

Business Plan



HVA RoHAWKtics

FRC 3824

2018

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I. Executive Summary

Mission Statement

FRC 3824, the HVA RoHAWKtics, strives to engage and inspire students and its community in the art of science and engineering by introducing them to innovative technologies and providing a safe, sustainable environment in which they may foster skills in engineering, programming, and business; and by establishing a foundation for their future endeavors in the workforce and STEAM (Science, Technology, Engineering, Art, Mathematics) community. This business plan functions to provide insights on the infrastructure of FRC 3824 and how it contributes to the team's successes, while upholding FIRST principles.

Team Basics

The Hardin Valley Academy (HVA) RoHAWKtics was established in 2011 by a computer science teacher, Mrs. Mary Lin. The lead mentor roles were later taken up by two other HVA teachers, Mr. John Tilson and Mrs. Beth Love. In the team's inaugural year, there were 13 members; the team has since grown to 57 members, a 338% growth. The team moved from an HVA school closet to Oak Ridge National Laboratory's (ORNL) National Transportation Research Center (NTRC) and Manufacturing Demonstration Facility (MDF) in 2012.



The HVA RoHAWKtics used to work at the MDF and NTRC buildings during build season. The team worked here six out of seven years.

Successes

The HVA RoHAWKtics' successes are reliant on incorporating cutting-edge technologies, such as additive manufacturing (3-D printing) and pultrusion, and involvement in education. In past years, the team had the privilege of working at government facilities, allowing members an opportunity to using state-of-the-art machinery. Members have the opportunity to work side-by-side with professionals in technical fields, granting them real-world experiences and insights. To educate the community, the team volunteers at numerous local outreach events, including parades, visits to elementary and middle schools, and use of the team-made t-shirt cannon, the NightHAWK, at sporting events. For the past two years, the HVA RoHAWKtics has been invited to demonstrate its robots and innovative, introductory STEAM products at the Barnes & Noble® MakerFaire to engage parents and children. The HVA RoHAWKtics has built up an extensive alumni network. Many of the team's alumni have gone on to study at prestigious universities, including Yale, MIT, Stanford, and various others. Alumni have continued to utilize the skills they learned while on the team to enlighten other communities on STEAM and the principles of FIRST.



The HVA RoHAWKtics marching in the Farragut Independence Day Parade with an interactive robot for spectators in Farragut, Knoxville.

The team also hopes to further its global outreach through its annual ERSTE (Encouraging Robotics and STEAM Through Exchange) Initiative. This is a German-American student-exchange program where the team has set-up a *FIRST* team, FTC 11515 RobotIGS, there and invites German students to come to Knoxville. The HVA RoHAWKtics continues to mentor them, resulting in FTC 11515 ranking 5th at a competition in Eindhoven, the Netherlands.

The team strives to expand its influence to a global scale through the creation of new competitive robotics teams and increased marketing of STEAM education.

II. *FIRST* Description

***FIRST* Basics**

FIRST (For Inspiration and Recognition of Science and Technology) is an international, nonprofit organization founded by Dean Kamen in 1989. It oversees the *FIRST* Robotics Competition (FRC), *FIRST* LEGO League (FLL), *FIRST* LEGO League Jr. (FLL Jr.), and *FIRST* Tech Challenge (FTC) competitions. *FIRST* strives to inspire prospective leaders in the STEAM community and engage students in a program that promotes the development of life and STEAM-based skills.

Core Values

One of *FIRST*'s chief values is *Gracious Professionalism*[®]. First coined by Woodie Flowers, who began working with Kamen and *FIRST* in 1990, it holds that a team not only works in a competitive environment but also behaves in a respectful and helpful manner towards others. It encourages teams, as well as individuals, to act with integrity and empathy within and out of the STEAM community.

Coopertition[®] is another chief value of *FIRST* based on the belief that teams should assist each other even while in the heat of competition. It promotes the display of altruistic and respectful behavior towards other teams in and out of competition. It also encourages teams to continuously learn from its members, mentors, and other teams while improving themselves.

III. Team Description

***FIRST* Robotics Competition**

The HVA RoHAWKtics is a member of *FIRST*'s FRC program, which has been dubbed by *FIRST* as the “ultimate Sport for the Mind”. Teams must build a robot that meets certain rules and guidelines for a game released the first week of January. Teams have six weeks to build their industrial-sized robot then compete in the hopes of attending the *FIRST* Championship at the end of competition season. The other side to the team involves the journey to spread STEAM education and *FIRST* principles throughout the community and even the world, by creating and attending outreach events and helping to start and maintain other *FIRST* teams.

