

FIRST Impact Award - Team 1710

2024 - 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. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in FIRST programs as mentors/sponsors.

One member on Team 1710 said being on the team has “opened my eyes to a world of possibilities and new dreams. I have learned to persevere through tough problems and rejoice in times of success”. 100% of our team members pursue post-secondary education. Approximately 95% pursue STEAM-related majors. Some of our alumni go on to start or mentor other FIRST teams, including teams 3928, 4201, and 1725. Our alumni also volunteer at FRC competitions as FTAs, referees, and field resetters.

Describe your community along with how your team addresses its unique opportunities and circumstances.

We seek to provide for our underserved population by making our outreach accessible to all. We translate our STEM camp posters into Spanish to accommodate the lingual diversity in our community. We volunteer at the Kansas School for the Deaf's National Robotics Competition for the Deaf and Hard of Hearing. We work with students in our school's special education department to give them an opportunity to experience STEM in a way that works for them.

Describe the team's methods, with emphasis on the past 3 years, for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?

We spread FIRST's message through annual STEM Summer Camps. We create an FLL game for students to play over the course of 4 days. In a fun and interactive way, students work to discover how to problem solve while working collaboratively with each other. As part of our Summer Camp curriculum, we teach and explore Gracious Professionalism. At the start of our camp, 6% of attendees felt well versed about Gracious Professionalism, however by the end of our camp, 73% of attendees felt knowledgeable.

Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.

We volunteer at multiple FIRST events such as FLL regional championships as emcees and referees, along with FRC regional and championship events as camera operators and student ambassadors. We host a yearly FLL qualifier where the entire team volunteers. Team members are also a part of the KC

STEM youth leadership board, providing insight into the future of STEM in Kansas. Our team hosted and funded two SWE Luncheons in 2022 and assisted with two others in 2023.

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

This year, our team earned a \$10,000 grant which we used to start and fund 6 FLL teams at 4 different schools. We hosted a meeting to give the new coaches an opportunity to discuss and ask questions about competitions. We also attended meetings and provided mentorship, assisting them with their programming and their innovation project. Additionally, we work with teams from Turkey, Brazil, and Mexico to provide advice, translations, or any other resources those teams could need for their success.

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

We host an annual You Go Girl Workshop where we invite middle school girls across our district to learn about STEM in engaging activities. At these workshops 25% of girls originally had an interest in STEM, however after the camp the results more than tripled with 80% of girls having an interest in STEM. We also host a Winter Workshop and Summer Camp to teach coding principles. On social media, we promote minorities in STEAM fields to recognize talent in industries which lack representation.

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

We annually hold a LEGO Drive for Children's Mercy Hospital and Kids TLC and provide them with kits for patients. We've also partnered with the Kansas Enrichment Network and FTC Team 6547 to share the benefits of FIRST with educators and after school programs. Additionally, we have joined the Open Alliance, where teams across FIRST share their robot construction progress and other team information. We worked with Kansas' Deputy Secretary of Commerce to promote FIRST within Kansas.

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 on Team 1710. Our Rainbow Alliance initiative promotes inclusion in STEAM for the LGBTQIA+ and BIPOC community through social media posts, buttons, and posters that we produce. We showcase and distribute these materials at competitions and team events. We invite guest speakers to educate team members on how to be inclusive and respectful allies. We create videos showing team members perspectives on the value of diversity in our community.

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

Our team remains successful through extensive documentation we share with team members and future leaders. Student leaders preserve knowledge by teaching underclassmen and writing leadership handbooks. Our machining members are a perfect example of this transfer of knowledge as we continuously pass down the art of machinery to new apprentices. Our Initiatives subteam manages, maintains, and reviews feedback about our team's initiatives that allows them to grow and evolve each year.

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years

We give presentations about the innovative ways our team engages with our community to companies interested in partnerships. Most recently, we presented to TVH Parts Co. and SCS Engineers. One of our newest ways to engage sponsors is by inviting them to our Open House to see the real-world skills our members develop during a build season meeting. We show our appreciation for sponsors by having sponsorship highlights on social media, team apparel, and on our robot's sponsor plate.

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

We have nine subteams that each utilize different skills for different jobs. To combat the communication barrier, we are establishing new cross-team projects requiring collaboration from multiple subteams. An example is the full remodeling of our team's website, which requires the collaboration of the Graphics, Informatics, Media, and Finance subteams to produce a high-quality product. Also, our Finance and Outreach subteams are collaborating to host a 'parents-night-out' fundraiser.

