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Studying the (^{7}Li,^{5}Li) reaction using STARS LEE BERNSTEIN, J.T. BURKE, J.A. CHURCH, K. MOODY, LLNL, L.W. PHAIR, P. FALLON, S. SINHA, M.A. MCMAHAN, M. WIEDEKING, R.M. CLARK, A.O. MACCHIAVELLI, I.Y. LEE, LBNL, E. RODRIGUEZ-VIEITEZ, B. LYLES, S.G. PRUSSIN, Univ. of California, H-.C. AI, Yale Univ., C.W. BEAUSANG, Univ. of Richmond — The LLNL group has been pioneering an effort to determine (n,x) cross sections on unstable nuclei via decay probability measurements of compound nuclei formed using light-ion induced "surrogate" reactions. To this end an experiment was performed at the 88-Inch cyclotron at LBNL using the STARS (Silicon Telescope Array for Reaction Studies) spectrometer coupled to LiBeRACE (Livermore-Berkeley Array for Collaborative Experiments) to study using the ^{234,238}U(^{7}Li,^{5}Li x) reactions to populate neutron-rich compound nuclei. Results from this experiment will be presented and its use for determining (n,x) cross sections on neutron-rich nuclei will be discussed. This work was performed under the auspices of the U.S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48, Lawrence Berkeley National Laboratory under contract No. DE-AC03-76SF0098 (LBNL) and by the NNSA Stockpile Stewardship Academic Alliance program (Yale/Richmond).

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