

I propose to come to Fermilab to continue my work on NOvA data analysis. This consists, first, of ongoing efforts to improve detector simulation with the current goal of resolving NOvA's hadronic energy discrepancy which sets the largest systematic error of our 3-flavor analysis. Second, I convene NOvA's Exotics group and perform my own astrophysical analyses. At the moment my focus is on a multi-messenger search for signals coincident with gravitational waves. On the DUNE side, I will work to build a small experiment to measure proton and muon range in liquid argon with the goal of constraining systematic error for DUNE and other LAr detectors.