



State of California  
 California Environmental Protection Agency  
 Office of Environmental Health Hazard Assessment

## DUTY STATEMENT

CURRENT       PROPOSED

RPA Number: CEERB-006 FY 23-24	Classification Title: Research Scientist IV (Epidemiology/Biostatistics)	Position Number: 811-130-5609-001
Incumbent Name:	Working Title: Extreme Heat Research Scientist	Effective Date:
Tenure: Permanent	Time Base: Full Time	Intermittent Hours Per Month:
Division/Office: Division of Scientific Programs/Community and Environmental Epidemiology Research Branch	Section/Unit: Extreme Heat Ranking System Development Section	Reporting Location: Oakland or Sacramento
Supervisor's Name: Walker Wieland	Supervisor's Classification: Environmental Program Manager I (Supervisory)	CBID: R10
Confidential Designation:  <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Designated Position for Conflict of Interest:  <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Position Telework Eligible:  <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Supervision Exercised:  <input checked="" type="checkbox"/> None <input type="checkbox"/> Lead <input type="checkbox"/> Managerial <input type="checkbox"/> Supervisory		

<b>Human Resources Use Only:</b>	
<b>HR Analyst Approval:</b>	<b>Date:</b>

### General Statement

This position requires the incumbent to maintain consistent and regular attendance; communicate effectively (orally and in writing if both appropriate) in dealing with the public and/or other employees; develop and maintain knowledge and skill related to specific tasks, methodologies, materials, tools and equipment; complete assignments in a timely and efficient manner; and adhere to department policies and procedures regarding attendance, leave, and conduct.

### Position Description

The Extreme Heat Ranking System Development Section (EHRSDS) implements a portion of Assembly Bill 2238 (AB 2238; Rivas L, 2022). This section leads the development and ongoing



management of an extreme heat ranking system for California. The development of this system uses the most recent scientific and health data that identify risk drivers for heat impacts across California. In addition, strong public, state, and federal agency engagement is needed to ensure the tool is effective. The section works closely with the Information Technology Branch to develop a system that meets the needs of California and is transparent and easily accessible. In its development of the extreme heat ranking system, the section takes equity into account and engages with those communities in California most likely to be adversely impacted by extreme heat events.

Under the general direction of the Environmental Program Manager (Supervisory), Chief, Extreme Heat Ranking System Development Section (EHRSDS), the Research Scientist (RS) IV (Epidemiology/Biostatistics (E/B)) serves as a senior team member and provides direction during the development and maintenance of the extreme heat ranking system. The RS IV (E/B) conducts research regarding the underlying scientific and public health assumptions within the ranking system. The RS IV (E/B) leads analysis of meteorological and epidemiological datasets related to extreme heat, represents the EHRSDS during public workshops and discussions associated with the ranking system, and creates public-facing materials on the extreme heat ranking system that are transparent and easy to follow. The RS IV (E/B) will perform the following duties and other related work:

### **Essential Functions (Including percentage of time):**

**35% Extreme Heat Ranking System Development.** In consultation with the EHRSDS Chief, direct the development and maintenance of extreme heat ranking system that seeks to characterize extreme heat risks to a variety of populations to improve public health responses to these episodes. Develop novel methodology and complex analyses (e.g., predictive models showing relationship between heat and health effects) to support the maintenance and evaluation of the system. Demonstrate expertise in epidemiology and climate science to draw conclusions from these analyses and implications on the heat ranking system. Identify suitable and available data for incorporation into the system, including but not limited to meteorological and health data (e.g., incorporation of urban heat island effect). Assess feasibility of different levels of spatial and temporal data resolution for the system. Gather and clean datasets and analyze them to understand relevance and system applicability. Create and update algorithms that combine meteorological, epidemiological, and other data to produce heat rankings that differ by geography and update as weather conditions change. Develop methods for incorporating historical data on meteorology and health impacts into the extreme heat ranking system to develop predictive forecasts. Update these methods based on input from meteorological experts. Develop, test, and refine categories of heat severity and policy recommendations for thresholds or triggers (e.g., opening of local cooling centers), especially for vulnerable populations, accounting for geographical differences in weather conditions. Provide input on policy decisions, such as the direction of resources to vulnerable populations, and the anticipated health-protective outcomes (e.g., reduced morbidity). Assess the impact of uncertainties by conducting sensitivity analyses on the input datasets and algorithms. Develop and present spatial data visualizations (e.g., interactive GIS maps) used to communicate the extreme heat ranking system results in near-real time. Refine these visualizations over time based on stakeholder feedback. Coordinate with OEHHA's web team to publish these visualizations to the extreme heat website and mobile application. Improve the system based



on feedback throughout the scientific review process and the public engagement process. Contribute to a project workplan on the Extreme Heat Ranking System by incorporating information such as the addition of new datasets and the improvements to indicators that can be completed each year and a projected timeline.

