

Chairman's Award - Team 2682

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2019 - Team 2682

Team Number

2682

Team Name, Corporate/University Sponsors

Pitt County Educational Foundation/Modlin Insurance Agency/Suddenlink by Altice/The Optimist Club of Greenville/Aramark/Pitt County Development Commission/Greenville Utilities Commission/The Kiwanis Club of Greenville/CPR-Stat/Helen McClung/Grady White Boats/Just Write Laser Engraving/Pair Electronics&Pitt County Schools

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2018/2019 year and the preceding two to five years

Besides the technical, marketing, and strategic skills our members gain, team participants gain confidence. You truly can be yourself on our team. We make it our goal to be a team that values diverse minds. Nearly 20% of our team have a sensory processing disorder or Autism Spectrum Disorder. The majority of our alumni are pursuing STEM fields, and 50% of our team leadership positions are held by female members, including our Commander Officer.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2018/2019 year and the preceding two to five years

Boneyard participates in many outreach events to spread the word of FIRST. We participated in the Bark 4 Life, Canine Crawl and the Run/Walk for Autism. Through our SWENext chapter, we are hosting annual Robotics Innovation events for Girl Scouts to earn a FIRST badge/patch. We donated 20 flood buckets to Houston to help with hurricane relief. We helped raise funds for a local class for students with Autism Spectrum Disorder to go to Disney World.

Team's innovative or creative method to spread the *FIRST* message

Our team focuses on creating innovators, leaders, and changemakers on and off the team. One way we inspire the next generation of innovators and inventors is through STEM curricula created by our team members. We are also working to increase female interest in STEM by hosting events like Girl Scout Innovation days. At the first of these events, 60 local Girl Scouts learned about programming and engineering while earning a SWENext badge.

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

We make resources like shopspace, programming help, mentorship and education available to other teams. We are sharing what we learn from our Autism Spectrum Disorder recruitment efforts by making our Autism Recruitment Handbook available for download on our website. We have distributed our handbook to teams in all 50 states as well as China, Israel, Canada and Tanzania. Our safety team provides mentorship to rookie teams by providing safety folders and kits at competition.

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

Last season we started the FRC team, Rambo Robotics. This season, in an effort to expand our knowledge and effectiveness in starting FRC teams, we are initiating a collaboration with well established teams around the world to create a "How to Start an FRC Team Handbook". We are stronger together and our goal is to make this handbook available to all teams so that we can grow the reach of FRC and make the opportunities it yields available to students that need them.

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

Our group provides \$20,000 in grants to start *FIRST* teams in our community. We have started 6 FLL teams and have mentored 10. We have started and mentored 3 FLL Jr. teams. We have started 2 FTC teams and mentored 3. We work to inspire the next generation of innovators and inventors by facilitating events like STEAM night at a local elementary school with engineers and scientists.

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

We noticed a lack of FTC teams in eastern NC. Now there are 3. We started 2 of those teams and mentored a 3rd in a partnership with another FRC team. We started and hosted the 1st FTC tournament in eastern NC last season. This year's attendance and participation increased by 150% including teams from neighboring states. We encourage our FLL and FLL Jr teams to stay in *FIRST* by inviting them to our FRC competitions and to our shop to learn more about *FIRST*.

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)

For the past 2 years Boneyard team members have won Junior Mentor of the Year at the Pitt County FLL Tournament. Last season we helped one of our teams, the KooKoo birds, market and distribute their book, Water: Save a Lot With Our Recycle Robot. We showed support to this same team at Championship in Houston last year by welcoming them, helping them set up their display, and attending the mentor meeting when their flight was delayed.

Describe your Corporate/University Sponsors

Solidworks, Pitt County Schools, Aramark, A Time for Science, Altice, Greenville Utilities, ECPC Pain Specialist, Pfizer, Grady White, Phelps Chevrolet, Rivers and Associates, The East Group, Kiwanis International, Barnes and Noble.

