

FRC TEAM 2080

Torbotics

Business Plan



To be an inspiration and catalyst for opportunities through Science, Technology, Engineering, and Mathematics.

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Executive Summary

Mission Statement:

To be an inspiration and catalyst for opportunities through Science, Technology, Engineering, and Mathematics.

Vision:

To ensure opportunities for all youth through Science, Technology, Engineering, and Mathematics.

Core Values:

1. **Gracious Professionalism** - Strive for integrity and gracious professionalism in everything we do.
2. **Creativity** - Approach all endeavors with innovation, creativity and open-mindedness.
3. **Teamwork** - Teamwork is grounded in respect, effective communication and a desire to foster strong relationships.
4. **Inspire** - It's our duty to reach out and share our experiences with others; to infuse our passion for robotics and STEM to inspire others.
5. **Opportunity** - Strive to create and support experiences where passion and purpose co-exist.
6. **Safety** - Ensure physical and interpersonal safety; only through the creation of an effective team can we build an effective robot.

Date Team Began:

October 2006

Location:

Hammond High Magnet IB World School in Hammond, Louisiana

Team Summary:

FIRST Robotics Competition (FRC) Torbotics, Team 2080, was founded in 2006 by Shelly Gaydos, a former physics teacher at Hammond High Magnet IB World School (HHMS). She served as lead mentor of the team until 2015 following her promotion to Vice Principal and now Interim Principal of HHMS. The team first participated in the 2007 "Rack n' Roll" competition season. Our principle sponsorship came from H. Rocker Electric that year.

The 2017 - 2018 Torbotics team consists of 40 students. Over 60% of team members reside outside of the HHMS attendance zone, with these students choosing to commute and attend HHMS in order to be a part of Torbotics and the school's established four-year engineering program. Membership in Torbotics represents 71% of the school districts in Tangipahoa Parish. Primary supervision of Torbotics falls under the direction of HHMS engineering teacher, Danny Thomasson (Lead Mentor) and HYPE Robotics founder, Jean Williams. The team is currently supported by four, additional active mentors, Tim Hicks (Intralox), John de St. Germain (Intralox), Donnie Carter (retired) and Ben Williams (HYPE Robotics).

Program Summary:

FIRST is an acronym that means *For Inspiration and Recognition of Science and Technology*. It was founded by inventor, Dean Kamen, in 1989 to inspire young people's interest and participation in science and technology. *FIRST* designs accessible, innovative mentor-based programs that motivate young people (ages 6

thru 18) to pursue education and career opportunities in science, technology, engineering and math (STEM), while also building skills in communication, team building, problem solving, self-confidence and leadership.

2017-2018 Season Sponsors:

SPAWAR, Lockheed Martin, Intralox, Entergy, Intuitive Surgical, Modern Woodman Financial, DOW, Shell: Laurie Guidroz, RDF, Raising Cane's, Dan Wrinkles Plumbing, Pierce Aviation, H. Rocker Electric, Explore & Learn Early Learning Center Incorporated, First Guaranty Bank and HYPE Robotics

Team Impact/Outreach:

At our core, Torbotics is devoted to sharing our experiences with others; infusing our passion for robotics and STEM to inspire others. We strive to be a driving force for meaningful STEM experiences and robotics throughout our parish, which is 50% rural, with 22% of the population under the age of 20. As the only FRC team in our area, we believe it is our responsibility to create possibilities for underserved communities, construct new programs and challenge the perceptions of STEM in our region. To date this school year, we have participated in over 3,000 hours of community outreach and service projects as a team, and individually. We currently mentor 6 FLLJr teams (ages 6-10), 4 FLL teams (ages 9-14), and 4 FTC teams (ages 12-18). As founding members of the Tangi STEM Coalition, we host numerous workshops and experiential STEM events year-round throughout our area. The Louisiana STEM Council recently identified us as mentors for upcoming VEX Robotics programs in our parish, and we have received the approval of the STEM Coordinator for our school board to pursue starting a FIRST team in every school in our area. The team was recently selected to organize our parish's first ever STEM Bash & Smash to involve professional and novice pumpkin chunkin contests. The team is routinely called on to provide demonstrations for local and state government and community leaders and participate in interviews. With over 200,000 youth and families served over the past 12 years, we are transforming our area and impacting lives.

Relationships & Information Regarding Current Sponsors:

We strive to develop and maintain high quality relationships with all team sponsors.

- Intralox – professional mentorship & monetary
- SPAWAR, Lockheed Martin, Entergy, Intuitive Surgical, Wrinkles Plumbing, Shell:Laurie Guidroz, Explore & Learn Early Learning Center Incorporated, First Guaranty Bank – monetary
- Raising Cane's – monetary, food for the team during build season, \$100 gift basket to raffle
- HYPE Robotics – mentorship & in-kind donations of electrical, build, business and safety materials

Team Growth:

Since our foundation in 2006, Team 2080 has grown from 12 members and a single after school engineering class to 90 members in 2015 with a four-year engineering curriculum and fully operational engineering workshop and endorsement as a Career Program under International Baccalaureate. Currently we have 40 active team members following a two-year transition period after the loss of our founding lead mentor.

Future Team Plans:

In addition to maintaining our current outreach activities, Torbotics has established the following goals.

- For every school in Tangipahoa Parish to have a FIRST robotics team supported by Torbotics.
- Develop increased depth in the planning, design and building skills of all team members with a new "skill shadow" program, summer training series, and building of a second robot with the assistance of underclassmen and the business team.
- Acquire and maintain larger corporate sponsorship & additional federally-funded grants.
- Work to finish fabrication of a new electronics design that we will seek to patent with the help of Paten Dive in New Orleans. We plan to market this design to other FRC teams and industry.



TORBOTICS is an acronym which stands for

Together Opening Realms Beyond Our Team In Communities and School.

Spreading the underlying values of FIRST and the opportunities it affords participants are of utmost importance to Torbotics, Team 2080. We are dedicated to creating connections within our larger community and providing opportunities in STEM fields to benefit our members and beyond. We strive to cultivate interpersonal success in the process. The knowledge and skill sets adopted will have a far reaching impact, benefitting people throughout our region well into the future. Twelve years ago at the onset of our program, our parish saw athletics as the primary source of a student's after school success. STEM outreach was non-existent. In part due to our outreach and media efforts and the vision of a few key leaders within our community, our parish now supports three STEM magnet schools, our School Board employs a full-time STEM coordinator and we currently provide weekly mentorship to 14 FIRST robotics teams in our area. 83% of our current team has had at least one year previous experience in FIRST through one of the teams we mentor. 30% of those with prior FIRST experience transitioned from one of the FIRST Lego League Teams that we mentor/coach.

At Torbotics we endeavor to be a catalyst. We strive to demonstrate the goals of FIRST and STEM to all youth. We provide creativity and innovation. We expand our region's images of STEM, of women and minorities in engineering and of the impact of connecting with community professionals.

Core Values



Gracious Professionalism

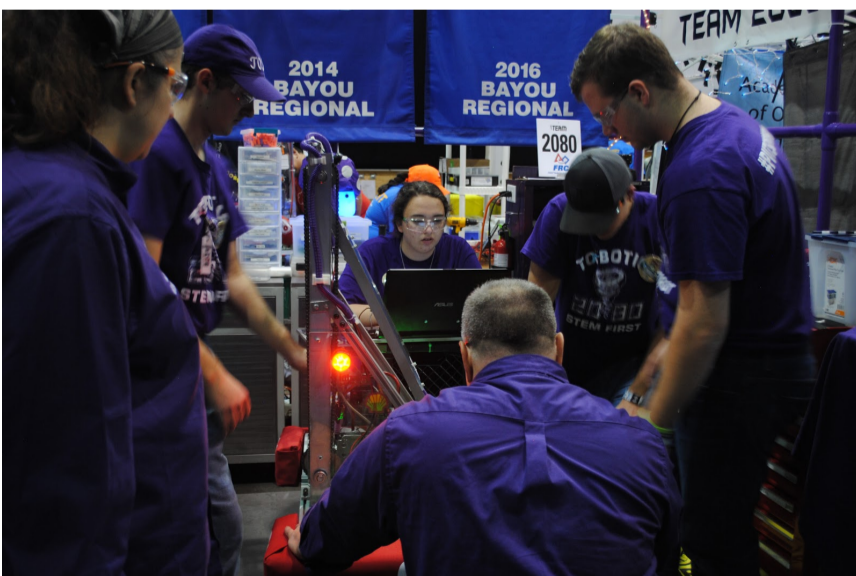
Strive for integrity and gracious professionalism in everything we do.

