Chairman's Award - Team 4265

Print Close

2022 - 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 2019, we've helped 65 members learn the engineering and leadership skills they need for careers. We've had 2 Dean's List Finalists and 1 Regional Volunteer of the Year, along with 2 FIRST Scholarships, 1 FIRST Senior Mentor, 11 Internships at ORNL and UTK, 5 Fusion 360 Cert, 2 Woodie Flower regional finalists, and 6 Registered Scrum MastersTM. Within the past 3 years, 100% of our alumni graduated HS and are seeking STEM degrees.

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 the Roane State Community College Foundation to deliver $114,000 in STEM robotics kits to rural middle schools. These kits have impacted over 1800 students and 150+ teachers who otherwise may not have been exposed to robotics. We partner with the American Museum of Science and Energy, providing hands-on STEM activities that 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 Smoky Mountains Regional Robot Quick Build cultivates leaders in science and technology. 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 and 1900+ attendees build 50 driving kit-bots! Since pandemic prevented us from hosting in-person events the past two years, we look forward to hosting RQB for future seasons.

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 run the only 2 FRC off-season events in our area: the Secret City Invitational and RoboRodeo, giving teams in our area additional events to grow their skills and connect with other teams. We regularly support FIRST events, including the Atomic City Invitational, running the Secret City FLL Qualifier, TN State Fair Robo-Rodeo offseason event, and FLL bootcamps. 35 FLL competed in the ACI this year, and a total of 62 FRC and 101 FLL robots competed in Robo-Rodeo alone over the last 6 years.

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 and have an open-shop policy. In 2019, 20% of our summer camp participants joined a robotics team. We are currently mentoring 3 FLL teams and 1 JrFLL team. Our FLL feeder teams have won the TN State Championship 4 times since 2012 and compete at an international level. We expanded our outreach to Knoxville/Nashville teams by volunteering at the Jefferson Middle School FLL Bootcamp, teaching FLL teams the skills they need for a 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 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 and 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 run an all-girls robotics summer camp annually. We regularly volunteer at their classes and are creating our own workshops. We also partnered with AMSE to run many events showcasing FIRST. We partnered with Roane State Foundation to fundraise $114,000 worth of robotics kits for rural schools and 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 a total of 86 participants from 11 states and 3 countries! 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 team diversity. 75% of our senior leadership team is female, and 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 inspired the younger generation to pursue STEM and sustain FIRST. We've run 5 summer camps, participated at elementary school STEM nights, and impacted 3500+ girls in ORCSGirls computer science classes to encourage younger members to participate in the 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 and help the team effectively plan and complete tasks.

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

We actively work to recognize/communicate with sponsors (laser etch plaques, banners, and inviting them to events). We engage our sponsors by sending updates, posting MiniVlogs/WildVlogs, and by utilizing social media. Our team partnered with the local nonprofit East TN Robotics foundation to gain new sponsors in 2019. For the past two years, we've implemented a practice of traveling in pairs of new and experienced members into our community to pitch our team to potential sponsors/partners.

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 20x that of last year, and by 1250% overall since last season.

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

In 2021, we received a 1.24 million dollar grant to create i-School, implementing a curriculum that brings robotics, agile engineering, and digital design and manufacturing to Oak Ridge High School. i-School consists of 4 hands-on, project-based classes that introduce students to the essentials of design and manufacturing. These classes also give students opportunities to partner with local businesses to manufacture parts, inspiring over 107 students so far to become innovators in STEM.

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. Last year, we were unable to meet in person until August, but we were determined to continue spreading STEM. We met virtually and hosted virtual training sessions which we've made public

for other teams. We also lost our school practice field space. We used this opportunity to forge stronger community relationships -- and now have both a new sponsor, BioLargo, and practice space.

Essay

Team 4265 Secret City Wildbots Passionately Pursues Perfection and Catches Excellence. We Forge Friendships to aid teams throughout the region, Inspire Others to engage in STEM, Reach Out at a regional, national, and international level, Sustain FIRST through partnerships, and Tackle Challenges with unwavering tenacity as we tirelessly pursue FIRST's mission. Our success in upholding FIRST's ideals and creating STEM opportunities proves that even though we are from the Secret City, we are not hard to find.

