Berkeley Climate Change Network

BERKELEY CLIMATE MAP UPDATED — WATER - DROUGHT - STORMS –JUNE 2025

Please send adds and edits to bruceriordan@berkeley.edu

California's historical story is intimately tied to water—too much, too little, fighting over scarcity, developing vast new urban areas in semi-arid conditions, and massive agricultural systems to feed the world. As the original campus of California's public university, Berkeley has long led the state in water research. That has only accelerated as a changing climate has produced drier dry years and wetter wet years and a series of problems for state leaders. Berkeley's climate-related water research includes:

- Water harvesting with covalent organic frameworks (COFs)
- Managing California water supplies for urban and agricultural use
- Snow hydrology
- Water for all – global water strategies
- North American monsoon
- Soils and water sustainability
- Urban stormwater management
- Equitable flood recovery
- Desalination
- Fog and redwood ecosystems
- Water and carbon cycle
- Water rights
- Groundwater management
- Impact of Co2 storage on groundwater
- Extreme rain events (atmospheric rivers)
- Water law and policy
- Water-energy systems
- Gene editing for drought tolerant California crops
- Drought impact on ecosystems and humans

Many of Berkeley's water research projects involve faculty and staff from the College of Engineering, Rausser College of Natural Resources and Lawrence Berkeley Lab. Additionally, water researchers are based in the College of Environmental Design, L&S Social Sciences, and Berkeley Law.

First	Last	Affiliation (primary)	Summary	Projects/Reports/Classes
Charisma	Acey	CED - City & Regional Planning	Faculty Director, Berkeley Food Institute Climate Equity Environmental Justice Core Faculty Water, sanitation, basic services delivery, food justice, urban agriculture, poverty alleviation, environmental sustainability, environmental justice, urban governance, participatory planning, community-based development, international development, development planning, sustainable development, African studies She has worked on participatory re-zoning for local healthy food systems and sustainability planning in the San Francisco East Bay, Columbus, Ohio, and Portland, Oregon.	PI for UCOP $100M Climate Action Seed LOI -- California Racial Equity Climate Adaptation Plan (RECAP) Toolkit The Intersection of Race and the Environment – Acey, Polsky, Powell in Berkeley Law-hosted discussion. Planning for Sustainability CYPLAN 119 **(FALL 2023)**
David	Alumbaugh	LBNL - Energy Geosciences Division	Lead, Carbon Storage Program (geological storage) Alumbaugh's research focuses on the incorporation of EM geophysical techniques into subsurface-characterization workflows, as well as advancing multi-physics data analysis, and to a lesser extent, statistically based methods of fusing multi-physics data into geologic interpretations.	Brine Extraction and Storage Test (BEST) — The overall objective of the EPRI-led BEST project to be performed at the Lansing Smith electric generating station near Panama City, Florida, is to help develop cost-effective pressure control, plume management and produced water strategies that can be used to improve reservoir storage efficiency and capacity, and demonstrate safe, reliable containment of CO_2 in deep geologic formations with CO_2 permanence of 99% or better.
Adda	Athanasopoulos-Zekkos	Engineering - Civil and	Assessing and mitigating the impact of multi-hazard stressors on geotechnical engineering	When Extreme Events Area No Longer Rare: Lessons from Hurricane Ida

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		Environmental Engineering	infrastructure, with particular emphasis on challenges due to age-related deterioration, population growth and densification, natural and human-made hazards, and new demands from climate change.	Berkeley News interview with Athanasopoulos-Zekkos after her small scientific group studied Ida and Katrina's impacts on infrastructure in Southeast Louisiana. Includes CNN interview.
Max	Auffhammer	RCNR - Agricultural & Resource Economics	Auffhammer's research focuses on environmental and resource economics, energy economics and applied econometrics. CEEJ Affiliate	Disco Shower or Consumption Shaming (2023) Quantifying Economic Damages from Climate Change (2018) – Using ML to quantify climate impacts
	Bakar Institute of Digital Materials for the Planet	CDSS	Christian Borgs, Director Omar Yaghi, Co-Director and Chief Scientist The Bakar Institute of Digital Materials for the Planet (BIDMaP) aims to speed up the development of reticular chemistry and modular structures for achieving cost-efficient, easily deployable ultra-porous metal-organic frameworks (MOFs) and covalent organic frameworks (COFs). These programs will help limit and address the impacts of climate change and extend to downstream technologies like conversion of CO2 to clean fuels, biodegradable polymers, enzymes, and pharmaceuticals. BIDMaP brings together top computation and machine learning experts with chemistry and other physical science researchers to exploit the vast potential these reticular structures	Water harvester makes it easy to quench your thirst in the desert ChatGPT-based Assistants Redefine Research Landscape in Groundbreaking ACS Central Science Article

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			have in achieving clean air, clean energy, and clean water.	
Roger	Bales	Engineering - Civil and Environmental Engineering	Bales' research focus contributes to California's efforts to raise awareness and policy implementation dealing with the state's water supplies, critical ecosystems, and economy directly correlated to the impacts of climate change.	Center for Ecosystem Climate Solutions - A multi-campus initiative that is developing the science-based data and tools California needs to more effectively manage its natural lands for health and resilience in a changing climate. Solar Aqueduct Initiative - Saving land and water while generating renewable energy at scale. Putting a lid on evaporation by covering miles of open canals with solar canopies in California and beyond.
	Berkeley AI Research Climate Initiative (BCI)	CDSS	**Medhini Narasimhan** , Co-Organizer Ritwik Gupta, Co-Organizer The Berkeley AI Research Climate Initiative unites AI and climate-related researchers to iteratively create, maintain, and evaluate meaningful benchmarks that bridge these communities. As a community of scientists, we aim to create better data, methods, and models that enable us as a society to better take care of our planet and the limited resources on it. However, machine learning is increasingly disconnected from large scale societal issues. We aim to build a bridge to the largest problem facing us today — climate change.	The Fate of Snow The Fate of Snow project will aim to model and predict the partitioning of snow over basin-scales in high-altitude complex terrain. By combining a range of remote sensing, in-situ, and simulated data sources, we aim to create a multifaceted benchmark of estimates of observational constraints on the major fluxes of water including evapotranspiration, snow sublimation, infiltration and runoff.

