

Opportunity Title: Post-Master's Research Associate in Computer Science for Nuclear Engineering Applications

Opportunity Reference Code: ORNL12-102-RNSD

Organization Oak Ridge National Laboratory (ORNL)

Reference Code ORNL12-102-RNSD

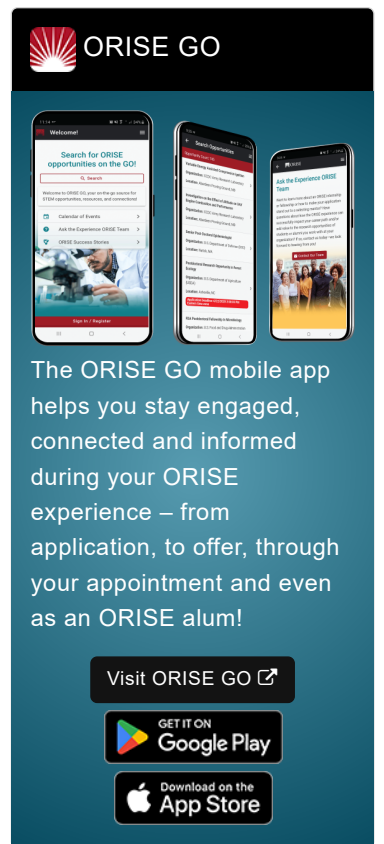
Description The Design, Safety and Simulation Integration (DSSI) group within the Reactor and Nuclear Systems Division (RNSD), Nuclear Science and Engineering Directorate, Oak Ridge National Laboratory (ORNL), seeks entry-level, highly motivated applicants for a post-masters research associate position, focused on the development of software for nuclear safety analysis and design. The central mission of the DSSI group is to use computational nuclear analysis expertise and practical applications experience to provide problem-solving tools, technical solutions, and policy advice to customers within the Department of Energy, the Nuclear Regulatory Commission, the Department of Defense and other government and private organizations. The group is responsible for the development, enhancement, and maintenance of numerous industry-leading software tools for nuclear criticality safety, reactor physics, radiation shielding, nuclear security modeling, used nuclear fuel disposition, and sensitivity and uncertainty analysis. The tools maintained within DSSI include the SCALE software suite, which is developed with the sponsorship of the U.S. Department of Energy and the Nuclear Regulatory Commission and is used by regulators, licensees and researchers in 40 nations. SCALE is developed in a collaborative team environment of approximately 30 staff members from three organizational groups, Nuclear Data and Criticality Safety, Reactor Physics, and Radiation Transport, coordinated by the DSSI group.

The primary functions of the position are (1) modularization and parallelization of existing computational software; (2) development and enhancement of databases and associated interfaces; (3) enhancement of visualization and data interpretation tools written in object-oriented languages; and (4) providing software development support to other team members.

Qualifications Candidates must have completed an M.S. in computer science, nuclear engineering, physics or a related field, and should have expertise in C++, Fortran, Java, Javascript, Python, or other relevant languages. Experience in or an understanding of computational nuclear engineering is desirable, but the desire to gain understanding of nuclear analysis and data is essential. The candidate must have demonstrated problem-solving skills and a willingness to apply those skills to a variety of problems. The candidate will participate as a member of a collaborative software development team and must possess the associated interpersonal and communication skills.

U.S. citizenship is not required; however, it is desirable that the candidate either holds or is able to obtain a Department of Energy security clearance. Salary will be determined according to the education, research skills, and experience of qualified candidates.

Applicants cannot have received the most recent degree more than five



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years prior to the date of application and must complete all degree requirements before starting their appointment.

Technical Questions: Contact Brad Rearden at reardenb@ornl.gov. Please reference the position title and number when corresponding about this position.

This appointment is offered through the ORNL Postgraduate Research Associates Program and is administered by ORAU through the Oak Ridge Institute for Science and Education (ORISE). The program is open to all qualified U.S. and non-U.S. citizens without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.

- Eligibility Requirements**
- **Degree:** Master's Degree received within the last 60 month(s).
 - **Discipline(s):**
 - **Engineering** ([27](#))
 - **Physics** ([16](#))

Affirmation I certify that I have completed coursework towards a degree in science, technology, engineering, mathematics, or a related field.

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