Hiro Iwasaki – Colloquium – January 23, 2020

Title: "Spectroscopy of Exotic Nuclei: Electromagnetic Responses of Weakly-bound Systems"

Abstract:
Exotic nuclei – short-lived rare isotopes – can serve as rich laboratories to study the strong and weak interactions at play in the nuclear medium. Their unusual combination of protons and neutrons as well as the proximity to the particle-decay threshold allows for testing and improving state-of-the-art nuclear models. One of the most intriguing phenomena that nuclear structure physicists have observed is nuclear halo in which valence neutrons are only weakly bound to remaining core nucleons and move in spatially extended orbits. As a unique research at NSCL, we perform excited-state lifetime measurements on a variety of exotic nuclei using fast rare isotope beams. In this talk, I will provide a brief overview, present recent physics highlights obtained for neutron-rich weakly-bound systems, and discuss their distinct features in electromagnetic responses. Perspectives for future studies at FRIB will also be discussed.