

**TEAM 3966
THE L&N STEMPUNKS
ENTREPRENEURSHIP AWARD**

2017



FRC TEAM 3966, THE L&N STEMPUNKS

TEAM MISSION STATEMENT

The mission of our team is to reach out and work with local schools, daycares, and organizations to inspire the East Tennessee community to become involved with science and engineering. We aim to communicate with local organizations to build meaningful relationships. We aspire to share our passion for FIRST programs and STEM education with the help of our families, friends, sponsors, and community partners. In doing so, we hope to empower the next generation of engineers, scientists, and business leaders through the vision of FIRST.

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TEAM ORIGIN

OUR SCHOOL

Our school, the L&N STEM Academy, was founded in 2011 as a public magnet school with a focus in STEM, the first of its kind in Tennessee.

The L&N STEM Academy utilizes one to one technology through Macbook Airs, which increases productivity and communication among all students, including our team members.



The L&N STEM Academy in downtown Knoxville TN.

OUR TEAM

We initially engaged our community at events like the Children's Festival of Reading and family engineering nights at elementary schools. We've since established a name for ourselves and often receive invites to demo or display booths representing FIRST at events. Our team is collaborating with the Change Center, an organization working on helping kids to have fun and safe environments to keep them off the streets. Together, we set up an FRC practice field for all of East and Downtown Knoxville.



A picture of our team in 2011, before we had even started our first season.



Our most recent team picture from the Battle for the Bluegrass off-season competition.

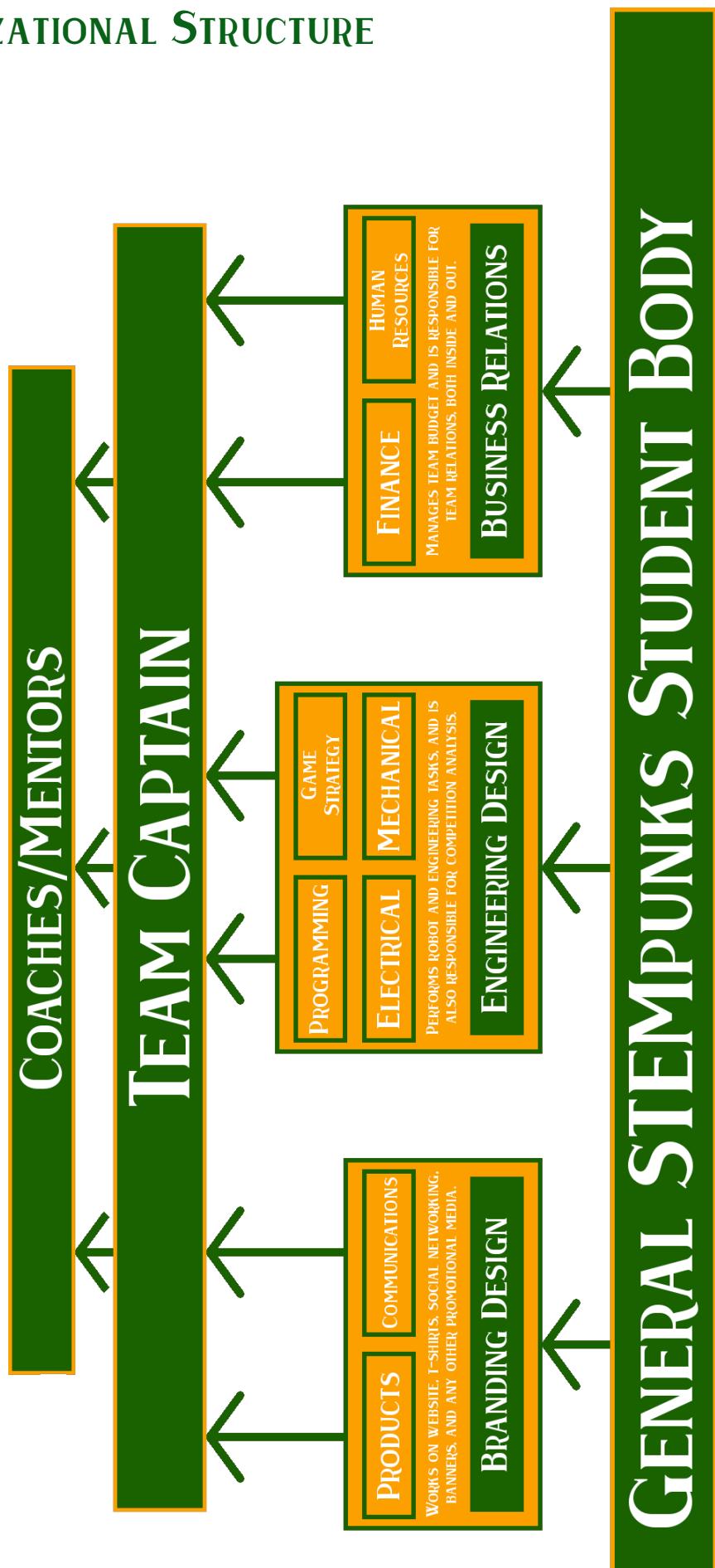
Our team's inaugural season, 2012, consisted of a team with only seven freshmen and one sophomore. In 2013, our team expanded to 13 members. In 2014 & 2015 our team had around 25 members. In the past two years, our team's member count has increased significantly. In 2016 our team had 48 active members, and for 2017 we currently have 44 members. We attribute the small drop to 2016's large graduating class. Our team focuses on active recruitment throughout the year to maintain this team growth.

