**­­­­­­­­­­­**

**BERKELEY CLIMATE MAP UPDATED — JAN 2024 ALL**

Funded by: VCR, RCNR, CIEE, Law, CED, Engineering, Chemistry, Haas, Goldman, CDSS, SPH, Education, Journalism, Social Sciences, Arts & Humanities, LBNL

We encourage your inquiries, edits, and questions at bruceriordan@berkeley.edu and 510.306.0130

| **First** | **Last** | **Dept/Area** | **College/School**(primary) | **Climate Problem/****Opportunity****(see list)** | **Summary** | **Research (Projects/Reports/****Proposals)** | **Teaching – Fall 2023 Spring 2024** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | [Blum Center for Developing Economies](https://blumcenter.berkeley.edu/) |  |  |  | The Blum Center for Developing Economies leverages the talent, enthusiasm, and energy of the [University of California, Berkeley](https://www.berkeley.edu/) community to address the grand challenge of global poverty. Our interdisciplinary problem-solving approach draws on students and faculty dedicated to facing this challenge through innovative initiatives, education, and research.  | 2023 UCOP Climate Action I&E funding to deploy Master of Development Engineering students to serve as I&E Climate Action Fellows, supporting projects in communities most vulnerable to climate change. |  |
|  | [Bakar BioEnginuity Hub/Bakar Labs](https://bbh.berkeley.edu/) |  | Campuswide | Energy | [David Schaffer, Executive Director](https://vcresearch.berkeley.edu/faculty/david-schaffer)At BBH, purpose-driven pioneers tackle hard problems using discoveries at the convergence of the life sciences with the physical, engineering, and data sciences. This is BioEnginuity.BBH is a major facility housed in the revamped ex-University Art Museum on Bancroft. BBH will be a key model for the development of the new climate tech hub in 2024. | [Bakar BioEnginuity Fellowships](https://bbh.berkeley.edu/berkeley-bioenginuity-fellowships/)[Neurotech Collider Lab](https://ncl.berkeley.edu/)[Bakar Labs Incubator at BBH](https://bbh.berkeley.edu/bakar-labs-incubator-at-bbh/)[Research Infrastructure Commons](https://bbh.berkeley.edu/research-infrastructure-commons/)[Bakar Fellows Program](https://bakarfellows.berkeley.edu/) |  |
|  | Bakar Climate Hub |  | Campuswide |  | New Climate Tech hub to be officially announced during Spring Semester 2024David Schaffer, project leader |  |  |
|  | [Berkeley Discovery](https://discovery.berkeley.edu/student-discovery-hub) |  | Campuswide | Climate Equity/Environmental Justice, Education | Leslie Rae Harlson, Executive Director[Alessandra Lanzara](https://discovery.berkeley.edu/about-initiative/people/alessandra-lanzara), Faculty Director[Amy Louise Azuma](https://discovery.berkeley.edu/about-initiative/people/amy-louise-azuma), Discovery Opportunities Dbase ManagerBerkeley Discovery is a campus-wide effort to transform undergraduate education. Discovery writ large is more than a single discrete experience or one-semester capstone project. Discovery is an intentional and holistic arc that supports all students on a journey of engaged creativity and self-actualization.The [Discovery Hub](https://discovery.berkeley.edu/student-discovery-hub) helps undergraduates discover opportunities in & beyond the classroom to apply learning and get experience in their field. We centralize information and guide students to discover what they want to do through real-world experience.Discovery Hub Undergraduate Resources* Guides for getting started in research, public service, entrepreneurship, & creative projects
* How-to workshops on navigating campus opportunities
* Tools for creating project ideas and student stories to inspire you
* A database of opportunities like research, internships, & scholarships

Our work is grounded in a fundamental educational insight: students thrive at Berkeley when they are able to develop their passions into immersive projects which bring them educational purpose, community & belonging, and confidence as changemakers. We call this transformative learning “discovery”, and [stories of student discovery projects can be found here](https://discovery.berkeley.edu/student-discovery-stories). | [Discovery Hub listserv](https://groups.google.com/a/lists.berkeley.edu/g/discoveryhub?pli=1) is a centralized email list for undergraduate resources and opportunities beyond the classroom in research, arts, entrepreneurship, public service, and more! | .  |
|  | [Berkeley Earth](https://berkeleyearth.org/) |  | Campuswide | Modeling, Education, Public Awareness | Richard Muller, DirectorBerkeley Earth is an independent U.S. non-profit organization focused on environmental data science and analysis.Our continued mission and responsibility is to deliver and communicate accessible environmental data and analysis to the broadest possible audience. | [Detailed info on GHGs and other data by country](https://berkeleyearth.org/)[Global Temperature Report 2023](https://berkeleyearth.org/global-temperature-report-for-2022/)[November 2023 Update](https://berkeleyearth.org/november-2023-temperature-update/) |  |
|  | [Berkeley Inter-Disciplinary Migration Initiative (BIMI)](https://bimi.berkeley.edu/) | Institute for Governmental Studies | Campuswide | Migration, Food/Agriculture, Climate Equity/Environmental Justice, Law, Policy | [Founding Director, Irene Bloemraad](https://vcresearch.berkeley.edu/faculty/irene-bloemraad)[Harpreet Mangat, Executive Director](https://bimi.berkeley.edu/harpreet-mangat)We are a partnership of faculty, researchers and students who investigate human mobility, immigrants’ integration and the ways migration transforms societies around the world. | [Mapping Spatial Inequality: The New Geography of Poverty and Immigration](https://test-bimi.pantheon.berkeley.edu/sites/default/files/shared/docs/BIMI%20Policy%20Brief%20Bloemraad%20-%20Mappin%20Spatial%20Inequality.pdf)[Disaster and Migration: Inequalities in Climate Migration (SS Matrix Panel video)](https://live-ssmatrix.pantheon.berkeley.edu/research-article/video-disaster-and-displacement-inequalities-climate-migration/)Currently working to build non-citizenship faculty cluster hire |  |
