

**Scientific Computing Researcher
Neutron Scattering Science Division
Oak Ridge National Laboratory
Oak Ridge, Tennessee**

ORNLO9-94-NSSD

Project Description:

The Oak Ridge National Laboratory is home to two of the world's premier neutron scattering facilities, the Spallation Neutron Source and the High Flux Isotope Reactor. The mission of the Neutron Scattering Science Division (NSSD) is to support and deliver high impact science using the neutron scattering instruments at these facilities. We have identified several cutting edge research programs that require advanced software development, and have several openings. Areas targeted include: advanced analysis and model fitting, materials simulations, multi-dimensional visualization, multi-technique analyses, and integrated acquisition and analysis applications including a program enabling pump-probe data collection modes. Science topic areas include materials science, soft matter and structural biology, magnetism and superconductivity, disordered materials, and complex fluids. Software development will leverage unique features and capabilities of NSSD resources such as event mode data collection, high performance computers, data management systems, high speed networks, instrument control systems, and advanced sample environment equipment in order to produce leading edge science applications.

Duties/Responsibilities:

- Works closely with instrument scientists and science team members to understand research requirements and transform these requirements into functional software.
- Work with a multi-disciplinary team to produce and test software which may be integrated into more complex packages.
- Engage in research projects led by NSSD scientific staff which directly benefit from the software development.
- Document software by writing user guides, reference manuals, and help pages. Train others in use of the software.
- Develop and implement appropriate testing protocols capable of verifying the accuracy of software produced.
- Maintain these applications, incorporating identified improvements.
- Represent NSSD at relevant conferences and workshops, engaging with the broader neutron scattering community to refine applications.

Qualifications:

Successful candidate must have a Ph.D. in physics, computer science, computer engineering, or other engineering or scientific discipline with demonstrated experience developing

analysis related software which others have used. Experience working in a scientific research and computing environment and has an understanding of user needs for performing analyses with scientific data and can develop tools and GUIs to meet these needs. Works well with other members of the development team, takes direction from project leaders, foresees and addresses communication needs, and takes initiative as necessary. Also works well independently to efficiently accomplish assigned tasks. Experience with languages such as: Java, python, IDL, Matlab, C++, and PHP required. Candidates should have a working knowledge of XML and HDF5 data formats and must be proficient in working with Microsoft Windows, Linux, or Mac operating systems. This position requires a research component combining scientific research with software development. Successful candidates will be an integral part of their assigned scientific research teams and will work closely with the team on integrating their software development to address the needs of on-going experiments. The research topic areas are commensurate with those listed above in the position description purpose.

Applicants cannot have received the most recent degree more than five years prior to the date of application and must complete all degree requirements before starting their appointment.

How to Apply:

Qualified applicants must apply online at 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>. When applying for this position, please reference the position title and number.

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.