1   Introduction

1.1   Developing a Reasonable Question

As defined in your prospectus, we need to ensure our research question aligns with our methods – and our analysis prodedures, which is often a statistical test.

1.2   Testing Methods

One effective way do to this is to collect preliminary data to ensure we will get reasonable results.

1.3   Creating Reliable Data Sources

2   Deploying the Pis

We did not have the capacity to create a robust case for our Pis that might allow them to be deployed without exposure to the elements.

Thus, here are some suggestions:

- Put the Pi and breadboard in a plastic sandwich bad and/or tupperware container. Make holes for the power input and the can PM sensor cable.

- Put the sensor at where there is good air flow outside a wondow that you can provide power to the Pi. Or better yet, find a location outide where a power socket is available. Note: the cable switch is not water proof, so be to protect the on/off switch; maybe put in a plastic bag too?

- Hopefully, the Pi still connects to your WiFi. If not, we'll have to come up with a method to launch the program on boot up. Work with Kyle if you have this issue, breifly we will

  - Edit the rc.local file to include the path of your script that you want to run. Make sure to include an ampersand "&" at the end of the path command, **this is REALLY important**. Otherwise, if the python script doesn't inherently end, and runs in a loop, the RasPi will never finish booting up "technically." When this happens, you won't be able to input any commands into the CLI. You **WILL** have to reformat the SD card and start all over. In our case, it's whatever python file. The rc.local file is located at /etc/rc.local in nearly every Linux distribution. YES, the Pi's OS is Linux.
  - Modify the Pi Configuration Utility and change the Boot option to: "Boot To CLI". That way, the next boot, it boots to the command line interface and runs the python script and if the program is a loop it'll keep running the script until you exit it.

3 Collecting the data

Once the data have been collected, you can extract the data from the SD card and copy to r for processing.

3.1 Processing the data

Marc will be creating a script to process the data and allow you to create a nice dataframe to analyze the data.

```
filepath.csv = "/home/CAMPUS/mwl04747/github/EJnPi/data/TestData.R"
rawdata = read.csv(filepath.csv)
```