Chairman's Award - Team 4265

Print Close

2020 - Team 4265

Team Number

4265

Team Name, Corporate/University Sponsors

Bechtel/UT Battelle & Oak Ridge National Labs/CNS, Consolidated Nucear Security LLC/Leidos/Oak Ridge Schools/Oak Ridge Public Schools Education Foundation/Oak Ridge Tool and Engineering/ARC Machining/RT Coating/ARMEC/Axis Fabrication & Machine/Technical Machining/Centrus/MS Technology, Inc./Engineering Services Group, Inc./UCOR URS CH2M Oak Ridge LLC/ORAU/Fastenal/Roane State Foundation/Bob Eby/FIRST Place Finish&Oak Ridge High School

Briefly describe the impact of the *FIRST* program on team participants within the last five years.

Since 2015, we've helped 62 members learn engineering & leadership skills they need for careers. We've had 4 Dean's List Finalists & 1 Volunteer of Year, along with 5 FIRST Scholarships, 1 FIRST Senior Mentor, 17 Internships at ORNL and UTK, 6 STEM Internships, 5 Fusion 360 Cert. 100% graduated HS and we have alum at TN Tech, Pellissippi State, Emory Riddle, UTK, UC Davis, ETSU, University of Michigan, Bryan College, Roane State, Rose Hulman, Univ. of Rochester; 93% Alum in STEM, 4 STEM jobs

Describe the impact of the *FIRST* program on your community within the last five years.

19-now:Ran WW Robot Summer Camp-23 girls 19:AMSE Sci Sat. 2 yrs:Secret City FLL Qual w/12 teams 19:CodeStock Academy Prez Mentor/Assist 5 FTC/22 FLL/52 JFLL 16-now:Ran RoboRodeo w/51 FRC/66 FLL bots 13-19:Robot Quick Build-50 bots built tot 13-19:Kickoff Wksp-96 teams/1939 attend tot 18:Secret City Invit. w/12 FRC/21 FLL bots 17-19 Intro A Girl to Engineering Day 15:5 attend DC RUSH 27 conf 26 FLL/JFLL events 12-16:Secret City Fest 34 hr instruct/assist TechGirlz/ORCSG Classes 90+events

Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.

19-:WW Robot Camp-all girls intro course 25% joined robot team 19 AMSE Sci Sat Ribbon Cut 2yrs Fest of Photons-Design Drone Maze AMSE season demo-Brought designs/parts/LIAB,Lab-in-a-Box w/RS Fdn-17kits 18 Secret City Fest Invit 18 WATE6 On Your Side/Focus on Edu 17-19 Robo Rodeo 16 Battle@Fairgrounds w/TVA/TN Valley Fair Mentor/Teach 15 ORCSG events GirlsInc STREAM conf prez YouTube-6yrs WildVlogs Mentor Slack chan 18-Vol 5 FLL Btcmp Opn Shp Policy-mentor inexp teams STEM night@elem schools

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

Wildbots model & promote FIRST core values in TNFIRST Region w/: Rookie Quick Build/Meet&Greet Partner w/ businesses & intro them to FIRST Vol @ STEM events (TechGirlz, Sci Sat, Sci Fair) Vol & Mentor @ FLL/JFLL events Lab in a Box activity w/ Roane State Participated in Rush 27 National Conference w/ TN Congressmen to advocate STEM edu bill Open Shop Policy inspires teams to excel/give back Encourage alum to give back by leading wkshps. Team structure encourages members to mentor each other

Describe the team's initiatives to help start or form other FRC teams

'17-18:OSHS, Roane Co & Campbell Co. Have been in discussions with both these systems Kentucky Ft. Campbell team-provided robot for offseason event to prepare them for 2019 season '16-19 LIAB Initiative with RS Foundation-introduced & taught 20 teachers in rural East TN counties to expose students to Robotics & STEM Our RQB is meant to level the playing field for more inexperienced teams by finishing a drivetrain on day 1 of build season.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

