

## Chairman's Award - Team 2383

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2020 - Team 2383

**Team Number**

2383

**Team Name, Corporate/University Sponsors**

American Heritage School/Boca Bearing/ProcessMap/Florida Power & Light/State of Florida/Motorola Solutions&American Heritage

**Briefly describe the impact of the *FIRST* program on team participants within the last five years.**

Team 2383's student-led structure allows veteran members leadership experience. Our members initiate and lead multiple community service projects, using skills learned through FIRST. Our students design, build, fully wire, and program our robots giving a truly hands-on experience to all members, with guidance from adult mentors. In addition, 100% of our team members attend college, with 95% of them majoring in a STEM field, when attending college.

**Describe the impact of the *FIRST* program on your community within the last five years.**

FIRST has inspired us to conduct several community-focused engineering projects, many of these being for various non-profit organizations. In 2015, we created a can crusher that would take the tabs off of soda cans and crush the can for the Ronald McDonald Foundation. In 2016, we created a ramp that would allow the physically disabled to saddle onto a horse, for Happy Farm. From 2017 to 2019, we created multiple solutions to help the visually impaired at the Lighthouse of Broward.

**Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.**

Our team has reached out and held various demonstrations across South Florida. These have been held at the Museum of Science and Discovery, off-season events, hospitals, Diwali celebrations, and Boy Scout events. In addition to this, we hold a mini-bot demonstration at the Florida Panthers STEM Day every year at the BB&T center. We also host two FIRST LEGO League tournaments every year. During the last off-season, we held a workshop for our trademark "NinjAssist" program at Mission Mayhem.

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

The Ninjineers have started two FIRST LEGO League teams, which we now coach. This past year, we have started and coached a FIRST Tech Challenge team made up of 7-9 graders at our school. In addition to this, we regularly use STEM to aid the global community through organizations such as the Ronald McDonald Foundation and the Lighthouse of Broward.

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

We often hold one-on-one and mass workshops with pre-rookies and at competitions. An example of this would be the "NinjAssist" workshop that we hosted at Mission Mayhem this past off-season. We have also opened our lab and field facilities to the other teams in the FIRST community, such as the Tech Tigers. We have mentored and initiated FRC Team 5472, the Stallions and have lent the team our off season robot.

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

Team 2383 has started and continues to coach 2 FIRST Lego League Teams at our school. We also hold a Pre-FLL after-school program for students in grades 4-8, which introduces them to FLL. This year we founded our first FIRST Tech Challenge team, a step in strengthening the bridge between our FLL and FRC, giving students of all ages the chance to participate in FIRST. Our own FRC students mentor and coach the team, honing their leadership skills while inspiring the next generation of Ninjas.

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

Team 2383 members coach all of our FLL teams, providing the role models and building friendships that ease the transition to FRC. As a result of this, 75% of our recent FLL graduates have joined Team 2383 and are expecting an 100% retention rate from our FTC program. Our team also hosts, coordinates, organizes, and staffs 2 FLL qualifying tournaments. Our members have also mentored the FTC team that we have started this year, the Rising Ninjas.

**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)**

Our members with FLL experience mentor and coach our FLL teams, giving students one-on-one mentorship from an FRC role model. We open up our facilities to all teams, and are always willing to assist them in their endeavors. This past year, we have allowed the Tech Tigers to use our equipment and fields. Our biggest assistance goes by NinjAssist. In this program, we travel around the pits of FRC competitions to assist any teams that need help, whether it is a drill, a battery, or an extra hand!

**Describe your Corporate/University Sponsors**

We are thankful to have generous sponsors that support our initiatives to spread STEM within the community and beyond, most notably our host school, American Heritage. We are also sponsored by Motorola Solutions, a company that helps our students attain real world experience through summer internships. In addition, we are supported by local and state organizations such as Boca Bearing, the State of Florida, and Florida Power & Light, all of whom work with us to achieve enhanced STEM education.

**Describe the strength of your partnership with your sponsors within the last five years.**

We are proud to have held a firm and unshakable partnership with our school, American Heritage since 2008. We present at school admissions events, financial aid fundraisers, and multiple school assemblies every year, representing FIRST to the whole student body. We send monthly updates, during off-season, and weekly updates, during on-season, to all our sponsors to encourage an open dialogue. We visit all our sponsors regularly, showcasing the robot at multiple community events.

