

Speaker: Scott Bogner, NSCL, Michigan State University

Title: Towards a Microscopic Density Functional Theory for Nuclei

Abstract: A primary objective of the SciDAC project, “Building a Universal Nuclear Energy Density Functional (UNEDF),” is to develop a *microscopically-based*, energy density functional applicable to all nuclei in the form of a generalized Skyrme functional, with theoretical error bars for the different terms in the UNEDF to provide guidance for fine-tuning to data and to give controlled extrapolations away from stability. In this talk, I describe a promising route for achieving these objectives that utilizes recent parallel advances in chiral effective field theory (EFT) inter-nucleon interactions, renormalization group (RG) techniques for nuclear systems, and nuclear many-body computational methods.