

Location: Albuquerque, NM
Full Time, Regular

What Your Job Will Be Like

We are seeking a motivated Geosciences Engineering Postdoc to join our innovative team! The selected candidate will support existing research efforts combining traditional geophysics with novel data science techniques to improve monitoring capabilities for underground nuclear explosions and underground structures. This will include developing and applying cross-correlation algorithms to unique seismic and seismo-acoustic datasets. Then, supported by your team, you will interpret the results and communicate findings through presentations and publications.

On any given day, you may be called on to:

- Support team members by sharing results and providing/receiving feedback on work
- Modify existing code base to test a new hypothesis and write data analysis codes to interpret and illustrate results
- Develop methods to handle large data sets
- Attend a mini course to learn new technical skills
- Participate in journal article discussion groups and seminar series
- Draft publications, reports, and presentations

Due to the nature of the work, the selected applicant must be able to work onsite.

Qualifications We Require

- PhD in geophysics, computer science, electrical engineering, seismology, or closely related field
- Ability to obtain and maintain a DOE Q-level security clearance

Qualifications We Desire

- Research experience in the one or more of the following technical fields: general geophysical signal processing; waveform correlation; inversion methods; algorithm tuning & optimization; uncertainty quantification
- Interpersonal skills and can work effectively both individually and on teams
- Proficiency with multiple common computer programming languages (Java, C++, Python, MATLAB, shell scripting)
- Strong organizational skills and ability to meet scheduled work completion dates
- Proficiency with varied communication methods, including oral presentation, preparation of high-impact visual presentations, publication of peer-reviewed manuscripts, and the ability to communicate scientific and technical information clearly and concisely at a level tailored to the audience

About Our Team

The Geophysical Detection Technology R&D department performs geophysical monitoring research and development in support of Sandia's mission as a national security laboratory. The team's geophysics expertise addresses challenges surrounding ground-based nuclear detonation detection through next-generation algorithms exploiting multi-phenomenological data, advanced sensor technologies, and demonstration experiments. The team has a broad range of expertise in field seismology, subsurface characterization, seismo-acoustic and infrasound modeling; evaluation of seismic and infrasound sensors and systems; and the processing, analysis, and interpretation of all types of geophysical data. Technical work spans the spectrum from theoretical to applied and includes strong modeling, lab and field data collection, and analysis capabilities. The department serves as Sandia's resource for ground-based monitoring expertise, partnering with departments across the labs to integrate multiple types of data-including optical, seismic, electromagnetic, infrasound, atmospheric, radionuclide-to address broad national security needs.

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability, or veteran status and any other protected class under state or federal law

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

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