Authenticity is a practice. It's a collection of conscious choices that we make every day. It's about the choice to show up and be real. Integrity is everything. We do what we do because it's who we are and it's the right thing to do. What we learn and discover along the way will always be more important than what we could ever win.

Creativity

Approach all endeavors with innovation, creativity and open-mindedness.

There will always be a way to do it better - we just have to find it. Passion creates motivation, which leads to innovation. Innovation is seeing what everyone else sees and thinking about it in a new way. Don't be afraid to fail. Be afraid not to try. To succeed twice as fast, you have to double your failure rate.



Teamwork

Teamwork is grounded in respect, effective communication and a desire to foster strong relationships.

Teamwork is at the heart of every great achievement. We are not a team because we work together. We are a team because we respect, trust and care for each other. To feel this we must give it first. Effective communication involves truly listening, being open-minded and making sure the other person feels heard. It's a commitment to work together toward a common vision. It's the ability to direct our individual achievements to the team and strive not to pass blame. It's safe to make mistakes and try out new ideas.

Inspire

It's our duty to reach out and share our experiences with others; to infuse our passion for robotics and STEM to inspire others.

All youth deserve the opportunity to see themselves as capable. In order to take the risks associated with being a successful, innovative thinker in STEM, you have to be exposed to opportunities to experiment in these fields early - to develop personal connections with role models. The only source of knowledge is experience. (Albert Einstein) Be the change you wish to see in the world. (Mahatma Gandhi)



Opportunity

Strive to create and support experiences where passion and purpose co-exist.

Discover who you are. Be open to new ideas and opportunities. Find your passion. It's born when you catch a glimpse of your true potential and then take action.

Safety

Ensure physical and interpersonal safety; only through the creation of an effective team can we build an effective robot.

Safety is always a top priority. We all deserve to feel safe. We believe in keeping each other safe. If a situation is unsafe: Report it. Address it. Safety is everyone's responsibility.

Team History

With primary sponsorship from H. Rockers Electric, Torbotics was established in October 2006 by then physics teacher, Shelly Gaydos, at Hammond High School. In March 2007, the team made it to its debut at the FRC Bayou Regionals in Kenner, LA. Since the very start, our program has been founded on the principle that FIRST is “more than robots.” It’s also about providing students with the opportunity to work and learn alongside professional mentors and develop strong communication skills. It’s about utilizing gracious professionalism in all aspects of development, learning how to form strategic and mutual alliances and the importance of developing and maintaining strong sponsorship and interpersonal relationships.

Torbotics is the only FRC team in our predominantly rural parish (county). As a result, we are a driving force for STEM education and robotics throughout our area. We endeavor to serve as a catalyst to expand our region’s images of STEM and of women and minorities in engineering. We currently mentor four FTC teams, five FLL teams, and six FLLJr teams, with four of these teams being community-based (impacting 104 youth annually). During the 2018-2019 school year, we have already begun a partnership with local after school programs in three of our most impoverished areas to launch a series of satellite FTC teams. We were also recently selected by the Louisiana STEM Council to serve as the liaison for VEX Robotics in our region. On March 15, 2018, our business team secured approval from the STEM Coordinator for Tangipahoa Public Schools to pursue our campaign to get a FIRST robotics team in every goal.

We use community outreach as a way to inspire those in elementary and middle school to aspire to what is possible. With over 200,000 youth and families served over the past 12 years, we are building communities and impacting lives.

Timeline

2006.

- Creation of Team 2080

2007.

- Rookie Year
- Attended Bayou Regional

2008.

- Attended Bayou Regional and Peachtree Regional
- Bayou Regional
 - Semi-finalist

2009.

- Attended Bayou Regional
 - Judges Award Recipient and Regional Finalist

2010.

- Attended Bayou Regional and Dallas Regional
- Bayou Regional
 - Finalist & Motorola Quality Award winner
- Dallas Regional
 - Semi-finalist

2011.

- Attended Bayou Regional and FIRST World Championship
- Bayou Regional
 - Quarter-Finalist & Entrepreneurship Award Recipient

2012.

- Attended Bayou Regional & Alamo Regional
- Bayou Regional
 - Spirit Award
- Alamo Regional
 - Quarter Finalist & Entrepreneurship Award Recipient

2013.

- Attended Bayou Regional & Razorback Regionals, & FIRST World Championship
- Bayou Regional
 - Gracious Professionalism Safety Hard Hat Award Recipient
- Razorback Regional
 - Regional Chairman's Award Recipient
- Red Stick Rumble Off-season Competition

2014.

- Attended Bayou Regional, Orlando Regional, & FIRST World Championship
- Bayou Regional
 - Regional Chairman's Award Recipient, Safety Hard Hat Award, & Quarter-finalist

2015.

- Attended Bayou Regional & Georgia Southern Classic
- Bayou Regional
 - Semi-finalist and Gracious Professionalism Award Winner
- Georgia Southern Classic
 - Quarter-finalist and Gracious Professionalism Award Winner

2016.

- Attended Bayou Regional, Lone Star Regional, FIRST World Championship, & Red Stick Rumble
- Bayou Regional
 - Semi-finalist and Regional Chairman's Award Winner
- Lone Star Regional
 - Quarter-finalist
- Red Stick Rumble Off-Season Event
 - Finalist

2017.

- Attended Bayou Regional, Rock City Regional, Beach Bot Battle & Red Stick Rumble
- Bayou Regional
 - Quarter-finalist, Safety Star Award, and Finalist for UL Hard Hat Safety Award
- Rock City Regional
 - Quarter-finalist and Alliance Captain
- Beach Bot Battle Off-Season Event
 - Semi-finalist
- Red Stick Rumble Off-Season Event
 - Quarter-finalist

2018.

- Attended Rock City Regional, Bayou Regional, & FIRST World Championship-Houston
- Bayou Regional
 - Quarter-finalist, Safety Star Award Finalist for the UL Hard Hat Safety Award, and Regional Chairman's Award Winner

Program Summary

2006

- Creation of FRC team 2080

2006 - 2007 Season

- Rookie Season: FRC game “Rack n’ Roll”

2007 - 2008 Season

- Established a framework for team organization
- Expanded knowledge base in the areas of build, business, scouting, safety, etc.

2008 - 2009 Season

- Hosted school robot demonstrations for area schools throughout the parish
- Created a professional portfolio
- Developed a series of technical trainings for all those interested in different aspects of engineering

2009 - 2010 Season

- Established our first X-treme Science Summer Camp reaching out to area youth ages 6 – 13 years-old
- Showcased our robot to local high schools throughout our region
- Hosted a field trip series for local elementary schools
- Partnered with North Oaks Hospital (Created naming contest for their da Vinci surgical robot)

2010 - 2011 Season

- Renovated a school workshop into our current engineering workshop
- Created FLL Team Bayou Builders through partnership with the Louisiana Children’s Discovery Center
- Hosted our 2nd annual X-treme Science Summer Camp
- Established our school’s 4-year engineering program and curriculum at HHMS

2011 - 2012 Season

- Jump started the 4-H robotics curriculum in elementary schools throughout Tangipahoa parish. Held a STEM workshop at HHMS for all 4-H clubs in the parish.
- Established our Santa’s Science Workshop Day Camp for youth ages 6 – 12 years-old over the winter break.
- Added a second camp to our X-treme Science Summer Camp series
- Created an after school robotics program at Hammond Westside Montessori School.
- Established team training seminars on safety and skill-building topics.

2012 - 2013 Season

- Established Flat Stanley program where we were able to reach out to over 1,200 kids worldwide. Experienced the most success in correspondence with schools in China.
- Added two more camps to our X-treme Science Summer Camp series including a LEGO Mindstorms Camp to prepare kids for participation on local FLL teams.
- Created a VEX team for our sophomores and juniors.

2013 - 2014 Season

- Hosted the 2014 Curtis Craig Jump Start Build which included 10 rookie teams at our facility on the 2nd Saturday of build season. These rookie teams left with a wealth of information, an electronics board, and a driving chassis. They also sat in on a pneumatics seminar we hosted.
- Provided a robot demonstration at Hammond's annual Starry November Nights.
- Established a field trip series for local elementary schools
- Created an FLL and a FTC team in Albania with the help of a former team member who moved to that area.
- Added an extra day to our summer and winter camps we host.

