

**TEAM 3966
THE L&N STEMPUNKS**

CHAIRMAN'S AWARD ESSAY

2018



FRC TEAM 3966, THE L&N STEMPUNKS

The mission of our team is to reach out to local schools, daycares, and organizations and inspire the East Tennessee community to become involved in science and engineering. 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.

TABLE OF CONTENTS

Contents.....	2
How Has FIRST Impacted Our Team.....	3
How Does FIRST Impact Our Community.....	3
Spreading the FIRST Message Through Innovation.....	4
Serving as Role Models and Inspiring Others.....	4
Helping to Start Other FRC Teams.....	5
Our Team's Initiatives to Form Other FIRST Teams.....	5
Helping Other Teams Progress Through FIRST.....	6
Mentoring Other FIRST Teams.....	6
Our Partnerships with Sponsors.....	7
Broadening Our Impacts Since 2012.....	8
How Would We Explain FIRST to Someone Who Has Never Heard of It.....	8
Other Information About Our Team.....	9
Chairman's Essay.....	10
Acknowledgements.....	16

CHAIRMAN'S AWARD SUBMISSION

HOW HAS FIRST IMPACTED OUR TEAM?

Our team, run as a business, has the resources for students to pursue any field they may be interested in, from business to engineering to branding. Our student-led team structure has prepared our students and alumni to become leaders within our community and our own team. FIRST has helped alumni from our team go on to get internships, pursue engineering degrees, and some even come back to be involved within our team or their own FIRST community.



Our team at the 2016 Battle for the Bluegrass

HOW DOES FIRST IMPACT OUR COMMUNITY?

In our community, our team participates in events involving elementary schools, such as the FLL Team 18907, and other organizations. In an attempt to outreach to the public, TVA hosted an event in Downtown Knoxville and our team was able to plant the idea of a FIRST program at St. Joseph Elementary. They were also exposed to the idea of a mentor from ORNL. In previous years, we hosted the SMRBS; we believe that this

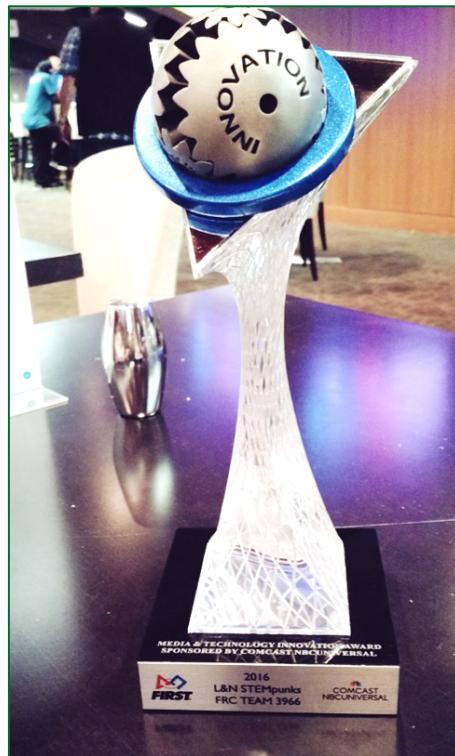


Having fun showing off our robot with our community.

event grooms future business men and women alongside engineers groomed by FIRST.

SPREADING THE FIRST MESSAGE THROUGH INNOVATION

While we spread the spirit of engineering, our team focuses on the often underappreciated aspects of FIRST: business and branding. We host the SMRBS annually and spoke in front of the Tennessee Department of Education in 2016 about financing more FIRST teams and regionals to help other teams become more well-rounded and sustainable. We also won the 2016 Media and Technology Innovation Award, two regional Imagery Awards, and one Championships Imagery Award for our media and branding strategies.



We won the 2016 Media & Technology Innovation Award.

SERVING AS ROLE MODELS AND INSPIRING OTHERS

Our team's student leads act as role models for our members by excelling in their AP classes, leading their department members into achieving its goals, and demonstrating exceptional maturity, and gracious professionalism to others. By seeing other students in these positions younger members are inspired to take on more responsibility by becoming leaders as well as compassionate and imaginative people. Students know that with hard work and dedication, they can become the next leader!

