

Opportunity Title: ORNL Fuel Cycle Analysis Post-Master's Research Associate

Opportunity Reference Code: ORNL18-93-RNSD

Organization Oak Ridge National Laboratory (ORNL)

Reference Code ORNL18-93-RNSD

Description The Reactor Physics (RP) Group within the Reactor and Nuclear Systems Division (RNSD), Nuclear Science and Engineering Directorate, Oak Ridge National Laboratory (ORNL), seeks applications for an applied Post-Master's Research Associate position, with emphasis in the area of fuel cycle analysis and assessment.

The RNSD conducts leading-edge science, technology, and engineering research and development for current and advanced nuclear reactors and fuel cycles; storage, transport, and disposal of used nuclear fuel; non-reactor nuclear systems (e.g., accelerators, irradiation facilities, fusion energy systems); and nuclear security and defense programs.

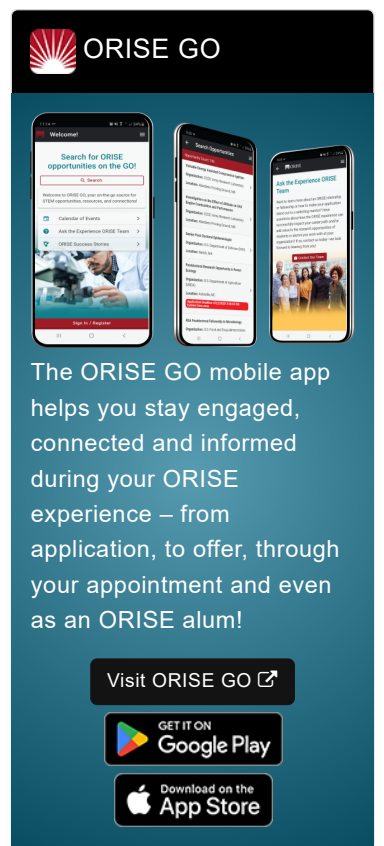
One of the focus areas of the RP Group is performing fuel cycle analysis and assessment of advanced reactors and associated fuel cycles. The group helps to quantify and advance the understanding of advanced nuclear energy systems (reactors plus associated fuel cycles), including the development of the tools and data that underpin the analyses. Customers include the Department of Energy, the Nuclear Regulatory Commission, and other government and private organizations. The group develops and uses state-of-the-art modeling and simulation tools and methods to help evaluate and solve critical U.S. nuclear energy problems and advance a variety of national programs. The successful candidate will work with experienced reactor and fuel cycle experts and code developers to generate the tools and data, execute the necessary analyses, and interpret the simulation results for reactor and fuel cycles relevant to the group's programs of work. Additionally, the candidate will work with source terms experts to generate source terms to support fuel cycle analyses and other advanced reactor physics applications. When opportunities dictate, the candidate will also work on the broader scope of activities ongoing within the RNSD.

Additional Information: Information about the Reactor and Nuclear Systems Division is available from:

<https://www.ornl.gov/division/rnsd>

Qualifications Candidates must have a master's degree in nuclear engineering or a related field and a demonstrated aptitude in the application and/or development of fuel cycle modeling tools. Applicants must have problem-solving skills and a willingness to apply those skills to a variety of large, complex problems. The candidate must have experience in programming and script writing. Candidates must have experience with the CYCLUS and/or ORION fuel cycle modeling tools. Experience with the SCALE package is also preferred.

Desirable experience includes evaluation of equilibrium and transition scenarios, working with a range of fuel cycle metrics (including front and back-end of the fuel cycle), statistical analysis, and data analytics.



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Excellent communication skills including verbal, presentation, and writing skills are required to enable effective interaction with a diverse set of technical peers and program managers. The successful candidate may be asked to work with other members of the group to develop new programs and write proposals.

The ORNL Postgraduate Research Associates Program is administered by Oak Ridge Associated Universities through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education (ORISE).

- Eligibility** • **Degree:** Master's Degree.
- Requirements** • **Discipline(s):**
 - **Engineering** ([27](#) )

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