

Post-doctoral Fellowship in Fault Mechanics and Earthquake Triggering

The Institute of Environment and the Department of Earth and Environment at Florida International University seek a highly motivated post-doctoral fellow to join the Geodesy Lab (geodesy.fiu.edu) to conduct fault mechanics and earthquake triggering research.

The research is part of an NSF-supported project aimed at understanding the impact of climatic variability on earthquake clustering in the Dead Sea Basin. It is based on the longest detailed paleoseismic record (220,000 years) derived from borehole and outcrop observations of deformed lake deposits ('seismites'). Initial analyses revealed a significant correlation between long-term earthquake occurrence and lake levels. The project explores the impact of lake-level changes on the paleo-earthquake record by evaluating the processes involved in seomite formation, including sedimentary unit build-up, seismic shaking, unit tearing, gravitational sliding, and deposition. Seismic shaking is an end product of complex tectonic processes involving strain accumulation, surface load changes, pore pressure changes, and stress release.

The postdoc's role in the project is to explore earthquake occurrence frequency in the Dead Sea Basin, which is bounded by both primary strike-slip fault segments and secondary normal faults, in response to hydrologic load and pore pressure changes at different lake levels. The research will be based on mechanical modeling of idealized and more complex/realistic fault systems using boundary element and/or finite element models to calculate strain accumulation and release under variable lake-level conditions. Therefore, the postdoc should have experience in fault mechanics, earthquake triggering, or other types of mechanical modeling.

The successful candidate will be part of an interdisciplinary team that uses geodetic and remote sensing observations to study various geological and environmental topics, including tectonics, earthquake interaction, land subsidence, sea-level rise, sinkhole detection, and wetland hydrology.

Candidates should have a PhD degree, or be in the advanced stages of their PhD studies, in Geophysics, Geodesy, Structural Geology, or Mechanical Engineering. The post-doctoral fellow will receive a competitive salary and full benefits. Women and individuals representing underrepresented groups are especially encouraged to apply.

How to apply:

The position will be based at Florida International University, Miami, Florida. Your application should include (1) a cover letter indicating your research experience and suitability for this position, (2) a curriculum vitae, and (3) the names, addresses, and e-mail addresses of three potential references.

Please email your application to **Dr. Shimon Wdowinski**, Institute of Environment, Department of Earth and Environment, Florida International University.

E-mail: shimon.wdowinski@fiu.edu

Application Deadline:

The closing date for applications is October 31, 2024, with a preferred start date in early 2025.