|  | [Berkeley Skydeck](https://skydeck.berkeley.edu/) |  | Campuswide | Climate Tech | Caroline Winnett, Executive DirectorSibyl Chen, General ManagerSkyDeck offers all the benefits of a traditional accelerator along with the vast resources of the world’s number one ranked public university.Formed as a partnership between Berkeley’s Haas School of Business, the College of Engineering, and the Office of the Vice Chancellor for Research, SkyDeck offers a powerful environment for startups to grow and launch. The robust and vibrant ecosystem includes a deep network of advisors, industry partners, and accredited investors.Venture Capital: We facilitate intros and help build relationships with our extensive network of top tier VCs and investors.Mentorship: Our 480 advisors and mentors actively coach and advise our founders on everything from product development to customer acquisition to go-to-market strategy to fundraising and beyond.Access to Talent: We help connect the intellectual firepower of UC Berkeley to our startups, matching hundreds of students, MBAs, and postdocs to intern and work for our startups. We also match faculty to advisory boards.Customer Development: We have strong relationships with hundreds of businesses and enterprises that are often early adopters of our startups’ technology, and we facilitate key introductions to executives from countless companies across our vast network of Berkeley alums. | New Climate Track launched in 2023 with funding from the UCOP Climate Action I&E program |  |
|  | [Big Ideas](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwivncjD__aCAxUPNzQIHeGbBzsQFnoECA0QAQ&url=https%3A%2F%2Fbigideascontest.org%2F&usg=AOvVaw1kWeTcGz-eLEq5f21rBUgX&opi=89978449)  | Blum Center for Developing Economi3es | Campuswide | All | [Phillip Denny, Director](https://bigideascontest.org/team/)[Big Ideas](https://bigideascontest.org/) is an innovation ecosystem that provides training, networks, recognition and funding to interdisciplinary teams of UC Berkeley students who have transformative solutions to real-world problems.Open to graduate and undergraduate students, the program offers up to $20,000, skill-building workshops and online resources, networking opportunities, and extensive feedback from a 1,500-strong judge and mentor network. Applications due December 6th, 2023!  | Big Ideas is now featuring a Climate Change and Sustainability Track with funding from the 2023 UCOP Climate Action I&E programSolutions may focus on several areas, including but not limited to: (1) clean, renewable energy technology; (2) land/watershed management; (3) climate change adaptation; (4) habitat restoration and/or maintenance; (5) Resource reduction/waste prevention (6) solutions addressing vulnerable communities in California affected by climate change; (7) programs or installations that spread awareness about climate change impacts in California. |  |
|  | [California Institute for Energy & Environment](https://uc-ciee.org/) |  | Campuswide | Energy, Climate Equity/Environmental Justice, Climate Tech | [Carl Blumstein](https://citris-uc.org/people/person/carl-blumstein/), Executive Director.As part of the CITRIS Climate initiative, [CIEE](https://uc-ciee.org/) blends the expertise of world-class researchers from across the UC and around the country to ensure steady progress toward California’s pace-setting energy goals. CIEE’s projects span an ambitious scope of topics, with a common thread: to intelligently apply cutting-edge technologies in service to society. From managing extensive studies on California’s climate vulnerability to developing smart energy solutions and deploying them in the field, CIEE brings together researchers, inventors and stakeholders to accomplish what none of us could do alone.  | [Oakland Eco-Block](https://uc-ciee.org/projects/oakland-ecoblock/) is a key project.“Eight Key Challenges for California’s Energy Future.”Involve the Youth: CIEE Postdoctoral Scholar Dr. Miriam Aczel recently co-published a commentary in Elementa: Science of the Anthropocene that highlights the potential benefits of youth-oriented citizen science research in informing climate change research. Projects range from new devices like the low-cost anemometer, Hamilton sensor and smart thermostat, to advanced systems like the micro-PMU for electric power distribution, the Berkeley Tree Database and the XBOS building management platform. Through field tests with its diverse partners, CIEE nurtures these innovations to wide-scale use beyond the Golden State. |  |
|  | [California Partners for Advanced Transportation Technology (PATH)](https://path.berkeley.edu/) |  | Campuswide | Transportation, Climate Tech | [James Fishelson](http://jfishelson@berkeley.edu), Executive Director [Scott Moura](http://smoura@berkeley.edu), Faculty Director PATH’s aim is to realize a **safe, equitable, efficient, and carbon-neutral transportation system** for all, seeking to transform transportation through leading edge research and the development and demonstration of emerging technologies and ideas. PATH includes experts in technologies ranging from automated vehicles, connectivity, advanced data management systems, traffic simulation and control, human factors, multimodal transportation, freight and logistics, and much more. | [Qijian Gan](https://its.berkeley.edu/people/qijian-gan) – 2023 UCOP Proposal: A Macroscopic Approach to Prioritizing Charging Infrastructure for Statewide Deployment of ZEVsPI on the Caltrans project, “System Impact of Connected and Automated Vehicles: An Application to the I-210 Connected Corridors Pilot”, to develop an integrated platform in microsimulation to enable the modeling of CAVs and to evaluate potential impacts of CAVs on current ICM systems.  |  |
