



Project Title

Data Mining, Analysis and Modeling Cell Support

Project Reference Code: DNDO-PNNL-McDonald

Hosting Site

Pacific Northwest National Laboratory
Richland, WA

Project Description

Federal, state, local, tribal and territorial agencies with preventative radiological detection programs often require technical support regarding procurement and deployment of detection systems, but don't have in-house technical resources to support them. The Assessments Directorate within the Domestic Nuclear Detection Office (DNDO) performs tests and evaluates radiation detection equipment, and has archived reports, test plans, data sets and models from over 100 tests that it has conducted. The Pacific Northwest National Laboratory is part of the Data Mining, Analysis and Modeling Cell (DMAMC) within the DNDO. The PNNL DMAMC consists of a team of subject matter experts from the radiation detection community responsible for leveraging this existing information to answer technical questions posed by DNDO stakeholders. The technical support we provide helps law enforcement evaluate radiation detection systems they are planning to procure. We can also help them better understand the limits of performance for equipment they already own. A student could participate on both computational and experimental tasks that would support DMAMC capabilities, including 1) Validation and modification of GADRAS, a radiation transport package, models with measurements of PNNL objects, 2) Characterization of new detectors in GADRAS, 3) adding new models to a model catalog, 4) and developing data processing tools that increase analysis efficiency.

Disciplines

Computer Science (General)
Nuclear Engineering
Nuclear Physics
Applied Physics

Mentor(s)

Ben McDonald, benjamin.mcdonald@pnnl.gov, 509-375-1872

Internship Coordinator

Wendy Chunn, wendy.chunn@pnnl.gov, 509-375-2810

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.