



BERKELEY LAB

LAWRENCE BERKELEY NATIONAL LABORATORY

2008 Summer Lecture Series

Noon...Tuesdays...Bldg. 50 Auditorium

June 24 Wes Bethel

Scientific Visualization: The Modern Oscilloscope for Seeing the Unseeable

Scientific visualization transforms abstract data into readily comprehensible images, provide a vehicle for “seeing the unseeable,” and play a central role in both experimental and computational sciences. Bethel, who heads the Scientific Visualization Group in the Computational Research Division, presents an overview of visualization and computer graphics, current research challenges, and future directions for the field.



July 1 Surabi Menon

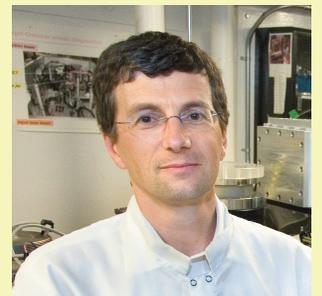
Regional and Global Climate Change: The Role of Particles and Gases

A member of the Atmospheric Sciences Department in the Environmental Energy Technologies Division (EETD), Menon’s work focuses on the human contribution to increasing impacts of climate change. Her talk will focus on what humans can do about the effects of global warming by examining anthropogenic influences on climate and future anticipated impacts, using a climate model and her own observations.

July 8 Wim Leemans

Accelerating Into the Future: From 0 to 1 GeV in a Few Centimeters

By exciting electric fields in plasma-based waveguides, lasers accelerate electrons in a fraction of the distance conventional accelerators require. The Accelerator and Fusion Research Division’s LOASIS program, headed by Leemans, has used 40-trillion-watt laser pulses to deliver billion-electron-volt (1 GeV) electron beams within centimeters. Leemans looks ahead to BELLA, 10-GeV accelerating modules that could power a future linear collider.



July 15 Roger Falcone

New Directions in X-Ray Light Sources

Molecular movies of chemical reactions and material phase transformations need a strobe of x-rays, the penetrating light that reveals how atoms and molecules assemble in chemical and biological systems and complex materials. Falcone, Director of the Advanced Light Source, will discuss a new generation of x ray sources that will enable a new science of atomic dynamics on ultrafast timescales.

July 22 Kathy Yelick

Multicore: Fallout From a Computing Evolution

Parallel computing used to be reserved for big science and engineering projects, but in two years that’s all changed. Even laptops and hand-helds use parallel processors. Unfortunately, the software hasn’t kept pace. Yelick, Director of NERSC, describes the resulting chaos and the computing community’s efforts to develop exciting applications that take advantage of tens or hundreds of processors on a single chip.



July 29 Arun Majumdar

Global Energy: Supply, Demand, Consequences, and Opportunities

Majumdar, Director of EETD, will discuss current and future projections of economic growth, population, and global energy demand and supply, and will explore the implications of these trends for the environment. Majumdar plans to end his talk by inviting discussion of the challenges and opportunities in science, technology, and policy, on the path we take towards sustainable development.