Notre Dame Science
Department of Physics

THE IMPORTANCE OF BEING NEUTRAL

Nuclear Seminar

Dr. William Peters
Oak Ridge National Laboratory
Monday, March 19, 2012
4:00 P.M. NSH 124

Experiments that detect ejected charged particles are a staple of low energy nuclear physics. Many of the same (or isospin-mirrored) results can be achieved through experiments that eject neutrons. The utility of neutrons as a probe of nuclear structure is just as extensive as their charged siblings. In fact, in some cases, their neutrality can be a plus. Generally, neutrons are much more difficult to detect, especially in tight geometries required in nuclear physics experiments. Modern neutron detector arrays like the Modular Neutron Array (MoNA) and the newly completed Versatile Array of Neutron Detectors at Low Energy (VANDLE) open the doors to a variety of new neutron-ejectile experiments for current and future rare ion beam facilities. I will discuss some of the highlights and future goals of both detector arrays, including structure experiments beyond the neutron dripline, transfer reactions of astrophysical importance near the proton dripline, and decay spectroscopy of neutron-rich isotopes.

All interested persons are cordially invited to attend.