

Chairman's Award - Team 3506

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2016 - Team 3506

Team Number

3506

Team Name, Corporate/University Sponsors

UTC Aerospace / LEAD Technologies, Inc. / BASF / Areva / CapTech Consulting / Van Buren Law, PLLC / Concept Systems, Inc. / Celgard, LLC / D.R.Joseph Incorporated / Duke Energy / Piedmont Natural Gas / Medtronic & Network for Good / Transbotics / Bank of America / AcCollegeMents / Beekman Family - Tetra Tech / Brown & Morrison_Chapman Asso / 84 Lumber Company / Kuraray America / Trimech / YG-1 America, Inc. / Daramic / Mr. & Mrs. Young / Lime Energy / Comm. Industrial Supply_PVC Fittings / Cavanagh Consulting / Protech International LLC / Enventys / ImaginOn CM Public Library & Queen City Robotics Alliance

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2015/2016 year and the preceding two to five years

FIRST continues to inspire our students and mentors. In the past 5 years, 90% of our alumni have gone into a STEM field. Every student on 3506 realizes that FIRST helps them discover their passion for STEM. In the process, the YETI students develop new soft skills. We gain confidence in our skills, ideas, and abilities; ultimately motivating us to pursue a STEM career. Not only do we learn more about robots, but we also learn more about ourselves.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2015/2016 year and the preceding two to five years

YETI has made FIRST more prevalent in our community by establishing the NC FIRST Zone. Within the Zone, we introduce new students, sponsors and community leaders to FIRST and STEM. As a team, we make it a point to do as many outreach events as possible, even some which are not FIRST or STEM-related. At these events, we share our passion for STEM and FIRST to the community. We often recruit new team members from events like DigiGirlz, GeekFest and our ImaginOn Engineering Outreach Program.

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

Team 3506 spreads FIRST's message to people of all kinds. Through our partnerships with ImaginOn, Urban Ministries and Project 658, we share FIRST and STEM to diverse populations. Our work with ImaginOn engages underprivileged students in STEM through STEM-based projects. With Urban Ministries and 658, we reach the homeless and refugee communities by donating food and clothing. We also partake in events like World Refugee Day, SIM and PTA Conventions where we market FIRST to our community.

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

As one of the founding teams of the Queen City Robotics Alliance (QCRA), YETI acts as a role model for teams all over North Carolina. We bring our energy and passion for STEM to outreach events all over NC. In everything we do, we make sure we exhibit gracious professionalism and clear communication. At our local library, we hold general robotics, videography, and JAVA classes for all QCRA teams to help prepare them for build season. These classes are also available to the general public.

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

YETI's rookie year was a challenge with no local support. YETI resolved to help all new local teams, such as Teams 4290 and 4935. As rookies, we provided these teams mentor to mentor meetings, question hot lines, parts, robot demonstrations and FIRST presentations to recruit students and help prepare them for FRC. 4290 and 4935 are now founding members with YETI of Queen City Robotics Alliance.

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

In the past six years, we started 2 Jr. FLL, 2 FLL and 2 FTC teams. Because a lot of our students started FIRST at a young age, we are in a unique position to start younger teams. We understand the benefits developing new skills sets at a young age. We continuously pay for the registration of these teams, and three of our students mentor these teams. These younger teams act as feeder teams for Team 3506.

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

Team 3506 is always willing to share parts, resources and knowledge with other teams. As a sustainable team, we realize the importance of assisting other teams in any way. We even go as far as paying for other team's lunches at tournaments. We also often assist our younger teams by sending our students to help with videography and basic mechanical challenges. Additionally, we also share our marketing, fundraising and business strategies to other FIRST teams.

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)

A lot of us started FIRST at a young age, so we understand the importance of the connections that the young adult mentors have with the younger students. Currently, three of our students mentor our feeder FLL and FTC teams. We have developed strong relationships with the younger teams in our alliance, and continuously help them to develop their passion for STEM.

Describe your Corporate/University Sponsors

YETI requires everyone to fundraise, resulting in 25-30 sponsors annually, which broadens team exposure. Sponsors include tech firms like LEAD Technologies, manufacturers like BASF, product development firms like Enventys and small local firms like real estate companies and grocery stores. We enjoyed five years with Central Piedmont Community College. From there, we established the FIRST Zone. We also forged a relationship with UNC, the hosts of 2016 NC FIRST Championships.

Describe the strength of your partnership with your sponsors with special emphasis on the 2015/2016 year and the preceding two to five years

Companies continue their interest in 3506. Some companies have been with us for six years and some only one. We keep our sponsors updated by sending them weekly newsletters and inviting them to our space. Every year, we also invite our sponsors to our robot reveal before StopBuild. As our fundraising is student-led, it is the students who develop strong relationships with our corporate sponsors. Our sponsors are always impressed with our overall work.

