

Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Determination of Partial Cross Sections in Single Nucleon Knock-out Reactions TAN PHAN, ANTHONY KUCHERA, Davidson College, DANIEL BAZIN, National Superconducting Cyclotron Laboratory — The structure of nuclei can be studied with knockout reactions where a few nucleons are removed from the projectile. These reactions can be accurately modeled [1], therefore, the nuclear structure input can be tested by comparing to the experimental cross sections. One test of structure models are partial cross sections to individual states for single nucleon knockout reactions. Seven knockout reactions of p -shell nuclei were performed at the National Superconducting Cyclotron Laboratory (NSCL). CAESAR, a CsI scintillator array, was used to detect gamma-rays from the reaction products. To determine the ratio of the cross section to the excited states, the response of the gamma-rays in CAESAR was simulated and combined with a background function. These were fitted to the experimental spectra to count the number of gamma-rays emitted. Ratios of the cross section from the ground to excited state will be presented. Combined with previous inclusive cross section measurements of the same reactions, these result can yield the partial cross sections. [1] G.F. Grinyer *et al.*, Phys. Rev. Lett. 106, 162502 (2011).?

Tan Phan
Davidson College

Date submitted: 21 Jul 2017

Electronic form version 1.4