Chairman's Award - Team 1710

Print Close

2021 - Team 1710

Team Number

1710

Team Nickname

The Ravonics Revolution

Team Location

Olathe, Kansas - 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.

FIRST has given members of Team 1710 the opportunity to build relationships and 21st Century skills for their future. All Alumni have graduated high school, and 92% have pursued post-secondary education in a STEM field. Alumni have started additional teams across the world providing mentorship and STEM opportunities to future generations. They are entrepreneurs and sponsors, making the world a better place.

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

Team 1710 is part of Olathe Northwest High School located in a suburb of Kansas City. In our school district, 26.47% of the students are considered economically disadvantaged and 73 languages are spoken. Team 1710 works to increase access to STEM in our community. We host summer camps, workshops and FLL competitions for elementary and middle schoolers. We also partnered with counselors and motivational speakers to increase mental health awareness within the STEM community.

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 host annual FLL qualifiers and showcases, incorporate FTC into our engineering curriculum, and provide grants to help start new FIRST teams. Team 1710 actively seeks opportunities to bring FIRST to underserved communities including the Kansas School for the Deaf through a camp and helped them start 3 FLL teams. We also promote women in STEM through our You Go Girl initiative. Our Title 1 middle school program brings the core values of FIRST and STEM to girls with little access to STEM.

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

Team 1710's team members are role models within the FIRST community by mentoring FLL and Jr. FLL teams. We bring many opportunities into our community by providing mental health awareness, STEM access to the underserved, and volunteering. Throughout our team's history we have constantly shown Gracious Professionalism on and off the field. We also include our community by fundraising at our local businesses to provide grants and scholarships for other FIRST teams.

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

Team 1710 is passionate about assisting other FIRST teams. We mentor Kansas School for the Deaf's 3 FLL and teams. In addition to mentoring, when they needed an FLL table we built it for them. We also helped an Alumni from Ukraine start the first FRC team in Ukraine by providing sponsorship. We also share our team space with local FLL teams that are in need of a place to meet. We also fundraise enough money for a grant fund that we issue to help new FIRST teams start.

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?

Team 1710 inspires young people by providing opportunities to engage with STEM in a fun environment. Our team touts a 100% graduation rate, and more than 75% of alumni go on to pursue degrees in STEM fields. Through our inclusion initiatives, we have substantially increased the number of women and minority group members on the team. Additionally, our mental health initiatives have helped teach strong habits to avoid burnout or worse mental health issues.

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 are partnering with the Olathe Public School Foundation, to pilot a platform called Just Giving where we can create a webpage for people to donate to the entire team or small projects within the team. We also have partnered with the first responders to create a product that would benefit their mental health. We conducted a STEM camp for students at the Kansas School for the Deaf. The kids were so excited about STEM that we helped create three FLL teams and we continue to mentor them.

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

We created our oldest initiative, You Go Girl, to promote women in STEM. Last year we expanded by creating the YGG Alliance. We distributed YGG starter kits including a mission letter, t-shirt, poster, and templates to other teams. We also began mentoring the Kansas School for the Deaf. In 2017, we created the Rainbow Alliance and each year we enhance it to welcome and include LGBTQ+ individuals. For Black History Month we created and shared posts, presentations, and an awareness video.

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

To ensure initiatives, which are the heart of our team, grow, we have a sub-team responsible for championing our initiatives. The entire team participates in our initiatives and knows how important they are to share into our community. To ensure sustainability, we fundraise for the coming year so that funds are available to keep our initiatives going. Leaders are responsible for passing down the skills and knowledge that will be needed in the future. This helps retain institutional knowledge.

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

Our sponsors are our biggest supporters allowing us to get to where we are today. Team 1710 has multiple methods for recruiting sponsors. The team engages potential sponsors by identifying businesses to give sponsor presentations too. Depending on the level of donation, the team has various ways to recognize our sponsors, from listing them on the team website to putting their logo on the robot or pit during competitions. Sponsors are also invited to attend our kickoff and showcase events.

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

We as a team do not receive any funds from our school but we are able to raise 100% of our budget ourselves via fundraisers and grants. We noticed that there were many underprivileged teams in our area that are unable to fundraise what they need. In order to remedy this situation we have created a grant program to help give underfunded teams a much needed boost. Our goal for this project is to be able to give four grants to teams in our area.