Our 3 SumoBots summer camps in '12-'13 led to the genesis of 4 FLL teams in our area. One went on to host the Atomic City Invitational and we referee for them at this event each year. 2 FLL teams progressed to FTC and we hope FTC teams will form through Lab-in-a-box schools. FLL Jr. members join FLL teams in our region. Our team includes students from our Sumobot summer camps.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

We comm/partnered w/ FRC teams 3140/1466/2393/3824/3966 through Slack. We reg. share/edit docs w/ teams from 7+ states. We partner w/ Kentucky Wildbots&MARS, attend events & collaborate in offseasons. We collaborated with 234 Cyberblue by editing/providing feedback on rookie business plan template. At one elem school we helped inspire 60+JFLL in 6 yrs & participated in end of season exhibitions(they shared what they built/researched) We took our bots to show what lies ahead for them in FIRST.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

2 FRC/FLL Off-season events provide more opportunities for teams to build skills and bond Meet & Greet/RQB/What to Expect events Open workshop is a source for teams lacking in mentorship & materials TN FIRST/Mentor Slack encourages communication LabView,Solidworks,&FLL camps provide skills for many FIRST teams TN Valley Fair events allow FLL teams to see what FRC teams do Volunteering & Judging at local FLL&FLL Jr.events&camps provides a chance for teams to see what is available for them

Describe your Corporate/University Sponsors

ORS/ORNL/UT Battelle/Roane State Foundation/FPF/ORPSEF/Bechtel/Leidos/Norco Metal Finishing Inc./RT Coatings/C & D Tire Service/Schramm Family/Ashley Parks/Buckner Family/Neighborhood Nerds/Home Depot/East Tennessee Robotics Foundation/Ortho TN/Arconic Foundation/Axis Fabrication and Machining/Technical Machining Services/Norco Metal Finishing Inc./CNS/UCOR/BioLargo/Luke Scime/Centrus/Fogel Family/CNS/Pitts and Lake PC/The Other One/Oak Ridge Tool and Engineering

Describe the strength of your partnership with your sponsors within the last five years.

Work to recognize/communicate with sponsors(laser etch plaques, banners, & invite them to events). Send updates in build season, WildVlogs, social media. Our partnership with RS Foundation made LIAB & teacher workshops possible(currently working on an international focus); Partnered w/TVA & TN Valley Fair for off-season event for FRC/FLL for 3 yrs; Partnered with sponsor CNS to Host/Run Secret City Invitational for FRC teams-1 year. Use social media to show thanks by posting on #SponsorSaturday.

Describe how your team would explain what *FIRST* is to someone who has never heard of it

FIRST inspires students to aspire to greatness in STEM & Engineering. FIRST develops leaders, teaching valuable technical skills in the process. In FIRST you learn hard work & fun can coexist. You gain experience in critical problem solving while learning valuable time management skills & you learn to value teamwork & how to respect & treat others professionally. In FIRST you learn what a better world would look like & are empowered to help build it to make your future the best it can be!

Briefly describe other matters of interest to the *FIRST* judges, if any

Were moved from a wksp to classroom after 4 yrs, & struggled finding a teacher for robotics class. Lost our practice field space at our school, but overcame this challenge and gained a field with the help of our sponsor, BioLargo. Now have an abundance of committed mentors, an admin that gets FRC. Received grants for 2 CNC & computers & are learning valuable skills. Our alumni return to mentor our team and others. Our team has a near 50/50 ratio of boys to girls.

For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.

Responsible for inception of Meet&Greet/Rookie Quick Build/Workshops/Bootcamps/only 2 offseason FRC events in TN Encouraged local teams to take over Meet&Greet We increase level of FRC/FTC comp in our region through events we lead Recognizing the lack of resources in surrounding counties, we've intentionally focused our efforts at building STEM in our backyard by partnering w/ RS Foundation to deliver over $60,000 in STEM robotics kits to rural schools (another $10,000 this summer)

Team Captain/Student Representative that has double-checked this submission.

