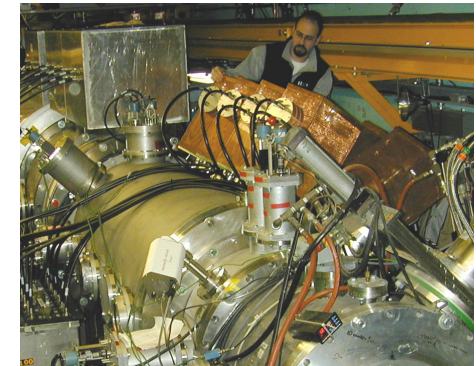
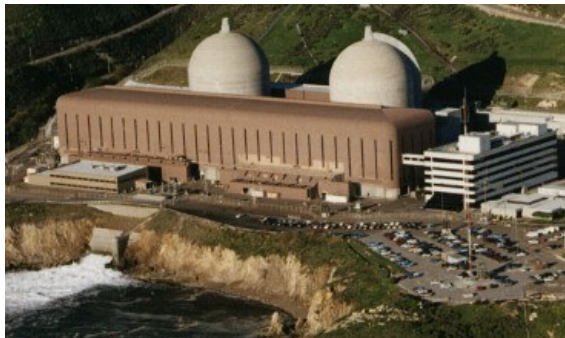


# Nuclear Engineering Department Overview



# Why study nuclear engineering at Berkeley?

The Nuclear Engineering Department at Berkeley was established in 1959 by Thomas Pigford after a suggestion from Glenn Seaborg and Edward Teller.

“For all our difficulties, life today is far better for more people and the possibilities for the future can be brighter than ever if we develop not only new knowledge, but a greater faith and new confidence in the human mind and spirit.”

**Glenn T. Seaborg**

## *Strategic Vision & Objective*

**Our objective is to be the preeminent provider of nuclear engineering education at the undergraduate, graduate and post-graduate level and to perform world-class research across all nuclear engineering disciplines, utilizing the resources available within the University and through our unique National Laboratory partnerships.**

## NE Faculty

- **Joonhong Ahn**, radioactive waste management; safety assessment of deep geologic repository; transport of radionuclides in geologic formations
- **Daniel Kammen**, energy and environment issues; renewable energy; energy policy; risk analysis; energy and society
- **Edward C. Morse**, applied plasma physics; fusion technology; microwaves
- **Eric B. Norman**, homeland security, neutrino physics, and nuclear astrophysics
- **Per F. Peterson**, heat and mass transfer; multiphase transport; thermal hydraulics; nuclear reactor design and safety; radioactive waste and materials management
- **Jasmina L. Vujic**, numerical methods in radiation transport; biomedical application of radiation; nuclear reactor core analysis and design
- **Brian D. Wirth**, models of the effect of neutron and high energy particle irradiation on microstructure; properties and performance of structural materials in nuclear energy technologies