2014 - 2015 Season

- Partnered with local airport to participate in Student Organization of Aeronautics and Robotics Research (S.O.A.R.R) where students practiced with RC airplanes and flight simulation.
- Added more local elementary schools to our field trip series.
- Created two FTC teams within our engineering program to meet after school (FTC #8647 and FTC #9661)
- Provided a robot demonstration at a conference held at the New Orleans Science & Technology School.
- Hosted our first community-wide robot reveal showcasing FRC, FTC and FLL teams.
- Served as robot game referees at the 3rd annual WWII museum robotics competition.
- An additional engineering teacher was added in response to the high demand for engineering classes at HHMS
- The team entered a major transition phase due to the changing of lead mentorship from our founding mentor to an interim mentor.

2015 - 2016 Season

- Continued our X-treme Summer Science Camps for youth ages 6-13 years old.
- Provided robot demonstrations at Starry November Nights.
- We continued providing science expos and robot demonstrations for our school and other area schools.
- The team's transition period was extended as the lead mentorship of the team again changed hands at the end of the season with the intro current mentor who is also now in charge of our engineering program at HHMS.

2016 - 2017 Season

- Facilitated two annual X-treme Science Summer Camps
- In response to the first floor of our school flooding during a major storm at the beginning of the school year, the team worked to repair classroom furniture and salvaged wood for future projects. Several team members also volunteered during this time to help with flood clean-up to homes and businesses throughout our community.
- Welcomed our third lead mentor in three years, extending our transition period
- Autodesk Inventor Certification was added to our engineering curriculum
- Hosted the Caine's Arcade Challenge at the Hammond Public Library (1,000+ attended)
- Hosted and organized Triple Robot Reveal for sponsors and community members
 - ❖ Showcased local FIRST programs encompassing FRC, FTC, and FLL teams
 - ❖ Attracted attendants such as local business leaders, local and parish government, local media, and community members
 - ❖ Showcased student Autodesk Inventor projects and engineering technology with our 3-D printer, MakerBot Replicator 2
- Our mentors and members participated in the launch of the Tangi STEM Coalition and were invited to become founding members
- Hosted field trips for elementary and middle school students in our region
- Participated in the Hammond High Magnet School Homecoming Parade
- Provided a robot demonstration at the Girl Scouts' B.I.G. Event at SLU and was tasked with educating participants on how to start FLL teams
- Provided a robotics demo & mini-build for area youth at Starry November Night.
- Assisted FLL team Bayou Builders with the facilitation of ten different engineering challenges as part of their annual Family LEGO Night at the Louisiana Children's Discovery Center.
- Worked with the FTC and FLL teams that we mentor to provide a FIRST robotics demonstration at Bayou Regionals.

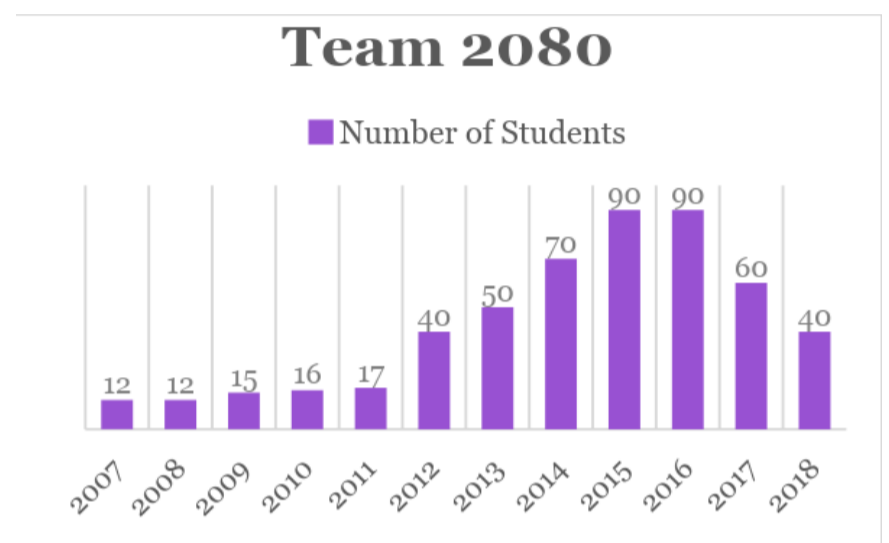
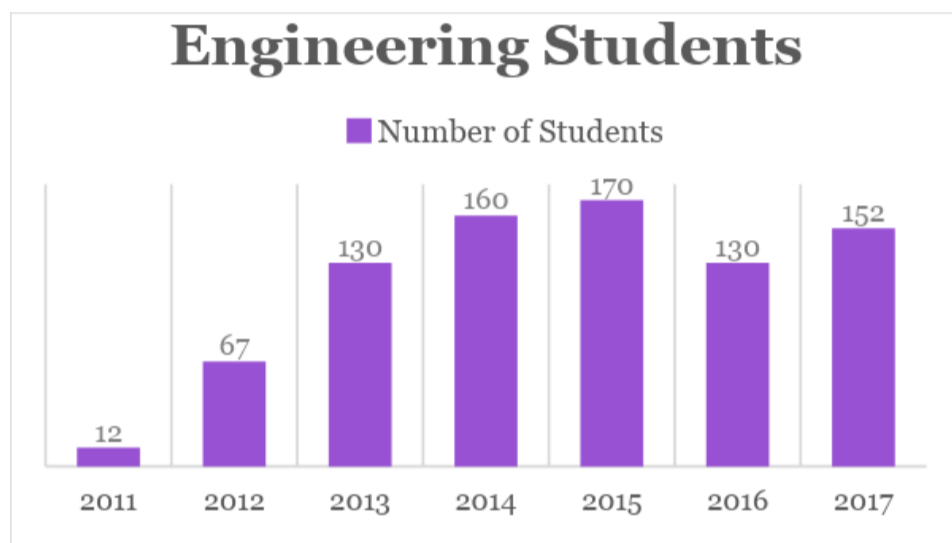
2017 - 2018 Season

- Several of our team members assisted with the organization and facilitation of a "Women in STEM" event hosted by FRC Team 1912 Combustion. (137 in attendance)
- Team members served as greeters and ran the Information Booth in the Olympic Village at the State Special Olympics held at Southeastern Louisiana University. A safety demo was also provided using our safety mascot, Torbo. (650+ in attendance)
- Team members collaborated with Greenville Park Leadership Academy to provide activities for their end of year STEM Fest at their school. (75+ in attendance)
- Volunteered at the first annual Festival de Robotique at State Capitol to speak with state government officials about personal gains associated with FIRST participation. Spoke in support support of a Senate Bill to establish a state advisory board (900+ in attendance)
- Designed and implemented all elementary STEM activities for four STEM Cafés sponsored by the Tangi STEM Coalition (500+ in attendance)
- Hosted a booth and showcased FTC robots at the Science EXPLO in the Hammond Public Library (500+ in attendance)

