

Postdoctoral Opportunities in Carbon Data Assimilation and Terrestrial Ecosystem Research

The Joint Global Change Research Institute (JGCRI) of the Pacific Northwest National Laboratory, and the Department of Atmosphere and Ocean Sciences at the University of Maryland, College Park campus seek two Post Doctoral Associates to conduct research on; 1) the development and application of a novel joint atmosphere-land carbon cycle data assimilation system that applies advanced data assimilation techniques to quantify major uncertainties in global carbon sources and sinks from local to global scales; and 2) biosphere-atmosphere interactions including characterizing changes in terrestrial ecosystems and carbon cycle, and the implication of such changes on functioning of these ecosystems and the services we derive from them. Both research themes will employ a combination of observations, models and analysis to understand, quantify and document changes to these systems. The research results will be published in peer reviewed open literature, and will be also made available to decision makers and practitioners for their use. These are full-time appointments with benefits.

The envisioned research will include a variety of observational datasets including flask CO₂ and FLUXNET measurements, space-based observations from GOSAT and soon-to-be launched Orbiting Carbon Observatory-2 satellite, land-cover and land-use dynamic information from MODIS and Thematic Mapper™ sensors on Terra, Aqua and Landsat satellites together with a coupled atmosphere transport and land carbon cycle model. The results will be analyzed to delineate ecosystem and carbon cycle dynamics in response to natural variability and anthropogenic perturbations, seasonal and decadal changes in these systems, and develop attributes that allow better characterization of such changes in time and space. In addition, we intend to use this coupled assimilation system to assess the attributes of current and future observing systems, long-term data sets, and carbon cycle models toward the development of future carbon monitoring systems.

Minimum Requirements

Candidates must have received a PhD within the past five years from an accredited college or university. All applicants must be able to demonstrate the legal right to work in the United States.

Qualifications

The successful candidate should have a Ph.D. in atmospheric sciences, ecosystems, geography, climate science, remote sensing, computer science, applied physics and mathematics or a related field.

Familiarity with modeling and data assimilation and analysis, and remote sensing of ecosystems is required. Background in atmospheric and/or terrestrial ecosystems modeling is desirable. Excellent written and oral communication skills and the ability to work in a team environment are also necessary. Please include a cover letter with names of references, and a resume.

Successful candidates are expected to be able to communicate across disciplines (ecosystems, atmospheric sciences, data assimilation, Earth system modeling, and remote sensing science) boundaries and interact with other team members. The successful candidates will be mentored by Professors Eugenia Kalnay, Ghassem Asrar, and Ning Zeng. The posts are available immediately but starting date is negotiable. Salary will be commensurate with experience and skill of successful candidates. For further clarification, please contact one of the following individuals: N. Zeng (zeng@umd.edu), E. Kalnay (ekalnay@atmos.umd.edu), G. Asrar (Ghassem.Asrar@pnnl.gov).

Additional information for the organizations involved can be found at:

Dept. of Atmospheric and Oceanic Science and Earth System Science Interdisciplinary Center, University of Maryland (www.atmos.umd.edu)

The Joint Global Change Research Institute, Pacific Northwest National Lab, US Department of Energy (www.globalchange.umd.edu)

Equal Employment Opportunity

Pacific Northwest National Laboratory (PNNL) is an Affirmative Action / Equal Opportunity Employer and supports diversity in the workplace. All employment decisions are made without regard to race, color, religion, sex, national origin, age, disability, veteran status, marital or family status, sexual orientation, gender identity, or genetic information. All staff at the Pacific Northwest National Laboratory must be able to demonstrate the legal right to work in the United States.

Closing Statement

While internal candidates are required to complete the Pre-Screening questions included in the application process, they do NOT need to resubmit information regarding eligibility to work in the United States. Likewise, internal candidates do NOT need to complete an additional background check except in those situations where a Security Clearance is required and the staff member does not have a Security Clearance.