OUR WORKSPACE

In 2015, our school became overpopulated and needed space to accommodate all students. With our lab converted to a classroom, our team scrambled to find a new place to call home before the start of the season. Without the resources to purchase or rent a new space, we contacted over a dozen downtown Knoxville property owners in the hopes that we could find a sponsorship.

Luckily, local developer Henry & Wallace was able to help us. While our current space is only temporary, we are grateful to have somewhere to work given our circumstances. Because of the instability of our lab space, our team and its members have learned a great deal about flexibility and community partnership. Our team overcame these issues last season regardless and had our most successful season yet.

ORGANIZATIONAL STRUCTURE



BUDGETING

Our Business team targets new sponsors by researching organizations that offer grants or have a history of philanthropic giving, focusing on businesses that are located in downtown Knoxville. By seeking local sponsors, we are able to build stronger relationships with our community. We find grants are the most effective way to secure funds. For businesses that do not offer grants, we contact them directly through phone calls and email. We use online documents to track the money we have raised and spent during the season to ensure that we are properly managing our funds.

RECRUITMENT

We begin recruiting new team members at the start of the school year, hosting an interest meeting for both upper and lowerclassmen, as well as inviting potential members to our lab. We also encourage veteran team members to talk to their friends about getting involved with the team. We find that students are more likely to

"WE FIND THAT STUDENTS ARE MORE LIKELY TO REMAIN ON THE TEAM IF THEY MAKE FRIENDS."

remain on the team if they make friends. When we're at outreach events we always talk about FIRST and encourage all students to join FIRST programs, whether it be our FRC team, other local FRC teams, or teams in other FIRST programs.

COMMUNICATION

We have found great success from clarity in our leadership positions and assigned responsibilities. Students in leadership positions show great initiative and vision for moving our team further towards progress and innovation. We utilize online platforms, such as Trello and Slack (which are interactive electronic to-do list and messaging systems), to help us in defining tasks and clearly communicating with our entire team.

RELATIONSHIPS

IN OUR COMMUNITY

Community stewardship and recruitment are year-round efforts for our team. Through our various outreach events, we strengthen relationships within our community and reach out to potential members. In 2016, our team participated in 16 different community events where we showcase our robots and encourage interested students to get involved with our team and other FIRST programs. We also annually host an interest meeting at our school to engage with our own students,

"STEWARDSHIP AND RECRUITMENT ARE YEAR-ROUND EFFORTS."

and actively recruit parents and community partners to mentor our members to provide technical and professional expertise and stay connected with our team.