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

On Team 1710, our core values align to the values of FIRST. Our goal is to spread the FIRST ideals and STEM opportunities to our community while also providing leadership, communication, collaboration and real world learning opportunities for our team members. We also push for inclusion and equality through many of our initiatives like You Go Girl, You Are Not Alone, and Rainbow Alliance.

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.

Outreach is the heart of our team, spreading FIRST and STEM access and inclusion throughout our community. We have also added a few additional events to our fundraising opportunities, and are using the money we earn to give grants to those teams who are struggling with funding this year.

Essay

Seventy three different languages are spoken within our diverse community, and many of these groups are underserved. Outreach to these communities is the heart of what makes Team 1710 so special. Through our focus on inclusion and equality, we expand STEM access and opportunities to these disenfranchised communities.

Suicide impacts all communites. In 2017, Team 1710 suffered our second loss to suicide. To help us heal from this loss and provide resources for team members suffering from mental health issues, we began You Are Not Alone. First, the initiative focused on bringing resources, such as counselors, into the school and destigmatizing mental health issues and established scholarships memorializing the lost. Last year, we began 'Mental Health Hours' to encourage team members to stop and reflect on their personal mental health through meditation and relaxing activities. We also hosted a guest speaker, Jack Sernett at the GKC regional who spoke to teams about his story with mental health. In addition, Team 1710 presented to a group of thirty counselors about our initiative and its impact on the community. Most recently, our team promoted mental health during COVID. Team members met online, collaborating with other FRC teams, to create social media posts about You Are Not Alone and what individual team members were doing to stay healthy through the pandemic. We expanded our reach and collaborated with three other FRC teams to create a series of twenty posts regarding mental health, reaching a total of 47,113 people! Our team has improved awareness of mental health and we hope to never lose another team member to suicide.

During the pandemic, we expanded You Are Not Alone to first responders in our community. We met with law enforcement, fire, and nursing staff to ascertain what they were going through, what mental health tools they had access to, what was working, and what mental health tools they needed. For many first responders, suicide is a greate danger than their jobs. We identified that music, words from loved ones, journaling, communication and exercise are keys to mental health. Our research matched data produced by professionals working with the first responders. We created three different tools to support mental help and presented each one. These presentations were met with enthusiastic support, and we are now working on implementing aspects of all three into one easy to use tool.

To ensure all members of Team 1710 have an equal chance for hands-on experience in our wood and metal shops, we created Goof Proof. Initially, it involved developing a safety handbook, but has grown to include many programs promoting shop safety. All students on Team 1710 have a chance to be shop certified on each piece of our machinery. We also expanded Goof Proof to increase safety awareness at competition. Team 1710's design team worked with the build team to create posters, buttons, and more to help increase awareness of safety best practices at competition. We have expanded the program to children, creating safety themed coloring books for elementary school children, making safety fun and approachable for younger audiences. Our safety superhero team, the Safety Squad was created to convey the message of safety through fun and engaging ways, like videos and a card game.

When COVID-19 began to ravage the country, Team 1710 focused on meeting the safety needs of the local medical community. To help ensure that those on the frontline of the pandemic had access to necessary personal protective equipment, Team 1710 collaborated with local medical facilities to form the Medical Supply Creation team. The team focused on the growing need for masks by meeting virtually to plan, design, and create mask templates that team members would sew. Our team also created tension relievers via at-home 3D printers. Team 1710 ultimately donated masks, tension relievers, and safety glasses to KU Medical Center, Leawood Pediatrics, and St. Luke's hospital.

Children enduring long-term hospital stays have unequal access to many childhood experiences. Inspired by a team member who battled cancer, Team 1710 created the LEGO Drive. The purpose of the LEGO Drive was to provide the patients our favorite childhood toy: LEGO kits. LEGOs are the perfect choice because they embody STEM concepts, allow hospitalized children to escape for a while, and are easily sterilized. During the first year of the LEGO drive the team was able to collect and donate almost $3,000 of LEGOs to Children's Mercy Hospital despite the pandemic.

