

Job# IRC70390

Title: Postdoc in Laboratory Rock Shear Fracture and Fluid Flow Experimentation
Organization: EES-14/Earth System Observations

Post-doctoral position in laboratory rock shear fracture and fluid flow experimentation at Los Alamos National Laboratory.

The Earth and Environmental Sciences Division (EES-DO) is seeking a post-doctoral candidate to perform and analyze the results from triaxial coreflood experiments investigating rock fracturing and fluid flow for oil and gas, geothermal energy, induced seismicity, CO₂ sequestration, and radioactive waste disposal applications. The experiments include *in situ* x-ray or neutron imaging, acoustic emission monitoring, geomechanical characterization, and multi-phase flow characterization. The focus of these experiments will be on the development of scaling relationships and integration of measurements into numerical models.

The successful candidate for this position will be part of an interdisciplinary team that is involved with developing theory to predict fracture fluid flow behavior, design of experiments to quantify the associated parameters, analysis of the results from these experiments, and implementation of what is learned into larger-scale numerical models, such as discrete fracture network (DFN) and multi-porosity models. Opportunities will be available for the successful candidate to contribute to any or all of these tasks.

Requirements:

- PhD in engineering, geosciences, physics, or a related field at the time of hire
- Experience numerically modelling flow through fractured or porous media
- Aptitude for operating laboratory equipment and tools
- Excellent writing skills and demonstrated publication record

Desirable Skills:

- Proficient programming skills, especially as applied to statistical data analysis, machine learning, and use of research modeling codes
- Experience numerically modelling rock fracturing
- Experience performing high-pressure laboratory experiments
- Field or industry experience in oil and gas, geothermal energy, and/or mining (or experience in an industry geomechanics laboratory)

The successful candidate could start as early as May 2019. For more information, see the post-doc program web page at Los Alamos National Lab

(<https://www.lanl.gov/careers/career-options/postdoctoral-research/postdoc-program/index.php>) for more details.

Education:

PhD in engineering, geosciences, physics, or a related field obtained within the last five years, or soon to be completed.

Notes to Applicants:

In addition to submitting your application online (job# IRC70390: <https://bit.ly/2RTAXIk>), interested candidates should send their CV, publications list, and statement of research interests to Dr. Luke P Frash (lfrash@lanl.gov) or Dr. Bill Carey (bcarey@lanl.gov).

Appointments are for two years, renewable for a third year.

Candidates who have the ability to obtain a DOE "Q" clearance will have more opportunities. To obtain a clearance, an individual must be at least 18 years of age and be a U.S. citizen.