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	Berkeley Food Institute	RCNR	Jeanne Merrill, Executive Director Charisma Acey, Faculty Director Timothy Bowles, Faculty Director The Berkeley Food Institute seeks to transform food systems to expand access to healthy, affordable food and promote sustainable and equitable food production. We empower new leaders with capacities to cultivate diverse, just, resilient, and healthy food systems. Current global food systems have achieved remarkable historical growth and expansion, yet increasingly fail on many fronts. We witness erosion of ecosystem and cultural diversity, decreased resilience in the face of emerging climate change, wasteful food and natural resources usage, persistent pollution, and myriad social injustices—including exploitation of food systems workers. We also watch millions of people go hungry while many others suffer from obesity.	2 Days of Soil, Science and Solutions – Report on CalCAN biennial conference on climate change and California agriculture Fostering Resilience and Health of Food Systems in the Face of Drought PI for UCOP $100M Climate Action Seed LOI -- California Racial Equity Climate Adaptation Plan (RECAP) Toolkit The Intersection of Race and the Environment – Acey, Polsky, Powell in Berkeley Law-hosted discussion. Planning for Sustainability CYPLAN 119 **(FALL 2023)**
	Berkeley Water Center	Engineering	David Sedlak, Faculty Director The BWC is a broad network of researchers working to create more resilient equitable and sustainable water systems with access to safe water for all. The BWC is supported by the College of Engineering.	Water for All – Global Strategies for a Changing Climate (published 2023) Berkeley Climate Change Network podcast with Sedlak about Water for All BWC manages the Berkeley Water Portal with links to courses, research, funding and more.

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Benjamin	Blackman	RCNR - Plant & Microbial Biology; Integrative Biology	The Blackman Lab studies how plants adapt to local environments and how crops were domesticated, with an emphasis on studying how these evolutionary processes alter plant-environment interactions during development. Several current projects center on the genetic and phenotypic basis of plant adaptation to historic and contemporary drought, and on the intersection of climate, plant reproductive traits and pollinator interactions.	NSF ORCC: Harnessing Adaptive Variation in Drought Resistance Strategies to Manage Populations Under Climate Change CCGP: Conservation and climate change genomics of California monkeyflowers with wide and restricted geographic distributions. PMB200C: Plant Diversity and Evolution FALL 2023 Bio1B: General Biology (SPRING 2024) Kooyers et al. 2021. Population responses to a historic drought across the range of the common monkeyflower (Mimulus guttatus). American Journal of Botany 108:284-296 (2021).
William	Boos	L&S Physical Sciences - Earth and Planetary Science	Atmospheric science, climate dynamics, monsoons, Earth's hydrological cycle, heatwaves, extreme precipitation	Mechanical forcing of the North American monsoon by orography (2021) EPS C181 (Atmospheric Physics & Dynamics, Fall 2023); EPS 81 (Extreme Weather & Climate, Spring 2024) Academic Senate Committee on Climate
Timothy	Bowles	RCNR - ESPM, Berkeley Food Institute	Agroecology, soil ecology and biogeochemistry, plant-soil-microbe interactions How can reliance on biodiversity and ecological processes create productive, resilient, and healthy agricultural systems? This question frames Bowles'	Quantifying direct yield benefits of soil carbon increases from cover cropping Long-Term Evidence Shows that Crop-Rotation Diversification Increases Agricultural

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			overarching goal, which is to support transformation of our agricultural system from one reliant on intensive, synthetic inputs to one based on ecological processes. How diversified, biologically based farms affect soil health, resource-use-efficiency, and resilience to environmental change, especially drought.	Resilience to Adverse Growing Conditions in North America How does building healthy soils impact sustainable use of water resources in irrigated agriculture? Agricultural Ecology ESPM 118 001 (Fall 2023)
Ellen	Bruno	RCNR - Agricultural & Resource Economics	Bruno is developing an extension program that focuses on policy issues relevant to California's agriculture and natural resources. Her current research considers the potential and effectiveness of water-related policies, which includes understanding how farmers respond to changes in water prices. Her work is motivated by climate change and the need for strategies that mitigate the economic costs of drought. As an extension economist, she works with state and local government agencies, as well as nonprofits and practitioners, to improve the management of California's water supplies.	"Untapped Potential: Leak Reduction is the Most Cost-Effective Urban Water Management Tool." *Environmental Research Letters* 17.3: 034021. Ellen M. Bruno and Katrina Jessoe. 2021. "Missing Markets: Evidence on Agricultural Water Demand from Volumetric Pricing." *Journal of Public Economics* 196: 104374.
Stephanie	Carlson	RCNR - ESPM	Evolutionary ecology and conservation of freshwater fishes, with a focus on migratory species. • Habitat mosaics and connectivity • Migration • Life history portfolios • Resilience CEEJ Affiliate	2023 UCOP Proposal: Building climate resilience through life history diversity: a tool to allocate restoration effort "Fish Ecology" class taught in spring although not 2024 due to sabbatical Closing the gap between science and management of cold-water refuges in rivers and streams

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				Spatial Patterns and Sensitivity of Intermittent Stream Drying to Climate Variability Refuges and ecological traps: Extreme drought threatens persistence of an endangered fish in intermittent streams
Maya	Carrasquillo	Engineering - Civil and Environmental Engineering	Interdisciplinary-trained environmental engineer focused on researching, educating, and implementing just and equitable solutions to address systemic issues connected to critical infrastructure in Black and Brown communities. I work across sectors, disciplines and industries and focus on bridging connections, and gaps in current practices to re-imagine how we conduct engineering and to improve the quality of life in and with communities influenced by the systems we create. Principal Investigator of J.E.D.I. (L)ab. Climate Equity Environmental Justice Core Faculty	Research interests include sustainable and equitable urban water infrastructure, food-energy-water systems (FEWs), community-engagement and citizen science in decision-making, and environmental/social justice
	Center for Law, Energy and Environment	Law	Daniel Farber, Faculty Director Louise Bedsworth, Executive Director The Center for Law, Energy, & the Environment (CLEE) believes solving our most pressing environmental challenges requires actionable research, training, and engagement to accelerate the implementation of solutions. Our four key research areas are: • Climate and Energy	Climate Policy Fact Sheet Series Wheeler Water Center

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			• **Water** • Oceans • Land Use	
	Central Sierra Snow Lab	Campuswide	Andrew Schwartz, Director Located at Donner Pass in the Sierra Nevada, the Central Sierra Snow Laboratory (CSSL) is a research field station specializing in snow physics, snow hydrology, meteorology, climatology, and instrument design. CSSL is one of the best instrumented snow study sites in the world with consistent observations of a wide range of atmospheric and snowpack variables. It is a research and teaching facility.	Second Snowiest Season in California records – Fox Weather March 2023 (video) Get the latest Sierra snowpack data here.
John	Chiang	L&S Social Sciences - Geography	Climate dynamics, climate variability and change, paleoclimate. Global climate dynamics working on both contemporary and paleoclimate research questions, and with a focus on understanding mechanisms of tropical rainfall changes.	Climate Dynamics GEOG 142 001 FALL 2023
Renee	Chow	CED	Dean, College of Environmental Design CED includes 3 departments: • Architecture • City + Regional Planning • Landscape Architecture + Environmental Planning • Institute of Urban and Regional Development	Suburban Space: The Fabric of Dwelling (2002) Changing Chinese Cities: The Potentials of Field Urbanism (2015).

