Physics of Sustainable Energy:
Using Energy Efficiently
and Producing It Renewably

Saturday/Sunday, March 1–2, 2008
University of California at Berkeley (Evans Hall)

Sponsors: Am. Physical Society's Forum on Physics and Society, and Amer. Association of Physics Teachers

The impacts of global warming are becoming ever more apparent. The reliance of US on foreign sources of energy decreases our security. Energy pollution continues to plague urban areas. These concerns highlight the need to come up with solutions to the energy issue. This short course is designed to acquaint physicists with an in-depth technical knowledge of the more promising developments in energy research and to enable them to evaluate energy issues for teaching or for research.

$100/$80 for students (includes two lunches, + 500 pg. proceedings) + $ for banquet/parking

Organizers: David Hafemeister, Cal Poly–SLO, Barbara Levi, *Physics Today*
Mark Levine, Lawrence Berkeley Nat. Laboratory, Pete Schwartz, Cal Poly–SLO

See www.calpoly.edu/~dhafemei/APSenergy.html (after Oct.1, housing, directions, etc.)

REGISTER BELOW. DON'T DELAY. SPACE IS LIMITED.

- -

Name____

Mailing Address____

Email________________________ Phone___________________

__$100 Check (Payable to APS) __$80 Student__$35 banquet__$15/d park, car license______

Mail form/check to D. Hafemeister, 553 Serrano, San Luis Obispo, CA 93405, dhafemei@calpoly.edu

Physics of Sustainable Energy:
Using Energy Efficiently and Producing It Renewably

I. Overview on Energy Issues (Saturday, March 1, 8:30 AM, Evans Hall, rm. 10)
1. Science of Photons to Fuels (Steve Chu, LBNL)
2. Energy End-Use Efficiency (Art Rosenfeld, CEC)
3. US–China Energy Issues (Mark Levine, LBNL)
4. Carbon Reduction Wedges (Rob Socolow, Princeton)
5. Science and Policy for Deep Cuts in Carbon Emissions (Dan Kammen, UCB)

Lunch

II. Energy-Use in Buildings and Industry
1. Buildings as Systems (Danny Harvey, U.Toronto)
2. Physics of Buildings (David Hafemeister, CalPoly)
3. Windows and Daylighting (Steve Selkowitz, LBNL)
4. Appliance Designs and Standards (Jim McMahon, LBNL)
5. Lighting, the white LED (Steve DenBaars, UCSB)
6. Heating/Ventilation/Airconditioning (Craig Wray, LBNL)
7. Industrial Use of Energy (Lynn Price, LBNL)

Banquet, Art Rosenfeld, "A day in the life of an Energy Commissioner," Berk. Fac. Club ($35)

III. Energy–use by Automobiles (Sunday, March 2, 8:30 AM)
1. The Race for 21st Century Auto Fuels (Alex Farrell, UCB)
2. Safe Automobiles (Tom Wenzel-LBNL, Marc Ross-U.Michigan)
3. Plug in Electric Cars and the Grid (Mark Duvall, EPRI)
4. Batteries for Electric Cars (Venkat Srinivassen, LBNL)
5. Hydrogen for Vehicles (Jan Herbst, GM)

Lunch

IV. Electricity Production
1. Solar Photovoltaics (Michael McGehee, Stanford)
2. Concentrating Solar Power (Mark Mehos, NREL)
3. Wind (Robert Thresher, NREL)
4. Nuclear Power (Per Petersen, UC-Berkeley)
5. Carbon Capture and Sequestration (Larry Myer, CEC)
6. Electrical–Grid Energy Storage (John Hull, Boeing)