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Activities of the Center of Excellence for Radioactive Ion Beam Studies for Stewardship Science[1]

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The Center of Excellence for Radioactive Ion Beam Studies for Stewardship Science is a consortium of universities, Oak Ridge Associated Universities, and Oak Ridge National Laboratory, led by Rutgers University. The purpose of this project, funded by the NNSA/DP Academic Alliance for Stewardship Science program, is to use radioactive ion beams to study low-energy nuclear reactions of importance to stewardship science, as well as to prepare future researchers in applied nuclear science. These studies are enabled by the plethora of unstable accelerated beams available at the Holifield Radioactive Ion Beam Facility at Oak Ridge. The initial measurements use neutron-rich beams of uranium fission fragments to study the neutron-transfer (d,p) reaction, a possible surrogate of neutron capture reactions. We also develop new radioactive ion beams of interest to nuclear structure, nuclear astrophysics, and stewardship science. This talk will present an overview of the activities of the Center and the available facilities, describe initial results of a (d,p) reaction with a fission fragment beam, and outline activities proposed for the near term. In collaboration with H.K. Carter, ORAU.

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