Tufts UNIVERSITY

Dept. of Civil and Environmental Engineering
School of Engineering

Postdoctoral opportunity in fluid-induced seismicity and aseismic slip

A postdoctoral scholar is invited to join a research group keenly interested in

(i) determining the mechanics of fault rupture at all stages of the seismic cycle
(ii) discovering to what extent our inferences are limited by available observations
(iii) identifying what these problems have in common with those in other fields of study

There is widespread recognition that fluids may play a role in facilitating or inhibiting fault slip. However, a complete understanding of that role requires observations to be interpreted by a transparent model of how fluids couple with the frictional strength of a fault, the deformation of the surrounding rock, and external loading.

Responsibilities: The scholar is expected to contribute to the research group by

(i) examining observations of fluid-induced slip as may occur naturally or artificially;
(ii) developing physical models within the constraints provided by data;
(iii) carrying out theoretical analyses and/or numerical solutions, with the purpose of
(iv) finding whether mechanisms are robustly supported by observations.

In addition, the scholar will present findings at appropriate scientific conferences/workshops, will prepare manuscripts for publication in peer-reviewed journals, and will help prepare technical reports to funding agencies and other interest groups. The scholar will receive support to simultaneously develop individual research projects and to pursue professional development opportunities.

Requirements: A Ph.D. in a relevant discipline in the physical, mathematical, or engineering sciences, and experience in one of the following areas is essential, and an interest in another is desirable:

(i) numerical methods applied to problems in fault modeling or fracture mechanics
(ii) numerical or analytical methods for non-linear differential equations
(iii) collecting, processing, or interpreting geophysical data pertaining to aseismic or seismic fault slip, or deep fluid injection

Start date: The position is available immediately, but the start date may be deferred to the end of 2021 to accommodate the completion of a Ph.D. or another postdoctoral position.

Duration: One year, with the possibility of extension.

Salary: Starting at $60,000/year.

Remote work: Extended remote work may be possible, depending on individual circumstances.

Apply/inquire: By email to **robert.viesca@tufts.edu**. Applications consist of a cover letter including a brief statement of research experience and interests relevant to the position responsibilities, a curriculum vitae, and the contact information for three references.

About Tufts University: Founded in 1852 in Medford/Somerville, Massachusetts, Tufts lies a short distance from historic downtown Boston and Cambridge, providing extensive opportunities for academic and industrial collaboration as well as participation in the rich intellectual life of the area. The School of Engineering is in the midst of a period of exciting growth that has seen the recruitment of outstanding new faculty and a quadrupling of funded research over the last ten years.