GLOBAL CLIMATE AND ENERGY PROJECT
STANFORD UNIVERSITY

GCEP

Agenda

GCEP RESEARCH SYMPOSIUM 2010 | STANFORD, CA

Creating a Sustainable Energy System for the 21st Century & Beyond

SEPTEMBER 28 – 29, 2010

GLOBAL CHALLENGES — GLOBAL SOLUTIONS — GLOBAL OPPORTUNITIES

Tuesday, September 28

7:15 – 8:00	McCaw Hall	Breakfast
8:00 – 8:30	McCaw Hall	**Welcome and Global Climate and Energy Project (GCEP): 2010** **Sally Benson,** Director, Global Climate and Energy Project Stanford University
Morning Plenary Sessions: Energy Systems Across All Nations **Chair: Lynn Orr, Director, Precourt Institute for Energy, Stanford University**		
8:30 – 8:35	McCaw Hall	**President John L. Hennessy,** Stanford University
8:35 – 9:30	McCaw Hall	**Plenary: The Recent Situation and Development of China's Energy Sector** **Dr. Xu Kuangdi,** Honorary Chairman of the Governing Board, Chinese Academy of Engineering; former Mayor of Shanghai
9:30 – 10:30	McCaw Hall	**Plenary: DOE Perspective: Addressing the Energy Challenges of the Nation** **Kristina Johnson,** Under Secretary of Energy, United States Department of Energy
10:30 – 11:00	Ford Gardens	Break
11:00 – 12:00	McCaw Hall	**Plenary: Evaluating Environmental Trade-offs, Co-benefits, and Unintended Consequences of Energy Options and Climate Responses** **Pamela Matson,** Dean of the School of Earth Sciences, Stanford University
12:00 – 1:00	Ford Gardens	Lunch (name badge required)
Afternoon GCEP Research Themes and Concurrent Energy Tutorials		

GCEP Research: Biofuels and Bioenergy Conversion		
1:00 – 2:40	McCaw Hall	**Moderator: Chris Field,** Carnegie Institution; Stanford University Presenters: **Claire Halpin,** University of Dundee, *Novel Mutants Optimized for Lignin, Growth and Biofuel Production* **Jim Swartz,** Stanford University, *Biohydrogen Generation* **David Lobell,** Stanford University, *Non-carbon Effects of Bioenergy on Climate*
2:40 – 3:00	Ford Gardens	Break
GCEP Research: Carbon Capture and Sequestration		
3:00 – 4:40	McCaw Hall	**Moderator: Sally Benson,** Stanford University Presenters: **Chris Edwards,** Stanford University, *Realizing Ultra-High-Efficiency Engines — Understanding Limits and Overcoming Limitations* **Gary Mavko, Tiziana Vanorio,** Stanford University, *Linking Chemical and Physical Effects of CO_2 Injection to Geophysical Parameters* **Don Zhang,** Peking University and University of Southern California, *Collaborative Research on Carbon Sequestration in Saline Aquifers in China*
4:40 – 6:30	Ford Gardens	Reception and Poster Session for GCEP Research Themes: *Biofuels and Bioenergy Conversion,* and *Carbon Capture and Sequestration*

Energy Tutorial: Carbon Capture and Sequestration		
1:00 – 2:40	Fisher Conference Center	**Sally Benson,** Director, Global Climate and Energy Project, Stanford University, ***Carbon Capture and Sequestration 101*** **Limited to the 75 people who pre-registered for the tutorial. Please arrive on time.**
Energy Tutorial: Solar Energy		
3:00 – 4:40	Fisher Conference Center	**Nate Lewis,** California Institute of Technology, ***Solar Energy 101*** **Limited to the 75 people who pre-registered for the tutorial. Please arrive on time.**

All food served at the symposium is provided by Catering By The Other Woman — seasonal, sustainable cuisine with an emphasis on organic and natural foods.