Awards and Rankings

2011: *Logomotion*

- Smoky Mountains Regional
 - Rank #14
 - Rookie All Star
 - Highest Rookie Seed
- *FIRST* Championship
 - Galileo Division, rank #59

2012: *Rebound Rumble*

- Smoky Mountains Regional
 - Rank #33
 - Engineering Excellence sponsored by Delphi
- Peachtree Regional
 - Rank #9
 - Industrial Design sponsored by General Motors

2013: *Ultimate Ascent*

- Palmetto Regional
 - Regional Finalist, rank #27
 - Excellence in Engineering sponsored by Delphi
- Smoky Mountains Regional
 - Regional Winners, rank #1
 - Excellence in Engineering sponsored by Delphi
- *FIRST* Championship
 - Curie Division, rank #10

2014: *Aerial Assault*

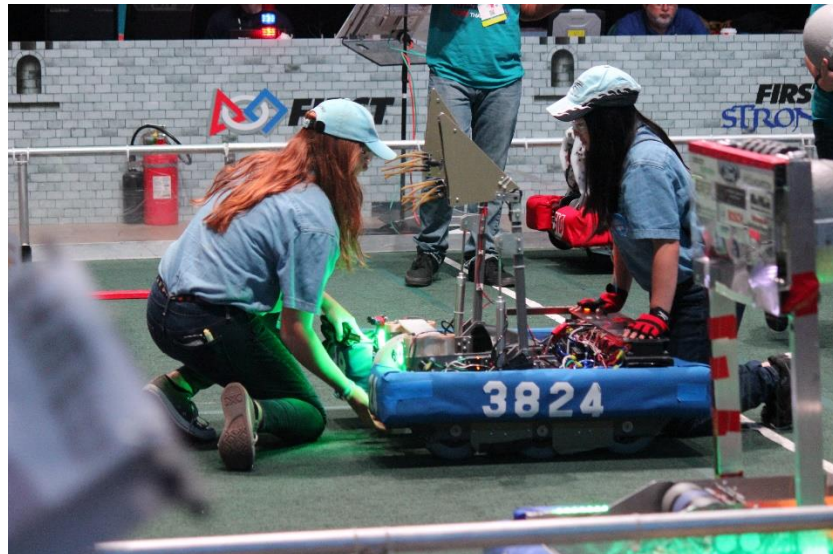
- Palmetto Regional
 - Regional Winners, rank #1
 - Industrial Design sponsored by General Motors
- Smoky Mountains Regional
 - Rank #12
 - Woodie Flowers Finalist (Dr. Lonnie Love)
 - Industrial Design sponsored by General Motors
 - Industrial Safety sponsored by Underwriters Laboratories
- *FIRST* Championship
 - Newton Division, rank #45

2015: *Recycle Rush*

- Palmetto Regional
 - Regional Winners, rank #1
 - Industrial Design sponsored by General Motors
- Smoky Mountains Regional
 - Regional Winner, rank #1
 - Excellence in Engineering sponsored by Delphi
 - Industrial Safety Award sponsored by Underwriters Laboratories
- *FIRST* Championship
 - Tesla Division, rank #11
 - Subdivision Finalists

2016: *FIRST Stronghold*

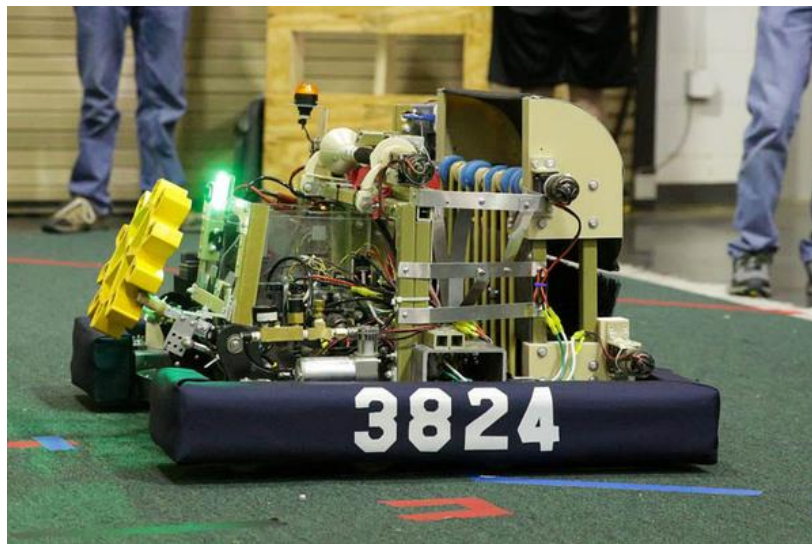
- Palmetto Regional
 - Semifinalist, rank #7
 - Innovation in Control sponsored by Rockwell Automation
- Smoky Mountains Regional
 - Regional Winners, rank #3
 - Excellence in Engineering sponsored by Delphi
- *FIRST* Championship
 - Carson Division, rank # 47
 - Quarterfinals



Two members with the HVA RoHAWKtics' 2016 competition robot at the *FIRST* Championship in St. Louis, MO.

2017: FIRST Steamworks

- Palmetto Regional
 - Regional Winners, rank #2
 - Judges' Award
- Smoky Mountains Regional
 - Quarterfinalists, rank #2
 - Regional Chairman's Award
 - *FIRST* Dean's List Finalist Award (Kaitlin Smith)
- *FIRST* Championship
 - Roebing Division, rank #27
 - Quarterfinals



The HVA RoHAWKtics' 2017 season robot, the HawkSteiger

Differences from Other Teams

The HVA RoHAWKtics share core similarities with other *FIRST* and FRC teams, but the team does differ from others. The HVA RoHAWKtics hosts an FLL Qualifying Tournament at HVA, which welcomes teams from across the region. The tournament has grown exponentially over the last four years. The HVA RoHAWKtics were the first team in the area to create a promotional t-shirt cannon, used at athletic games and pep rallies. Members participate in outreach events other teams do not, including the East Tennessee Children's Hospital Fantasy of Trees. Team members make 3D-printed and laser-cut ornaments to decorate a Christmas tree, which is auctioned off to benefit Children's Hospital. The HVA RoHAWKtics believes in the importance of emphasizing the business aspect of FRC. In recent years, the team has conducted business presentations to better inform members of the methods and duties of the business sub-team (A list of sub-teams and responsibilities can be found on page 14). Members are also required to know the team's

history and read over its business plan. Over the course of the build season, members are encouraged to partake in the business team's activities, including promotional videos, social media posts, and presentations. For the past two years, one of two executive co-captains has been a former business captain.



