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**Geant4 Simulations of Nuclear Isomer Gamma Emission Detection**<sup>1</sup> ADAM FRITSCH, Gonzaga University, JAMES BROWN, Wabash College, ANDREW CLUSSERATH, BRYCE MAKELA, Gonzaga University — When an atomic nucleus is excited, it can form a nuclear isomer, a metastable state with a relatively long half-life. By experimentally investigating the energy levels of neutron-rich isomers, nuclear structure models can be better constrained. Using Geant4, Monte Carlo simulations have been performed to determine optimal detector geometry and placement near a target for measurement of nuclear isomer de-excitation via gamma emission. Various beam and target combinations have been simulated. Preliminary results will be presented.

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