

## Chairman's Award - Team 2341

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2019 - Team 2341

### Team Number

2341

### Team Name, Corporate/University Sponsors

The Boeing Company/Singletrack Integration/Enviro Systems Inc./HAAS Foundation/Team Tinker - Tinker OC-ALC/Citizen Potawatomi Nation/OG&E/Northrop Grumman/Mid First Bank/Canadian Valley Electric COOP&Gordon Cooper Technology Center

### Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2018/2019 year and the preceding two to five years

FIRST robotics has impacted 2341's members by exposing them to programs like the Society of Women Engineers and chances to visit engineering colleges. Alumni members have earned \$83,000 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 graduating with a STEM degree, compared to 10% nationally. Former team members return annually to mentor our team.

### Describe the impact of the *FIRST* program on your community with special emphasis on the 2018/2019 year and the preceding two to five years

This is the 8th year for our Le'go Your LEGO Drive, donating over 2000 LEGO kits to 8 hospitals in 5 states. We host 28 STEM events each year impacting 26 districts, including: Mother Daughter STEM Night and SOAR3 STEM camp. We participate in community events like the Family Promise Walk, OKC Regional Food Bank, and the Cancer Bowl-a-Thon. Our new program, STEM on Wheels, will take robotics and STEM careers into communities where STEM is lacking so more students learn about STEM careers.

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

Our new program this year is "STEM on Wheels". We are writing curriculum, securing funds, ordering supplies and communicating with the 26 schools in our area about our mobile STEM camp. This summer, we will take our mobile STEM camp out to communities, many of which are high poverty and rural areas. We attend the Regional STEM Alliance meetings, sharing FIRST with business leaders and educators, and take our Sprockets Safety Program to elementary students, teaching grades 1-3 about safety.

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

Our 12-year team shows role model characteristics by bringing many FIRST teams together for a greater good, providing opportunities at our facility for teams to collaborate. We share our practice field and machine shop/water jet with around 20 FTC and FRC teams a year. We host events such as Robot Rampage, Robot Showcase, and a Brainstorming Night to build connections with teams. By starting and mentoring FLL Jr. and FLL teams, we show how Core Values continues to be important throughout FIRST.

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

Team 2341 reaches out to schools and shares at the Governor's STEM Summit, STEM and Aerospace Day, and the OKACTE educators conference. The past 2 years, we led Teams 6464, 6891, and 6900 through their rookie seasons, and this year we have done the same for Team 7473. The Anadarko school superintendent has asked us to help them start an FRC team next season. We help rookie teams 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 48 FLL teams through grants that we have been awarded. We have 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 members have assisted in training 25 FLL Jr. coaches, many of whom we mentored through their rookie year last year. 2341 members assist in coaching 4 FLL teams, going to their practices and to competitions up to the world level. 6 students from those FLL teams are currently members of Team 2341, having progressed through the FIRST programs. Team members also mentor other FIRST teams, bringing them to our facility for tours, letting them drive our robot, and teaching them safety classes.

**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)**

Our team has partnered with the two FTC teams at our school to mentor elementary FLL teams in our area, such as the NERDs, Mechanical Monsters, Kilobotz, and Team X. We collaborate with the team from Metrotech to host Robot Rampage, resulting in many teams who are struggling getting much needed help from our more experienced teams. We also work with the Metrotech team to host Showcase, giving teams with last minute issues some support before bag-and-tag, such as programming and mechanical help.

**Describe your Corporate/University Sponsors**

In the aerospace industry, we have Boeing, Tinker OC-ALC, Northrop Grumman and Enviro Systems. In manufacturing, sponsors are Gene Haas Foundation and Singletrack Integraton. Our school, Gordon Cooper Technology Center gives us monetary support as well. The businesses of OG&E, Canadian Valley Electric, MidFirst Bank, and the Citizen Potawatomi Nation donated money so we could host the Oklahoma FLL State Championship.

**Describe the strength of your partnership with your sponsors with special emphasis on the 2018/2019 year and the preceding two to five years**

Our sponsors provide financial support, mentors, and volunteers at FIRST events each year. They actively seek the students who have gone through the FIRST program for jobs. OSU gives us \$700 to build a half field for our team and others to practice on. In return, we build parts for the Baja team at OSU. A huge connection with our sponsors this year is their support with our Le'go Your LEGO Building Blocks Drive. Getting them on board with this outreach allows us to increase our donations.