The HVA RoHAWKtics decorating a tree for the Fantasy of Trees, 2017

In 2015, the team began its biannual German-American student exchange program, the ERSTE Initiative (*erste* is German for *first*), laying a foundation for other teams to follow. Members host students from Germany for a few weeks in the spring, taking them to competition, school, and on family activities. In the summer, team members go to Germany and help spread *FIRST* throughout the country and Europe.



The HVA RoHAWKtics with the German exchange students and mentors

Market Served

The market served by the HVA RoHAWKtics is the STEAM community, the individuals involved in the five components of STEAM.

- **Science:** The team provides an environment that fuels analytical thinking by hypothesizing and creating steps to solve problems, whether it be building a robot or creating new marketing strategies.
- **Technology:** Members and the public alike are exposed to new and interactive tech that subsequently grows interest in the program and other fields.



The HVA RoHAWKtics with one of its robots, Pultruder, at Blue Grass Elementary School for its educational STEM Night

- **Engineering:** Students get to work with professional engineers and spread the knowledge gained from those interactions with the community through demonstrations.
- **Arts:** The team has professional photographers as mentors and ones that work in graphic design, letting members learn and apply such skills. Students have opportunities to design logos, flyers, signs, shirts, and other items requiring artistic abilities.
- **Mathematics:** Members use math in all aspects of the team. Such calculations are needed for the engineering side but also for business to figure out growth and retention rates.

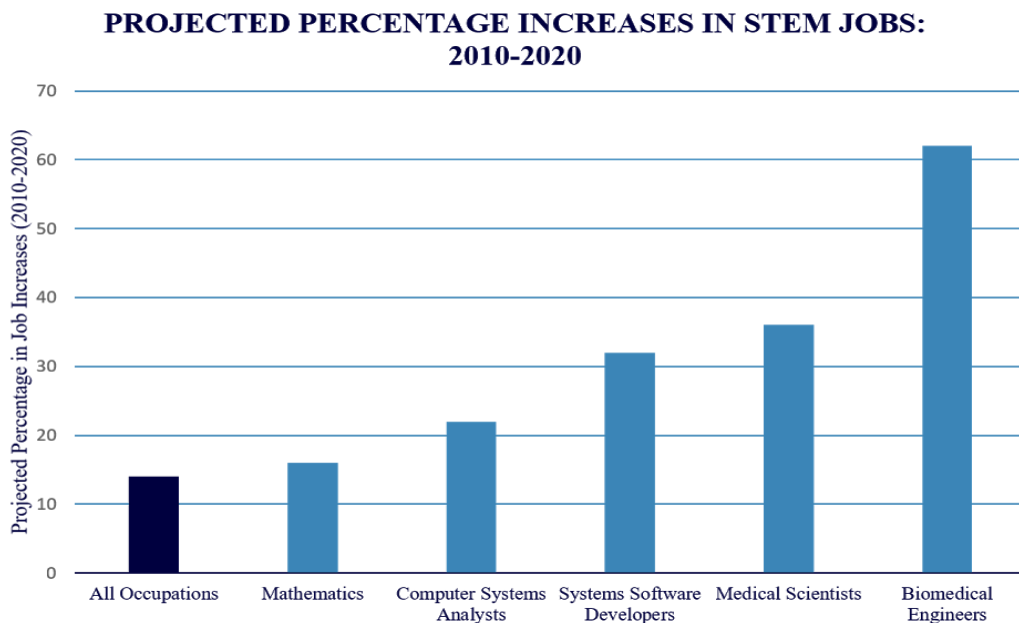
These five components are imperative to both the team and community as such knowledge and skills are made available to the public, increasing the size of the market and, therefore, the team's influence.

IV. Market Analysis

Market Research

The STEAM community stretches across students, companies, and other members of the community interested in STEAM ideas, but the focus of the HVA RoHAWKtics is spreading that education to younger generations (high school and below) to prepare them for the workforce.

- According to the Bureau of Labor Statistics, STEM (Science, Technology, Engineering, and Mathematics) careers in the U.S. are expected to grow 13% from 2012 to 2022.



This graphic is provided by the Department of Education.

- The National Science Foundation reports that Tennessee, as of 2011, has one of the lowest percentages of science and engineering degrees in the U.S., ranging from 20.4% to 26.1%. The national average is 29%.
- The Department of Education reveals that only 16% of high school seniors are “proficient in math and interested in a STEM career”.
- The median earnings for science and engineering jobs in 2012 was \$78,270, while the median salary for all other jobs was \$34,750 according to the NSF.

STEM Careers vs. Other Careers (Median Earnings in 2012)



This information is from the NSF.

