

# Energy and Resources Group Spring 2012 Colloquium Series (ER295)

## February 8, 2012



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#### **Geologic Carbon Dioxide Sequestration: A Direct Approach to Reducing Point-Source CO<sub>2</sub> Emissions**

**110 Barrows Hall / 4:00 p.m.**

Carbon dioxide (CO<sub>2</sub>) capture and storage (CCS) is a combination of technologies that addresses climate change by directly reducing the net CO<sub>2</sub> emissions arising from the use of fossil fuels as the main global primary energy source. CCS as normally envisioned involves the capture of CO<sub>2</sub> from flue gases at point sources such as power plants, and CO<sub>2</sub> compression and transport by pipeline to suitable sites for injection into deep geologic formations for permanent storage (i.e., geologic sequestration). Injected CO<sub>2</sub> becomes trapped in the deep subsurface by various processes that are understood to become more effective as time goes on. Large-scale deployment of CCS could contribute up to one-third of the reductions in CO<sub>2</sub> emissions needed to avoid global temperature rises of more than 2 °C. The environmental risks that arise from the injection of large amounts of CO<sub>2</sub> into the deep subsurface must be balanced against the benefits of CCS to climate change. Implementation of CCS is being delayed because of the lack of economic incentive, legal and regulatory frameworks, and public acceptance.

Curt is a Staff Scientist and Head of the Geologic Carbon Sequestration Program in the Earth Sciences Division at Lawrence Berkeley National Laboratory. Curt is also the Editor in Chief for storage of a new journal from Wiley called *Greenhouse Gases: Science and Technology*. Curt received his PhD in geology from U.C. Santa Barbara in 1989, and has worked at LBNL since 1990. His area of expertise is numerical model development and applications for coupled subsurface flow and transport processes. For the last ten years, Curt has worked in two main areas of geologic CO<sub>2</sub> storage, (1) CO<sub>2</sub> injection for enhanced gas recovery, and (2) near-surface leakage and seepage processes, monitoring, detection, and impacts including risk-based frameworks for site selection and certification. Curt is the author of more than 70 peer-reviewed papers and book chapters, and contributed to the IPCC Special Report on CCS, making him one of the many IPCC authors that shared the 2007 Nobel Peace Prize.