create safety and Chairman's programs, and encourage them throughout the year.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

Team 2341 is constantly seeking ways to start FIRST teams in the state of Oklahoma. Throughout the past several seasons, we have started 25 FLL Jr. teams and 40 FLL teams through grants that we have been awarded. We have also started 3 FTC teams that we continue to mentor to this day. Not only do we start these teams, but we also encourage all students to continue on to the next level of FIRST in the progression of programs so they have a chance to experience all the programs FIRST has to offer.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

Team 2341 strives to ensure that all other FIRST teams have such a powerful learning experience that they continue to progress through FIRST and on to other STEM fields. We host events that bring teams from all programs together giving us the opportunity to build connections and aid teams through their journey in FIRST. We also invite teams to come practice and cut out parts in our shop. The past several years we have assisted Team 3247, Robopack, with their safety, building, and Chairman's.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

Team 2341 has taken the time to mentor 90+ teams, from all four levels of FIRST, over the past several years. We host workshops for these teams, invite them to our practices or attend theirs, help with award submissions, and assist with building and programming robots. Altogether we have spent about 20,000 many hours mentoring teams. This year we have emphasized mentoring our new 25 FLL Jr. teams by working with them throughout the season. We have also helped many teams during competitions.

Describe your Corporate/University Sponsors

Our sponsors provide financial support, mentors, and volunteers at FIRST events each year. Beyond this, they also actively seek the students who have gone through the FIRST program for jobs. Our sponsors include Enviro Systems Inc., Boeing, Tinker OC-ALC, ExxonMobil, Eaton, Mills Machining Inc., Singletrack Integration, National Defense Education Program, HAAS Foundation, EGR, and Gordon Cooper Technology Center. We are very grateful for all sponsors and advertise them on shirts and the robot.

Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years

2341's sponsorship from Tinker OC-ALC gives us opportunities, funding, and mentorship. They send employees to help us run the FLL Qualifier and State Championship, STEM Day, Mother Daughter STEM Night, and many of our other STEM events. Our sponsors invite us to demonstrate our robot and we ask them to speak to students and do evaluations of our program. We have also made connections with Oklahoma State University and the University of Oklahoma by participating and helping with their events.

Describe how your team would explain what *FIRST* is to someone who has never heard of it

On the outside, the main focus of FIRST is building and competing with robots, but its impact and motivation goes deeper than that. It gives students an opportunity to gain useful knowledge, teamwork and speaking skills, work with experts, be involved in outreach, and show Gracious Professionalism to all those around them. The competition allows students of different ages to compete in a unique challenge with their robots, that changes every year, and win awards in many areas of their hard work.

Briefly describe other matters of interest to the *FIRST* judges, if any

Team 2341 is unique because our Pre-Engineering program has students from 26 different schools, so we have students coming from vastly different walks of life on our team. We also have a wall in our shop, called the "Wall of Fame", filled with funny pictures of our team members that we gathered from social media, and it has become a fun way of bonding. This year when we co-hosted the FLL State tournament, some of our members personally went to businesses asking them to sponsor the competition.

Team Captain/Student Representative that has double-checked this submission.

Shelby Jones

Essay

Team 2341 was started 11 years ago with only three mentors and 6 students, and now we have grown to include 24 mentors and 40+ students. The Sprockets have become a tree of influence in our community by branching out, finding new ways to "Spread the Message of FIRST and STEM." Our team accomplishes this goal by sharing with over 18,000 people each year. "Growing a New Generation of FIRST" is our passion!

FIRST provides our nutrients for success. Our mentors impact our team and others by running CAD and LabVIEW classes. This season, our mentors stepped back even more, allowing students to take the lead role in the design process. This taught us organization, time management, leadership, and manufacturing skills. Team 2341 explores other STEM fields while involved in FIRST. We attend SWE Conferences and tour SWOSU's Engineering Department and Quad Graphics in Oklahoma City. The Sprockets partner with OSU in attending their annual National Lab Day, CEAT Junior Day, SWE Day, and a senior private tour of their engineering school. We learn real, transferrable skills that apply to all aspects of life. These skills helped 90% of our alumni go on to college and 62% to pursue STEM careers. Members received over \$82,000 in FIRST scholarships. Alumni received internships and jobs from Boeing, Enviro Systems Inc. and NASA because of involvement in FIRST Robotics.

