

# ORNL Publications

## External Publication

### Job Posting Title

Senior Computer Scientist in Climate Modeling / NB50599780

### Posted Date

10/21/2016

### End Posting Date

01/21/2017

### Purpose

The Computer Science and Mathematics Division in the Computing and Computational Sciences Directorate and the Climate Change Science Institute (<http://climatechangescience.ornl.gov/>) at the Oak Ridge National Laboratory (ORNL) seek to hire a Senior-Level Computer Scientist in Climate Modeling.

### Major Duties/Responsibilities

Major Duties/Responsibilities:

- You will lead ORNL and multi-lab efforts to develop and implement novel capabilities for next generation global and regional Earth system models, to be executed on pre-exascale architectures and in preparation for exascale.
- You will collaborate with highly diverse and multidisciplinary teams of computer scientists, applied mathematicians, environmental and climate scientists, and computational scientists at ORNL's Climate Change Science Institute (CCSI), other DOE Labs, and partner universities and provide expertise in the area of computational performance.
- In addition to investigating and maximizing computational performance on hybrid and multicore architectures that are slated to be among the fastest in the world, you will join a growing team within CCSI focused on the development of numerical algorithms to improve Earth system model execution and analysis.
- You will also conduct research and develop software, and report results in open literature journals, technical reports, and at relevant conferences.

### Qualifications Required

Basic Qualifications:

A Ph.D. degree in computer science, computational science, applied mathematics, or an Earth or environmental related science and least 6 years of research experience in computer science as applied to the Earth system, outside of Ph.D.

Preferred Qualifications:

- Experience developing and executing large scientific simulations on multi-petascale supercomputing systems, with a specific focus on algorithm performance, mesh generation, coupling of components and processes, nonlinear and linear solvers, limiters, and/or other numerical issues common with complex codes.
- Extensive programming experience in more than one of the following: Fortran, C++, python, MPI, OpenMP, OpenACC and

## CUDA

- Extensive experience using solver and other numerical libraries such as Petsc and Trilinos and revision control systems including svn and Git.
- Demonstrated excellent interpersonal skills for leading a highly diverse team, strong oral and written communications skills, good organizational skills, and high personal motivation.
- Proven connections to the computer science research community and/or supercomputer hardware vendors
- Familiarity with advanced I/O libraries, NetCDF and HDF file formats, and other related issues of data movement and processing.
- Possess a general understanding of the nature and behavior of classical physics problems that exist in Earth system model components (for example, fluid flow, porous media and land surface processes, phase change, chemistry transport).
- A recognition and adherence to modern software engineering practices and standards to enable contribution and leadership for a large team-based model development process.
- International recognized expert in field.
- Demonstrated leadership (as Principal Investigator) and management capabilities for large research projects.

This position will remain open for a minimum of 5 days after which it will close when a qualified candidate is identified and/or hired.

We accept Word(.doc, .docx), Excel(.xls, .xlsx), PowerPoint(.ppt, .pptx), Adobe(.pdf), Rich Text Format(.rtf), HTML(.htm, .html) and text files(.txt) up to 2MB in size. Resumes from third party vendors will not be accepted; these resumes will be deleted and the candidates submitted will not be considered for employment.

If you have trouble applying for a position, please email [ORNLRecruiting@ornl.gov](mailto:ORNLRecruiting@ornl.gov).

Notice: If the position requires a Security Clearance, reviews and tests for the absence of any illegal drug as defined in 10 CFR 707.4 will be conducted by the employer and a background investigation by the Federal government may be required to obtain an access authorization prior to employment and subsequent reinvestigations may be required.

If the position is covered by the Counterintelligence Evaluation Program regulations at 10 CFR 709, a counterintelligence evaluation may include a counterintelligence-scope polygraph examination.

ORNL is an equal opportunity employer. All qualified applicants, including individuals with disabilities and protected veterans, are encouraged to apply. UT-Battelle is an E-Verify Employer.