Chairman's Award - Team 1710

Print Close

2018 - Team 1710

Team Number

1710

Team Name, Corporate/University Sponsors

Clay Blair Family Foundation/Ewing Kauffman Foundation/US Engineering/Black & Veatch/EW Plumbing/Society of Women Engineers-Exxon Mobil Corporation/Farmers Insurance/Olathe Public Schools/Top Notch Heating and Cooling/Peoples State Bank/Sherman Family Foundation/Reproductive Resource Center/Rockwell Automation/Imagine Dental&Olathe Northwest 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

Our leaders teach communication and technical skills to our younger members to strengthen personal development and soft skills. We present at global conferences and mentor underserved students through our diversity-focused initiatives. 94% of alumni have joined STEM fields. Annually, our seniors are offered up to 2 million dollars in scholarships and multiple have received paid internships. Many of our alumni go on to prestigious universities like MIT, WPI, Columbia, and Cambridge.

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

FIRST Team 1710's You Go Girl campaign has inspired over 11,000 girls to pursue STEM. Our team participates in Relay for Life, donating time and resources to the American Cancer Society. The Chamber of Commerce invited our team to present to 150 local business leaders about STEM education. By utilizing our FLL kits, we connect with at-risk students at Johnson County's Evening Reporting Center, a juvenile court alternative, with the hope to inspire them to engage in positive STEM activities.

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

We presented our You Go Girl program at FIRST Championships and the SWE National Conference. A team founder brought FIRST materials and "You Go Girl" to President Obama and his family. Our mentor met with the Governor last year to start a STEM Day at the Capitol. We will showcase the FLL, FTC, and FRC programs at the inaugural STEM Day as well as Introduce a Girl to Engineering Day. We were selected by FIRST to represent FRC in the Smithsonian's MathAlive! exhibit sponsored by Raytheon.

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

On FIRST Team 1710, we build more than robots, we build leaders. Our leaders empower members of our team to inspire future generations by modeling valued workplace skills of diligence, project management, and organization. Other teams have emulated our You Go Girl initiative and our safety program. We distribute our safety handbook and posters at competition and provide other teams access via our website. The nine FTC teams at Olathe Northwest have imitated our team structure and values.

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

Our Letter Writing Campaign has inspired the foundation of a team in Taiwan, FIRST Team 4253. We have received feedback from individuals in S. Korea, stating they'll start an FRC team soon. Our website includes information on how to get involved in FIRST programs. An alum helped to start FIRST Team 3928 in Iowa, another started FIRST Team 5052 in Texas, and a third is coaching FIRST Team 5968 in Manhattan, KS. Our team has helped start teams in the KC Area: FIRST Team 5268 and FIRST Team 5119.

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

We integrated eight FTC teams into the Aerospace and Engineering curriculum. This year, we introduced a ninth team for a senior capstone. Our coach presents at a Summer Conference each year about FIRST, inspiring the creation of FLL teams through $500 grants and free kits. This year, we held a presentation to start FLL Jr. and FLL teams, resulting in the creation of more. An alum started an FTC team in Washington this year, and we are developing an FTC team at Olathe West High School.

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

We helped two KC teams with their Chairman's submissions. We started and mentor nine FTC teams. We have supplied multiple FLL teams with $500 grants and materials to start a team. With a grant, 24 FLL kits were purchased to host 30 camps and workshops at local schools. Each year, we bring our FLL camp to every second grader in Louisburg, KS. This year, we hosted a seminar for starting FLL Jr. teams. Annually, we host an FLL Qualifier, and assist with the FLL KC Regional Championships.

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)

We provide mentorship and supplies to 9 FTC teams. We guide new FLL Jr. and FLL teams by hosting a seminar for potential new coaches, and provided grants and kits. We guide teams such as Team 2725 who came to an FRC Regional with only a chassis by providing parts and resources to repair their robot and drive system. We helped teams with their programming, and provided teams parts. We provided financial aid and advice for FRC Teams 1723, 1763, 1984, 5119, and 5268.

Describe your Corporate/University Sponsors

FIRST Team 1710's is sponsored by local and internationally recognized businesses and corporations including: Top Notch Heating and Cooling, Honeywell, University of Kansas, the National Weather Service, Single Source, and FIRST. These companies support us through the donation of materials, finances, services, or mentors to support our mission to inspire the future generation to pursue STEM.

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

Team 1710 engages its sponsors by extending invites to attend kick-off, team meetings, design reviews, and Showcase. We partner with sponsors like the KC STEM Alliance to host the FLL Qualifiers, providing volunteers, electrical supplies, and audio-visual livestreaming to run the event. To recognize our sponsors' contributions, we have devised a tiered sponsorship system that rewards each through brand placement, apparel, and more.