**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 goes deeper than that. It gives students useful knowledge, teamwork and speaking skills, experience with experts, and outreach opportunities. It allows students to compete in a unique challenge with their robots that changes every year and win awards in many areas of their hard work. For our team, FIRST has resulted in life long career choices and scholarship opportunities.

**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. This year, we have bonded stronger than ever, making time to have fun together. We play UNO, solve Escape Room mysteries, and sing karaoke together. We eat dinner together every Monday and we encourage parents to come and see what we are working on. 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.**

Laura Farris

## Essay

"We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard." This quote by John F. Kennedy describes the perseverance, persistence, and dedication that Team 2341, the Sprockets has gained through our experiences in FIRST.

Team 2341 began 12 years ago with only 3 mentors and 6 students. This year we have 18 students and 25 mentors in our Sprockets family. We have blasted off with 53 separate events since our inception, sharing FIRST with over 20,000 people each year. Igniting a passion for FIRST is our mission!

Our mentors help us shoot for the stars both in and out of FIRST. 5 of our members began their FIRST journey 6 years ago with Lori. She recruited them as 6th graders to participate in the "Hardest Fun They Would Ever Have". In the 3 years she had them, they progressed to world events, including World Festival in St. Louis where they won top awards. Their favorite memory was her winning Coach of the Year at World Festival. When a tornado struck during FLL practice one May, Lori refused to go to the shelter until all of her team and mentors were safe. It was then they knew that they meant more to her than just being her team; they were her family. She has continued to follow them through FIRST as one of our FRC coaches today. David teaches a CAD and LabView class each year for us. He cuts parts for our robot and assembles our game field into the late hours of the night. Roger, affectionately known as Papa Farris, not only helps us with building and organization skills but also helps us with our homework and pushes us to pursue STEM careers. He brings humor and Big Macs to our practices! Our mentors also provide help applying for scholarships, writing grants, and pursuing internships, such as with Boeing, NASA, and Enviro Systems. 90% of our team members go to college having earned over \$83000 in FIRST scholarships, and 66% pursue STEM and related careers thanks to our mentors.

2341 sparks an interest in FIRST and STEM in our community through local events. Our most treasured event is our Le'go Your LEGO Building Blocks Drive. This is the 8th year we will collect and deliver LEGOs to Children's Hospitals in cities where we compete and will surpass 2000 kits donated in 5 states. Hospital representatives have told us the LEGOs are used for therapy tools and are the most requested toy. We have impacted Oklahoma Children's Hospital, New Orleans Children's Hospital, St. Louis Children's Hospital, Denver Rocky Mountain Children's Hospital, Hub City Covenant Hospital, Dallas Scottish Rite Hospital and Shriner's Hospital in St. Louis and Shreveport. Not only are the children we help impacted by the generous donations from FIRST teams and sponsors, but we ourselves are also impacted deeply. This event has shown us that FIRST truly is a family that supports each other. It has shown us what persistence and dedication to an idea can do to help someone in need. We also annually participate in the Shawnee Family Promise Walk and the American Cancer Society Bowl-a-Thon. We volunteer time at the OKC Regional Food Bank, Susan G. Komen: Race for The Cure, and Salvation Army Bell Ringing. We have helped Boy Scout and Girl Scout troops get their robotics badges by teaching them how to program and build robots. Our efforts have been highlighted on the Oklahoma Horizons television show, FOX 25 News and the Shawnee Outlook publication. Our diverse media coverage gives us a way to talk about FIRST on a larger scale.

The Sprockets are preparing to launch a new and innovative program called "STEM On Wheels" in our region. Team members have set a 2-year goal to get this program up and running. We aim to incorporate healthy living with FIRST and STEM. After contacting the 26 districts in our area to schedule camp times, team members are writing curriculum, gathering supplies, choosing snacks, and preparing robots we will take to these schools. Supplies will be transported in the new trailer donated by a mentor. Even though there are STEM camps in our region, they take a limited number of students. Students must have transportation to attend those camps, which will be remedied by our taking the camp to the kids. No other camp in our area does this. Team members have written grants, which were submitted with the help of a mentor, to fund our program to both Tinker AFB and the Avedis Foundation.