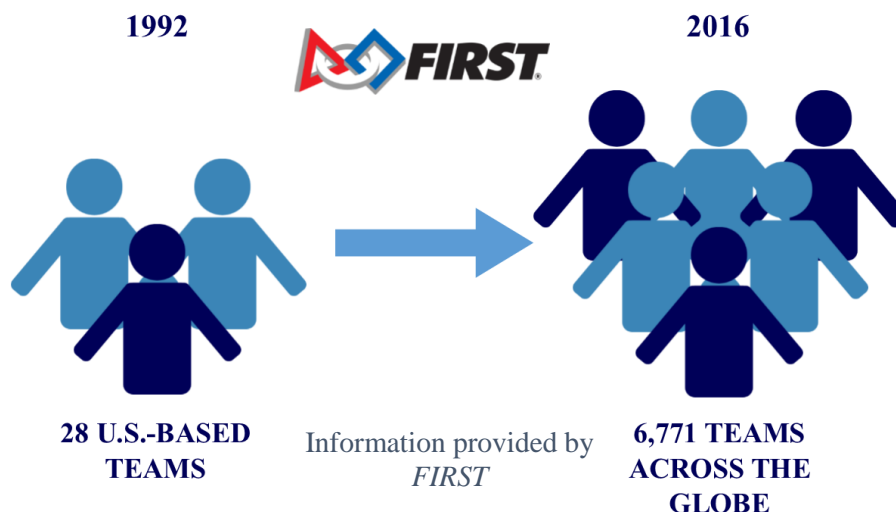
- The Georgetown University Center on Education and the Workforce found that 35% of those with a Bachelor Degree in STEM earn more than those with a Master's in "non-STEM". It was also found that 47% of those with a Bachelor Degree in STEM earned more than those with PhD's in "non-STEM".

These statistics only involve STEM principles because the STEAM Movement is still a fairly new concept. This year is the first year that STEAM is really being pushed by *FIRST* instead of STEM.

FIRST Research

The following information is provided by *FIRST*.

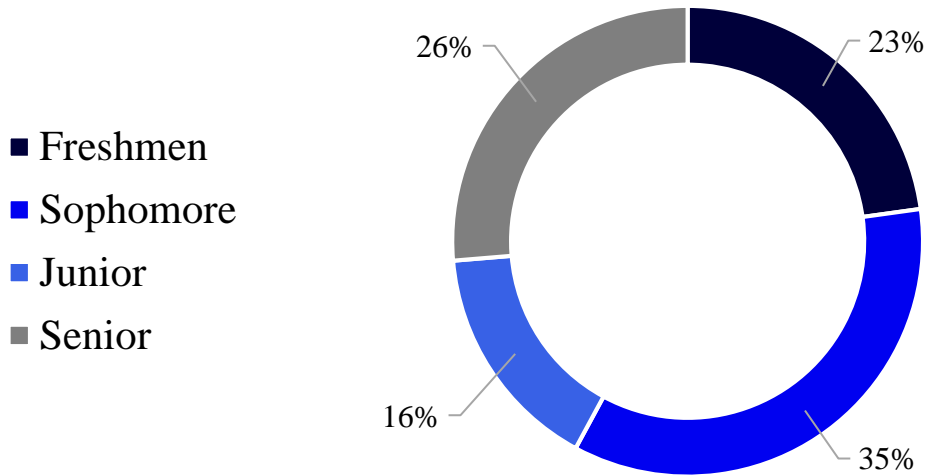
- Participants are two times more likely to major in science and engineering.
- 75% of *FIRST* alumni are in STEM fields, whether as students or professionals.
- The program has experienced a 6,040% growth in number of teams in its 26 years.



