

RAGE Robotics

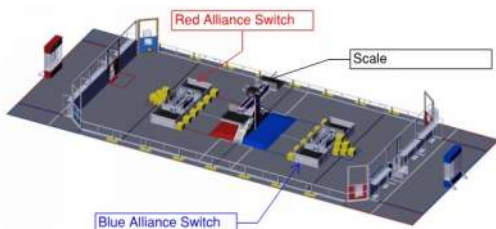
Team 173



Build Season Week 5 Update

This has been an exciting and emotional week—robot parts are arriving, we are assembling, planning, building, taking apart and re-building and then building some more. We said a final good-bye to a long time mentor and friend, we celebrated a birthday and we are down to crunch time. 9 more days!!

FIRST Power Up Summary—The premise behind this year's challenge is that we are trapped in an arcade game. With our two alliance partners, we will work to defeat the boss and escape. To defeat the boss, we will be collecting power cubes (approximately 13" x 13" x 11" cubes) using them to earn power ups (a temporary advantage during the match) and control 2 field elements—the “switch” and the “scale”. Both elements work similar to a seesaw—if our alliance places more cubes (i.e. weight) on our side of the element, the switch or scale tips in our favor and we “control” that element. We earn points for each second that we control our alliance switch or the scale. We can also prevent our opponents from accumulating points by adding cubes to their switch to prevent them from gaining control. The “end game” for this year's game is to climb the scale—lifting our robot at least 12" above the scale platform. This can be accomplished by using the 13" wide rung that is secured to the side of the scale or by lifting our alliance partners. In order to have all 3 robots climb at the end of the match, cooperation between alliance partners will be essential since there is not room for all 3 to use the climbing rung provided. A rendering of the field is shown below and the kickoff video can be viewed at <https://www.youtube.com/watch?>



Saying good-bye to a friend and mentor

This past October we had to say goodbye to one of RAGE's founding mentors, Bruce Hockaday after a hard fought battle with ALS. For 23 years he could be found at the computer or in the RAGE workshop working with students and building some pretty amazing robots. As we have worked on our 24th robot this winter, we have thought of him often. On Saturday, February 10, a memorial service was held for Bruce. The standing room only service was attended by family, co-workers, friends and current and past RAGE students and mentors. It was heart warming to see all



of the people whose lives Bruce had impacted and it was nice to see that all of the qualities that we appreciated in him were also recognized and loved by just about everyone who had the pleasure of knowing him. We are thankful to Bruce for his dedication and all of the time he gave to help our students find their “ah ha” moments but we are also thankful to his family for sharing him with us for the past 23 years!

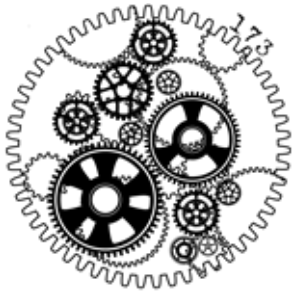
2018 Robot Name

During this weeks full team meeting, the team made a unanimous decision to name this year's robot Bruce. We choose this name with respect and know that with every cube we place, every race to the scale, and every climb, Bruce (Mr. Hockaday to all of his students) will live on and continue to inspire.

Happy Birthday Ted!

The team couldn't have been happier to celebrate Ted's birthday this past week with RAGE themed cookies. Any birthday that happens during build season is a good birthday and any cookies that need sharing are welcomed!





RAGE Robotics

Team 173



Sticking with the red base!

Build Subgroup:

The build crew has had their work cut out for them. The assembled base was painted **RED** this past week, most of the elevator mechanism has been completed and the gearboxes, wheels, and belts have been installed. Unfortunately, due to a slight design change, some of the pieces of the frame need to be re-cut. The new pieces should arrive on Tuesday and the build crew can take what they learned in their first "practice build" to finish things up.



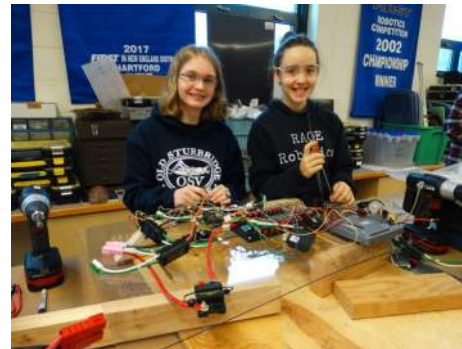
Build/Electrical group collaboration



It will be all right, Andrew!

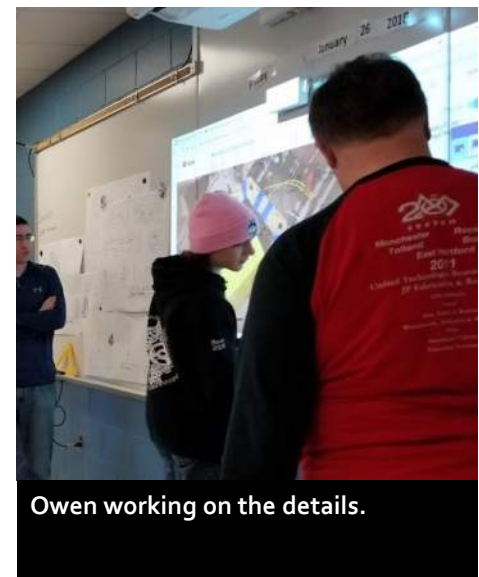
Electronics Subgroup:

As Shane so eloquently put it at this weeks meeting: they are going vertical! Everything has been mounted on the electronics board including the power distribution panel, voltage regulator module, pneumatics control module, robo rio, radio and the motor controllers. Wires were soldered onto the analog breakout board. The last few steps include attaching the motors and the pneumatics.

