FIRST Impact Award - Team 1710

2025 - Team 1710

Team Number

1710

Team Nickname

The Ravonics Revolution

Team Location

Olathe, KS - USA

Describe the impact of the *FIRST* program on team participants within the last 3 years. Think about percentages of those graduating high school, attending college, in STEM careers, leadership skills, and serving as mentors/sponsors in *FIRST* programs.

Team 1710 intentionally equips and enriches all team members with applicable skills including leadership and hands-on technical expertise. After graduation, 99% of Team 1710 alumni pursue additional post-secondary educational opportunities including colleges, universities, and trade schools with 95% of alumni eventually working in STEM fields. Further, Team 1710 alumni have become the future leaders of FIRST, establishing and mentoring FRC teams such as teams 3928 and 4201.

Describe your community along with its unique opportunities and circumstances. Think about your geographic region, diversity of town/school, language barriers, socioeconomic barriers, and cultural expectations.

Our team is based in Olathe, Kansas, a suburb of Kansas City. This year, around 30% of kids in our school district qualified for free or reduced lunch. Our community embraces ethnic diversity, with almost 40% of our schools being made up of non-white students. To support our diverse community, we translate our posters into other languages. We provide for our underserved population by making our outreach accessible to all. We partner with Title I schools in our area to host STEM events.

Describe the team's methods, with emphasis on the past 3 years, for spreading the *FIRST* Mission in ways that are effective, scalable, sustainable, and creative.

For over a decade, Team 1710 has hosted a yearly Summer Camp and Winter Workshop. Working in teams, kids learn STEM skills by navigating various challenges we create through an FLL game. Campers practice skills like logical thinking, electrical circuitry, and line coding while experiencing the world of FIRST. Many participants go on to join FIRST, including some members of our team. Team 1710 secured a grant allowing us to start and mentor six FLL teams at Title I schools in our district.

Describe your team's goals and the progress you have made towards them to fulfill *FIRST's* Vision.

Our team's core mission is to empower students and our diverse community through hands-on STEM experiences. We host workshops inspiring kids to develop technical and interpersonal skills— who often later use those skills on FIRST teams. Beyond robotics, we prepare students for real-world challenges by providing healthy strategies to manage stress and support others through our You Are Not Alone initiative. As a result, our alumni become STEM leaders, embodying FIRST's Vision.

What impact has your team seen from your efforts described in the above question? How does your team measure impact?

Our team is strengthened by engaging with a variety of cultures and backgrounds. Before our You Go Girl workshop, only 25% of attendees were interested in STEM careers. But, by the end of camp, 80% left wanted to pursue one. Additionally, we track our community impact hours. We ended last year with 2,000 hours, reaching more than 100,000 people with 2,000 of those being close connections. Our FIRST Fund grant awarded teams across three continents: North America, Asia, and Europe.

Please provide specific examples of how your team and team members act as role models within the *FIRST* community with emphasis on the past 3 years. How do you share these best practices with other teams?

Our team volunteers at multiple events such as FLL regional championships as emcees and referees, along with FRC events as camera operators and student ambassadors. We also host an FLL qualifier at which our team volunteers. Team members are a part of the KC STEM youth leadership board, providing insight into the future. Our team hosted and funded two SWE Luncheons in 2022 and funded two others in 2023. We also work with the local robotics coalition and host scrimmages with other teams.

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

FIRST Fund is a material grant program Team 1710 created in 2021. Teams apply to receive part(s) in value of up to $500. This year we awarded nine teams across the world in underserved communities, including two rookie teams, helping them compete at their best while reducing the financial burden associated with purchasing robot parts. Our team purposely raised a 5% surplus in funds to ensure our team can sustain this grant for future applicants.

What other initiatives have you created, grown, sustained, or participated in (*FIRST* or otherwise) to help inspire young people to be science and technology leaders and innovators? What outcomes have you seen from your efforts in the past 3 years?

Our You Go Girl (YGG) initiative fosters success for women in STEM. In our YGG Workshop, girls learn STEM through activities like Newton’s Cradle and lava lamps. Our workshop has been very successful, as some attendees later joined the Engineering Academy and our team, allowing them to grow to become leaders in STEM. We create media about influential women in STEM to celebrate their contributions. Through YGG, the women on our team are empowered to lead our team and futures in STEM.

Describe the partnerships and relationships that you've created with other organizations (teams, sponsors, educational institutions, government, philanthropic entities, etc.) and what you have accomplished together, with emphasis on the past 3 years.

This year, we partnered with teams 1802 and 5268 to donate around 150 LEGO kits to Children’s Mercy Hospital through our annual LEGO Drive. We have donated 700+ kits through this program to date. We also partnered with the Kansas Enrichment Network and FTC Team 6547 to share the benefits of FIRST with educators and after-school programs. By visiting Kansas and Missouri legislators in Topeka and Jefferson City, team members advocated for legislation increasing STEM funding for students.

