



## PLAINFIELD DISTRICT EVENT

On Friday March 23rd, TechHOUNDS traveled to Plainfield High School to compete with 35 other teams. Pit crew unpacked on Friday night and immediately went to work, spending the night scouting other teams, bringing our robot “Quickdraw” to the practice field to test autonomous mode, and working through any last-minute issues with our mechanics. We arrived Saturday morning ready to start our qualification matches. However, before we could even get to our first match, we destroyed our collector in one of our practice rounds. We had to replace half of our collector within 30 minutes and managed to do it so well we were able to win every single match that day of the competition. Win after win, we slowly built up our ranking point ratio, and on our very last match of the day we were able to rank first place with just a 0.01-point lead! TechHOUNDS left day one with smiles on our faces and positive attitudes.

Going into day two TechHOUNDS was almost guaranteed to lose our rank to one of our strongest competitors, FRC 234 Cyber Blue. Just when we thought we would go down, Cyber Blue lost one of their final matches which resulted in a 0.29 ranking point advantage. With only one match left we were set in first place and locked into our position. Up to this point, TechHOUNDS was undefeated with a win-loss ratio of 11-0 with just one match left. We just barely lost the last qualification match but managed to keep our first place position.

Moving into the alliance selections, TechHOUNDS were the first to choose. Out of all the amazing teams we selected FRC 234 Cyber Blue for their incredible scale ability and climbing position.

# THE NUTS AND BOLTS

## UPCOMING EVENTS

April 13-14:

District Champs

April 19:

OLMC Cub Scout Demo

April 25-28:

World Championships

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## PLAINFIELD CONTINUED

For our second pick, we chose FRC 3947 The Last Crusaders, an incredible vault robot known for continuously placing cubes into the exchange to obtain power ups. The eliminations went extremely well; we first played against the eighth seed alliance and won our first two matches, moving up to the semifinal matches. We managed to pull off another two wins qualifying us for the final matches. For the first match as the red alliance, TechHOUNDS and Cyber Blue focused primarily on the scale while The Last Crusaders worked on getting power ups to boost our score. We set up a solid lead against the blue alliance, yet they switched up their strategy to gain control of both the switches. It was a close match but the red alliance was able to win with a final score of 373 to 288. Just when we thought we were set up for the win, Cyber Blue's intake broke during the autonomous period. We ended up losing the match by 13 points. We were tied and needed to win our last match or we would be out of the competition. At the start of the last match, autonomous began with TechHOUNDS accomplishing our 2 cube scale auton and Cyber Blue with their 2 cube switch, starting off the match with a major lead. We were able to keep the scale in our possession, winning the entire competition!

During the award ceremony, TechHOUNDS was able to pick up our blue banner and also received the Engineering Inspiration award recognizing our dedication to spreading STEM throughout our community.



TechHOUNDS and Cyber Blue end match positions, Quick Draw ready to climb.



Coach Zac Bonewit and Driver Caleb Smith speaking with Cyber Blue Coach about strategy.

## CHILDREN'S MUSEUM ROBOTICS DAY DEMONSTRATION

The Indianapolis Children's Museum celebrates National Robotics week annually by inviting multiple FIRST teams to demonstrate their robots and talk to parents about how to get their children involved in similar programs. TechHOUNDS has attended their Robotics Day for the last three years! TechHOUNDS brought our 2016 robot Hammerhead. During the event we explained what Hammerhead does and even let some of the kids shoot the boulders. Throughout the day TechHOUNDS interacted with over 1,000 people!



## TIPPECANOE DISTRICT COMPETITION

On Friday, March 30th TechHOUNDS arrived at Harrison High School to compete at the FIRST Tippecanoe District Competition. Saturday morning we started the competition matches with a win and four ranking points. Throughout the day we were able to continue winning, ending the day in second place just a few ranking points below FRC 1741 Red Alert.

TechHOUNDS Pit Crew had an extremely long night with various medical issues, yet we came back just as strong for day two. TechHOUNDS kept up our second place rank and were able to pick FRC 1501 Team THRUST and rookie team FRC 7198 Fearsome Gears to join our alliance. We started off quarter finals with a huge win against the seventh seeded alliance with a final score of 412 to 265. Our red alliance needed one more win to move onto the semifinals. However the blue alliance made a comeback and won the next match. Now tied one to one, the last match would decide who could compete in the semifinals. Our alliance made a huge comeback setting us ahead for the entire match, we defeated the blue alliance, this qualified us for the semifinals. TechHOUNDS won all three of the semifinal matches advancing our alliance to the finals.

