



BERKELEY CLIMATE MAP — EXTREME HEAT – JUNE 2025

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Heat research and action projects are being conducted with a number of off-campus partners including State of California, county health departments, public and non-profit health organizations, and medical facilities. These research partnerships are working on a wide range of heat problems and solutions, including:

- Building design, materials and operations
- Ag: Crop yields, farmworkers and food system workers
- Ecosystems in a warmer world
- Hybrid, efficient air conditioning to reduce energy use and grid stress
- Climate vulnerable TK-12 schools
- Bay Area heat strategies by county
- Indoor temperature standards for California
- City planning
- Urban heat islands
- Cal-Adapt local heat mapping
- Human Rights
- Children, pregnant women and older adults
- Social disparities in pre-term baby risk in heat events
- Heat and mortality in Latin American cities, tropics, etc.
- Sleeping and heat stress
- Air pollution and heat combinations
- Cal-THRIVES extreme heat toolkit for policymakers

Berkeley's work on extreme heat is led by the College of Environmental Design, Lawrence Berkeley Lab, School of Public Health. Others include, Berkeley Law, Rausser College of Natural Resources, College of Engineering and L&S Physical Sciences, Biological Sciences and Social Sciences.

First Name	Last Name	Affiliation (primary)	Short Summary	Selected Projects/Reports/Classes
Ed	Arens	CED - CEDR, CBE	Director, Center for the Built Environment at the College of Environmental Design. CBE is an industry/university cooperative research center focusing on commercial/institutional buildings.	Arens has been principal investigator for a large number of state, federal, and industry grants addressing building energy performance, indoor environmental quality criteria, field monitoring procedures, and architectural aerodynamics.
Max	Aufhammer	RCNR - Agricultural & Resource Economics	Environmental and resource economics, energy economics and applied econometrics.	Heat in the Heartland – crop yields along the Mississippi
Dennis	Baldocchi	RCNR - ESPM	How ecosystems function in a warmer world. How the terrestrial biosphere ‘breathes’; plants and microbes exchange trace gases, in and out of the atmosphere, in their quest to acquire the energy needed to support their metabolism.	The Biosphere - ESPM 2 001 - LEC 001 (FALL2023) Ecosystem Ecology, ESPM 111, Spring 2024 Biometeorology, ESPM 129, Fall 2024
William	Boos	L&S Physical Sciences - Earth and Planetary Science	Large-scale climate dynamics. How atmospheric circulations, ocean interactions, radiative transfer, and land surface processes control regional and global climate. Academic Senate Committee on Climate	Record breaking heat predicted for tropics this summer (2024) Mechanical forcing of the North American monsoon by orography (2021)
Gail	Brager	CED - Architecture, CBE	Director, Center for Environmental Design Research supporting 3 centers including Center for the Built Environment.	Mixed Mode Building Research – hybrid space conditioning – comfort with less energy use

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Federico	Castillo	RCNR - ESPM	Socio-economic impacts of extreme events associated with climate change. The economic aspects of protected areas and migration.	Extreme Heat and COVID-19: A Dual Burden for Farmworkers (2022) Key research: hurricane impact; Afro-Latinx and Latinx migration; FEMA expenditures; heat waves-COVID joint impacts on farm workers. Current research on hurricane Harvey impacts on Afro-Latinx and Latinx community and FEMA expenditures
	Center for Cities and Schools	CED - IURD	Jeffrey Vincent, Co-Founder & Director the Center for Cities & Schools (CC&S) . Interdisciplinary, action-research center, linking the fields of city planning and K-12 education.	UCOP \$100M Climate Action LOI lead - Building Adaptive Capacity of California's Climate Vulnerable TK-12 Schools -- Seed (Decline) Virtual Policy Forum on Climate Resilient California Schools (2023)
	Center for Law, Energy and Environment	Law	Daniel Farber , Faculty Director Louise Bedsworth , Executive Director Solving our most pressing environmental challenges through actionable research, training, and engagement to accelerate the implementation of solutions.	Bay Area Heat Health Climate Project Zoom workshop February 2025 Bay Area 5 th Assessment Regional Report
	Center for the Built Environment	CED - CEDR	Ed Arens , Director. Academic-Industry partnership to improve the performance of buildings.	HVAC systems California Safe Indoor Temperature Policy Study

