

**NATIONAL SCIENCE BOARD
TASK FORCE ON SUSTAINABLE ENERGY**

**Roundtable Discussion #3
*Science, Engineering, and Education Challenges
Related to the Development of Sustainable Energy***

September 4, 2008

**University of California, Berkeley
Clark Kerr Campus Conference Center
2601 Warring St.
Berkeley, CA 94720**

ROUNDTABLE AGENDA

****Members of the public are welcome to attend this roundtable discussion. There will be rows of chairs positioned in the room for the public to sit. Please be aware that those who plan to drive to the Clark Kerr Campus Conference Center will need to plan in advance for parking.****

8:00 a.m. Welcoming Remarks

- Dr. Steven C. Beering, Chairman, National Science Board

8:05 a.m. Summary of Task Force Roundtable Discussions: February 8, 2008 in Arlington, VA and June 19, 2008 in Golden, Colorado

- Dr. Dan E. Arvizu and Dr. Jon C. Strauss, Co-Chairmen, National Science Board Task Force on Sustainable Energy

8:15 a.m. Overview, Purpose, and Goals of Today's Roundtable Discussion

- Dr. Dan Arvizu and Dr. Jon Strauss

8:25 a.m. Introduction of Participants

8:30 a.m. Presentation: What Roles Can Federal and State Governments Play in Promoting Sustainable Energy?

Speakers:

- Dr. Mark Levine, Staff Senior Scientist and Leader of China Energy Group, Lawrence Berkeley National Laboratory (*Confirmed*)

8:45 a.m. Discussion Session 1: Regulatory Environment for Sustainable Energy Research

Co-Moderators: Dr. Dan Arvizu and Dr. Jon Strauss

Focus Questions:

- 1) What is the role of the California Air Resources Board (CARB) driving research at the Federal and international level? What were some of the results from previous CARB policies?
- 2) What actions are most likely to be effective by the federal government and state governments to promote sustainable energy systems at state, national, and international levels?

- 9:15 a.m. **Break**
- 9:30 a.m. **Presentation: Energy, Environment, Economics, and S&E Policy**
- Speaker:** Dr. Mark Brown, Associate Professor, Department of Environmental Engineering Sciences, University of Florida (*Confirmed*)
- 9:55 a.m. **Discussion Session 2: Energy, Environment, Economics, and S&E Policy**
 Co-Moderators: Dr. Dan Arvizu and Dr. Jon Strauss
- Focus Questions:*
- 1) What is appropriate science and engineering for integrating energy, environmental, and economic considerations to inform policy?
 - 2) What engineering studies and applications best fit dynamic ecological and socio-economic systems?
 - 3) What policy instruments lend themselves to adaptive and flexible management schemes?
- 10:55 a.m. **Presentation: Financing, Forecasting, Modeling, Trajectory in Renewable Energy: A Strategic Perspective**
- Speaker:** Mr. Vinod Khosla, Founder and Partner, Khosla Ventures (*Confirmed*)
- 11:20 a.m. **Presentation: Federal Support for Sustainable Energy Research**
- Speaker:** Dr. Daniel M. Kammen, Director, Renewable & Appropriate Energy Laboratory, University of California, Berkeley (*Confirmed*)
- 11:45 p.m. **Discussion Session 3: Public-Private Investment in Sustainable Energy Research**
 Co-Moderators: Dr. Dan Arvizu and Dr. Jon Strauss
- Focus Questions:*
- 1) How can the public and private sectors effectively work together in funding basic S&E research in sustainable energy technologies? How can current funding roles and partnerships be strengthened?
 - 2) What are the lessons learned (e.g. about deploying new technologies) from previous cooperative R&D partnership programs between the Federal government and industry? What are some suggestions on how to maximize support for sustainable energy research in the future?
- 12:30 p.m. **Lunch** (*Provided for Invited Roundtable Participants Only*)
- Luncheon Welcoming Remarks:** Chancellor Robert Birgeneau, University of California at Berkeley (*Confirmed*)
- 12:40 p.m. **Luncheon Presentation: Net Zero Energy, High-Performance Green Buildings: Rationale and Vision for the Federal R&D Agenda**
- Speaker:** Dr. S. Shyam Sunder, Director, Building and Fire Research Laboratory, National Institute of Standards and Technology (*Confirmed*)
- 1:40 p.m. **Break**

1:55 p.m. **Presentation: Advancing Public Awareness of Topics in Sustainable Energy**

Speaker: Dr. Eric Smith, Professor, Department of Political Science and Environmental Studies Program, University of California, Santa Barbara
(*Confirmed*)

2:20 p.m. **Presentation: NSF's Current and Potential Sustainable Energy Initiatives in Formal and Informal Education and in Workforce Development**

Speaker: Dr. Al DeSena, Program Director, Division of Research on Learning in Formal and Informal Settings (DRL), National Science Foundation; Coordinator, Lifelong Learning Cluster, DRL, NSF (*Confirmed*)

2:45 p.m. **Discussion Session 4: Public Awareness and Education about Global Sustainability and Sustainable Energy**

Co-Moderators: Dr. Dan Arvizu and Dr. Jon Strauss

Focus Questions:

- 1) In what ways can topics in global sustainability and sustainable energy be clearly and effectively communicated to the general public? What roles do Federal and state governments, academia, industry, and the media have in this communication?
- 2) What role does social science research play in a sustainable energy agenda (e.g. understanding of consumer behavior and conveying awareness of S&E topics to the general public)?
- 3) What is NSF's role in supporting K-16 formal and informal education initiatives in global sustainability and sustainable energy?
- 4) What is NSF's role in supporting workforce development initiatives in areas of sustainable energy?

4:00 p.m. **Presentation with Q&A: Current Sustainable Energy Initiatives in NSF's Directorate for Mathematical & Physical Sciences**

Speaker: Dr. Tony Chan, Assistant Director, Directorate for Mathematical & Physical Sciences, National Science Foundation (*Confirmed*)

4:30 p.m. **Summary and Next Steps for the Task Force**

- Dr. Dan Arvizu and Dr. Jon Strauss