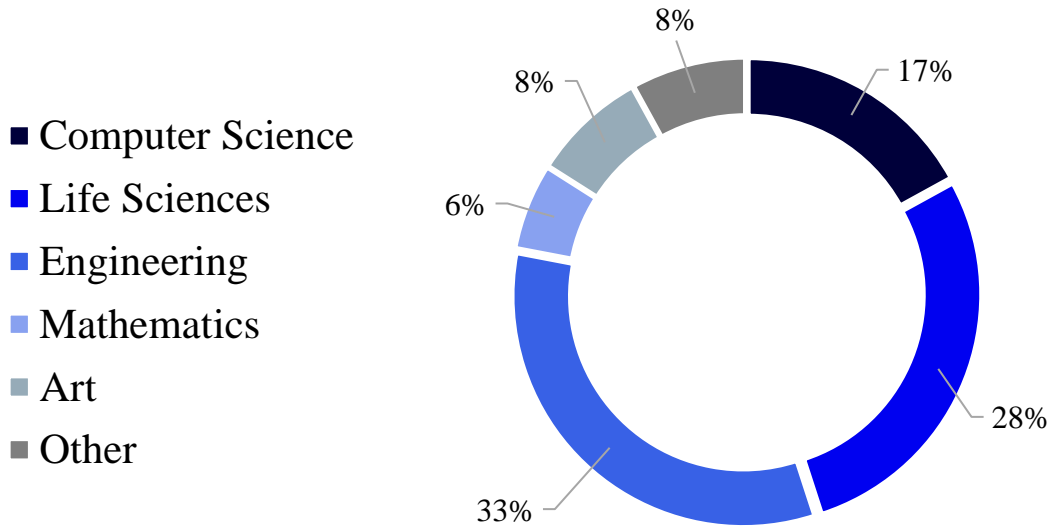
Team Research

- **Size:** There are 12 mentors and 57 student members, giving a mentor-to-student ratio of about 1:4.
- **Growth:** The team's first year included 13 members. With this year's number being 57, the growth of the team comes to 338%.
- **Sponsors:** The team currently has 12 sponsors, which are—
 - The Home Depot
 - Oak Ridge National Laboratory (ORNL)
 - Knox County Schools
 - Electric Power Research Institute (EPRI)
 - Bechtel
 - Consolidated Nuclear Security (CNS)
 - Tennessee Valley Authority (TVA)
 - Arconic
 - Techmer PM
 - Ingenutec
 - Tuff Torq Corporation
 - GKN
- **Demographics:**
 - 19% of the student members are female.
 - 36% of the team is composed of new members.
 - 86% of alumni go on to study and work in STEAM fields.
 - 1:4 mentor-to-student ratio

CLASS BREAKDOWN



CAREERS MEMBERS ARE INTERESTED IN*



*DATA FROM 2017 SEASON

SWOT Analysis

The HVA RoHAWKtics is a large team, by *FIRST* standards, located at Farragut High School's CTE Building during the six week build season and at HVA during the remainder of the year. The team participates in two regional events, one in Myrtle Beach, SC and the other in Knoxville, TN. If the team qualifies, as it has done six out of its seven years, members go on to the international *FIRST* Championship located, now, in Houston, TX.

| Strengths | Weaknesses |
|--|---|
| <ul style="list-style-type: none"> • Organization • Number of members/mentors • Resources • Adaptability • Knowledgeable mentors • Familial involvement • Documentation | <ul style="list-style-type: none"> • Limited student participation • Sponsor loss • Design issues • Sustainability • Lack of diversity |
| Opportunities | Threats |
| <ul style="list-style-type: none"> • Sponsors • Workforce training • Outreach • Innovative technologies • Social media • National recognition • German-exchange program | <ul style="list-style-type: none"> • Other teams • Other organizations and clubs • Inclement weather • Losing workspace • Dilution of funds • Mentor loss • Sickness |

FRC 3824 utilizes its strengths to offer new opportunities for its members, mitigate obstacles in sustainability, and provide solutions to its weaknesses. With many of its mentors coming from ORNL and an array of professional fields, the team is able to provide members with an educational environment which fosters a multitude of skills, including engineering, graphic design, and entrepreneurship. The team's 1:4 mentor-to-student ratio allows members to form close bonds with mentors, forming a network in which members and alumni may obtain internships and jobs at distinguished facilities such as universities or ORNL, and stay involved with *FIRST*. Despite having a large member roster, team members are unable to attend every meeting or outreach events. As a result, veteran members often assume more tasks and attend more outreach. FRC 3824's many sub-teams enables members to explore the many sides of FRC, from safety to business, yet the distribution of members among the sub-teams presents a weakness. The majority of members are on the Build and Design team, while Business, Safety, and Strategy have few. To combat this flaw, the team works to involve all members in these teams by engaging them in marketing plans, safety presentations, and strategizing. The team's adaptability has enabled it to mitigate some threats. After the loss of its workspace, FRC 3824

secured a space at FRC 3140's build area and have taken the opportunity to strengthen the bond between the two teams. The team also lost mentors and sponsors, and have contacted local businesses to counter the loss.

This season, five out of seven of the sustainability threats highlighted in last year's business plan were realized, and the team has taken steps this season to mitigate their effects. FRC 3824 lost its previous workspace due to the lack of space at Oak Ridge National Laboratory, but was fortunately invited to work at FRC 3140's workspace. In light of its sponsor loss, FRC 3824 has conducted more fundraisers, such as utilizing the fundraising platform *Snap! Raise*, to make up for lost funds. The HVA RoHAWKtics reached out to parents, requesting they become more involved with the team, to counteract its mentor loss. This season, the team has missed five days due to sickness and inclement weather. As a result, members met in small groups at their homes and worked on individual duties.

