

## Chairman's Award - Team 3824

[Print](#)[Close](#)

2020 - Team 3824

### Team Number

3824

### Team Name, Corporate/University Sponsors

Knox County Government/Bechtel/GKN/EPRI/ARCONIC/INGENU TEC/Oak Ridge National Lab/Consolidated Nuclear Security/UCOR/TVA/SolidWorks/Total Structures/Knox County Schools&Hardin Valley Academy

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

Using our unique team structure, students are able to lead one another. Instead of following the standard teacher centered system, students are able to form and create their own ideas that lead each meeting; by doing this, our team helps students prepare for life after high school. Thanks to the program we have organized, students have secured internships and jobs using the skills they learned on the team, such as soft skills and teamwork.

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

Within the Knox County area, HVA RoHAWKtics has reached more than 270,000 individuals through events such as the Marble City FLL Qualifier and Two Blues STEM camp (a collaborative STEM camp between Hardin Valley and Farragut), along with many others. Over the years, hosting these events has allowed us to spark excitement around developing technology for younger generations as well as provide an encouraging environment for STEM exploration.

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

We attend our school's home football games where we bring our robot, the NightHawk, onto the track to launch t-shirts and donated items from sponsors into the crowd. In 2018, we built motorized props for Hardin Valley Academy's marching band show, Broken. Through these events, we are able to introduce robotics to people who haven't been exposed to it before. We also do this by working in partnership with The MUSE Knoxville, a children's museum providing STEAM education to kids.

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

Our team is composed of seven subteams, each comprised of members from all grade levels. In our student-led organization, returning members advise incoming members in the skills needed for their respective roles through working alongside each other. Our team also values keeping a high GPA throughout high school, averaging a 3.8 within a school of over 2,000 students, showing that we can balance academics and other activities.

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

As a team, we are working to start new FRC teams at nearby locations like West and Bearden High Schools, which we hope will take effect in the next few years. Aside from starting teams, we have assisted several teams within their business subteam, helping write business plans that have proceeded to win awards two years in a row. We also have alumni who have gone on to start and lead various FRC teams in our area.

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

We started an FTC team, RobotIGS, in Germany through the ERSTE Initiative in 2016. We also have plans to start FLL and FTC teams at Hardin Valley elementary and middle schools respectively once we gain faculty support for the project. We are also working to start an FLL team at Girls Inc. in Oak Ridge, a nearby after school program for girls.

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

After starting the previously mentioned FLL and FTC teams, our team will continue to assist them when they need it. Our intention is to allow Hardin Valley Elementary and Middle School students to experience the progression of *FIRST*, building up to joining our team in high school. We also plan to start and assist FTC teams in other local middle schools that feed into Hardin Valley.

**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)**

Our primary method of mentoring younger teams is through our FLL state qualifying tournament. We have hosted this event for the past seven years, helping about 20 teams of students to explore robotics each year. It grew big enough to allow us to partner with 4265 Secret City Wild Bots to form another qualifying tournament that started in 2017. Outside of the tournament, we also have individual team members who help with mentoring FLL teams throughout their season.

**Describe your Corporate/University Sponsors**

The majority of our sponsors are large engineering companies, such as Bechtel, CNS, Arconic, and others, who supply us in a variety of ways. By giving money, buying supplies, and allowing us to use their more sophisticated tools, they help our team stay alive. We also receive help from our school district, Knox County Schools, who allows us to meet in their facilities during our build and off seasons.

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

In the last few years, our team's relationship with some of our sponsors has vastly changed. While we worked in an ORNL facility, several of our sponsors and mentors were established as a result of that relationship. When that opportunity was lost due to safety issues, we lost some supporters along with it. Since then, our team has taken initiative to find new sponsors, as well as strengthen our bonds with old ones, namely Bechtel, GKN, and Knox County Schools.

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

FRC stands for *FIRST* Robotics Competition. It's building a robot to play against hundreds of others. It's long days and late nights of planning, writing, programming, and sometimes arguing. It's bonding with friends from all grade levels, through successes and failures. It's creating a family out of diverse-minded peers that goes beyond the end of each night. It's a six-week build season that fosters a lifetime of experience, and a 1,404 sq ft game field that opens a world of opportunity.

