Overview

Los Alamos National Laboratory (LANL) is a multidisciplinary research institution engaged in science and engineering on behalf of national security. You will work in the Earth and Environmental Sciences Division, and will be primarily engaged with the Atmosphere, Climate, and Ecosystem Sciences Team. Team members will support and enrich your research and professional goals through their outstanding breadth and depth of expertise in their respective fields.

Research efforts associated with this position include:

- Fusing various geospatial datasets to create a vector representation of the Earth's river systems, including major human impacts like dams and diversions
- Using streamflow gage data to develop and validate a flow routing scheme for links of the network model
- Forcing the model with gridded earth system simulations to explore flood risk projections or river flux dynamics at large scales.

Detailed description

We seek applications from diverse candidates with experience in any of the following research areas: geospatial data assimilation and analysis, streamflow modeling, river fluxes and/or flood risk, watershed science, or computer science. While the overarching research goals for this project have been established, there is significant flexibility in the way these goals can be achieved. A self-motivated, creative postdoc will find this environment conducive to intellectual and professional growth. A comprehensive knowledge of the novel research components will not be necessary as on-the-job training will support your success through a collaborative team atmosphere.

You will work with a multi-disciplinary team of observational and computational hydrologists, geomorphologists, and computer scientists in effort to develop a global, network-based model of river connectivity by fusing various existing observational geospatial datasets. A flow routing scheme will be integrated into the river network model and validated with streamflow observations in order to assess flood risk under various climate scenarios. Depending on your interests, your research could include components of remote sensing, machine learning, geospatial data fusion, or database development. You will have access to ample high-performance computing resources.

Required and Desired skills

The relative breadth of the research goals for this position calls for a corresponding broad degree of experience. However, some of the preferred skills below can be acquired during the postdoc's tenure.

Required skills:

- An ability to work and communicate effectively in a diverse team environment

- Experience with raster (e.g. DEMs or satellite imagery) and vector (e.g. shapefiles) geospatial data
- Proficiency in a programming language (Python highly desirable)
- A basic understanding of flow routing

While not required, demonstrated interest or experience with flow routing models, GIS-enabled databases, remote sensing and/or "big" datasets, or river network models will be considered a plus. In addition to these technical skills, we highly value effective communication skills demonstrated by published articles and/or presentations.

Education

A PhD earned no more than five years ago in earth science, computer science, civil engineering, climate science, geography, or closely related fields is required.

Notes to Applicant

Send a *curriculum vitae* including names and contact information of three references, a one-page cover letter detailing qualifications and research interests, and your earliest start date to Jon Schwenk at jschwenk@lanl.gov Please entitle the subject line "Global River Network Postdoc Search." Applications will be reviewed as received, and we hope to fill the position as soon as possible. Additional questions may be included in your application.

You must also formally apply through the LANL careers website. To apply, go to https://lanl.jobs/los-alamos-nm/geospatial-hydrology-postdoctoral-researcher/3925DEF8CC384970A864E8A813A378DD/job/.

Candidates may be considered for a Director's Fellowship and outstanding candidates may be considered for the prestigious Marie Curie, Richard P. Feynman, or J. Robert Oppenheimer named positions. For general information related to the Postdoc Program, salary, and benefits go to: http://www.lanl.gov/careers/career-options/postdoctoral-research/index.php. Salary ranges can be found at: https://www.lanl.gov/careers/career-options/postdoctoral-research/postdoc-program/postdoc-salary-guidelines.php.

The position will ultimately require relocation to the Los Alamos/Santa Fe area. Los Alamos and Santa Fe offer a unique blend of cultural, outdoor, and historical activities. See https://livability.com/nm/los-alamos/experiences-adventures/8-reasons-to-move-to-los-alamos-nm and https://www.lanl.gov/community/visitors/living-in-los-alamos.php for more info.

Pre-Employment Drug Test

The Laboratory requires successful applicants to complete a pre-employment drug test and maintains a substance abuse policy that includes random drug testing.

Equal Opportunity

Los Alamos National Laboratory is an equal opportunity employer and supports a diverse and inclusive workforce. We welcome and encourage applications from the broadest possible range of qualified candidates. 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 1-505-665-5627.