Post-doctoral researcher in land surface ecohydrologic modeling

The Geosciences Department at Boise State University is seeking a postdoctoral researcher with the skills and interest to perform land surface ecohydrology modeling and data assimilation. The position will be funded through Army Research Office and National Science Foundation grants focusing on estimating critical zone ecohydrologic variables like soil moisture, net primary productivity, and evapotranspiration in semi-arid watersheds through the fusion of models and remote sensing data. The ideal candidate will have skills in land surface ecohydrologic modeling with community models as well as the use of data assimilation/fusion approaches for model calibration and uncertainty assessment. The candidate will be expected to work collaboratively with an enthusiastic and diverse interdisciplinary team studying critical zone biogeochemical processes in semiarid landscapes. The position is for one year with an option of a second year of funding pending successful review and progress.

Responsibilities and job duties

Responsibilities include setup, parameterization, calibration, and confirmation of a watershed- to regional-scale land surface ecohydrology model in southwest Idaho. The successful candidate will leverage a diverse suite of in situ and remote sensing observations to calibrate the model. Significant opportunities will be available to interact with colleagues in the use of novel sources of vegetation and hydrologic data to constrain models. These potentially include ground-based hyperspectral imagery, airborne LiDAR, terrestrial laser scanning technology, and cosmic ray-derived observations of terrestrial water storage. The successful candidate will assist in preparing presentations and publications summarizing results, and work with data management professionals to document and archive derived data products for use by collaborators and the community.

Required qualifications:

- A doctoral degree in an appropriate field of biophysical science or engineering (e.g., civil and environmental engineering, bioresource engineering, landscape ecology, hydrologic sciences, bio-meteorology, etc.) must be completed by the time employment begins
- Training and previous experience in land surface modeling
- Experience with Linux-based operating system environments
- Proficiency in one or more scientific programming languages, including C/C++, FORTRAN, Python, or similar
- Proficiency in analysis and visualization of model output using software platforms like MATLAB, R, Python, VTK, or similar
- Demonstrated capacity and enthusiasm for working productively with a large interdisciplinary team

Desirable additional qualifications:

- Parallel computing experience using high performance computing clusters
- Community land surface ecohydrology or Earth system modeling experience (e.g., the Weather Research and Forecasting model, Community Earth System Model, Ecosystem Demography model, NASA Land Information System, etc.)
- Prior use of data assimilation algorithms like the ensemble Kalman filter, sequential information filter, Markov Chain Monte Carlo, etc.
- Experience in analysis and interpretation of remote sensing observations from spectral platforms like MODIS and Landsat, and/or microwave remote sensing platforms
- Previous publications in land surface modeling and data assimilation

How to Apply: Interested parties should electronically submit a full CV and cover letter (not exceeding 2 pages) detailing relevant experience to Dr. Alejandro (Lejo) Flores (lejoflores@boisestate.edu). Inquiries for additional information should also be directed to Dr. Flores at this email address. **Review of applicants will begin 15 December 2013 and will continue until the position is filled.**

About the Department: In addition to hydrologic sciences, the Geosciences Department includes other major focus areas of expertise including near surface geophysics, surficial processes and geomorphology, geology, geochemistry, and petrology, and quantitative geosciences and modeling. Collaborative research projects are ongoing across the department, college, and university, with applied math, computer science, civil and electrical engineering departments, in addition to numerous local government labs and institutions. For further information about Prof. Flores' research group and the Geoscience Department, please visit our websites at http://earth.boisestate.edu/lejoflores/ and http://earth.boisestate.edu, respectively.

About the University: http://www.boisestate.edu/. As of August 17, 2009, Boise State University is a SMOKE FREE campus. For more information please go to http://healthservices.boisestate.edu.

About Boise: Boise, the capital and largest city of the State of Idaho, is the hub of commerce, banking and government for the state. It is a blend of both traditional and non-traditional sights and attractions. Located along the Boise River and nestled against foothills of the Rocky Mountains, our city offers many outdoor activities to local residents, from skiing at Bogus Basin Ski Resort to biking on the Boise River Greenbelt to boating at nearby reservoirs. The Boise area has it all - desert, rivers, mountains and lakes for hiking, camping, kayaking, river rafting, hunting and fishing. The City of Trees boasts one-of-a-kind museums and urban parks. Among the many unique sites to visit are the Basque Museum and Cultural Center, Idaho Anne Frank Human Rights Memorial, Idaho Black History Museum and the World Center for Birds of Prey. Boise is home to Boise State University, the state's largest university with an enrollment of over 19,500 students, as well as 34 grade schools, 9 junior high schools, and 5 high schools. See more information at http://www.cityofboise.org/visiting/about-boise/ or http://www.boisechamber.org.

Background Investigations: Any offer of employment at Boise State University will be contingent upon the successful completion of a background investigation. To view the University's full Background Investigations policy, please go to http://policy.boisestate.edu.

Drug-Free Workplace: It is the policy of Boise State University to maintain a drug-free workplace and campus. For more information about this policy, please go to http://policy.boisestate.edu.

Jeanne Clery Statement: The Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act) requires all colleges and universities that participate in federal financial aid programs to keep and disclose information about crime on and near their campuses to all job applicants. To read the Boise State University Safety Report go to http://security.boisestate.edu/annual-security-reports.

Boise State University is strongly committed to achieving excellence through cultural diversity. The University actively encourages applications and nominations of women, persons of color, and members of other underrepresented groups. EEO/AA Institution, Veterans preference.