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			Chow's Research: Metropolitan challenges of the 21st century — water volatilities, resource scarcities, and equitable communities — require solutions that are locally rooted. Chow has developed analytic and generative design tools for integrating local urban and architectural systems across sites and individual buildings.	
	Cleantech to Market (C2M)	Haas	Brian Steel, Co-Director Ana Martinez, Associate Director Cleantech to Market (C2M)–*Inspiring Climate Tech Leadership*–is a partnership between graduate students, startups, and industry professionals to help accelerate the commercialization of leading cleantech solutions. In the process, C2M also develops the next generation of innovative cleantech leaders. Startups involved in — low-carbon energy, green chemistry, food, and water technologies covering both mitigation and adaptation — are invited to apply into the C2M program at the beginning of each year. C2M then handpicks interdisciplinary teams of UC Berkeley grad students to help entrepreneurs identify the most viable initial markets, prospective customers and partners, funding sources, and related strategies.	C2M's 2023 Climate Tech Summit featured 8 companies that are forging new paths to develop critical climate and energy solutions • Rare earth elements • Waste heat to Green H • Residential energy finance • Heavy-duty batteries • Carbon sequestration • **Energy-efficient Desalination** • Emission-free generator • **Water purification** 2024 Finalists (students select cohort)
Stephen	Collier	CED - City and Regional Planning	Collier studies city planning and urban governance from the broad perspective of the critical social science of expertise and expert systems. His work	Teaching: CYPLAN 214 – Climate Planning and Urban Systems SPRING 2023

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			addresses a range of topics, including climate resilience and adaptation, emergency preparedness and emergency management, neoliberal reform, infrastructure, and urban social welfare. Collier examines both contemporary and historical topics.	
Jason	Corburn	Public Health - Environmental Health Sciences	Director, Center for Global Healthy Cities The Center for Global Healthy Cities is an action-oriented, community-engaged initiative that utilizes science and policy analysis to improve the lives and living conditions of the most vulnerable urban populations around the world. We accomplish this through cross-cutting research, training, and community partnerships. Research: Urban Climate Change & health equity, Environmental Health & Justice, Urban health, Urban planning, design & health, Health in All Policies, Racial & ethnic inequities in health, Global Urban Health.	Richmond Rising, Transformative Climate Communities - Project Evaluation – documenting the TCC grant progress and outcomes Water and sanitation for all: Citizen science, health equity, and urban climate justice Urban Climate Justice, Human Health, and Citizen Science in Nairobi's Informal Settlements PH150 & CP117 Urban & Community Health SPRING 2022
Todd	Dawson	L&S Biological Sciences - Integrative Biology	Research in Dawson's laboratory focuses on the interface between plants and their environment. The tools of physiological and evolutionary plant ecology and stable isotope biogeochemistry are currently being applied towards the study and interpretation of this interface. Projects pay special attention to how aspects of plant form and function combine to permit adaptation to environmental variation, whether naturally or anthropogenically imposed, and how plants and their unique traits influence the structure and function of the communities and ecosystems they compose.	The Fog and the Redwood on Science Friday 2024 papers on climate change and soil carbon, ag, bats, etc.

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	Disaster Lab (D-Lab)	Engineering	The D Lab Develops and Validates Practical Innovations for Disaster Preparation, Response, and Recovery. Thomas Azwell, Director.	UCOP Climate Action I&E funding is helping D-Lab to grow and iterate the innovation support pipeline, increase research and entrepreneurship advisory support for UC Berkeley innovators, expand access to field-based pilots, comprehensive evaluations, and facilitate participation with industry partners.
Iryna	Dronova	RCNR - ESPM, Landscape Architecture (CED)	Dronova is interested in diverse aspects of landscape ecology and its potential to inform sustainable, multi-functional landscape-designs and decision-making in environmental planning. • Dynamics of wetland vegetation and ecosystem services in California's Sacramento-San Joaquin Delta (the Delta). • Effects of city environment on urban ecosystem services. • Coupled thermal-vegetation patterns as indicators of development and socioeconomic context in urban regions CEEJ Affiliate	What Putin's War in Ukraine Means for Our Global Climate Crisis (2022) 2023 UCOP Proposal: Planning Restoration of San Francisco Bay's Wetlands to Co-benefit Human- Wildlife Climate Resilience Ecological Analysis LDARCH C110A 001 (Fall 2023)
Peter	Fiske	LBNL - Earth and Environmental Sciences Area	Fiske is the Director of the National Alliance for Water Innovation (NAWI) and Water-Energy Resilience Research Institute (WERRI) at LBL. WERRI's goal is to orient and align the water-related research programs at LBNL to address critical gaps in the reliability, efficiency and sustainability of water-energy systems in California and the nation. Prior to joining LBNL, Fiske was the CEO of PAX Water Technologies, Inc. 2008 to 2017 when it was acquired by UGSI Inc. PAX Water pioneered the	Desalination for a Circular Water Economy – Energy and Environmental Science 2020

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			use of biomimicry to develop innovative and energy efficient technologies for the water industry.	
Inez	Fung	L&S Physical Sciences - Earth and Planetary Sciences	A question driving the research is how atmospheric CO2 and climate co-evolve, and what we can do about it. A focus is the role of land surface interactions among energy, carbon, and water in climate change.	**Carbon Cycle Dynamics** EPS C183 001 (FALL 2023)
	Geospatial Innovation Facility	RCNR	Nancy Thomas, Executive Director The Geospatial Innovation Facility at RCNR provides leadership and training across a broad array of integrated mapping technologies. Our goal is to help people better understand the changing world through the analysis and visualization of spatial data. We develop engaging applications that leverage and build upon state-of-the-art geospatial and web technologies, and provide opportunities for researchers to learn how they can use spatial data to answer critical questions.	**Key GIF Climate Project — Cal-Adapt: Exploring California's Climate Change Research** Cal-Adapt (http://cal-adapt.org) has been developed for the State of California o showcase the wealth of innovative climate change research being produced by the scientific community in California, as documented in the 2009 California Climate Adaptation Strategy. Through a combination of locally relevant information, visualization tools, and access to primary data, Cal-Adapt allows users to investigate how the climate is projected to change in their area of interest, and gives them tools to plan for these changes. The site has been developed by the GIF with funding and advisory oversight by the California Energy Commission's Public Interest Energy Research (PIER) Program, and advisory support from Google.org. Learn more about the development of Cal-Adapt in a

