

Chairman's Award - Team 5431

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

2019 - Team 5431

Team Number

5431

Team Name, Corporate/University Sponsors

Flowserve/FIRST In Texas/Cali Kind/Texas Workforce Commission/Microsoft/Texas Instruments/BAE/Alliance Data/TIL Investments/Plano ISD/Titan Robotics Booster Club/MariaDB/Diamond Data Systems/Raising Canes&Plano Isd Academy H S

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2018/2019 year and the preceding two to five years

5431's dedication to spreading the message of FIRST has provided its members with a variety of opportunities. Our relationship with our primary sponsor, Flowserve, has led to the company providing internships to many of 5431's graduating members. The opportunities 5431 provides for our students allows them to develop valuable industry skills, preparing them for their future.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2018/2019 year and the preceding two to five years

As the inaugural FIRST team in our school district of almost 54,000 students, 5431 convinced our administration to take a chance on FRC. Our district administration now relies on us to support teams by mentoring and by hosting scrimmages, qualifiers, workshops, and off-season events attended by over 3,000 people. Plano ISD now has 73 FIRST teams on 60 campuses. Our work integrates robotics in meaningful ways into our school district and our community.

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

Titan Robotics hosts a Signing Day which is featured on NBC5 and has been spotlighted in 6 news stories. We wow at halftime shows during semi-pro basketball games, annually throw the first pitch at a minor league baseball games, and host 5K Robot Parades benefiting veterans and the homeless. We give yearly presentations to AHS students which has grown our team 5-fold. We've been featured at 17 events including press conferences with Plano's mayor and Plano ISD's CEO breakfast.

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

5431 makes a sizable impact with over 110 events over the last four years. Our Titans have done 2,800 community service hours this season alone, and a total of 8,378 hours over the last four seasons. Titans make quilts for children of fallen vets, run STEM nights for young students and host numerous teams on our practice field. Titans bring spare batteries and tools for teams to use at competition and volunteer at every event we attend.

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

5431 works tirelessly to help young FRC teams by creating events like the NTX Coach and Mentor Workshop, which brings rookie and veteran teams together to learn from one another. Titans worked with area teams to create, host, and run the NTX Tournament of Robots Off-Season Event to give new teams, team members, mentors, and sponsors a taste of what FRC is all about. This off-season event has allowed teams to try out FRC before the new season starts.

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

Our team is the initiator of FIRST momentum in our district. Since our inaugural season, our district has grown to include 56 FLL, 15 FTC, and 2 FRC teams. Our members mentor and coach many teams, some of which they were founding members of, volunteer at events, and have recruited 53 new FIRST volunteers in Plano. Titan Student Ambassadors at school, local tournaments, and championship events share the excitement of FIRST with all, from young children to local VIPs and CEOs.

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

5431 hosted a weekly workshop to help FLL teams in our district with any issues they come across while creating and programming their robots. We assist other FIRST teams by inviting them to practice on our FRC field, by creating branding packages or donating parts to other teams. We also support FTC teams by welding, and fabricating parts on our Plasma CNC or 3D printer. 5431 has also hosted 365 FLL, FTC, and FRC teams at qualifiers, workshops and practice sessions over the last 3 years.

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)

Over 1200 FLL and FTC students have been to our facility over the past three years to practice, scrimmage and compete. Our members have worked with FLL and FTC teams on their campuses to share our experiences and knowledge. Titan Robotics created an FLL SWAT team to assist with programming between matches. We are expanding these efforts with Saturday morning open mentoring sessions to enable us to impact more students.

Describe your Corporate/University Sponsors

Titan Robotics receives mentorship and financial support from: Flowserve, Alliance Data Systems, Rockwell Collins, PTC, and Texas Instruments. Additionally, we receive funds from DB Maria, TIL Investments, CANAC Construction, Diamond Data Systems, BAE, and our school district. 5431 has cultivated a unique partnership with the University of Texas at Dallas who collaborates with us to host and run kickoffs, scrimmages, and qualifying events at all FIRST levels.

Describe the strength of your partnership with your sponsors with special emphasis on the 2018/2019 year and the preceding two to five years

5431 is proud to be Flowserve's flagship team. Because of the strong mentor relationship with Titan Robotics, Flowserve has gone on to sponsor the Dallas Regional, robotics teams in Brazil, China, and India, and provides internships for our graduating seniors that align with their future interests. We demonstrate our robots at their headquarters for Flowserve Family Day and give tours to executives from the company at competition.