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

In 2017, our team lost our build space. This meant that leading up to our 2018 season, we didn't know if we would have a space to work or if our team would exist for another year. Thankfully, a neighboring team, FRC 3140, invited us to work with them. We have been working at Farragut High School since. Through this we have become more sustainable as a team, and we know that when we inevitably must find a space of our own, we will be able to do so confident that the HVA RoHAWKtics will live on.

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

Our team has reached more than 315,000 people since its inception in 2010. It has expanded from our school to as far as Göttingen, Germany in just 10 years. We run a biennial exchange program with RobotIGS in Germany where we strengthen the bond between our teams and help them succeed in FTC. Our alumni also help us expand past our community. 100 percent of our alumni have gone on to college or the military, totaling 24 universities across the country, where they spread awareness of *FIRST*.

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

Josh Seay

## Essay

"Stay Hungry, Stay Humble." This inspirational motto from our very first year has been passed down to each generation of our team to make it their own. From fully 3D printing an entire robot to starting an FTC team in a country that had none, FRC 3824, the HVA RoHAWKtics, has become the embodiment of our motto during the past 10 years.

Competition is a basis of FIRST, though due to the influence of the second half of our motto, "Stay Humble," our team has found that we strive to have a lasting impact rather than a banner on our wall. We use this rationale by continuing our tradition of decorating for Fantasy of Trees, walking in the Farragut Fourth of July Parade, demonstrating our program at Eighth Grade Night, hosting our FLL qualifying tournament, engaging in Valley Palooza, and volunteering at Two Blues STEM Camp - all for the past five years.

The longevity and hunger for expansion of these events has proven to our team the impact we can have. While we host and run our FLL Qualifying Tournament, 279 glowing student faces surround us, lit up with enthusiasm for robotics while parents and mentors observe. We see the same reaction at Two Blues STEM Camp, an event where our members reach over 520 kids by showcasing our robot, sharing STEM activities, and teaching them about engineering. At Eighth Grade Night, shy incoming freshmen get to meet and talk with us about the team before they enter high school. At this event we have reached over 2,000 students in the past five years, humbling us by reminding our members that we were once in their position. We get the chance to see them again along with the rest of the student body during Valley Palooza, an event where any Hardin Valley Academy student and their parents may come to our booth and talk with current members or drive our robot. Another event we attend is the Farragut Fourth of July Parade where we walk down the street beside the robot. It launches balls and prizes to little kids in the crowd while we hand out FIRST flyers, reaching around ten thousand people every year. Additionally, at Fantasy of Trees, we reach another thirty thousand people by showcasing the art of our design team's 3D printed ornaments to the community with a decorated Christmas tree. Our tree is then sold to the public with all proceeds going to the East Tennessee Children's Hospital.

For many years, our team has loved participating in these events; however, we have not always had this luxury. At the end of the 2017 season, our team discovered that five out of the seven threats from the previous year's SWOT analysis had come to fruition. This left our team with a loss of mentors, sponsors, funding, and workspace, as well as consistent inclement weather issues preventing our team from meeting. Team 3824, now with low morale, plunged into the 2018 season utterly devastated. Nevertheless, our motto kept us alive; we "Stay[ed] Hungry" and persisted. No one wanted the team to dissolve, so we had to come up with innovative solutions. To improve our mentor and sponsor resources, 3824 went to local businesses in search of untapped assets. In order to accommodate the lack of our own space, we partnered with team 3140 Flagship Robotics, who allowed us to work in their shop at Farragut High School. However, since this is further away, our team was pushed to discover new means of coming together due to an inability to meet during school breaks and cancellations. We "Stay[ed] Humble" through this and realised that we needed the support of our mentors, sponsors, and community in order to reach our full potential. Our team's resilience and determination allowed us to reach our tenth year. Despite our struggles, we were still able to maintain our annual outreach events as well as continually adopting more.

