

**L&N STEMPUNKS**

**FRC TEAM 3966**

**BUSINESS PLAN**

**2016**

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## **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, and sponsors. In doing so, we hope to empower the next generation of engineers, scientists, and business leaders through the vision of FIRST.

# 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 iPads and laptops for all students, which increases productivity and communication not only throughout our school, but with our team members as well.

## OUR TEAM

Our team's inaugural season, 2012, consisted of a team with only seven freshmen and one sophomore. Though there were few members and we did not win at our regional, everyone gained the basic engineering skills necessary for future years. Through active recruitment, we have since gained six times the number of original members, with 48 active members this year alone.

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 sponsorship.

Luckily, local developer Henry & Wallace<sup>1</sup> was able to find us space in a building they own. Since August, our team has moved twice due to Henry and Wallace's constant renovation plans. While our current space is only temporary and we expect to move

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<sup>1</sup> Henry and Wallace LLC is a real estate developing company located in downtown Knoxville, TN. They have generously sponsored our team by providing unused space downtown. Our primary contact at Henry & Wallace is Mr. Patrick King ([patrick.king@henryandwallace.com](mailto:patrick.king@henryandwallace.com)). <http://henryandwallace.com/>

again after the season, we are grateful that we were even able to have a team this year 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.

# **ORGANIZATIONAL STRUCTURE**

## **BUDGETING**

Our Business team has developed a strategy to gain and retain sponsors. To target new sponsors, we research organizations that offer grants or have a history of philanthropic giving. We focus on groups that are in downtown Knoxville to build stronger relationships with our community. If we have to contact an organization directly, we call or email them. So far, we have found grants to be the most effective way to secure funds. To track our spending, we use a Google Drive spreadsheet to track our initial budget, expenses, remaining budget, and each individual item we purchase. It also lets us track the money we have raised.

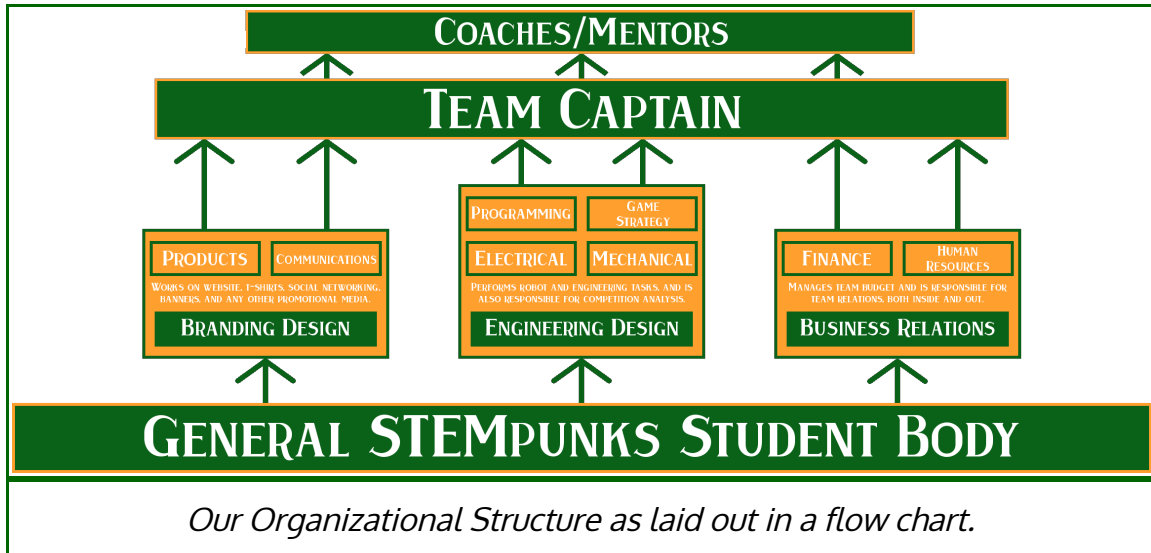
## **RECRUITMENT**

We start recruiting new team members as soon as school is in session, hosting an interest meeting at our school and inviting potential rookies to view our lab. At outreach, we talk about FIRST and provide contact information to those curious about our team. We encourage all students to join FIRST programs, whether it be our FRC team, or other local FIRST teams.

