



**Non-CO<sub>2</sub> Greenhouse Gas Emissions Workshop**  
Frances C. Arrillaga Alumni Center, Fisher Conference Center  
**STANFORD UNIVERSITY**  
*Stanford, California*



August 26-27, 2008

**— Tuesday, August 26 —**

**8:00 – 8:30**     **CONTINENTAL BREAKFAST- South Lobby**

**8:30 – 9:40**     **Welcome and Introduction**

Chair: Richard Sassoon

8:30     Global Climate and Energy Project Introduction and Overview of Workshop     Sally Benson, *Global Climate and Energy Project*

8:50     GHG's Other Than Carbon Dioxide: Emissions, Technology, Mitigation Potential and Research Needs     Paul Gunning, *U.S. Environmental Protection Agency*

**9:40 – 11:15**     **Methane Emissions from the Natural Gas Sector**

Chair: Richard Sassoon

9:40     Methane Emissions and Emissions Reduction Opportunities at Natural Gas Transmission, Distribution, and Storage Systems     Jack Dunlap, *Pacific Gas & Electric Company, San Francisco*

**10:20 – 10:35**     **BREAK**

10:35     Technology Developments to Address Methane Reduction in the Delivery of Natural Gas     Eddie Johnston, *Gas Technology Institute*

**11:15 – 2:15**     **Methane Emissions from the Waste Sector**

Chair: Sally Benson

11:15     Uncertainties in Landfill Methane Inventories: What's Next?     Bob Harriss, *Houston Advanced Research Center, Texas*

**11:55 – 12:55**     **LUNCH**

12:55     Improving Landfill Methane Recovery – Recent Evaluation and Large Scale Tests     Don Augenstein, *Institute for Environmental Management, Inc., Palo Alto*

1:35     Biomethane to Pipelines: Challenges and Opportunities to Increasing an Attractive Waste to Energy Option     Marc Kolb, *Pacific Gas & Electric Company*

**2:15 – 4:30**     **Emissions from the Livestock Sector**

Chair: Jennifer Milne

2:15     Greenhouse Gas Emission Controls on Livestock in North Carolina: A Case Study of Unintended Consequences     Joe Rudek, *Environmental Defense Fund*

**2:55 – 3:10**     **BREAK**

3:10     A Metagenomic Approach to Reduce Ruminant Methane Emissions and Perspectives on Solutions for Developing Countries     Chris McSweeney, *CSIRO, Australia*

3:50     Genetic Improvement of Forage Crops for Climate Change Mitigation     Michael Abberton, *Institute of Grassland and Environmental Research (IGER), Aberystwyth, Wales, UK*

**4:30 – 5:30**     **RECEPTION**



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**— Wednesday, August 27 —**

**7:30 – 8:00**     **CONTINENTAL BREAKFAST- South Lobby**

**8:00 – 9:20**     **Nitrous Oxide and Methane Emissions from Agricultural and Natural Ecosystems**     Chair: Scott Fendorf

8:00     An Overview of Nitrous Oxide and Methane Emissions from Land Systems: Global Changes, Cascades, and Controlling Processes     Pamela Matson, *Stanford University*

8:40     Feedback and Global Changes in Nitrous Oxide and Methane Emissions from Natural and Managed Land     Klaus Butterbach-Bahl, *Institute for Meteorology and Climate Research, Garmisch-Partenkirchen, Germany*

**9:20 – 12:15**     **Measuring and Modeling Nitrous Oxide and Methane Emissions from Soils**     Chair: Chris Field

9:20     Use of Models to Simulate Agricultural Greenhouse Gas Emissions     Bill Parton, *Colorado State University*

**10:00 - 10:15**     **BREAK**

10:15     Modeling Impacts of Farming Management Alternatives on Methane and Nitrous Oxide Emissions at Regional Scale     Changsheng Li, *University of New Hampshire*

10:55     Overview of Measurement Technologies for Nitrous Oxide and Methane Emissions from Agriculture – Implementation on a Large-Scale, and their Strengths and Weaknesses     Ray Desjardins, *Ag and Food Canada, Ottawa, Canada*

11:35     Tunable Diode Laser Spectroscopy Applied to the Measurement of Nitrous Oxide and Methane Emissions from Animal Waste and Agricultural Fields     Claudia Wagner-Riddle, *University of Guelph, Ontario, Canada*

**12:15 – 1:15**     **LUNCH**

**1:15 – 3:15**     **Cross-Cutting Opportunities and Future Needs**     Chair: Lynn Orr

1:15     Development of Strategies for Enhanced/Reduced Methane Production from a thermodynamics perspective     John Coates, *University of California, Berkeley*

1:55     Looking to Mammalian Evolution for How to Reduce Gut Methanogenesis     Ruth Ley, *Cornell University*

2:35     **Adjourn**