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

FIRST (For Inspiration and Recognition of Science and Technology) is an opportunity for students to develop innovative solutions to engineering problems, gain experience in mechanical, electrical, programming, communication, graphics, and business through interacting with mentors, STEM activities, and building robots. FIRST provides students with real-world, hands-on experience, and inspires youth to pursue STEM careers, creating the next generation of science and technology leaders.

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

Team 1710 initiated a partnership with Kansas Senator Julia Lynn to establish a Kansas "STEM Action Center" to combat a shrinking STEM workforce in Kansas. We met with Senator Lynn and Kansas Secretary of Commerce Antonio Soave to present our proposal and to seek support for this education to career pipeline. This organization would oversee and deploy strategies to improve the STEM education system. We will speak before legislators at the annual STEM Day at the Capitol to garner more support.

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

Quinlan Brown

Essay

Every story has a beginning; here on Team 1710, we take this to heart and we inspire the next generation of young minds who will revolutionize the world. Throughout our 13 years as a team, we have refined our approach to FIRST through our Core Values: Commitment, Hands-On Experience, Inspiration, Gracious Professionalism®, Student Leadership, and Safety. Business-inspired student leadership positions allow us to run Team 1710, and give our members experience with communication and leadership skills.

DIVERSITY DRIVEN

After observing a lack of middle school girls pursuing STEM, we created STEM Connection: a collaborative effort between middle and high schools to cultivate passion in young women and inspire them to pursue STEM fields. For 3 years, 230 girls have annually participated in STEM Connection's multi-tiered system of "girls mentoring girls mentoring girls," which brings high school, collegiate, and professional female mentors together with Title I middle school girls through hands-on workshops in robotics, coding, circuits, DNA extractions, and more. 37 STEM Connection mentors have invested 400 volunteer hours in our program, working with the girls in their activities. Witnessing the enthusiasm and passion of these girls, who historically have not have the access or support to engage in STEM, has further motivated us to serve more girls in more grades in more locations. Seeing its success, the Olathe Public School District is working to incorporate STEM Connection as a district-wide program. Through STEM Connection, Team 1710 is continuing to inspire the next generation of women leaders in STEM.

You Go Girl (YGG), an initiative originally formed to motivate girls to join our team, has since evolved into a tool that celebrates girls in STEM. We design promotional materials that feature the girls on our team to encourage and normalize STEM opportunities for women. Within the past 5 years, we've taken 750 girls to the Kansas City Regional to spread enthusiasm for FIRST and STEM. During the tours, girls are guided through the pits and learn FIRST core values such as teamwork and dedication. Later, they see the culmination of hard work through competition matches.

In 2015, Sue Rippe, co-founder of Team 1710, was inducted into the National Teacher Hall of Fame. While in Washington D.C., she delivered gifts to President Obama and his family, which included our YGG media. Beyond introducing YGG to our national government, we presented YGG at the 2015 FIRST Championships and addressed the underrepresentation of women in STEM and our solutions to help increase female interest. We were invited by FIRST to present during "Future Innovators on the Rise," a panel at the 2015 Society of Women Engineers (SWE) international conference, which spread the message of STEM Connection and YGG to an international audience, and discussed how other teams can introduce more individuals into STEM. Furthering our impact, SWE Kansas City asked Team 1710 to showcase FLL®, FTC®, and FRC® Robots at their Introduce a Girl to Engineering Day event. Three hundred girls explored the fundamentals of engineering through STEM career fairs and hands-on engineering activities. From its humble beginnings, the scope of the YGG mission has expanded globally, impacting over 11,000 girls through workshops, camps, and presentations.

On Team 1710, it is our goal to create an environment where all STEM professionals are celebrated. We noticed that the LGBT+ community is also underrepresented in STEM. Our team formed an initiative called the Rainbow Alliance, which through inclusivity training,

presentations, research, and literacy materials, seeks to identify and break down barriers that hinder progression to STEM careers. We extended the Rainbow Alliance beyond our own team by presenting during a National Science Foundation conference at Clemson University in 2016, where professors discussed new methods of inclusion in STEM at the collegiate level. We learned that it is necessary to provide a strong foundation within youth education to keep LGBT+ individuals in the STEM career pipeline. We provided teams at the 2017 FIRST Championships with informational handouts that explained the basic concepts on how to be respectful and inclusive to LGBT+ individuals. During Championships, Team 1710 hosted a workshop over diversity and inclusivity within FIRST teams. Through this workshop, Teams 1710 and 2500 addressed how inclusion and diversity positively affects FIRST teams, how to foster healthy team cultures, and how to help teams begin their own inclusion-based programs and outreach.

