

AGENDA
Energy Symposium: The “Rosenfeld Effect”
Friday, April 28, 2006 – 8:30 am to 5:40 pm *
Sibley Auditorium, University of California, Berkeley

8:30	Coffee and tea
9:00-9:15	Introductions WILLIAM W. NAZAROFF -- Chair, Energy and Resources Group, UC Berkeley -- Professor of Environmental Engineering, UC Berkeley Opening Comments ROBERT J. BIRGENEAU -- Chancellor at the University of California, Berkeley
9:15-10:30	Session 1: JOHN HOLDREN -- Director, The Woods Hole Research Center -- Teresa and John Heinz Professor of Environmental Policy and Director, Program on Science, Technology, and Public Policy at John F. Kennedy School of Government, Harvard University -- Professor of Environmental Science and Policy, Department of Earth and Planetary Sciences, Harvard University -- President, American Association for the Advancement of Science NRDC ENERGY TEAM -- <i>Sheryl Carter</i> , Director, Western Energy Programs -- <i>Devra Bachrach Wang</i> , Director, California Energy Programs -- <i>Audrey Chang</i> , Staff Scientist
10:30-10:45	Break
10:45-12:00	Session 2: MARK LEVINE -- Director, Environmental Energy Technologies Division, LBNL -- Group Leader, China Energy Group, LBNL -- Founder and board member, Beijing Energy Efficiency Center ASHOK GADGIL -- Senior Staff Scientist and Group Leader, Environmental Energy Technologies Division, LBNL -- Adjunct Professor, Energy and Resources Group, UC Berkeley
12:00-1:30	Lunch Break
1:30-2:45	Session 3: ROBERT SOCOLOW -- Co-Director, The Carbon Mitigation Initiative, Princeton University -- Professor, Princeton University STEVE CHU -- Lab Director, LBNL -- 1997 Nobel Laureate in Physics
2:45-3:00	Break
3:00-4:15	Session 4: STEPHEN SCHNEIDER -- Co-Director, Center for Environmental Science and Policy at the Stanford Institute for International Studies -- Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies, Stanford University -- Professor, Department of Biological Sciences, Stanford University HENRY KELLY -- President, Federation of American Scientists
4:15	Break
4:30-5:10	Session 5: JOSEPH ROMM -- Executive Director, Center for Energy and Climate Solutions -- Former Acting Assistant Secretary of Energy for Energy Efficiency and Renewable Energy
5:10-5:40	Summing up: ART ROSENFELD

* All sessions will start and end at their indicated clock times. We are deliberately violating a UC Berkeley tradition that all courses and seminars begin ten minutes later than the indicated start time.

Speakers and Topics
Energy Symposium: The “Rosenfeld Effect”
Friday, April 28, 2006 – 8:30 am to 5:40 pm
Sibley Auditorium, University of California, Berkeley

