



Earth and Environmental Sciences Division

Job Title: **Geophysicist (Scientist 3/4)**

Location: **Los Alamos, NM, US**

Organization Name: **EES-17/Geophysics**

Job ID: **IRC19552**

Department Description:

Located in northern New Mexico, Los Alamos National Laboratory (LANL) is a multidisciplinary research institution engaged in strategic science on behalf of national security. LANL enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health, and global security concerns.

The mission of the Earth and Environmental Sciences (EES) Division of Los Alamos National Laboratory is to solve complex problems of importance in environment, energy, and national security by using our capabilities in earth and environmental sciences. The division is a highly interactive, well-funded research organization with an annual budget of approximately \$100 million and a staff of approximately 240. The core disciplines of EES Division include Geology, Geochemistry, Geophysics, Geomaterials, Geography, Hydrology, Atmospheric Science, Ecology, Environmental Science, Computational Science and Geotechnical Engineering. The disciplines are organized into four groups within the division, which consist of 30-40 Scientists, with approximately 20 support staff, post-docs, and students. Each group has a variety of scientific programs, on the order of \$20-\$25M in direct funding. The members of each group are organized into 3 or 4 teams, led by team leaders who support the Group Leader directly.

This job posting is for the Geophysics Groups (EES-17). EES-17 performs research and develops solutions for United States national security and nuclear explosion monitoring (treaty monitoring) with the goal of detecting and characterizing clandestine nuclear explosions anywhere in the world. The Group is characterized by a balance of basic and applied research, encompassing experimental and computational analysis, which leads to the development of novel and integrated capabilities that are then utilized to address practical problems for sponsors in multiple offices in DOE, NNSA, other federal agencies, and industry.

EES-17 is looking for a creative, experienced professional scientist to join our interdisciplinary team to take a leadership role in research to detect and characterize clandestine nuclear explosions using multi-phenomenology explosion monitoring (MultiPEM) approaches. The position offers the opportunity for challenging, professional collaborations on multi-disciplinary teams.

We have a need for a scientist with expertise in one or more of; explosion or seismic source characterization, source effects on wave propagation, seismic analysis, infrasound acoustics, non-

seismic methods such as gravity, electrical and electromagnetic techniques, ground penetrating radar, etc. Projects range from energy development to national security applications, with many emphasizing multiphenomenology monitoring and assessment (i.e., MultiPEM). Experience is sought in theoretical development, modeling, or data analysis using these techniques to solve a variety of earth science problems. We are also interested in individuals with a strong statistics background who can work with multidisciplinary teams with chemists, mathematicians, and other scientific disciplines.

The successful candidate will conduct innovative research and will develop and lead projects supported by interdisciplinary teams of scientists and staff. He/she will interact regularly with sponsors to understand their goals and will author programmatic reports that address problems of national importance. The candidate is expected to publish in peer-reviewed journals and present at national conferences.

Detailed Description:

This position will be filled at either the Scientist 3 or 4 level, depending on the skills of the selected candidate. Additional job responsibilities (outlined below) will be assigned if the candidate is hired at the higher level.

Scientist 3 (\$83,100 - \$142,500)

The duties for the Scientist 3 include:

- Leading the development of new proposals that lead to internal and external funding
- Contributing to the leadership of projects in terms of overall direction and specific approaches to solving problems
- Representing the Laboratory to external agencies in limited and defined capacities
- Contributing to the identification, promotion, and development of new technical capabilities within the Laboratory
- Building and leading small teams to accomplish work objectives
- Participating in new program opportunities as directed
- Leading and contributing to peer-reviewed publications
- Mentoring students, post docs, and technicians
- Some travel may be required.

Scientist 4 (\$101,400 - \$171,000)

The duties for the Scientist 4 include:

Responsible for all job functions of a Scientist 3, except the duties will be carried out under nominal supervision.

- Originating and leading the development of new initiatives
- Providing strategic technical direction to multiple teams for Laboratory-wide initiatives
- Developing and implementing plans for new and significant project development opportunities
- Leading the development of large, complex proposals

- May lead moderate to large teams to solve large and challenging problems
- May provide direction to assigned technical and scientific staff

Minimum Job Requirements:

- An extensive background in the areas of explosion or seismic source characterization, source effects on wave propagation, seismic analysis, infrasound acoustics, or non-seismic methods
- Demonstrated experience meeting sponsor expectations with respect to scope, schedule, budget and deliverables
- A demonstrated record of directing and completing theoretical and/or data intensive geophysical investigations
- Strong oral and written communications skills, including a demonstrated record of peer-reviewed publications that show the development of innovative advanced concepts, theories, methods, techniques and approaches
- Demonstrated experience acquiring internal/external funding for self and others
- Demonstrated record of mentoring students and post docs
- Experience leading interdisciplinary teams of scientists and technicians

Additional Requirements for a Scientist 4:

- Prior experience developing and implementing plans for new and significant project development opportunities
- Demonstrated success in building and maintaining moderate to large research portfolios
- Demonstrated leadership in the development of innovative approaches to problem solving
- Discipline authority as demonstrated by publications, invited talks, fellowships and other awards

Desired Skills:

- Familiarity with using large geophysical databases (e.g., Oracle) to extract information for analysis
- Experience in the quantitative estimation of uncertainty in model parameters and predictions
- Statistical expertise in fixed, random and mixed effects linear models, error propagation, and Bayesian methods
- Fluency in one or more programming and/or scripting languages
- Experience in the management of moderate to large, complex and/or high-risk projects, involving multiple tasks, capabilities, and organizations
- Experience with internal and external peer reviews across organizations or disciplines

Education:

Typical educational requirement is an advanced degree in science or engineering from an accredited college or university. Ph.D. preferred, M.S with extensive experience acceptable, in

Geophysics, Statistics, Acoustics, Geosciences, Computational Sciences, or Engineering and at least 5 years professional experience with a strong component of leadership.

Additional Details:

No Clearance: This position does not require a security clearance. Selected candidates will be subject to drug testing and other pre-employment background checks.

Pre-Employment Drug Test: The Laboratory requires successful applicants to complete a pre-employment drug test and maintains a substance abuse policy that includes random drug testing.

Regular position: Term status Laboratory employees applying for regular-status positions are converted to a regular status only with approval of the cognizant Principal Associate Director.

Equal Opportunity: Los Alamos National Laboratory is an equal opportunity employer and supports a diverse and inclusive workforce. We welcome and encourage applications from the broadest possible range of qualified candidates. The Laboratory is also committed to making our workplace accessible to individuals with disabilities and will provide reasonable accommodations, upon request, for individuals to participate in the application and hiring process. To request such an accommodation, please send an email to applyhelp@lanl.gov or call 1-505-665-5627.