Postdoctoral position in hydroclimatic variability and extremes in the coastal Western U.S.

Contact Name: Prof. Morgan Levy
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Title of the Position: Postdoctoral Scholar-Employee
Location: Scripps Institution of Oceanography, University of California San Diego**,** San Diego, California, USA
Appointment duration: Initial appointment is for 2 years with possibility of renewal based on performance and availability of funding.
Number of Positions: 2

Position Description:

The Scripps Institution of Oceanography (SIO) at the University of California San Diego (UCSD) seeks applications for a Postdoctoral Scholar-Employee. The Scholar will be focused on hydro-climatological data analysis and modeling related to climate and hydrologic variability and extremes in the Western U.S., and terrestrial freshwater and oceanic interactions relevant to California water management. This research will be carried out within a large, two-year multi-campus UC effort focused on equitable stewardship of California's water in a changing climate: the COEQWAL (COllaboratory for EQuity in Water ALlocations) project, which brings together expertise from across the UC and CSU system, government agencies, and NGO collaborators. The project will leverage new climate change projections and existing water resource planning models to explore tradeoffs in California water availability outcomes across a range of management scenarios, with an emphasis on providing meaningful, timely, and actionable information for end-users and communities with historically limited involvement in water resources planning analysis.

The Scholar will be jointly advised by Prof. Morgan Levy and Dr. Daniel Cayan at SIO, and will also work closely with, and receive mentorship from, distinguished colleagues and collaborators from the COEQWAL project. The Postdoctoral Scholar will work collaboratively with PIs, fellow Postdoctoral Scholars, and PhD students to accomplish specific project-critical tasks that include: interpreting and analyzing downscaled global climate model (CMIP6) meteorological variables; interpreting and analyzing pre-produced deterministic hydrologic model (VIC, Noah-MP) projections; developing new deterministic hydrologic model simulations with collaborators as needed and/or developing stochastic weather and streamflow generation model products customized for California watersheds. The Scholar will also be encouraged to explore broader scientific inquiries, including but not limited to topics such as: understanding climatologic and hydrologic variability and extremes; addressing California water supply availability, quality, and equity challenges; and exploring coastal surface water and groundwater quantity and quality with respect to extreme events, water supply, ecosystems, and fisheries.

An overarching emphasis on interdisciplinary collaboration, including engagement with scientists, engineers, regulators, policymakers, water managers, and community stakeholders will be central to this position. The Scholar may also work on other climate or hydrology initiatives within SIO and UCSD, depending on program needs. The exact responsibilities will vary based on the evolution of the funded project, and the interests, expertise, and experience of the Scholar.

Responsibilities and Expectations:

The Scholar will be expected to understand and work with global climate model data products, and one or both of the following: (i) deterministic hydrologic models and model outputs, preferably VIC and/or Noah-MP (expertise in other modeling platforms will also be considered); (ii) stochastic weather and streamflow generation modeling (or, a relevant statistics or engineering background and interest in developing this skill). The scholar will work to deliver data and modeling products, produced with PIs and collaborators, on a planned schedule. The Scholar will conduct literature reviews to understand and synthesize scientific and technical information across climate, hydrology, and water management domains, and will research and write scholarly papers and articles with PIs and collaborators. The Scholar will participate in interdisciplinary collaboration on complex climate and water science issues, and support collaboration within a multi-institution, cross-disciplinary team. The Scholar may assist with other miscellaneous aspects of project activities as appropriate. Occasional travel within California will be required for this position.

Qualifications:

Candidates should have a PhD (or equivalent international degree) or be enrolled in a PhD program at the time of application; receipt of a PhD is required by the appointment start date. The candidate should have no more than three years of postdoctoral research experience by the start date.

The ideal candidate will have a demonstrated interest in interdisciplinary water systems research. Candidates with a Ph.D. in hydrology, environmental engineering, climate science, atmospheric science, or meteorology, and with a strong analytical background in data-intensive or model-based climatologic or hydrologic research are preferred. The candidate should have strong skills in at least one scientific programming language (e.g., R, Python, Matlab), proficiency in data analysis and visualization, experience working with spatial and time series data, and experience handling and properly documenting large datasets and ensuring data quality. The candidate will have excellent research, analytical, organizational, and writing skills; a demonstrated publication record or articles currently under review; an ability to communicate effectively and be able to prioritize and function both independently and collaboratively; excellent time management skills and a demonstrated ability to finish projects and deliver on commitments; and an ability to work with people from a variety of disciplinary backgrounds and perspectives.

Application Procedure:

The position is available immediately. Interested individuals should submit the following as attachments via email to Prof. Morgan Levy at mclevy@ucsd.edu: a recently updated C.V., a cover letter describing past research experience and career goals, and the names and affiliations of 3 references (contact information only). Applications will be considered until positions are filled, with preference given to applications received by October 15, 2023. UCSD is an equal opportunity/affirmative action employer with a strong institutional commitment to excellence and diversity (http://diversity.ucsd.edu/).