<p>JOHN HOLDREN -- Director, The Woods Hole Research Center -- Teresa and John Heinz Professor of Environmental Policy and Director, Program on Science, Technology and Public Policy at John F. Kennedy School of Government, Harvard University -- Professor of Environmental Science and Policy, Department of Earth and Planetary Sciences, Harvard University -- President, American Association for the Advancement of Science</p>	<p>“Global Energy Challenges and the Role of Increased Energy Efficiency in Addressing Them” Among the many energy challenges facing the United States and the world, two are pre-eminent: (1) how to limit the economic and security liabilities of overdependence on oil in the face of rising demands for transport fuel; and (2) how to provide the energy needed to create and sustain prosperity for the entire planet and not destroy global climate with the carbon dioxide produced from fossil-fuel combustion. The talk characterizes these challenges in quantitative terms and demonstrates that a strong emphasis on increasing energy efficiency, the idea to which Art Rosenfeld has devoted his distinguished energy career, will be indispensable in surmounting them.</p>
<p>NRDC ENERGY TEAM -- Sheryl Carter, Director, Western Energy Programs -- Devra Bachrach Wang, Director, California Energy Programs -- Audrey Chang, Staff Scientist</p>	<p>“The Rosenfeld Effect in California” California leads the nation in innovative energy policies, and those policies are reflected in trends in energy use that are significantly different than in other states. This talk will review those policies and trends in California, and the contributions made by Art Rosenfeld.</p>
<p>MARK LEVINE -- Director, Environmental Energy Technologies Division, LBNL -- Group Leader, China Energy Group, LBNL -- Founder and board member, Beijing Energy Efficiency Center</p>	<p>“Energy Efficiency in China: Glorious History, Uncertain Future” China will drive international energy markets. China increases its oil consumption a relatively small amount (by Chinese standards), oil prices soar, and fears of the Chinese energy behemoth grip the world. China's energy demand soars, as it has for the past four years, and the timetable for China becoming the world's largest emitter of carbon dioxide moves forward from 2025 to 2020. No other global energy issue is more important than China's future demand for energy. This talk will describe the successes and failures of energy efficiency in China's energy policy. Based on a remarkable series of recent developments at the highest level of the Communist Party of China, the talk will conclude with predictions about efficiency in China's future.</p>
<p>ASHOK GADGIL -- Senior Staff Scientist and Group Leader, Environmental Energy Technologies Division, LBNL -- Adjunct Professor, Energy and Resources Group, UC Berkeley</p>	<p>“Saving Energy and Making Drinking Water Safe in the Developing Countries” Energy efficiency is not only important for economies that are wasteful of energy, it is also important for resource-poor societies that have to divert resources from other urgent needs (education, health, infrastructure) to energy supply. Unlike billions of people around the world, we, in the first world, take safe drinking water for granted. This talk will present projects that use innovative and energy efficient technologies to make safe drinking water affordable to poor communities in developing countries. This talk will also present real-world projects to promote energy efficiency in poor economies.</p>
<p>ROBERT SOCOLOW -- Co-Director, The Carbon Mitigation Initiative, Princeton University -- Professor, Princeton University</p>	<p>“The Urgency of Energy Efficiency” The world's energy system will change in response to the twin challenges of mitigating climate change and sustaining orderly markets in fluid fuels. A simple model (“stabilization wedges”) quantifies the scale of the effort required to mitigate CO2 build-up in the atmosphere and illuminates interesting interactions between the two challenges. Many options are available to modify energy supply: (1) unconventional oil and gas, (2) coal-to-power and coal-to-liquids with CO2 capture and geological storage, (3) nuclear fission, and (4) renewables (solar, wind, biomass). But all have major handicaps. Only with significant improvements in the efficiency of the global energy end-use system is it reasonable to expect the changes in the energy system to be great enough to meet the twin challenges. Rosenfeld has been telling us this for more than thirty years.</p>

Speakers and Topics
Energy Symposium: The “Rosenfeld Effect”
Friday, April 28, 2006 – 8:30 am to 5:40 pm
Sibley Auditorium, University of California, Berkeley