HELPING TO START OTHER FRC TEAMS

Our team has opened up a practice field in the past for surrounding teams to utilize. In 2017, the team decided to take a discretionary year off from hosting the Smoky Mountain Regional Business Summit in an effort to restructure to become a non-profit and expand our business content offered for the 2018 summit. In addition, we are currently looking into mentoring schools that may want to participate and start their own teams.



Our field at the Change center being put together!

OUR TEAM'S INITIATIVES TO FORM OTHER FIRST TEAMS

While there is a lack of First Tech Challenge teams in our region, our team has been able to assist in helping to start a First Lego League Jr. team at Christenberry Elementary School, team 8262. In addition to helping to start a team, we have been successful in participating in outreach geared towards elementary and middle school youth in our region to cultivate interest in STEM fields and FIRST.

HELPING OTHER TEAMS PROGRESS THROUGH FIRST

Each year, our team hosts the Smoky Mountain Regional Business Summit where we teach other teams in our region how to better run the business and branding side of their teams. We worked closely on this with FRC team 6517 last season. Additionally, some of our team members are mentors for the surrounding First Lego League and First Lego League Jr teams. As a team, we are helping other teams become sustainable and professional.

MENTORING OTHER FIRST TEAMS

One of the ways that our team mentors younger FIRST teams is our mentorship with Christenberry Elementary. There, we guide the younger students to research their goals for the season and guide them through a basic engineering design process. This year, at GMA, we helped the students in their FIRST and VEX teams to gear up for competition. Other than helping them with engineering and design, we help them learn how to take ownership of their projects and help set goals for their team.

**"WE HELP THEM LEARN HOW
TO TAKE OWNERSHIP OF
THEIR PROJECTS AND HELP
SET GOALS FOR THEIR TEAM."**

OUR PARTNERSHIPS WITH SPONSORS

Our team has always had an exceptionally strong relationship with our sponsors; we invite them to all our team events and regionals, send them newsletters about what we're up to, and keep our door open so they can stop by our lab space anytime to get to know us one on one! In addition, we promise each of our sponsor levels different rewards like logo placement (on our robot, website, T-shirt, etc.) and thank you letters. We couldn't exist without the strong connections we have with our sponsors.

Our biggest sponsors include Knox County Schools, Clayton, and Bechtel; they each have generously given us \$5,000. Although those are the most significant donors, we couldn't do without all of our sponsors. In addition to our financial sponsors we have generous In-Kind sponsors like Green Magnet who gave us our lab space for the 2018 season so we can continue to compete in FIRST competitions.



Our 2018 Lab Space and Platinum Sponsors

BROADENING OUR IMPACT SINCE 2012

Since our beginning in 2012, we have grown and developed our business and branding departments. With our expertise, we now assist other FRC teams to improve their business and branding departments. We've won several awards in these areas, and we make our submissions public so other teams can learn from them. We also regularly host the Smoky Mountain Regional Business Summit to interact with and inform other teams. We believe that having a well-balanced team is the key to sustainability.

HOW WOULD WE EXPLAIN FIRST TO SOMEONE WHO'S NEVER HEARD OF IT?

To someone who has not heard of FIRST, our team would explain that FIRST is a program centered around not only building robots, but learning through hands-on participation and teaching students how to create a better future with their own hands. It provides them with experiences and



An example of our outreach booth setup.

life skills such as collaboration, communication, and gracious professionalism. It allows students to be able to help and mentor others and to be the next business, engineering, brand innovators, or leaders.

OTHER INFORMATION ABOUT OUR TEAM

This year has been a growth year due to a large number of team members who left. Also, we were unable to host the SMRBS due to restructuring the business content to offer stronger marketing strategies, starting the team as a nonprofit, fundraising, and team growth. We became a nonprofit to increase our capabilities of charitable solicitations, fundraising, and to better our ability help other teams reach their full potential. This is done by hosting events, business summits, and outreach.



CHAIRMAN'S AWARD ESSAY

Our team's goal is to inspire change in the world through a commitment to others. Whether we are inspiring our own students, FIRST teams, or other members of our community, it is essential to support those who support us. We are dedicated to helping our community because we understand that our team could not exist without their help. Aiding our community is the heart of our team.

