**Second Prototype Test Plan**

To: Professor Pisano

From: Team 15

Team: Team 15

Date: 3/6/24

Subject: Second Prototype Test Report

1. **Monitoring Circuit Data + Webserver Pairing (Hardware/Software Integration)**
   1. **Set up**

**The monitoring circuit is laid out. The microcontrollers had been prepared with the code uploaded and had been paired with the web server to wirelessly transmit data. For the prototype, the circuit elements are connected over two small breadboards, but the final product will utilize a PCB.**

* 1. **Pre-testing Setup Procedure**
     + **Have the monitoring circuit laid out**
     + **Connect to battery for power via 5V source on solar charge controller**
     + **Open webserver on laptop**
  2. **Testing Procedure**
     + **Live feed from our web server shows the readings/graphs of our various sensors**
     + **A small lamp was used as an external light source to demonstrate our light sensor’s capabilities**
     + **The circuit was connected to the benchtop oscilloscope to demonstrate that the figures from our webserver display are accurate**
  3. **Measurable Criteria**
     + **Ability of webserver to display data collected in real time**
     + **Wireless connection between monitoring circuit(s) and webserver**
     + **Professional display of data on webserver**

1. **Conclusion**

**This test was successful as we successfully integrated the two main components of our project, the physical monitoring circuit and our cloud database/webserver UI. We have verified that the data obtained wirelessly is accurate by probing key points in the circuit, and the UI of our webserver to display these values includes rather polished graphs. The fact that the server is now ready to take, log, and display data from the solar panel set up means we are well on track to make additional progress. Our focus as a team can now shift to webserver UI for mobile browsers, the control circuit, designing/ordering a PCB for the monitoring circuit, and finalize the parts for/assemble our solar panel frame and reflector setup.**