Chairman's Award - Team 4265

Print Close

2021 - Team 4265

Team Number

4265

Team Nickname

Secret City Wildbots

Team Location

Oak Ridge, Tennessee - 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.

Since 2017, we've helped 59 members learn the engineering & leadership skills they need for careers. We've had 2 Dean's List Finalists & 1 Volunteer of Year, along with 2 FIRST Scholarships, 1 FIRST Senior Mentor, 11 Internships at ORNL and UTK, 5 Fusion 360 Cert. Within the past 3 years, 100% of our alumni graduated HS and are seeking STEM degrees. We have alumni at TN Tech, UTK, University of Michigan, Rose Hulman, Univ. of Rochester, and the U.S. Merchant Marine Academy.

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

Many schools in surrounding counties completely lack computer science classes and programs. To address this need, we partnered with RS Foundation to deliver $57,000 in STEM robotics kits to rural schools. These kits have impacted over 1800 students who otherwise may not have been exposed to robotics. We also work to engage our community through our partnership with AMSE, our local museum. We provided hands-on activities and demonstrations of our robot to help engage our community in FIRST.

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?

Our TN Robot Quick Build helps cultivate science and technology leaders. It ensures that rookie teams can learn basic technical skills and begin the build season with a functioning kit bot - making them more likely to have a successful season and continue in FIRST. Since 2013, we've helped 96 teams & 1939 attendees build 50 driving kit-bots! We also mentored 7484 in 2018, even loaning them a robot. Finally, we ran & hosted an event for 12 FRC & 21 FLL robots during the Secret City Invitational.

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 started a Robot Quick Build to help rookie & inexperienced teams begin their season with a functioning drive base. This event has impacted 96 teams & 1900+ students. We regularly support FIRST events, including the Atomic City Invitational, running the Secret City FLL Qualifier, TN State Fair RoboRodeo offseason event, & many FLL bootcamps. Finally, we regularly assist teams with our open shop policy & provided FRC7484 with a robot for an offseason event to prepare them for the '19 season.

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

We have assisted/mentored 53 FIRST teams in the past 3 years & have an open-shop policy. In '19, 20% of our summer camp participants joined a robotics team. We are currently mentoring 3 FLL teams. Our FLL feeder teams have won the TN State Championship 4 times since 2012 & continue to compete at an international level. We have also reached Knoxville/Nashville teams by volunteering at the Jefferson Middle School FLL Bootcamp - helping FLL teams learn the skills they need for a successful season.

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 helped inspire the younger generation through FLL events, our Lab-in-a-Box program, and outreach to girls. Our FIRST events have increased local FLL participation so much that sumo bot event participation has more than doubled & we needed to start the Secret City FLL Qualifier to meet rising demand. Our LIAB kits have reached over 1800 students and 150 teachers. In 2019, our all-girls robotics summer camp inspired 20% of participants to join a robotics team.

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

Our most impactful partnership has been with ORCSGirls. We ran an all-girls robotics summer camp ('19-'20 - reaching 54 girls total). We regularly volunteer at their classes and are creating our own workshops - with more curriculum currently under development. We also partnered with AMSE to run many events showcasing FIRST. We partnered with Roane State Foundation to fundraise $57000 worth of robotics kits for rural schools & partnered with CNS to host/run Secret City Invitational for FRC teams.

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

We actively work to close the STEM gender gap by inspiring middle school girls. Since 2019, we've run an all-girls robotics summer camp. We've had 54 participants from 11 different states! We regularly support ORCSGirls, which provides free computer science to middle school girls. Recognizing the need to increase the number of women in STEM, we have been working to increase our own team diversity. 71% of our senior leadership team is female, & a woman co-leads our entire team.

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

We've focused on inspiring the younger generation to pursue STEM and FIRST to help sustain our FIRST community. We've run summer camps, participated at elementary school STEM nights, & volunteered at ORCSGirls computer science classes to encourage younger members to join our local FIRST community. These events will help inspire the next generation of Wildbots to join our team. We use the Scrum project management system to make our work visible & help the team effectively plan & complete work.

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

Last year, we reorganized our sponsor engagement strategy after losing our practice space and needing to fund projects. We actively work to recognize/communicate with sponsors (laser etch plaques, banners, & invite them to events). We also engage our sponsors during build season by sending updates, posting MiniVlogs/WildVlogs, and by using social media. We also partnered with the local nonprofit East TN Robotics foundation to engage with the community and gain new sponsors in 2019.

