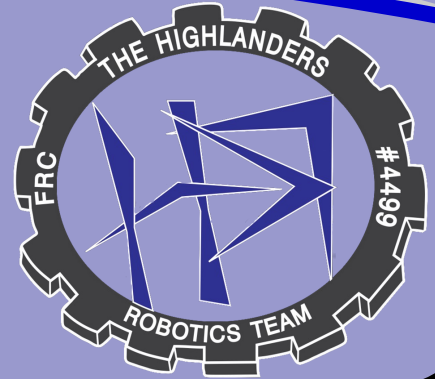


# The Cyber Cycle

## The Highlanders FRC

“The Cycle of Success”



## The 2015 Season Kicks Off!

Here comes the start to another great year! The season officially started on January 3rd, with the announcement of the new challenge...Recycle Rush!

We've been busy prototyping and designing. Look inside for what we've done since the end of last season.

**RECYCLE RUSH** is a recycling-themed game played by two Alliances of three robots each. Robots score points by stacking totes on scoring platforms, capping those stacks with garbage can-sized recycling containers, and properly disposing of “litter” (pool noodles). In contrast to recent years, there is very little interaction between the two alliances; each alliance only concentrates on scoring points on its own side of the field, not defending against the other alliance. Matches are still organized with a 15 second autonomous (robot-controlled) period followed by 2 minutes and 15 seconds of driver-controlled (tele-op) action.

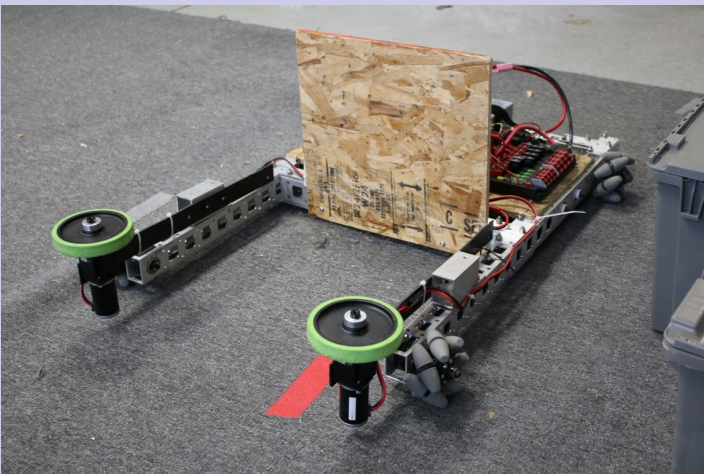


The main challenges for this year's robot include picking up scattered or flipped over totes and moving and stacking them. The robot must also pick up large recycling containers, drive them where they need to be and place them on top of tall stacks of totes.

The new challenge brings lots of ...well, challenges with it. The team spent time on the first day of the season building field elements, brainstorming and even playing the game as humans. The team is trying to understand the ins and outs of scoring and strategy as well as the spacing of the field and size of the field elements.



As of now the team has designed and built a chassis, and has selected and built a mechanism for grabbing crates. Lifters, flippers, and other fun things are still coming!



Check out the daily blog to keep track of all of the latest developments!

[http://www.highlandersfrc.com/2015\\_blog/default.aspx](http://www.highlandersfrc.com/2015_blog/default.aspx)

## Meet the Team:

Matt is a senior at Fossil Ridge High School. He has been with the team since its inception in 2012, and has had varied roles; electrical and mechanical build and drive team.

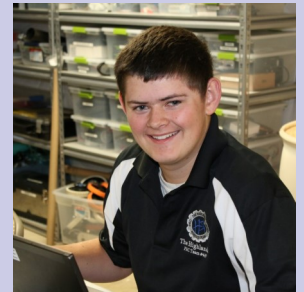


Ryan is a sophomore at Fossil Ridge. He is very interested in video production, and after assisting last year is our primary videographer this season.

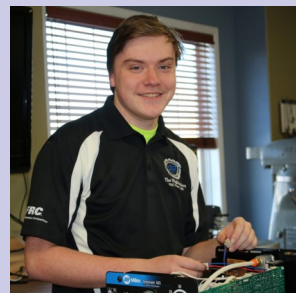


Jack is a sophomore at Liberty Common High School. This is his first season with FRC, and he is on the programming team.

