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## REALIZING THE OPPORTUNITIES OF NEUTRON CROSS SECTION MEASUREMENTS AT RIA

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The Rare Isotope Accelerator will produce many isotopes at never before seen rates. This will allow for the first time measurements on isotopes very far from stability and new measurement opportunities for unstable nuclei near stability. In fact, the production rates are such that it should be possible to collect 10 micrograms of many isotopes with a half-life of 1 day or more. This ability to make targets of short-lived nuclei enables the possibility of making neutron cross-section measurements important to the astrophysics and the stockpile stewardship communities. But to fully realize this opportunity, the appropriate infrastructure must be included at the RIA facility. This includes isotope harvesting capabilities, radiochemical areas for processing collected material, and an intense, ?mono-energetic?, tunable neutron source. As such, we have been developing a design for neutron source facility to be included at the RIA site. This facility would produce neutrons via intense beams of deuterons and protons on a variety of targets. The facility would also include the necessary radiochemical facilities for target processing. These infrastructure needs will be discussed in addition to the methods that would be employed at RIA for measuring these neutron cross-sections.

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