Since the beginning, we have worked towards growing our business and public relation skills, as well as helping other teams to do the same. We have made this both a local and national effort, as we believe it is crucial for FIRST teams to have sustainable business and communication practices that can fully support and grow their team from season to season. Our team has been recognized for our skills in these areas, winning the Entrepreneurship Award and the Imagery Award from multiple events over the last few years. We were the last winners of the Media and Technology Innovation Award at the 2016 FIRST Championship. We believe that other teams should gain these skills and hopefully win these awards themselves, thus broadening the horizons of FIRST. We try to help other teams that may need assistance in these areas by making every award submission public. If other teams wanted to emulate, they could review our submissions.

We also help other teams in a hands-on environment when we annually run and host the Smoky Mountains Regional Business Summit (SMRBS), where our students and guest speakers present to attendees on topics that are often overlooked on many FRC teams. Our team has heard



Teams attending the 2016 Smoky Mountains Regional Business Summit in downtown Knoxville.

“we don’t have a business team” far too often, so we aimed to change that by hosting SMRBS. SMRBS has given us the opportunity to work hands-on with teams by facilitating discussions, educating on our areas of expertise, and giving attendees a place where they can network with students from around the region. The third annual SMRBS (in 2016) had 77 attendees from 3 states. In order to strengthen next year’s SMRBS, our team took a year off to restructure and enhance our business content, including marketing strategies, becoming a nonprofit, fundraising, and team growth.



Our Finalist award at the Battle for the Bluegrass in Corbin, Kentucky.

Recently, our team has been making advancements in engineering. This past year, we competed in two off-season events in our local area-- Battle of the Bluegrass, where we were a finalist, and the first Robo-Rodeo as captains of the winning alliance. In continuously supporting these local events, we believe that we have

strengthened the FIRST community in our area by encouraging the event hosts to continuously host them and by building relationships with other teams that we compete with, like team 4630 and 2393.

In supporting FIRST locally, we have mentored FLL Team 18907 for the past two seasons, with them placing in the top fifteen at a Knoxville regional this year. This past fall, we began mentoring Jr. FLL Team 8262 as they began their first year. In addition to mentoring others, we also invite homeschooled and younger students to join our team if they are interested in the FIRST robotics experience but lack other opportunities. For example, there were a few middle school students on our team who wanted to participate in FIRST last season, but had no programs at their school. Encouraging them to join us before they reach high school means they can foster skills geared towards their interests earlier, and help them receive a more in-depth experience with FIRST. These students have continued to be on the team, and one has even gone on to become a team lead. We have also had middle schoolers on our team this year.

In the past two seasons, we have had a close hand in assisting FRC Team 6517. Their school previously had a team in 2014, and we have been helping them get back on their feet. We have invited their entire team to our lab, offered them parts, connected them with sponsors, and answered their questions when they have them to ensure that their rookie season is successful. We even had the opportunity go to the 2017 FIRST championship with them! We will continue to work on strengthening our region's FIRST programs, providing materials and assistance wherever we can.

Besides helping out Tennessee FIRST efforts, our team volunteered at the inaugural TVA North Georgia FLL Robotics Competition, helping as referees and scorekeepers and teaching other high schoolers to fill those roles. As an event organizer put it, "I am not exaggerating in saying that the event would have been a disaster without their help...We had no other volunteers who could be refs." With our help, the event was a huge success, and FLL teams from around the region look forward to attending the competition again in the future.

In 2015, our team traveled to Washington, D.C. for the FIRST National Advocacy Conference to speak about allocating more state funding for afterschool STEM-based programs like FIRST. We also improved our relationship with Congressman Jimmy Duncan during the Veterans' Day Parade. The experience and knowledge we gained at the National Advocacy Conference several years ago has been essential for our efforts, which we continued by speaking with the Tennessee Department of Education in Nashville two summers ago. In an effort between US FIRST and TN FIRST, we were invited to speak on our experiences as an FRC team due to our recognizable presence in the community. We did this in hopes of allocating funds to build a FIRST grant program in TN that would do the following: help start more competitions, pay team registration fees, and provide stipends to FIRST coaches for their hours dedicated to their teams.