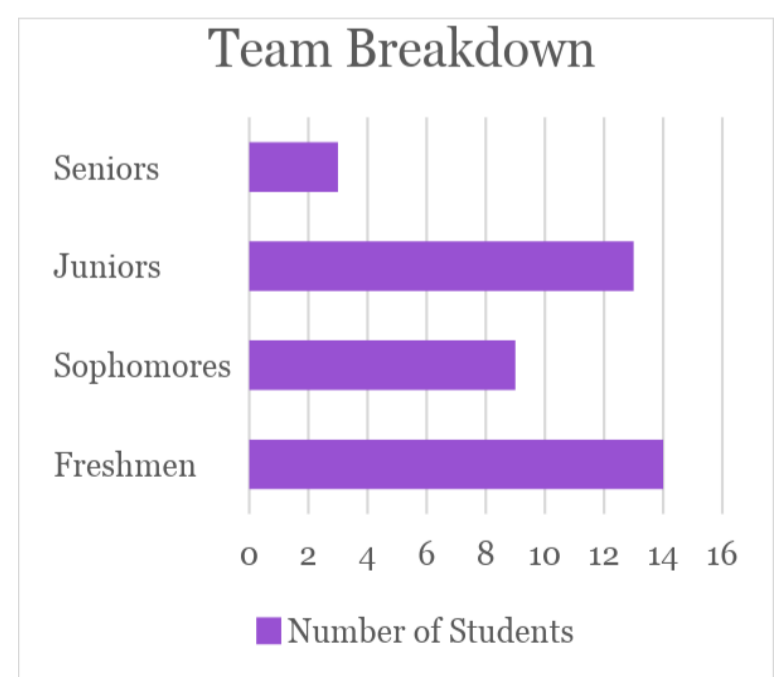
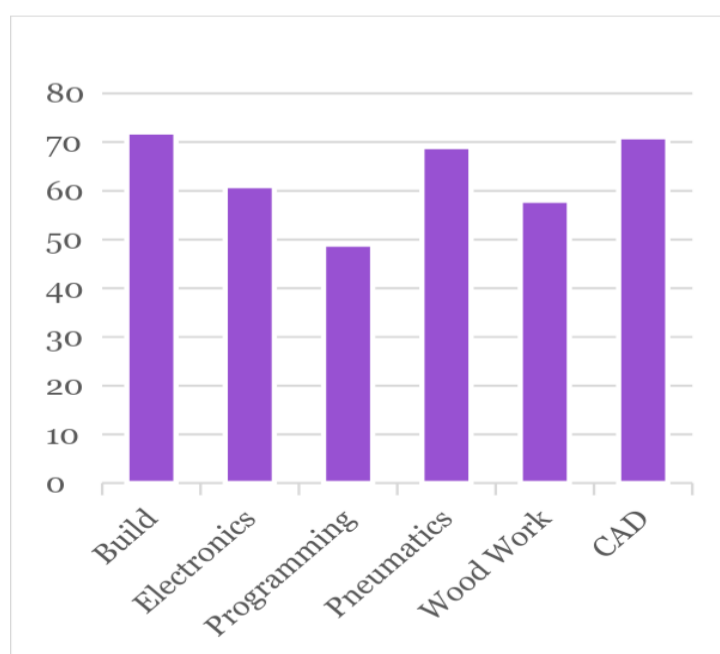
- Our mentors and members continued to attend monthly meetings for the Tangi STEM Coalition and serve on the Executive Board
- Facilitated two annual X-treme Science Summer Camps (72 in attendance)
- Designed and facilitated a project-based STEM activity at Greenville Park Leadership Academy family STEM Day (300+ in attendance)
- Hosted a FLL 2017 Season Jump Start for veteran and rookie teams. (13 teams participated totaling 158 attendees)
- Hosted a 2017 FTC Kick-off for teams in Tangipahoa Parish (4 teams participated with 31 attendees) Invited local educators interested in creating teams next season
- Hosted the FTC Baton Rouge Regional Qualifier Competition (17 teams attended with 250+ attendees)
- Created and mentored 6 rookie FLL Jr. teams (impacting 36 students)
 - ❖ Team QUEST
 - ❖ Imagineers
 - ❖ OMS Aqua Builders
 - ❖ OMS Evaporators
 - ❖ OMS Tidal Waves
 - ❖ OMS Water Robots
- Took on mentorship of an additional FTC team (FTC Event Horizon), providing technical support and practice field space, as needed. (impacting 6 students)
- Established and provided support to a rookie FLL team at Ponchatoula Jr. High (impacting 10 students)
- Provided ongoing mentorship of FLL teams in our region (impacting 30+ students)
 - i. Bayou Builders
 - ii. Hammond Eastside MiniTors
 - iii. Trafton Academy
 - iv. Westside Whirlbots
- Highlighted our engineering program and robot at our school's biannual showcases and Open House to recruit new members (1,500+ in attendance)
- Pitched our #putSTEMFIRST campaign and business plan to area civic organizations and the Tangi STEM Coalition. Gained the support of the STEM Coordinator of the Tangipahoa Parish School Board to pursue the creation of a FIRST robotics team in every school in our parish during the upcoming season.
- Participated in Greenville Park Leadership Academy's 2018 STEM Festival.

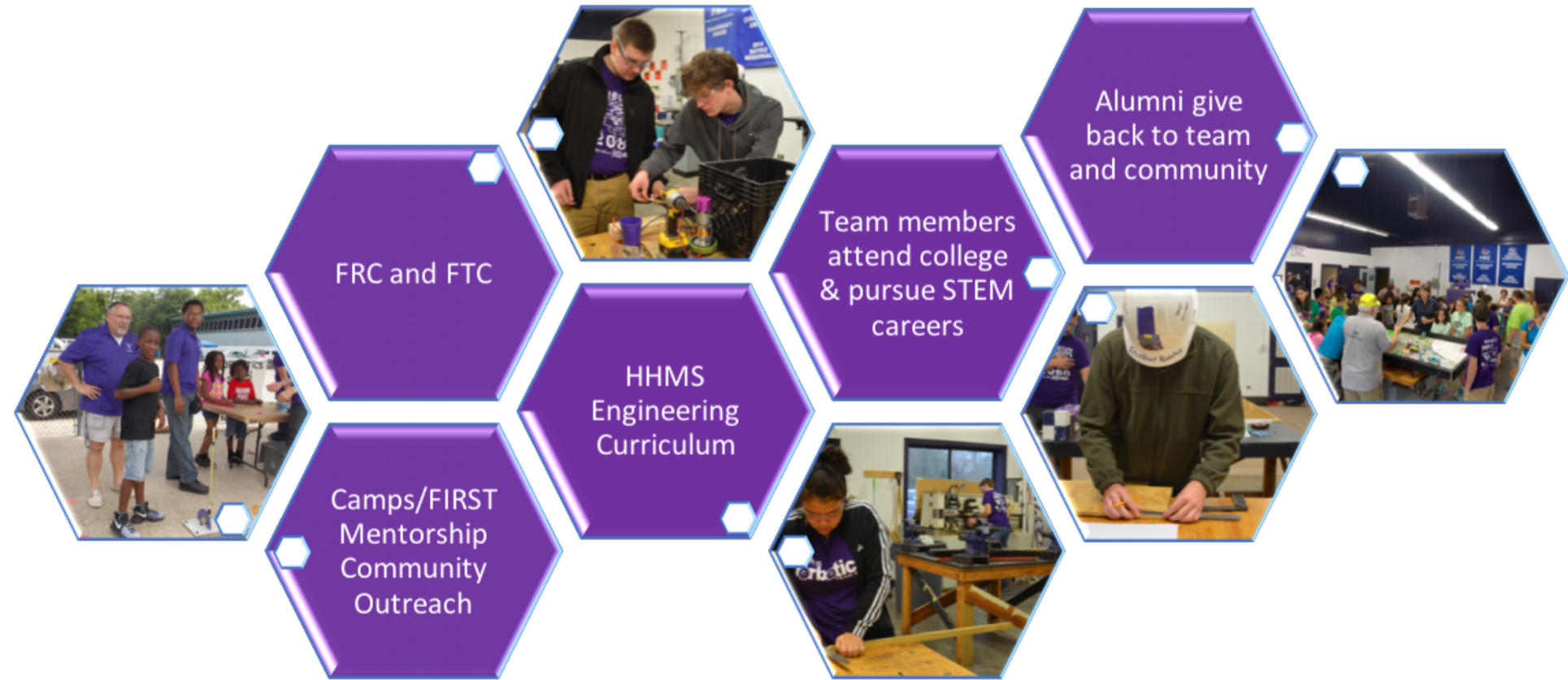
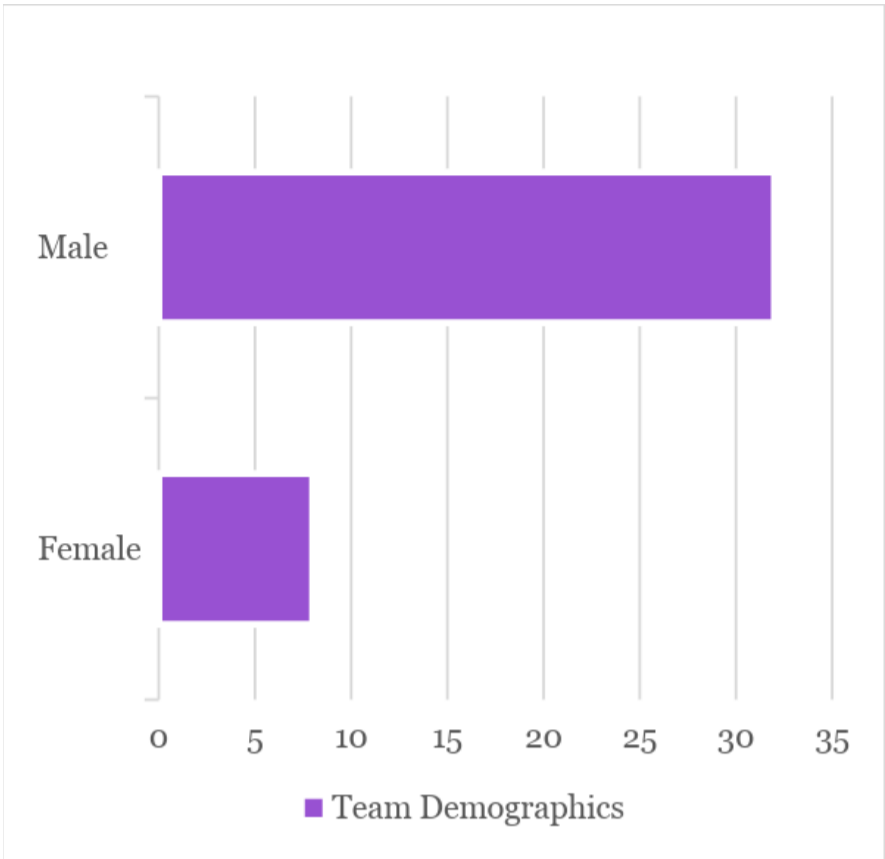
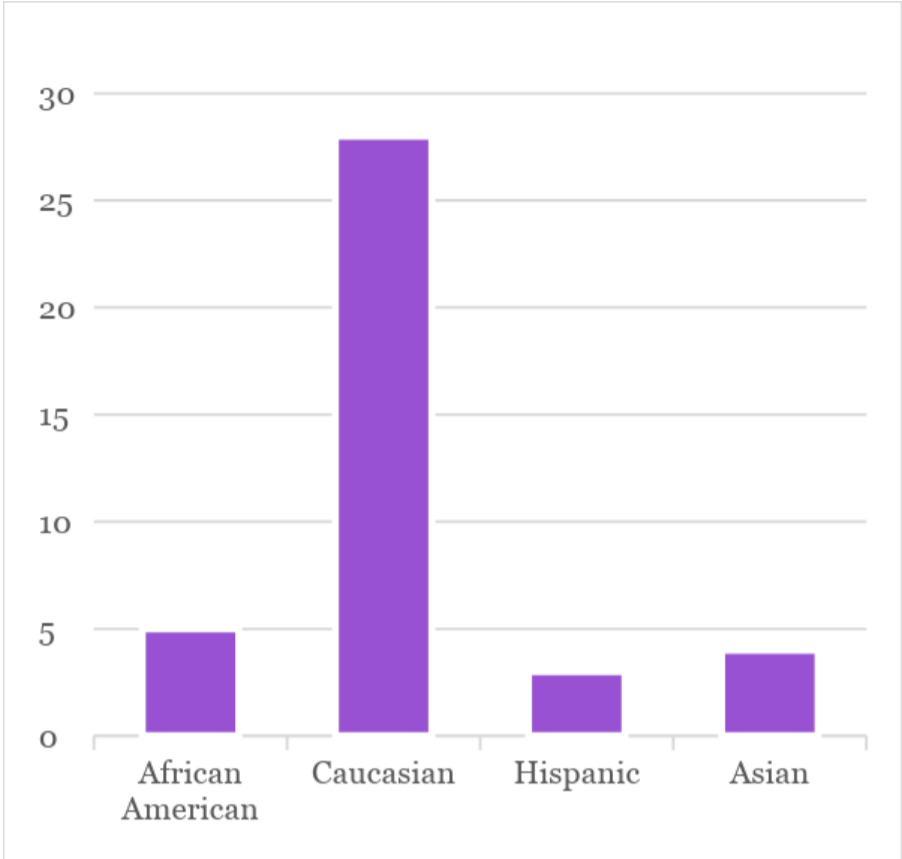
Team Growth

