



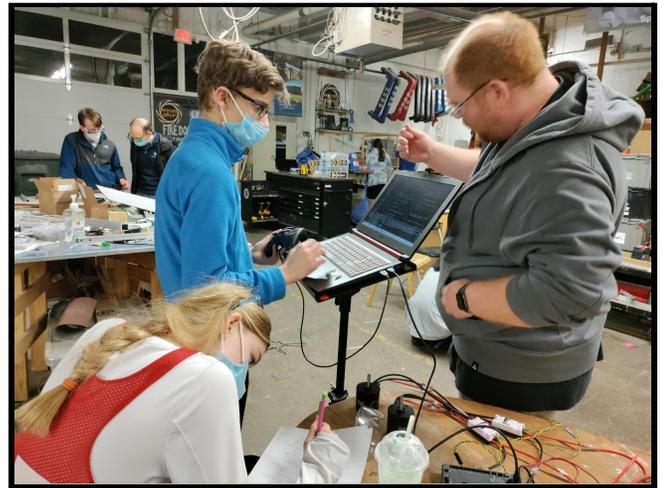
# BONDS 581F

Welcome to our eighth weekly BONDS Status Report of the 2022 season, where we summarize what our team has achieved in each week of our build season! In this entry, you'll see what BONDS Robotics accomplished in the eighth week of the build season for the 2022 FRC competition, Rapid React!

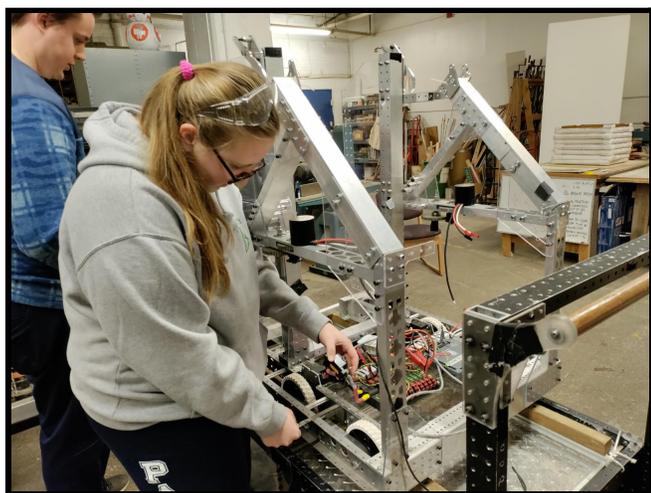
## *Build, Programming, and Drive Team*

On Monday, February 28th, we continued assembling our robot's superstructure and started manufacturing the backplate of the ball manipulator. We also made great progress in programming the robot. On Tuesday, March 1st, we double-checked if we had supplies to start building the ball manipulator, created two Computer Aided Design (CAD) files for our power kill mount, and worked on the robot's battery mount. On Wednesday, March 2nd, we began assembling the ball manipulator. In addition, we began fixing the robot's climber arms, as they weren't extending smoothly due to the screws on the bottom being too long and a bearing on the top pushing against the climber too much. After a bit of troubleshooting, we also successfully got the robot to drive! On Thursday, March 3rd, we used our X-carve machine to carve out a plate and spacer for the robot's kill switch, attached the side panels of the ball manipulator, and filed down a backplate for the robot. On Saturday, March 5th, we began adding foam to the battery box, continued fixing our climber arms, organized our tool kits, and continued making bumpers to place onto the robot's frame.

This week, the mentors also decided which students will be on the drive team! There are five drive team positions: the driver, the manipulator, the drive coach, the technician, and the human player. The driver moves the robot across the field, while the manipulator controls the robot's mechanisms to perform different tasks, like shooting cargo balls into the hub. The drive coach guides the driver and the manipulator across



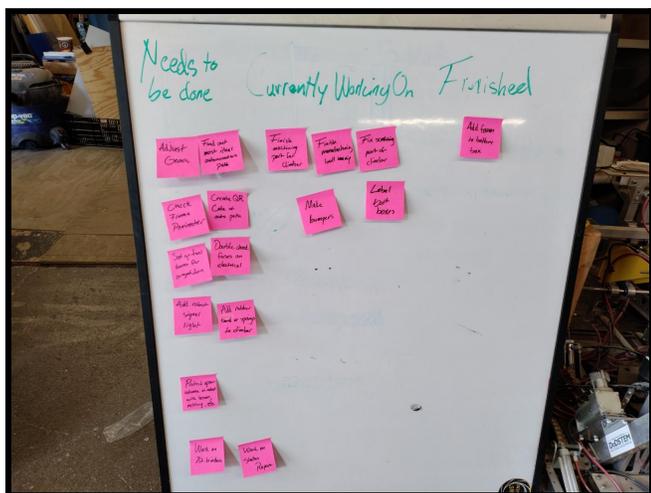
the field, keeping an eye out for openings for the robot to drive through and opportunities to score points. The technician prepares the robot on the field before a match, makes any necessary adjustments, and oversees its removal from the field once a match has ended. Lastly, the human player deposits cargo balls for the robot to retrieve, and can even score points for the team by throwing balls into the upper hub during the autonomous period. If a student wants to be on the drive team, they'll take a written test, designed by our mentors, that quizzes them on the competition's rules.



We also dedicated the beginning of Tuesday's practice to listing all the necessary objectives we need to have finished before we compete. For instance, we have a great deal of space behind the ball manipulator where a cargo ball could potentially get stuck during a match. If that happens while our robot is already carrying two cargo balls in the ball manipulator, our team can be penalized for holding more than two cargo balls. Therefore, one of our tasks is to find a way to shield off that space so we aren't penalized for accidentally holding additional cargo balls.

Another one of our objectives is planning which tools we want to bring to the competition. Because we only have so much room in our pit area at the competition, we want to make sure we have the correct tools and the right amount of them. We also want to label the materials we're bringing, so we can easily find them during the brief time we have in-between matches to fix the robot.

On Friday, March 4th, we held an online meeting where we continued to add to the list of requirements we made on Tuesday. On Saturday, we wrote down all of our



tasks onto sticky notes and placed them on a whiteboard, divided into three columns, in our shop. The three columns separate each task into what needs to be done, what is currently being worked on, and what has been finished. During each practice, students can choose which one of the tasks in the first column they would like to complete or help out with one of the tasks currently being worked on. We hope that, in the coming weeks, all the tasks in the "Needs to be Done" column will be moved to the "Finished" column on the right!

## Marketing Team

In addition to finalizing our T-shirts, we also spent this week brainstorming ideas for marketing materials we can use to showcase our robot's strategy! During the competition, our students will be busy scouting out other teams we can potentially form alliances with, as well as demonstrating our own robot's strategy to teams who are scouting us. One of the things we and many teams look for in a robot is an autonomous path, the path that a robot is programmed to take during the first fifteen seconds of every match. We decided that we could showcase our own robot's autonomous path by creating a chart of it that can be accessed through a QR code. During the competition, when other teams scout us, we can give them a button that has the QR code of our autonomous path!



We want to give a big thank you to all of our sponsors this year! None of this would be possible without you, as your support allows us to continue learning STEM values and to Bring Opportunities Near Dayton Students.



To see more of our progress throughout the season, please follow us on Instagram, Twitter, YouTube, and our official website! Stay tuned!



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