Having fun refereeing at the North Georgia FLL regional.

Speaking with the Department of Education was the first step in opening up a conversation with state legislators such as Senator Randy McNally who runs the Finance, Ways and Means Committee in the Tennessee General Assembly. Through this grant effort, we can become more effective in influencing legislation proposed in the state. By doing so, we can potentially encourage surrounding states to follow suit in furthering opportunities for students to participate in afterschool programs such as FIRST.



Our team at Sequoyah Elementary's Family Engineering Night

students, families, and teachers about the impact that FRC has had on our team. We also run demonstrations of our robots and host booths with information about our school and FIRST programs.

Every year, our team represents our school, the L&N STEM Academy, at the Knox County Magnet Showcase, where magnet schools around the district come together to show off their programs. We encourage students to attend our school and our sister school, Green Magnet Academy, which have a heavy STEM focus. At this event, we demonstrate the positive experiences available for students. This shows students how they can gain valuable and applicable skills from a STEM education. Our efforts continue at the annual Back to School Bash sponsored by Mayor Tim Burchett, where we explain to parents and students the education that FIRST programs build for students.

Our team consistently keeps up with our local Knoxville-based organization contacts to know when they need us for their events. Our goal is to inspire others to work in STEM-related

As students involved in FIRST Robotics, the second cornerstone of our team's mission involves our continued efforts to support and promote STEM education. In order to be successful proponents of local STEM education, we not only have to engage in conversations among students of all ages, but also inspire educators. Our team has continually collaborated with CURENT, an electrical engineering research department at the University of Tennessee, to coordinate "Family Engineering Nights" at elementary and middle schools around Knoxville. At these events, we talk with

fields, and show people what can be achieved through hard work and determination. One of the best ways to reach out to our community is through the voice of our local businesses and organizations. We have worked with the Tennessee Valley Fair, the Knoxville Utility Board, CNS-Y12, and the Knoxville Ice Bears, among others, to reach the most people possible. While state fairs and hockey games may not be traditional places to find FIRST Robotics, it is important to have a presence there and reach an audience that is not familiar with FIRST.

"OUR GOAL IS TO INSPIRE OTHERS TO WORK IN STEM-RELATED FIELDS, AND SHOW PEOPLE WHAT CAN BE ACHIEVED THROUGH HARD WORK AND DETERMINATION."

Last season, we began helping a local community effort to start a project called the Change Center. The Change Center is a safe downtown partnership facility that provides recreational activities, leadership development and job initiatives for teens. While the Center is not yet complete, we have been helping them get the space ready. The Change Center also generously allowed us to host a community practice field in their space for Knoxville teams. We utilized an AndyMark field perimeter owned by Oak Ridge National Laboratories to allow teams to come practice driving and programming their robots before they competed last year.

FIRST has taught us the importance of giving back to the community to build stronger ties and create closer relationships with those around us. Two seasons ago, our team faced a huge obstacle as our school had grown too large and needed our lab space for a classroom. We reached out to the community and found a school near downtown Knoxville who graciously donated a temporary work space. This year, we partnered with Green Magnet Academy when they graciously offered us a place to work that was accessible for our students, thus providing us with another bond within our community.



Our new lab space at Green Elementary School, filled with hard-working students!

As a six-year team, we take pride in our accomplishments, and look to the future in expanding our positive impact. While we are pleased with our efforts so far, we know that there is much more we can continue to do in spreading the mission of FIRST. We are giving back to the people who have supported us with a longstanding commitment to them and our community, and the dedication of our students to serve where we are needed.



GET STEMPUNKED!

ACKNOWLEDGEMENTS

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

Green Magnet Academy

Bechtel • Knox County Schools • Clayton Family Foundation

Leidos • UT-Battelle • Boeing • Pilot Flying J

Consolidated Nuclear Security • Steel Plate Fabricators

Arconic Foundation • Tennessee Valley Authority • Northrop Grumman • Drayer Physical Therapy

DeRoyal Industries • Steel Plate Fabricators • Sullivan Sandblasting • TNT Powder Coating • Cherokee
Millwright & Mechanical • Dassault Systèmes • SwipedOn • Shoney's