

**Cal Poly Humboldt Sponsored Programs Foundation**  
Postdoctoral Researcher Job Announcement  
*This is not a state position*

**Job Title:** Postdoctoral Researcher

**Wage and Benefits:** \$62,400 annual + Health, Dental, Vision & Life insurance, Vacation & Sick leave

**Project Name:** Highway 101 Eureka/Arcata Corridor Climate Adaptation Implementation Plan Assessment

**Project:** We have an opening for a postdoc position focused on analyzing the role of climate change on coastal flood and erosion hazards in Wigi (Humboldt Bay), Northern California. Additionally, the postdoc will assess a range of co-produced natural, engineered, and nature-based adaptation solutions. Wigi has been experiencing nearly the fastest rate of relative sea level rise on the U.S. west coast due to a combination of sea level rise (SLR) and [subsidence](#). The postdoc will analyze coastal hazards along Hwy 101 between the cities of [Eureka and Arcata](#), adjacent to the bay. In consultation with the funding agency [Caltrans](#) and the advisory committee, the postdoc will investigate shoreline conditions, wind setup, wind-waves, runup and overtopping for a range of extreme wind-speeds, directions, and stillwater levels (including SLR) at multiple locations within the project area. The postdoc will join a team that is also assessing groundwater, riverine, and seismic hazards. The work will enable Caltrans to advance planning and to prioritize and implement a collaborative, multi-benefit, and cost-effective adaptation solution in one of the most vulnerable stretches of roadway in the state.

**Essential Functions of the Job:** As per agreement with Caltrans, at minimum, the postdoc will analyze existing shoreline, wind and water level observations; and use SWAN and empirical models to produce SLR assessments similar to [previous studies](#) in the region. They will also provide support for the analysis of combined hazards (coastal, groundwater, riverine, and seismic). It is expected that the postdoc will produce technical memos and PowerPoint presentations for Caltrans according to regular deadlines in line with the consulting nature of the funding.

**Additional Opportunities:** We are hoping to find a candidate with a skillset and interests that will expand the consulting project into a research project. Research and consulting could overlap via the collection and analysis of additional relevant observations, more sophisticated numerical/surrogate modeling, and/or joint probability analysis of coastal/riverine flooding under different climate regimes. These approaches will enhance our product for Caltrans and could lead to exciting peer-reviewed journal publications (see funding below).

**Funding & Timeline:** Contingent on completion of the contracting processes, the position could start as soon as possible. Start date will be discussed in coordination with the postdoc, advisors, and Caltrans. Initial appointment will be full-time consulting-related work for a 15-month period, with the possibility for a 3-month extension dependent on the candidate's potential to publish some of their prior work in a peer-reviewed journal. Additional reappointment may be possible depending on future funding.

**Location:** Wigi (Humboldt Bay) and Cal Poly Humboldt are located on the present and ancestral Homeland and unceded territory of the [Wiyot Tribe](#). We prefer the candidate to be based at Cal Poly Humboldt where they would work closely with Dr. Ludka, be available for possible field opportunities and interact with community stakeholders. Visiting scholar appointments can also be arranged at University of Washington (UW), or Oregon State University (OSU), and the option of remote work from other locations may be considered. In a remote work situation travel to Humboldt for some in-person meetings may be required. The postdoc will have the opportunity to foster a strong research network through visits to UW and OSU and through interactions with the [Humboldt Sea Level Rise Institute](#) and [Cascadia Coastlines and Peoples Hazards Research Hub](#).

**Advisory Committee:**

- [Bonnie Ludka](#) - Cal Poly Humboldt; Environmental Resources Engineering (*Primary advisor*)
- [Jeff Anderson](#) - Northern Hydrology & Engineering
- [Alex Horner-Devine](#) - University of Washington; Civil & Environmental Engineering
- [Peter Ruggiero](#) - Oregon State University; College of Earth, Ocean, and Atmospheric Sciences
- [Meagan Wengrove](#) - Oregon State University; Civil & Construction Engineering

**Collaborators:**

- [Eileen Cashman](#) - Cal Poly Humboldt; Environmental Resources Engineering
- [Margaret Lang](#) - Cal Poly Humboldt; Environmental Resources Engineering (*Groundwater Assessment Lead; Land Use and Infrastructure Impacts Lead*)
- [Josephine Archibald](#) - Cal Poly Humboldt; Environmental Resources Engineering
- [Mark Hemphill-Haley](#) - Cal Poly Humboldt; Department of Geology (*Geologic Hazards Lead*)
- [Brian Buchanan](#) - Cal Poly Humboldt; Environmental Resources Engineering (*Riverine Flood Impacts Lead*)

**Minimum Qualifications:**

- Ph.D.(at time of appointment) in Engineering, Oceanic and Atmospheric Sciences, Applied Mathematics, Data Science, Computer Science, or related discipline.
- Experience using physics-based coastal models (Delft-3D, X-Beach, SWASH, etc.) to assess flooding
- Established track record of peer-reviewed scientific communications
- Strong computational skills (preferably in Python, R or MATLAB)
- Excellent technical writing skills in English
- Excellent oral communication skills in English
- Ability to pursue research independently
- History of success in collaborative team environments
- Excellent organizational skills
- Ability to manage deadlines

**Desired Qualifications:**

- Experience using version control tools (e.g., Git)
- Experience conducting joint probability analyses
- Experience developing statistical models from large datasets
- Experience collecting and analyzing coastal hydrodynamic and geomorphic data, especially in bay/estuarine systems
- Experience assessing adaptation designs, including natural “living” shoreline projects
- Experience using downscaled climate model output to drive physics-based coastal models
- Experience using results from physics-based coastal models to design machine learning based surrogate models

**Application Instructions:** Email {bonnie.ludka [at] humboldt [dot] edu} a SINGLE PDF with a cover letter, CV, [EIF form](#), and contact information for 3 references with the subject: “Caltrans Humboldt SLR postdoc position”.

**Application Review Date:** Screening of applicants will begin 11 September 2023 and will continue until the position is filled.

Cal Poly Humboldt Sponsored Programs Foundation is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, age, sex including sexual orientation and gender identity, national origin, disability, protected Veteran Status, or any other legally protected status. More information about Cal Poly Humboldt SPF’s Equal Employment Opportunity hiring can be found [here](#).

For assistance with the application process, please submit an Accommodation Request Form, which can be [found here](#) or contact ADA Coordinator at 707.826.3626 or confidential fax at 707.826.3625. For more information regarding accommodation, you may also visit the Cal Poly Humboldt Human Resources website at <https://hraps.humboldt.edu/reasonable-accommodation>. Individuals in need of a telecommunications relay service may contact the California Relay Service at 877.735.2929 TTY.