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

FIRST is about building robots to build character. You will spend hours working on your robot and strategy, but it will all pay off in the end. FIRST is an encouraging community to find your undiscovered passion for STEM. FIRST motivates you to reach your full potential in STEM and beyond. FIRST also teaches you skills that you would not learn in a classroom setting. Participating on a FIRST team helps you learn to collaborate, communicate and connect.

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

Here on YETI, we take pride in our unique swag. Students all over NC look for our YETI tattoos, lollipops, puppets, necklaces, chap sticks, cookies and hats. Our big blue mascot, furry robots, and fuzzy hats are emblematic of YETI. At a tournament, our opposing alliance got a foul by reaching over and petting the blue fur on our robot! On our team of 29, we enjoy comradery and we motivate everyone to be their best. We are more than just a team, we are a family.

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

Tanisha Paul

Essay

"The reward of our work is not what we get, but what we become" -Paulo Coelho
Six years ago, sixteen determined students and seven dedicated mentors embarked on a journey with YETI Robotics, the first FRC team in Charlotte. Keeping true to the mission of FIRST, Team 3506 started various FIRST teams and after school programs. Recently faced with obstacles, YETI found sturdier ground for growth with the establishment of the FIRST Zone. Team 3506 provides an environment where students can discover their passion for science, technology, engineering and math and become the next generation of excellence. Our team intensity and drive inspires others to see what FIRST and STEM are all about.

"The way to get started is to quit talking and begin doing." -Walt Disney
Three years ago, YETI mentors recognized that in order for FIRST to expand in the Charlotte area, it needed a stable non-profit organization for funding and resources. The mentors of four local FRC teams started the Queen City Robotics Alliance (QCRA) to secure financial, physical and human resources for all of FIRST's progression of teams. This continuity of support allows students to stay engaged with FIRST all the way up to adulthood. A cornerstone in this effort is the FIRST NC Zone-Charlotte. The Zone is a partnership with NC FIRST and the QCRA. YETI and Team 4290 students and mentors transformed a 9,600 square feet industrial warehouse before the FRC build season to a zone where students can continuously grow in FIRST. Since all of FIRST's progression of programs use this space, older students are able to empower younger students. Through the generosity of the Argosy Foundation's grant and NC FIRST Robotics' contributions, we have a great space. This space holds full-sized FRC, FTC and FLL fields, and a full

workshop. The Zone is available for all FIRST teams and STEM related activities in North Carolina. We recognize how amazing and educational our experience with FIRST is, so we want to share our experience and knowledge with

younger teams as well as the community at large.

"Diversity: the art of thinking independently together." -Malcolm Forbes

Team 3506 draws from originality and diversity to forge success. We are a community team who recruits from a diverse group of students from all over the Charlotte region. Students come from public, private, and homeschools, and from many different ethnic and socioeconomic backgrounds. Our key to success is based on our philosophy of a student led team and drawing on everyone's unique talents. We don't feel like we have to fit one mold. YETI's leadership team consists of one Team Captain and five Vice Presidents. The student leaders act as role models to teach rookies and younger students. Seniors share their knowledge to ensure a continuous cycle of STEM education. Currently, 90% of our alumni have gone into STEM careers.

"It is time for parents to teach young people early on that in diversity there is beauty and there is strength."-Maya Angelou

Our team realizes the importance of diversity. In our first year, YETI had one girl on its team of 16. Through years of growth, our team has increased its diverse membership. Today, out of a team of twenty-nine students, 24% is comprised of girls. YETI Robotics established its 'Pink Pipeline' to provide a solid learning ground for girls to develop their basic engineering skills. Within the Pink Pipeline, YETI Robotics started all-girls FTC, FLL and Jr. FLL teams. The Pink Pipeline currently encompasses over 25 girls. Three female students on Team 3506 have gone through the Pink Pipeline and say that it gave them confidence in their skills and ideas. To recruit even more girls, 3506 annually presents and demos at Microsoft's DigiGirlyz, an all-girls STEM summer camp. Our effort to bring girls into STEM careers caught the eye of a film-maker, Ashley Maria. Her documentary, Pioneers in Skirts, is coming out this spring and talks about the challenges women face in the workforce. Ashley Maria followed our students to show how participating in FIRST Robotics encourages girls to pursue a career in STEM and the challenges they face. Wilson's World, on WCCB TV, also did a live broadcast featuring the girls on YETI. The YETI students were able to show Charlotte what FIRST Robotics is, and how diverse populations are welcomed into FIRST.