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

This year, we recognized that our social media needed improvement. We've transitioned from our weekly WildVlogs to multiple MiniVlogs each week. These MiniVlogs are shorter videos that quickly highlight our team's progress to reach a broader audience. With this strategy, our average monthly views have increased by more than 20 times that of last year. We are also posting weekly training videos to provide public resources for other teams.

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

During quarantine, we started creating a resource library for other FIRST teams. This resource library includes both technical & non-technical resources, ranging from LabVIEW programming & electrical engineering to fundraising, sponsor engagement, & Scrum, an organizational system. Although these resources are not finalized, we are posting weekly training videos & plan to finish the rest of the resources in the offseason. These resources help other teams succeed and spread the mission of FIRST.

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.

Our team has consistently overcome challenges. This year, we were unable to meet in person until August, but we were determined to continue spreading STEM. We met virtually & developed a resource library for other teams. The resources

are not yet finalized, but we plan to finish them in the off-season. Last year, we also lost our school practice field space. We used this opportunity to forge stronger community relationships -- and now have both a new sponsor and practice space.

Essay

Team 4265 Secret City Wildbots Passionately Pursues Perfection & Catches Excellence. We Forge Friendships to build a stronger region, Inspire Others to engage in STEM, Reach Out both regionally & nationally, Sustain FIRST through partnerships, & Tackle Challenges with persistence as we work to achieve FIRST's mission. Our consistent success spreading FIRST's ideals and creating STEM opportunities shows that even though we're from the Secret City, we're not hard to find.

Forging Friendships
We've organized & run key events in our region to continue a culture of Coopertition. Since 2013, we've hosted an open workshop to build & collaborate with teams 3844, 4462, 4489, 4630, 5508, & 6219. We've encouraged open communication between local mentors, students, & teams through our TNFIRST Slack channel & Meet & Greet. Over 900 students & mentors from 16 teams have attended our event. We've introduced a wider audience to FIRST through 2+ weeks of community events, such as Robo-Rodeo, Halloween SpookTECHular, Secret City Invitational (SCI) & Atomic City Invitational (ACI). We've done Robo-Rodeo for 4 years with a total of 52 FRC & 89 FLL robots competing, SCI for 1 year with 12 FRC & 16 FLL robots, & ACI for 8 years with 49 FLL robots competing most recently.

We actively encourage GP & Coopertition, cultivating friendships outside our region in our passionate pursuit for perfection. We've scouted with teams 1466, 2393, 3140, 4306, 7484, 2614 & 3959 at 8 competitions. We have collaborated for 7 years, improved our scouting strategies and have even created an app, which we have iterated on for the past 3 years. We collaborate regularly with team 2614 from West Virginia, we assisted them with the most recent virtual WVRoX off-season event, and lent them our workspace to fix their robot during a competition.

Inspiring Others
We actively work to involve girls in technology. During the summer of 2019, we organized & ran a weeklong robotics summer camp for middle school girls. We partnered with Oak Ridge Computer Science Girls, a Tennessee-based nonprofit that teaches girls about technology, & received a grant from the National Center for Women & Information Technology. Our camp gave 23 middle school girls an opportunity to explore STEM & robotics. Over 20% of these girls joined a FIRST/robotics team. In 2020, we taught the camp virtually despite the pandemic - sending robots & inspiration to 31 girls from 11 different states! We plan to run this camp in the future to continue teaching & inspiring the next generation of Wildbots and STEM leaders.

Since running our camp, we are partnering with multiple organizations to help introduce computer science to middle school girls around the world. We regularly support ORCSGirls' free computer science classes. These classes have helped inspire girls both nationally & internationally. We've even had participants from countries as remote as Pakistan & Ireland! We further support ORCSGirls by creating & teaching our own classes - with more curriculum currently under development. We are also encouraging girls in technology by developing curricula for Girl Scout robotics badges.

Recognizing the need to increase the number of women in STEM, we have been working to increase our own team diversity. This year on 4265, 71% of our leadership team is female, & a woman co-leads our team as a Scrum Master. To increase the confidence of women on our team, we participated in IndyRAGE, an all-girls competition. Our all-girls team were captains of the winning alliance in 2018 and finalists in 2019.

We have spread FIRST & STEM in our community at 59 events in the last 3 years: Rotary meetings, American Museum of Science & Energy (AMSE), science & STEM fairs, school orientations, & numerous festivals. To attend these events, we've volunteered for 1000+ hours in the past 3 years.One Some of our most impactful events have been in partnership with AMSE. We've built & demoed a ribbon-cutting robot for the museum's grand reopening, created a drone maze for the Festival of Photons, & planned a series of events to showcase FIRST.