<p>STEVE CHU -- Lab Director, LBNL -- 1997 Nobel Laureate in Physics</p>	<p>“The Energy Problem: Our Current Choices and Future Hopes” Among America's most serious concerns are: (1) national security, which is intimately tied to our energy security, (2) economic competitiveness, and (3) the environment. These issues transcend our national boundaries and have serious implications for the world. At the core of these problems is the need to secure clean, affordable and sustainable sources of energy. While great progress can be made on the demand side of the equation, the problem must be solved by science and technology on the supply side of the equation. After briefly describing the energy problem, the remainder of the talk will describe our current options and some areas of energy research that may lead to transforming technologies.</p>
<p>STEPHEN SCHNEIDER -- Co-Director, Center for Environmental Science and Policy at the Stanford Institute for International Studies -- Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies, Stanford University -- Professor, Department of Biological Sciences, Stanford University</p>	<p>"Can we define, let alone solve, global warming?" Some worry it is too late to stop the catastrophic consequences of global warming, while others argue it is all natural variations and no significant threat. Although these extremes cannot be ruled out, the bulk of the credible studies do, indeed, agree that it is too late to prevent some dangerous outcomes, such as: (1) the 2003 European heat waves and “excess deaths” of some 30,000 people, or (2) the aftermath of Katrina, a hurricane whose intensity was very likely ratcheted up a bit by warmer oceans. On the other hand, we still have a few decades to reverse our trend of dumping greenhouse gases into the atmosphere as if it were a free sewer, and, thus, prevent some really large and dangerous effects like melting Greenland or slowing the Gulf Stream. What is “dangerous” is a value judgment about what potential harms matter, but science can say a lot about risk: the likelihood of a variety of outcomes. These will be highlighted.</p>
<p>HENRY KELLY -- President, Federation of American Scientists</p>	<p>"How to turn Good Science into Good Politics" Scientists and scientific methods continue to enjoy the respect of most Americans. But this reputation for objectivity and integrity represents a threat to interest groups whose positions are undercut by competent analysis. These groups have responded with increasingly successful efforts to: (1) paint mainstream science as simply one more interest group, (2) use the trappings of the scientific processes to create <i>faux</i> institutions whose main purpose is to manufacture uncertainty and controversy even when there is none in the mainstream community. This talk will explore how we got to this peculiar state of affairs, and what practical steps can be taken to address the problem.</p>
<p>JOSEPH ROMM -- Executive Director, Center for Energy and Climate Solutions -- Former Acting Assistant Secretary of Energy for Energy Efficiency and Renewable Energy</p>	<p>“100 Katrinas: The Fate of America in the Global Warming Century” America has at most 10 years to lead the world into a radically different energy policy, one envisioned and articulated long-ago by Art Rosenfeld. If we continue to reject that “easy” path to sustainability, the only way to avoid catastrophic climate change will be the hard path of brutally high prices for carbon, electricity, and gasoline. Failing either approach, we will be subject to the inexorable forces of a climate with carbon dioxide concentrations approaching triple pre-industrial levels. We now know the climate is changing faster than the models had predicted, with stronger feedbacks and earlier thresholds. America in a tripled world faces rapid sea-level rise, an endless barrage of major hurricanes, extreme heat-waves, and multi-decadal mega-droughts. This talk explores how climate change will transform America, when it will happen, how we could stop it, and why we probably won't.</p>

BIOGRAPHY
Arthur H. Rosenfeld
Commissioner, California Energy Commission

Energy Symposium: The “Rosenfeld Effect”
Friday, April 28, 2006 – 8:30 am to 5:40 pm
Sibley Auditorium, University of California, Berkeley

Art Rosenfeld received his Ph.D. in Physics in 1954 at the University of Chicago under Nobel Laureate Enrico Fermi, then joined the Department of Physics at the University of California at Berkeley. There he joined, and eventually led, the Nobel prize-winning particle physics group of Luis Alvarez at Lawrence Berkeley National Laboratory until 1974. At that time, he changed his research focus to the efficient use of energy, formed the Center for Building Science at Lawrence Berkeley National Laboratory (LBNL), and led it until 1994.

From 1994-1999 Dr. Rosenfeld served as Senior Advisor to the U. S. Department of Energy’s Assistant Secretary for Energy Efficiency and Renewable Energy. In 2000 California Governor Gray Davis appointed him Commissioner at the California Energy Commission, and in 2005 he was re-appointed by Governor Arnold Schwarzenegger. He is responsible for the Public Interest Energy Research program, with an annual budget of \$82 M; for energy efficiency, including the California energy efficiency standards for buildings and for appliances; and is the Assigned Commissioner to collaborate with the Public Utilities Commission Proceeding on demand response, critical peak pricing, and advanced metering and the Proceeding on Energy Efficiency Programs, with an annual budget of \$600 M.

Dr. Rosenfeld, the author or co-author of nearly 400 refereed publications, received the Szilard Award for Physics in the Public Interest in 1986, the Carnot Award for Energy Efficiency from the U.S. Department of Energy in 1993 and the Berkeley Citation in 2001 from the University of California. He is the co-founder of the American Council for an Energy Efficiency Economy (ACEEE), and the University of California's Institute for Energy and the Environment (CIEE).

Art’s website at the CEC:

<http://energy.ca.gov/commission/commissioners/rosenfeld.html>