V. Organization and Management

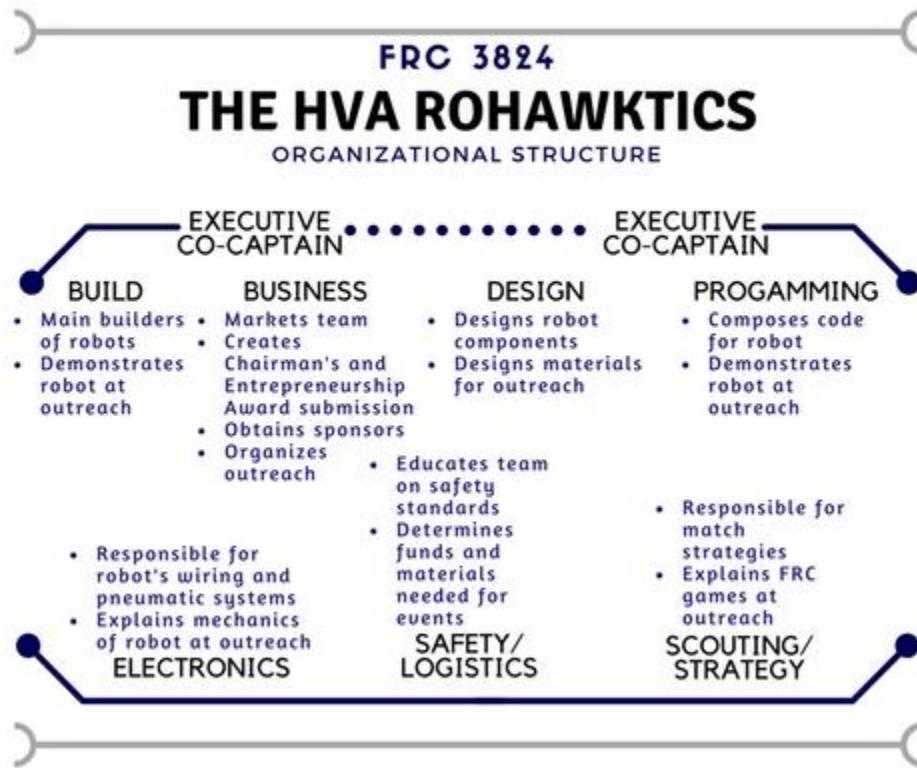
Organizational Structure

The HVA RoHAWKtics' team is separated into eight sub-teams, which are build, business, design, electronics, logistics, programming, safety, and scouting/strategy.

- **Build:** Members apart of this sub-team are in charge of robot construction, from the competition robot to the NightHAWK.
- **Business:** This team's responsibilities include award submissions, planning outreach events, website maintenance, social media posts, documentation, and marketing.
- **Design:** Students work to plan and sketch prototypes and integrate designs. They also help make flyers and informational sheets for the team, and design materials for outreach.
- **Electronics:** This sub-team checks and plans wiring and pneumatic systems along with other items associated with electronics in the robots.
- **Safety/Logistics:** This team provides education information on how to be safe while simultaneously enforcing safety mandates set by *FIRST*. Students work to create checklists of materials needed to get ordered in a timely manner, kept track of, and brought to appropriate events. This sub-team also works with Business to create sign-ups for outreach events.
- **Programming:** Members code the robot to do tasks at events, specifically competition. They must program the robot for both the autonomous period (no human drivers) and the tele-operated period (human driven).
- **Scouting/Strategy:** Students on this sub-team investigate past years' games and conducts research on other teams. They also design a scouting app to scout robots and teams while at competition for potential alliance members to effectively and efficiently gather data and present it in a meaningful way to the rest of the team.

Each sub-team typically has two co-captains, an upper and lower classman. Two executive captains, who are senior members and former sub-team captains, oversee the entire team.

Mentors work side-by-side with students on all levels of organization to spread experience and foster ideas made by students. This ensures that students do not work for mentors but alongside them so both parties benefit from the interaction.



Lead Mentors

There is one lead mentor, Mr. Tilson, who supervises the team and assures all members are involved. Mr. Tilson took over after the team's founder, Mrs. Mary Lin, could no longer participate after the first year. Mr. Tilson is a physics teacher at HVA. Mrs. Love is a former lead mentor. She formerly worked as an English teacher at the school and now works with homebound students and as a substitute.

VI. Service and Product

Service

The HVA RoHAWKtics provides the service of spreading knowledge, technologies, and STEAM and *FIRST* ideals through the community; the benefits of such are seen through the

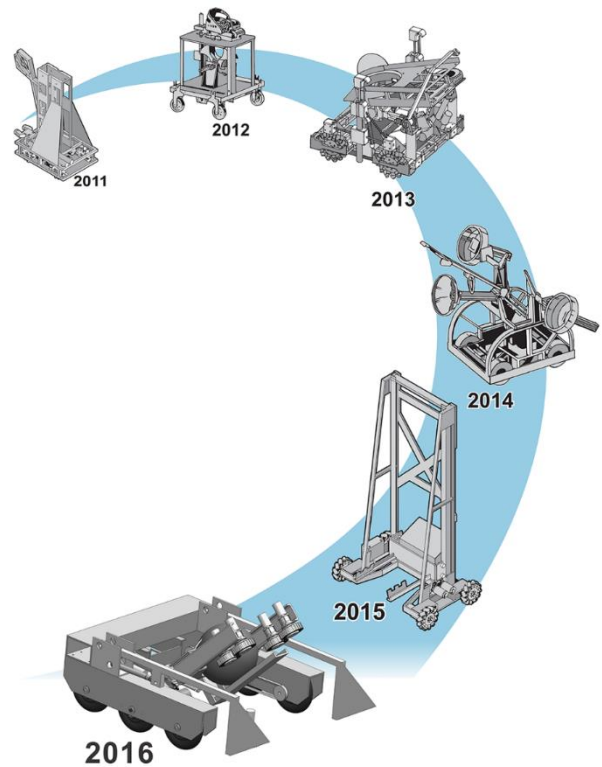


FRC 3824 with TN Governor Bill Haslam, 2013

growing interest in the team and what it stands for. The team is asked year after year to return to certain outreach events, like football games, Barnes & Noble® MakerFaire, Farragut Independence Day Parade, STEM nights at elementary and middle schools, and hosting an FLL Qualifying Tournament. Kids are exposed to *FIRST*, growing interest and leading to more participation in events like FLL, FTC, and FRC. Other members of the community also realize the applications of what the team does in the workforce.

