

Chairman's Award - Team 3641

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2018 - Team 3641

Team Number

3641

Team Name, Corporate/University Sponsors

Pratt Miller/Magna/NISSAN/FCA Foundation/FORD/Cybernet Systems Corp./South Lyon Community Schools/State of Michigan/Spectrum Automation/Extreme Machine & South Lyon East High School & South Lyon High School

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

Team 3641 uses FIRST as an opportunity to not only teach our students how to build robots, but how to build skills that will translate into future careers. For example, our team members are all trained in creating a detailed tactical plan. This plan encompasses all aspects of our team- from programming, machining, strategy, electrical, and drive practice, to Chairman's, and outreach activities- and gives our goals a path to success.

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

Our team works to inspire all ages in our community through STEAM classes, QFD workshops, our FLL tournament, Girl Scout workshops, visits to a juvenile detention center, cleaning up the Michigan War Dog Memorial, writing and translating into Spanish 2 children's books, bringing the books to Peru and Spain, starting and mentoring 8 FLL teams and 2 FTC teams, unloading a food truck monthly, presenting for several community groups as well as the Michigan state legislature, and plans for many more!

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

This year we wrote a STEAM resource book to share activities with other FIRST teams or STEAM event organizers. Recently, a team member who moved to India has organized and led 4 robot and engineering workshops in underserved schools. He has also worked to create a presence of FIRST in India, using our books and resources. Additionally, the team is creating instructional videos for FIRST in Michigan Machining Badges. These will be shared with teams to help with their training, safety, and skills.

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

Team 3641 strives to create leadership roles for our students. We have 15 high school students mentoring our 8 FLL teams and 2 FTC teams. Also, in order to get a robotics varsity letter, students are required to write a best practices paper that outlines an important skill they learned and would like to pass on. Topic examples range from basic machining to business planning. These papers are housed on our website and provide team sustainability and a way to share our knowledge with other teams.

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

The Toasters are praised year after year for our Machine Shop that we bring to district and state events. Last year we provided a Machine Shop at a competition where we didn't even compete. This year, we were asked by FIRST in Michigan leadership to switch our schedule to attend an event with more rookie teams. We're excited for the opportunity to guide rookie teams through their first competition! We also have hosted QFD workshops for FRC teams for the past 3 years at kickoff.

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

This season, the Toasters made huge strides to support more FIRST teams for all ages. We hosted our second FLL tournament and invited the whole community. This event led to our FLL interest meeting last spring, where over 100 parents and students learned about FIRST Robotics. We are proud to have started 8 FLL teams in the 2017 season, with high school mentors for each of them. We have planned another interest meeting for both FLL and JrFLL teams to take flight this spring.

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

We are hosting a Girl Scout Robotics badge event in the hopes that we can start FLL or Jr. FLL teams with those girls. We are working with district administrators to expand the number of FTC teams in our district for next year. We continue to host STEAM classes in our community and we assist other FRC teams to teach them how to successfully run those classes in their own communities. Our team also provides FLL tables and Challenge kits for each of our FLL teams upon their registration.

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)

The Toasters started and currently mentor our 8 FLL teams, 2 FTC teams and Jr. FLL team. High School mentors work with each team to teach programming and design, lead workshops on aspects of teamwork, practice presentations, and put our rookie teams on track for a great first season! Six FLL teams came to our lab for practice before our tournament, and we are facilitating spring get togethers between the teams to show what everyone has continued to build throughout the year.

Describe your Corporate/University Sponsors

The Toasters raised \$43,204.39 this year from our 57 gracious sponsors. In addition to monetary support, we have mentors from businesses who regularly attend meetings, and sponsors who machine parts for us that we are not able to produce in our workshop. Each team member is required to solicit sponsorship as well as regularly follow up with the sponsors throughout the year to keep them apprised of our team's progress and events.

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

A main goal of Team 3641 is to connect with our sponsors. We have worked with sponsors to make robots for the Detroit International Auto Show, to work at their corporate VEX tournaments, to tour their facilities, and even to reach out for internships and jobs. An exciting event the Toasters attended occurred this past spring when we were invited to meet with Governor Rick Snyder at our sponsor Pratt & Miller where we discussed the future of STEAM education in Michigan.

