**Job Title (Masters)**

Analyst & Software Developer for Multi-Physics Applications

**What Your Job Will Be Like**

We are seeking a computational scientist to develop and execute modeling, simulation, and analysis of electron, X-ray, and gamma-ray radiation transport for Sandia’s nuclear deterrence and other missions! You will help define environmental specifications for our nuclear deterrence systems and components and predict the reliability of our engineered technologies in various radiation environment scenarios. You will model the impacts of radiation effects on materials and/or electronics used within these technologies, helping to inform design decisions for adequate component function and resilience.

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

Maintaining code quality to advance our radiation transport codes.

Develop models and perform simulations on world-class high-performance computing systems and analyze data to predict the transport of radiation and its effects on system and component design and qualification.

Present results at workshops, conferences, and meetings with sponsors and partners.

Due to the nature of the work, the selected applicant must be able must be able to work in-person on the Sandia National Laboratories New Mexico campus.

**Qualifications We Require**

MS in Computational Science, Engineering, Physics, Applied Math or a related field and one year of engineering or scientific experience

Experience with computational modeling and simulation or analyses of radiation transport/effects and/or multi-physics applications

Ability to obtain and maintain a DOE Q clearance

**Qualifications We Desire**

PhD in Computational Science, Engineering, Physics, Applied Math

Experience with the development, code implementation and/or application/analyses of either deterministic or Monte Carlo methods to coupled electron/X-ray particle radiation transport.

Experience with parallel code development and/or execution on high-performance computing architectures using MPI, OpenMP, Kokkos, and/or GPUs.

Experience with build systems, version control, unit and regression testing.

Scientific computer programming experience with Modern C++ and/or Python

Experience within a software development team implementing software quality and agile practices.

Experience in working with and/or doing analyses for a nuclear deterrent based customer with radiation transport codes.

Publication of research results in peer reviewed journals.

**About Our Team**

The Radiation Effects Theory Department (1341) performs theoretical and computational research to understand the effects caused by ionizing radiation from nuclear weapons, space environments and other sources, including those generated by experimental facilities. We develop physical models and numerical methods for deployment in computer codes that model the interaction of particle radiation (X-rays, electrons, neutrons, gammas) with matter. We use these and other types of codes to predict and understand electrical and mechanical radiation effects. Software quality engineering, software verification methods, validation to experimental data, and uncertainty quantification are fundamental to these computational efforts. We support a variety of customers who are concerned with the effect of radiation on their systems and components.

The team is committed to attracting, retaining, and encouraging an outstanding workforce representing a broad group of people and perspectives. We share this common vision by encouraging mutual respect among staff, post-docs, and interns from a diverse set of backgrounds. This hardworking team works across Sandia National Laboratories to accomplish outstanding results.