Alexandra Shanafield

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 & internationally, Sustain FIRST through partnerships, & Tackle Challenges with persistence as we work to achieve FIRST's mission. Our consistent success spreading FIRST 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 had 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 new audience to FIRST through 2+ weeks of events, such as Robo-Rodeo, Secret City Invitational (SCI) & Atomic City Invitational (ACI). We've done Robo-Rodeo for 4 years with a total of 52 FRC robots & 89 FLL robots competing, SCI for 1 year with 12 FRC robots & 16 FLL robots, & ACI for 7 years with 49 FLL robots competing last time.

We actively encourage GP & Coopertition, & cultivate friendships outside our region in our passionate pursuit for perfection. We've hosted Earl Scime in our workshop to hear about team 2614 history, learned their FIRST insights, collaborated in manufacturing, & attended all WVRoX off-season events. We've worked with teams 1466, 2393, 3140, 4306, 7484, 2614 & 3959 to improve the effectiveness of scouting by collaborating on an app & scouting together at 7 competitions.

Inspiring Others
For 9 years, we've promoted FIRST & STEM at 110+ events: Rotary meetings, American Museum of Science & Energy (AMSE), Girls Inc., Oak Ridge Computer Science Girls classes, science & STEM fairs, school orientations, Christmas parades, & numerous festivals. To attend these events, we've driven 10,277 miles & volunteered for 731 hours in the past 3 years. Additionally, we've organized & run 3 Sumobot camps at Oak Ridge Children's Museum for 60+ kids, STEM Eclipse activities for 250+ elementary students, & STEM activities for summer reading programs. We've also assisted at Camp Invention for 3 years.

Since joining forces with AMSE, we've built & demoed a ribbon-cutting robot for its grand reopening, created a drone maze for the Festival of Photons, & planned a series of events to showcase FIRST. We have a history of mentoring & assisting FIRST teams for 8 seasons. In the past 5 years, we've mentored/assisted 52 FLL & 61 Jr. FLL teams & helped inspire the next generation of Wildbots & STEM leaders!

We've also assisted & organized the only local off-season FLL event, the Atomic City Invitational for 7 years & numerous other TN FLL & Jr. FLL events. In addition, we organized & hosted the inaugural Secret City East TN FLL Qualifier in December 2018 & 19.

We use our digital media to impact our community & are currently making ourselves visible on YouTube, Instagram, & Twitter. For 7 years & counting, we've produced weekly "WildVlogs" during the build season to feature our progress & inspire teams. Our channel has 35000+ views, bringing FIRST to a whole new audience. As guests on a "Focus on Education" show, STAR 102.1, WATE, WOKI-FM, & WBIR News programs, we've been able to share STEM & FIRST with over a million people.

In qualifying for the World Championships for 7 years, we've had opportunities to draw inspiration from & network with other successful teams.

In our STEMspiration of 54 graduates: 85% have attended college, & 93% of them are pursuing STEM degrees & careers. Eleven FIRST alumni (9 from 4265, 1 from 1985 & 1 from 2614), came back to mentor us due to their love for FIRST. We are thrilled to have a team composition of 40% females. For 2 years, we sent members to IndyRAGE, an all-girls competition. We were finalists in 2019 & winning captains in 2018.

This past summer, we organized & ran an all-girls summer camp for 4 days by partnering with ORCS Girls & receiving an NCWIT grant. We were able to give 23 middle school girls an opportunity to explore STEM & robotics. Over 20% of these girls joined our or another FIRST/robotics team appropriate for their age. To continue teaching & inspiring the next generation, we're going to continue this camp again this summer & assist at a FLL camp to teach more skills specific to FIRST.

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Through our involvement in the community, presence in media, & impact on people of all ages, we inspire our culture to have a greater appreciation for STEM.