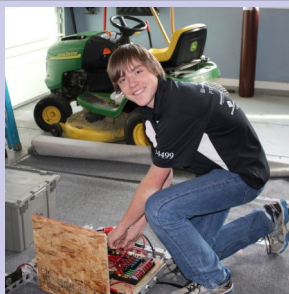
Michael is a sophomore at Fossil. He started his first FLL season as a 2nd grader, and FRC as an 8th grader. This year he is co-leader of the build team.



Megan is in 12th grade at Fossil, and this is her 3rd season in FRC. She has already committed to attending CSU for biomedical engineering in the fall. Go Megan! Go Rams!!



Alex F. is a senior at Fossil, and is a founding member of FRC team 4499. He is co-leader of the build team, and is applying to engineering colleges for the fall.



Jacob is a senior at Fossil, and is co-team leader this year. He spends his free time playing trombone in the HS band, and is applying to colleges to pursue engineering in the fall.

Caelan is also a senior at Fossil Ridge, and is on the build and electrical teams. He is applying to colleges for BioMedical Engineering.



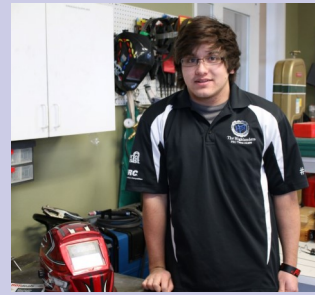
Alex G. is a sophomore at Liberty Common HS and is in his second year on the team. He is part of the build team, but is happiest when working with carbon fiber or 3D printed parts.



David G. is a senior at Liberty and is co-leader of the strategy group. He has been with 4499 for 3 years, but was in FLL and FTC before that. He is ready to pursue engineering, but isn't sure where yet.

## Meet the Team (page 2):

Tyler is a freshman at Legacy High School. Family members drive him an hour each way for each practice. That's a dedicated programmer! And family!

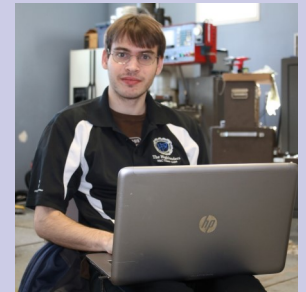


Andre has been on FIRST teams since 2nd grade and is one of the original Highlanders. He is safety team leader and member of the build team. He is looking into computer science and engineering colleges.



Skyler is a senior at Fossil Ridge HS and is in his 8th FIRST season. He is on the build team this year in addition to being in charge of tournament logistics.

Alex I. is a senior at Liberty Common HS and is both our Strategy and Programming team leads. He has been on 4499 since the beginning, and had FTC and FLL experience before that.



Drew is a senior at Fossil and is a game designer in his own right. He has been with team 4499 for 3 years and did one season of FTC before that. He'd like to go to college for computer science.

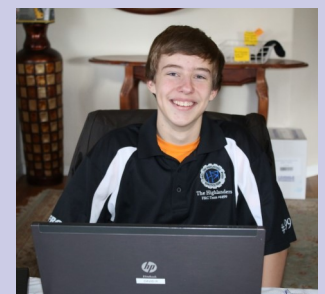


Naathan is a senior at FRHS and is leader of our Operations Safety and Excellence team. Over the summer he ran an FLL camp and started a team for the local Boys & Girls club. Go Naathan!



Nela is a freshman at Fossil Ridge. This is her first year on the team, but she has participated in community projects with us for a few years. She is on the build and OSE teams.

David R. is a sophomore at Liberty and new this year to our team. His experience with a high-commitment FLL team has prepared him well for FRC! He's on the programming team.



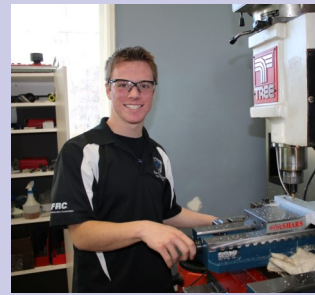
Dawson is a freshman at Rocky Mountain HS and is in his 2nd year on our team. He is co-lead of the safety team and is on the build and electrical teams. He spends his free (?) time volunteering at the raptor center.



