



Computational Imaging Postdoctoral Appointee

Job ID: 674751

Location: Albuquerque, NM

<http://www.sandia.gov/careers>

Passionate about your work and dream of utilizing state-of-the-art facilities to explore solutions? Join a dynamic team and solve significant issues and challenges for our nation's security!

We are seeking an Optical Science Postdoctoral Appointee for our Remote Proliferation Detection Department. The selected applicant will join a multidisciplinary team to develop and use active and passive remote sensing systems to collect and analyze optical signatures and observables relevant to the proliferation detection and nuclear nonproliferation mission spaces.

Qualifications We Require

- Ph.D. in Optics, Electrical Engineering, Physics, Applied Mathematics, Computer Science, Mechanical Engineering, or an equivalent field acquired within 5 years prior to employment
- Ability to obtain and maintain a DOE security clearance

Qualifications We Desire

- Experience in one or more of the following areas:
- Computational imaging: Simulating, designing, or performing experiments with computational imaging systems
- Photon transport: Modeling and simulating light scattering in diverse media
- Engineering and scientific model development or data analysis
- Strong background in optical remote sensing and optical measurement capabilities
- Experience with optical tomography, statistical optics, or speckle imaging
- Monte Carlo, radiative transport equation, diffusion equation, or Mie theory simulation experience
- Experience related to imaging through turbulence
- Proven experience in computer graphic programming
- Excellent analytical and problem-solving skills; ability to identify research objectives and develop clear solutions to complex problems while using sound judgment in drawing conclusions
- Willingness and ability to collaborate on a dynamic team with varied skills and backgrounds and be proactive and creative in solving problems that arise
- Excellent time-management skills, including the ability to prioritize work to deliver results
- Proficiency with varied communication methods, including oral presentation, preparation of high-impact visual presentations, written reports, and the ability to clearly and concisely communicate scientific and technical information
- Proven ability to conduct creative, independent research

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

- Develop optical system solutions for data collection of phenomenology of interest
- Develop novel algorithms for data processing and exploitation
- Develop optical and electromagnetic transport models for diverse media
- Plan, execute, and analyze data from laboratory and field experiments
- Form highly productive dynamic teams to accomplish project goals
- Be responsible for the effective communication of research results through publications and conference presentations
- Define your future career goals, seek to acquire technical skills, scientific knowledge, and collaborations needed to pursue them

About Our Team

We support the Office of Proliferation (NA-221) within the NNSA Office of Defense Nuclear Nonproliferation Research and Development (DNN R&D) through the execution of nonproliferation technology research, development, and demonstration experiments, applications, and field exercises. The department advances national security missions through the development of innovative concepts for active and passive remote sensing systems, signatures, and exploitation. The department maintains a breadth of remote sensing competencies including target phenomenology, scene simulation, radiative transport, optical sensor modeling and development, spectral and temporal data processing, and algorithm development.

This collection of competencies allows the team to develop novel, mission-specific sensor concepts and prototypes, as well as assess and predict mission performance. The projects within the group span diverse mission areas including, but not limited to, Nuclear Nonproliferation, Weaponization, USNDS, and other DOD mission areas. We are actively engaged in program development and maturing enabling capabilities by transitioning research and development from across the laboratory.

About Sandia

Sandia National Laboratories is the nation's premier science and engineering lab for national security and technology innovation, with teams of specialists focused on cutting-edge work in a broad array of areas. Some of the main reasons we love our jobs:

- Challenging work with amazing impact that contributes to security, peace, and freedom worldwide
- Extraordinary co-workers
- Some of the best tools, equipment, and research facilities in the world
- Career advancement and enrichment opportunities
- Flexible schedules, generous vacations, strong medical and other benefits, competitive 401k, learning opportunities, relocation assistance and amenities aimed at creating a solid work/life balance*

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These benefits vary by job classification.

Security Clearance

Position requires a Department of Energy (DOE) granted Q-level security clearance.

Sandia is required by DOE directive to conduct a pre-employment drug testing, and 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 a DOE Q-level security clearance, which requires U.S. citizenship.

Applicants offered employment with Sandia are subject to a federal background investigation to meet the requirements for access to classified information or matter if the duties of the position require a DOE security clearance. 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 or terminated by the DOE, rendering the inability to perform the duties assigned and resulting in termination of employment.

EEO

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, or veteran status.