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Abstract for an Invited Paper for the APR21 Meeting of the American Physical Society

## NSCL to FRIB: Building 50 Years of Nuclear Science to Explore the Edges of Nuclear Stability BRAD SHERRILL, Michigan State University

The talk will review the scientific program of the National Superconducting Cyclotron Laboratory, NSCL, with a focus on research with rare isotopes. In the process of conducting experiments with nearly 1,000 rare isotope beams, over 30 years, new insights into the nuclear force and how to model atomic nuclei have advanced our understanding of nuclear structure and the role of nuclei in the universe. One of the advances has been in how to predict the limits of atomic nuclei in mass and charge. The talk will discuss these aspects and the perspectives for further advances with the Facility for Rare Isotope Beams, FRIB. FRIB will begin scientific operation in 2022, culminating a dream of the science community to have access to a broader range of the most exotic atoms.