

# Advancing the Science of Geologic Carbon Sequestration

(Registration: [www.earthsciences.osu.edu/~jeff/carbseq/carbseq 2009](http://www.earthsciences.osu.edu/~jeff/carbseq/carbseq2009))

**A Workshop & Symposium Hosted by**

*The Ohio State University in partnership with Ohio University*



*School of Earth Sciences*



*Institute of Energy and Environment*

**Sponsored by**



*Battelle Energy Technology*



*American Electric Power*

## Agenda

**March 9 – Morning**

### **Session 1 – Geological Carbon Sequestration: Introductions (8:30-10:15)**

*Jeff Daniels, Moderator*

1. Welcome and Introductions: (Doug Alsdorf, OSU; Gary Spitznogle, AEP; Battelle spokesperson)
2. [Power Industry perspective of Technical Challenges \(Mike Hammond, AEP\)](#)
3. Field [Testing: The Laboratory for Geological Carbon Sequestration \(Neeraj Gupta, Battelle\)](#)

### **Session 2 – Carbon Capture and Sequestration Challenges (10:30-12:15)**

*Scott Miller, Session Chair*

1. [Technical Challenges in Reducing the Costs for Carbon Capture \(Bruce Sass, Battelle\)](#)
2. [Capture and sequestration challenges for synfuel development, Dave Bayless, OU](#)
3. [Geologic and hydrogeologic Challenges in the Midwest \(Larry Wickstrom, Chief Ohio Geological Survey\)](#)
4. [Sequestration options at the source \(L.S. Fan, OSU\)](#)

### **Lunch (12:30-1:15)**

**Keynote: Klaus Lackner, Columbia University (1:15-2:00)**

## March 9 – Afternoon Sessions

### Session 3 – Fluid flow, transport, and Hydrology (2:15-4:00)

*Frank Schwartz, session chair*

1. [Hydrogeologic Modeling Challenges \(Frank Schwartz, OSU\)](#)
2. [Overview and Initial Assessments of Potential Groundwater Impacts \(Jens Birkholzer, LBNL\)](#)
3. [CO2-brine-rock interactions and Geochemical Modeling Challenges \(Chen Zhu, Indiana University\)](#)
4. [Coupled Thermal, Hydraulic and Mechanical \(THM\) processes in Geological Media \(Jonny Rutqvist, LBNL\)](#)

**Summary of Challenges (4:15 – 5:15) – Speakers present 1 key challenge; audience input and discussion**

**ICEBREAKER – 5:30-6:30**

## March 10 – Morning (8:30 AM)

### Session 5 – Mineralization, fractures and CO<sub>2</sub> in saline aquifers (8:30-10:15)

*Beverly Saylor, Session Chair*

1. [Geologic heterogeneity and CO<sub>2</sub>-mineral interactions \(Beverly Saylor, CWRU\)](#)
2. [The Kinetics of Sub-surface carbon sequestration \(Eric Oelkers, University of Toulouse\)](#)
3. [Geochemical Tools for Monitoring Geologic Carbon Sequestration, \(David Cole, ORNL\)](#)
4. [Geologic Sequestration in Reactive Rocks Opportunities and Challenges, \(Travis McLing, INL\)](#)

### Session 6 – Characterization and Monitoring (10:30-12:30)

*Gregg Nadon, Session Chair*

1. [Pore space and permeability for CO<sub>2</sub> movement \(Steve Bryant, UT Austin\)](#)
2. [Seismic Techniques for Characterizing and Monitoring of sequestered CO<sub>2</sub>\(Jackie Gerst, Battelle\)](#)
3. [Borehole geophysical well logging methods for characterization \(Andrew Duguid, Schlumberger\)](#)

**Lunch (12:30-1:30),**

**(1:45-2:30) Keynote: Mark Shanahan, Energy Advisor to the Governor;  
Director, Ohio Air Quality Development Authority**

## March 10 – Afternoon

### Session 7 – Pore Space and Permeability (2:45-4:00)

*Gary Spitznogle, Session Chair*

1. [Capacity and Injectivity: Are they in conflict? \(T.S. Ramakrishnan, Schlumberger; J. Johnson, Presenter\)](#)
2. [CO<sub>2</sub> Injection Test Results and Permeability Data – MRCSP Michigan Basin Test Site \(Joel Sminchak, Battelle\)](#)
3. [System and process controls on dynamic mass partitioning, isolation performance, and site selection \(Jim Johnson, Schlumberger\)](#)

**Summary of Challenges (4:00 – 5:00) – Speakers present 1 key challenge; audience input and discussion**

**Wrapup Comments – Jeff Colwell, Battelle; Dan Duellman, AEP**