## **COMMUNICATION**

In the past, our team encountered issues with accountability and communication. After a comprehensive restructuring of our team last season, we have found great success from the clarity in leadership positions. Students occupying those positions show great responsibility, and those who seek positions in the future exemplify initiative. We also utilize the platforms Trello and Slack, interactive electronic to-do list and messaging systems, to define tasks and to provide a clear way to communicate with other team members. All of these developments have made this build season very successful for us.

## ORGANIZATIONAL FLOW CHART



# RELATIONSHIPS

## IN THE COMMUNITY

Outreach and recruitment are year-round efforts of our team. Through them, we strengthen relationships within our community and gain new members. In 2015, our team participated in countless community events, bringing our robots to a variety of events. At our school, we share robotics with the whole student body by hosting interest meetings and inviting them to our lab. We encourage those not at our school to join a FIRST program, whether it's our team or another. We also actively recruit parents of members as well as partners from our community to be technical mentors.

To support our community, we participate in local events, such as visiting children from at-risk inner-city schools to interest them in science and engineering. We also emphasize giving back to sponsors by participating in their events and giving them rewards for levels of patronage. This year, we worked with Henry & Wallace to secure a new lab space. This was an amazing opportunity to build a strong community relationship.

## IN FIRST AND FRC

Our team has more likes and follows on social media than any other Tennessee FRC team<sup>2</sup>. This allows our team to be more visible across all fronts and enables us to teach other teams about using social media and developing their own brands.

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<sup>2</sup> We have measured and quantified our social media reach and growth, presenting them in our team's submission of the 2016 Media and Technology Innovation Award, sponsored by Comcast. It can be viewed here: <http://lnstempunks.org/media/resources/mediatech2016.pdf>



We also advise other teams through our Smoky Mountains Regional Business Summit. Additionally, we actively collaborate with Team 4504 on a weekly video series for FRC<sup>3</sup>. One of our biggest recent endeavors was traveling to Washington, D.C. to advocate for FIRST and STEM education.<sup>4</sup>

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<sup>3</sup> In an effort to help teams across our East Tennessee region establish a noticeable and strong social media brand, we mentored Team 4504, Blount County Robotics, in their weekly video series project called the SMR Vault. With our support and expertise, Team 4504 was able to provide weekly updates throughout the build season to teams in our local Knoxville area.

[https://www.youtube.com/channel/UCoT85r\\_bOpepcwNIV1\\_TSoA](https://www.youtube.com/channel/UCoT85r_bOpepcwNIV1_TSoA) and  
<https://twitter.com/smrvault>

<sup>4</sup> Team 27's Webpage for the FIRST National Advocacy Conference -

<http://www.teamrush27.net/nac>

<https://twitter.com/LNSTEMpunks/status/610805015515688961>

<https://twitter.com/LNSTEMpunks/status/610524919768698880>

<https://twitter.com/LNSTEMpunks/status/61011814731440128>

## **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 principals of the FRC program, teaching young students the meaning of FIRST. Our team's focus is to ensure that each individual comes away with new skills useful to their future. Our program teaches students programming, electronics, fabrication, business management, and much more. No matter the interest, our team has a fit for every student wanting to be involved with FIRST.

### **PANTHERBOTS**

This year, we mentored rookie FLL Team 18907, the PantherBots.<sup>5</sup> We took it upon ourselves to take an emerging team and guide it to become what FIRST is all about: giving back to the community by inspiring students to be innovative and pursue the excitement of science and engineering.

### **SMRBS**

Our team annually hosts the Smoky Mountains Regional Business Summit, geared towards empowering the non-engineering members of FRC teams. We aim to help these often overlooked members of teams grow their skills in branding, social media, team structure, and more. These skills are essential to any FRC team, and we find it important that teams develop these skills, so that their team can be successful. One team told us: "Our team definitely took away some valuable information that we are

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<sup>5</sup> Link to Knox News Article that mentions our team as a featured mentor to the PantherBots - <http://www.knoxnews.com/news/local/green-magnet-academy-students-learn-robotics-with-legos-2679b1f6-717d-1075-e053-0100007ffb8-363665441.html>

hoping to fold into our organization... overall, the event was fantastic and I'm so impressed by how professional [your] entire team is."<sup>6</sup>

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<sup>6</sup> This was a response from one of the teams in attendance in our 2015 SMRBS feedback survey.