SETTING THE STANDARD FOR SAFETY

As one of our Core Values, safety continues to be a cornerstone for Team 1710. Our program, Goof Proof, utilises instructional safety videos, promotional buttons, t-shirts, posters, activity books, and trading cards to make learning about safety fun. Team 1710 distributes hundreds of trading card decks at competition with updates based upon the current FRC challenge and created a group of safety mascots—super heroes that teach the importance of safety, to engage and appeal to younger audiences. In 2015, we extended our safety program to the Kansas City Engineering Zone, which provides space, tools, and mentorship for robotics teams in urban areas. In addition, all team members are trained in first-aid, workplace safety, OSHA compliance, utilization of on-site machinery, and CPR.

OUTREACH

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Team 1710 partners with the Johnson County Evening Reporting Center (ERC), a juvenile detention center offering alternatives to incarceration programs. With FLL kits, we introduce at-risk teens to the world of STEM, and expose them to activities that emphasize critical thinking skills. The students participate in various 1710-designed challenges that range from robot obstacle courses to "sumobots". Throughout the event, they refine their design and build foundational skills such as problem solving and decision making. Participants in each event gain new STEM exposure, opening their minds to further pursue the wonders of STEM.

Each year, our team spreads the mission of FIRST around the world with our Letter Writing Campaign. Since 2014, Team 1710 has written 1,400 letters to businesses, individuals, and organizations, reaching more than 35 countries. These letters contain an overview of FIRST, and are intended to help spread information about the life-changing opportunities made available through STEM.

Annually, we host 49 sessions of STEM camps and workshops to teach youth the fundamentals of engineering and innovation. We lead a workshop for every 2nd grade student in Louisburg, Kansas, inspiring 130 kids each year. In addition, Team 1710 holds LEGO summer camps for 3rd-5th grade children to teach the engineering design process and introduce young minds to STEM. We also hold advanced camps for 6th-8th grade students to expand upon their previous experiences by working with sensors, complex functions, and develop new programming skills.

One in five young adults suffer from mental illness. Over the years our team has personally been impacted by suicide. To help us heal, and raise awareness our team started the "You Are Not Alone" initiative. To cultivate an atmosphere where our team members feel safe we started a Big & Little's program. We pair returning members with new members, so that all members have someone they can talk to. We have also brought in counselor's to help our members after the passing of a teammate. This year we will increase mental health awareness by distributing posters at our school and competitions to provide tips on how to handle stress, anxiety, and depression. We hope to help those who suffer know they're not alone.

GROWING STEM

3 years ago, Team 1710 funded and started 9 FTC teams in Olathe Northwest's Engineering Academy (EA) junior curriculum. Students learn electrical, mechanical, programming, teamwork, and leadership skills through real world implementation. These FTC teams focus on introducing STEM to the community by showcasing FIRST programs to help increase STEM opportunities in the future. Additionally, we've hosted a FLL qualifier and FLL Jr. showcase every year since 2012.

In Kansas, the STEM workforce is in a crisis, in which 60% of Kansas jobs require a post-secondary certification, but only 40% of workers meet the qualifications. In addition, 50% of Kansas college graduates leave the state within 5 years, and there is a noticeable lack of secondary STEM education resources. Our team is working with our state government to create a Kansas STEM education initiative. In 2017, Team 1710 created a partnership with Kansas Senator Julia Lynn and Kansas Secretary of Commerce Antonio Soave to establish a Kansas "STEM Action Center," dedicated to increasing the STEM workforce. Through this partnership, we presented our proposal and sought support for the STEM Action Center. During the annual STEM Day at the Capitol, we reached out to Kansas legislators to garner further legislative support for STEM programs in Kansas. This year, we are continuing our relationship with the state legislature and recently appointed state governor, Jeff Colyer, to continue moving the STEM Action Center forward to positively impact the Kansas STEM workforce.

Thirteen years after its inception, FIRST Team 1710's mission still is to inspire the next generation of innovators. We continue to push the boundaries of what a robotics team is capable of by connecting with our community, instilling a culture of STEM, and creating leaders. Using robots as a tool to develop ourselves and our enthusiasm for STEM, we share this passion across our community and beyond. Our unique programs, including You Go Girl, Goof Proof, STEM Connection, Rainbow Alliance, and the STEM Action Center, unite communities and inspire the world.

We Build More Than Robots. We Build Leaders.