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

Our members find community, acceptance, and belonging in Team 1710. Our Rainbow Alliance promotes inclusion in STEM for the LGBTQIA+ and BIPOC community through intentional training and media. We showcase and distribute student-created materials at competitions and team events, and produce a video highlighting the diverse members of our team. Annually, we host a National Education Association Just Schools facilitator to train members on allyship and intersectionality.

Explain how you ensure your team and the initiatives you have created will be sustainable.

Team-wide meetings are held on each of our initiatives yearly: You Go Girl, You Are Not Alone, Goof Proof, and Rainbow Alliance. Through this, our Initiatives subteam facilitates feedback and suggestions from the team. For instance, this year we are expanding YGG to elementary school girls by including them in our YGG Workshop. Current leaders create handbooks to pass down to their successors including practical advice on how to lead each subteam, ensuring consistency, and effectiveness.

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

Our team has nine subteams, each with unique responsibilities. At times this limits the extent members interact with each other. To improve communication, we have implemented a subteam shadowing system alongside mental health hours to promote inter-team communication and team bonding. In addition, we emphasize communication and collaboration through subteam shout-outs and team-wide projects. Students provide feedback through climate surveys to improve team culture and connectivity.

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, particularly noteworthy, or had a large impact.

Team 1710 works within the FIRST community to create a more accessible and cooperative network of individuals and teams, collaborating to help found the Kansas Coalition to foster a network of communication and Coopertition across the state. Our team collaborates with teams worldwide, as we regularly meet with teams from Brazil and a future FRC team from Vietnam to provide them with sustainability advice. Additionally, we showcase STEM to civic organizations like the American Legion.

Judge Feedback

How should Team 1710 improve one of our initiative programs?

An area the team has an opportunity to improve.

Something that really impressed the judges.

Essay

We are Team 1710. Our 52-member team is divided into nine subteams replicating a business model. The robot-focused subteams include Build, Design, and Programming, while the business-focused subteams include Finance, Community Impact, Initiatives, Informatics, Graphics, & Media. Each subteam is led by a chief officer who ensures students develop essential skills while completing projects. To maximize knowledge retention, graduating leaders complete a handoff book each year for future leaders, ensuring team sustainability.

The unique experiences of our team members stay with them for life. Hudson Hurtig, a 2022 graduate, stated, “Drawing upon the lessons I learned in 1710, I gave my final presentation for my summer internship at Tesla. Immediately following this presentation I was offered a full-time job at Tesla at just 18 years old”. With 95% of Team 1710 alumni committing to STEM-related careers, our graduates work at reputable companies such as SpaceX, Garmin, and Boston Dynamics. We routinely invite former members to major team events, namely our team showcase and kickoff event, and send monthly newsletters to keep them updated on team highlights and our robot. Our alumni enrich the FIRST community by volunteering at FIRST competitions and mentoring teams. Some even start new FIRST teams, such as Corey Brown, our 2023 Woodie Flowers Finalist and founding mentor of team 3928. We provide an environment where alumni and parents are eager to return and inspire the next generation of STEM innovators.

For many alumni, the wave of change they've created began with the "You Go Girl" Initiative. STEM careers have historically been male-dominated, and Team 1710 intentionally addresses this issue. The "You Go Girl" (YGG) initiative bridges this gap by educating and encouraging girls to pursue STEM careers. Research by the American Society of Mechanical Engineers indicates women make up only 34% of the STEM workforce. Similarly, studies by the SheHeros Organization show girls begin losing interest in STEM by middle school. To combat this trend, our team hosts middle school girls in an annual YGG Workshop where we encourage continued interest in STEM. Jerusha Rowden, now a Civil Engineer stated, "At my Title I elementary school, Team 1710 brought us to the Rebound Rumble competition and I loved being able to talk to all of the teams and being able to see myself doing this." Last year, at the beginning of the event, only 25% of girls expressed interest in pursuing a STEM career, tripling to over 80% after our workshop. We teach various skills such as programming SPIKE Primes, operating electrical circuitry, working with chemistry concepts, and problem-solving. We expanded this camp to include elementary school girls this year. Additionally, our graphics team creates informational posts highlighting women in STEM, designing posters, and showcasing the women on our team and their contributions to STEM with trading cards by handing them out at competitions.

Along with our efforts to support women in STEM, we extend our efforts to the BIPOC and LGBQTIA+ community through our "Rainbow Alliance". Founded in 2017, "Rainbow Alliance" is an initiative aiming to increase LGBTQIA+ and BIPOC representation in FIRST. We host annual diversity presentations with Angie Powers, the President of the Olathe National Educators Association, who works nationally to support racial and social justice for students. Our team also creates infographics to highlight diverse cultures and their contributions to STEM. By embracing different perspectives, our team cultivates a welcoming and supportive atmosphere where everyone feels safe and empowered.

