

CprE/EE/SE 491-- sddec20-23

Underwater Algae Bloom detection

Semester 2 week 6

10/25-11/9

Client: Santosh Pandey

Faculty Advisor: Santosh Pandey

Team:

Anastasia Golter -Housing Team

Nicholas Stasi - Sensor Team

Emily Kinne - Sensor Team

Zachary DeMaris - Housing Team

Jack Seiter - Communication Team

Andrew Koenen - Sensor Team

Overall Summary:

These last two weeks the team has been working hard to get the final touches done on the prototype to make sure that we could put the device into the water and test it. Along with that came testing of the device out of the water and testing the device in the water.

Individual Contributions:

These are the descriptions for individual contributions for the two weeks of this reporting period:

10/25-11/9

Anastasia Golter: Over the past two weeks I have been working on reports with the team as well as the final housing assembly. I had a $\frac{5}{8}$ inch hole drilled in our float for the tubing that contains the wires to run up through. I then worked with the team to attach the tubing to the float and we later tested it in water. We also worked on sealing the sensor boards in plastic.

Bi-weekly total: 13 hours

Nicholas Stasi: The last two weeks I worked on finishing the perf-board and getting it to a working condition with the FONA module and all sensor boards. I also helped Chloe and Zach on waterproofing the sensor leg. I also helped the team in doing “wet-testing” where we actually got to put our entire system in lake Laverne to collect data.

Bi-weekly total: 6 hours

Emily Kinne: I worked with the team to finish waterproofing our system with our tubing and plastic seals and finally test our final prototype in water. I have also been working on our final presentation and documentation by compiling data from our sensors and writing some of the technical specifications of our project.

Bi-weekly total: 11 hours

Zachary DeMaris: The last two weeks I have worked with the team to integrate the final pieces of the project. We created a finished leg with 3 sensor boards sealed. We then attached the leg to the floating platform. We also added the plastic housing to protect the communication module. Finally, after we integrated all components we took the platform to Lake Laverne to do a real world test to gather data in the lake.

Bi-weekly total: 12 hours

Jack Seiter: These last two weeks I worked with the team on construction, final assembly, and ensuring the sensor reading code and the report receiver code work together. Additionally I changed some serialization semantics to fix

Bi-weekly total: 14 hours

Andrew Koenen: these last two weeks I have been helping to test the integration of the complete product. I've been working with Jack on communication calling sensors, Chloe and Zach on housing, and testing the perf board with Nick to make sure everything goes smoothly. Lastly I helped to test the device in the lake and try to get data back

from it.

Bi-weekly total: 12 hours

Pending Issues:

The only issue we had was with sealing the device. Unfortunately it is hard to test our version of waterproofing without putting the device into the water. When putting the device into the water it had a leak and the leg was flooded. If we had more time we would have been able to reconstruct and fix the leg, however due to limited time and resources we can only show what did work

Plans:

We plan to take the testing data and show how the device failed, but still remained safe. We also plan on finishing the poster and report to submit and prepare for the IRP soon.