Charlotte is an international hub for diversity and we leverage the diversity of our students to share FIRST and STEM with people from different cultures. We fondly call our initiative 'Going Global Local.' Last year, YETI Robotics established a strong relationship with Project 658, a local organization that aids the refugee community in Charlotte. In recognition of 658's mission and events going on around the world, we focused on refugees from places like Myanmar, Turkey, and Bangladesh. Currently, we have students who work with the youth programs at 658 and also one student who did his Eagle Scout Project for Project 658. Additionally, we ran a winter clothing drive for 658. We are introducing STEM ideas to 658 by converting a competition FLL table into a STEM activity station, and we are excited to see how it will grow. Another strong relationship YETI Robotics has is with Urban Ministries. Through our outreach event called 'Operation Cold Cuts', we made over 1,200 sandwiches and gave them to the homeless community. Our stewardship and compassion are important to our team identity.

"Most people say that it is the intellect which makes a great scientist. They are wrong: it is character." -Albert Einstein

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As a team, we are proud to say that we reach all kinds of people. In the past five years, we have reached 37,325 people. Not only do we demo and present at events like The Society for Information Management Convention and GeekFest, but we also make it a point to reach the underprivileged community in Charlotte. One approach is with ImaginOn, a local library and community center. Two years ago, we started our ImaginOn Engineering Outreach Program. Every Thursday, YETI students and mentors bring in small STEM based projects for the ImaginOn kids to do. We capture the imagination of the underprivileged kids by having them make flaming robot-cars and mini catapults. One of the students who participated in this program went on to join one of our FTC teams. A team goal is to establish sustainable relationships with organizations and people all over Charlotte, and over the past six years, we have continuously expanded our connections in Charlotte and beyond.

"Tell me and I forget. Teach me and I remember. Involve me and I learn." -Benjamin Franklin

YETI Robotics is more than one FRC team, we are a community. We have started 2 FTC, 2 FLL, and 2 Jr. FLL teams, and; assisted 2 FRC teams; and are a founding member of the QCRA. Many current students came from YETI's feeder teams. Because of this connection, we are in a unique position to help and mentor our younger teams. Three YETI students mentor our feeder FLL and FTC teams. YETI students have also built multiple FTC fields and FLL tables for our feeder teams. In partnership with 100 Black Men, we hosted an FTC kick-off, an FTC regional tournament and a Jr. FLL expo. With QCRA, we hosted an FLL tournament and assisted in the planning of 5 other FIRST events. Volunteering at these events allows students and mentors to assist younger students and encourage them to stay in FIRST.

In order to reach as many events, people and programs as possible, we learn to work with other FIRST teams.

Throughout the off-season, YETI students and mentors host various JAVA, general robotics and sensors, and videography courses. These classes are open to the general community and QCRA teams. Within these weekly classes, our students share their knowledge to other FIRST teams.

Start by doing what's necessary; then do what's possible; and suddenly you are doing the impossible."-Francis of Assisi
In order to have a successful and sustainable team, we must form strong relationships with our corporate sponsors.

Some of our sponsors, such as Celgard and BASF, have continuously and proudly sponsored us over the years. Each year, students are required to contact at least three companies. This encourages students to go out of their comfort zones and talk to professionals. This year, motivated by last year's fundraising of \$50,000, some students contacted over 10 companies! YETI Robotics takes pride in having a minimal participation fee, and it is because of our student-led fundraising. Through fundraising, marketing, and outreach, we learn to communicate clearly and show gracious professionalism. As YETI Robotics grows, we realize the importance of having a sustainable business plan. We currently have a plan that maps out our entire team and our growth.

"Obstacles don't have to stop you. If you run into a wall, don't turn around and give up. Figure out how to climb it, go through it, or work around it." -Michael Jordan

We believe that STEM and FIRST are about connecting people, and as a team we work to expand, diversify and empower our community. We learn from our mistakes and become stronger every year. For example, last year, for the first time ever, we implemented a strategy team. Immediately after kick-off, the strategy team works to devise a strategy that drives the design and build process. Rather than building the strategy around the robot, we are able to build the robot around the strategy, which is new to Team 3506. As we acquire more knowledge over the years, we realized the importance of sharing our ideas and experiences with other teams. YETI students are always willing to let other teams borrow tools and parts, share our marketing and business strategies, and help fix various code challenges. Our signature blue furry robots, fuzzy white hats, and YETI puppets are emblematic of our sense of humor, spirit, and dedication to FIRST.

"It's more than robots. We build robots to build character" - YETI Robotics