We regularly visit students of all ages from schools across the entire county to interest them in science and engineering. We also emphasize giving back to sponsors by attending their events and recognizing their contribution through our rewards system.

SOCIAL MEDIA & FIRST

Our team has high engagement online and on social media, our success culminating last season in winning the 2016 Media and Technology Innovation Award.

Social media has allowed us to

"SOCIAL MEDIA HAS ALLOWED US TO REACH A BROADER AUDIENCE."

reach a broader audience in our community and beyond. We also help other teams with things like social media through our annual Smoky Mountains Regional Business Summit.

In 2015, our team met with Tennessee legislators in Washington, D.C. to advocate for FIRST and STEM education during the FIRST National Advocacy Conference, hosted by Team 27 RUSH. We continued these efforts this summer when our team was invited to meet with the Tennessee Department of Education about funding FIRST teams & competitions throughout the state.

DEPLOYMENT OF RESOURCES

Our team connects with our community through our location, regional contacts, and local relationships. We regularly collaborate with Knox County Schools and community partners to engage in after-school science fairs, summer camps, and demonstrations. At these events, we promote STEM education through the principles of the FRC program, teaching young students the meaning of Coopertition and Gracious Professionalism.

FIRST OUTREACH

This year, we continue to mentor local FLL and Jr. FLL teams. We also have been actively assisting an up and coming FRC team in our area, inviting them to our lab, and answering any questions they may have about how we run our team. It is essential for us to give back to the community in helping these teams, inspiring students to be innovative and pursue the excitement of science and engineering.



Our team at the Knox County Schools Magnet Showcase, where we showed off our robot alongside our sister school and the FLL team we mentor at Green Magnet Academy.

WE AIM TO GIVE OUR STUDENTS THE MOST OUT OF OUR TEAM BY:

- Providing a safe space for self expression.
- Teaching strong communication skills.
- Building lifelong friendships.
- Emphasizing scholarships for FIRST participation.

SMOKY MOUNTAINS REGIONAL BUSINESS SUMMIT

Our team annually hosts the Smoky Mountains Regional Business Summit, geared towards empowering the non-engineering members of FRC teams. We help these often overlooked members of teams grow their skills in branding, social media, team structure, and more. We believe these skills are essential to any successful FRC team. One team told us: “[We] definitely took away some valuable information that we are hoping to fold into our organization...the event was fantastic and I'm so impressed by how professional [your] entire team is.”

FUTURE PLANS

FUNDRAISING

We have worked extensively to gain support for our program through sponsorships. In previous years, we only raised \$10,000-\$30,000. This year, we surpassed all of our expectations, raising \$48,000. Our goal is to raise \$50,000 in our 2018 season. Our team believes we have exhausted our options in terms of finding local grants for sponsorships, so we plan to aggressively target companies in STEM fields next season so we can gain new sponsors.

ON OUR TEAM

We hope to inspire new members to join the team through our ongoing outreach efforts. Additionally, we wish to improve our rookie training process by "buddying them up" with a veteran member so they have someone they can directly talk to and ask questions to. We believe that better trained rookies will have a cascade effect throughout our team and improve us across all fields.

"WE HOPE TO INSPIRE NEW MEMBERS TO JOIN THE TEAM THROUGH OUR ONGOING OUTREACH EFFORTS."

AT OTHER SCHOOLS

We plan to continue mentoring Green Magnet Academy's FLL team and Christenberry Elementary School's Jr. FLL team, and to inspire schools near us to start FIRST teams. We also will continue to take part in local events and attend more each year.

FRC TEAM SUPPORT

We will continue to host events such as the Smoky Mountains Regional Business Summit. In the coming years, we hope that Business and Branding departments will be recognized as equal to the Engineering departments on each and every team. We also hope to continue working with ORNL to host a local FRC practice field.

