



Project Title

Modeling, Simulation, and Analysis of the Mobile Urban Radiation Search System

Project Reference Code: DNDO-LBNL-Cooper

Hosting Site

Lawrence Berkeley National Laboratory
Berkeley, CA

Project Description

The Mobile Urban Radiation Search (MURS) project is developing a production-ready compact, modular radiation detection and imaging system for SUV-based platforms. The system features a radiation detection system along with a suite of integrated contextual sensors including GPS, video, and LIDAR.

As part of the development effort, the performance of the system is being assessed through the analysis of experimental data recorded with the system, and the use of detailed Monte Carlo simulations to support the interpretation of these data and assess alternative designs.

A DNDO intern is sought to participate in the analysis of the experimental and simulated data in order to assess the spectroscopic detection sensitivity and localization performance of the current prototype MURS system, as well as exploring various alternative design options for enhanced performance.

These activities would involve the development and use of data analysis code in C/C++, Python, and/or MATLAB and a basic understanding of the physics governing the interaction of gamma rays with matter. A candidate participating in these research activities would have the opportunity to gain experience of algorithm development and data analysis while learning about state of the art multi-sensor systems for mobile gamma-ray detection and imaging.

Disciplines

Nuclear Engineering
Physics (General)
Nuclear Physics
Applied Physics

Mentor(s)

Reynold Cooper, rjcooper@lbl.gov, 510-486-7296

Internship Coordinator

John Valentine, jvalentine@lbl.gov, 510-486-4920

The name and contact information of the hosting site internship coordinator is provided for further assistance with questions regarding the hosting site; local housing availability, cost, or roommates; local

transportation; security clearance requirements; internship start and end dates; and other administrative issues specific to that research facility. If you contact the internship coordinator, identify yourself as an applicant to the DNDO Summer Internship Program.

Interns will not enter into an employee/employer relationship with the Hosting Site, ORAU/ORISE, DHS, DNDO or DOE. No commitment with regard to later employment is implied or should be inferred.