

Opportunity Title: ORNL Quantum Algorithms Post-Bachelor's Research

Associate

Opportunity Reference Code: ORNL19-65-CSED

Organization Oak Ridge National Laboratory (ORNL)

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Description Oak Ridge National Laboratory (ORNL) is the largest US Department of Energy science and energy laboratory, conducting basic and applied research to deliver transformative solutions to compelling problems in energy, environment, and security.

The Quantum Information Science Group in the Computational Sciences and Engineering Division at Oak Ridge National Laboratory is seeking a Post-Bachelor's Research Associate to perform research in designing, implementing, and testing novel quantum and quantum-inspired classical algorithms aimed at solving scientific computing challenges within the mission of the DOE Office of Science. The research associate will be collaborating with the members of ORNL's Quantum Information Science group in algorithm research for solving quantum machine learning, optimization, and many-body physics problems. The research associate is expected to leverage ORNL's unique multidisciplinary collaborative environment where domain scientists from condensed matter, nuclear, and high energy physics work together with applied mathematicians, computer scientists, and quantum information researchers with the goal of advancing the cutting-edge research in scientific computing.

Qualifications The successful candidate must have a bachelor's degree in physics, math, computer science, computer engineering, or a related discipline.

Required undergraduate-level classes:

Quantum Mechanics

Quantum Information and Quantum Computing

Calculus

Linear Algebra

Preferred undergraduate-level classes:

Abstract Algebra

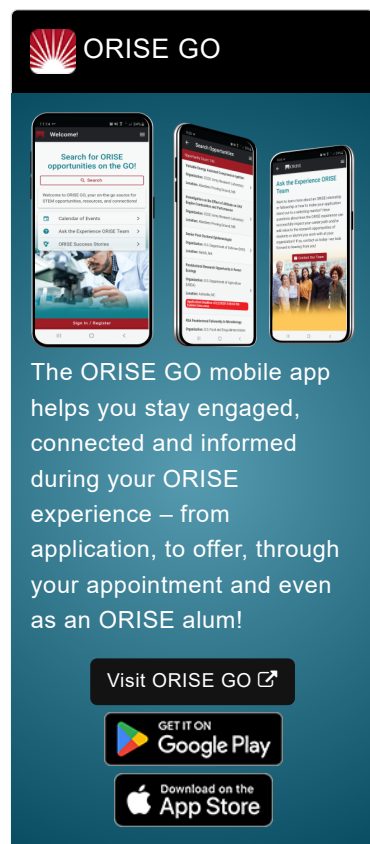
Differential Geometry

Combinatorics

Introduction to Particle Physics

Preferred:

- Demonstrated interest in quantum computing research



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- Excellent written and oral communication skills and the ability to communicate in English to a scientific audience
- Motivated self-starter with the ability to work independently and to participate creatively in collaborative and multi-disciplinary teams of researchers
- Ability to function well in a fast-paced research environment, set priorities to accomplish multiple tasks within deadlines, and adapt to ever changing needs.

Living in East Tennessee: While the opportunity to work at ORNL is an amazing experience in itself, it's easy to overlook everything else East Tennessee has to offer if you haven't had the opportunity to spend time here. From spending your weekends downtown at Knoxville's farmers market, the Rhythm n' Blooms Music Festival, or the Dogwood Arts Festival, to some of the best hiking, kayaking, and camping in the U.S, East Tennessee has something to offer everyone.

The ORNL Post-Bachelor's 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 Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree received within the last 36 month(s).
 - **Academic Level(s):** Post-Bachelor's.
 - **Discipline(s):**
 - **Computer, Information, and Data Sciences** ([2](#))
 - **Mathematics and Statistics** ([4](#))
 - **Physics** ([2](#))
 - **Age:** Must be 18 years of age

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