

## Chairman's Award - Team 2080

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2018 - Team 2080

### Team Number

2080

### Team Name, Corporate/University Sponsors

Intralox/Lockheed Martin/SPAWAR/Laurie Guidroz/Dan Wrinkles Plumbing/First Guaranty Bank/Intuitive Surgical Inc./Raising Cane's&Hammond High School

### Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years

For 12 years, a cornerstone of the Torbotics' experience has been to strengthen community awareness and interest in STEM through providing creative, innovative outreach programs for all youth, expanding our region's images of STEM. We average 17 outreach events per year impacting over 10,000 youth. Team 2080 is committed to making an impact on communities having documented over 3,325 service hours this season.

### Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years

We are a driving force for STEM and robotics throughout Tangipahoa parish, which is 50% rural, with 22% of youth pursuing STEM careers. In contrast, Torbotics has a 100% graduation rate with 95% moving on to STEM-related fields. Our engineering program represents 71% of the school districts in our parish. As students in our FLL and FLLJr outreach move on to high school, over 85% come to Hammond High Magnet School to become a part of Torbotics and our four-year engineering program.

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

Put STEM FIRST: #WeAreSTEM captures our belief that STEM exposure is important to our future. It is our effort to connect all youth with quality STEM experiences and FIRST initiatives in rural and impoverished areas. It promotes the message that quality STEM experiences are attainable, including meaningful connections with STEM professionals. #WeAreSTEM is launched on social media (facebook, Instagram, Snapchat and Twitter). It is part of our marketing materials and featured on local websites.

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

Torbotics is committed to creating possibilities for underserved communities, challenging perceptions of STEM in our area. We do this thru outreach events and serving as guest speakers. This season we facilitated outreach events at Greenville Park Leadership Academy, Hammond Eastside, Hammond Westside, Special Olympics, Hammond Library, Slidell Library, Girl Scouts, Tangi STEM Coalition, LA STEM Council, S.M.A.R.T. Kids, SeaPearch, Family LEGO Night, regional FTC Kick-off and FLL Jump Start.

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

Team 2080 is always looking for new ways to start and grow FRC teams. Previously we started Team 5169 Armadillos Robotics. We are currently assisting Due West Robotics in SC with planning implementation of their upcoming FRC team for the 2019 season. Business and sponsorship development and potential shop needs are the primary focus. We routinely serve as a resource to other school districts who are interested in developing engineering programs.

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

During the past 4 years, we have started and mentored 5 FLL teams (Bayou Builders, Mini Tors, Westside Whirlbots, Trafton Academy, and Cyber Gators). We have launched 6 FLL Jr teams - the first in our area and 4 FTC teams, one community-based. 8 of the 15 teams are rookies. In total, we have directly impacted 99 youth. We have plans to expand our FLL and FLL Jr outreach into 7 new schools next year. We will also launch remote FTC teams in August to connect with our rural communities.

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

The team volunteered at the LA FLL Jr Expo (144 impacted) and facilitated a FLL Jump Start (162 impacted) showcasing programming, build and connecting teams with professionals. We invite teams to tour our shop to learn more about FRC and to join us at events decide on FIRST progression. We met with members of Ragin Cajuns, Gator Bots, and Code Wizards who wanted to learn more on how to create their own FTC teams. As Bayou Builders' mentors, we provided Skype support for 67 teams worldwide.

**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)**

Team members actively mentor 6 FLL Jr teams, facilitating the weekly meetings of two community-based teams, deliver weekly mentorship of the FLL Bayou Builders, Trafton Academy and Cyber Gators along with ongoing support as requested for our other two teams, and provide ongoing direct mentorship of the 4 FTC teams that we serve. Since a few of these teams met during the summer and requested assistance, we have averaged 415 direct face-to-face service hours in mentorship just this season.

**Describe your Corporate/University Sponsors**

Sponsorship of Team 2080 is diverse including in-kind support and monetary donations. Over the past year, we have received sponsorship from HRocker, Intralox, Shell Oil Company, Wal-Mart, Pierce Aviation, SPAWAR, Solid Works, Cretin Homes, Entergy, Lockheed Martin, "K" Construction, Wrinkles Plumbing, Raising Cane's, Cate Street Seafood, and the Engineering Department at Southeastern Louisiana University (SLU). The team has also received support from HYPE Robotics and Due West Robotics.

**Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years**

We are midway thru a campaign to generate new sponsorship. Funds not required for operations will be used to supplement our outreach events, targeting underserved communities who require support. We believe it is important to have face to face contact to personalize our desire to highlight the importance of providing FIRST robotics and STEM. In addition to thank you letters, we invite sponsors to robot reveal and banquets, and showcase sponsorship on pit banners and robot stickers.

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

FIRST means For Inspiration and Recognition of Science and Technology. Scientists, engineers and innovators are our rock stars. Starting at age 6, students develop original builds with the notion it is okay to fail and gracious professionalism, perseverance and collaboration are the true prize. Through FIRST, students learn teamwork, technical skills and cooperation. FIRST inspires students to relate to STEM fields as something exciting and obtainable; to see themselves as innovators

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

Torbotics looks forward to evolution with each season. Our team was instrumental in the founding of the Tangi STEM Coalition and serve as executive board members. We have also started several new safety initiatives this season. For travel, team members wear IDs with medical and emergency contact information and a picture. There are additional logs kept in our Safety Binder and Travel Binder.

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

Maurice Watts

## Essay

A guiding principle underscoring the mission of Torbotics is that of a "constantly evolving family which seeks to cultivate and enhance members' passion for, and ability to address unforeseen STEM challenges, while infusing our enthusiasm and zeal into the community." At our core, we are devoted to providing unique STEM opportunities throughout the predominantly rural parishes of Tangipahoa, St. Helena, Washington and Livingston - inspiring youth to dream big and pursue ways to develop their creative and intellectual passions. We serve as role models and a launching point for STEM innovation throughout our region. Through "putting STEM FIRST," we strive to form lasting connections within our community to assist us in accomplishing our mission and the mission of FIRST.

### Putting STEM FIRST in Schools

Throughout the past 12 years, Torbotics has ignited a whirlwind of change within our school and school district, resulting in exponential growth of our team and vast impact of our programs. Initially housed in a single classroom, Team 2080 has transformed into a fully-functional engineering facility and computer lab, renovated by team members and community partners. From a single robotics class, a four-year Career Preparatory engineering curriculum has now been established at Hammond High Magnet School (HHMS). Currently our engineering program and team represent 71% of the school districts in our parish; with all reporting that participation in Torbotics was the primary motivating factor prompting them to travel out of district to attend high school. The team has a 100% graduation rate and 91% of these graduates go on to pursue careers in STEM-related fields.

Since the establishment of our four-year curriculum, modeled after FIRST, we have flourished into a highly respected team not only in our school but the community as well. The curriculum allows students to learn engineering principles while also applying what they are learning in physics, geometry and advanced math. It is unlike any other engineering program in our parish. Students get to witness STEM fields, tour local engineering facilities, and receive mentorship from local industry leaders and university professors. Throughout their high school career, our members learn valuable skill sets that will help them in future careers. From FIRST Core Values, to certifications in OSHA and Autodesk Inventor, and opportunities to gain practical skills in design, build and programming, team members are able to receive a broad understanding and competency in a variety of capacities.

### Putting STEM FIRST for Team Members

Torbotics is a special opportunity within Tangipahoa Parish. It's more than just a four-year engineering education, it endeavors to empower students. Participation gives students real experience in applying knowledge, testing theories, building on innovative ideas, all while developing successful communication and team building skills. It serves as a connection point between tech and engineering professionals, students, local schools and the community. Torbotics alumni often return to connect with the team after they graduate whether just to visit, volunteer, help with technical problems or provide financial support. 100% of all graduates are awarded some type of financial support upon graduation to further their education. One of our team members was recently named one of two Dean's List Finalists representing Louisiana FTC.

This season we implemented a team mentorship program whereby each division captain (i.e., programming, electrical, drive system, build, business, etc.) is assigned an understudy whose role it is to assist, learn and contribute. Division captains and technical mentors are also tasked with developing trainings to help team members cross-train. We have also implemented new safety initiatives this season.

