**Accomplishments**

We are proud of many of our accomplishments this quarter. The first challenge we faced was getting the pumps to work. We spent many hours trying to debug the switch setup and interface to the microcontroller. We ran into issues we didn’t understand at first and so overcoming them boosted morale. Once we put everything together and solved our issues, it was incredibly gratifying to see the pump respond as expected to our commands and fill up the grow tray appropriately.

The serial communication was initially a daunting task, but we pored over all the documentation for both the Atlas Scientific parts and the ATMega2560 UART app notes. After spending hours trying to correct bugs like forgetting to append carriage returns to each transmission, we got the serial communication between ATMega2560 and the Atlas Scientific pH sensor. Seeing the output from the sensor show up in the terminal on the computer was the first big step in our basic communications.

Once we got the pH sensor working, it was simpler to set up the TDS sensor, but the temperature/humidity sensor gave us special trouble due to the complications of timing using the single wire interface. We spent too much time trying to debug the associated C codes so when we realized we could just talk to it using the Raspberry Pi, several sighs of relief and high fives were exchanged.

The most tangible of our accomplishments was getting a frame put together so we could begin to better visualize the project. Wayland’s father came to Santa Cruz last minute and put together the framework for our enclosure. He precut all the wood and assembled it in our lab. We now have a place to begin placing components and ensuring our components match with our Solidworks designs.