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

FIRST is a robotics program that is similar to being given a puzzle. You find out that to solve the puzzle, you need a team of diverse people. You also discover, that if all of you want to be the best, you need to be a team. By becoming and collaborating as a team, and if all of you give it 110%, you develop solutions. Some don't work, so you keep on trying, yet you try together, and together you solve the puzzle. At the end, you find a solution, but more importantly, a team solution.

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

Titan Robotics brings our passion for FIRST and STEM education wherever we go. Our growth over the past four years reflects this passion. We work hard to support the new FLL, FTC, and FRC teams in our area because of the impact FIRST has had on our lives. 5431 even created a multi-team outreach initiative to promote synergy. This initiative has already created two off-season events and a workshop for teams and coaches.

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

Ammar Jaleel

Essay

Our Beginning

Three students. Team 5431 started with three tenacious students who wouldn't take no for an answer. They were three of the first students to walk through our school, Academy High School (AHS), when it opened in August 2013. As other student groups were forming for the first time, these three students asked our principal for her permission to start an FRC team. Her answer? A flat NO!

While it was certainly a setback, a seed had been planted. As an alternative to FRC, the trio founded the Titan Robotics Club and built a robot to compete in the local BEST tournament. BEST only ignited their appetite for a deeper Robotics experience - the FIRST seeds had rooted and wanted to grow. In fall 2014, having proven the value of robotics, the club members reapproached our principal. The group had also located willing professional mentors and a staff member to be coach. Titan robotics, FRC 5431, was empowered to germinate.

The first week of the 2015 competition season brought all 13 members of Team 5431, four mentors and a rookie head coach to the Dallas Regional to compete with the likes of 118, 148, 1477, and 2848 - all world champions. 5431 ended an exciting weekend as the highest rookie seed in 10th place, garnering an invitation to the third place alliance. Our team, as the Rookie All-Star, earned a spot to the St. Louis Championship. The FIRST seed had begun to sprout and we couldn't wait to share our experiences with others in our school and community.

Our Impact

438 students. AHS is a unique four-year campus. We are a project-based, interdisciplinary, STEAM public school that draws students via a lottery. As a part of our learning process, we fabricate solutions to complex problems and present them to outside audiences, ranging from the city council to engineers and executives from local and national companies. These professionals recognize the benefit of growing robotics in our school and district. Many of these companies are now our sponsors.

As the FIRST seeds we have planted continue to grow, the support within our school has blossomed. All of 5431's matches are shown on campus, and our engineering teachers have changed their projects to include the concepts of "alliances" and "coopertition®". Many incoming students apply to AHS just to become a part of 5431. The students who join our team have the opportunity to work with industry professionals, furthering their exposure to and interest in STEM careers. Over the last four years, our mentors from 14 local, national, and global businesses have discovered the value of FIRST and 5431, offering internships to our team members and the AHS student body. 100% of our team members graduate with STEM endorsements to their diplomas, 90% of those students major in STEM fields, and 36% of 5431's graduates mentor FIRST teams.

Our Community

53,057 students. The number of students in Plano ISD is staggering. Nearly one-third of them are classified as at-risk. At the same time, there are high-tech industries moving to our area that cannot find enough qualified workers. Our district excels at providing extracurricular activities for academics, fine arts, athletics, and agricultural activities; yet until 5431 started there were no STEM extracurricular choices. Four years later, there are 73 FIRST teams in our school district: two FRC, 15 FTC, and 56 FLL. 5431 supports these nearly 1,000 FIRST students by mentoring two FTC teams and five FLL teams, and hosting and running our STEM Squad Saturday morning mentoring sessions throughout the fall for all in the district. In the past three years, we hosted and ran nine FLL scrimmages, three FTC scrimmages, four FRC open practices, five FLL official qualifiers, three FTC official qualifiers, the 2017 and 2018 Dallas area kickoff event for the FLL and FTC seasons, and hosted and co-hosted two FRC offseason competitions. Additionally, we continue to work with our district administration to sow the seeds of FIRST robotics throughout Plano. We visit four elementary and middle school campuses to lead students in STEM activities. We demonstrate our robot at Plano ISD events including the CEO Breakfast and the Education Foundation board meetings to raise awareness and funds for the district's robotics initiative.

