DNP15-2015-020046

Abstract for an Invited Paper
for the DNP15 Meeting of
the American Physical Society

Opportunities in nuclear structure and reactions

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The last decade has seen important advances in the area of low energy nuclear physics. New measurements have provided crucial insight into the behavior of nuclei at the limits of stability, including the mapping of the neutron dripline up to Oxygen, investigations of unbound nuclear states, and the discovery of new super-heavy elements. In parallel we have seen a revolution in low-energy nuclear theory, moving toward quantified predictability, rooted in the underlying inter-nucleon forces. But the next decade offers even more opportunities with a new generation factory of rare isotopes, and the anticipated developments in high performance computing. The Facility for Rare Isotope Beams coupled with new state-of-the-art detectors will allow us to access a large fraction of the necessary information for the r-process responsible for making at least half of the heavy elements in our universe. FRIB will provide the needed intensities to study global nuclear properties, shell structure, and collective phenomena far from stability. Key measurements are anticipated, at various facilities, which will inform symmetry tests with rare isotopes. We expect to put strict constraints on the equation of state. These and many other opportunities will be highlighted in this overview talk.