Team 1710 helped found the first FRC team in Ukraine, 7851 Neurablink. Team 7851 was founded by Andrii, a Ukrainian foriegn exchange student on Team 1710's build team. Before he returned to Ukraine, Andrii met with team leaders and mentors to prepare materials and resources from Team 1710 to jumpstart the program and encourage potential mentors, sponsors, and instructors to join. To establish the FIRST program, Andrii needed approval from the Ukrainian Government and the Director of Military Education. We assisted by providing letters on his behalf about the advantages of FIRST. Team 1710 also provided initial funding for Team 7851 and helped them develop sponsorship and community relationships. Since 2018, Team 7851 has started new FLL, FTC, and FRC programs across Ukraine.

The deaf community is one of the least represented in STEM. To help address this disparity, we began collaborating with Kansas School for the Deaf. Initially, we held a LEGO workshop at the school to inspire the students. Our team was nervous about the language barrier but we found creative solutions, like typing text messages, to share the excitement! The program was a hit, and Team 1710 began regularly mentoring their three new FLL teams. Additionally, when they needed a new FLL table, we stepped up and built it.

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Team 1710 has a rich history of encouraging women to engage with STEM. You Go Girl, our oldest initiative, was created to include more women in STEM. To begin, we sent postcards to incoming female students featuring two of the women on our build team to encourage them to join Team 1710. Since then, we expanded You Go Girl to include trading cards, T-shirts, and posters to display in classrooms, because we believe that you can't be what you can't see. The program has been hugely successful, with substantive increases in participation from female students, including several years where almost half of the team were women. Additionally, many leadership positions are held by women, including two of the last three CEOs. In order to spread the success of You Go Girl to other FIRST teams, we created the You Go Girl Alliance. Alliance members receive a You Go Girl Kit including a jumpstart guide for the initiative, a You Go Girl Shirt, hair bow, stickers, trading cards, and a template for t-shirts and posters. Through You Go Girl, we bring more balance to STEM education and workplaces.

We applied the skills learned from You Go Girl to a new initiative, Rainbow Alliance designed to produce a more inclusive environment for minority groups in STEM-related fields. Rainbow Alliance focuses on providing a safe, inclusive environment for members of the LGBTQ+ community and BIPOC individuals pursuing STEM-related careers. Team 1710 began producing merchandise to spread the message of inclusion, such as buttons, t-shirts, and posters that are handed out or shown at competitions highlighting the contributions of minority scientists, engineers, and more. To further inspire LGBTQ+ individuals, Team 1710 created a graphic showcasing Alan Turing's contributions on Team 1710's Instagram page. In a similar show of support to BIPOC, Team 1710 has started posts for African American History Month by showcasing the scientific and technological achievements of African Americans. In the future, the goal is to make sure all underrepresented voices are heard by sharing their stories.

This summer we planned to get together and finally build that ever-elusive swerve drive. We had written and presented to the mentors, and sold them on the idea that we could build a robot to show at outreach events in the community. Then Covid happened. It took a lot of creative thinking, ingenuity, and grit, but we prevailed. Using Swerve Drive Specialties MKII modules we designed a smaller drivetrain model with an electrical board. Because we used a predesigned model, we were able to buy certain parts from Swerve Drive Specialties. The remaining were made by local businesses with access to shop equipment while the school shop was closed. This saved money and time, as certain parts were on backorder. After ordering, manufacturing and sorting the parts into build kits, they were sanitized and delivered to build team members. Once each module was completed and collected, the full robot was assembled and delivered to a programming team member. The member encountered many difficulties that required mentor assistance, but he prevailed in the end. After many hot, sweaty, Kansas summer nights, challenges were worked through and the fruits of our labor were realized. Wheel alignment, encoder calibration and other tasks were undertaken and completed. The team emphasized collaboration throughout the programming of the swerve drive. A single programmer kept the robot to test code, but he posted videos and code snapshots to team Slack channels where mentors, alumni, and team members could all provide feedback. The swerve project offered all those involved with a taste of the difficulties encountered working in the online world. In the end, the swerve project gave a sense of direction and triumph to a year that had already robbed so many team members of the activities they all anticipated this FIRST season.

Team 1710 is tireless, whether we're working in our community or working on our robot we never give up because ingenuity and inclusion are the cornerstones of team 1710 and everything we do.