5431 believes that in order for FIRST and STEM education to succeed in any community, FIRST teams need to work together. To exemplify that mentality, 5431 founded NTX, an organization that brings teams together to further STEM education and FIRST all across North Texas. 5431 along with 5417, 6171, 1296 and other area teams, work hard to embody the spirit of gracious professionalism by promoting and creating inter-team alliances. As a part of NTX, Titan Robotics hosts and runs the North Texas Coach and Mentor Workshop, where students and mentors come to AHS for sessions led by representatives from various teams. This gives all participants a chance to get to know each other, learn from each other, gain new knowledge and share past experiences. In 2017, 5431 initiated, hosted, and ran a brand new off-season event called "The NTX Tournament of Robots". The tournament rotates between 5417, 6171, 1296 and us each year in order to benefit each team.

Essay - page 2

Our Region

With 969,603 people, Collin County is one of the fastest growing counties in the nation, and we would love for each and every person to know about the value of FIRST. Titan Robotics believes that it's our job to "Make it Loud," help spread the seeds of FIRST, and advance the culture of STEM in our community. In the last three years we hosted: a book drive; made 12 quilts for deceased service members' children; taught Boy Scout troops about robotics to help them earn robotics merit badges; demonstrated our robots at MathCounts competitions, Barnes and Noble Mini Makers' Faires, Take Your Children to Work events, Earth Day celebrations, and many more community events. Two years ago, our team established the "5k Robo Run" which benefits various local charities like K9's for Independence and The Samaritan Inn.

In order to reach an even broader audience, we worked with the Frisco RoughRiders, a minor league baseball team, to start an annual "Robotics Night at the Ballpark." Our robot threw out the first pitch on Labor Day Weekend 2016 in front of thousands of people, and we're invited back every season. 5431's robot was also featured at two Frisco Texas Legends minor league basketball games. Our team has appeared in our school district's eNews, the Plano Profile Magazine, the Murphy Messenger newspaper, and most notably, our annual Robotics Signing Day is covered by DFW's NBC affiliate.

Our World

One remarkable partnership. Through a connection of a founding team member, 5431 met and recruited Eric Van Gemenen, Chief Transformation Officer for Flowserve Corporation. Not only has Eric invested thousands of hours mentoring our team, but it didn't take long for him to see the value of FIRST beyond Titan Robotics.

Eric's first-hand experience with 5431 is the reason behind Flowserve's incredible support for FIRST. Flowserve provides internships for 5431 graduating seniors; sponsors the NTX Tournament of Robots FRC Off-Season Competition; sponsored the Dallas FRC Regional Competition; supports a team in Pennsylvania and teams in Brazil, India, and China. Mr. Van Gemenen shared, "After seeing what FIRST robotics is all about through my connection with 5431, it was a no-brainer to advocate for where I believe our charitable support should go. In my time of involvement with this team, I have seen kids grow their understanding of engineering and come into their own. When I brought our CEO to an event where 5431 was competing, and he had the chance to talk with the kids and see what was happening, it was an easy sell. This is a way that we as a company can personally connect with students and make a true impact." Titan Robotics is extremely proud to be the flagship team of Flowserve Corporation and to help plant the seeds of FIRST Robotics beyond our community. From 13 learners in Plano to teams halfway around the world, 5431 and Flowserve bring all these people together under one concept...FIRST.

Our Future

2000 FIRST students by 2024. 5431's goal is to help integrate STEM into our community so that being on a robotics team is just as common as being on a soccer team. Our district administrators are striving to have a FIRST team at every school in Plano ISD, and we will continue to help make sure that happens. We are on our way with teams at 60 of 66 schools. As the students on the FLL teams grow, they will be able to participate in FTC, and then FRC, growing their own FIRST seeds that will flourish into strong robotics programs. As part of that effort, 5431 planned and executed a summer camp in 2018 for elementary school students to teach them the basics of FLL. We are currently developing two additional camp curricula: one that teaches basic engineering concepts and principles; and another that teaches the basics of FLL. Members of our team create and share online courses to assist other teams with programming and CAD as well. We plan to one day connect and share ideas and resources with teams around the world. While we are proud of what we have accomplished in spreading the principles of FIRST, we look forward to planting more seeds. We are proud to see how the seeds we first planted only five years ago have grown, and look forward to reaping the rewards and reinvesting in the future of our community.