These plans extend to the next three years and beyond. We think when it comes to fundraising, rookie training, FIRST outreach, and community outreach, there is always more to be done.

**"WE THINK WHEN IT COMES TO FUNDRAISING,
ROOKIE TRAINING, FIRST OUTREACH, AND
COMMUNITY OUTREACH, THERE IS ALWAYS
MORE TO BE DONE."**

FINANCIAL STATEMENT

SPONSOR RELATIONS

Our team has preserved strong relations with some of our biggest sponsors, such as Knox County Schools, Bechtel, and the Clayton Foundation. In addition, we have maintained and further developed our relationships with several older local sponsors, such as CNS, Alcoa, and TVA. We highly emphasize fostering partnerships beyond monetary donations to promote our mission of inspiring the local East Tennessee community with a passion for science, technology, and engineering. We have placed a special emphasis on following through on all of our commitments, and we're proud to have followed through on every single one of our sponsor rewards and promises last season.



Our team took our robot to a company social for our top sponsor, Henry & Wallace, to show their company what we do and that we appreciate their support.

TRACKING OUR FUNDS

We thoroughly track our contributions and expenses using a Google Drive spreadsheet. It allows us to see individual purchases and see how much a particular team has left in their budget. It has also allowed us to effectively manage our funds to ensure

that we utilize our budget to the fullest extent, while staying within our budgetary parameters.

This year, our team has worked hard to reach a goal of \$43,250 in available funds for the team. We are proud to have exceeded this goal this season. Any additionally raised funds will help our team in purchasing new equipment and software, like a subscription to the communication platform Slack.

Team/Project	Budget
Emergency / Robot Reserve	\$5,000
Mechanical	\$3,250
Electrical	\$2,000
Programming	\$3,750
Game Strategy	\$500
Products	\$2,000
Communications	\$1,000
Finance	\$750
Human Resources	\$750
Lab Space	\$2,000
Regional Fees	\$9,000
Regional Travel	\$9,000
Off-Season Event	\$250
SMRBS	\$4,000

A snapshot of our budgeting document on Google Drive.

RISK ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none"> • Fundraising - Our team has been effectively raising more funds each season. We have also shared fundraising know-how with other teams to great effect. • Community Outreach - Our team is consistently looking out for opportunities to help the community. • Camaraderie - We have high team morale, with everyone eager to be actively involved. • Branding - We have a strong brand presence in our community that is consistent and recognizable. 	<ul style="list-style-type: none"> • Availability - Many of our team members are actively involved in multiple other organizations both at school and in our community. • Stretched Thin - Our team is very outgoing when it comes to activities in our community. This leads to concerns regarding if we have the manpower to commit ourselves to multiple events.
Opportunities	Threats
<ul style="list-style-type: none"> • Diversity Plans - Continue recruiting more female and minority members to our team to promote equity through diversification. • More Than Just Robots - Continue to pursue events such as our Smoky Mountain Business Summit to convey that FRC is more than just building a robot. • Off-Season Workshops - To help rookie members prepare for the intense competition season. 	<ul style="list-style-type: none"> • Large Graduating Class- Many students that make up our current team leadership are seniors who will be graduating in the spring, leaving a gap in experienced leadership. • Lab Space - Our lab space is liable to being moved as it is a donation from one of our sponsors. If for some reason they could no longer sponsor our team, we would not be able to compete in FRC.

ACKNOWLEDGEMENTS

Our team would like to recognize the generous support from our sponsors:

Henry & Wallace

Bechtel • Knox County Schools • Clayton Family Foundation

Leidos • UT-Battelle • Comcast NBCUniversal • Radio Systems Corporation • Pilot Flying J

Consolidated Nuclear Security • Salon Studios • Steel Plate Fabricators • Riot Printing Company

Alcoa • Tennessee Valley Authority • Northrop Grumman • Drayer Physical Therapy

DeRoyal Industries • Cherokee Millwright & Mechanical • Dassault Systèmes • SwipedOn