

# **Postdoctoral Research Associate in Computational Sciences**

## **National Center for Computational Sciences Oak Ridge National Laboratory Oak Ridge, Tennessee**

ORNL10-25-NCCS

### **Project Description:**

The Oak Ridge National Laboratory's Leadership Computing Facility (OLCF) has the charge to develop and apply transformational computational science capabilities in support of dramatic advances in our understanding of the physical world and using that knowledge to address the most pressing national and international concerns. The OLCF is one of the world's premier science facilities—an unparalleled research environment that provides the most powerful computing resources in the world for open scientific research (<http://www.nccs.gov>). Postdoctoral positions are available immediately for candidates interested in and capable of performing leading-edge research and development in support of the U.S. Department of Energy's Energy Frontier Research Centers (EFRCs – see <http://www.er.doe.gov/bes/efrc.html>), Leadership-class users from the Innovative and Novel Computational Impact on Theory and Experiment (INCITE) Program (<http://doeleadershipcomputing.org/>), and the general computational sciences community. While the INCITE program is open to anyone from academia, research laboratories, and industry; the EFRCs are focused on aspects of science that will take advantage of new capabilities in nanotechnology, high-intensity light sources, neutron scattering sources, supercomputing, and other advanced instrumentation, much of it developed with DOE Office of Science (<http://www.er.doe.gov/>) support over the past decade. These efforts will lay the scientific groundwork for fundamental advances in solar energy, biofuels, transportation, energy efficiency, electricity storage and transmission, clean coal and carbon capture and sequestration, and nuclear energy.

### **Unique and relevant ORNL resources:**

The NCCS at ORNL ([www.nccs.gov](http://www.nccs.gov)) was established in 1992. In 2004 the Center was designated by the Secretary of Energy as a User Facility for the nation, designed to provide unclassified research a resource 100 times more powerful than the capabilities in 2004. As a designated User Facility, the Oak Ridge Leadership Computing Facility delivers leadership-class computing for science and engineering; focuses on grand-challenge science and engineering applications; procures largest-scale computer systems (beyond typical vendor design points) and develops high-end operational and application software; and educates and trains the next generation of computational scientists. The facility gives researchers an unparalleled environment in which to make new discoveries that will dramatically impact the nation's ability to produce a secure energy economy and increase mankind's fundamental understanding of our world. Today the computing resources of the NCCS are among the fastest in the world. The NCCS is a part of the Computing and Computational Sciences Directorate (CCSD) that also embodies two other research organizations: the Computational Sciences and Engineering Division and the Computer Science and Mathematics Division.

The CCSD maintains leadership in various areas of computational science across the laboratory and within the overall computational science community.

**Qualifications:**

Postdoctoral candidates with a strong computational science background in materials science, nanoscience, bioscience, chemistry, climate, and computer sciences will be considered. In all areas candidates should have a strong understanding of application development techniques (models, algorithms, software) at scale (large processor counts). Heterogeneous computing experience would be a plus as well as a strong performance engineering knowledge base. Exceptionally outstanding Masters level candidates may also be considered. Successful candidates will be mentored and teamed with staff in domain science research groups at Oak Ridge National Laboratory and the Scientific Computing Group in the OLCF. Here they will collaborate with leading computer and computational scientists at ORNL in the development and application of new computational techniques specifically targeted at the key DOE Office of Science missions. Applicants cannot have received the most recent degree more than five years prior to the date of application appointment and must complete all degree requirements before starting their appointment.

**Technical Questions:**

Questions regarding the position can be directed to Ricky Kendall at [kendallra@ornl.gov](mailto:kendallra@ornl.gov) or Doug Kothe at [kothe@ornl.gov](mailto:kothe@ornl.gov). Please include the requisition number and title when corresponding.

**How to Apply:**

Qualified applicants must apply online at [https://www2.ornl.gov/ORNL\\_POST/](https://www2.ornl.gov/ORNL_POST/). All applicants will need to register before they can begin the online application. For complete instructions, on how to apply, please see the instructions at <http://www.ornl.gov/orise/edu/ornl/ornl-pdpm/application.htm>.

This appointment is offered through the ORNL Postgraduate Research Participation Program and is administered by 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.