

Abstract for an Invited Paper  
for the DNP10 Meeting of  
The American Physical Society

**Modeling *r*-Process Nucleosynthesis in Hot Astrophysical Flows**

REBECCA SURMAN, Union College

While the basic mechanism of rapid neutron capture, or *r*-process, nucleosynthesis has long been understood, a definitive determination of the astrophysical site of the *r* process remains elusive. Here we discuss various aspects of two potential sites—the core-collapse supernova neutrino-driven wind and hot outflows from black hole-neutron star mergers. We will pay particular attention to the role of neutrino interactions in these environments and to the importance of a careful understanding of nuclear properties far from stability for realistic *r*-process simulations.