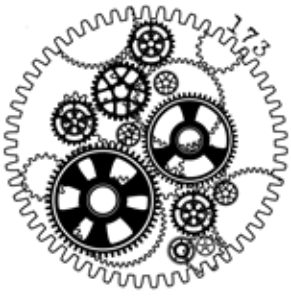


Pneumatics Subgroup:

With limited space and lots of moving parts, the pneumatics group was still working on finding real estate to place the pneumatic components.



Owen working on the details.



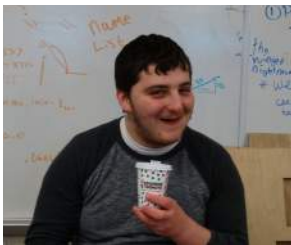
RAGE Robotics

Team 173



CAD Subgroup:

Despite it being week five, CAD is still going strong. This past week they worked to finalize a design for the cube handler and continued to work on the end climb.



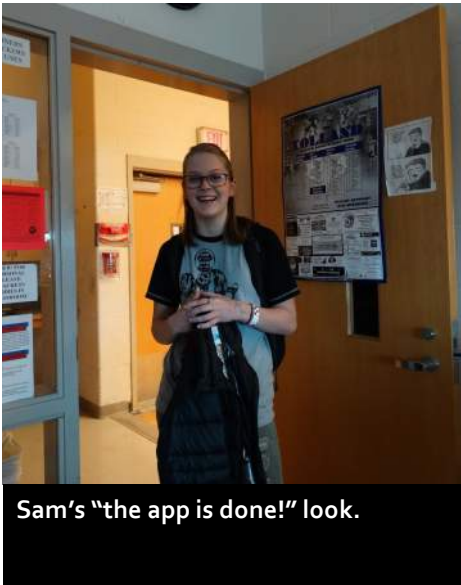
Programming Subgroup:

At this point, the programs for the joysticks to control the robot and the cube manipulator have been completed. The programs for the elevator and drive are almost done as well, leaving autonomous, which will be created once the others are completed.



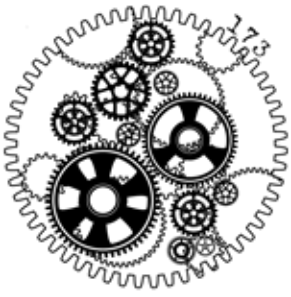
Scouting Subgroup:

This has been a big week for the scouting crew. They spent a good amount of time and hard work to crank out a finished scouting app. If you aren't familiar with the competition set-up, we usually have a day and a half of qualification rounds—usually 60+ matches with randomly selected alliance partners. Following the qualification rounds, the top 8 ranked teams choose two alliance partners they will compete with during the playoffs. The different teams at the competitions have strengths, weaknesses and abilities that can either complement our robot or sometimes, do exactly what we do. Our scouting group has worked to create an app that our team can use during the qualification rounds to gather information about the other teams—what their strengths are, how they handle the cubes, what they can do in autonomous, if they can climb, etc. They can then compile the data collected and come up with a list of teams that would best complement our team (in case we are choosing alliance partners for the playoffs). The rest of the team is excited to see the new app setup and give it a try before our first competition!



Sam's "the app is done!" look.





RAGE Robotics Team 173



Done ScoutingForm2018v1.3.1.html

Autonomous

Cross Baseline?

Placed Power Cubes on Switch?

Placed Power Cubes on Scale?

Autonomous Speed (choose one)

0 to 5 seconds

6 to 10 seconds

11 to 15 seconds

Teleop

Cubes

Number of Power Cubes Placed on Switch

Number of Power Cubes Placed on Scale

Number of Power Cubes Placed in Exchange

Defense

Number of Cubes Placed on Opponent Switch

Did Robot Prevent Others from Placing Cubes?

Rate Overall Defense

Cube Collection

Does the Robot Pick up Power Cubes from the Floor?

Does the Robot Pick up Power Cubes from the Feeder Station?

End Game

Was the Robot on the Platform?

Did the Robot Climb?

Did Robot Help Others to Climb?

Did the Robot Continue to Play?

Overall Comments

Non-technical Subgroups:

The non-technical groups are in the midst of the submission deadlines—their Chairmans’ submission was completed last Tuesday and the Entrepreneurship submission is due this coming week. With students on the team still battling the flu, the group has been creative in making sure they still meet the deadlines. Once the submissions are in, the group will focus on the finalizing and practicing the Chairman’s presentation, editing the Chairman’s video, putting the final touches on the team’s Business Plan, producing some promotional information for the pits during competitions and working on the team imagery for this year’s game.



Scouting app preview—students can upload on their phones and scout during competitions.



The team thanks the Canavan and Poulos families for another delicious breakfast at Saturday’s meeting!

Stop Build Day Countdown: 9 days!

For additional updates, please check out our website (www.ragerobotics.com), like us on Facebook (RAGE Robotics), follow us on Instagram ([ragerobotics173](https://www.instagram.com/ragerobotics173)) or Twitter ([@RAGE173](https://twitter.com/RAGE173))