2341 plants seeds through local events and frequent STEM involvement. We yearly participate in the Shawnee Family Promise Walk and the American Cancer Society Bowl-a-Thon. We volunteer at the OKC Regional Food Bank, Susan G. Komen: Race for The Cure, Salvation Army Bell Ringing, Firelake Balloon Festival, and the Shawnee S.T.E.A.M. Night. This fall we held a State Fair FIRST event to tell Oklahomans about robotics and how to get involved with FIRST. We invited 14 teams in FLL, FTC, and FRC to join us in this impactful outreach event. We hand out brochures and fliers about FIRST and STEM at these events. We help Boy Scout and Girl Scout troops get their robotics badges by teaching them how to program and build robots. One of our biggest and most consistent programs is our Le'go Your LEGO Drive. Beginning 6 years ago, the drive has had local and nationwide impact by providing LEGO kits to children in hospitals in 5 states. We continue to see this as a beneficial program, especially when a hospital told us that LEGOs were the most requested toy among their young patients, and our members got to see the impact on these kids' lives. These kits are used to provide the kids physical therapy in a fun way. We include information about FIRST and STEM with the kits in brochures and handmade cards. At every FIRST competition we attend, we ask our team members, mentors, and other teams attending the event to participate by bringing LEGO kits to our pit so we can donate them to a local hospital. We have donated over 1,350 LEGO kits to the Oklahoma Children's Hospital, New Orleans Children's Hospital, St. Louis Children's Hospital, Denver Rocky Mountain Children's Hospital, Texas Scottish Rite Hospital for Children and Shriner's Hospital in St. Louis and Shreveport.

The Sprockets are a vital component in creating and assisting in STEM activities in our region. We played an important role in helping Shawnee become recognized as the first STEM community in Oklahoma. We raised awareness of STEM, which began a movement that inspired our superintendent, Marty Lewis, to visit with lawmakers about creating a STEM partnership. Our commitment toward FIRST events and initiative to start STEM events prompted our administration, along with General Ben Robinson, to recognize the need for STEM education. Members continue to participate in the STEM alliance meetings to further STEM education in our area. Our mentors have written STEM curriculum like the SOAR3 STEM manual and the "You Be the Astronaut!" rocket program manual. In turn, we teach and assist with these camps and lessons, spreading STEM in communities around 26 schools in Oklahoma. These STEM camps impact 900+ students each year. We host 28 STEM events each year, working to inspire young minds in the 26 school districts in our area to pursue STEM fields. Our team helps plan, set up, work concessions, assist in classes, and run activities for all events. Some examples include: Sophomore Showcase, SOAR3 camps, STEM Leadership Conference, and Wise Guys! Girl Power!

Team 2341 consistently uses media, reaching an estimated 5 million people thus far. Team members have been featured on OETA's Oklahoma Horizon television show, highlighting the work we have done in our community. FOX 25 News station interviewed us at the 2015 Creativity World Forum, showing the ways we creatively spread FIRST. The Sprockets were on the cover of the Shawnee Outlook, along with an article about how our involvement in FIRST Robotics has significantly impacted our team members. Our diverse media coverage gives us a way to talk about FIRST on a larger scale and branch out to share with different people.