- 15% **Research and Writing to Develop and Update the Extreme Heat Ranking System Report.** Review existing literature and tools on the health effects of heat and heat health warning systems. Evaluate health data from these studies for scientific rigor and thoroughness. Provide interpretations of scientific research findings in these areas that will be accepted as authoritative by EHRSDS staff. Add and approve the addition of literature (e.g., scientific articles, literature reviews) to a database within a reference management software such as Endnote. Conduct complex statistical analysis using epidemiologic methods (e.g., regression analysis, time series analysis for the relevant data and summarize results for impacted communities and other California government agencies. Conduct analysis to understand relationships between meteorological conditions and health outcomes of various population groups taking other factors (e.g., geography) into consideration. Conduct complex statistical and spatial analyses of datasets related to extreme heat and health vulnerability to understand the distribution of heat-related morbidity and mortality. Use statistical software (such as R or SAS) and geographic information systems (GIS) software (such as ArcGIS) to conduct the statistical and spatial trends analyses of extreme heat data. Lead the planning, development, and analyses to assess the effectiveness of the system in reducing health impacts of heat and in reducing health inequities. Research and create metrics to measure the short- and long-term impacts of heat on human health, including metrics to assess health equity. Draft written reports describing scientific analysis including exposure assessments, epidemiological analyses, and risk assessments in collaboration with a multi-disciplinary team of experts within OEHHA. Serve as the senior staff scientist responsible for the production of reports, how-to guides, and other documents on the development of the system and guidelines on using the system.
- 15% **External Agency Consultation and Providing Internal Expertise.** Provide epidemiologic heat-health expertise and recommendations to the Office and external agencies. Provide authoritative expertise to other sections within OEHHA, other California Environmental Protection Agency (CalEPA) boards and departments, and other state and federal agencies in evaluating epidemiologic research and related heat health effects. Identify topics areas for consultation with federal, state, and local agencies related to data currently used or potentially useful for extreme heat ranking system development and updating. Collect relevant materials to form greater scientific understanding of data sets related to extreme heat vulnerability through participation in technical discussions and collaborations with program staff from federal, state, and local entities through meetings or by written correspondence. Identify and propose improvements in the use of the data for the extreme heat ranking system based a review of the material considered in the consultation. Summarize concerns and evaluate them based on scientific merits in writing or verbally for consideration by OEHHA management. Consult with academic and stakeholder experts, such as meteorologists, community experts, and academic researchers.
- 15% **Outreach and Community Engagement.** As part of a team, consult with key contacts in



communities to gain a fuller understanding of potential impacts of extreme heat, ensuring meaningful engagement of environmental justice communities in program design, development, and implementation. Develop and facilitate training workshops for community groups, various governmental agencies, and other interested stakeholder groups on how to use the tool. Actively listen to communities input on the system and identify strategies to meaningfully integrate community perspectives into the system.

10% **Contract Development.** In coordination with Chief of the EHRSDS, lead the development and maintenance of contracts to improve the system. Provide clear guidance on requirements and acceptable performance for potential contractors. Manage contracts and ensure appropriate performance and on-time deliverables. Facilitate effective communication throughout the contract lifecycle.

### **Marginal Functions (Including percentage of time):**

5% **Racial Equity and Environmental Justice (REEJ).** Participate and engage in REEJ related trainings and activities that will promote strategies and policies for advancing REEJ in OEHHA. Collaborate with REEJ manager to ensure adequate implementation of new practices and principles to support the process of embedding REEJ in all OEHHA scientific programs. Attend trainings to support the development of materials for environmental justice, enhancing the Extreme Heat Ranking System's outreach through various documents like fact sheets, press releases, presentations, and white papers to communicate OEHHA's REEJ work in Extreme Heat activities.

5% **Continuing Education/Publications.** Attend relevant scientific meetings and conferences at the local and national level and make presentations where appropriate. Attend continuing education courses to maintain and further develop technical skills and expertise. Assist EHRSDS staff and other collaborators in the preparation of manuscript drafts for publication in scientific journals that relate to analyses of extreme heat and health by time and place through conducting the literature review and drafting the methods and results sections.

### **Typical Physical Conditions/Demands:**

The job requires extensive use of a personal computer and the ability to sit/stand at desk, utilize a phone, and type on a keyboard for extended periods of time. Ability to lift 15 pounds, bend and reach above shoulders to retrieve files and/or documents.

### **Typical Working Conditions:**

OEHHA has a hybrid work environment that includes work in an office setting in a high-rise building and telework at home. Office arranged in cubicles, not all of which have direct natural illumination. Time critical assignments are part of the workload. Prolonged sitting while reviewing scientific articles, reports and generating scientific documents and reports is required. Repetitive motion in using office equipment occurs. Travel to off-site meetings may be required as necessary. Participation in teleconferences and webinars is required. May be required to travel to other OEHHA locations for



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business related needs as necessary.

**Special Requirements of Position (Check all that apply):**

- Duties performed may require pre-employment and/ or routine screenings (background/criminal/fingerprint clearance, drug testing, fingerprinting, physical, etc.).
- Duties require participation in the DMV Pull Notice Program.
- Performs other duties requiring high physical demand. (Explain below)
- Requires repetitive movement of heavy objects and/or operation of heavy machinery or motorized vehicles.
- Other (Explain below)

**Explanation:**



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### Supervisor Statement

I certify this duty statement represents an accurate description of the essential functions of this position. I have discussed the duties of this position with the employee and provided the employee a copy of this duty statement.

Supervisor Name	Supervisor Signature	Date
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### Employee Statement

I have discussed these duties with my supervisor and have been provided a copy of this duty statement. I certify I have read, understand, and can perform the duties of this position either with or without reasonable accommodation\*.

*\*A Reasonable accommodation is any modification or adjustment made to a job, work environment, or employment practice or process that enables an individual with a disability or medical condition to perform the essential functions of his or her job or to enjoy an equal employment opportunity. (If you believe reasonable accommodation is necessary, check yes. If unsure of a need for reasonable accommodation, inform the hiring supervisor, who will discuss your concerns with the Reasonable Accommodation Coordinator.)*

Do you need a reasonable accommodation to perform the essential functions of this position?

YES       NO

Employee Name	Employee Signature	Date
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