When the opportunity to reach new people arises, our team seizes it. For instance, last year, we decided to reach out to the brand new Hardin Valley Middle School and invite eighth grade students interested in STEM to come to the Smoky Mountains Regional Competition. Members of 3824 were able to give students a tour of the pits, explain the game, and show them how our team operates. Seeing its success and the inspiration it gave, we decided to reach out to other middle schools in the surrounding area to try to satisfy our hunger and become even more involved in the community. We also accomplish this by participating in STEM nights, which gives 3824 a chance to interact directly with kids, showing them the enthusiasm and motivation that FIRST has to offer. These interactions give students an exposure to more advanced science and technology at an earlier age, helping to construct innovative minds. We have found by doing this that many participants go on to join FRC teams in high school. When we are unable to run our own STEM nights, the team looks for other ways to reach out. We decided to partner with the MUSE Knoxville, a children's museum, which runs their own STEAM nights that allow our team to reach an otherwise distant part of our community. This partnership has allowed us to assist them while they run their own events revolving around science and technology. We also reach people outside of STEM environments through our dine out nights. Thanks to various Knoxville restaurants, our team is able to illustrate our program to the public eye. Through these events, we have garnered a new respect for FIRST from children and adults of many backgrounds and professions. Many of our team members have joined the team due to the inspiration and presentations given to them at these various outreach events.

We also "Stay[ed] Hungry" to expand FIRST principles within our school, by advocating to have a Robotics class added to the curriculum in order to develop an interest in robotics throughout Hardin Valley. This way any student who wished to learn about STEM principles was able to do so without joining the team. The class thrived for five years in our school until 2019 when it was dropped due to a change in the scheduling system. In the future, the class will be integrated with other classes to ensure all Hardin Valley students will still have the opportunity to gain experience in robotics.

**Essay - page 2**

FIRST Like a Girl is a major program that many teams participate in; however, our team takes a different approach. We do not target girls directly or push them into the spotlight because we feel that goes against the principles of our team. While it is important to have girls in STEM, we choose to recruit and support everyone equally regardless of gender. When girls join the team, they become very successful and an integral part of our team. For example, last year through our anonymous application system, every girl on our team applied for a leadership position which led to about 60% of our captains being female. This year we have doubled the number of girls on our team from last season. We hope to continue supporting girls in STEM in this way, giving everyone an equal opportunity to learn about FIRST and STEM principles.

In 2016, 3824's ingenuity and hunger were demonstrated through the founding of our own robotics-based exchange program in Germany. Since then, this previously unexplored idea has turned into a staple for our team. This enabled us to cross borders, moving FTC into Germany. Building our exchange program started in Göttingen-Geismar at a school called Georg-Christoph-Lichtenberg Gesamtschule. The first step is bringing students from Germany to the United States and immersing them in our culture as well as us in theirs. They live with members of RoHAWKtics, joining our family and the team members' daily lives, including attendance at the Smoky Mountains Regional Competition. Then once our summer break begins, members of 3824 travel to Germany and have the exciting opportunity to experience daily life and school in Germany. Due to the program's success, we were invited to present at both World Championships in 2019. This exchange not only allows 3824 to expand ever-evolving STEM education, but also allows two teams with diverse members to experience an exchange of culture, perceptions, and walks of life.

For the past 10 years, the HVA RoHAWKtics has expanded, acting like a catalyst throughout our city and beyond. We have reached more than 313,200 individuals, totaling almost 70% of the population of Knox County and accumulating more than 7,830 volunteer hours over 10 years. As much as we strive to succeed in competition, our team seeks recurring, contemporary, and expansive outreach. Despite abundant uphill battles, FRC 3824 maintained the ability to be humble and consistently perform at outreach, but that was not enough. We were and still are hungry for more. Our team aims to take on new endeavors and showcase FIRST principles at riveting and diverse outreach events each year, moving past the convenience and comfort of remaining in the Knoxville area. We establish an environment that empowers students. We create deeper connections through STEM. We inspire the next generation. We "Stay Hungry, Stay Humble."