Over the past 12 years our program has expanded from a single after school engineering class to a four-year engineering curriculum. While our number of engineering students and team members were on a steady rise, we entered into a period of instability at the end of the 2015 season, when our founding lead mentor, Shelly Gaydos, was promoted to vice principal of our school. This has resulted in a brief dip in our senior leadership due to the instability created in having 3 different lead mentors over four years. Recovery is evident, however, under current lead mentorship and the larger number of underclass students currently participating.



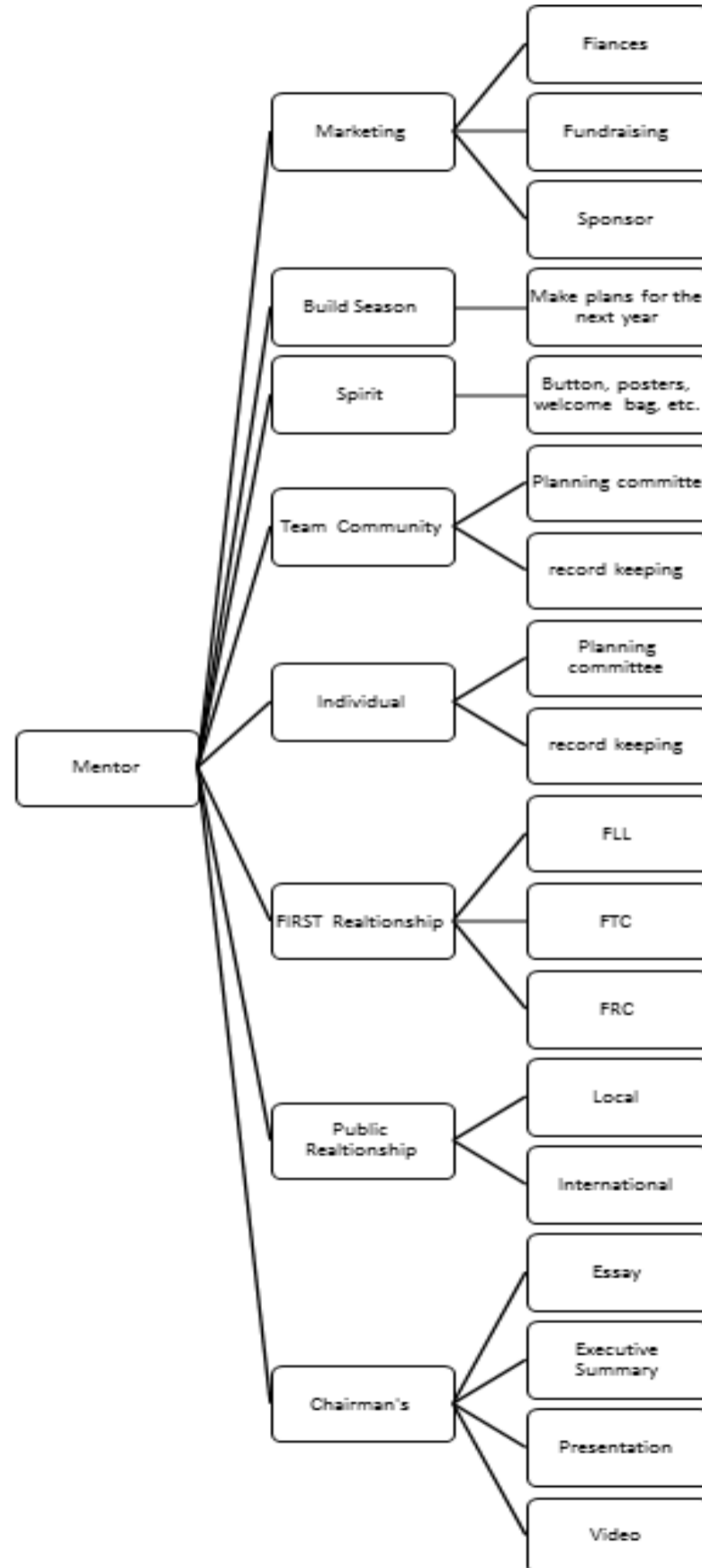
The success of our engineering curriculum and our International Baccalaureate Career Path curriculum has significantly boosted our student count (“Engineering Students”). For example, our students currently enrolled in our program represent 71% of the school attendance zones in our parish, with 50% coming from outside of the HHMS attendance zone. Our 4-year curriculum is geared to expand on the interests and skill level of each student. Through FIRST mentorship we have also sustained an increase; 83% of our team transitioned to FRC from FIRST teams that we mentor. Five of our 10 leadership positions have previous FLL experience.