Wednesday, September 29

Morning GCEP Research Themes and Concurrent Energy Tutorials					
7:15 – 8:00	McCaw Hall	Breakfast			
GCEP Research: Solar Energy			**Energy Tutorial: Battery Storage**		
8:00 – 9:00	McCaw Hall	**Moderator: Nate Lewis,** California Institute of Technology Presenters: **Zhenan Bao,** Stanford University, *Carbon Nanomaterial-Based Transparent Electrodes* **Peter Peumans,** Stanford University, *Molecular Solar Cells*	8:00 – 9:00	Fisher Conference Center	**Yi Cui,** Stanford University, ***Battery Storage 101*** **Limited to the 75 people who pre-registered for the tutorial. Please arrive on time.**
GCEP Research: Advanced Energy Transformations and Storage			**Energy Tutorial: Biofuels**		
9:10 – 10:30	McCaw Hall	**Moderator: Richard Sassoon,** GCEP Managing Director, Stanford University Presenters: **Philippe Poizot,** Universite de Picardie, *Evaluation of Redox-active Organic Electrode Materials for Greener Li-ion Batteries* **Anders Nilsson,** Stanford University/ SLAC, *Nanomaterials Engineering for Hydrogen Storage* **Thomas Jaramillo,** Stanford University, *Developing Solid-state Electrocatalysts Based on Design Principles from Nature: The Oxidation of Water and the Reduction of CO_2 to Fuels*	9:10 – 10:30	Fisher Conference Center	**Chris Field,** Carnegie Institution; Stanford University, ***Biofuels 101*** **Limited to the 75 people who pre-registered for the tutorial. Please arrive on time.**
10:30 – 11:40	Ford Gardens	Poster Session for GCEP Research Themes: *Solar Energy,* and *Advanced Energy Transformations and Storage*			
11:40 – 12:00	McCaw Hall (overflow in Fisher Conference Center)	Doors open for lunch. Please arrive early. Seating is limited, overflow in Fisher Conference Center (name badge required to attend either in McCaw or Fisher)			
12:00 – 12:05		**Introduction of Special Guest Speaker by George Shultz,** Distinguished Fellow, Hoover Institution; Chair, Hoover Energy Policy Task Force; former U.S. Secretary of State			
12:05 – 1:00		**New Thoughts on a Hot, Flat and Crowded World** **Thomas Friedman,** *The New York Times* Columnist; Pulitzer Prize Winning Author			

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Wednesday, September 29 (continued)

Afternoon Plenary Sessions: Opportunity and Innovation in the Energy Economy		
1:10 – 2:40	McCaw Hall	**Plenary: Information Technology Opportunities in the Energy Sector** **Moderated by Mark Horowitz,** Chairman, Electrical Engineering Department, Stanford University; Chief Scientist, Rambus Panelists: **Paul De Martini,** Vice President and Chief Technology Officer, Smart Grid, Cisco **Pat House,** Co-founder, Vice Chairman, and Senior Vice President of Strategy, C3 **Balaji Prabhakar,** Associate Professor, Electrical Engineering and Computer Science Departments, Stanford University **Bill Weihl,** Green Energy Czar, Google
2:40 – 3:00	Ford Gardens	Break and Poster Session (continued) for GCEP Research Themes: *Solar Energy,* and *Advanced Energy Transformations and Storage*
3:00 – 3:45	McCaw Hall	**Plenary: On the Size of the Mitigation Effort Required to Solve the Climate Problem: New Constraints from Recent Carbon Cycle Research** **Stephen Pacala,** Director, Princeton Environmental Institute, Princeton University
3:45 – 5:10	McCaw Hall	**Plenary: The Energy Innovation Ecosystem** **Moderated by Journalist Andrew Revkin,** *Dot Earth* Panelists: **Uma Chowdhry,** Senior Vice President and Chief Science and Technology Officer, Emeritus, DuPont **Roy Johnson,** former Chief Executive Officer, Calisolar **John Krenicki,** Vice Chairman, GE; President and Chief Executive Officer, GE Energy Infrastructure **Richard Swanson,** Founder and President Emeritus, SunPower
5:10 – 5:15	McCaw Hall	**Closing Remarks** **Sally Benson,** Director, Global Climate and Energy Project Stanford University

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Global Climate and Energy Project
The Jerry Yang & Akiko Yamazaki Environment & Energy Building
Mail Code 4230
473 Via Ortega, Suite 324
Stanford, CA 94305
Phone: (650) 724-6740
Fax: (650) 725-9190
Email: gcep@stanford.edu
http://gcep.stanford.edu

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