

**NEER FY 2001  
PROJECT ABSTRACT**

<b>Grant Number:</b>	01ID14109
<b>Project Title:</b>	Determination of Unknown Neutron Cross Sections for the Production of Medical Isotopes
<b>Lead PI:</b>	Stephen Binney, Oregon State University
<b>Abstract:</b>	<p>In the past, cross section measurement work had been supported by USDOE, but that effort was terminated with many important cross section determinations unfinished. There is a strong need for accurate cross section data with regard to the production of medical radioisotopes. Much of these data are unknown or inaccurate, especially for intermediate radioactive products. Knowledge of these cross sections will benefit medical isotope production and several other practical applications by providing important data for medical isotopes previously unavailable. This neutron cross section information is required to design reactor facilities and targets for the optimal production of medical isotopes. Previously unknown thermal and resonance integral cross sections, and in some cases (n,p) cross sections, will be determined for several nuclides important to medical isotope production applications. Existing integral reaction rate measurements will be used to unfold thermal cross sections and resonance integral values and their uncertainties. Measurements will be made using the Oregon State University TRIGA Reactor to confirm these results. This will enable calculations of optimized medical isotope production in reactors with respect to several different parameters (position, target density, configuration, etc.).</p>