



As we wrap up the third week of robotics, our team continues to make significant progress on all fronts.

Build & Design

The Build & Design team faced some unexpected challenges this week. While the original plan was to complete the V1 robot by last Sunday, issues with the laser-cut elevator caused a slight delay. Rather than continuing with a V1 elevator that wouldn't allow for testing, and lacking materials for a new prototype they opted to jump into building the final elevator. This jump required the fabrication team to begin cutting parts for the robot earlier than anticipated and required the hang and coral/algae manipulator teams to begin cutting parts for the actual robot earlier than previously anticipated.



Coral/Algae Manipulator

This week, the coral algae manipulator subteam conducted minor changes, most notably increasing the manipulator arm length before integrating it with the V1 robot. From there, the team tested its intake, placing positions in conjunction with the elevator, manually moving the elevator to simulate various operational scenarios.



Fabrication

Fabrication team temporarily put the pit case project on hold to focus on cutting parts for the actual robot. They successfully cut 22 parts for the elevator and several gussets for the superstructure, making significant progress on the robot's physical components.



Elevator

This week, the elevator team encountered integration issues with the other subsystems and faced strict time constraints during the meetings. Despite these challenges however, the elevator team has transitioned to directly building the final version. This was made possible thanks to our fabrication subteam. With these components completed, the team was able to construct the final elevator including motors before ending the week.

Ground Algae Intake

Over the past week, the team successfully completed a full wooden prototype of the ground intake. However, shortly after construction, they recognized that the algae manipulator could potentially handle algae pickup directly from the ground, rendering the original intake less critical. In light of this insight, the team decided to continue refining the ground algae intake but moved it to a lower priority for fabrication.



Programming

Programming team has shifted their focus to developing the autonomous period code. While they completed the first version, testing was challenging due to simulation bugs. The team also refined subsystem code for design changes, including removing the ground algae subsystem and adjusting the elevator and manipulator pivot subsystem.



Vision

The vision subteam successfully updated their model, achieving improvements in both detection accuracy and processing speed. This updated model now operates at 15 frames per second, marking a substantial improvement. The vision subteam's next challenge is finding an even more sophisticated model capable of detecting algae from greater distances and beginning the complex mathematical calculations to determine the precise distance between the algae and the robot.

Drivetrain

Drivetrain team achieved a major milestone with their custom swerve now functioning well in teleoperated mode. They've implemented unit testing for utility functions to ensure reliability. The team's next focus is resolving bugs in path generation and following code to enable work on the autonomous routine.



Marketing

Marketing has been working on preparing materials for merchandise orders. They've completed the t-shirt design for REEFSCAPE and are working on branding enhancements at the upcoming competitions. Exciting additions include custom Antares wax seals and gift bags for distribution at events. The team also completed this season's highlights video for fundraising which has been uploaded to YouTube.



Strategy

This week, the Strategy Team met to go through the new Regional Advancement system introduced this year by FIRST, discussing how to tailor their approach to maximize success. The team discussed different priorities we have as well as thinking about our robot's abilities in comparison to other potential robot designs we could see at the competition. They continued iterating on the scouting app, thinking about new features to include and the most efficient way to reorganize the app.

Business

This week, the Business Team has been working on reconnecting with earlier sponsors, sending out email and trying to establish a clear business pipeline. The team hosted an event on Saturday where they talked to Khan Lab School parents for potential philanthropic contacts and ensured that they are getting volunteer and donation matching from their companies. We can't wait to continue to work towards strengthening our relationships with both new and old sponsors, as well as continuing to support our students through our fundraising competition! Kudos to some rookies who had a successful start to a grass-roots fundraising campaign in the neighborhood!



More frequent updates can be found at [instagram.com/frcteam6962](https://www.instagram.com/frcteam6962)

Team photos are on team6962.smugmug.com

YouTube Channel with robot tests is <https://www.youtube.com/@frcteam6962>