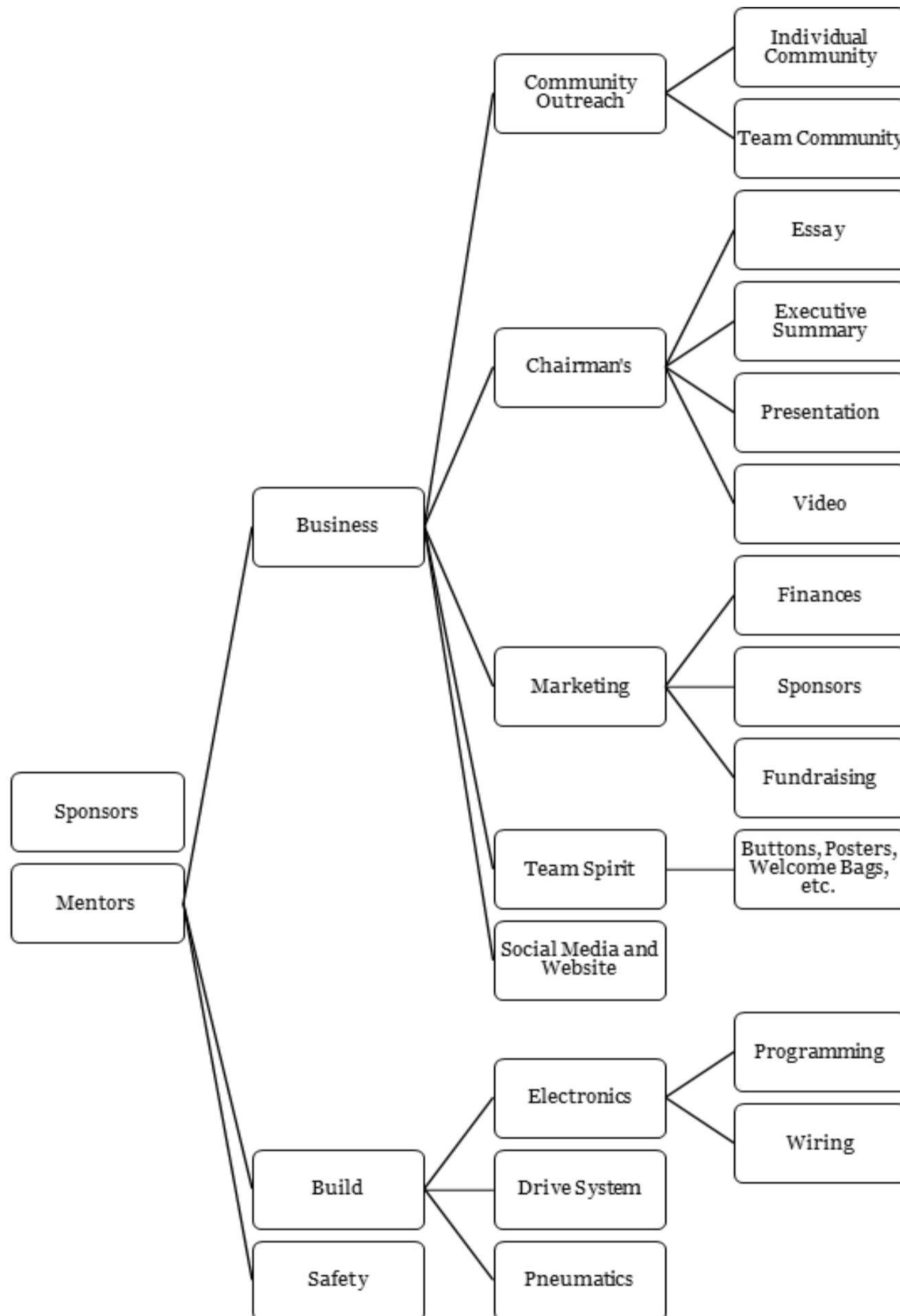


Team Structure

Off-season Groups: During the off-season, our team members are able to cross-train to learn different areas involved in the construction of our team. A different area captain is selected for each meeting to provide training on a particular area (Ex: soldering, gear ratio, programming, business etc.) We divide into groups to plan for the upcoming season and put a lot of focus on team building and community outreach.



Build-season Groups: Our team divides into 3 main components during the 6-week build season. From there our team breaks down further into subgroups where we have a supervisor and an understudy to ensure a transfer of skills and in case the supervisor is unable to attend a competition. Our team members, however, do not stay in inflexible groups. We are also able to fluctuate to do the task that needs to be accomplished.



Team Planning

- May
 - Conduct a season-wide After Action Report to use in developing future team goals.
 - Review Team Handbook & Membership Application documents and begin application process for leadership.
 - Develop initial budget for the new season & prepare for off-season cross-training.
- June
 - New Member Welcome meeting complete with training on the team's operation and safety.
 - Facilitate summer camps and implement off-season cross-training series.
- July
 - Off-season competitions to introduce new members to the event process and allow others to participate.
 - Run additional summer camps & continue cross-training certifications.
- August
 - Recruit new members and ensure renewal of OSHA and First Aid training for all team members.
 - Organize and host a FLL season Jump Start for both rookie and veteran teams and return to mentoring these teams.
- September
 - Organize and host a FTC season Kick-off for area teams and return to mentoring local teams.
 - Continue with community outreach initiatives and off-season training.
- October
 - Host annual STEM Smash and Bash for our region. Submit chairman's documentation.
 - Continue with FLLJr, FLL and FTC mentorship, community outreach and training
- November
 - Continue with FLLJr, FLL and FTC mentorship, community outreach and training host a FLL 20158.
 - Begin participating in local farmer's market to showcase and sell custom-made items from the shop.
- December
 - Continue with FLLJr, FLL and FTC mentorship, community outreach and training.
 - Host a FTC Regional Qualifier and FLLJr Expo for our area. Plan for upcoming build season
- January
 - Participate in FRC Kick-off
 - Implement Build Team Structure and begin work on the new competition robot.
- February
 - Submit Chairman's documentation, complete the robot and submit a plan for safety
- March & April
 - Competition & community outreach efforts & continue FIRST mentorship and community outreach.

Throughout the year we contribute to our community by facilitating outreach and community events, both individually and as a team.



Community Outreach

Torbotics is dedicated to helping our community and spreading the goals of FIRST while sparking interest in the STEM fields. Annually, we participate in approximately 20 community events to engage the public and inspire students of all ages to view themselves as competent innovators. We are committed to creating and mentoring additional FIRST teams in our area. This year we created 6 FIRST LEGO League Junior teams (FLLJR), an additional FIRST Lego League team (FLL), and FIRST Tech Challenge team (FTC). This brings our current FIRST mentorship total to 6 FLLJr, 4 FLL, and 4 FTC. As Executive Board Members of the Tangi STEM Coalition, we have played a key role this year in providing a series of STEM Cafes throughout our parish, in addition to providing robot demonstrations at the Hammond Library, various downtown events and school field trips. Our annual X-treme Science Summer Camp is one of our main fundraisers. The camp is dedicated to inspiring the children in our community and educating them about STEM, FIRST, and Torbotics. This year we will partner with NASA to provide AstroCamp in line with the new FLL season.



Schools

Torbotics has influenced the schools in our community in many ways. Prior to its inception, an emphasis placed on STEM fields was uncommon, at best. Since that time, we now have 3 STEM magnet schools in our district and a 4-year engineering program. Freshmen begin with Intro to Engineering, where they learn FIRST ideals and how to build Lego Mindstorm robots. Students then progress sophomore year to Engineering I. At this level, students are taught more about STEM and FIRST, being grouped into teams to build robots to experiment with the new FTC field. If interested, students can also join one of our afterschool FTC teams. Team members apply these skills their junior and senior year when they take part in FRC during the Engineering II and Robotics classes. The program continues to grow by joining forces with the International Baccalaureate Program to create a Career Path. The CP Program includes a tailored engineering curriculum, accelerated STEM IB, and requires completion of a Reflective Project, and a community service project.

Campaign

Put STEM FIRST: #WeAreSTEM captures our core belief in the importance of STEM in our community's future. This phrase contains the essence of our goal, to inspire and connect with youth in underrepresented and rural areas thru offering STEM experiences and gaining support for quality STEM education. Our goal is to create a FIRST robotics team in all schools in our parish, with emphasis placed on increasing female and minority participation. #WeAreSTEM is launched on all of Team 2080's social media. This campaign is an important part of our team. It's our new way to spread the word of FIRST and gain attention to STEM.

