

June 11 - July 20, 2012

NUCLEAR FORENSICS UNDERGRADUATE SUMMER SCHOOL 2012

University of Missouri, Columbia, MO

Application Deadline March 16, 2012

Undergraduate Students specializing in the physical sciences are encouraged to apply. Applicants must be US Citizens. Fill out the ONLINE APPLICATION (link below).

Applicants must submit:

- Brief Statement of Intent stating strengths, goals and interests
- Current Resume
- University Transcript (with copy of Spring 2012 schedule)
- One Letter of Recommendation from a Faculty Member or Technical Reference

Submit application materials electronically to:

<http://institute.lanl.gov/institutes/application>

Students will be notified of selection by March 26, 2012 (requests for early decision can be considered individually—contact Susan Ramsay)

For more information:

Susan Ramsay
Los Alamos National Laboratory
email: ramsay@lanl.gov
phone: 505-665-7214
fax: 505-665-7895

Student Stipend

Each student will receive housing, three meals per day M-F, and a \$5,000 stipend that includes travel.



Purpose

In its third year, this six-week summer school, to be held June 11 - July 20 on the University of Missouri, Columbia (MU) campus (shown above), is designed to provide comprehensive, experimental, hands-on training in topics essential to nuclear forensics as a means of interesting students in pursuing graduate studies in technical fields related to nuclear forensics.



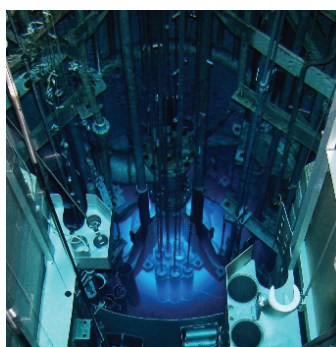
Technical Focus

Students will be trained in topical areas such as:

- Nuclear Decay
- Atomic and Nuclear Structure
- Nuclear Material Processes and Uses
- The Nuclear Fuel Cycle
- Radiation Detection
- Standard Analytical Methods
- Environmental Radiochemistry

Course Format

Two 1½-hour lectures will be presented in the morning, with laboratory experiments performed most afternoons. Coursework will cover major topics in nuclear and radiochemistry, as well as in the chemical and physical characterization of actinide-bearing materials.



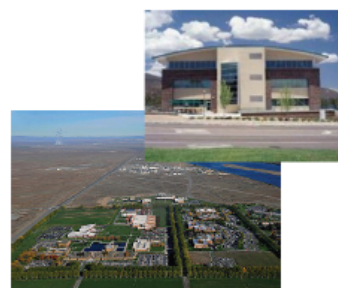
Objectives

At the completion of this summer school, students will understand:

- The chart of nuclides, and be able to utilize it
- Different modes of radioactive decay
- Components of the nucleus and how it influences nuclear properties
- How fission is induced and the resulting products
- Radiation detection and mass spectroscopy, and be able to determine isotope concentration or ratios
- The fundamental components and chemistry in the nuclear fuel cycle
- The chemistry of key radio-nuclides in applications important to nuclear forensics
- The application of analytical methods in characterizing materials
- Contemporary issues in nuclear forensics

Field Trip

The 2012 Nuclear Forensics Summer School will include a field trip to a National Laboratory to provide participants a first-hand view of an operational environment.



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