Jacob C. Dulya

This week, I may have less to report as it was a very busy week with a lot of things to do outside of our experiment. On Monday, the interns visited the J-PARC facility and were very generously given a tour of many areas within the facility as well as taught about some of the experiments they are working on at J-PARC. We learned about their neutrino experiments and how the neutrinos are generated at J-PARC in Tokai and sent all the way over to the Super Kamiokande neutrino detector just shy of 300 km away. This detector contains ~10,000 large PMTs to detect neutrino events. This experiment is done to analyze the apparent neutrino oscillation that occurs when they travel this distance.

Tuesday we were back at the RCNP and got back to work on our experiment. As of last week, we introduced ourselves to where the experiment will be taking place, in experimental room W by the H-Course, and Tuesday we began setting up the table that will have our NaI detectors on top of it. This required a lot of meticulous work lining up the table perfectly with our beam-target point, and took up a majority of the day. We marked places on the floor as well as drew out the angles for the NaI detectors which are now in line with the beamline. We also received a script from Ideguchi-san on reading in a big endian binary file, which we were successfully able to compile and plan to use for our data analysis alongside ROOT to help us get around file sizes too large to work with.

On Wednesday, the first part of the day was spent preparing for our interim reports and the afternoon was spent presenting our work. We tried our best to answer questions to the best of our ability and showcase what we have learned to our hosts and colleagues at the RCNP.

Thursday we began bringing things down to the experimental hall, and even got access to our germanium detector early. We brought down all of the modules we will need, and set up a table with 2 NIM crates to build our DAQ system. We had to fill the germanium detector with liquid nitrogen for operation and then also had to place it directly in-line with our target. This day was a lot of manual labor and at the end of it we have also set up a VNC viewer account to remotely control the MCA laptop while we are not in the experimental hall.

Friday, we met up at the RCNP main building and were again generously taken to tour another facility. We toured SPring-8, a high energy photon beam where the RCNP does some experiments. Here we saw a lot of the (very large) facility and then returned to the RCNP.