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

FIRST is more than building robots. FIRST builds people by providing hands on experience with real world challenges in multiple disciplines. Robotics allows children to learn how to build, solve problems, collaborate, and lead each other through challenges given by some of the brightest inventors of our time. FIRST gives them knowledge, confidence and STEAM experience to help them succeed in an increasingly technological world. FIRST is people working together to turn ideas into reality!

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

Four years ago, the Flying Toasters added an "A" for Art to STEM to create STEAM. The sequel to our children's book "To the Moon and Back: A STEAM Powered Story That's Out of This World!" emphasizes the importance of STEAM education and working together towards a brighter future. This was written and illustrated completely by our talented team members, and is available in two different languages. It will be published early this summer.

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

Gretchen Ascher

Essay

The Toaster's 2018 Mission:

To create enthusiasm for STEAM education in all ages -- from the greatest generation to the next generation.

Tiny Toast (Pre-K to 5th grade):

Goal- Starting with the next generation, we introduce these Tiny Toasters to the world of STEAM by creating an environment where discovery, excitement, and creativity can flourish.

1. Started 8 FLL Teams

Our team completed a long term goal of starting FLL teams in our community. We planned an FLL interest meeting and had over 100 students and parents attend! It was an incredible success, as we started eight rookie teams to kickoff the 2017 FLL season.

2. Mentor all 8 of our FLL Teams

Our team provided high school Toaster mentors and resources for every team to start their FLL journey. In fact, nearly a third of all high school Toasters are FLL mentors, meeting with their younger counterparts every week! One of our teammates even won the Mentor Award at his team's competition! We have plans to grow the number of teams in the coming years.

3. FLL Tournament

In 2016, we got "bready to crumble" at our first ever FLL competition: The Flying Toasters' Crumble Rumble! Our entire team had a blast in 2017 continuing the competition, with 24 teams and over 100 volunteers helping make this event a success. Toasters worked hard to ensure that the tournament ran on schedule and under budget, and had a great time seeing our Tiny Toaster friends grow in their excitement for FIRST.

4. STEAM Classes

This is our fourth year running STEAM classes across many communities, where we have stations with fun-filled activities for each aspect of STEAM. In the past four years, we have run 15 of these classes, including 7 in the past year alone, where we have reached out to more than 400 students.

5. STEAM Activity Resource Book

We made a compilation of over 50 interactive and educational activities for all ages called "The Flying Toasters' STEAM Class Resource Book." This guide has all of the steps needed for other FIRST teams, parents, grandparents, teachers, and anyone interested in running a successful STEAM learning experience, using activities we have employed in our very own classes. We made a version of the book available on our website so people near and far have access to it.

6. Girl Scout Badge Event

A Girl Scout Badge Event is planned in May to reach out to 80 girls around the community. This event is geared towards scouts earning the Robot Programming and Robot Design badges. The event is completely student planned and run, which gives our students leadership opportunities. We anticipate this exposure will increase the number of girls who engage in STEAM activities and robotics in the future.

7. Toaster Published Children's Books

At events for Tiny Toasters, we love to read our children's book, "The Flying Toasters Spread the Word." Its sequel, "To the Moon and Back: A STEAM-Powered Story That is Out of This World" is scheduled to be published this summer. It is about a group of students who take a field trip to the moon! The characters learn about the importance of working together and use their knowledge of STEAM to find their way home. Our first book can be found in libraries and schools across the world! We have sent it to India, as well as translated it into Spanish and sent it to Peru and Spain. In addition, the books are student written and illustrated by our talented team members!

Teenage Toast (6th to 12th grades):

Goal- We reach out to our fellow Teenage Toast to collaborate, support and teach skills.

1. Supporting numerous FRC and FTC Teams

a. Toasters provided the Machine Shop at 4 tournaments in 2017. Our team brought our machine shop to each of the district and state competitions we attended. We also stepped up to support a 4th tournament that was struggling to provide a machine shop, when we were not even competing. In 2018, we plan to provide our machine shop and volunteers for 4 events, including Worlds in Detroit.

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- b. The Toasters are creating a culture of skill development using the FIRST in Michigan (FiM) Badges as a platform to document our progress. Many FiM skills were learned during our Fall Training, encouraging students to apply for the badges. Also during our Fall Training, all team members learned how to create and follow a detailed Tactical Plan, helping us achieve our season goals. To capitalize on the FIRST spirit of cooperation, our team is creating how-to videos for the FiM Machining Badges 1 and 2. They will be published online and shared through FIRST in Michigan on a dedicated Youtube channel we started, called "Robots Explained."
- c. Teaching other FRC and FTC teams to run successful STEAM events is one of our areas of expertise. Last year we shared our experience, tools and processes in running a STEAM event with Team 3707, the TechnoDogs, by hosting classes with them in their community.
- d. We provide Toaster student & alumni mentors for both of our FTC Teams, helping with all aspects of their program.

