sdmay18-38: Smart Wireless Ag Sensors for Measurement of Soil Water Contents
Week 2 Report
September 16 - September 30

Team Members
Colin Cox — *Circuit board researcher*
Wage Miller — *Hardware lead*
Jarrod Droll — *Finances*
Rachel Hoke — *Meeting Coordinator*
Scott Rowekamp — *Software Researcher*
Tyler Thumma — *Documentation Lead*

Summary of Progress this Report
During the last two weeks of September we continued to meet with our client to learn more about our requirements on the project. Last report we learned about how the sensors work and where they will be implemented. From then we have gone over the following information for the control boxes.
We want to have 10 sensors and boxes put together by the end of the semester, that have the following improvements:
1. Reducing the size of the box to 1/4th of its current size
2. Create a new layout for the circuit boards
3. Decrease power consumption
4. Only have 1 sensor per box that is securely connected and waterproof
5. Create a better application that can plot the data over time of the soil readings

We have started researching different aspects of the project, and have been reaching out to the PhD and Grad students who are also working on this research. In order to understand the process and the basic steps on fabricating the sensors and control box before we go in and make changes/improvements.
We have found a potential option for a replacement for the Arduino board within the control box. This will help with reducing the size of the box and gives us a good starting place with the other components that we are looking for.

Pending Issues
Our pending issues right now is making sure that we are getting the correct knowledge from the right people and properly documenting it. We are also faced with the challenge of creating smaller components and to start with the size of the control box needs to be researched and planned to see if there is even one that we can purchase but also considering designing and building our own through 3D printing or some other method.

Plans for Upcoming Reporting Period
Overall our focus is to learn more about the current process before we go off on our own. We plan on meeting with Xinran to get more information about making the control box, and what components go into it.
Continue research into the different components of the control box. We are also going to start in on understanding the application that is used to collect data on your phone (bluefruit). Start looking into software setup and possible changes.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Colin Cox	Colin found a potential replacement for the Arduino board within the control box.	3	9
Wage Miller	Worked with Colin on the hardware aspects of the control box. Researching the change in size and understanding the different components that go into the box. Began research on Op-Amp circuits for the box.	3	9
Jarrod Droll	Looked into the various costs of the current parts and researched what our potential changes might run us. Keeping track of our budget.	3	9
Rachel Hoke	Set up meetings with client, and reached out to multiple resources for understanding the current sensors and control box. Document meeting notes and combine with Tyler's notes.	4	10
Scott Rowekamp	Started work on the requirements that we have for the application and website that collects the data that the sensors bring in.	3	9
Tyler Thumma	Record and post various documentation for our project during the meetings. Review notes with other members before posting.	3.5	9.5