

Chairman's Award - Team 5414

[Print](#)[Close](#)

2018 - Team 5414

Team Number

5414

Team Name, Corporate/University Sponsors

NASA/NRG Energy/Boeing/Texas Workforce Commission/United Safety/Aura Engineering/Primrose of Clear Lake/BNY Mellon/Jacobs&Robert Turner College and Career H S&Glenda Dawson H S&Pearland H S

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

How many high schoolers can say they beat NASA engineers in game of laser tag? Our team is offered the unique opportunity for NASA engineers to teach us with tools rather than textbooks. We work with them to build robots, character, and most importantly, relationships that have helped us grow into better engineers and people. ?Danny Farner has said "Mr. Hartnett stopping his busy work day to support my rocket launch during NASA Aerospace Scholars was truly lifechanging."

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

After our superintendent watched us at World's, our district has shown increased support for robotics, proposing an estimated \$100,000 for improving Pearland robotics. We mentor Jr. High FIRST teams, and our superintendent made it his priority to expand current teams and create more robotics programs for grade levels K-12. ?We have impacted over 233,000 people by showing our robot and sharing our FIRST experience at events like our local Christmas parade, trick-or-treat trail, and open houses.

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

We are fortunate to have the Championship in our own backyard. In our efforts to spread FIRST, we invited elected officials and industry VIPs to World's and gave them personal tours, explaining FIRST and how it has impacted us. Notably, we hosted Congressman Pete Olson and VIPs from NASA. We also gave a tour to the Rockets' Sales Executive, furthering the team's interest in working with us to incorporate FIRST into Rockets' events. It's gratifying to see important leaders involved in FIRST.

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

Our team acts as a role model by selflessly embracing the spirit of Cooperation. On a typical Saturday, our workroom is buzzing with rookie and veteran teams working side by side with our students to troubleshoot and test their robots. Our students don't hesitate to drop what they're doing to lend a hand to another team, even during the grind of build season. Discobots, one of our frequent visitors, said that we "stand alone as a team that has constantly opened up their space."

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

Our team has branched out not only in our own backyard but also across the world to plant the seed of FRC. Inspired by our dedicated team after visiting our facility in our pre-rookie year, 2014, the CEO of United Safety wanted our help to start new FRC teams in Canada and Dubai despite. Locally, we have helped start many teams in the surrounding area, such as Angleton and Tomball, by purchasing over \$1k in tools for them and allowing them to use our facility to test components of their robot.

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

We assisted the Robots in the Outback program in 2016, creating a simplistic design for teams to utilize if they should choose to. Also, we virtually mentored the team throughout the build season making sure they were utilizing their time efficiently. Within our district, we started an FTC team at one of our junior highs and helped mentor them throughout the season. In addition, we Peared Up with our school district to propose starting 8 new FIRST teams under the Diversity and Inclusion grant.

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

Pearadox hosts an annual Kickoff event, Pear Up, where multiple veteran and rookie teams meet to watch the reveal video and discuss potential strategies for that year's game. Our team requires each member to mentor other robotics programs at lower grade levels in our district such as the FTC team. In addition, we have welcomed multiple FRC teams to our facility during the build season to test their design ideas on our field.

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)

We are proud to be a NASA house team which enables us to participate in national calls where we share resources and ideas, which in turn makes us better mentors. We put this to use hosting over 10 teams to use our facility and share our resources. We also Pear Up with Spectrum to spread their resources for building better rookie teams such as using their "FIRST 1000" list to buy tools for T3. Each year, we assist with their FLL tournament to serve as role models for young FLL teams.

Describe your Corporate/University Sponsors

We maintain robust partnerships that provide resources to our team. We are one of only three NASA house teams in Houston, building a strong partnership with NASA. NRG is a founding partner who we continue to work with today. United Safety donated a trailer to take our equipment to competitions and they house and maintain the vehicle. Best Buy has Peared Up with us by donating materials and money to our PrePear Workshop. We also work with local sponsors such as Former Fab who weld our base.

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 host an annual open house event- complete with food trucks to draw new audiences- to build relationships with our sponsors where we have had the CEO of FomerFab, Mayor of Pearland, and our superintendent drive the robot. Our sponsor, Pearland Police Officers, received a special tour of our shop when they visited during the open house. We have participated in events hosted by our sponsors to strengthen our partnership such as the Block Party hosted by NASA to build FLL field components.