# **FUTURE PLANS**

## **SPONSORS**

We have worked extensively to gain support for our program through sponsorships. In previous years, we only raised \$10,000-\$15,000. This year, we surpassed all of our expectations, raising \$25,000. Our goal is to raise \$40,000 in for our 2017 season. In the future, we plan to research more companies that support programs such as ours or that give out grants. Our team also plans to continue reaching out to the community to build greater relationships for our team. To ensure that the new members we recruit find a perfect fit and are prepared for the season, we place rookies with veteran team members so they can learn quickly without making repeated mistakes. By having an experienced and expanding team, we have extra hands and resources to effectively gain sponsorships and conduct community outreach.

## **OUTREACH**

Outreach is always an important part of our team. We took it upon ourselves to mentor Green Magnet Academy's FLL team this year. In the future, we plan to continue mentoring their team and hopefully inspire more schools to create FIRST teams. Our team continues to grow every year, and we aim to continue this growth in the future. A larger team gives us more opportunity to send people out into the community for outreach.

We will continue to mentor teams and host events such as the Smoky Mountains Regional Business Summit.<sup>7</sup> We believe we can broaden the scope of FIRST and have more of an impact in the East Tennessee region. In the coming years, we hope that

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<sup>7</sup> Here is the webpage we made for the event - <http://lnstempunks.org/2015smrbs>  
<https://twitter.com/LNSTEMpunks/status/645235057758732288>

Business and Branding departments will be recognized as equal to the Engineering departments on each and every team.

## **FINANCIAL STATEMENT**

Our Business department has preserved strong relations with some of our biggest sponsors, such as Knox County Schools, Bechtel, and UT-Battelle. In addition, we have also maintained several older local sponsors such as CNS and Alcoa. Our team understands the importance of fostering partnerships beyond monetary donations to promote our mission of inspiring the local East Tennessee community with a passion for science, technology, and engineering. In the past, we had unclear sponsor levels and didn't follow through on our sponsorship awards. We have placed a special emphasis on following through on all of our commitments this season, and we have already delivered on nearly all of these by putting sponsors on our t-shirts and sending our sponsors a weekly newsletter.

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, the Finance subgroup worked persistently to achieve new sponsors to help set aside funds for a second regional's registration fees and travel costs. Not only did they achieve their goal of raising \$20,000, they have surpassed it and are just past \$25,000 raised, with more being pursued. We aim to raise \$40,000 for the next season to help cover more travel expenses and new equipment for the team.

# RISK ANALYSIS

Strengths of Our Team	Weaknesses of Our Team
<p><b>Recruitment</b> - With our school being a public magnet STEM school, most people are already excited about joining engineering related extracurriculars, and we have a mentorship program to get rookies well prepared for the upcoming season.</p> <p><b>Community Outreach</b> - Our team is consistently looking out for opportunities to help the community.</p> <p><b>Camaraderie</b> - We have high team morale, with everyone eager to be actively involved.</p> <p><b>Branding</b> - We have a strong brand presence in our community that is consistent and recognizable.</p>	<p><b>Commitment</b> - Many of our team members are actively involved in multiple other organizations both at school and in our community.</p> <p><b>Stretched Thin</b> - 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.</p>
Opportunities to Pursue...	Threats to Our Team
<p><b>Diversity Plans</b> - Continue recruiting more female and minority members to our team to promote equity through diversification.</p> <p><b>More Than Just Robots</b> - Continue events such as our Smoky Mountain Business Summit to convey that FRC is more than just building a robot.</p> <p><b>Off-Season Workshops</b> - help rookie members prepare for the intense competition season.</p>	<p><b>Indefinite Lab Space</b> - With our school's student body continually growing we had to be relocated. Though the new space is larger and always accessible, it is no longer located at our school. Since our current lab space is not permanent, we will likely have to move again in the near future.</p>

## **ACKNOWLEDGMENTS**

**THANK YOU TO OUR GENEROUS 2016 SPONSORS:**

### **DIAMOND**

**HENRY & WALLACE**

### **PLATINUM**

**BECHTEL**

**KNOX COUNTY SCHOOLS**

### **GOLD**

**CLAYTON FAMILY FOUNDATION**

### **SILVER**

**RADIO SYSTEMS CORPORATION • LEIDOS**

**PILOT FLYING J • CONSOLIDATED NUCLEAR SECURITY**

**RIOT PRINTING COMPANY • GRAPHIC CREATIONS**

### **BRONZE**

**ALCOA • TENNESSEE VALLEY AUTHORITY**

**UT-BATTELLE • NORTHROP GRUMMAN**

**DASSAULT SYSTEMES • DUCK DUCK GOOSE**

**DEROYAL • STEEL PLATE FABRICATORS • RT COATINGS**