|  | [Center for Cities and Schools](https://citiesandschools.berkeley.edu/) |  | Campuswide | Education, heat, drought, wildfire, storms  | Jeffrey Vincent, Co-Founder & Director the [Center for Cities & Schools (CC&S).](https://citiesandschools.berkeley.edu/) Center for Cities + Schools is an interdisciplinary, action-research center, linking the fields of city planning and K-12 education.We advance policies and practices that create opportunity-rich environments, both in and out of schools, where young people of all backgrounds can thrive.Vincent’s policy and research interests lie at the intersection of land use planning, community development, and educational improvement, with a particular focus on how school facilities serve as educational and neighborhood assets. Much of the work involves “engaged scholarship,” done for and in partnership with public agencies, nonprofit organizations and others with public interests in mind.  | UCOP $100M Climate Action LOI lead[Virtual Policy Forum on Climate Resilient California Schools](https://citiesandschools.berkeley.edu/in-the-news/join-ccs-stanford-undauntedk12-and-ten-strands-for-a-virtual-policy-forum-on-climate-resilient-schools-for-california-april-21-2023/) (2023) |  |
|  | [Center for Effective Global Action (CEGA)](https://cega.berkeley.edu/) |  | Campuswide | Poverty, Health, Economics, Migration | [Carson Christiano, Executive Director](https://cega.berkeley.edu/user-type/staff/#carson-christiano)Joshua Blumenstock, Faculty Co-DirectorEdward Miguel, Faculty Co-DirectorCEGA’s mission is to improve the lives of people living in poverty by generating key insights for policymakers backed by rigorous and transparent research. CEGA is a hub for research, training, and innovation headquartered at Berkeley. We generate insights that leaders can use to improve policies, programs, and people’s lives. Our academic network includes more than 150 faculty, 65 scholars from low- and middle-income countries, and hundreds of graduate students–from across academic disciplines and across the globe–that produce rigorous evidence about what works to expand education, health, and economic opportunities for people living in poverty. | [Measuring Development 2023: Mitigating the Risks and Impacts of Climate Change](https://cega.berkeley.edu/event/measuredev2023-climate/) (9th annual conference with World Bank, Univ. of Chicago and others)[How does Measurement Contribute to a Habitable Planet for All?](https://medium.com/center-for-effective-global-action/how-does-measurement-contribute-to-a-habitable-planet-for-all-27e441642ebb)[Kenya Analytical Program on Forced Displacement](https://cega.berkeley.edu/research/kenya-analytical-program-on-forced-displacement-kap-fd/)[Syrian Refugee Life Study](https://cega.berkeley.edu/research/the-syrian-refugee-life-study/) |  |
|  | [Central Sierra Snow Lab](https://vcresearch.berkeley.edu/research-unit/central-sierra-snow-lab) |  | Campuswide | Water, Drought | [Andrew Schwartz, Director](http://aschwartz@berkeley.edu)Located at Donner Pass in the Sierra Nevada, the [Central Sierra Snow Laboratory (CSSL)](http://cssl.berkeley.edu/) 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](https://www.youtube.com/watch?v=1tmrO8ZBrxc) (video)Get the latest Sierra snowpack data here. |  |
|  | [CITRIS and the Banatao Institute](https://citris-uc.org/) |  | Campuswide | Climate Equity/Environmental justice, Energy | [Alexandre Bayen, Director](https://ce.berkeley.edu/people/faculty/bayen)Camille Crittenden, Executive Director[Carl Blumstein, Executive Director, CITRIS Climate](https://citris-uc.org/people/person/carl-blumstein/)**CITRIS and the Banatao Institute is a University of California** research center focused on creating IT solutions that generate social and economic benefits for everyone.[CITRIS Climate](https://citris-uc.org/research/climate/) is a key initiative. The CITRIS Climate initiative supports the goal of carbon neutrality at the UC system level and beyond, with attention to issues of climate justice and equity to reduce the effects that are disproportionately experienced by underrepresented and underserved communities.CITRIS Climate also facilitates collaborations across UC campuses and other CITRIS initiatives to advance the knowledge and technology needed to support global and individual climate adaptation and mitigation. Through cross-disciplinary, IT-driven approaches of climate mitigation and adaptation applied to wildfires, sea level rise, hurricanes, heat waves and other related hazards, CITRIS Climate aims to promote resilient communities and sustainable infrastructure through a more inclusive and diverse STEM workforce.CITRIS Innovation HubThe CITRIS Innovation Hub fosters interdisciplinary innovation in the interest of society, expands on-ramps for next-generation talent and promotes greater workforce inclusion.CITRIS FoundryThe Foundry is the University’s deep tech innovation hub created in 2013 to help UC entrepreneurs build companies that make a significant impact on the world. The Foundry provides access to design, manufacturing, and business development tools, along with a community of entrepreneurs and experts to transform entrepreneurial teams into founders.Marc Theeuwes, Managing Director | Preparing for a warming world: CITRIS at the vanguard of climate tech research[CITRIS Seed Grants awarded Dec 2023 – includes projects on soil carbon and resilient building materials to address heat](https://citris-uc.org/6-multicampus-interdisciplinary-projects-selected-for-2023-citris-seed-award/)**CITRIS Foundry awarded $$ from 2023 UCOP Climate Action I&E program to create a “climate action acceleration fund” that will support previous recipients of the CITRIS Seed Funding Program for climate action projects that are ready to advance to the next stage of commercialization.** |  |
