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SECAR: The Separator for Capture Reactions in Astrophysics SARA AYOUB, AALAYAH SPENCER, FERNANDO MONTES, Michigan State Univ, SECAR COLLABORATION — Proton- and alpha-capture reactions on unstable proton-rich nuclei power astrophysical explosions like novae and X-ray bursts. Studying these processes is crucial to understanding the mechanisms behind those explosions and the nucleosynthesis at those sites. The Separator for Capture Reactions (SECAR) is a new recoil separator currently under construction at the National Superconducting Cyclotron Laboratory (NSCL) and the Facility for Rare Isotope Beams (FRIB) that will allow us to directly measure the astrophysical reaction rates of interest. It is designed to enable measurements with reaccelerated beams in the A=15-65 mass range over a broad range of astrophysical energies. Several of the magnets and other components are now installed at Michigan State University. The presentation will introduce the SECAR concept, its scientific goals, and provide an update of the current status of the project. SECAR is supported by the Department of Energy Office of Science Office of Nuclear Physics and the National Science Foundation.

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