Describe the strength of your partnership with your sponsors with special emphasis on the 2018/2019 year and the preceding two to five years

Our goal has always been to make our sponsors feel like part of the team. We send out newsletters and updates to keep them apprised of our progress. When donations are received, our students send a handwritten thank you note. We hold kick off and robot reveal events for our sponsors and community. We send out save the date cards for tournaments and events. Sponsor names and/or logos are displayed in our pit and on at least 1 competition shirt per season.

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

FIRST is a second family and a comprehensive simulation of real world corporate technology organizations. *FIRST* creates a safe social environment where some of the most advanced and positive innovation occurs. *FIRST* is not only STEM, but it is STEAM (A=arts). The robot, while important, is not the only priority. Marketing, Engineering, Design, Safety, are all branches of *FIRST*. It also means giving back. STEAM to us means Sharing The Empowering, Altruistic Mentality of *FIRST*.

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

In an effort to spread the mission of *FIRST*, we partnered with 3 nonprofit startups. Happiverse changes social media's landscape by creating a positive, healthy platform for connecting with people. Through one collaboration we are making available engineering term flashcards in Mandarin/English. In an effort to get kids excited about STEM, we are partnering with the Book Elf, a business that promotes literacy, and they have agreed to work with us to spread STEM educational books.

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

Jenevieve Surkin

Essay

Neurodiversity. The FIRST frontier. These are the voyages of Boneyard Robotics. Its five-year mission: to explore strange new mindsets...to seek out new perspectives and new forms of equity, to boldly inspire like no team has before!

In the last 5 years, we have worked to establish ourselves as a diverse, supportive, and accepting FIRST family which serves as a benevolent, creative, and inspiring home to build a better future for all. We accomplished this by discovering our strengths as a team and by discovering our own unique ways to spread the FIRST message.

According to Abraham Maslow's hierarchy of needs, we all have a need to belong. As a result, people seek out role models, someone they can look up to and strive to be like. In our fledgling years, our outreach followed the set ways other FIRST teams had used to impact their communities. We found ourselves adopting conventional outreach strategies defined by our role models, as evidenced by this excerpt from our 2017 Chairman's essay:

"(2017 Essay) Boneyard is committed to helping the community and world while also spreading the word of FIRST. We publicize FIRST through outreach events hosted by our team at the ECU Football games and events, Barnes & Noble Maker's Fair, open house at all public schools in our county and Freeboot Friday at Uptown Greenville.

We are a regular name around the Humane Society of Eastern North Carolina. We have donated pet supplies and last year walked our robot during the Bark for Life where we helped raise \$2,800. We also helped set up and walked in the Canine Crawl. Boneyard held a One Warm Coat drive. During this drive we collected and donated warm coats to families who may not have access to them during the winter free of charge. Our efforts have allowed us to donate 28 coats this winter.

We also participated in the Down East Heartwalk in Greenville where Boneyard joined the Love for Layla team. During this event, Boneyard supported the Love for Layla team and helped raise \$1,975 that was donated to the American Heart Association."

We are proud to participate in these events every single year, and they've enriched our hometown and team as a result. Despite this, Boneyard participated as an independent entity in only one of the events listed. Because of this, Boneyard was not finding another one of Maslow's points on the hierarchy of needs: self-actualization. But these original initiatives did guide us to the foundation from which we began to build our identity.

Our first step in finding our individuality was discovering our defining characteristics. Those are our empathy, understanding, and spirit in bringing together many diverse minds. This is our year of growth. In our own unique way, we are expanding the FIRST universe.

We've worked to expand FIRST through teams on all levels. We've started three FLL Jr. teams, one of which we helped market and promote their published book titled, *Water: Save a Lot With Our Recycle Robot*. We've started 6 FLL teams, mentored 10 FLL teams, and for the past two years, Boneyard members have won the Junior FLL Mentor of the Year. We have started one FRC team and supported two.

Boneyard has mentored three FTC teams, two of which we started. We hosted the only FTC tournament in eastern North Carolina, not once, but twice. This years' attendance and participation increased by 150% including teams from neighboring states. This is a demonstration of how our impact on FTC teams in North Carolina and beyond is growing.