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				highlight article published in the June 2011 issue of PE&RS.
Cynthia	Gerlein-Safdi	Engineering - Civil and Environmental Engineering	Water and Carbon Lab leader Water and Carbon Lab is a team of hydrologists and ecohydrologists interested in understanding the links between the water and carbon cycles at various temporal and spatial scales. As ecohydrologists, the team is interested in better understanding the link between carbon (CO2 or CH4) and water in different ecosystems. They do so by combining process-based modeling of vegetation, stable isotopes experiments, field experiments, and analysis of satellite data. They are specifically curious about the influence of climate change-induced shifts in water resources on the ability of plants to uptake carbon dioxide or for wetlands to produce methane.	Projects at UC research stations and other sites.
Lau	Gherardi	RCNR - ESPM	Plant Ecology at multiple scales looking at above- and below-ground responses to Climate Change. Research focused on soil carbon inputs and cycling in desert-shrubland-grassland ecosystems. I combine field experiments with remote sensing and data synthesis.	ESPM 116B - Grassland and Woodland Ecology SPRING 2023 NSF-CAREER proposal submitted looking at the effect of precipitation extremes and nutrient deposition on carbon sequestration and cycling in California annual grasslands. Enhanced precipitation variability decreases grass- and increases shrub-productivity

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				Effect of interannual precipitation variability on dryland productivity: A global synthesis
Manuela	Girotto	RCNR - ESPM	Hydrologic response and interaction between natural and human driven processes, land surface remote sensing and multi-sensor, -spectrum, -resolution data assimilation; hydrology contribution to sea level change, snow hydrology.	Advisor for the "The Fate of Snow" – a partnership between the BAIR climate initiative, Lawrence Berkeley Berkeley Lab, Meta AI and the Center for Western Weather and x Extremes using AI techniques to combine measurements from aircraft observations of snow and a multitude of openly available weather and satellite data sources. ESPM 299 030 – Individual Research (Fall 2023)
Ted	Grantham	RCNR - ESPM	Cooperative Extension Specialist and Adjunct Professor, ESPM Grantham's research focuses on the relationships between hydrological and ecological processes in studies relevant to the management of water resources. An overarching goal is to improve the ability to predict the effects of climate change and management actions on freshwater ecosystems, and the socio-economic and ecological benefits they provide. Core research and extension interests include: · environmental flow science	UCOP Climate Action Initiative Project: COEQWAL: Equitable stewardship of California's water in a changing climate $8M FUNDED Coordinating Lead Author: California 4th Climate Change Assessment, North Coast Region Report UC Water Academy (Spring 2024)

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			· California water management and policy · climate change risk assessment and adaptation	
Nell	Green Nylen	Law - Center for Law, Energy and Environment	Green Nylen's work engages law, science, and policy to inform decision making about critical water issues that intersect with climate resilience. Her work has included research and analysis aimed at improving California water allocation and water rights administration and oversight during droughts / times of water shortage; identifying important considerations for sustainable groundwater management (e.g., considerations for implementing managed aquifer recharge (MAR) projects and programs, including flood-MAR; considerations for water trading / market programs; etc.); addressing institutional barriers to water reuse in small rural communities; understanding the interaction between regulation and innovation in the U.S. wastewater sector; improving environmental permitting processes and regulatory relationships to better support socially and environmental beneficial multi-benefit projects; improving policy options for expanding safe drinking water access and affordability in California; and more.	Project (US EPA: 2022-2026): Accelerating Technical and Community Readiness for Water Reuse in Small Systems Project (US EPA 2022-2025): A knowledge-to-implementation framework for Enhanced Aquifer Recharge Project (USDA: 2021-2026): Securing a climate resilient water future for agriculture and ecosystems through innovation in measurement, management, and markets Report (2023): Managing Water Scarcity: A Framework for Fair and Effective Water Right Curtailment in California Paper (2021): Surface Water Quality Regulation as a Driver for Groundwater Recharge: The Case of Virginia's Sustainable Water Initiative for Tomorrow Report (2017): Trading Sustainably: Critical Considerations for Local Groundwater Markets Under the Sustainable Groundwater Management Act
Maria Paz	Gutierrez	CED - Architecture	Flood resilience. Gutierrez's research focuses on materials invention and cultures across scale lengths in regions under severe water stress and	2023 UCOP Proposal: Biomass and Living Materials (BALM) for Regenerative Prefabricated Homes

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			flood risk. Gutierrez has developed extensive multisectoral fieldwork in over fifteen countries of the Americas centered on advancing sustainability, health, and equity in construction. Bakar Fellows Program	
Kristina	Hill	CED - Landscape Architecture & Environmental Planning	Director, Institute of Urban and Regional Development Leading Bay Area sea level rise expert, particularly around groundwater issues. Working with BCDC, flood control agencies, cities and others in the region. Hill studies urban ecology and hydrology in relationship to physical design and social justice issues. Her primary area of work is in adapting urban districts and shore zones to the new challenges associated with climate change. Hill currently focuses her research on adaptation and coastal design in the Bay Area but engages in comparative studies in the US Mid-Atlantic, Europe, and Hawaii. CEEJ Advisory Council	Shallow Groundwater Response to Sea Level Rise – 4 Bay Area Counties Teaching: LDARCH 201 001 - Ecological Factors in Urban Landscape Design (Fall 2023)
Arpad	Horvath	Engineering - Civil and Environmental Engineering	Head of the Energy, Civil Infrastructure and Climate Graduate Program, Director of the Transportation Sustainability Research Center, and Director of the Engineering and Business for Sustainability Certificate Program. Horvath's research focuses on life-cycle environmental and economic assessment of	2023 UCOP Proposal: Life Cycle Analysis and Strategies for decarbonizing California Buildings with consideration to (and in light of) racial equity and housing affordability. CE268E Environmental Life-cycle Assessment (Fall 2023)