Reaching Out
We've spread STEM to places previously untouched by FIRST. In the past 5 years, we've partnered with Roane State Community College to design a robotics kit for rural middle schools in East TN. Our Lab-in-a-Box is a complete robotics kit worth $2000, packed inside a single tote. It includes lessons, which we have shared with 150+ teachers. 17 kits are inspiring students to pursue robotics & STEM in places where neither have a presence. 10 more kits are scheduled for delivery after the pandemic. An estimated 1836 students have come in contact with STEM through these kits. Delivering the kits to rural counties in TN was an eye-opening experience that has strengthened our resolve to reach others with STEM. Although COVID-19 has temporarily slowed our progress, we will be expanding the program by adding a coding component in future kits.

We've further supported STEM education in our state through our advocacy. We contacted the TN Board of Education to advocate having coding classes count towards the foreign language graduation requirement. We have another meeting scheduled for May 20th. In our school, we revolutionized STEM education by starting a college credit robotics class 6 years ago. We also taught a LabVIEW Programming & Autonomous Robotics class with Roane State Community College for three years. We were unable to teach the classes in 2020 but are working to resume them next year.

We use social media to spread robotics beyond our community. For the past 8 years, we produced weekly "WildVlogs" during the build season to feature our progress & inspire teams. This year, we're posting 30-second "MiniVlogs" of our prototypes to better expand our reach. With this strategy, our average monthly views have increased by more than 20 times that of last year. We are also providing published resources by posting weekly training videos to benefit other teams. Our YouTube channel has 42500+ views, sharing FIRST with a wide audience. As guests on a "Focus on Education" show, WATE, WOKI-FM, & WBIR News programs, we've been able to share STEM & FIRST with over a million people.

Sustaining FIRST

By founding the TN Robot Quick Build (RQB), we began laying the foundation for TNFIRST FRC to be a hub of technical excellence & FIRST's core values. RQB began in January 2013 at ORHS with 6 teams & 100 attendees who built 5 fully functional kit-bots. We further strengthened local Coopertition by facilitating workshops along with the RQB at the local university. Now, after 8 years, we've cultivated a stronger, more effective TNFIRST community by helping 96 teams & 1,939 attendees build 50 driving kit-bots. We mentored team 7484 in 2018 by helping them compete at the Battle for the Bluegrass, loaning them a robot, & preparing them for their rookie launch into Deep Space. With no rookie teams in our region in 2019, & the pandemic preventing us from hosting in-person events this past year, we plan to continue RQB for future seasons.

For the past 9 seasons, we've further supported our FIRST community by mentoring/assisting other FIRST teams. In the past 3 years alone, we've mentored/assisted 53 FIRST teams - helping inspire the next generation of STEM leaders! We are currently mentoring 3 FLL teams. Our FLL feeder teams have won the TN State Championship since 2012 & continue to compete at an international level. We have reached Knoxville, Nashville, & teams in the surrounding area by volunteering at the Jefferson Middle School FLL Bootcamp. In partnership with CNS, we ran & hosted an off-season event for 12 FRC & 21 FLL robots during the Secret City Invitational.

We help our East TN FLL community by supporting local events. We supported our region's only off-season FLL event for 8 years & numerous other TN FLL & Jr. FLL events. We also ran & hosted the inaugural Secret City East TN FLL Qualifier in December 2018 & 19. In December 2019, we partnered with East Tennessee Robotics Foundation, a local nonprofit, to engage with our community, attract new sponsors, and showcase the robotics taking place in our community.

Tackling Challenges

Recently, the most formidable challenge our team has faced is navigating the COVID-19 pandemic. Our school closed, & we were unable to meet in person until August. Determined to continue spreading STEM, we met virtually & developed resources for other FIRST teams. Our resource library includes both technical & non-technical materials, ranging from LabVIEW programming & electrical engineering to fundraising, sponsor engagement, & the Scrum project management system. Although these resources are not finalized, we are posting training videos on a weekly basis, & plan to finish the rest of the resources in the offseason.

Legacy

Throughout our journey with FIRST, we've forged lasting friendships, inspired others to embark on STEM adventures, reached out to our community in ways previously thought impossible, worked to sustain FIRST in innovative ways, & tackled numerous challenges. We've made ourselves known throughout this unexpected journey & continue to passionately pursue perfection, hoping to catch excellence along the way. As Ernest Hemingway once said, "It is good to have an end to journey toward; but it is the journey that matters in the end."