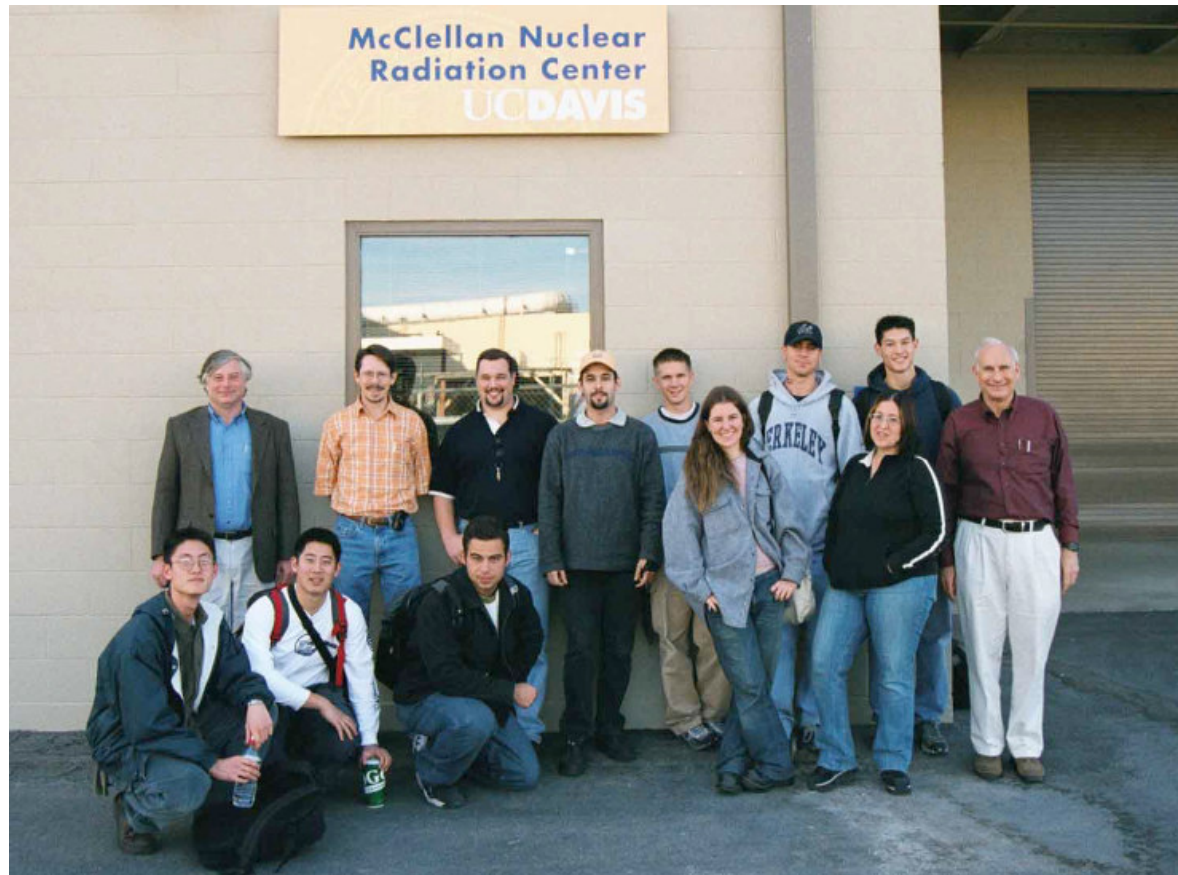
## NE Faculty - Professors in Residence

- **Ehud Greenspan**, advanced reactor design and analysis; advanced nuclear fuel cycles; transmutation of nuclear waste; reactor physics; criticality safety; boron neutron capture therapy
- **Ka-Ngo Leung**, plasma source and ion beam development for fusion; neutron production; microelectronic fabrication; particle accelerators
- **John P. Verboncoeur**, numerical algorithms; stability; kinetics; and basic plasma physics; fusion; discharges for materials processing; microwave-beam devices
- **Kai Vetter**, gamma-ray and neutron imaging concepts for applications ranging from homeland security and nuclear non-proliferation to biomedical imaging; search for neutrino-less double-beta decay in  $^{76}\text{Ge}$

## NE RESEARCH AREAS

- **Applied Nuclear Physics**
- **Bionuclear and Radiological Physics**
- **Energy Systems and the Environment**
- **Ethics and the Impact of Technology on Society**
- **Fission Reactor Analysis**
- **Fuel Cycles and Radioactive waste**
- **Fusion Science and Technology**
- **Laser, Particle Beam, and Plasma Technologies**
- **Nuclear Materials and Chemistry**
- **Nuclear Thermal Hydraulics**
- **Risk, Safety, and Large-Scale Systems Analysis**

**Students at Berkeley have a unique opportunity to benefit from the advantages of a small, congenial department with a low student-to-faculty ratio and exciting prospects for research and future employment.**



**Department of Nuclear Engineering, University of California, Berkeley**

## **Small Classes increase opportunities for in-depth learning**



**Professor Jasmina  
Vujic demonstrates  
use of the gamma-  
ray camera to  
students in imaging  
course.**

**NE students work in department research laboratories or at nearby National Laboratories to obtain research experience. This semester, 19 graduate students are employed at LBL or LLNL.**



**The next decade holds promise for finding solutions of major, grand-challenge problems**



**UCBNE Students at Yucca Mountain**

**Department of Nuclear Engineering, University of California, Berkeley**