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			products, processes, and services, particularly answering important questions posed about civil infrastructure systems and the built environment. He has conducted studies on the environmental implications of various products, processes and services, in particular, transportation systems, water and wastewater systems, buildings, concrete and other construction materials, pavements, and biofuel.	CE11 Engineered Systems and Sustainability (Spring 2024)
	Human Rights Center	Law	Betsy Popken, Executive Director. Our Climate Justice Program addresses the human impacts of climate change. As the climate changes, the prevalence and ferocity of extreme weather events — severe heat waves, torrential rains, alarming floods, extensive droughts, and destructive wildfires — are increasing. Such events drastically affect peoples' lives — their health, livelihood, housing, access to food and water, and personal security.	Labor Force in New Orleans After Katrina Climate Displacement and Migration July1: Climate Disasters Program
	Innovative Genomics Institute	Campuswide	Jennifer Doudna, Founder and Chair of the IGI Governance Board Brad Ringeisen, Executive Director. World-class research, driven by the real possibility to use genome engineering to treat human diseases and end hunger. Includes	CRISPR for Climate Change Disease Resistant Crops Precision Microbiome Editing 2023 UCOP Proposal: Lab to Land California: Biotechnology for Accelerated Conservation and Climate Resilience

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			Climate and Sustainable Agriculture Program Climate change, crop diseases, and hunger are intimately intertwined problems. We are using genome engineering as a tool to address all three. We are developing and deploying genome-editing technology to capture and sequester more greenhouse gases and to develop climate-friendly agricultural solutions for farmers in developing countries. Our focus is on those most vulnerable to a changing climate, and areas in agriculture that are underdeveloped by the commercial sector.	Grant: Technology Enabled Biological Carbon Capture and Sequestration- $21M, 8/2022 From California to Kenya: Sharing CRISPR Tools with African Scientists IGI Scientists Make Progress In Protecting Rice From Drought The Crop of the Future - Sorghum Grant: Technology Enabled Biological Carbon Capture and Sequestration- $21M, 8/2022
	Institute of European Studies	L&S Social Sciences -	Jeroen Dewulf, Director, Institute of European Studies. Examining Europe in its global context and training the next generation of scholars to develop the capacity for transatlantic dialogue and cooperation. Floods after wildfires project	Several projects at IES involve climate change engaging academics at Berkeley and a French University. One project "Après Moi, le Deluge" – looking at floods after wildfires. "We realized right away we had a really similar line of research topics and interests with floods as a common link," says Anna Serra-Llobet of the Social Science Matrix Center for Catastrophic Risk Management. With Douvinet working in France, and Serra-Llobet located in the US, the France-Berkeley Fund (FBF) was the perfect opportunity for an international collaboration. The team was awarded a France-Berkeley Fund research grant in 2019, and the pair also involved Berkeley's John Radke, and Sarah

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				Lindbergh (CED) as well as master students from the Environmental Planning Studio. The master students won a national student paper competition in 2021 for their work in the project, in particular for "thinking out of the box".
Andy	Jones	LBNL - Climate and Ecosystem Sciences Division	Jones leads the Earth Systems and Society Program Domain. He is the Hydroclimate theme lead for LBL's Water-Energy Resilience Research Institute (WERRI) and the Resilient Systems Grand Challenge lead for the Earth and Environmental Sciences Strategic Vision. His research uses quantitative Earth system science tools –computer models, uncertainty quantification techniques, etc. – to gain decision-relevant insight into how humans affect the climate and vice versa. Major themes include the "usability" of regional climate projections for adaptation planning, the resilience of energy, water, and food systems to multiple stressors, the role of land use change in efforts to both reduce and adapt to climate change, and the tightly coupled interactions among people, built infrastructure, and environmental processes in urban contexts. CEEJ Affiliate	Jones is a lead scientist for the HyperFACETS Project that brings scientists and stakeholders together to co-produce research on water and climate in 6 regions of the U.S. Teaching: ENERES 290: Seminar in Energy and Resources – Climate Science and Society Graduate Seminar FALL 2023
Trevor	Keenan	RCNR - ESPM	Keenan's interests are centered on understanding the response of terrestrial ecosystems to climate variability and long-term change, as well as related	Novick K, Keenan TF, et al. [incl. 12 co-authors] (2024) We need a solid scientific basis for nature-based climate solutions in

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			feedbacks to the atmosphere through ecosystem carbon cycling and water use. Using ML for studies on carbon cycling. Data-driven models produce new insights into carbon cycling.	the United States. *PNAS*, 121 (14) e2318505121 here. Exacerbated drought impacts on global ecosystems due to structural overshoot. *Nature Ecology and Evolution*, 5, 1490–1498 Spring 2024: ESPM 15, Intro. to Environmental Sciences
Michael	Kiparsky	Law - Center for Law, Energy and Environment	Director, Wheeler Water Institute The Wheeler Water Institute contributes robust analysis and forward-looking policy recommendations to directly inform decision-making. Anchored by our unique blend of legal, policy, and technical expertise, we bring clarity and actionable research to a famously challenging field. Established in 2012 at Berkeley Law, the Institute conducts projects at the intersection of law, policy and science. Our research helps decision makers improve governance to make water systems more resilient to climate change and other stressors.	The majority of our research has implications for climate resilience and adaptation, primarily through developing more robust institutional capacities in the water sector. Managing Water Scarcity: A Framework Examples include: Developing capacity of groundwater systems to weather climate disruption by fostering sustainable groundwater management and innovative strategies for groundwater recharge:
Matt	Kondolf	CED - Landscape Architecture and Planning	Kondolf is a fluvial geomorphologist specializing in environmental river management and restoration. He teaches courses in hydrology, river restoration, and environmental science and planning. His research focuses on human-river interactions, with emphasis on managing of flood-prone lands, managing sediment in rivers and reservoirs, and river restoration, and has published extensively on these topics.	