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

When describing FIRST to a CEO, Congressman, or the NBA, we describe FIRST as building a family of passionate creators. Comprised of entrepreneurs, artists, and engineers, our family works towards the singular goal of competitive excellence. In addition to family, FIRST is innovation. FIRST offers many opportunities to find multiple solutions to problems, encouraging creativity in problem-solving among teams. FIRST has united a group of creative problem-solvers together into team Pearadox.

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

Pearing Up with our school district, our team has many future plans to improve robotics throughout our community. We are proposing to expand our shop to improve safety. We also strive to expand robotics programs in all grades through facilitating robotics professional development for 20 teachers. Within the next 3-5 years, we expect to have FIRST programs at all of our schools and to allow children to have robotics available to them as early as Kindergarten, culminating in FRC in high school.

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

Daniel Farner

Essay

Pear Up. At first, it was just another fruit pun, but over time, it grew into a philosophy that governs how our team runs. Pearing Up means working together, not just for personal growth, but to engage in creating a stronger and richer community. From Pearland, Texas, Team 5414, Pearadox, is constantly finding ways to Pear Up, starting with our own team. Our team of 35 members includes 7 athletes and 7 NASA Aerospace Scholars, speaks 5 languages, and comes from 3 rival high schools. Over the past 4 years, we have worked together to serve over 3600 hours at 118 outreach events reaching over 233,000 people. By Pearing Up with other FIRST teams, government officials, younger students, and our community, Pearadox is driven in pursuit of upholding, uplifting, and upgrading the level of competition in our area.

A mere four years ago, we were a rookie team, and we remain incredibly grateful to the experienced teams that helped us grow into the strong team we are today. It is our duty and privilege to give back and continue to grow FIRST in our surrounding area. Every season, we host our annual kickoff event, Pear Up, where we invite other FRC teams with special emphasis on teams with low resources. In our rookie year, we invited only Blarglefish, but this year, the event has grown to include 6 teams, filling our facility with students anxious to learn. To inspire students, each year, we have a different guest speaker such as Molly White, a project lead at NASA, talk to the teams about STEM opportunities. We watch the reveal video and break out into groups to help teams develop feasible strategies to tackle build season. As teams move in to the build season, we have an open facility consisting of full sized field elements and game pieces for other teams, such as our regular attendees AwtyBots and Energy HEROs, to test and modify their ideas. This year, we helped start Team T3 and provided them with the tools/supplies needed to build a functional robot in addition to hosting them at our facility to use our resources. Sharing facilities also allows our teams to collaborate in the spirit of Coopertition. After the 2018 build season, we plan to host a Week Two inspection event for Houston area teams, where less experienced teams can have their robot checked by inspectors and plan to make modifications as necessary at competition. During competition season, we operate the Pearatrooper program, where our students visit other teams' pits to see if they need assistance. We created this program last year in response to frequent requests for help from teams struggling to pass inspection. One of the most amazing things about FIRST is its ability to help students and change lives. By Pearing Up with other teams, we plant seeds to help both students and the program grow.

Furthermore, in our efforts to grow FIRST, we Pear Up with government officials at all levels. We routinely contact legislators including 255 representatives, inviting them to contests and pushing for greater STEM and FIRST recognition. At our invitation, Congressman Pete Olson has attended multiple robotics events, including the World Championship and the Lonestar Regional, where he was the first and only congressman to attend in its over 20 years of existence. Congressman Olson was impressed by our team's passion for robotics and wanted to expand FIRST on a larger scale. Perhaps our most important involvement in government, however, takes place a mere three miles from our facility at the school district's office. Our superintendent, Dr. Kelly, has always been supportive of our efforts, but when he accepted our invitation to support us at World's last year, he understood the full extent of this program and immediately made it a district priority to structure a pipeline of competitive robotics programs. After his experience, Dr. Kelly said of Pearadox, "Perhaps the greatest evidence of its triumphs has been our subsequent decision in 2017 to expand robotics to every one of our 23 campuses - all aimed at maximum student participation and competition excellence." He has pledged to renovate our facility and plans to expand the district's robotics program. By Pearing Up with elected officials, we help create a sustainable program and grow FIRST, allowing it to impact more lives.