In 2019, Team 1710 began our annual LEGO Drive to donate easily accessible toys promoting STEM and creativity for children with extended hospital stays. From its inception, we have donated 700+ LEGO sets to Children's Mercy. We have since extended our reach to KidsTLC. This year, we partnered with teams 5268 and 1802 as a unique way of increasing collaboration between FIRST teams and expanding our impact. Together, we donated around 150 LEGO sets.

Our team prioritizes the safety of our community through our "Goof Proof" Initiative. Our graphics subteam creates a coloring book each year engaging children with a unique story while teaching the essential safety concepts of our initiative. To keep our team safe, we teach shop safety through hands-on practice and demonstrations. Members then take a machine certification test to demonstrate their proficiency. Our media subteam collaborates with the build subteam to create videos showcasing how to safely utilize machines, totaling over 1,500 views across our social media platforms. Our team also hosts an annual CPR course all team members attend. Accidents and unintentional injuries cause more than 220,000 deaths annually in the U.S., so our team decided to include Stop the Bleed, a nationwide program aimed at providing life-saving education. The Injury Prevention Coordinator of the Midwest Health Medical Center told us "that the only thing worse than a death from an injury is a death from an injury that could have been prevented." This year, we are expanding this initiative by providing other teams with safety kits at competitions.

Along with promoting safety, Team 1710 works within the FIRST community to create a more accessible and cooperative network of individuals and teams. We are active members of the Open Alliance and maintain a thread on Chief Delphi sharing updates on the construction of our robot promoting transparency and creating discussion to foster collaboration within FIRST. Locally, we have visited the Kansas and Missouri capitols advocating for legislation to increase STEM funding and education. We collaborated with teams 1108, 1986, and 3284 on this initiative. We continue to work with Kansas teams by founding the Kansas Coalition to foster a network of communication and Coopertition across the state. Additionally, Team 1710 connects with teams worldwide, as we regularly meet with teams from Brazil and a future FRC team from Vietnam to provide them with sustainability advice.

Team 1710 envisions a future where STEM opportunities are accessible for people of all ages and backgrounds. Our team reaches over 100,000 people yearly while forming over 2,000 meaningful connections. All of our members contribute to community impact through volunteering a combined total of 1938 hours over the past year and averaging ~26 hours per person. By season end, we project this to be around 2,250. In 2023, we received a $10,000 grant from the Women's Giving Circle to create, fully supply, and mentor 6 FLL teams in nearby Title I elementary and middle schools. We develop and execute all of our events including hosting annual camps, STEM nights, seminars, mentoring, and presenting at conferences. Each summer, our team welcomes nearly one hundred kids into our facilities for two camps where we teach them engineering design, programming, problem-solving skills, and teamwork through a mock FLL-styled game. This season, we created a game titled 'The 1710 Carnival' which features nine different challenges and an endgame task where campers utilize SPIKE Primes. Throughout the camp, they learn a variety of other skills such as JavaScript and Python, science concepts, and basic electrical wiring. We also implemented a thirty-minute art break such as making slime for campers to incorporate more of the 'A' in STEAM into these events. Along with summer camp, we host an annual Winter Workshop where students learn how to problem solve using LEGO SPIKE Primes. This year, we created a Candyland-themed Winter Workshop, where we created a fun and educational storyline for the kids. We aim to make STEM accessible to all by working with nearby Title I schools by hosting STEM Nights throughout the year. Through these outreach opportunities, we hope to create a future where STEM is accessible to everyone.

You Are Not Alone is an initiative started in 2017 to challenge the stigma surrounding mental health. Suicide is the third leading cause of death among individuals aged 15-29. To combat this, Team 1710 embraces the slogan "It's okay not to be okay, but it's never okay to stay that way". Team 1710 hosts mental health hours for team members during our 7-hour meetings to encourage students to take a break from the world of robotics and prioritize their mental health. Additionally, we create promotional material featuring the Suicide and Crisis Lifeline number (988) on bracelets, buttons, and posters we share with teams throughout competitions and our community. We have also hosted an annual mental health speaker at our regional events for the past 3 years, aiming to educate teams across our community about the importance of mental health. Through "You Are Not Alone," we strive to foster a culture where mental health is a priority, ensuring no one has to face life's toughest waves alone.

Team 1710 recognizes the importance of sustainability within FIRST, and to help keep fellow teams afloat, we began our FIRST Fund program. This grant program, started in 2021, donates part(s) worth up to $500 to teams in need. This year we awarded nine teams across three different continents in underserved areas, including rookie teams. Overall, more than 15 teams have benefited from this program. Additionally, we provide a 10-page sustainability handbook to every applicant. The handbook is complete with examples of emails, fundraisers, and all the strategies our team uses to raise and maintain our budget. Our team intentionally raises a 5% surplus of funds to be able to provide a sustainable program for other teams.

We aspire to create a future where STEM is accessible and experienced by all by creating equitable and challenging opportunities. This vision statement drives Team 1710 in all areas and keeps us focused on the ideals of FIRST in competition, with other teams, and our community.;