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			He has served as advisor to US and state agencies on river management and restoration, and provided expert testimony before the US Congress, the California Legislature, the US Supreme Court, and the International Court of Justice and Permanent Court of Arbitration in the Hague.	
Robert	Kostecki	LBNL - Energy Storage & Distributed Resources	Director, Energy Storage and Distributed Resources Division ESDR enables and accelerates the development and adoption of new advanced technologies for sustainable transportation, renewable power and energy efficiency.	Water treatment systems Grid Integration Energy Storage Energy Conversion Laser Technologies Thermal Science Applied Energy Materials
Lara	Kueppers	RCNR - Energy Resources Group	Kueppers is an interdisciplinary environmental scientist, whose research focuses on ecological responses and feedbacks to climate change. She uses field experiments and observations, as well as models, to understand climate-ecosystem interactions in forests and agroecosystems. to climate change.	"Warming increased bark beetle-induced tree mortality by 30% during an extreme drought in California"(2021) Kueppers is deputy director of Next Generation Ecosystem Experiments—Tropics, a long-term, multi-institution project funded by the Department of Energy, to better understand and project tropical forest feedbacks
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)

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			His dissertation focused on the role of design in shaping urban flood infrastructure and the changing spatial politics of urban flooding through two case study cities, New Orleans, Louisiana and Dhaka, Bangladesh. His current book project, Making and Unmaking the Dry City, focuses on the historical evolution and contemporary problems of flood mitigation in these two cities.	Lau Climate Futures Seed Grant His book co-authored with Lawrence Vale, The Equitably Resilient City: Solidarity and Struggle in the Face of Climate Crisis will be published with MIT Press in 2024." CYPLAN 140 Urban Design: City Building and Place-Making FALL 2022 CP241 Research Methods in Environmental Design CP248 Advanced Urban Design Studio
Laurel	Larsen	L&S Social Sciences - Geography	Water is one of the features of the physical environment most sensitive to global climate change and human management. Larsen's research tries to tease apart the direct and indirect ways in which hydrologic changes impact ecosystems, and, conversely, how those ecological changes impact hydrology. It is only through a firm understanding of these dynamic interactions that we can predict future change in the hydrological and ecological components of landscapes. Using ML in studies of hydrology. Environmental Systems Dynamics Laboratory	Just Transitions in Large Social-Ecological Systems: Drought, Sea-Level Rise, and Salinity in the Delta; Understanding and modeling controls on greenhouse gas emissions from boreal peatlands GEOG 259 001 - SEM 001: Post-normal science: Theory and methods for advancing equitable, defensible decision-making in complex social-ecological systems. SPRING 2024
	Lau Grants for Just	CED	Supports projects led by CED faculty that aim to reduce the impacts of climate change, incorporate	2024 Lau Grant:

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	Climate Futures		community engagement, and emphasize equitable, actionable solutions. 2024 Lau Grants awarded for Just Climate Futures to Professor of Architecture Luisa Caldas, Associate Professor of Landscape Architecture & Environmental Planning Lu Liang, and Assistant Professor of Landscape Architecture & Environmental Planning Danielle Zoe Rivera. Cross-disciplinary teams will work over the next six months to develop scalable, place-based solutions to the climate crisis.	Looking at flood adaptation in unincorporated areas
Michael	Mascarenhas	RCNR - ESPM	Postcolonial theory and development studies, environmental justice and critical race theory, and science and technology studies CEEJ Affiliate	Current research and book project examines water access in the cities of Flint and Detroit. Mascarenhas was an expert witness at the Michigan Civil Rights Commission in 2017 on the Flint Water Crisis, and an invited speaker to the National Academies of Sciences, Engineering, and Medicine's Committee on Designing Citizen Science to Support Science Learning.
Baoxia	Mi	Engineering - Civil and Environmental Engineering	Research focuses on membrane separation, transport and interfacial phenomena, physicochemical processes for drinking water purification and wastewater reuse, desalination, environmental nanotechnology, and innovative applications of membrane technology to renewable energy generation, public health protection, and hygiene and sanitation improvement for underdeveloped and disaster-ridden regions.	

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Norman	Miller	L&S Social Sciences - Geography	Miller is focused on understanding hydroclimate processes and related impacts based on modeling and analysis of regional climate and hydrology and their impacts on water supply, demand and water quality, agriculture, and impacts to other sectors of society. This includes, coupled atmosphere- land surface-groundwater modeling from the site scale to continental scale; climate variability and change analyses; water and energy resources impacts, scaling theory; nonlinear coupling, feedbacks and sensitivities with climate systems; and high-performance computing.	Assessing impacts of social-ecological diversity on resilience in a wetland coupled human and natural system. Ecology and Society, 26(2):3, DOI: 10.5751/ES-12223-260203. GEOG 149A: Climates of the World. FALL 2023
Meg	Mills-Novoa	RCNR - ESPM, ERG	Director, Climate Futures Lab As a human-environment geographer, her research focuses on the enduring impact of climate change adaptation projects. She collaborates closely with communities and practitioners to improve the design, implementation, and outcomes of adaptation projects that promote inclusion and equity. Most recently, she served as the outreach coordinator for the Climate Impacts Research Consortium at Oregon State University, a climate science-to-action team funded by NOAA. Climate Equity Environmental Justice Core Faculty	What happens after climate change adaptation projects end: A community-based approach to ex-post assessment of adaptation projects Intervention: The Invisible Labor of Climate Change Adaptation. Political Ecologies of Climate Adaptation **ENERES C266 001** Climate Justice (ESPM C160/ENERES C176) FALL 2023

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Nigel	Mouncey	LBNL - DOE Joint Genome Institute	Nigel Mouncey, Facility Director, DOE Joint Genome Institute Director of the DOE Joint Genome Institute and also the Program Head for JGI's Secondary Metabolites Science Program. The mission of the JGI is: As a US Department of Energy User Facility, we provide advanced genomic capabilities, large-scale data, and professional expertise to support the global research community in addressing energy and environmental research grand challenges. We optimize our service to the community through responsibly managing our people and resources.	When "The Blob" Made It Hotter Under the x:Data from marine heatwave event may foreshadow climate change impact on marine microbial communities. Multi-omics of permafrost, active layer and thermokarst bog soil microbiomes Switchgrass and Sustainable Biofuels
Louise	Mozingo	CED - Landscape Architecture & Environmental Planning	Founding director of CED's Center for Resource Efficient Communities (CREC), a research interdisciplinary team dedicated to supporting resource efficiency goals through environmental planning and urban design. Mozingo's research and creative work focuses on ecological design, landscape history, and social processes in public landscapes, with an emphasis on sustainability. CEEJ Affiliate	"Toward sustainable stormwater management: Understanding public appreciation and recognition of urban Low Impact Development (LID) in the San Francisco Bay Area." "Challenging anthropocentric stormwater management: Advancing legislation for environmental sustainability in the United States." .
Peter	Nico	LBNL - Resilient Energy, Water and Infrastructure Program	Nico is the Program Lead for the Resilient Energy, Water and Infrastructure Program. His research involves: • Enhanced weathering projects • Soil organic carbon processes • Carbon accounting models • CA SGC-funded Working Lands Innovation Center — negative emissions on CA crop and rangelands	

