



**UNDERGRADUATE RESEARCH ASSISTANT IN NEUTRON DETECTION TECHNIQUES
POSITION IMMEDIATELY AVAILABLE**

An undergraduate research assistantship is available with the **Bay Area Neutron Group (BANG)** in the Department of Nuclear Engineering. In collaboration with Lawrence Livermore National Laboratory (LLNL), our team is investigating neutron spectroscopy techniques for extreme high-flux environments. LLNL is constructing a fast-neutron imaging facility that has a need for neutron spectral measurements in a regime where traditional time-of-flight energy characterization is not possible due to inadequate beam pulsing.

A variety of feasibility studies are underway using the neutron production facility at **Lawrence Berkeley National Laboratory's 88-Inch Cyclotron** to determine the most promising methods in advance of the completion of the LLNL facility. These include coincident neutron/gamma measurements from carbon inelastic scatter, proton-recoil telescope design, active-target secondary time-of-flight, scintillator response function characterization and spectral unfolding, and neutron activation spectral unfolding.

The research assistant will help assess and compare the feasibility of one or several of these methods, combining hands-on experimental testing of detectors and Monte Carlo simulation to determine detection efficiencies and backgrounds. An ideal candidate will have knowledge of neutron transport, and at least a basic familiarity with MCNP and/or Geant4 neutronics codes sufficient to run and modify existing input decks.

This position reports to Dr. Bethany Goldblum.

Hours/Pay:

40 hours per week (summer), 10 hours per week (academic year)

\$15 per hour

Required Qualifications:

- Undergraduate degree in progress in Nuclear Engineering, Physics, EECS, or related disciplines
- Passion for scientific inquiry
- Strong written and oral communication skills

To apply, submit a cover letter and CV to
Bethany L. Goldblum, PhD (bethany@nuc.berkeley.edu)
Department of Nuclear Engineering, UC Berkeley
Executive Director, Nuclear Science and Security Consortium
