Collinear laser spectroscopy (CLS) is a well-established technique for obtaining hyperfine spectra and deducing fundamental nuclear properties for long chains of isotopes of specific elements. I will discuss the implementation of CLS at the National Superconducting Cyclotron Laboratory (NSCL) at Michigan State University (MSU) to study the systematic behavior of charge radii of radioactive nuclei. The challenges with such measurements are the small sample sizes (only a few thousand nuclei per second) and short lifetimes (as short as a few seconds), so a premium is placed on experimental efficiency. I will discuss the application of CLS at the current NSCL facility and the future Facility for Rare Isotope Beams (FRIB) that is under construction on the MSU campus, with the aim of improving our knowledge of the properties of atomic nuclei.

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