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			• **Energy and water issues** • Water quality issues with CCS	
	Office of Sustainability and Carbon Solutions	Campuswide	The Office of Sustainability serves as a leader for sustainability initiatives on campus. Established in 2008, the Office of Sustainability has motivated concern for environmental stewardship to actualized improvements. Because of our efforts via education, outreach, and committees focused on promoting awareness and engagement, sustainability principles now inform campus choices pertaining to building projects, water and energy savings, transportation, food offerings, supply purchasing, and more.	Berkeley Clean Energy Campus With target dates of 2028 for phase one and 2030 for phase two, Berkeley has a plan to replace their natural gas powered cogeneration plant with a new clean and green resilient energy system. This forward-thinking initiative will phase out fossil fuel use for powering, heating, and cooling campus. The new reproducible, scalable Berkeley Clean Energy Campus system will demonstrate state-of-the-art technologies and exemplify creative financing such that other campuses and public institutions can replicate Berkeley's model.
Rusen	Oktem	L&S Physical Sciences - Earth and Planetary Sciences	Developing and implementing image processing-based algorithms to collect data on atmospheric clouds. Collaborated with David Romps on new cloud data sets.	Berkeley Researchers Look to Clouds for Drought Clues — 4D Stereophotogrammetry leads to new data sets. Use stereo photogrammetry to collect data on atmospheric clouds. Analyze observation data to understand the cloud processes.
Therese	Peffer	CED - CIEE, CBE	Program Director, CIEE Researcher @CBE Research in smart building technologies, building-to-grid, demand response, and smart grid research projects with the objective of creating comfortable and energy efficient livable spaces.	Co-chair Behavior Energy & Climate Change Conference Manager, EcoBlock Project

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Margiana	Petersen-Rockney	RCNR - ESPM	Rural livelihoods and climate change. How rural agricultural communities in the US respond and adapt to the impacts of climate change - from water scarcity and unpredictable weather to changing policies, markets, and migrations. Examples of published work here and here. Social-ecological systems and climate change. Management practices implemented on "working landscapes" and their impact on ecosystem functioning and biodiversity conservation. Example of published work here.	Narrow and Brittle or Broad and Nimble: Comparing Adaptive Capacity in Simplifying and Diversifying Farming Systems." Petersen-Rockney was an editor for a special issue on farming systems and adaptive capacity in *Frontiers in Sustainable Food Systems*, which can be found here.
Ravi	Prasher	LBNL - Energy Technologies	Associate Laboratory Director, Energy Technologies Area 4 Divisions • Building Technology and Urban Systems • Energy Analysis & Environmental Impacts • Energy Storage & Distributed Resources • Cyclotron Road Research Themes • Tackling the Climate Crisis • Decarbonization via Integrated Energy Systems • Storage: The Key to Climate Solutions • **Advancing Water-energy Systems** • Energy Equity and Environmental Justice • Prioritizing Energy Efficiency	

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			• Innovation Economy	
Justin	Remais	Public Health - Environmental Health Sciences	Chair of the Division of Environmental Health Sciences. His research examines how the transmission of environmental pathogens responds to rapid environmental change. His team advances methods for estimating the dynamics and spread of infectious diseases in changing environments, such as those associated with rapid urbanization, industrialization, changes in water resources, and an increasingly variable climate.	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) PBHLTH 271G – Health Implications of Climate Change; PBHLTH 273 – Environment and Infectious Diseases SPRING 2022
Alan	Rhoades	LBNL	Climate change is the defining issue of my generation. Mountains (our natural water towers) are sentinels in how impacts from climate change are felt. As an early career global and regional climate modeler, I have a keen interest in understanding how mountainous water cycle processes are influenced by climate change, how those changes might influence water resource management, and how the scientific community might better help water managers preemptively adapt to these changes. My focus is primarily on the mountains of the western U.S. across long-term (hydroclimate) and short-term (hydrometeorological extremes) timescales.	EESA Study Predicts Larger, Wetter Atmospheric Rivers – Mountains Vulnerable to Extreme Rain from Climate Change Limiting Global Warming Now Can Preserve Valuable Freshwater Resource –
Danielle Zoe	Rivera	CED - Landscape Architecture & Environmental Planning	Rivera's research examines policy and design for environmental and climate justice. Her work uses community-based research methods to address the impacts of climate-induced disasters affecting low-income communities throughout California, South Texas, the Chesapeake Bay, and Puerto Rico.	Lau Grant for flood studies in Central CA coast Equitable Recovery for the Pájaro Valley After the 2023 Winter Storms

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			Her current work deeply engages rural and unincorporated communities of color reeling from disasters, challenging government agencies to recognize these communities and alter outdated policy and programmatic frameworks. Rivera teaches environmental planning and design, community engagement, and environmental justice. Just Environments Lab Climate Equity Environmental Justice Core Faculty	Rural Flood Mitigation (Central Coastal California and South Texas) LDARCH 254: Disaster Studies Seminar; LA202: LAEP Studio SPRING 2024
David	Romps	L&S Physical Sciences - Earth and Planetary Sciences -	Romps' work on atmospheric dynamics includes research on cloud dynamics, microphysics, and the interaction of clouds with Earth's climate. Yi-Chuan Lu is grad student working with Romps on heat and other issues	A list of Romps' research: Berkeley Researchers Look to Clouds for Drought Clues — 4D Stereophotogrammetry leads to new data sets. 13-minute Youtube video (May 2022) examining the techniques of climate denial. 2023 UCOP Proposal: Ranking California's climate-intensified heat waves using downscaled metrics of heat stress
Nathan	Sayre	L&S Social Sciences - Geography	Sayre is a human geographer with interests in the transformation and management of the earth's environment. His research centers on semi-arid rangelands, especially in the southwestern United States: how they have changed, how they have been understood and managed, and the politics and economics surrounding land use change, fire restoration, and endangered species conservation.	Research on the 1861-62 California mega-flood and subsequent drought. Co-teaches a course on Global Warming.

