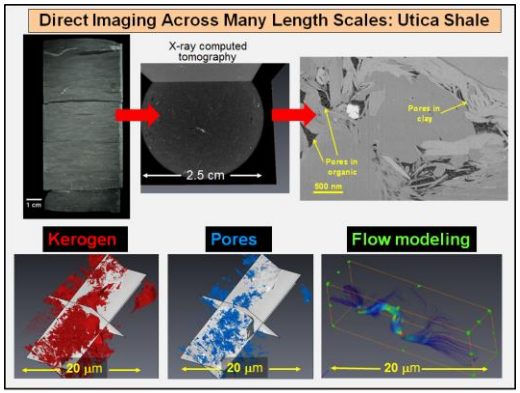
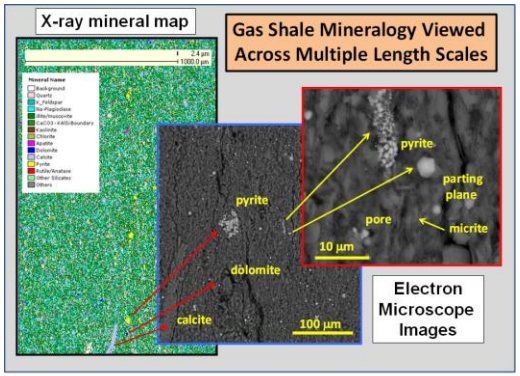




Current Focus Areas:

Interaction of hydrocarbons with geological and engineered materials

Characterization of gas shale and caprock

CO_2-brine-rock interactions relevant to carbon sequestration

Gas, fluid and isotope monitoring of CO_2 injection tests; frack gas and flowback fluids

Formation of methane hydrates in sediments

Development of down-hole geophysical methods

About Us

The researchers of SEMCAL endeavor to provide a scientific understanding of pore to field scale rock-fluid interactions through state-of-the-art physical and chemical property analysis. In-depth laboratory analysis of subsurface earth materials provide a foundation to help industry and academia develop a fundamental understanding of formations relevant to resource exploration and development in Ohio, the Midwest, the Nation and the World.

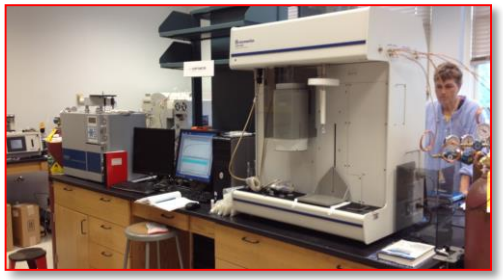
Contact Us
Principle Scientists:

Director: Dr. David Cole
cole.618@osu.edu
Phone: (614)-688-7407

Associate Director: Dr. Jeffrey Daniels
daniels.9@osu.edu
Phone: (614) 633-9446

Associate Director: Dr. Ann Cook
cook.1129@osu.edu
Phone: (614) 247-6085

Research Scientist: Dr. Julie Sheets
sheets.2@osu.edu
Phone: (614) 406-3298



SEMCAL

Subsurface Energy Materials Characterization and Analysis Laboratory

at

The Ohio State University

Students preparing samples

Goals:

- Educate and train students about subsurface processes.
- Provide chemical and physical property measurements of cores and fluids.
- Provide capabilities to simulate in-situ conditions for testing purposes.
- Develop new methods to image and analyze core and rock samples.

We have a broad spectrum of geochemical and geophysical instruments that measure nano- to macroscale rock properties.

Our Mission:

To provide scientific understanding of pore to field-scale rock-fluid interactions through state-of-the-art physical and chemical property analysis

PANalytical XRD

Porosimeter

Picarro cavity ring down spectrometer for carbon isotope analysis

Equipment:

Probe permeameter
Pulsed decay permeameter
Micromeritics mmmercury porosimeter
Archimedes work station (bulk & grain density)
Micromeritics surface area analyzer
PANalytical X-ray Diffractometer
Leica RES 102 Dual Ion Mill
FEI FEG SEM with QEMSCAN software
Picarro cavity ring down spectrometer
Costech elemental analyzer (COHNS)
OI Analytical Carbon Analyzer
X-ray computed tomography
Bruker 20MHz low-field NMR
Stirred batch hydrothermal reactors
Gamma spectral core scanner
High P-T biaxial resistivity and triaxial acoustic velocity core holders
Dean Stark and soxhlet fluid extraction systems
ThermoFisher Delta V Advantage stable isotope ratio mass spec with gas chromatograph
Computer Lab for numerical modeling and visualization