In an effort to find new ways to inspire the next generation of innovators and inventors, Boneyard partnered with three start-up nonprofits, one is a social media platform specifically designed to promote kindness and authenticity, one spreads STEM books throughout the world through anonymous book sharing, and another teaches engineering terms in Mandarin through unique interactive flashcards. We have also created STEM enrichment videos that teach unusual, creative, science topics such as the effects of knuckle cracking, how macromolecules create butter, what are algorithms and machine learning as well as food safety during Hurricanes, and more, all geared towards an audience ranging from age 8 and beyond. We continue to encourage the STEM-related growth of the next-generation by supporting a group of engineers and scientists in putting on a STEAM night at a local elementary school. The success of this event inspired us to organize and host an engineering symposium for FRC teams and local high schools.

Our 2018 Chairman's essay introduced a new aspect of Boneyard's self-discovery: Neurodiversity.

"(2018 Essay) After achieving a greater sense of our identity, Boneyard is determined to equitably increase our neurodiversity. To us, neurodiversity means having a variety of mindsets, learning styles, and personalities.

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By partnering with a local Autism Spectrum Disorder specialist, we decided to learn how to include more students with special needs in the Boneyard family. We learned the employment rate for adults with Autism is less than 20% and that the biggest aspects of this issue are delayed social skills and misunderstanding from the general public. Boneyard is striving to become part of the solution.

By exercising FIRST values, our team members with Autism are finding their passions and becoming more social in a supportive and accepting environment. This environment's fundamental principles are to equitably emphasize their strengths and character traits by forming individualized, custom-cut roles. For example, a student with Autism who is not comfortable talking in front of others is not expected to present safety talks. Instead, working in the programming room or being the team photographer are more comfortable positions. As a result, our members with Autism this season have grown to represent 12% of our team."

12% was only the beginning. This year we have expanded our membership of students with a sensory processing disorder or Autism Spectrum Disorder to nearly 20% of our team. Our team members with sensory processing differences have inspired us to create an Autism Recruitment Handbook and the first sensory rooms at NC FRC Competitions, called the "Quiet Space[s]." FIRST in North Carolina has embraced this new concept and Boneyard has made the commitment to providing the resources, education, and human power for all FRC competitions in North Carolina to have a designated "Quiet Space".

We have plans to develop our "Quiet Space" design and education resources for other teams, including FTC, FLL, and FLL Jr. teams globally. The goal is to sustain and grow efforts that create a more equitable space for all.

Our first step to reaching that goal is to distribute our Autism Recruitment Handbook to other FIRST teams and organizations. By doing so, we pass on our experiences, spread awareness, and share the importance of neurodiversity. We have sent handbooks to FIRST teams in all 50 states, Canada, Israel, China, and Tanzania.

Our second step is to expand the "Quiet Space" concept beyond North Carolina. We are communicating with the teams that were sent the Autism Recruitment Handbook to receive feedback and help them expand their own neurodiversity. Our hope is that through FIRST we can create a culture change in the world where people's perception of those with sensory processing differences will evolve. In the words of Stephen Covey, author of 7 Habits of Highly Effective People, "Strength lies in differences, not similarities." Boneyard is achieving this by actively work with everyone on our team, people in our community, and people around the world to emphasize that this Earth is beautiful, because we are different.

Boneyard found our role model but realized that trying to emulate them exactly does not enable individual growth. Rather, it is learning from their strengths, challenges, and experiences that enriched and empowered Boneyard to break down its own self-imposed barriers. We realized that we have the ability to inspire the next generation of STEM-trepreneurs and teach the extraordinary in hopes of continuing the legacy of FIRST. And it is because of this realization that Boneyard has grown beyond the safety net of our role model's accomplishments and stepped into the real world.

In order to help our world "live long and prosper," we are preparing for our "Next Generation." Expanding the FIRST universe of diversity and equity is now Boneyard's ongoing mission. Through neurodiversity education and awareness, STEM curricula and outreach, and FIRST team expansions, we have launched beyond the preconceived notion that we have to be someone else to succeed.

Only then do we enter deep space, find a field of opportunities to explore who we really are, and accomplish our mission of boldly inspiring as no team has before.