Product

The HVA RoHAWKtics' produce robots for competition and outreach. The team has six weeks at the start of January to build the annual competition robot. This robot is different every year as it must perform tasks based on the game video and manual released. The competition robot allows students a chance to work hands-on with innovative technologies and apply knowledge they have learned in school, like programming, physics, and mathematics. Students also have the opportunity to exercise teamwork in a competitive environment with time constraints. After the season is over, these competition robots are often reused in outreach, especially ones that can be used to interact with people. The team also has the NightHAWK, the t-shirt cannon that is used solely for outreach at sporting events. Its purpose is to market the team and sponsors (members shoot sponsors' t-shirts) and excite the crowd at games.



The HVA RoHAWKtics' competition robots from its inaugural year to 2016.

VII. Marketing Strategies

Member Recruitment and Retention

Recruiting members is vital to ensuring the HVA RoHAWKtics' growth. This is achieved by:

- Attending HVA's club-recruiting events, such as 8th Grade Night and Valleypalooza
- Placing signs and flyers around the school and community
- Having the NightHAWK at school sporting events
- Networking through team members and mentors
- Demonstrations at community outreach events
- Keeping a presence on multiple platforms of social media



The HVA RoHAWKtics' NightHAWK, which shoots t-shirts, at a home football game.

The team's plan to recruit more starts with personally talking to other organizations at HVA, especially ones who are not normally associated with robotics, such as art and photography clubs. This will help the team acquire more diversity within the team and bring in people with different perspectives and ideas.

Retaining members is the next step. This is done through:

- Opportunities to be promoted to leadership positions
- Strengthening interpersonal skills
- The chance to add points on college, job, and other types of applications

- Working with professional mentors, innovative technologies, and in state-of-the-art government facilities
- Volunteering in outreach events, which can be used for volunteer hours
- Opportunities to travel across the country and world
- The chance to be put up for an award at competition, called Dean's List

Mentor Recruitment and Retention

The HVA RoHAWKtics pride themselves on its knowledgeable mentors. To make sure this is always the case, mentors are recruited by networking with:

- Student members
- Current mentors
- Sponsors
- Schools that members attend
- Alumni

To recruit more mentors, the team is beginning to stress getting families more involved so that there is more support from home and the integration of more diverse backgrounds for mentors.

The retention of mentors is also emphasized to keep the program sustainable. To do this, the team:

- Spotlights mentors on the website
- Incorporates them in much of the processes
- Stresses their importance to the team
- Nominates one mentor for the Woodie Flowers' Award

Mentors are driven to remain on the team by the goal to inspire and educate succeeding generations, even after their children graduate from the team.

Sponsor Recruitment and Retention

Sponsors are an important part of the HVA RoHAWKtics since they provide the team with majority of its funds. To recruit more sponsors, the team:

- Attends outreach events
- Does demonstrations for companies
- Supplies a sponsorship brochure, outlining the levels of sponsorship and incentives for each
- Networks using student members and mentors

A plan thought out for next year is to implement the use of student-made pitches in which those students will go out to local business and ask for donations and sponsorships.

Sponsorship retention is vital to ensure funds are available for the team throughout the years. This is done by:

- Sending thank-you notes at the end of build season
- Spotighting sponsors on the robot cart, over announcements at competition, in the team's pit for the public to see, on the website, and in the business plan, depending on their sponsorship level
- Sending an annual team picture
- Hosting a Dignitary Day

The team hopes to strengthen the retention among sponsors by inviting them to more outreach events that members are a part of and sending more updates throughout the season instead of just at the end.

Team Marketing

Marketing is an essential component of the HVA RoHAWKtics as it gets the team's name out to potential members, mentors, and sponsors along with the rest of the community. To promote the team, members are continually:

- Staying present on social media
- Working with the school
- Appearing in news media, such as newspapers, television, and radio
- Conducting in-class presentations
- Attending outreach
- Shooting team t-shirts at sporting events
- Handing out buttons, flyers, and brochures at events
- Putting flyers up around the community
- Running charity events at the school
- Keeping an up-to-date website filled with all the team's information

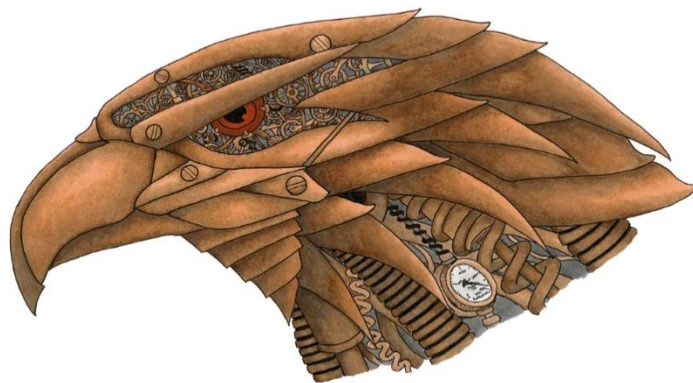
Branding

Branding is an integral part of the team's program. It helps to promote and market the team and make it more recognizable at events. Examples of branding for the HVA RoHAWKtics include:

- Integrating team colors, Carolina blue and navy blue, on all flyers, brochures, shirts, website, etc.
- Including the team logo on uniforms and marketing items
- Adapting the logo to promote FRC games, while keeping the original one (as seen below)
- Wearing a different t-shirt for each day of competition and a hat worn every day



The HVA RoHAWKtics' main team logo.



