

Postdoctoral Researcher in Applied Geophysics
Geophysics and Atmospheric Sciences Department
Sandia National Laboratories, Albuquerque, New Mexico

Sandia National Laboratories is the nation's premier science and engineering facility for national security and technology innovation. We are a world-class team of scientists, engineers, technologists, postdocs, and visiting researchers focused on cutting-edge technology, ranging from homeland defense, global security, and environmental preservation to energy and combustion and computer security.

Sandia's Geophysics and Atmospheric Sciences Department staff investigate R&D problems in the areas of energy resource characterization, homeland security, and national defense. Current projects include assessment of petroleum resources, tunnel detection, climate monitoring, and development of 3D numerical modeling codes. The successful candidate will provide technical expertise to one or more of these areas. Technical activities cover the spectrum from theory to application, including algorithm development, computer modeling, data inversion, and field demonstration.

The Department has a **R&D position available for a postdoctoral appointee in seismic and/or EM modeling, imaging, and inversion**. The Department currently has several projects utilizing high-resolution 3D forward modeling techniques for acoustic, elastic, anelastic, and poroelastic media. Models are used to analyze field and laboratory data and examine geophysical phenomena associated with near-surface environments (<100 m), as well as deeper hydrocarbon and carbon sequestration reservoirs. Unique opportunities exist to enhance existing codes that include improving algorithmic efficiency and execution speed, improving absorbing boundary conditions, and enhancing modeling of the physics of shallow subsurface materials. Application of these improvements to datasets from complex earth or atmospheric environments will enable validation of the codes, as well as the advancement of basic geophysical understanding of these environments.

Required:

- A Ph.D. in geophysics or a closely related field.
- Fundamental understanding of, and experience with, complex wave propagation within heterogeneous materials
- Strong mathematical and scientific computer programming skills.
- Good communication and writing skills.

Desired:

In addition to the required attributes above, we also desire candidates with familiarity with 3D seismic and/or EM modeling and parallel processing experience in a Unix/Linux environment. Prior work with wave propagation in the shallow subsurface or for hydrocarbon exploration is also desired. We seek individuals with high levels of self-motivation and initiative

Security Clearance:

Sandia is required by DOE directive to conduct a pre-employment background review that includes personal reference checks, law enforcement record and credit checks, and employment and education verifications.

Applicants for employment must be able to obtain and maintain the appropriate DOE security clearance if required for a position. Applicants offered employment are subject to a federal background investigation to meet the requirements for employment including access to classified information or matter. Substance abuse or illegal drug use, falsification of information, criminal activity, serious misconduct or other indicators of untrustworthiness can cause a clearance to be denied by the DOE, rendering the inability to perform the duties assigned and resulting in termination of employment.

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For further information, contact Geophysics Department manager Amy R. Halloran at 505-844-4904 or arhallo@sandia.gov or consult our careers website at <http://www.sandia.gov/careers> and search for posting 641119.