

**Post-Master's Research Associate
in Climate Science Informatics**

**Environmental Sciences Division
Oak Ridge National Laboratory
Oak Ridge, Tennessee**

ORNL10-45-ESD

Project Description:

The Environmental Sciences Division (ESD) of Oak Ridge National Laboratory (ORNL) has an opening for a postgraduate student in its Environmental Data Science & Systems group (http://www.esd.ornl.gov/research/enviro_data_systems/). We are seeking a recent (within the last five years) masters or doctoral graduate interested in applying software development and informatics skills to Earth Science data management and distribution.

The successful candidate will be involved in a project to customize/improve a software system in order to tailor it for Earth Science data archive management and perseverance. This project will principally be associated with recently funded NASA project involving digital object management for data at the ORNL Distributed Active Archive Center for biogeochemical dynamics (<http://daac.ornl.gov>) and at the Modeling and Synthesis Thematic Data Center (<http://nacp.ornl.gov>). The successful candidate may be also involved with a range of software development and data management activities to support research projects in Climate Science and Environmental Informatics at ORNL, such as the Atmospheric Radiation Measurements Archive (<http://www.archive.arm.gov/>), the Carbon Dioxide Information Analysis Center (<http://cdiac.ornl.gov/>), and the National Biological Information Infrastructure Metadata Clearinghouse (<http://www.nbi.gov>). The additional work areas include improve tools for analyzing and subsetting geospatial & temporal data, comparing the results of climate models with field and remote sensing data, working with climate dataset metadata, and collating data from multiple sources. The specific projects to be worked on will depend on the skills and interests of the selected individual(s) and the results of proposals currently in submission.

The position appointment is for one year, with extension to a total of three years possible, depending on performance, mutual interest, and available funding. The anticipated start date for this position is between April and September of 2010. Salaries will be competitive and include benefits.

Qualifications:

The candidate must possess a Masters or Doctoral level degree in a science or engineering discipline. A Master's degree in computer science paired with an undergraduate degree in a climate-related discipline is particularly preferred, but other combinations of education and experience will be considered. The most recent degree must be within five years of the start date for the position. Currently enrolled students with an anticipated graduation date of June 2010 or earlier will be considered.

The following skills and experience are required:

- At least two years experience in Informatics or computer programming as applied to some type of engineering or scientific application. Software development experience for some type of Internet-facing application is required.
- Working experience in Linux (preferred) or Windows servers, including application configuration, troubleshooting, and shell script creation.
- Demonstrated experience with one or more content management systems, with Drupal particularly preferred, and including the use of programming (e.g. PHP) for customization of the CMS-based web application.
- Good communication skills in English, both written and spoken.

The following skills and experience are desirable. No one applicant will have experience in all of these areas, but applicants should highlight their experience in these areas as part of the cover letter and resume:

- Experience or working knowledge of software products from DuraSpace; experience with the Fedora Commons Repository Software is highly desired.
- Significant experience with Java server-side frameworks (such as Spring, Struts, JSF etc.), and various server side programming skills. Experience developing applications that use the Apache web server and the Tomcat servlet engine is highly desired.
- Experience working with one or more relational database systems is highly desirable (with MySQL and/or PostgreSQL preferred).
- Demonstrated experience with XML, RDF, XPath, XSchema, and XSLT.
- Demonstrated experience with SOAP/REST Web Services development.
- Experience with metadata standards, such as FGDC, Dublin Core, EML, Dublin Core, or ISO 19115.
- Experience in any aspect of library systems (particularly special libraries), collections management, data or information lifecycle management, or curation.
- Experience in any aspect of climate science, ecology, or environmental science, particularly any research or field experience involving these scientific disciplines.
- Experience working in a software development team, particularly a geographically disbursed software development team and/or one developing an open-source tool set.
- Experience in user interface design, human computer interaction analysis, particularly as applied to the querying of scientific data and the manipulation of search results.
- Experience working with the visualization and analysis of multidimensional data, particularly any form of multivariate statistics, pattern recognition, or regression analysis.
- Experience with distributed authentication systems and/or applications of cybersecurity in Internet-facing applications.
- Experience with Geographic Information Systems and geographic data management, particularly including the ESRI software tool set and Minnesota Map Server.

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 Jerry Pan at pany@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/. 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.