The HVA RoHAWKtics' promotional game logo, based off of the 2017 game STEAMWORKS™. This was created by one of the team's members.

VIII. Funding Request

Current Funding Requirements

The HVA RoHAWKtics' budget is around \$120,000. This money mostly comes from sponsors (~\$38,500), then team fees (\$500 per member), and then donations (~\$2,500). The team, therefore, relies heavily on the continuance of funding, especially from sponsors, who range from local businesses to international corporations. The money goes to travel, hotels, buses, materials, uniforms, promotional items, and competition entry fees. The time period covered by the money received normally lasts a competition season (January through April). Any leftover money goes towards off-season outreach activities. All finances are recorded and kept through the Hardin Valley Academy Foundation and specifically through an adult bookkeeper affiliated with the team.

Future Funding Requirements

As the team continues to grow, so does the amount of funds needed to support the team. If the team qualifies for the *FIRST* Championship, which takes place in April, the team must go to the competition in Houston, Texas. Due to the long distance, the team is unable to take a bus to the competition and must, instead, travel by plane. Airline tickets to Houston cost around \$500 per person, but become more expensive the later the team finds out if it can go to Championship, which can happen as late as mid-March. Overall travel expenses (buses, hotels, etc.) become more expensive as the team continues to grow. Neither members nor mentors want to have to inhibit this growth, so getting more funds is important in the years to come. Funds help with paying the entrance fees for competitions. The team's registration fee for its first regional costs \$5,000, the second \$4,000, and going to Championship is another \$5,000. In past years, the HVA RoHAWKtics has been invited to the Indiana Robotics Invitational, which costs \$800 to register.

Small donations still go a long way. The team needs money for printing flyers and brochures, buying office supplies, and other smaller items. Donations can also be accumulated over a period of time to help pay for expensive items.

How Many Cupcakes it would take to run Team 3824



Each cupcake represents 6,315 cupcakes.

FRC 3824 would have to sell ~120,000 cupcakes at \$1 each to sustain the team.

Sponsoring the Team

There are six levels of sponsorship depending the amount given to the team. The numbers given below are the least amount given up until the next level:

1. **Copper-** \$500
 - Logo on team website
2. **Cobalt-** \$1,000
 - Logo on t-shirts
 - Copper benefits
3. **Carbon Fiber-** \$2,000
 - Logo on robot
 - Cobalt benefits

Other sponsorship opportunities, like t-shirts shot out of NightHAWK and logo on the team's pit at competition, are available at the discretion of the lead team mentors.

IX. Financial Projections

Historical Financial Data

Below is the HVA RoHAWKtics' financial statement for the 2017 competition season, which includes the amount of funds gained from each sponsor, donations, team fees, left-over from previous years, and nonmonetary donations. The financial statement also includes how the team's resources and funds are allocated. About 50% of the team's income comes from sponsors, while 41% comes from team fees. As far as expenditures go, 79% of the money goes towards paying competition expenses, which includes entry fees, buses, hotel rooms, and team meals. The actual production of the robot only accounts for about 10% of the team's expenditures. Other items, such as marketing and miscellaneous, make-up 10%.

| INCOME | |
|---|-----------------|
| Sponsors: | |
| | \$38,500 |
| Donations: | |
| | \$2,500 |
| Concessions: | |
| | \$350 |
| Team Fees: | |
| | \$31,700 |
| Left Over from 2016 Competition Season: | |
| | \$4,887 |
| Total: | \$77,937 |

| NON-MONETARY DONATIONS | |
|------------------------|----------------------------|
| Team Parents | Saturday Lunches, Shipping |
| ORNL | Field Parts |

| EXPENDITURES | |
|-------------------------------|-----------------|
| Competition: | |
| Entry Fees: | |
| Palmetto Regional | \$5,000 |
| Smoky Mountain Regional | \$4,000 |
| <i>FIRST</i> Championship | \$5,000 |
| Indiana Robotics Invitational | \$800 |
| Bus: | |
| Palmetto Regional | \$7,500 |
| <i>FIRST</i> Championship | \$1,200 |
| Plane: | |
| <i>FIRST</i> Championship | \$15,000 |
| Hotel: | |
| Palmetto Regional | \$9,500 |
| <i>FIRST</i> Championship | \$12,600 |
| Team Meals: | |
| Palmetto Regional | \$2,460 |
| Smoky Mountain Regional | \$2,960 |
| Robot Production: | |
| | \$8,000 |
| Marketing: | |
| Uniforms | \$1,500 |
| Branding: | |
| | \$6,000 |
| Miscellaneous: | |
| Crates | \$1,000 |
| Total: | \$82,520 |

Financial Objectives

The main objectives include:

- Involving students more in fundraising through the implementation of student-made pitches to be given to local businesses
- Keeping a written budget for each year and archive them for future reference
- Raising enough money to keep up the growth of the team
- Continuing the Dignitary Day and other sponsor-communication tactics

X. Contact Information

Main Ways of Contact

Email: rohawktics@gmail.com

Website: rohawktics.org

Social Media

Twitter: @RoHAWKtics3824

Facebook: @rohawktics

Instagram: @hvarohawktics3824

Youtube: HVA RoHAWKtics 3824