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				Decarbonizing Large Commercial Buildings through Heat Recovery and Storage
	CITRIS and the Banatao Institute	Campuswide - Berkeley, Davis, Santa Cruz, Merced	Alexandre Bayen, Director Camille Crittenden , Executive Director. Creating IT solutions that generate social and economic benefits for everyone.	CITRIS Seed Grants awarded Dec 2023 – includes projects on soil carbon and resilient building materials to address heat
Stephen	Collier	CED - City and Regional Planning	City planning and urban governance.	Teaching: CYPLAN 214 – Climate Planning and Urban Systems SPRING 2023
	Disaster Lab (D-Lab)	Engineering	Thomas Azwell, Director. Develops and Validates Practical Innovations for Disaster Preparation, Response, and Recovery	Course: ENGIN 183C: THE DISASTER CHALLENGE LAB
Carlos	Duarte	CED - CEDR, CBE	Radiant heating and cooling, occupant behavior impact on building energy consumption, and the development of tools that help building stakeholders.	Optimizing radiant systems for energy efficiency and comfort Tool for high thermal mass radiant systems
	Geospatial Innovation Facility	RCNR - ESPM	Nancy Thomas, Executive Director . Provides leadership and training across a broad array of integrated mapping technologies.	Cal Adapt site- climate projections to areas of interest and gives tools to plan for changes – include extreme heat section
	Green Building Resource Center (GBRC)	CED - CEDR	Edward Arens , Co-Director David Lehrer , Co-Director Advances and promotes sustainable building design and operation on the campus and provides resources to other universities in similar efforts across California.	

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Rohini	Haar	Law - Human Rights Center	Emergency physician. Health and human rights. Protection of human rights in times of complex humanitarian crisis and conflict.	Course: PH211 Health and Human Rights
Zoe	Hamstead	CED - City and Regional Planning	Policy, Buildings. Climate Equity/Environmental Justice	Teaching: CYPLAN 290 - Topics in City and Metropolitan Planning: Climate Justice Seminar SPRING 2022
Tianzhen	Hong	LBNL - Building Technologies and Urban Systems Division	Deputy Head of the Building Technologies Department at LBNL.	Anthropogenic heat from buildings in Los Angeles County: A simulation framework and assessment
Charlie	Huizenga	CED - CBE	Personal comfort systems for energy efficiency and heat stress reduction	Establishing Maximum Thermal Conditions for California Residential Dwellings Policy Recommendations (developed with the UCB Center for the Built Environment) were delivered to the CA Legislature Feb 2025 Recommends 82°F as the maximum safe indoor air temperature for CA residential buildings Recognizes the importance of air movement (e.g., fans) in allowing higher air temperatures Proposes consideration of new building standards, incentivizing passive and low-energy cooling strategies, and using future weather models for energy analysis

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	Human Rights Center	Law	Betsy Popken, Executive Director. Our Climate Justice program addresses the human impacts of climate change. Our research results in recommendations to create new laws and policies, and other actions to protect the human rights of people in affected communities.	Co-Director, Climate-Induced Displacement and Migration in CA – project for CA 5 th Climate Assessment Climate Justice Program now Climate Disasters Initiative on July 1
Carly	Hyland	Public Health-Environmental Health Services	Cooperative Extension Professor in EHS -- Interventions and research translation to mitigate the health impacts of climate change among agricultural and food systems workers, with a focus on heat, wildfire smoke, and pesticides.	Interventions and research translation to mitigate the health impacts of climate change among agricultural and food systems workers, with a focus on heat, wildfire smoke, and pesticides. Examining Farmworker Experiences with Heat and Climate Change in Idaho
	Institute for Urban Infrastructure and Development (IURD)	CED - City and Regional Planning	Kristina Hill, Director. Interdisciplinary academic and research unit dedicated to prioritizing justice in initiatives to understand, mitigate, and adapt to climate change.	
Andy	Jones	LBNL - Climate and Ecosystem Sciences Division	Jones leads the Earth Systems and Society Program Domain at LBNL.	
Tom	Kirchstetter	LBNL - Energy Analysis & Environmental Impacts Division	Director, Energy Analysis & Environmental Impacts Division at LBNL	
Layla	Kwong	Public Health - Environmental Health Sciences	Identifying pathways of disease transmission; developing products and services to reduce exposure to climate change, air pollution,	Quantifying exposure to heat stress and the impact of heat stress on children, pregnant women, rickshaw pullers, and older individuals.

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			pathogens, and irritants; and evaluating intervention impacts on child health.	Developing interventions to reduce exposure to indoor heat stress. Global environmental health — Bangladesh, India, China, Mongolia, Fiji, Indonesia, Peru, Uganda, and Mali in urban, rural, and humanitarian settings. Climate Equity Environmental Justice Core Faculty
Zachary	Lamb	CED - City and Regional Planning	Urban spatial politics, ecological design, and uneven vulnerability to environmental hazards, particularly hazards associated with climate change	UCOP \$100M Climate Action LOI lead – January 2023 - Manufacturing Climate Equity: Equitable Climate Action in California’s Manufactured Home Parks -- Seed (Decline)
	Lau Grants for Just Climate Future –		2025 Awards – Exhibition through April 23	Heat + Haze at the Edge – Nader Afzalan and Lu Liang
Ronnen	Levinson	LBNL - Building Technologies and Urban Systems Division	Leader of the Heat Island Group at LBNL.	Heat Island Group
Rachel	Morello-Frosch	RCNR, Public Health	Climate Equity and Environmental Justice Roundtable	Social Disparities in the Risk of Preterm Birth During Extreme Heat Events
Elizabeth	Noth	Public Health - Industrial Hygiene	Director, Industrial Hygiene Program at the Northern California NIOSH Education and Research Center.	2023 UCOP Proposal: Heat and Wildfire Smoke Impacts on Prison Residents and Workers