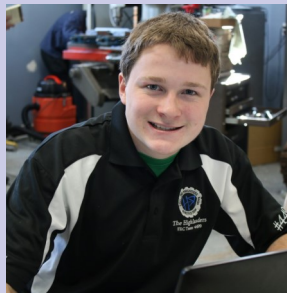
Ben is a junior at Liberty and is in his first year in FRC. He is also a key member of his school's FTC team, and so keeps busy with one robot or the other.

## Meet the Team (part 3):

Mike W. (Mikey) is a freshman at Liberty and is brand new to our team. He is also currently on an FLL team that is heading to the World Championships! Congrats!!

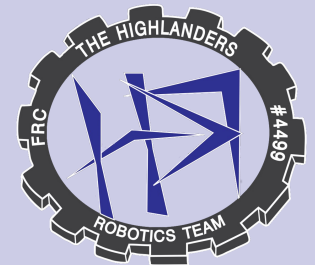


Will is a senior at Liberty Common HS and is Highlanders team captain. He is working hard to keep everyone moving in step and to learn from the team's experience.



John is a junior at Liberty. Even though someone else would have had to do them this year, he is relieved that the robot doesn't need bumpers at all. He is co-leader for the programming team.

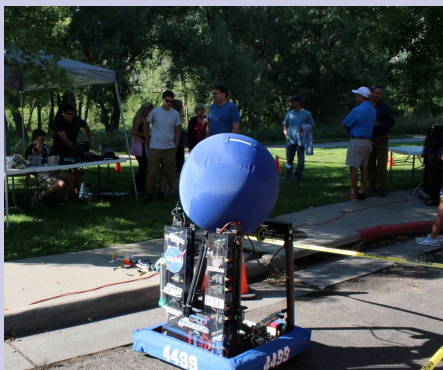
Go  
Highlanders!



## Our Lives Before Build Season...

We did LOTS of work with local youth on Lego Robotics (FLL) - we:

- Ran a 6-week summer camp
- Started 2 teams at a local school
- Coached a new team at the Boys and Girls Club
- Held a workshop for new coaches
- Ran an FLL tournament (3rd year in a row)

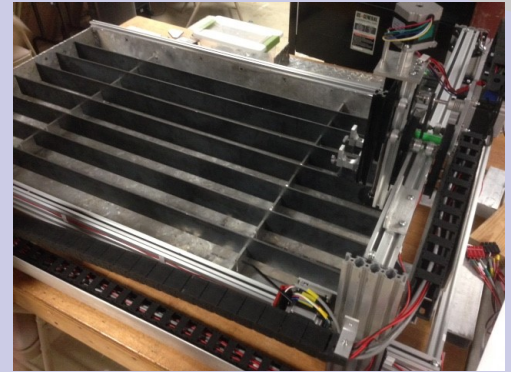


We also showed off the robot to different groups:

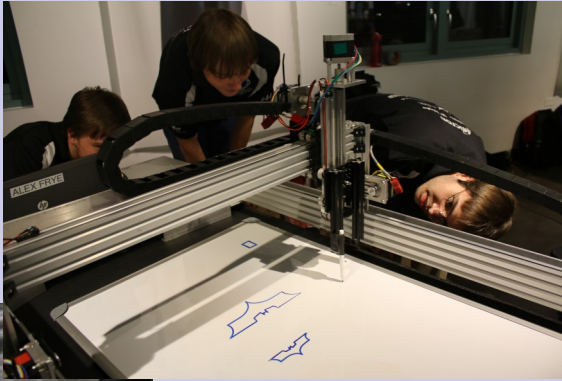
- Boys and Girls Club summer camp
- 3 separate companies
- Robotics expo in Denver, where we presented to a group of 30 local activists.



Through the summer and fall we designed and built a Computer Numerical Control (CNC) plasma cutter so that we'll be able to cut sheet metal for the robot. We had a 'CNC Expo Writer' in mid-November, with the plasma cutting functionality completed just recently. Thank you to our newest sponsor, SheetCAM, for a free license for the control software!



The batman symbol is a good test program, plus just cool to have around.



But the most fun all summer was the Survivor Mud Run, at a local dirt bike trail, where we got to get very muddy!



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