Abstract Submitted
for the DNP12 Meeting of
The American Physical Society

**Low-lying structure of the N=49 nucleus $^{81}$Ge**[1] S. AHN, K.L. JONES, S.T. PITTMAN, University of Tennessee at Knoxville, D.W. BARDAYAN, K.Y. CHAE, C.D. NESARAJA, S.D. PAIN, M.S. SMITH, Oak Ridge National Laboratory, A.S. ADEKOLA, J.A. CIZEWSKI, S. HARDY, M.E. HOWARD, B. MANNING, P.D. O'MALLEY, Rutgers University, W.A. PETERS, I. SPASSOVA, Oak Ridge Associated Universities, K.A. CHIPPS, Colorado School of Mines, J.C. BLACKMON, M. MATOS, B.C. RASCO, Louisiana State University, R.L. KOZUB, Tennessee Technological University — The study of low-lying levels of nuclei near closed shells elucidates the evolution of nuclear shell structure far from stability, and also affects estimates of heavy element nucleosynthesis in supernova explosions. Currently, there is little experimental data for the relevant unstable nuclei. This is particularly the case on the the neutron-rich side, where changes in the shell structure are expected near the drip line. The low-lying levels of the N=49 nucleus $^{81}$Ge have been studied by measuring the $^{80}$Ge(d,p)$^{81}$Ge transfer reaction at 310 MeV (3.875 MeV/u) in inverse kinematics at the Holifield Radioactive Ion Beam Facility at Oak Ridge National Laboratory. The excitation energies and the angular distributions of low-lying levels were measured. The experimental setup and the preliminary result on the data analysis will be presented.

[1]This work was supported in part by the U.S. Department of Energy Office of Nuclear Physics and National Science Foundation.

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Date submitted: 13 Aug 2012 Electronic form version 1.4