|  | [Climate Equity and Environmental Justice Roundtable](https://ceej.berkeley.edu/) |  | Campuswide | Environmental justice, water | Info on the 8 Advisory Council Members and the 15 Core Faculty can be found [here](https://ceej.berkeley.edu/people).The Climate Equity and Environmental Justice roundtable brings faculty and students together across dsciplinary boundaries and incentivizes faculty engagement and student training around real-world problems where integrated thinking is needed most. Roundtable activities foster a community of shared practice through seminars, symposia, team-building lunches and retreats, co-creation of curriculum, and convening special events with leaders from within UC Berkeley together with external experts and practitioners. The CEEJ Roundtable is a multidisciplinary group of scholars dedicated to advancing research on human-induced climate change and the disparate impact it has on marginalized, racialized, and underrepresented groups. The group is comprised of faculty in the social and environmental sciences, public health, engineering, city and regional planning, and landscape architecture. The [Katherine S. and James K. Lau Graduate Fellowship in Climate Equity](https://nature.berkeley.edu/lau-graduate-fellowship-climate-equity) was established in 2021 to support doctoral students pursuing climate equity and/or environmental justice research with an emphasis on ameliorating the impacts of climate change on vulnerable populations and addressing root causes of inequality. Recipients of this fellowship, as well as others in the research groups of Roundtable faculty, also participate in Roundtable activities.  | Watch: [Climate Justice and the Question of Reparations](https://www.youtube.com/watch?v=mrBqiJqtmlk) (YouTube)[The Quest for Environmental and Climate Justice – Robert Bullard talk at Brower Center November 1, 2023.](https://nature.berkeley.edu/news/2023/11/quest-environmental-and-climate-justice-dr-robert-bullard)Christopher Schell: “[Ecological and evolutionary consequences of systemic racism in urban environments](https://www.science.org/doi/10.1126/science.aay4497),”[Why Warblers Flock to Wealthier Neighborhoods](https://www.nytimes.com/2023/11/21/science/birds-cities-redlining.html?unlocked_article_code=1.Bk0.Pz_b.cJz7mKKjzDB0&smid=url-share) |  |
|  | [Critical Environmental Justice Lab](https://crg.berkeley.edu/critical-environmental-justice-lab) | Berkeley Center for Race and Gender | Campuswide | Climate Equity/Environmental justice | Michael Mascarenhas (coordinator)The CEJ Lab’s purpose is to provide a space for students and faculty to cultivate a deeper understanding of the social and environmental relations that articulate at the conjuncture of environmental justice and systemic racism. The goal is to advance this critical perspective to help shape members’ theoretical and methodological approaches to research and teaching.Part of [Berkeley Center for Race and Gender](https://crg.berkeley.edu/home) |  |  |
|  | [Energy Biosciences Institute](https://energybiosciencesinstitute.org/) |  | Campuswide | Energy | [John Coates](https://vcresearch.berkeley.edu/faculty/john-coates), DirectorThe Energy & Biosciences Institute provides industrial sponsors access to world-class, collaborative research facilities across the energy, chemical, material sciences, data sciences, engineering, and agriculture sectors.Sponsorship opens access to our partner network of 7,500 faculty and principal investigators, and 100,000 student, postdoctoral, and professional researchers. Our team will help you to establish the most effective collaborative networks.  | Research Overview:We direct and facilitate collaborative, cross-disciplinary research that leads to sustainable real-world solutions across the supply chain. Sponsors and researchers benefit from the inevitable synergies of such collaborations.The EBI’s broad core research focuses on not only today’s energy issues, but also those of the future generations, and the incremental steps in between. Every day, EBI researchers work to devise practical energy strategies and products that sequester carbon and shift the energy landscape while continuing to meet society’s energy demands. The EBI’s work focuses on three energy themes: diverse sources, unifying storage, and utilization.  |  |
|  | [Global Policy Lab](http://www.globalpolicy.science/) |  | Campuswide | Migration, Economics, Finance, Policy | Sol Hsiang, Principal InvestigatorJosh Blumenstock, Principal InvestigatorIntelligent and rational management of climate change requires that we balance the costs and benefits of planetary-scale policies. We focus on understanding the effects of climate change on societies around the world, the largest critical unknown in the design of global climate policy. | [Global Policy Lab papers on Migration](http://www.globalpolicy.science/migration)[Social and Economic Impacts of Climate](https://www.science.org/doi/10.1126/science.aad9837)[Potential Extreme Population Displacement in the Tropics Under Non-Extreme Warming](https://www.nature.com/articles/srep25697)[Non Linear Permanent Migration Response to Climatic Variations But Minimal Response to Disasters](https://www.pnas.org/doi/pdf/10.1073/pnas.1317166111) |  |