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	Office of Sustainability and Carbon Solutions		Director position currently being filled through outside search.	Heat issues for campus buildings that are not AC-equipped.
Justin	Remais	Public Health - Environmental Health Sciences	Chair of the Division of Environmental Health Sciences at SPH. How the transmission of environmental pathogens responds to rapid environmental change.	NIH R01 - Climate change and the epidemiology of Valley fever in California (2019-2026; \$4.2mil); NIH R01 - Climate change and the expansion of fungal diseases in the U.S. (2023-2028; \$3.9mil)
Daniel	Rodriguez	CED - City and Regional Planning	Director, Institute for Transportation Studies. How mortality will change as heat events increase under global emissions scenarios for the midcentury.	With funding from the NIH, Drexel Climate Change and Urban Health Research Center, where among others we are conducting a comparative study of the neighborhood effect modifiers of the heat-mortality relationship in several US and Latin American cities. Research brief on Green spaces and climate change -- strategies for adaptation and mitigation for Latin American cities (2022)
David	Romps	L&S Physical Sciences - Earth and Planetary Sciences	Atmospheric dynamics including cloud dynamics, microphysics, and the interaction of clouds with Earth's climate.	2023 UCOP Proposal: Ranking California's climate-intensified heat waves using downscaled metrics of heat stress
Stefano	Schiavon	CED - Architecture, CEDR,	Ways to reduce energy consumption in buildings while improving occupant health, well-being and productivity.	Heat Exposure, Activity and Sleep project (HEATS) – Tech and behavioral strategies

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		Civil and Environmental Engineering		to improve sleeping in high heat environments
Cara	Schulte	Public Health	SPH doc student working on heat + human rights	Climate Change as a Labor Rights Issue: Documenting the Health and Human Rights Impacts of Extreme Heat on Workers in Dhaka, Bangladesh
	Socio-Spatial Climate Collaborative	L&S Social Sciences - Sociology	Daniel Aldana Cohen, Director. Hub for critical social science research on the climate emergency.	The Cities Feeling the Heat Eco Apartheid is Real
Jonathon	Stillman	L&S Biological Science3s - Integrative Biology	The effects of climate change and human impacts on marine and aquatic organisms in response to warming,	INTEGBI 230 – Marine Ecosystems and Global Change SPRING 2022
Elizabeth	Stuart	LBNL	Financial vehicles and providers that can contribute to mitigating the effects of extreme heat on humans	
Jason	Su	Public Health - Environmental Health Sciences	Developing machine learning land use regression modeling algorithms that incorporate multiple types of measurements into a single modeling frame.	Impact of Air Pollution Exposure on Metabolic Outcomes for California Residents Impacts of Air Pollution on Life Expectancy across Multiple Generations: Race, Ethnicity, and Preterm Birth, Term Low Birth Weight, Childhood Autism, Parkinson's, and Alzheimer's Disease and Air Pollution – California Studies

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				Impacts of Train and Port Pollution and Air Toxics on Respiratory Symptoms and ED Visits Within Vulnerable Communities in Southern California.
	UC Center for Climate Health and Equity	Campuswide	Arianne Teherani , Founding Co-Director Sheri Weiser , Founding Co-Director Sapna Thottathil, Managing Director. Drives climate action that safeguards health through four pillars - research, education, health system sustainability, and policy:	Wildfires and health education hub
Pouya	Vahmani	LBNL - Climate and Ecosystem Sciences Division	Research has been focused on the effectiveness of different heat mitigation strategies (e.g. cool roofs), climatic consequences of water conservation measures (e.g. drought tolerant vegetation), and impacts of urban irrigation on the climate at a regional scale.	Urban heat island modeling and analysis for the Bay Area
Michael	Wehner	LBNL - Computational Research Division	Extreme weather events in a changing climate, especially heat waves, intense precipitation, drought and tropical cyclones	Heat and mortality studies in Mexico
Max	Wei	LBNL - Energy Analysis and Environmental Impacts Division	Energy Efficiency Standards Group, and the Sustainable Energy Systems Group at LBNL. Heat Project in Fresno.	Wei and LBL have developed CAL-THRIVES – A California Toolkit for Heat Resilience in Underserved Environments.
Hui	Zhang	CED - CEDR, CBE	Thermal comfort in complex environments, and comfort modeling. How to reduce heat	Working with Ronnen L at LBNL on DOE-funded “Resilient Cooling” project --

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			stress in extreme conditions using fans and evaporative cooling.	fans for resilient cooling (can be used higher than recommended temp limit) – Presentation Feb 2025: Low Cost Solutions for Heat Stress