Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

Development of the Oak Ridge Rutgers University Barrel Array S.D. PAIN, J.A. CIZEWSKI, R. HATARIK, K.L. JONES, M. SIKORA, J.S. THOMAS, Rutgers Univresity, D.W. BARDAYAN, J.C. BLACKMON, C.J. NESARAJA, M.S. SMITH, ORNL, J. HOWARD, R.L. KOZUB, Tennessee Tech., J. JAMES, R.J. LIVESAY, Colorado School of Mines, A. GADDIS, Furman University, M.S. JOHNSON, ORAU, B.H. MOAZEN, University of Tennessee — The development of high quality RIBs, such as those at the HRIBF at ORNL, has made possible the performance of transfer reactions on unstable nuclei. Measurements of (d,p) reactions on n-rich fission fragments yield data on nuclear structure away from stability, are of importance to stewardship science and are of astrophysical interest due to the proximity to suggested r-process paths. Experimentally, (d,p) reactions on heavy (Z=50) fission fragments are complicated by the strongly inverse kinematics and low beam intensities. Ejectile detection with high resolution in position and energy, a high dynamic range and a high solid angular coverage is required. The Oak Ridge Rutgers University Barrel Array (ORRUBA) is currently under development for such measurements, providing a high solid angular coverage for angles forward and backward of 90 degrees. Resistive strip silicon detectors are used to obtain high- precision position and energy measurement, and ΔE-E particle identification is employed at angles forward of $\theta_{lab} = 90^{\circ}$. The array's scientific motivation and technical aspects will be presented, along with a report of the first measurements performed with an early implementation of ORRUBA.

Steven Pain
Rutgers University

Date submitted: 30 Jun 2006 Electronic form version 1.4