|  | [Innovative Genomics Institute](https://innovativegenomics.org/) |  | Campuswide | Food/Agriculture | [Jennifer Doudna, Founder and Chair of the IGI Governance Board](https://innovativegenomics.org/people/jennifer-doudna/)[Brad Ringeisen, Executive Director](https://innovativegenomics.org/people/brad-ringeisen/)[Melinda Kliegman, Director, Public Impact](https://innovativegenomics.org/people/melinda-kliegman/)The Innovative Genomics Institute believes in the potential of genome engineering to solve some of **humanity’s greatest problems. The IGI is composed of diverse researchers at Berkeley and at UCSF. Together, our scientists have powerful combined expertise. They conduct world-class research, driven by the real possibility to use genome engineering to treat human diseases and end hunger.** In addition to our scientific efforts, the IGI is committed to advancing public understanding of genome engineering, providing resources for the broader community, and guiding the ethical use of these technologies.[Climate and Sustainable Agriculture Program](https://innovativegenomics.org/programs/sustainable-agriculture/)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. | CRISPR for Climate Change[Disease Resistant Crops](https://innovativegenomics.org/news/plant-immune-receptor-discovery-can-help-scientists-fight-agricultural-pandemics/)[Precision Microbiome Editing](https://innovativegenomics.org/microbiome-editing/)2023 UCOP Proposal: Lab to Land California: Biotechnology for Accelerated Conservation and Climate ResilienceGrant: Technology Enabled Biological Carbon Capture and Sequestration- $21M, 8/2022[Funding kicks off a new era in climate research at the IGI](https://innovativegenomics.org/news/net-zero-farming-carbon-capture/). A gift of $3 million dollars from an anonymous donor to the Innovative Genomics Institute is kick-starting the next generation of climate change research at IGI. To date, IGI’s climate change work has mostly focused on using [genome engineering](https://innovativegenomics.org/glossary/genome-editing/) to help agriculture adapt to a changing climate. Building on that strategy, this gift provides initial funding to a series of new IGI projects that are aimed at developing scalable nature-based solutions to mitigate climate change. [From California to Kenya: Sharing CRISPR Tools with African Scientists](https://innovativegenomics.org/news/crispr-course-african-scientists/)[IGI Scientists Make Progress In Protecting Rice From Drought](https://innovativegenomics.org/news/protecting-rice-drought/) Grant: Technology Enabled Biological Carbon Capture and Sequestration- $21M, 8/2022 |  |
|  | [Institute for South Asia Studies](https://southasia.berkeley.edu/) |  | Campuswide | Migration, health,  | [Munis D. Faruqui](https://southasia.berkeley.edu/munis-d-faruqui), DirectorAnirban Gupta-Nigam, Associate DirectorOne of the world's leading institutes for research and programs on South Asia, the ISAS works with faculty members, graduate students, community members, private institutions, and non-profit organizations to deepen understanding of the region and to create new generations of scholars of South Asia. | In response to the cataclysmic climate change in the region, the Institute for South Asia Studies (ISAS) is developing a four-year program (2022-26) on the critical and urgent issue of climate change in South Asia. Interdisciplinary public conferences, a speaker series, collaborative workshops with organizations in South Asia, and open-access resources including interactive teaching tools will link the ISAS closely with one of UC Berkeley’s Signature Initiatives on Environmental Change, Sustainability, and Justice as part of the campus’ Strategic Plan. Building on our interdisciplinary faculty strengths across the College of Letters & Science, the College of Environmental Design, the College of Engineering, the Rausser College of Natural Resource, and the Haas School of Business, the aim of the four-year program is to provide UC Berkeley faculty, staff, and students in-depth resources to develop area-based knowledge, research tools, language training, and opportunities to collaborate with leading institutions in South Asia. |  |
|  | [Institute for Transportation Studies](https://its.berkeley.edu/) |  | Campuswide | Transportation  | [Daniel Rodriguez, Director](https://ced.berkeley.edu/people/daniel-rodriguez)[Laura Melendy, Assistant Director](https://its.berkeley.edu/people/laura-melendy)ITS develops leading-edge innovations influencing movement of people and goods and advancing sustainability, economic health, and quality of life. ITS hosts a number of faculty members from nine UC Berkeley academic departments and schools and approximately 150 researchers and students are associated with ITS through our various research and educational activities.ITS Berkeley is the umbrella organization for seven research centers:[California Partners for Advanced Transportation Technology](https://its.berkeley.edu/research-centers/path)[Berkeley DeepDrive](https://its.berkeley.edu/research-centers/berkeley-deepdrive)[Transportation Sustainability Research Center](https://its.berkeley.edu/research-centers/tsrc)[Safe Transportation Research and Education Center](https://its.berkeley.edu/research-centers/safetrec)[Smart Cities](https://its.berkeley.edu/research-centers/smart-cities)[NEXTOR](https://its.berkeley.edu/research-centers/nextor)[UC Pavement Research Center](https://its.berkeley.edu/research-centers/ucprc)And two education centers[TechTransfer](https://its.berkeley.edu/research-centers/techtransfer)[Transportation Library](https://its.berkeley.edu/research-centers/transportation-library) | [Hydrogen an Option for U.S. Trucking: Is Hydrogen Too Expensive For Trucks? Europe’s second biggest truck manufacturer thinks so, but American experts disagree. (OCT 2023)](https://its.berkeley.edu/news/hydrogen-option-us-trucking-hydrogen-too-expensive-trucks-europe%E2%80%99s-second-biggest-truck) |  |