The Sprockets are involved in sharing FIRST with the grove of legislators in our government. Yearly, we have a booth at STEM Day and Aerospace Day at the Capitol. Here we talk to legislators about FIRST Robotics and STEM Education. Our goal is to increase awareness and funding for FIRST and STEM and initiate the writing of STEM standards. Team 2341 was recognized on the Oklahoma House Floor in 2016 for being the first CareerTech school to win the Regional Chairman's Award. We shared with 150+ educators at the OKACTE Summer Conference. We talked about our team and demonstrated our robot to the Oklahoma Career Tech Board of Education and Gordon Cooper Technology Center's Board of Education. Sprockets are now working with Team 3247 to build a SWAT Bot for our local police department, using FIRST skills to make our community a safer place.

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The Sprockets realize that safety is an important part of our work in FIRST. Each year, our team writes safety curriculum for budding elementary students, which includes the UL Timon and Pumbaa videos and a student-made PowerPoint that address home, electrical, and water safety, and Bill Nye's message from Safety Smart Science on germ awareness. We share our safety lessons in classrooms in our area and with the FLL Jr. teams we started. Our extensive safety efforts won us a World Championship Industrial Safety Award in 2014.

Team 2341 has become the roots of growth for FIRST in Oklahoma by starting 79 teams. In 5 years, we mentored and assisted 14 FTC teams, 48 FLL teams, and 40 FRC teams. We help these teams with building, manufacturing parts, loaning tools, preparing award submissions, sharing our workspace, and inviting teams to all our brainstorming and scrimmage sessions. Last year we led Team 6464 through their rookie season and this year we have done the same for Teams 6891 and 6900. We assemble LEGO robot kits for loan to rookie FLL teams. Robot Rampage is our annual event that brings FIRST teams of all levels during the off season to showcase their accomplishments and bond with other teams. The Sprockets provide the machine shop and practice field for the Oklahoma FRC Regional every year. This season we started an OKFIRST Robot in 3 Days program. The project was hosted in our shop, using our school's water jet and manufacturing tools, and was led by our mentors. Together 7 mentors from 4 teams, 2341 Sprockets, 3247 Robopack, 2765 Radioactive Robotics, and 6809 Ace Robotics, completed this task. All these programs help us gain a reputation as a role model to other FIRST teams and are a way for us to give back to the FIRST community.

Grafting the levels of FIRST together in the Progression of Programs, our team hosts an FTC Qualifier and FLL Regional Qualifier where 18 FTC teams, 24 FLL teams and 32 FLL Jr. teams come to compete. This season we hosted the FLL State Championship that 100+ teams attend. At these events, Sprockets members, mentors, and alumni help plan the competition, set up for the event, work concessions, judge, emcee, reset the field, referee, work registration, and assist judges. At the state FLL competition we set up an FRC field and invited 6 other teams to come show off what we did in our season and talk to younger FIRST members. We worked with the Citizen Pottawatomie Nation to host this event, and members garnered sponsorships from local businesses to help fund this competition, \$10,000 in total.

The Sprockets have worked hard to spread FIRST in new and innovative ways. This season we are "Growing a New Generation of FIRST" by starting 25 FLL Jr. teams. We received an Argosy foundation FIRST grant for \$47,000 to pay for these teams' registration, startup kits, t-shirts, and other required materials. We assisted one of our mentors in teaching a workshop for the new coaches. Our team continued to lead them through the year by mentoring them and hosting their qualifier and State Championship. We invited the younger FIRST members to come to our shop to learn more about safety, what we do in FRC, participate in our LEGO drive, and see how they can progress through the FIRST programs.

The Sprockets have become a team that other team should emulate in our region by not only our desire and efforts to bond with other teams, but also because of our strong bond with our mentors and each other, as teammates. This year, we have created the "Wall of Fame". This is where team member's pictures are posted in inspiring and fun ways. Also, 60 percent of our members have come through the Progression of Programs, being deeply rooted in the Core Values of FIRST. Mentors are immersed in FIRST, coaching teams at the FLL and FTC levels as well. Through our "Growing a New Generation of FIRST", we ensure that passion and knowledge will continue for generations to come in the children of Oklahoma that we work with and all of the people they touch in their lifetime.