Team members are also student members of the Gordon Cooper Regional STEM Alliance. This alliance of business leaders, educators and students meets quarterly to discuss furthering STEM in our region. We also teach and assist with the 4-8th grade SOAR3 STEM Camp at our school. Our mentors wrote STEM curriculum for this camp like the SOAR3 STEM manual and "You Be the Astronaut!" rocket program. These camps impact 900+ students each year. Yearly, we host 28 STEM events to encourage STEM careers. Our team helps plan, set up, work concessions, teach classes, and run activities for all STEM events at our school. Some examples include: Sophomore Showcase, STEM Leadership Conference, and Wise Guys! Girl Power!

The Sprockets are involved in sharing FIRST with government. This year, a team member has been working with the OK State Department of Education to consider making participation in FIRST an elective credit for high school students. She has made 6 contacts through email and phone, working to get FIRST involvement the recognition it deserves. 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 continue our push for the writing of STEM standards. Team 2341 was recognized on the Oklahoma House Floor in 2016 for being the first vocational-technical school to win the Regional Chairman's Award. We have talked about our team and demonstrated our robot at both the Oklahoma Career Tech's and Gordon Cooper Technology Center's Board of Education and shared with 150+ educators at the OKACTE Summer Conference.

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The Sprockets realize that safety is an important part of our work in FIRST. This year, our team is 100% CPR and First Aid certified. A current team member carries an Epi Pen for serious allergies and past team members have passed out at competitions so we felt this was necessary for our team. Each year, our team creates safety curriculum for 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. Our 2019 safety curriculum focuses on drug awareness and safety. We have shared safety in both schools and with the FLL Jr. teams we started. Our extensive safety efforts have won us Industrial Safety and Hard Hat Awards at Championship.

Team 2341 has helped numerous teams take off in FIRST by starting, mentoring, and assisting at all levels and hosting FIRST events. In 5 years, we have mentored and assisted 14 FTC, 48 FLL, 25 FLL Jr. and 41 FRC teams. We build and manufacture parts, loan tools, prepare award submissions, share our workspace, and invite teams to all our brainstorming and scrimmage sessions. The past two years, we led Teams 6464, 6891, and 6900 through their rookie seasons, and this year we have done the same for Team 7473. Recently, the Anadarko school superintendent asked us to help them start an FRC team next season as well. Robot Rampage is one of our off-season events where FIRST teams can bond and show what they have accomplished. We also host Showcase, a similar event that takes place the Saturday before "bag and tag". The Sprockets have provided the machine shop and practice field for the Oklahoma FRC Regional for the past 10 years. 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.

Each year our team hosts an FTC Qualifier and FLL Regional Qualifier where 22 FTC teams, 24 FLL teams and 32 FLL Jr. teams come to compete. Twice, we co-hosted the FLL State Championship for 100+ teams. 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. This year, team members were ambassadors for dignitaries like Lieutenant General, Donald E. Kirkland. Before he left, General Kirkland said he was impressed with our team members and offered to write letters of recommendation for future endeavors, such as to any of the Academies. At the state FLL competition we, and other teams we invite to participate, also demonstrate our robots. We worked with the Citizen Pottawatomie Nation to host this event, and members garnered sponsorships from local businesses to help fund this competition.

The Sprockets have reached the stars in our region through 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, our team went through many changes that we have drawn strength from. Our principal told us that even though we have been allowed dual membership in FRC and FTC in the past, we must make a choice this year. We lost former team members, but since our team has downsized, we have all taken on multiple roles. This has allowed us to know about all of the parts of FRC, not just the area that we primarily work in. This knowledge has helped us feel more connected to each other and FIRST principles. 33% of our members have come through the Progression of Programs, being highly trained in the Core Values of FIRST. Mentors are immersed in FIRST, coaching teams at the FLL and FTC levels as well. Through our "Igniting a Passion for FIRST", we ensure that dedication, excitement and knowledge continues for generations to come in the children of Oklahoma that we work with and all of the people they touch in their lifetime.