|  | [Institute of European Studies](https://ies.berkeley.edu/research) |  | Campuswide | Floods, Wildfires , transportation | [Jeroen Dewulf](https://german.berkeley.edu/people/jeroen-dewulf/), Director, [Institute of European Studies](https://ies.berkeley.edu/research) | Several projects at IES involve climate change engaging academics at Berkeley and a French University. One project [“Après Moi, le Deluge”](https://fbf.berkeley.edu/blog/apres-moi-le-deluge-wildfires-dangerous-companion-golden-state-midi) – 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](https://fbf.berkeley.edu/) research grant in 2019, and the pair also involved Berkeley’s John Radke, and Sarah 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”.A second FBF-funded [project](https://fbf.berkeley.edu/grantee-spotlight-electric-vehicles-and-global-urban-adoption): How do city dwellers use electric vehicles in France and California, and what can the two regions learn from each other? Collaborators [Ethan Elkind](https://www.law.berkeley.edu/research/clee/about/people/ethan-elkind/) (Berkeley Law) and [Yannick Perez](http://www.ritm.u-psud.fr/researchers/yannick-perez/) (CentraleSupélec, Université Paris-Saclay) tackled these questions with dozens of participants at their FBF-funded [international conference](https://www.law.berkeley.edu/research/clee/events/electric-vehicles-and-global-urban-adoption-policies-and-perspectives/) in June 2019. Based on those discussions, UC Berkeley Law’s Center for Law, Energy and the Environment (CLEE) recently released the symposium brief Electric Vehicles and Global Urban Adoption: Policy Solutions from France and California.  |  |
|  | [Institute of International Studies](https://iis.berkeley.edu/) |  | Campuswide | Migration, Policy | [Susan Hyde, Director](https://polisci.berkeley.edu/people/person/susan-hyde)IIS represents an interdisciplinary arena of scholarship characterized by the analysis of connective and systemic dynamics in global politics and economics. International or global studies is distinct from area studies, which tends to focus on understanding individual countries, societies, or regions. International studies is primarily concerned with interactions among states and non-state actors across a multitude of arenas—from security and governance to economic and cultural exchange. It includes the study of cross border movements of people, ideas, money, goods, diseases, pollution, information as well as international institutions, international law, and global governance more generally. The addition of transnational problems that affect the world as a whole, esp. since the 1970s, has expanded the horizons of IIS, and includes phenomena that take place within the borders of one country but are studied across regions, such as migration, civil war, democracy, authoritarianism, humanitarian crises, human rights abuses, globalization, and climate change. |  |  |
|  | [Lawrence Hall of Science](https://www.lawrencehallofscience.org/) |  | Campuswide | Education | [Rena Dorph](https://www.lawrencehallofscience.org/people/rena-dorph/), Director[Craig Strang](https://www.lawrencehallofscience.org/people/craig-strang/) Associate DirectorFor over 50 years, The Lawrence Hall of Science has been at the forefront of science education. As part of UC Berkeley we work with scientists, engineers, and educators to design the most effective learning experiences. We strive to transform the world of STEM, infusing these fields with diverse perspectives and innovative minds.LHS partners with school districts to support science learning. We can offer the following district-wide elementary, middle, and high school programs, either virtually or in-person: multi-session, interactive, hands-on and NGSS-aligned science lesson sequences; stand-alone interactive classroom workshops; interactive science shows; and teacher professional learning to support virtual or in-person NGSS instruction. Custom options are available, too.  | [California Environmental Literacy Initiative](https://ca-eli.org/) is the statewide initiative focused on K-12 environmental and climate literacy.[COVID-19 Outdoor Learning Initiative](https://www.greenschoolyards.org/covid-learn-outside) is a nationwide effort that Lawrence Hall of Science launched when schools shut down early in the pandemic. The initiative brings together the ideas that outdoor learning is a solution to the pandemic, good for kids' health and learning whether there is a pandemic or not, and that schools control huge amounts of land that can be turned into parklike climate mitigating spaces by decreasing their carbon footprint and by creating green, shaded places in communities. The website has a huge library of resources for schools to use in their efforts to address climate change through both their facilities and their teaching and learning.We developed this middle school [Ocean Science Curriculum Sequence:](https://mare.lawrencehallofscience.org/curriculum/ocean-science-sequence) The ocean-climate connection and climate change. |  |