Risk Analysis

2018 Risk Assessment Matrix and Analysis

RISK	RISK SEVERITY	RISK LIKELIHOOD	RISK LEVEL	PROJECT PHASE	PARTY RESPONSIBLE
Diversification of funding sources.	INTOLERABLE	PROBABLE	EXTREME	PLANNING	Business Team & Mentors
Diversification of team composition.	UNDESIRABLE	PROBABLE	EXTREME	CONSTRUCTION	All Team Members
Actively engaged professional and student mentors.	UNDESIRABLE	PROBABLE	HIGH	FINAL DECISION	Both Lead Mentors
Prevention of workshop or pit injury.	INTOLERABLE	POSSIBLE	EXTREME	FINAL DECISION	Safety Captain & Team Members
Diversification of individual team member's planning, engineering and business skills.	UNDESIRABLE	PROBABLE	HIGH	CONSTRUCTION	Division Captains & Mentors
Potentially low FRC off-season participation	UNDESIRABLE	POSSIBLE	MEDIUM	PLANNING	All Team Members
Need for community outreach and support outweighing team member & lead mentor availability.	UNDESIRABLE	POSSIBLE	MEDIUM	PLANNING	All Team Members
Knowledge not being transferred from veteran to rookie team members.	INTOLERABLE	POSSIBLE	HIGH	CONSTRUCTION	Division Captains & Mentors
Not having needed building supplies when needed and then the supplies needed being out of stock.	UNDESIRABLE	POSSIBLE	MEDIUM	ENGINEERING	Division Captains & Mentors
Not packing all necessary items for competition travel.	INTOLERABLE	POSSIBLE	HIGH	FINAL DECISION	Division Captains

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RISK	PLAN	RESPONSIBLE PARTY
Diversification of funding sources	<ol style="list-style-type: none"> 1. Reach out to former sponsors to cultivate a new connection and update them on team progress and current initiatives. 2. Invite former and current sponsors to the 2018 Robot Reveal and a special banquet at the end of the season. 3. Meet with Hammond Chamber of Commerce to discuss possibilities for diversification of funding sources throughout the city of Hammond and the parish as a whole. 4. Pick a series of days to stop by downtown Hammond and make personal appearances at local businesses. Share flyers with upcoming events, brochures and business cards. Provide Sponsorship Packets, as needed. 5. Look for different local and national grants and apply. 	<p>Business Team, Lead 1 & 2 Mentors</p> <p>All Team Members</p> <p>Business Team & Lead 2 Mentor</p> <p>Business Team</p> <p>Business Team & Mentors</p>

RISK	PLAN	RESPONSIBLE PARTY
<p>Diversification of team composition</p> <ul style="list-style-type: none"> • It is recognized that by the time a student reaches high school age, he or she is less likely to take risks in areas where the student does not feel confident if they have not had exposure to it as something desirable in earlier years. 	<ol style="list-style-type: none"> 1. Partner with after school programs in Independence, Amite & Kentwood to start satellite FTC teams. Partner with local church groups in each area to help with transporting students to the shop at least once a month. (Plans are already in place to partner with SMART Kids STEM & Literacy program in Independence) 2. Present our business and strategic plan to the Tangi STEM Council & STEM Coordinator for Tangipahoa Parish Public Schools. The goal is to get an 	<p>All interested team members & Lead 2 Mentor</p> <p>Business Team & Lead 1 & 2 Mentors</p>

	<p>FLL and/or FTC team in every school in the parish.</p> <ol style="list-style-type: none"> 3. Meet with the Tangipahoa Parish Schools Superintendent & School Board to pitch our desire to start a FIRST team in each school. 4. Develop funding sources these FIRST teams; especially those in the rural regions of our parish. 5. Develop a training series for all new FLL and FTC teams in our parish. Focus on a having a separate training and support group for new coaches. 6. Host our second annual FLL Season Jump Start. 7. Continue participation in the Tangi STEM Coalition and STEM outreach events sponsored through the council. 8. Develop a series of “Tangi STEM Stars” newsletters that will be emailed for teachers to share with students at all schools in our parish. The newsletter will highlight students throughout the parish who have participated in a recent STEM event. There will also be a local STEM professional interviewed and highlighted each month in addition to a fun STEM fact. 9. Partner with our area K-8 public and charter schools to see if they would like to start they have any students that they would like to nominate to join one of our community-based FIRST teams. 10. Collaborate with our local Office of Community Service and area group homes to start a FLL team specifically for children in foster care. Look into providing similar opportunities for children with developmental challenges. 	<p>Business Team</p> <p>Business Team & Mentors</p> <p>Any interested team members</p> <p>All interested team members with the support of the Bayou Builders</p> <p>All available team members</p> <p>Lauren has developed this and gotten it approved by the Tangi STEM Coalition and the STEM Coordinator for Tangi Public Schools. Any interested team members will assist her.</p> <p>Aaron has initiated this and will receive follow up from Lead Mentors and any interested team members.</p> <p>Aaron has initiated this and will receive follow up from Lead Mentors and any interested team members.</p>
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RISK	PLAN	RESPONSIBLE PARTY
<p>Actively Engaged Professional & Student Mentors</p> <ul style="list-style-type: none"> The team has had 3 different Lead 1 Mentors over the past four years. The team has had 4 different Lead 2 Mentors over the past four years with the most recent change occurring during the 2018 build season when one of our community mentors had to step in and become the Lead 2 Mentor. All of our current technical mentors are employees of Intralox. All travel quite a bit and give us as much time as they can dependent on their schedules. 	<ol style="list-style-type: none"> Work with our team families to provide our technical mentors with notes of appreciation each season to be presented to them at the end of season banquet. Send a special thank you to Intralox for supporting their employees who mentor for us. As part of our financial diversification plan, also tease out anyone who may prefer or be interested in serving as a technical mentor (ex: a media specialist, a business analysis, an engineer, anyone with an interest) and invite them to the shop to meet the rest of the team and see what we do. Continue to be active members of the Tangi STEM Coalition to make needed connections with individuals interested in promoting STEM education and experiences throughout our parish. We are organizing the Tangi STEM Coalitions first annual large STEM event this year. We are planning to engage the professional and collegiate communities from our region in creating large scale catapults to compete in a pumpkin chunkin contest. We partnered with the engineering department at Southeastern Louisiana University to have mentorship of our program incorporated 	<p>All interested team members & families, Lead Mentors</p> <p>Business Team & Lead Mentors</p> <p>Lead Mentors & any interested team members</p> <p>Lead Mentors & any interested team members</p> <p>Lead Mentors</p>

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	into their curriculum. This will start in the 2018 fall semester.	
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RISK	PLAN	RESPONSIBLE PARTY
Workshop or Pit Injury	<ol style="list-style-type: none"> 1. Developing a culture of safety is a top priority of the team. This includes not only safe practices but an attitude and commitment to safety and watching out for each other. 2. Coordinating with Division Captains to have them develop a training for the entire team on a particular aspect of what they do or a tool that they use that can be a safety hazard. 3. Develop ongoing trainings based on safety trends and information gained during the routine inspection of the shop. 4. Coordinate with someone certified in First Aid to come in and do a training for us prior to our first round of 2018 summer camps. (Goal is to have majority of team members & mentors First Aid certified.) 5. Review the need for any updates to the team's Safety Plan at least twice annually (once at the end of the season and again just prior to the next build season). 6. Develop a comprehensive travel team training to include multiple levels of safety at events to include interpersonal relationships. 7. Maintain a fully stocked Safety Station. 	<p>All team members & Mentors</p> <p>Safety Captain & Division Captains</p> <p>Safety Captain & Safety Co-Captain</p> <p>Safety Captain</p> <p>Safety Captain, Safety Co-Captains & Mentors</p> <p>Safety Captain, Safety Co-Captains & Mentors</p> <p>Safety Captain, Safety Co-Captains & Mentors</p>

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	8. Develop Safety Cards for each travel team member to include emergency contact numbers & allergies.	Safety Captains & Business Team
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RISK	PLAN	RESPONSIBLE PARTY
Diversification of individual team member's planning, engineering, and business skills.	1. We are developing a series of trainings to occur at least one day during each 2018 summer camp scheduled. These trainings will include bringing in professionals to talk with us and demonstrate different build, electrical and business techniques and practices.	Division Captains, Lead Mentors
	2. We will continue with our job shadowing initiative started during the 2017-2018 season in which freshmen and sophomores were assigned to a more experienced team member to learn more about specific roles on the team.	All Team Members
	3. Cross-training will continue throughout the fall semester. Depending on feedback received over the summer, we will develop a similar training series where we bring in professionals to assist us in the fall.	Division Captains & Lead Mentors