Forging Friendships

We facilitate FIRST by running events for FLL teams. In 2018, we founded the Secret City Qualifier, creating an opportunity for FLL teams in our area to compete. Our team has also hosted and volunteered at the only local off-season FLL competition, the Atomic City Invitational, since it began. This event features a sumobot competition, an alliance challenge, and even the Great Ball Contraption, introducing spectators to STEM and FIRST. 35 FLL teams competed this year.

In addition to hosting competitions, we coordinate local camps that mentor FLL teams in building and programming robots. Last year, we organized another boot camp in Nashville. We run the only 2 off-season events for FRC teams in our area: the Secret City Invitational and RoboRodeo. In the past 6 years, 62 FRC and 101 FLL robots have competed at RoboRodeo.

Inspiring Others

Team 4265 firmly believes there should be no barriers to STEM -- we play our part in making sure STEM and FIRST opportunities are accessible to everyone, no matter the sex, ethnicity, or socio-economic background.

We strive to promote female inclusion in STEM. During the summer of 2019, we organized and ran a weeklong robotics summer camp for middle school girls. The team partnered with ORCGirls, a Tennessee-based nonprofit that teaches girls about technology, and received a grant from the National Center for Women and Information Technology. Students built and programmed a robot using micro bits, working with a team to code a dance routine by the week's end. Our program gave 23 middle school girls an opportunity to explore STEM and robotics. Over 20% of these girls joined a FIRST/robotics team. Over the past 3 camps, we have taught 86 campers from 11 states and 3 countries (Canada, US, Moldova). We run this camp annually, educating and inspiring the next generation of Wildbots and STEM leaders.

We also diversified team leadership. 75% of the leadership positions are female, and a woman leads our team as a Scrum Master. To increase confidence, we participated in IndyRAGE, an all-girls competition. Our IndyRAGE competitors were finalists in 2019.

We have brought STEM to rural communities previously untouched by FIRST. For the past 6 years, we have collaborated with Roane State Community College to distribute a robotics kit to rural middle schools in East Tennessee. Our Lab-in-a-Box is a complete robotics kit worth $2000, packed inside a single tote. The kit includes lessons and equipment that we have shared with 150+ teachers. Our LIAB program continues to grow. We will have delivered 57 kits in total by the end of this summer, with 40 kits administered this year. An estimated 1836 students have come into contact with STEM through our efforts. This eye-opening experience has strengthened our resolve to support underprivileged youth in STEM. Although COVID-19 has temporarily slowed our progress, we will be expanding the program by adding a coding component to future kits.

Our team has served our community by partaking in 61 FIRST and STEM events in the last 3 years: rotary meetings, science and STEM fairs, school orientations, and festivals. We have dedicated 1000+ hours to organizing sustainable, grassroots start-ups. We have reached thousands of kids through the Halloween SpookTECHular event, featuring candy-dispensing robots at the Oak Ridge Civic Center. We bring robotics to Family Science Saturdays at the American Museum of Science and Energy to introduce our community to the joys of STEM.

Reaching Out

Team 4265 recognizes that we never achieve progress alone. After all, FIRST is a fundamentally collaborative effort. Only deliberate outreach will lay a strong foundation for the future of STEM.

This year, we furthered our commitment to improving STEM education by obtaining a $1.24 million grant from the TN Department of Education to design and implement a curriculum that brings robotics and industry learning to Oak Ridge High School. iSchool is life-changing -- we equip students with diverse technical skills, allowing them to work in STEM immediately after high school. We network with the most prominent local companies in the industry, including ORT-E, TTE, Lokar Inc., and GemTech. iSchool also partners with ACE and SEAMTN, and these organizations recruit students who have completed iSchool courses. These businesses provide internship opportunities for qualified Scrum masters, gauge expertise, and propose real-world issues for students to solve. iSchool consists of 3 classes: a foundational course introducing students to the essentials of CAD, a dual-enrollment robotics curriculum instructing members on how to construct a device of their design, as well as an advanced STEM class focused on operating machinery and bolstering work experience. So far, 107 students have enrolled across the fall and spring semesters! We want participants to apply their newfound capabilities off-campus, transforming iSchool into a hub of engineering for the region. To achieve this vision, we are arranging a self-sustaining program where companies contract parts manufactured by students.