### Putting STEM FIRST for Rural Communities

Torbotics provides experiences not often available in our rural area. As founding members of the Tangi STEM Council, the team is strategically aligned to assist in the pursuit of creating quality STEM education opportunities for all students. The team builds community awareness by promoting STEM events and programs in the greater Tangipahoa area, thru participating in the creation of community STEM events at low or no cost, building community-workforce relationships, and leveraging resources to support and expand our outreach. To this end, the team has been integral in developing a series of STEM Cafes that bring local STEM professionals into rural communities to meet in intimate groups with middle and high school students, while university leaders meet with parents to discuss methods for career prep and Torbotics provides experiential STEM activities for 1st through 6th graders. In follow-up surveys of families who recently participated in these events in some of the more rural communities of our parish, a universal theme was that of appreciation for helping provide young students with a way to "see themselves as successful STEM innovators," along with serving as "valued role models they aspire to one day become." Averaging over 100 families served with each event, one participant wrote, "Thank you for taking the time to put my child first and providing her with an obtainable image for what being involved with STEM could be for her." Torbotics aims to expose all youth to the possibility of seeing within themselves the opportunity for ingenuity within STEM. The team plans to expand this effort during the upcoming school year with the inception of satellite FTC teams, where youth who live in rural areas can join our team and participate in planning and build meetings via Skype, Twitch streaming and Slack, with area churches assisting with transportation once a month to complete in-person team meetings. Once we are able to show success and generate sustainable community interest, we plan to submit a proposal to our local school board and local businesses to provide small grants to schools to start their own FTC teams. Each summer Torbotics reaches out to connect schools interested in developing FLL teams with Friends of FIRST to get financial assistance in starting their team.

**Essay - page 2****Putting STEM FIRST in our Partnerships**

Torbotics strives to create lasting political and community partnerships throughout familiarizing these professionals with the FIRST ideals through presentations, robot demonstrations, personal tours, media coverage and interviews. Torbotics has hosted personal visits from the Mayor of Hammond, Hammond's Economic Development Board, Hammond City Council members, Tangipahoa Parish School Board members, local service organizations, Tangi STEM Council, several state representatives and our Parish President.

We have maintained a variety of in-kind and financial support this season. We maintain contact with our sponsors and other constituents via direct email, thank you letters, annual invitations to our robot reveal event, our website, and social media. We also provide demonstrations for sponsors to help generate business, and using the team as a recruiting tool for employers.

**Putting STEM FIRST to Inspire Youth**

Team 2080 wants to serve as a catalyst to promote the importance of investing in future generations. Over the past five years, our annual week-long summer science camps have been deemed a local favorite; often filling up quickly. Our camps are designed to provide a variety of experiences geared toward multiple age groups, with our youngest participating in activities such as rocket launching, designing rollers, rubber band tension cars and catapults, while the older students get to either build and program utilizing NXT Mindstorms or creating a basic Tetrax bot to control. We also collaborated with the Bayou Builders over the summer to develop a new camp focused on FLL Jr development and WeDo build and programming. We had families commute from as far away as New Orleans each day just to attend.

Torbotics is committed to developing and facilitating engaging opportunities for all youth to become inspired to pursue purposeful experimentation with STEM principles, while modeling FIRST values and gracious professionalism. The team typically averages facilitation of 17 outreach events each year totaling anywhere from 9,000-10,000 youth and families impacted. Such events can occur both in school and at other locations. The Louisiana STEM Council recently named Hammond High Magnet School and, specifically, Torbotics to spearhead the implementation of VEX Robotics teams in area schools who were recently awarded this grant. To this end, we will have to host at least one VEX Robotics Competition and one VEX IQ Challenge Event for area schools.

Team 2080 was able to assist in establishing six FLL Jr teams this season, the only FLL Jr teams currently within a 20-30 mile radius of our parish. We started a FLL team at Ponchatoula Jr High, while continuing to provide direct mentorship of four additional teams (Bayou Builders, Whirlwinds, Mini Tors and Team Name Not Found). We also continued to mentor four FTC teams including one community-based rookie team. Through providing technical support and mentorship to the Bayou Builders members of Torbotics have the ability to connect with up to 67 additional FLL teams worldwide to share programming support and team development while also learning about each other's cultures. We are on different message boards to provide feedback and advice for teams transitioning to FTC from FLL. This season we also facilitated our first FLL Season Jump Start reaching out to both rookie and veteran teams.

We believe that "putting STEM FIRST" is important to the future of our parish. With over 200,000 youth and families impacted over the past 12 years, we are building communities, impacting lives and changing the world. Through our involvement with Torbotics, "#WeAreSTEM."