2. Community Service

With over 1,000 hours of community service in the past two years, the high school members have connected with over 4,000 people, volunteering at activities such as cleaning up the Michigan War Dog Memorial, providing food through Blessings in a Backpack, building Easter baskets for impoverished inner city families with Families Building Faith, and volunteering for local institutions such as the South Lyon Historical Society.

3. International Outreach in India

Spreading the message of FIRST across the world is something important to the Toasters, and India is one of our international outposts. We brought our first children's book to India. Furthermore, one of our team members is in India spreading the message of STEAM and working to start FIRST teams in his area. One example is an event held to teach "squishy circuits" to over 45 fifth graders, overcoming language barriers to engage the students in learning about electricity and engineering. The students had such a good time, they started coming back to later classes and bringing their friends!

4. Team Statistics

The team has a 100% graduation rate, and an average GPA above 3.5. Most team members are also involved in a variety of other clubs, such as the arts, National Honor Society, and sports. Through our influence in these areas, as well as the outreach events for Girl Scouts, the team has raised the amount of girls on the team to 25%.

Timeless Toast (Adulthood):

Goal- We engage professionals for sponsorships, mentors, and real-world knowledge. We aim to bring the Toaster experience to members of our community who may not have gotten the opportunity to explore these fields during their youth and inspire parents, grandparents, aunts, uncles, and children-at-heart.

1. Sponsor Relations & Events

- a. Sponsor relations are a fundamental part of what allows the Toasters to fly. This year, we have connected with 57 sponsors, raising over \$43,000 for our team's projects and goals! Our sponsors also support the team by supplying mentors and occasionally fabricating parts for our robot.
- b. One of our largest supporters, Nissan, requested our assistance with their VEX Tournament this December. Our team cheerfully volunteered at their day-long event, and thanked them for their sponsorship.
- c. Our sponsor, Pratt & Miller, invited us to showcase our program at their headquarters, and to meet Governor Rick Snyder to discuss the future of STEAM education--but our connections with the governor don't stop there. Gov. Snyder has been a huge supporter of the Toasters over the years by writing a forward for our first children's book, inviting us to lobby for more STEAM funding at the Michigan House of Representatives, and inviting us to the Michigan State Capitol Robotics Day. These connections have enabled us to work toward our goal of increasing awareness of FIRST and STEAM throughout the state.
- d. In 2017, our sponsor Bosch approached us to build a robot for them to showcase in the North American International Auto Show.

2. Active Alumni

We are proud that 100% of our alumni have graduated, and 100% of our alumni have moved on to a higher education. We keep in touch with our alumni throughout college and beyond; we are excited that once our alumni graduate, they don't leave the FIRST community. Several of our alumni go on to coach and mentor FTC, FLL, and FRC teams both in South Lyon and around the country.

3. Presentations to Community Groups

We raise awareness among Timeless Toasters through numerous presentations and workshops. We have presented for Rotary and Kiwanis clubs, the South Lyon School Board, and local men's and women's groups. These presentations give students the opportunity to share our experiences, as well as practice leadership and communication skills.

4. Senior Rehab Center

We volunteered at a community senior rehab and care center where we did hands-on STEAM activities and let the residents drive our robots! At this demonstration, high school team members were able to share their journeys and innovations in STEAM. These older members of the community did not have these opportunities in their youth, so it has been an amazing learning experience for our teen Toasters see how the "greatest generation" has paved the way for the

experiences we have the privilege of participating in today.

Toasters Through the Ages:

Through the ages, from the Tiny Toast to the Timeless Toast, the team strives to inspire and pique the interest of everyone. It's a task the Toasters feel integral to the team atmosphere we wish to create, and indispensable to the character we hope to instill in the members. After all, Toasters aren't "born," they're "bread," and thus our goal is to inspire a world in which STEAM education and opportunities are spread throughout the community. Our goal is that everyone can come together in a feeling of unity within FIRST, from the greatest generation to the next generation!