



Oregon State University, School of Chemical, Biological, and Environmental Engineering seeks highly qualified PhD candidates to begin January 4, 2010, in the areas of experimental multi-phase flow, and geologic CO₂ sequestration, respectively.

The first PhD position will support an NSF project funded collaboratively with Univ. of North Carolina to develop a first principles, multiscale theoretical and computational approach that represents a paradigm shift in modeling of multiphase porous medium systems. The project combines theory, computation, mathematical analysis, and high-resolution experimental observation to formulate, solve, and validate models that capture the physics of multiphase flow and transport phenomena. The OSU component is focused on characterization of the capillary pressure-saturation-interfacial area-permeability relationship for two- and three-phase flow using microtomography. Interest in, and knowledge of, imaging and image processing in the IDL and Avizo environments, is highly desirable.

The second PhD position will support a larger joint project with Los Alamos Natl. Lab and Univ. of Illinois, Urbana-Champaign on geologic sequestration of CO₂. Predicting the fate of CO₂ in the subsurface requires a fundamental understanding of multiphase, reactive flow and transport where competing physical and chemical processes generate complex, heterogeneous flow and reaction patterns. Primary responsibilities will be direct observation of high-pressure, supercritical CO₂ interactions with pore-scale systems using x-ray microtomography. Interest in, and knowledge of, imaging and image processing in the IDL and Avizo environments is highly desirable.

Candidates for both positions should already have completed an MS in Environmental Engineering, Hydraulics/Hydrology, Petroleum Engineering, Geosciences, Applied Mathematics, or related quantitative field. Outstanding candidates with a completed BS in a relevant field may also be considered. Preference will be given to candidates who have experience with geochemical experimentation, ambient and high-pressure multi-phase experimentation, as well as microtomography-facilitated research at synchrotron sources, image processing, hydrodynamic modeling, and mathematical and statistical data analysis. International applicants are welcome and can be accommodated with a J-1 visa. Additional information at <http://web.engr.oregonstate.edu/~wildensd>

Corvallis is a college town with 50,000 residents, including about 19,000 OSU students and is located in the Willamette Valley, 90 miles south of Portland and less than an hour's drive from the Oregon coast to the west, and less than two hours to Cascade Mountain ski resorts to the east. The area is known for offering extensive hiking, biking, camping, and other outdoor activities.

Please e-mail a curriculum vitae (including GPA and GRE scores), letter of interest (fully detailing your interests and experiences), and names/phone number/email of 3 references to: Associate Professor Dorthe Wildenschild at dorthe@engr.orst.edu. Materials should be received by **November 15th for first consideration**. Personal interviews may be held at the 2009 AGU meeting in San Francisco in Dec.