Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

The MUon Scattering Experiment (MUSE) at PSI[1] MICHAEL KOHL, Hampton University, MUSE COLLABORATION — The proton is not an elementary particle but has a substructure governed by the interaction of quarks and gluons. The size of the proton is manifest in the spatial distributions of the electric charge and magnetization, which determine the response to electromagnetic interaction. Recently, contradictory measurements of the proton charge radius between muonic hydrogen and electronic probes have constituted the proton radius puzzle, which has been challenging our basic understanding of the proton. The MUon Scattering Experiment (MUSE) in preparation at the Paul-Scherrer Institute (PSI) has the potential to resolve the puzzle by measuring the proton charge radius with electron and muon scattering simultaneously and with high precision, including any possible difference between the two, and with both beam charges. The status of the MUSE experiment will be reported.

[1]supported by NSF and DOE

Michael Kohl
Hampton University

Date submitted: 12 Jul 2016 Electronic form version 1.4