|  | [Office of Sustainability and Carbon Solutions](https://sustainability.berkeley.edu/office-sustainability) |  | Campuswide | Buildings, energy | Kira Stoll, Director, [Office of Sustainability and Carbon Solutions](https://sustainability.berkeley.edu/office-sustainability)**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 is committed to surpassing the carbon reduction mandates set by California state regulations by achieving at least a 90% reduction in total emissions (scopes 1,2, and 3), relative to a 2019 baseline, by 2045. Berkeley’s goals align with the 2023 update to the UC Sustainable Practices Policy, which has embraced more robust climate action targets. These revised goals emphasize direct emissions cuts and curtail reliance on carbon offsets. [Berkeley Clean Energy Campus](https://cleanenergycampus.berkeley.edu/home) 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. For decades, Berkeley has led the world in climate solution technology and policy research. Now, the campus will begin transitioning to an energy system that sets the standard in sustainable, resilient infrastructure. |  |
|  | [Opportunity Lab](http://www.olab.berkeley.edu/) |  | Campuswide | Climate Equity/Environmental justice, Policy, Migration | [Hilary Hoynes, Faculty Director](https://www.olab.berkeley.edu/faculty/hilary-hoynes)The Opportunity Lab serves as the central research hub for UC Berkeley scholars conducting cutting-edge research on social and economic inequality in the United States. The O-Lab’s mission is to build new insights into the causes and consequences of inequality, and to provide policymakers with evidence-based solutions promoting equity and opportunity for all.The Opportunity Lab’s Climate and Society Initiative supports research to better understand how environmental conditions and externalities are affecting families and communities, while also examining the economic consequences of policies designed to combat or mitigate climate change and pollution.Led by[**Professors Solomon Hsiang**](http://globalpolicy.science/solomon-hsiang)**,** [**Meredith Fowlie**](https://www.meredithfowlie.com/)**,** and[**Reed Walker**](https://w-reed-walker.com/)**,** the initiative uses data-driven approaches to study the social costs of greenhouse gas emissions, the cost-effectiveness and distributional consequences of resource management strategies, and inequalities in exposure to environmental harm.Catherine Wolfram, Climate and SocietyMax Auffhammer, Climate and SocietyMeredith Fowlie, Climate and SocietyMichael Anderson, Climate and SocietySol Hsiang, Climate and Society | [How Climate Migration Will Reshape America (NYT Magazine 2020)](https://www.nytimes.com/interactive/2020/09/15/magazine/climate-crisis-migration-america.html?smid=tw-nytmag&smtyp=cur)[Climate & Society reports, events and more](https://www.olab.berkeley.edu/climate-environment-papers) |  |
|  | [Othering and Belonging Institute](https://belonging.berkeley.edu/) |  | Campuswide | Climate Equity/Environmental Justice, Migration  | [john a. powell](https://belonging.berkeley.edu/john-powell), Director[Elsadig Elsheikh](https://belonging.berkeley.edu/elsadig-elsheikh) Director, Global Justice Program[Hossein Ayazi](https://belonging.berkeley.edu/hossein-ayazi) Project Policy Analyst, Global Justice Program[OBI Climate Justice Principles](https://belonging.berkeley.edu/obis-climate-justice-principles) The Othering & Belonging Institute's existing body of [climate justice work](https://belonging.berkeley.edu/climate-justice) includes our work on [climate refugees](https://belonging.berkeley.edu/climaterefugees), on [housing justice](https://belonging.berkeley.edu/housing), on [community power-building](https://belonging.berkeley.edu/community-power-and-policy-partnerships), and more. Please see our website: <https://belonging.berkeley.edu/climate-justice>.The Institute advances groundbreaking research, policy, and ideas that examine and remediate the processes of exclusion, marginalization, and structural inequality—what we call othering—in order to build a world based on inclusion, fairness, justice, and care for the earth—what we call belonging. | [Climate Displacement and the Right to Stay – Tools and Tactics for Climate Justice (1 hour video event Nov 15)](https://belonging.berkeley.edu/video-climate-displacement-and-right-stay-tools-and-tactics-climate-justice)[Climate Migration is Here – Is Biden Ready?](https://www.eenews.net/articles/climate-migration-is-here-is-biden-ready/)[Climate Refugees: Climate Crisis and Rights Denied](https://belonging.berkeley.edu/sites/default/files/climate_refugees.pdf) — 88-page report [Moving Targets: An Analysis of Global Forced Migration](https://belonging.berkeley.edu/sites/default/files/haasinstitute_moving_targets_globalmigrationreport_publish_web.pdf?file=1&force=1) [Climate Displacement and Resilience Database](https://belonging.berkeley.edu/climatedisplacement/climate-displacement-and-resilience-database), [Launch event panel](https://belonging.berkeley.edu/video-climate-displacement-and-right-stay-tools-and-tactics-climate-justice) and [KPFA post-event interview](https://podcasts.apple.com/us/podcast/book-of-basketball-2-0/id1483525141?i=1000557221121). |  |
|  | [Science at Cal](https://scienceatcal.berkeley.edu/) | Lawrence Hall of Science | Campuswide | Education | [Dione Rossiter](https://scienceatcal.berkeley.edu/our-staff/), Director, Science at CalScience at Cal connects UC Berkeley Science, Technology, Engineering and Mathematics (STEM) researchers with diverse community groups of all ages and backgrounds, for science engagement and learning. Accessibility, inclusiveness, creativity and innovation are hallmarks of Science at Cal events, which reach tens of thousands of people annually.Science at Cal was envisioned as a unifying effort to raise public awareness, understanding and appreciation of scientific research at Berkeley. Throughout the year, Science at Cal presents ongoing, free outreach programs in STEM and other disciplines, helps promote other groups’ related efforts, and creates new programs and initiatives at Berkeley and in the community. This broad scope of activities is made possible by Science at Cal’s [dynamic network](https://scienceatcal.berkeley.edu/network/) of campus alliances and valuable community partnerships. |  |  |
