

## Constraining neutron capture rates on radionuclides: the DICER instrument at LANSCE

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Neutron capture data essential for applications such as astrophysics, criticality safety and defense applications, however, challenging to acquire for short-lived radionuclides. A technique has been recently developed at the Los Alamos Neutron Science Center (LANSCE), that can provide accurate data on a plethora of radionuclides relevant to these applications, by performing neutron transmission measurements. The Device for Indirect Neutron Capture Experiments on Radionuclides (DICER) is a capability that was developed to address the aforementioned challenge. DICER performed its first measurement on a radioactive sample recently, by irradiating liquid <sup>88</sup>Zr samples that were produced in collaboration with the Isotope Production Facility (IPF) at LANSCE. This measurement resulted in the discovery of a nuclear level near the neutron separation energy. Other recent efforts include the measurements of <sup>239</sup>Pu and <sup>88</sup>Y. A description of the new apparatus as well as preliminary data on a few stable and radio-isotopes will be presented.