RISK	PLAN	RESPONSIBLE PARTY
Potentially Low FRC Off-Season Participation	1. We will have more opportunities for team members to be engaged over the off-season with moving our FLL & FLL Jr outreach/mentorship programs to the shop.	Lead Mentors & any interested team member
	2. Team members will be trained	Lead Mentors

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	<p>in how to work with these community teams.</p> <p>3. We plan to increase participation by offering the additional cross-training opportunities over the summer.</p>	Division Captains & Lead Mentors
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RISK	PLAN	RESPONSIBLE PARTY
Need for community outreach and support outweighing team member and lead mentor availability.	<ol style="list-style-type: none"> 1. At the beginning of each season, we will sit down as a team and plan how to address the community outreach need. 2. Develop an incentive program to increase team member participation at events. 3. Develop a team transportation list to help younger team members get rides to events. 	<p>All team members & mentors</p> <p>All team members & Lead Mentors</p> <p>All team members</p>

RISK	PLAN	RESPONSIBLE PARTY
Knowledge not being transferred from veteran to rookie team members.	<ol style="list-style-type: none"> 1. We are developing a series of trainings to occur at least one day during each 2018 summer camp scheduled. These trainings will include bringing in professionals to talk with us and demonstrate different build, electrical and business techniques and practices. 2. We will continue with our job shadowing initiative started during the 2017-2018 season in which freshmen and sophomores were assigned to a more experienced team member to learn more about specific roles on the team. 3. Cross-training will continue throughout the fall semester. Depending on feedback 	<p>Division Captains & Lead Mentors</p> <p>All team members</p> <p>Division Captains & Lead Mentors</p>

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	received over the summer, we will develop a similar training series where we bring in professionals to assist us in the fall.	
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RISK	PLAN	RESPONSIBLE PARTY
Not having needed building supplies when needed and them being out of stock.	<ol style="list-style-type: none"> 1. A parts reporting procedure will be developed and put into place prior to the next build season that will help with identification of parts we are low in and in developing the Cost Accounting Worksheet. 2. At least once a week, Division Captains will need to report to Lead Mentors any supplies needed. 	<p>Any interested team members & Lead Mentors</p> <p>Once implemented, all team members will be held responsible.</p> <p>Division Captains</p>

RISK	PLAN	RESPONSIBLE PARTY
Not packing all necessary items for competition travel.	<ol style="list-style-type: none"> 1. Develop a comprehensive packing list (checklist) for each team division. Lead Mentors will check over the packing lists prior to load up for competition. 2. Each Division Captain is responsible for ensuring the initial packing of materials needed for his or her division. 3. Prior to loading materials onto the trailer, a member of another division will check through the materials of another area utilizing the checklist. This will also provide terminology cross-training. 4. A main list will be kept at event of items that were needed but not brought to ensure more efficient packing next time. 	<p>Division Captains & Lead Mentors</p> <p>Division Captains</p> <p>All team members</p> <p>Pit Crew at competitions & Lead Mentors (Travel team members during After Action Meeting)</p>

Risk Aversion/Future Planning

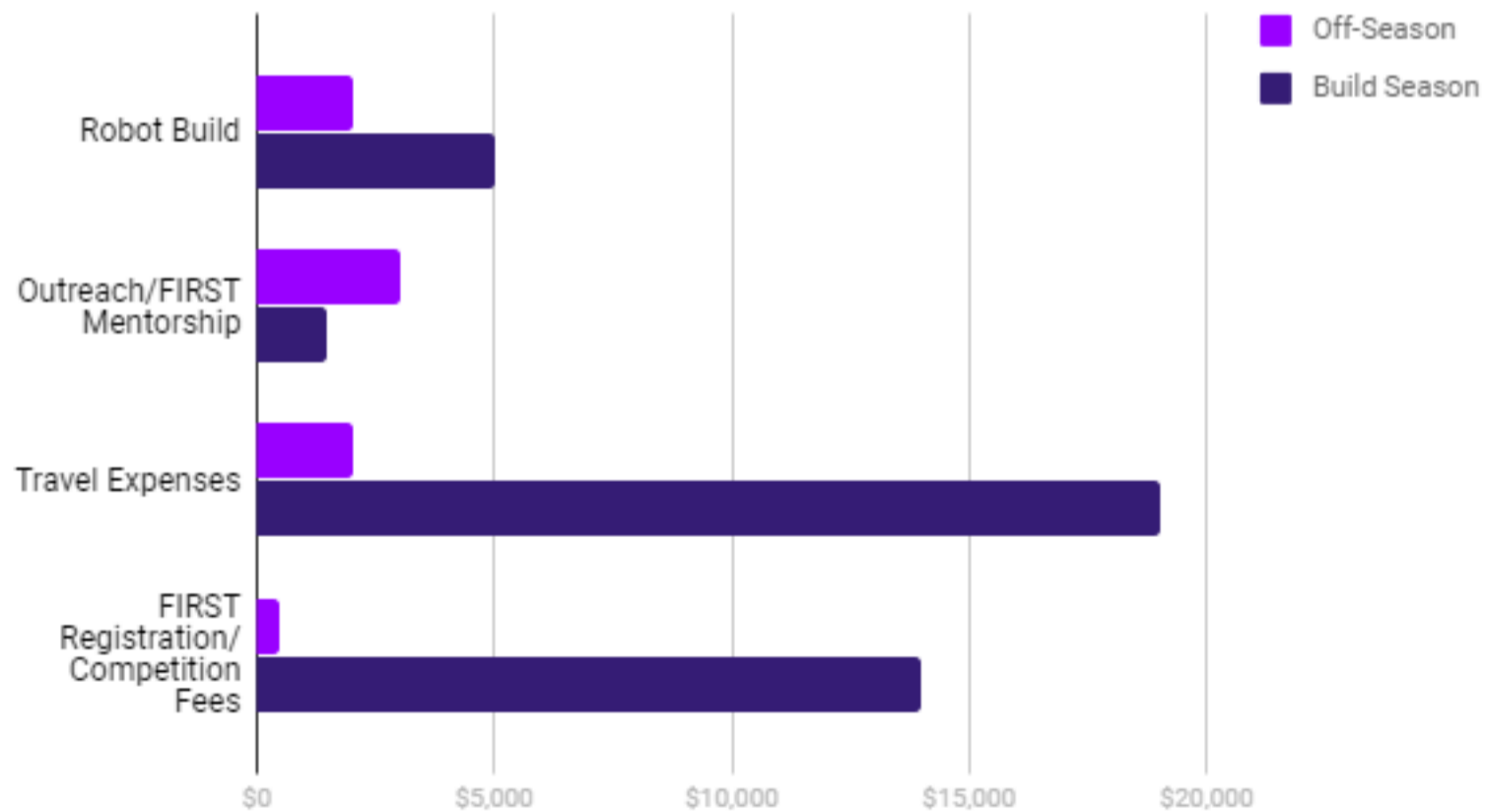
Over the next three years, Torbotics strives to serve as living proof of sustainability. This goal can be achieved by working toward making our team self-sufficient financially. In this time, Team 2080 will be working to engage all members of the team in the process of developing an invention. Such an experience would be optimal for employing the FIRST ideals into real life situations. Students would be a part of thinking of a creative solution to a problem, drafting ideas, prototyping, and potentially advancing into obtaining patents and marketing. If this product were to find a favorable market and generate profit, this could be a source of revenue that may eventually ease the team's dependence on sponsors to fund our participation. Also, plans are being made to raise funds in the off-season by using our resources to create products to sell to members of the community whilst educating our own students on how to build these products in the shop. With more revenue, it would be possible to not only improve our team but to also give back more to our community. Aside from this change, the goal is to maintain relationships with our sponsors and to put STEM FIRST, expanding the STEM curriculum into schools in our area . We have implemented FIRST into the middle and high school levels as well as after school for younger students, but it would be great to also bring STEM into our elementary schools so even more students may be reached.

Finances

2017-2018 Corporate Sponsor Listing

SPAWAR	Lockheed Martin
Intralox	Entergy
Shell: Laurie Guidroz	DOW
Intuitive Surgical	Modern Woodman Financial
Dan Wrinkles Plumbing	Raising Cane's
RDF	Pierce Aviation
Explore & Learn	First Guaranty Bank
FPB Financial	H. Rocker Electric
HYPE Robotics	Big Bad Ben Car Wash
Noland Stewart Salon	Due West Robotics
PAM Specialty Hospital	LaCaretta
Courtyard Cafe	Faust Construction

FRC Torbotics Projected Annual Budget



For More Info...

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