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

Our goal is to empower team members and our community through hands-on experience. We build skills at STEM workshops which have grown attendance year over year. Many attendees become team members, where they learn technical skills, public speaking, resilience, and commitment. We equip our team members with stress management and coping mechanisms through our You Are Not Alone initiative to help with real world encounters. Our team members become fighter pilots, engineers, and entrepreneurs.

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 or particularly noteworthy.

We use the lessons that ensure our teams stability every year to help other teams gain this stability. We created FIRST Fund to provide approximately \$500 of parts for teams with a financial need, along with sending them a copy of our financial handbook. We created FIRST Exchange to make a unified location to share parts, with no cost besides shipping. We also help teams find success at competition by sharing our scouting data through flyers and our scouting app's built-in API.

Judge Feedback

Who/When	Feedback
	<p>What sets apart the Hall of Fame Impact teams from Regional Impact Award winners, and what can we do to make that jump?</p> <p>An area the team has an opportunity to improve.</p> <p>Something that really impressed the judges.</p>

Essay

Throughout the last three seasons, the magnitude of our impact has soared to new heights. From the robot to our summer camp, we further the mission of FIRST in and beyond our community with our

dynamic outreach, diverse initiatives, innovative FIRST programs, and our unwavering commitment to making STEAM accessible to everyone.

Over the past 19 years, we've developed strategies for financial sustainability, and now we are in a position to help other teams. We support new teams through a program we created called FIRST Fund. Through this grant program we provide funds to teams who express financial need. To make this possible, our team raises funds outside our own operating budget each year. We provide teams with a copy of our financial handbook, containing budgeting and fundraising strategies. This program helped Idaho-based Team 8546 raise the funds necessary to travel to the FIRST Championship. Teams from around the world applied for the grant and we selected two recipients late last year amounting to \$1,400. One team was from New York City, another from Mexico, and both consisted of students from families of financial need who used the grant toward their robot.

Two major challenges teams face are obtaining parts and reducing waste. To help surmount these obstacles, we created FIRST Exchange – a website allowing any team to post spare parts for others to claim. Its goal is to streamline the exchange of lightly used parts in a convenient and cost-effective way by only asking recipient teams to pay for shipping. We've had many successful trades, with our largest exchange being between two teams over 500 miles apart.

After a team member underwent long-term treatment at Children's Mercy hospital, we discovered LEGO sets provide a perfect means to captivate and entertain children in intensive treatment because hospital staff can easily sanitize them between patients. This led us to initiate a LEGO drive aimed at fostering STEM-related activities for those in long-term care. Over the last three years, our LEGO Drive has donated over 680 LEGO kits to Children's Mercy and Kids TLC, a nonprofit organization that provides safe, caring environments for children. This mission came full circle when one of our team members' siblings received a LEGO set from our drive during their stay at the hospital. We continued to expand this program through promotion efforts at other schools, at our FLL Qualifier, and on our social channels.

Our home state of Kansas was recently ranked lowest of all 50 states in the US by Mental Health America's comprehensive measures, and this crisis has personally affected our community. In response to how tragedy from suicide personally affected our team, we created You Are Not Alone (YANA) in 2018. YANA is an initiative dedicated to supporting and destigmatizing mental health issues while providing resource awareness. Throughout the build season, tension and stress can increase, so we created "Mental Health Hours" to prevent burnout, promote coping methods, and a time for relaxation. These effectively ease tension through sports, meditation, board games, painting with Bob Ross, and even a student-crafted escape room. The open creative time is always a fresh brain-break from robotics work. To extend healthy mental health practices to others in our school and community, we host a variety of mental health speakers. We've partnered with the Sources of Strength organization and our school's Diversity Leadership Club to host a mental health speaker at our school, and are working to host similar events this year. Last year, we partnered with the Director of the Johnson County Mental Health Center, who spoke at the Heartland Regional to teach our community about the 988 hotline. We distribute buttons, business cards, and bracelets promoting the 988 hotline at our competitions as well. We make it our job to ensure everyone knows that they are valued, heard, and that there are outlets to get through every struggle. We truly believe that You Are Not Alone.

Safety is an important part of our robotics team, and we ensure that all members who use machines are well-trained. All of our build members have to pass a safety certification quiz with 100% accuracy before

they are allowed to use the machines. We mandate proper PPE and appropriate attire for those in the shops. This year, our members were CPR-trained by the Johnson County MED-ACT. Additionally, we create safety videos to teach others to use these machines safely. To promote safety throughout competitions, we illustrate an activity book annually featuring safety superheroes as well as posters and buttons to distribute at competitions.

