

Subject: Ecosystem disturbance and hydrology modeling postdoc

Ecosystems and Hydrology Postdoc

Summary: The Computational Earth Science Group in the Earth and Environmental Sciences (EES) Division at Los Alamos National Laboratory has an immediate opening for a creative and resourceful postdoc candidate with substantial knowledge of regional surface hydrology, particularly in conjunction with climate change impacts, extreme events, and climate-driven disturbances (such as vegetation stress/mortality, wildfire, and infestation). The candidate will work as part of a multi-disciplinary team conducting research in Critical Watersheds--watersheds that are vulnerable to climate change while serving a critical function for society. Successful applicants will have hydrologic modeling and analytical science expertise in one (or more) of three core areas of the project:

- (1) Modeling hydrological systems with the goal of understanding the interaction and feedbacks between climate and key physical processes driving hydrologic/ecohydrologic systems at the regional scale.
- (2) Impact of climate change on terrestrial hydro-ecology, including drought-induced forest mortality and other disruptive events that influence streamflow responses.
- (3) Statistical approaches to analyzing extreme events with a focus on climate and hydrological extremes such as drought and intense precipitation events.

Minimum Job Requirements:

Strong theoretical understanding of surface hydrology and climate change impacts on hydrological systems.

In-depth knowledge and hands-on experience of at least one regional hydrology model (e.g., VIC, SWAT, SUMMA).

Knowledge of climate model databases (e.g. CMIP5, CESM1 Large Ensemble) and how to apply climate model projections in hydrological models (i.e., downscaling techniques)

Knowledge of climate observations, including temperature, rain and snow data collections, in point and gridded forms, from across the CONUS region.

Ability to run numerical simulations and models to predict vegetation dynamics and/or remote sensing techniques to quantify and interpret vegetation changes.

Demonstrated record of peer-reviewed publications.

Excellent communication, writing and oral presentation skills.

Desired skills:

Programming skills to handle large data (e.g., Python, JULIA, C/C++/C#, R).

Understanding and ability to work in high-performance computing (HPC) environments.

Statistical approaches for analyzing extreme climate (e.g., drought) and hydrologic (e.g., flood) events.

Spatial data analysis, such as geostatistics and GIS.

Education and background: Candidates must have received a hydrology-related Ph.D. within the last five years or will have completed all Ph.D.

requirements by commencement of appointment. Preferred candidates will have effective written and oral communication skills, demonstrated ability to publish peer-reviewed papers, and the ability to work in a diverse and dynamic team. Work will entail desktop and/or high performance computing, data synthesis, and model development and application. We anticipate the candidate to start in or before summer 2016.

Notes to Applicants:

For more information please contact Richard Middleton at rsm@lanl.gov. In addition to applying on-line, please send a résumé and a short statement (not to exceed one page) including a short biography (2-3 lines), research interests, and future career goals to Richard Middleton by March 25th, 2016.

Additional Details:

Position does not require a security clearance.

Candidates may be considered for a Director's Fellowship and outstanding candidates may be considered for the prestigious Marie Curie, Richard P. Feynman, J. Robert Oppenheimer, or Frederick Reines Fellowships.

For general information about LANL's postdoctoral program please refer to <http://www.lanl.gov/careers/career-options/postdoctoral-research/postdoc-program/index.php>

Los Alamos National Laboratory is an equal opportunity employer and supports a diverse and inclusive workforce. All employment practices are based on qualification and merit, without regards to race, color, national origin, ancestry, religion, age, sex, gender identity, sexual orientation or preference, marital status or spousal affiliation, physical or mental disability, medical conditions, pregnancy, status as a protected veteran, genetic information, or citizenship within the limits imposed by federal laws and regulations. The Laboratory is also committed to making our workplace accessible to individuals with disabilities and will provide reasonable accommodations, upon request, for individuals to participate in the application and hiring process. To request such an accommodation, please send an email to applyhelp@lanl.gov or call 1-505-665-4444 option 1.

Located in northern New Mexico, Los Alamos National Laboratory (LANL) is a multidisciplinary research institution engaged in strategic science on behalf of national security. LANL enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health, and global security concerns.