

Brief Summary

Intensity Frontier Proposal from Kevin McFarland

I propose to spend the bulk of January-June 2019 in residence at Fermilab to lead the MINERvA data preservation project. The goal of the project is to provide public access to MINERvA data at a level that would support reanalysis of the data. The two major components that need to be developed are (1) a data ntuple format to support this reanalysis and (2) a containerized executable that would take a standard generator format file as input and produce simulated data from it. From these, it would be possible to reproduce MINERvA measurements with a different interaction model, to add new observables to an existing analysis to answer physics questions that come up after the fact about MINERvA results, or to even in principle do entirely new analyses with the data. The data preservation project has been recently endorsed by both the Fermilab PAC and by the HEPAP Portfolio review. Production of results from the antineutrino data currently being collected by MINERvA may also benefit from this simplified analysis framework. My presence at Fermilab would enable interactions with MINERvA analyzers and with scientific computing experts to support development of the first and second components of the project, respectively.