One of our favorite ways we Pear Up is by working with younger students at our feeder schools and beyond. Many of our founding members started with an FTC team in junior high and were inspired to found our FRC team so they could continue FIRST. We now want to give the same opportunity to be involved in robotics to younger students. Hoping to grow robotics at a younger level, we created a program, the PrePEAR workshop, to advance STEM in our community. This is a one-day program geared towards younger generations of engineers, specifically designed with Scouting robotics merit badge requirements in mind. We have hosted 4 workshops-two specifically for girls- affecting kids ages 10 to 14. At each workshop, students learn about career opportunities from a guest speaker, then build a robot to achieve different challenges. This event shows the strong demand for FIRST at younger grade levels and contributes to the superintendent's vision of competitive robotics accessible to all students in grades 5-12. Another impactful outreach event involved our co-captain, Drew, Pearing Up with KIPP Liberation for his Eagle Scout project serving students from inner-city Houston. He enlisted our members to work with the middle school students to explain robots and EV3 programming, and he donated three kits to create a sustainable program to continue to change lives. According to Drew, "It was gratifying to be able to instill my love of robotics in the next generation." One other crucial way we interact with younger students is through mentoring middle school and junior high teams in our district. Every year we Pear Up with our feeder schools by working with their robotics and STEM clubs. However, in the past year, Dr. Kelly has encouraged these teams to work more closely with us and unify as one Pearland Robotics family, with Pearadox as the "big brother" of the group. We actively engage with two middle schools and two junior highs and look forward to forming closer ties with all of the district's programs. The range of clubs we mentor includes Ecobots, SCRATCH, Vex, Girls Who Code, Seapearch, Texas Computer Education Association, and FIRST. Growing these programs helps excite younger kids about the endless possibilities in STEM and helps us reach future members to ensure that FIRST has a lasting impact in our area. We consider Pearing Up with these younger students to be one of the most important things we do. By planting our love for STEM in the next generation, we create a program that is sustainable for years to come.

Essay - page 2

We also Pear Up with our community to generate awareness about FIRST and STEM in our unique environment. We could not be prouder to have our roots in Pearland, Texas, just outside of Houston. According to a study by Rice University, Houston recently surpassed New York City as the nation's most diverse city, and Pearland is one of two Houston suburbs more diverse than the city itself. This means that with every outreach event we do in Pearland and in the Greater Houston Area, we bring FIRST and its message of leadership and innovation to the most diverse audience in the nation. One of the most memorable opportunities that our team earned was to coordinate the FIRST involvement with the Houston Rocket's STEM night and ball exchange. This was an event geared toward increasing interest of STEM for inner-city kids. At this event, we organized a demonstration of multiple FRC robots from the Stronghold game. We met numerous NBA Legends, retired players who look for ways to volunteer in the basketball community and shared our passion for robotics with them. They were eager to help us demonstrate the robot by participating in free-throw competitions between our robot and the kids. Coaching our robot to be successful and follow through with the game plan, we showed kids that robotics is inclusive of everyone. Moreover, we participated in a ball exchange with the Rockets' starting lineup to open the game in front of 16,000 people at the Toyota Center. Our team was also invited to the local police department to demonstrate our robot and develop a partnership. At this event, we talked to several police officers about our business plan in order to show our team's sustainability and growth. In addition, we demonstrated our 2016 robot and invited the officers to the Lonestar Central Regional and World Championships. The event served as a great way to show support for our local law enforcement and to educate them about our team, to help us grow in future years. The event also gave us a brand-new partner, with whom we hope to develop even stronger relationships in the future. Pearing Up with our unique environment is crucial to our mission because it allows FIRST to engage a diverse audience.

While we've been focused on Pearing Up, we've also been growing up. FIRST molds us into the leaders of tomorrow. 100% of our alumni and current members have gone or plan to go to college. Skills gained through FIRST will be useful in the future, but for many of our students, these skills are already translating into jobs. Many of our students are employed at Code Ninjas Code Academy, where they are teaching the next generation about STEM. Their experience with FIRST impressed employers and gave them skills necessary to succeed. Jobs are just one example of things we have gained from our time on Pearadox. We have also gained confidence, expertise, and a community.

By Pearing Up, we learn leadership, communication skills, and grow our love of service. By Pearing Up, we are able to make a difference in our community by spreading our passion for FIRST and STEM. By Pearing Up, we change the world.