For all elimination matches, the higher seeded alliance plays with red bumpers as the red alliance. Since we were the second seed and were gearing up to play the first seeded alliance, we needed to switch to blue bumpers. Now playing as the blue alliance for the finals, we



Alumni Kate Hawkins talking with Team Lead Laura Dobie. Many alumni were able to visit and give support to TechHOUNDS. "It was great to see all of the alumni, we got to catch up and talk about what they are up to now," Dobie said.



Operator Megan Singer and Driver Caleb Smith during a match. Both Singer and Smith have been on the TechHOUNDS drive team for two years. Winning their first competition at the off-season event CAGE Match in 2016

were matched against the first seeded alliance captain FRC 1741 Red Alert, FRC 1747 Harrison Boiler Robotics, and FRC 1528 Cyber Cards. The first match our blue alliance lost the first match with a final score of 472 to 266. Nevertheless, our drive team was not fazed. Since we were playing against two incredible scale bots we knew we needed to completely switch up our strategy. The next match our alliance partner Fearsome Gears focused on the vault trying to gain points through power ups, with Team THRUST working solely on competing for the scale and TechHOUNDS playing offense on the red alliance's switch. Keeping the red alliance from scoring on their switch allowed our alliance to level the scores. It was a close match all throughout the game until the final seconds, when our blue alliance pulled ahead with a final score of 303 to 273. It was an incredible comeback and one more chance to take home the blue banner. The last and final match of the event we kept the same strategy, hoping to keep the scores close so that we could defeat the red alliance through the end game period with a double climb. After long deliberation from all the match officials the score was released. A blue alliance win! The final score was extremely close: 319 to 255. Our performance at Tippecanoe and Plainfield qualified us for the District Championship in Kokomo!

# TECH FEST

This year, TechHOUNDS was able to expand upon a larger relationship within our community by partnering with the Carmel Clay Public Library. TechHOUNDS kicked off the partnership by demonstrating our robot at their Eclipse Extravaganza event in August, which celebrated the solar eclipse last year and STEM. Through October and November, TechHOUNDS hosted three Steamworks workshops to give middle school students exposure to the engineering design process and computer aided modeling.

In February, TechHOUNDS took part in Purdue University's Physics Workshop by showing families about the high-level physics and calculus that was used in programming the 2016 Stronghold robot, "Hammerhead." The partnership has wholly expanded since then; on Saturday, April 7th TechHOUNDS hosted TechFEST in celebration of National Robotics Week. TechFEST is an original project this year similar in style to a fair with lots of stations and booths for families and people of all ages to check out. The three main focuses of the event were transportation, applied engineering, and of course, robotics! The applied engineering area had stations like architecture, prosthetics, planetary gears, and snap circuit activities. In the transportation area, people learned about everything mechanical in cars like fluid dynamics, the four-stroke cycle and a slew of parts that make everyday vehicles operate. Robotics was all about TechHOUNDS and the robots we build, and even how to implement more FIRST programs in the community. Some families and kids really clicked with our mission and stayed for hours, continuing to finish every activity and learning from every exhibit. Through talking to so many families at the event, TechHOUNDS was able to spread the message of FIRST and how to get FIRST teams at their own schools. There is a growing interest for robotics and engineering in our community and TechHOUNDS will be the catalyst to grow it even more.

