



Summer School:
Atomic-level Response of Materials to Irradiation
Inn & Spa at Loretto, Santa Fe, NM
June 20th – 25th, 2010



Scope: The school aims to inform and educate students in the area of radiation effects in materials, with emphasis on atomic-level phenomena. The one-week long curriculum will cover a range of topics:

- Fundamentals of bonding, crystal structures, defects and interfaces relevant to nuclear reactor materials
- Atomistic modeling and materials characterization methods
- Sources of energetic particles, physics of ion stopping, collision cascades and radiation-induced defect formation, defect diffusion and clustering.
- Influence of radiation damage on the structure, dimensional changes and properties (radiation-induced phase transformation, hardening, embrittlement, creep, voids, swelling, etc).

The school will also include a half-day excursion on Wednesday afternoon, and evening public lectures in nuclear energy with focus on the role of materials research.

Who should attend?

Undergraduate and graduate students, post-doctoral researchers, faculty members and staff scientists (particularly early-career) interested in radiation effects in materials and research on structural materials, fuels and waste forms for advanced nuclear energy systems. Basic materials science background is required.

List of lecturers:

Mike Nastasi, Amit Misra, Art Voter, Blas Uberuaga, Chris Stanek, Stuart Maloy, Kurt Sickafus, Alfredo Caro (LANL), Mike J. Demkowicz (MIT), Gary Was (University of Michigan), Bob Averback (University of Illinois), Ben Larson, Lance Snead, Roger Stoller, Yuri Osetsky, Steve Zinkle, Malcolm Stocks (ORNL), Dieter Wolf (INL), A. El-Azab (Florida State University), Bob Odette (UC-Santa Barbara).

How to Apply – Students should email (preferred), mail, or FAX application materials to:
Ms. Debbie Wilke, LANL, P.O. Box 1663, MS: T011, Los Alamos, NM 87545
Email: dwilke@lanl.gov; Fax: 505-663-5504, Phone: 505-663-5621
Application deadline: March 15th, 2010

The following materials should be included in the application:

- 1) A one page cover letter describing your interest in this summer school and how attending this school will benefit your near term (1-3 year) academic and professional goals.
- 2) In addition to the cover letter, student and post-doc applicants should also include a current resume and a letter of recommendation from supervisor.

Selected students will be informed by end of April and asked to officially register. **There is no registration fee and lodging/meals/excursion costs will be covered by the school.** Attendees will have to cover their own airfare and ground transportation expenses to reach the Inn & Spa at Loretto, Santa Fe, NM.

Organization and financial support for the school:

The school is organized by the three Energy Frontier Research Centers (EFRCs), respectively, at Los Alamos National Laboratory, Oak Ridge National Laboratory and Idaho National Laboratory. EFRCs are sponsored by the US, DOE, Office of Basic Energy Sciences.

School syllabus and additional information will be posted in the coming weeks at: <http://cmime.lanl.gov>

School is sponsored by the Materials Design Institute (Dan Thoma, director, MDI and adjunct Professor, UC-Davis), LANL National Security Education Center.