Post-doctoral research position in fluid-shale geochemistry and reactive transport

Project description
The University of Illinois Urbana Champaign Department of Geology is seeking to hire a postdoctoral research associate to construct shale-fluid reactive transport systems and associated development of numerical simulations for the alteration of shale due to reactive fluids. The successful applicant will be a part of a multi-institution research team that is using geochemistry, fluid transport, and rock physics to investigate reactive transport and use this knowledge to improve efficiency, sustainability, and the environmental footprint of unconventional stimulation. The post-doctoral researcher will guide the design and implementation of characteristic reactive pathways implemented within microfluidic cells designed to reproduce the fracture network characteristic of shales. In tandem, they will implement core-scale through flow and shut in experiments coupled with state radiotracer imaging techniques to resolve the permeability field of these unconventional materials. All results will be used to guide, constrain and validate the development of numerical reactive transport simulations. Positions are fully funded for two-years with extension possible.

Qualifications and activities
We seek an exceptional individual with a Ph.D. in hydrogeology, geochemistry, petroleum engineering, reactive transport modeling, or a related discipline. Applicants should have experience in the design of experimental fluid-rock interaction systems in tandem with construction of numerical reactive transport modeling. Prior work in radiotracer imaging or comparable applications of tomography are desirable. We encourage post-doctoral associates to prepare for scientific careers by publishing, presenting at scientific meetings, writing proposals, organizing symposia, building professional networks, and cross-training.

How to apply
Interested applicants should send a Curriculum Vitae, a one-page narrative summary of research experience, and the names and contact information of two references to Jennifer Druhan (jdruhan@illinois.edu). Review of applications will begin immediately and will continue until the position is filled. UIUC is an equal opportunity employer.

The team
The postdoctoral scholar will work under the supervision of Dr. Jennifer Druhan (UIUC). The position is part of a multi-lab collaborative team funded by the U.S. Department of Energy, Energy Frontier Research Center specifically focusing on the mechanism controls of water-hydrocarbon-rock interactions in nanoporous geological media. Partner institutions include Stanford University, University of Southern California, University of Wyoming and the SLAC National Accelerator Laboratory.