## DEAN'S LIST AWARD WINNER!

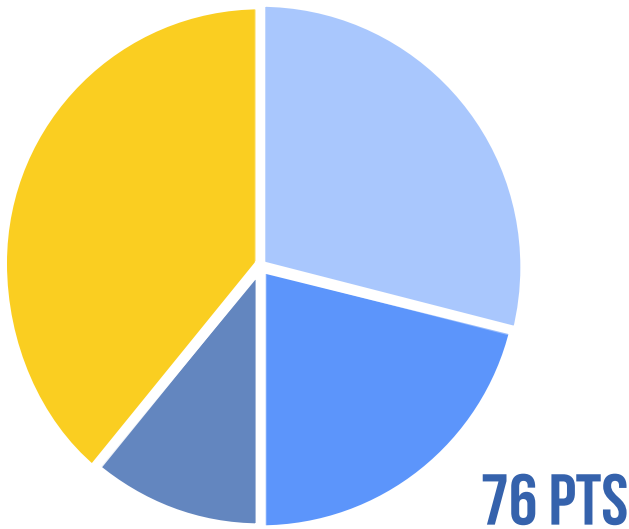


Each year, teams have the opportunity to nominate two sophomores or juniors on their team for the Dean's List award. This honor recognizes outstanding student leaders. This year, TechHOUNDS nominated junior Derek Fronck and sophomore Priya Una for the award. Current Robot Ops lead Derek Fronck always goes above and beyond in his effort to help the team. He constantly works on improving mechanical aspects of our team and making sure Robot Ops members live up to their potential. Priya Una was nominated for her commitment to improving our outreach efforts. This year, Priya has coordinated all of our Senior Living Workshops, mentored our younger robotics teams, and initiated the numerous library workshops and the Library TechFEST. Both nominees were interviewed at the event about their commitments and passion for the team. During the award ceremony, we found that Priya had won! She will now move onto the District Championship Dean's List level to see if she will be selected as an Indiana Dean's List representative at Worlds.

# DISTRICT RANKING SYSTEM

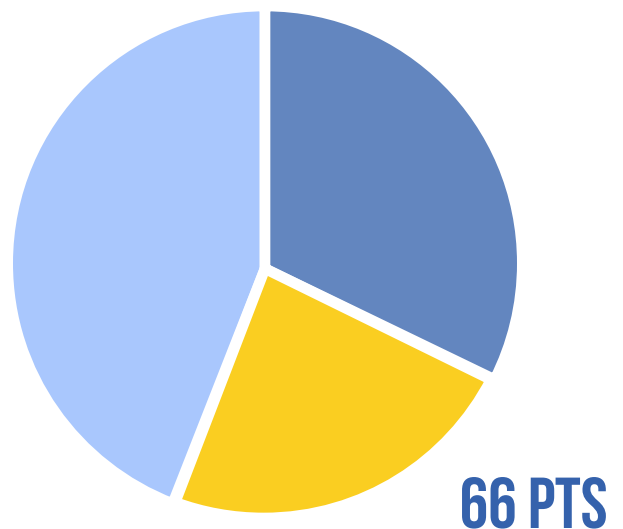
To determine each team's rank in worlds FIRST has set up a district ranking system. Each team's performance in either the regionals or district competitions will decide if that team qualifies for the World Championship in Detroit. Each team can either gain points through their robot or through awards. Below is a breakdown on where TechHOUNDS received ranking points.

## PLAINFIELD BREAKDOWN



- 8 Engineering Inspiration
- 22 Qualification Rank
- 16 Alliance Selection
- 30 Final Matches (10pts for quarterfinals, semifinals, and finals)

## DISTRICT 2 BREAKDOWN



- 21 Qualification Rank
- 15 Alliance Selection
- 30 Final Matches (10pts for quarterfinals, semifinals, and finals)

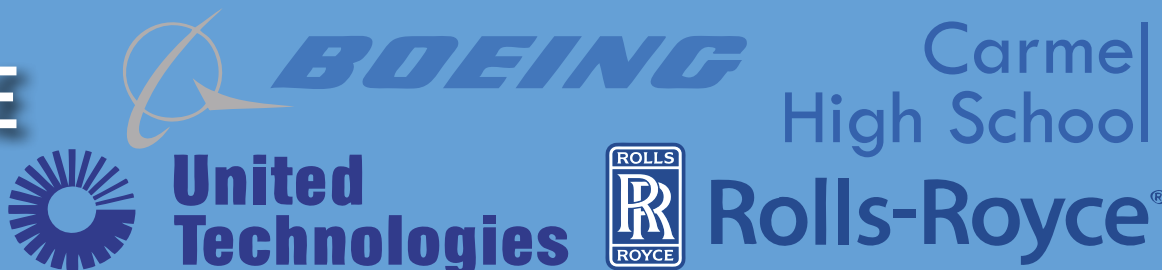
\*Note: only full team awards earn points (Dean's List does not contribute to team rank)

## TOP INDIANA DISTRICT RANKINGS

Rank	District Points	Team	Event 1	Event 2	District Championship	FRC Championship
1	142	868 - TechHOUNDS	76 🏆	66 🏆	Qualified	---
2	115	1501 - Team THRUST	54 🏆	61 🏆	Qualified	---
3	114	1024 - Kil-A-Bytes	71 🏆	43 🏆	Qualified	---
4	113	1741 - Red Alert	45 🏆	68 🏆	Qualified	---
5	106	234 - Cyber Blue	34 🏆	72 🏆	Qualified	---

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**DIAMOND**

**\$4000+**

**• A P T I V •**

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