Reaching Out
To have a strong STEM community, we encourage FIRST at a young age. We currently are mentoring 4 FLL teams & 10 JFLL teams. Our FLL feeder teams have won the TN State Championship since 2012 & continue to compete at an international level. 1 FLL & 1 FTC team often work out of our shop. We reach more than just our specific teams by volunteering at the Jefferson Middle School FLL Bootcamp which reaches Knoxville, Nashville, & surrounding area teams. In partnership with CNS, we ran & hosted an off-season event for 12 FRC & 21 FLL robots during the Secret City Festival.

We've spread STEM to places untouched by FIRST. In the past 4 years, we've partnered with Roane State Community College to design a kit for rural middle schools in East TN. Our Lab-in-a-Box is a complete robotics kit in a single tote; it includes lessons that are shared with 150+ teachers. 17 kits are inspiring students in robotics & STEM in places where neither have presence with 10 more kits on the way. An estimated 1836 students have touched these robots. Delivering the kits to rural counties in TN was an eye-opening experience that has strengthened our resolve to reach others for FIRST. We're currently working with RSCC to deliver our 1st international kit.

We revolutionized STEM education in our school by starting a college credit robotics class 5 years ago. We also taught a LabVIEW Programming & Autonomous Robotics class with Roane State Community College for three years.

In December, we partnered with East Tennessee Robotics Foundation, a local nonprofit started by our mentors, to raise funds for teams in East TN. This fundraiser raised $2000 to help struggling FIRST teams.

4 years of SpookTECHular Halloween events have provided opportunities to reach out & work with STEM & community clubs. In 2015, we premiered the movie Slingshot at our school, inviting our community to come learn about Dean Kamen & his quest to solve the world's water crisis. We also showcased our robot during a premiere of Terminator Genisys.

Sustaining FIRST
By founding the TN Robot Quick Build, 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. Our commitment to Coopertition led us to facilitate workshops in parallel with the RQB at UTK. After 8 years, we've achieved a stronger, more effective TNFIRST community by helping 96 teams & 1,939 attendees to build 50 driving kit-bots. In 2018, we mentored 7484, helped them compete at Battle for the Bluegrass, loaned a robot, & prepared them for their rookie launch into Deep Space.

Our goal of sustaining FIRST reaches further than the Southeast. In 2015, we advocated for FIRST on the national level by attending RUSH 27's National Advocacy Conference in DC. We met with TN Congressmen to lobby support for the Every Student Succeeds Act, allowing funding for STEM engagement programs such as FIRST. Recently, we've contacted the TN Board of Education to support the idea of a coding class as a graduation requirement. In May 2020, we will be meeting with them to discuss this possibility.

Tackling Challenges
While running the inspect & adapt cycle during pre-season, we discovered our robot had a major flaw. To overcome this challenge, we developed a hybrid mecanum/traction drivetrain dubbed the Dragonfly, which earned us multiple awards. CAD files were released to the world & are used by teams across the country.

Numerous machine fabrication delays led us to recruit additional sponsors & write a grant for a CNC which has allowed us to machine parts in-house for many FRC, FTC, & FLL teams. In 2017, our workshop gained another CNC through a grant, allowing us to iterate faster. Following Worlds 2015, we returned as Einstein Finalists, only to learn that we were losing our workspace. While this made us unable to hold summer STEM camps, we were able to reorganize to host & run LabVIEW/SolidWorks boot camps with 33 attendees from 4 area teams.

Another challenge we've addressed is our productivity. In August 2015, 2 mentors & the team captain attended a ScrumMaster training course for eXtreme Manufacturing & became certified Scrum Masters. Scrum is a framework used to address complex, adaptive problems while creatively & efficiently delivering products of the highest possible value, impacting student growth, & increasing our productivity.

Last year we lost 2 prominent seniors, & currently, a third of the team is new to FRC. So, we embraced the opportunity to spend the off-season training in safety, machinery & even robot skills by competing at several off-season events. This experience prepares our new members for a life & career in STEM.

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."