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

FIRST isn't just a non-profit, it's a family of like minded individuals which raises young minds to be superior in the science, technology, engineering, and mathematics field, with guidance from professional mentors. Starting in first grade and going all the way through high school, FIRST gives students a head start in STEM, but it's more than robots. FIRST creates next generation leaders and innovators with the power to learn new things, give back to the community, and change the world.

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

The Ninjineers is a majority student run team by student directors whose goal is to inspire and create the next generation of STEM thinkers and leaders. Our team does not pre-screen new members and there is no experience needed to join the team. Our Ninjas involve themselves throughout the South Florida area and making a big impact in shaping the future.

**For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.**

At first, the team consisted of eight members and no attention was given to it. Now, the team is the most popular on school campus and students from all grade levels grow their skills to provide leadership as older students. We've started and assisted FRC teams around the tri-county South Florida area. Our focus on inclusiveness and outreach allows us to serve as role models for youth around the world. We reach our community and far beyond, increasing engagement in the STEM field and FIRST.

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

Erika Wagner

## Essay

### INTRODUCTION

FRC Team 2383, the Ninjineers, at American Heritage School, Plantation, Florida, began with hopes and wishes to give back to our community, not only the FIRST community, but the local and global community as well. Everyone, everywhere - we ARE changing the world, inspiring tons and introducing many school students and children to the principles of FIRST. While inspiring others, we are constantly inspiring ourselves - changing the world of underprivileged schools around the world.

### EVENTS

Our goal is to make sure that all FIRST participants, no matter which program, have the best experience possible. We connect with our members and those on other teams to learn about their experience. With this insight, we are able to design effective solutions in order to improve the experience of others.

For example, in 2010, we realized that we saw an influx of new members interested in the club, however, the new members struggled to participate in their first build season. We then created Ninja-to-Ninja program. This program allows new members to shadow experienced members and allows them to naturally find their niche within the team. We also created FFRC - Fantasy FIRST Robotics Competition. This is a pre-season event that uses a unique game that we create each year to simulate our brainstorming and development processes during build season. After starting it, it grew from a single team scrimmage to a 7-robot tradition.

We also applied a similar strategy to help combat another important problem: gender underrepresentation in STEM. In 2013, we implemented GEMS, Girls Excelling in Engineering and Mathematics, into our pre-season plans. GEMS provides a low-pressure environment for girls to gain confidence that they carry with them through their time in FIRST. After seeing great results from the initial pilot, we have continued to implement the program into all pre-seasons and have helped other teams implement the program into their schools and programs.

### COMMUNITY-FOCUSED ENGINEERING

In addition to the multiple pre-season events we run internally, the team's fundamental principles have always been to give back to the community, not only locally, but globally. We create solutions to problems which occur outside of the FIRST community. We use the skills we've learned through FIRST to engineer solutions. Using this method of problem solving, we have applied our FIRST principles to several community-focused engineering projects.

For example, we created a can crusher, in correlation with the Ronald McDonald Foundation. A standard aluminum can, such as a soda can, has a full aluminum tab, unlike the rest of the can. The foundation collected these tabs and took these tabs to a local aluminum recycler where the foundation collected money which went to different Ronald McDonald houses. After hearing about this, the team set out on a way to collect as many can tabs as we could. We set out to create a device that would have an input for a soda can, the machine would tear the tab off, save the tab, and crush the can. After seeing local success within our school, we brought this can crusher to many other schools and hospitals and accumulated over 700,000 soda tabs. Recently, we partnered with a local organization that helps the visually impaired community. We visited the organization and learned from the visually impaired on what parts of their daily life are difficult and we set out to create a solution.

These community-focused projects are crucial to our team in multiple ways. Not only do they all solve a specific problem to change lives locally and globally, but they also interest a new group of students in FIRST and STEM. These projects, which lack the competition pressure, are less intimidating to inexperienced members and people who have traditionally felt excluded from STEM. We have had numerous members, male and female, join our FRC team as we have connected with them on a more personal level than an FRC robot. This effect trickles down into the people that we share these projects with: community-focused projects provide a new venue of interest and prove how much FIRST empowers participants to make a bigger impact.

