

Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

High precision gamma-ray spectroscopy for enhancing the production and use of medical radioisotopes¹ E.A. MCCUTCHAN, S. ZHU, A.A. SONZOGNI, Brookhaven National Laboratory, M.P. CARPENTER, M.D. GOTT, J.P. GREENE, Argonne National Laboratory, P. BENDER, E.J. GASS, University of Massachusetts, Lowell — Precise knowledge of the radiation emitted by radioactive isotopes is needed in both the production and use of medical isotopes. The decay of many isotopes now being considered for use in nuclear medicine were last studied more than 30 years ago using very simple detector setups and without this particular function in mind. The field of gamma-ray spectroscopy has made tremendous advances in the subsequent decades, with multiple HPGe detectors employing Compton-suppression and high efficiency gamma-gamma coincidence spectroscopy. In the present work, we make use of these techniques to significantly improve the knowledge of decay schemes of several isotopes being considered for nuclear medicine. An overview of results on a number of isotopes will be presented including studies of the emerging PET imaging isotopes, ^{72}As and ^{61}Cu . New decay schemes will be presented and their impact on the production and use of the isotope will be discussed.

¹Work supported by the U.S. DOE under Grant No. DE-FG02-94ER40848 and Contract Nos. DE-AC02-98CH10946 and DE-AC02-06CH11357

Elizabeth McCutchan
Brookhaven National Laboratory

Date submitted: 01 Jul 2020

Electronic form version 1.4