

Overall Summary:

Over the past month, as things have been changing rapidly, our team has created a contingency plan and working on documentation. Losing access to the lab was a challenge that we, as well as all other teams, have faced, but we plan to continue making progress on our project.

Individual Contributions:

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

3/16-4/12

Anastasia Golter: Over the past four weeks, I have been working with the team primarily on documentation. We have worked on lightning talks, our contingency plan, and design. I have also been researching articles for a review paper that we will create as a team.

Bi-weekly total: 12 hours

Nicholas Stasi: These past two weeks, our team has had several extra meetings to discuss design choices related to our microcontroller. We have since settled on a design choice that the entire team agrees upon. We have not had access to the lab so we have not been able to do testing, but we have been working on our design document. I have also been doing some research in the field of underwater sensors to get an idea of what strategies and tactics we can use with our own design.

Bi-weekly total: 5 hours

Emily Kinne: These last four weeks have been difficult transitioning to online learning. Since we can no longer work in the lab almost all hardware aspects of our project have been put on hold. I continued to meet with our team and make some important decisions about our design document. I have also started research for our review paper.

Bi-weekly total: 5 hours

Zachary DeMaris: During the past 4 weeks things have drastically changed. The university has shut down and we haven't had access to our lab to continue prototyping our project. In the meantime, we have continued working on our design document. We have met to finalize a lot of the controversial design choices. I have been trying to research how well raspberry pis might work on our project.

Bi-weekly total: 4 hours

Jack Seiter: This week I ordered the parts I needed to continue with hardware development, particularly with celular, from home. It will arrive sometime before next semester, probably. I also fixed a few bugs in our report receiving software and have been working on a space optimized file based persistence device for holding data reports before they are sent to the reporting server. Additionally I attended and contributed to our various meetings.

Bi-weekly total: 5 hours

Andrew Koenen: During this time we have had zero ability to get into the lab and access our project. That being said the team has been having meetings to flush out design decisions and choices we still need to make. Along with this, we have been working on improving the design document. Along with helping with the above tasks I have been researching some devices to help with the celular connection project. Lastly, I have been tweaking my board design to make sure that when we can get back into the lab I am ready to order more parts.

Bi-weekly total: 11 hours

Pending Issues:

We still have yet to finish soldering all the boards and have had some issues using solder paste such as pin bridging and not getting a solid solder joint. We plan to have these issues resolved when labs open again, which will likely be in the fall. While the lab is closed we hope to do continued research into cellular communication and how we could possibly move the project to Pi and how this would affect our timelines.

Plans:

We plan on getting the FONA 808 operational experimentally so that we can start writing code for it. Once this is complete we will experiment with the PI to test sensors with it. Other plans for the team include flashing firmware onto the newly soldered boards and entering the testing phase. Another aspect of the project that is also in development is the structure. Tubing has been purchased and the structural side of the project is being brainstormed. We plan to begin prototyping with waterproofing and vinyl tubing when our schedules permit. If any of this cannot be completed due to the constraints placed by the current pandemic situations, we will look into other existing underwater research in hopes to improve both our design and implementation of this solution. In the meantime, a few team members are moving forward with the design document for our project by doing research and reviewing similar existing technologies to write up in a formal technical document.