### PUBLIC OUTREACH

We use demos and media coverage to promote FIRST and connect with people all over the world. We spread the word about FIRST by showcasing our passion for robotics and STEM in local newspaper articles, radio shows, and television stories. Last year, we broadened our scope: our team of directors went onto two well known radio shows: Elvis Duran & The Morning Show and The BEAT's Breakfast Club. These two national radio shows get, on average, 125,000 listeners combined. While on these coverages, both local and national, we shared the skills we have gained through FIRST.

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While we love reaching a large number of people through the multiple sources of media coverage, we recognize the value of in-person interactions with the masses. For the past three years, we have showcased FIRST at the Museum of Discovery and Science, along with other FIRST teams, to spread the FIRST message. We built two benchbots to give kids the opportunity to drive a robot, encouraging even the shyest kids to talk to us. Once we have gotten their attention, we have resources about FLL and FRC to show them directly how they can get involved with FIRST at their age. We also go to multiple other outreach events and create our own including Lowerschool Seminars at multiple schools and open-shop FLL training.

As we demonstrate our team and FIRST at these events, we wanted to give everyone a fuller FRC experience. Which is why this year, we have implemented mini-bots into our presentation. Mini-bots are smaller replica versions of FRC robots that have all have different functionalities. These robots are created during our summer camps and are utilized for, not only demonstrative purposes, teaching kids the fundamentals of engineering, Along with this, we created a scaled down version of the FIRST STEAMWORKS field so that visitors, adults and children, at these outreach events can play in a "real" field and play.

### FIRST LEGO LEAGUE

Demonstrations such as the ones at local STEM seminars and the Museum of Discovery and Science pique the interest of a new generation of engineers. In order to accomplish this, we use LEGO robotics to help kids connect their interest to action. Our members coach on average four FLL teams each year, totalling more than 30 teams in our history. Our members act as role models for the kids and help with the transition to FRC.

We also host and staff two FLL tournaments each year, reaching more than 250 teams since 2010. WE talk with the kids directly about our experience in FRC and show them around our lab, inspiring them to continue FIRST in high school and beyond.

To connect with kids who are nervous about the competitive aspect of FLL, we run a low-pressure after school enrichment LEGO program during the FLL off-season. We also run several LEGO summer camps, which are open to all kids in the South Florida area, since 2010.

We love interacting one-on-one with local kids, but we always strive to reach a broader audience as well. To connect with students and teachers all over the world, we hold multiple video chat seminars with international FLL teams. These seminars are really helpful for the students as they can ask us any questions they may have and present their ideas with students who have gone through what they are going through. Along with these video chats, we also try our very best to travel abroad and visit these teams. We have successfully traveled to India and South Africa to help these teams and interact with them.

### FIRST TECH CHALLENGE

This year, the Ninjineers have started and mentored FTC team 16391, The Rising Ninjas. In an effort to further this team, our members have led them through the processes of creating a robot and all the aspects that go into it. In addition, we have dedicated members that take time out of their FRC week to focus on the FTC team. With the help of our guidance, the Rising Ninjas have qualified for States in their rookie year.

### NINJASSIST

In recent years, our team has started a program that we like to call NinjAssist. NinjAssist is a term we have coined to describe our outreach to help others who are not on our team. NinjAssist's main endeavor happens during competitions, during which our team assigns a group of members to travel around the pits and reach out to all the teams that need assistance. We have been known as a reliable group to donate any tools or skills needed to help every team reach their full potential.

While a large portion of our effort occurs at competition, NinjAssist is not limited to the pits. We have reached out to many teams to use our lab facilities, and have helped many in the process. Our biggest contribution has been to the Tech Tigers, who have used our equipment and field during the 2020 build season. In order to further our program, we held a NinjAssist workshop at the Mission Mayhem off-season competition. Our program has gone much further since we handed out our first NinjAssist card.

### CONCLUSION

Throughout our history, Team 2383 has fostered lasting relationships, and through them, lasting impact. By focusing on connections, the Ninjineers create events to maximize the FIRST experience, give back to our community through community-focused engineering, spread the word about FIRST, and inspire kids locally and globally. This drives us to set goals and empowers us to accomplish them. By giving back to our community and connecting with as many people as we can, we change the world.