Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

The development of single-nucleon pickup reactions with fast, exotic beams as a spectroscopic tool[1] S. MCDANIEL, A. GADE, P. ALDRICH, D. BAZIN, J.M. COOK, C. AA. DIGET, NSCL, Michigan State University, K.W. KEMPER, Department of Physics, Florida State University, T. GLASMACHER, A. RATKIEWICZ, K. SIWEK, NSCL, Michigan State University, J.A. TOSTEVIN, Department of Physics, University of Surrey, UK, D. WEISSHAAR, NSCL, Michigan State University — One-nucleon knockout reactions are an established tool to track the evolution of nuclear shell structure away from stability by probing single-*hole* states. Currently, fast-beam, heavy-ion induced *pickup* reactions are being developed that provide, in a similar way, the complementary structure information by probing single-*particle* states. At the NSCL, several proton and neutron pickup reactions centered around the proton-rich isotope ^{50}Fe were investigated: ^{9}Be(^{49}Mn,^{50}Fe)X, ^{9}Be(^{50}Fe,^{51}Fe)X, and ^{9}Be(^{48}Cr,^{49}Mn)X. Information from these reactions, including the effects of target variation (^{9}Be versus ^{12}C), will help develop the one-nucleon pickup reaction into a tool for nuclear structure physicists.

[1]Supported by the National Science Foundation.

Sean McDaniel
NSCL

Date submitted: 01 Jul 2008 Electronic form version 1.4