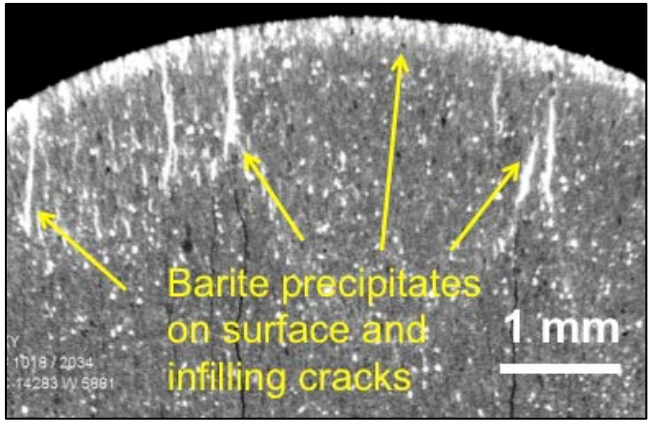
Two post-doctoral research positions in fluid-shale geochemistry and reactive transport

SLAC NATIONAL ACCELERATOR LABORATORY

Position 1: Project description

The SLAC Shale Geochemistry program is seeking to hire a postdoctoral research associate to study shale-fluid interactions and pore-scale shale alteration resulting from unconventional stimulation practices. The scholars will join a vibrant, highly interactive, and multidisciplinary 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 conduct fluid-shale experiments and investigate micro-/nanoscale chemical and physical alteration in shales using synchrotron-based X-ray methods (microprobe chemical imaging, micro-/nano CT, small-angle X-ray scattering), electron microscopy, and lab-based micro X-CT. Porosimetry and permeametry will be used to characterize macroscopic properties. Results will feed ongoing numerical reactive transport model development. Positions are fully funded for two-years with extension possible.



Qualifications and activities

We seek an exceptional individual with a Ph.D. in geochemistry, geomechanics, petroleum engineering, reactive transport modeling, or a related discipline. Applicants should have experience studying fluid-rock interactions and using one or more of the microscale characterization methods noted in the Project Description or with related methods such as infrared or Raman microscopy. Experience in geochemical thermodynamics, fluid transport modeling, and/or reactive transport modeling is 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.

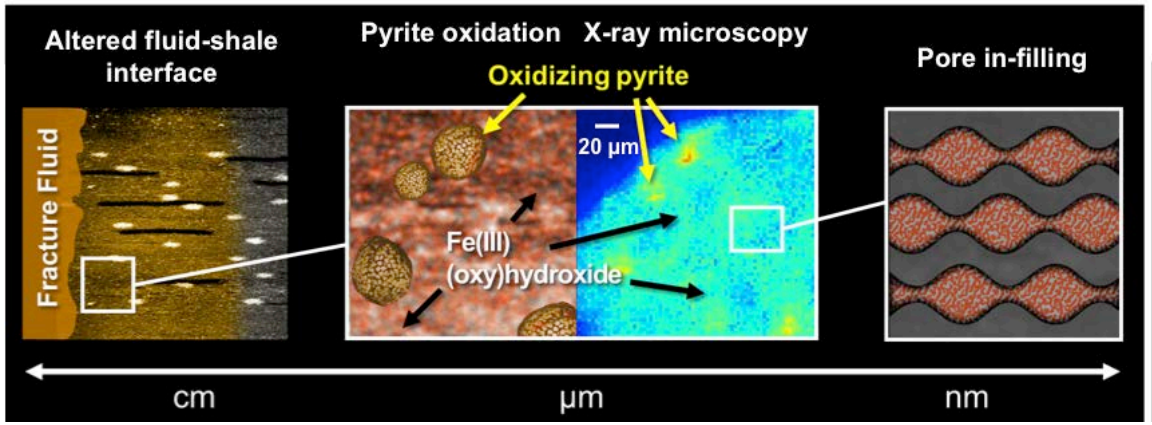
The team

The postdoctoral scholar will work under the supervision of Dr. John Bargar (SLAC). The position is part of a multi-lab collaborative team that includes NETL (C. Lopano), LBNL (H. Deng), and LLNL (J. Morris). The postdoc will further collaborate with members of the shale geoscience team at SLAC and Stanford University. These teams provides deep experience in basic and applied shale research. The SLAC Shale Geochemistry program is funded by the U.S. Department of Energy, Office of Fossil Energy and Office of Basic Energy Sciences.

U.S. DEPARTMENT OF ENERGY
Office of Fossil Energy
Office of Basic Energy Sciences

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 John Bargar (bargar@slac.stanford.edu). Review of applications will begin immediately and will continue until the position is filled. SLAC is an equal opportunity employer.



Two post-doctoral research positions in fluid-shale geochemistry and reactive transport

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Position 2: 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 mechanistic 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

U.S. DEPARTMENT OF ENERGY
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