

University of Notre Dame  
College of Science  
Department of Physics

## **NUCLEAR SEMINAR**

### **Activation experiments for p-process nucleosynthesis**

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**Monday, November 15, 2010 4:00 p.m. NSH 124**  
**(Refreshments will be served prior to the seminar in 124 NSH)**

The nucleosynthesis of the proton rich p-nuclei is described in complex reaction networks including several hundred isotopes and the corresponding thousands of reaction rates. Therefore, theoretical predictions of the rates, normally in the framework of the Hauser-Feshbach theory, are necessary for the modeling. The reliability of these calculations should be tested experimentally for selected isotopes and in systematic studies. A perfect tool for the latter case are activation experiments: their high sensitivity and selectivity allows measurements with small amounts of target material which is mostly the case for the low abundant p-nuclei. Different approaches for systematic studies on the input for Hauser-Feshbach calculations – such as optical particle-nucleus potentials – will be presented with focus on activation experiments. Recent results and their influence on an improvement of the nuclear physics p-process nucleosynthesis are discussed.

**ALL INTERESTED PERSONS ARE CORDIALLY INVITED TO ATTEND**