STEM fields – and engineering in particular – are historically male-dominated, but our You Go Girl (YGG) initiative aspires to change that by empowering women and encouraging them to pursue STEM careers. Research shows that girls lose interest in STEM in middle school. To combat that, our team hosts annual YGG workshops for girls in middle school to inspire continued interest in STEM in their futures. At the start of our workshops, we measure their interest in STEM and roughly 25% saw themselves going into a STEM career. After these workshops, the results more than tripled, with 80% of the girls envisioning themselves pursuing a STEM career. During this event, we taught programming with SPIKE Primes, electrical circuitry with Harry Potter wands, and imparted valuable engineering problem-solving skills to these young minds. We design posters featuring action shots of every female on our team utilizing their STEM skills to empower young women – because we know you cannot be what you cannot see. We create trading cards highlighting the girls on our team as well as famous women in STEM. We also create informative social media posts featuring female professionals, and historically significant women in STEM. We extend our reach beyond our team by engaging with the FIRST community by hosting multiple SWE Luncheons.

Rainbow Alliance is our initiative to promote the inclusion of LGBTQ+ and BIPOC individuals in STEAM. We create new posters and buttons each year to share at competitions, as well as a diversity video we post to celebrate diversity on the team. Additionally, we celebrate important diversity months, such as Black History Month, Pride Month, and Native American Heritage month through artfully crafted social media posts – reaching over 9,235 people in the process. Earlier this season, we had a guest speaker educate our team about the importance of inclusion and how to be a good ally. We believe that fostering an inclusive environment is crucial to ensuring that every individual can contribute their unique strengths and thrive.

Outreach is our focus. We dream of a future where everyone can have equal opportunities to experience STEM and we work to make that happen. Each year our team reaches over 100,000 people and forms meaningful personal connections with 2,391 people through hands-on outreach events. All team members contribute to outreach by volunteering a combined 1,960 hours in the past year at roughly 40 events. On average, each team member will have completed approximately 40 hours of outreach by the end of the year. We personally develop, plan, and execute all of our events including STEM workshops, FLL Qualifier, demonstrations at a museum. Our team welcomes elementary and middle school students into our facilities for 2 different week-long camps where we teach engineering design and coding principles primarily through our own variation on an FLL styled game. This year we created a game titled “Safety Squad: Revenge of Dr. Drill” featuring nine challenges with varying difficulty. We teach students how to code with SPIKE Prime robots. Additionally, we endorse inclusion in STEAM throughout our community. Recently our team has made diverse partnerships with groups such as our school’s Special Education department and assisted with a robotics competition at the Kansas School for the Deaf. We translate our major event advertisements into Spanish to better accommodate the lingual diversity in our community.

Team 1710 is on a mission to put a FIRST team in every elementary, middle, and high school in Kansas

through our Robotics Outreach Pipeline for Everyone (ROPE). This year, our focus was on underserved schools in our district. We started 6 FLL teams across 4 schools in our area and were able to fully fund the rookie year of 5 of these teams by obtaining a grant from the Olathe Public Schools Foundation Women's Giving Circle. Throughout last season we explored funding options with the Deputy Director of Commerce for the State of Kansas that would enable every school to have FIRST teams. This year, the Kansas Enrichment Network invited us to the Kansas Connection Conference where we gave a presentation with FTC Team 6547 about the opportunities FIRST programs can provide to after school programs.

Our team provides its members with skills and opportunities that extend beyond their time on our team. "Team 1710 radically shaped the trajectory of my life, creating lasting friendships, connections, technical skills, soft skills, and project management skills," said one recent graduate. "Being on Team 1710 undoubtedly correlated to securing my first two internships and being successful as I pursue a degree in Electrical Engineering." Our alumni work at companies such as SpaceX, Tesla, and Lockheed Martin, and many continue to volunteer for FIRST as judges, robot inspectors, mentors, and coaches.

Team 1710 is committed to making sure everyone has the opportunity to gain the real world skills that can ensure their success in a STEAM field. As we reach new heights, we will utilize our dynamic outreach projects, diverse initiatives, innovative FIRST programs, and our unwavering commitment to making STEAM accessible to everyone to expand the values of FIRST in our community. ;