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David	Sedlak	Engineering - Civil and Environmental Engineering	Director, Berkeley Water Center Sedlak's research focuses on fate of chemical contaminants, with the long-term goal of developing cost-effective, safe, and sustainable systems to manage water resources. He is particularly interested in the development of local sources of water. His research has addressed water reuse--the practice of using municipal wastewater effluent to sustain aquatic ecosystems and augment drinking water supplies--as well as the treatment and use of urban runoff to contaminated groundwater from contaminated industrial sites as water supplies.	NSF's Engineering Research Center for Reinventing the Nation's Urban Water Infrastructure (ReNUWIt), National Alliance for Water Innovation. Author of "Water 4.0", Water for All – Global Strategies for a Changing Climate (published 2023) Berkeley Climate Change Network podcast with Sedlak about Water for All
Whendee	Silver	RCNR - ESPM, Innovative Genomics Institute	Her work seeks to determine the biogeochemical effects of climate change and human impacts on the environment, and the potential for mitigating these effects. The Silver Lab is currently working on drought and hurricane impacts on tropical forests, climate change mitigation potential of grasslands, and greenhouse gas dynamics of peatlands and wetlands.	Silver is the lead scientist of the Marin Carbon Project, which is determining the potential for land-based climate change mitigation, particularly by composting high-emission organic waste for soil amendments to sequester atmospheric carbon dioxide. The Silver lab is investigating the potential of ground rock amendments to sequester carbon and lower greenhouse gas emissions via enhanced weathering. Soil carbon sequestration in global working lands as a gateway for negative emission technologies Compost amendment to enhance carbon sequestration in rangelands

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Kenichi	Soga	Engineering - Civil and Environmental Engineering	The Soga Research Group is a multi-disciplinary organization with expertise in infrastructure monitoring & resilience, computational geomechanics, city-scale modeling, and artificial intelligence as it applies to construction and infrastructure management.	Sustainability and Resilience Engineering for All UCOP $100M Climate Action LOI lead – January 2023 Climate Resilient Watershed Management for Multiple Benefits
Brian	Staskawicz	RCNR - Plant and Microbial Biology, IGI	Director, IGI Climate and Sustainable Agriculture Program Staskawicz Lab conducts biological research for sustainable agriculture. Crop disease and drought, intensified by climate change, threaten global food security for our growing population.	2023 UCOP Proposal: Gene Editing Strategies for Drought Tolerance in California Crops Exploration and engineering of plant mechanisms and defenses can pave the path toward a more sustainable future. The work focuses on understanding the molecular basis of plant-pathogen interactions and immunity, expanding CRISPR-Cas genome editing technology in plants, and engineering disease resistant and drought tolerant crops for agricultural sustainability.
William	Stewart	RCNR - ESPM	Co-Director, Berkeley Forests Cooperative Extension Specialist Areas of interest for both research and extension center around improving the positive financial linkages between working forests and rangelands on one hand and our urban residents on the other.	
Julia	Szinai	RCNR - Energy and Resources Group	Szinai is studying policies to facilitate cost effective integration of renewable resources, and is interested in how technologies such as energy storage, demand response, and electric vehicles impact the reliability of the grid with increased renewable resources. She	

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			is also interested in the interaction between, and the resilience of, energy and water systems under climate change.	
	USDA-NIFA AI Institute for Next Generation Food Systems (AIFS)	Engineering	Tarek Zohdi, Lead Berkeley researcher and Co-PI. A research center funded by the National Science Foundation (NSF) in partnership with the U.S. Department of Agriculture (USDA) and the National Institute of Food and Agriculture (NIFA) aims to improve U.S. food systems to address such issues as pandemic-driven food system security and safety; improving crop yield, quality and nutrition; decreasing energy and water resource consumption; and increasing production and eliminating food waste.	The NSF award of $20M over five years will create the USDA-NIFA AI Institute for Next Generation Food Systems (AIFS), one of five AI institutes established to accelerate research and support the U.S. workforce. The center is led by a team at UC Davis in partnership with researchers from UC Berkeley, Cornell University, University of Illinois at Urbana-Champaign, the UC Division of Agricultural and Natural Resources (ANR) and the U.S. Department of Agriculture.
Pouya	Vahmani	LBNL - Climate and Ecosystem Sciences Division	Vahmani's research themes include process-based urban hydro-climate modeling with applications in flood risk management and ground water recharge in cities, extreme heat and energy demand in cities, municipal water conservation and heat mitigation, and heat mitigation and climate adaptation in urban areas.	
Sarah	Vaughn	L&S Social Sciences	Vaughn is a sociocultural anthropologist working at the intersection of environmental anthropology, critical social theory, and science and technology studies. Her research advances understandings of climate change in the Circum-Caribbean while tracking the affective, ethical, and political components of dignity and belonging. At stake in her research are questions about the role climate	Author: Engineering Vulnerability in Pursuit of Climate Adaptation – Massive flooding in 2005 Guyana Teaching: ANTHRO 189 - Special Topics in Social/Cultural Anthropology: Climate Change and the Senses SPRING 2024

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			change has in shaping the materiality of expertise, an ethics of (re)distribution, and narrative form. CEEJ Affiliate	
Michael	Wehner	LBNL - Computational Research Division	The behavior of extreme weather events in a changing climate, especially heat waves, intense precipitation, drought and tropical cyclones	The Impact of Moisture and Temperature on Human Health in Heat Waves The deadly combination of heat and humidity in India and Pakistan in summer 2015 Focus on compound events. In: Fifth National Climate Assessment. U.S. Global Change Research Program, Washington, DC, USA.
Omar	Yaghi	Chemistry	Co-Director and Chief Scientist Bakar Institute of Digital Materials for the Planet (BIDMaP) The Bakar Institute of Digital Materials for the Planet (BIDMaP) aims to speed up the development of reticular chemistry and modular structures for achieving cost-efficient, easily deployable ultra-porous metal-organic frameworks (MOFs) and covalent organic frameworks (COFs). These programs will help limit and address the impacts of climate change and extend to downstream technologies like conversion of CO2 to clean fuels, biodegradable polymers, enzymes, and pharmaceuticals. BIDMaP brings together top computation and machine learning experts with	KACST-UC Berkeley Center of Excellence for Nanomaterial Clean Energy Applications (CENCEA) Collaborative Research Center - $8.4M contract and $8.0M grant, 6/2022 ChatGPT Research Group for optimizing crystallinity of MOFs and COFs. ACS Central Science, 2023 A GPT-4 reticular chemist for MOF discovery. Symmetry-informed geometric representation for molecules, proteins, and crystalline materials. ChatGPT Chemistry Assistant for text mining and prediction of MOF synthesis.

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			chemistry and other physical science researchers to exploit the vast potential these reticular structures have in achieving clean air, clean energy, and clean water.	
David	Zilberman	RCNR - Agricultural & Resource Economics	Marketing, biotechnology, water, risk management, biofuels, natural resources, agricultural and environmental policy, the economics of innovation. Economics of renewable energy (using ML).	