<u>Postdoctoral position in dryland ecosystem modeling</u>

Jornada Basin LTER, Las Cruces, New Mexico

New Mexico State University, with partners at the USDA-ARS Jornada Experimental Range, UCLA, Arizona State University, and University of Illinois are seeking qualified applicants to contribute to research in dryland ecology at the Jornada Basin Long-Term Ecological Research (JRN-LTER) site. The post-doctoral fellow will contribute to process-based modeling, synthesis and analysis of long-term field data, complemented by landscape scale data on vegetation patterns and dynamics with climate, soils, land use and associated trophic interactions. The intent of this project is to establish a modeling foundation that can be scaled to dryland ecosystems regionally and globally.

Responsibilities: Contribute to JRN-LTER and global understanding of dryland vegetation dynamics, state-change and resilience using process-based population and community models. The project will draw inspiration from earlier dryland models, adding critical new processes relating to spatial connectivity for wind, water, propagules and herbivores, driving spatial and temporal heterogeneity in landscape-scale dryland vegetation dynamics. The post-doctoral fellow will lead model development and collaborate on analysis and publication of results, new proposals and scientific/community outreach. We seek candidates with interests in ecosystem modeling, using low-dimensional point and spatially interactive models, for improved ecological inference in drylands.

Preferred qualifications, skills and experience: PhD in ecology, ecological modeling, mathematics, computer science or related fields with interests in dynamical systems modeling. Interest in dryland ecosystem vegetation dynamics and pattern formation in southwestern USA and/or global drylands. Experience coding analytical and/or simulation models, integration of model outputs with field and/or geospatial data for parameter estimation and model validation. Proficiency with Matlab, Octave, Python or other coding languages, with experience coding ordinary differential equation, cellular automata and/or partial differential equation-based models. Experience with open-source programming, high-performance computing and data visualization is a plus, as is a general interest in open science and reproducible research practices. Publication record commensurate with academic level. PhD students with anticipated Fall 2022 completion date are welcome to apply.

Anticipated Start Date: November 1, 2022 – February 1, 2023

To apply: email the following information (subject line: "Jornada Modeling Postdoc") as a single PDF file to msoss@nmsu.edu: 1) a cover letter outlining your research interests and prior experience, 2) a detailed CV, and 3) contact information for 3 academic / professional referees. Prospective candidates are encouraged to review the JRN-LTER website (https://lter.jornada.nmsu.edu/) and contact Dr. Niall Hanan (nhanan@nmsu.edu) to discuss the potential contributions of the successful applicant. NMSU postdoc salaries and benefits are nationally competitive, while the cost of living in Las Cruces, New Mexico is relatively low. Support for travel for fieldwork, conferences and professional development is available. The position is available immediately for one year, with annual renewal possible for a second year subject to satisfactory progress and for additional years depending on availability of funding. Review of applications will begin immediately and continue until the position is filled.

New Mexico State University is a Hispanic Serving Institution (HSI), an Affirmative Action/Equal Opportunity employer and values equality of opportunity, human dignity, and diversity. We strongly encourage members of marginalized and under-represented groups to apply.