We are committed to uplifting traditionally underrepresented minorities in STEM. Our team partners with the nonprofit ORCSGirls, which provides free STEM education to middle school girls internationally. In the past 3 years, this partnership has reached almost 3500 girls. Team members mentor participants and create innovative courses from the ground up. We devised "Code Some Chords," utilizing EarSketch to teach girls fundamental coding skills using music. "Cartoons From Scratch" educates students to produce cartoons, animation, and visual storytelling using the program Scratch. Finally, "Artistic Math" employs Python and Jupyter Notebooks to graph shapes using equations. We hold classes regularly, with around 20-30 girls attending each meeting. Our team believes that everyone deserves to pursue STEM -- we are bringing that dream to fruition by supplying quality, accessible education.

Our team utilizes social media to spread robotics to a worldwide audience. We are posting 30-second "MiniVlogs" and weekly progress videos. Our average monthly views have increased by more than 20x since last year and continue to climb. The team has grown by 45% in subscribers compared to the previous season; we have also increased by 1250% in views. Our YouTube channel has 61000+ views. As guests on a "Focus on Education" show, WATE, WOKI-FM, and WBIR News programs, we have showcased STEM and FIRST to over a million people.

Sustaining FIRST

We founded the TN Robot Quick Build (RQB), laying the foundation for TNFIRST FRC to become a hub of technical excellence and FIRST's core values. RQB began in January 2013 at ORHS with 6 teams and 100 attendees who built 5 fully functional kit-bots. We further strengthened local Coopertition by facilitating workshops with the RQB at a local university. Now, after 9 years, we have cultivated a stronger, more effective TNFIRST community, assisting 96 teams and 1,939 attendees in building 50 driving kit-bots. With no rookie teams in our region in 2019, and the pandemic preventing us from hosting in-person events this past year, we look forward to hosting RQB for future seasons.

For the past 10 seasons, we have further supported our FIRST community by mentoring/assisting FIRST teams. In the past 3 years alone, we mentored/assisted 53 FIRST teams - inspiring the next generation of STEM leaders! Our FLL feeder teams have won the TN State Championship since 2012 and compete internationally. We have assisted teams in Knoxville, Nashville, and surrounding areas by volunteering at the Jefferson Middle School FLL Bootcamp. In partnership with CNS, our team ran and hosted an off-season event for 12 FRC and 21 FLL robots during the Secret City Invitational.

We are committed to sustaining STEM opportunities in the community. Our team has supported our region's only off-season FLL event for 9 years and numerous other TN FLL and Jr. FLL events. We ran and hosted the inaugural Secret City East TN FLL Qualifier in December 2019. In December 2019, we partnered with East Tennessee Robotics Foundation, a local nonprofit, to engage with our community, attract new sponsors, and showcase the achievements of teams in our region.

Tackling Challenges

The most formidable challenge facing our team was connecting in a pandemic environment. To continue strengthening FIRST during COVID-19, we switched to virtual communication. We hosted countless LABVIEW and CAD workshops for team members to grow their knowledge and posted them to YouTube as a resource for other teams.

In 2020, we lost our practice field. To overcome this loss, we reached out to BioLargo, a local business, and they offered us a space. As a result of this blossoming partnership, our team partnered with them to manufacture and sell hand sanitizer, providing resources to the community and money to our team.

Legacy

Throughout our journey with FIRST, we have forged lasting friendships, inspired others to embark on STEM adventures, reached out to our community, sustained FIRST using ingenious methods, and persevered through numerous challenges. We have made a name for ourselves throughout this journey and passionately pursue perfection, always catching excellence along the way. As science fiction author Ursula K. Le Guin once said, "It is good to have an end to journey towards; but it is the journey that matters, in the end."