|  | [Smart Cities Research Center](https://its.berkeley.edu/research-centers/smart-cities) | Institute for Transportation Strategies | Campuswide | Transportation | Jane MacFarlane, Director, [Smart Cities Research Center](https://its.berkeley.edu/research-centers/smart-cities)Smart Cities Research Center is a collaboration between UC Berkeley and Lawrence Berkeley National Laboratory to improve energy-efficient mobility systems. Urban mobility understanding can be greatly improved by taking advantage of a new generation of data that has been collected by mobile devices. We study mathematical models and data analytics with approaches ranging from urban-scale simulation to control theory. We work with industry and public agencies to collect and model data for the purpose of developing more efficient transportation networks. |  |  |
|  | [Student Environmental Resource Center](https://live-asuc-cert.pantheon.berkeley.edu/) | Dean of Students Office | Campuswide | Education | [Sharon Daraphonhdeth, Director](https://live-asuc-cert.pantheon.berkeley.edu/meet-the-team/)Mission: SERC cultivates a collaborative space to strengthen the collective effectiveness of the sustainability community and provides resources for students to actualize their visions of a more equitable, socially just, and resilient future.SERC’s current [Strategic Plan](https://live-asuc-cert.pantheon.berkeley.edu/strategic-plan/) is built around 5 areas:* Environmental Education
* Community Engagement
* Leadership and Professional Development
* Advocacy and Action
* Equity and Inclusion

Launched in 2012, SERC is today a department within the Dean of Students Office in the Division of Student Affairs.  | SERC provides extensive resources for students, links students to more than 40 environmental organizations, conducts campus events, operates programs like The Green Initiative Fund and more.[Climate Justice Week Archives](https://live-asuc-cert.pantheon.berkeley.edu/cjw/) |  |
|  | [Transportation Sustainability Resource Center](https://tsrc.berkeley.edu/) | Institute of Transportation Studies | Campuswide | Transportation, Land use | TSRC conducts research on a wide array of transportation-related issues, addressing the needs of individuals as well as the public. Research efforts are primarily concentrated in six main areas:1. [Advanced Vehicles & Fuels](https://tsrc.berkeley.edu/research/advanced-vehicles-fuels)
2. [Energy & Infrastructure](https://tsrc.berkeley.edu/research/energy-infrastructure)
3. [Future of Mobility](https://tsrc.berkeley.edu/research/future-mobility-0)
4. [Goods Movement](https://tsrc.berkeley.edu/research/goods-movement-0)
5. [Mobility for Special Populations](https://tsrc.berkeley.edu/research/mobility-special-populations)
6. [Shared Mobility](https://tsrc.berkeley.edu/research/shared-mobility)

[Susan Shaheen](https://ce.berkeley.edu/people/faculty/shaheen), Co-Director[Tim Lipman](https://tsrc.berkeley.edu/timothy-lipman-phd), Co-Director[Arpad Horvath](https://ce.berkeley.edu/people/faculty/horvath), Co-Director | Tim Lipman - Research focuses on electric-drive vehicles, fuel cell technology, combined heat and power systems, biofuels, renewable energy, and electricity and hydrogen energy systems infrastructure. Director of the Northern California Center for Alternative Transportation Fuels and Advanced Vehicle Technologies ([NorthCAT](http://northcat.org/)) |  |
|  | [UC Botanical Garden](https://botanicalgarden.berkeley.edu/) |  | Campuswide | Ecosystems/Biodiversity | [Lewis Feldman](https://plantandmicrobiology.berkeley.edu/profile/feldman), Director, [UC Botanical Garden](https://botanicalgarden.berkeley.edu/)The UC Botanical Garden was formally established in 1890 on the central campus and moved to Strawberry Canyon in the early 1920s. The Garden is a research museum open to the public year-round, displaying a notably diverse plant collection. Over 12,000 different kinds of plants, including many rare and endangered species, are cultivated by region of origin in naturalistic landscapes and in ethnobotanical collections on 34 acres.The Garden holds one of the most taxonomically diverse collections in the United States, with the largest known percentage of documented wild origin materials. The California collection, which contains about 25% of the state’s flora, is the largest of its kind in the world. The North American Plant Collections Consortium, a program of the Agricultural Research Service (USDA) and the American Public Gardens Association recognizes the excellence of four Garden collections (oaks, magnolias, cycads, and ferns). | ****Research****The documented wild origin of the collections facilitates their use for many areas of plant research, from discerning evolutionary relationships to climate change responses. Plant materials are sent all over the world to support research projects. Publications resulting from use of the collection are posted on the Garden’s web site. |  |
|  | [UC Center for Climate Health and Equity](https://climatehealth.ucsf.edu/) |  | Campuswide | Health, Climate Equity/Environmental Justice | Housed at and led by UCSF in partnership with faculty and staff at the other nine UC campuses.[Arianne Teherani](https://profiles.ucsf.edu/arianne.teherani), Founding Co-Director [Sheri Weiser](https://profiles.ucsf.edu/sheri.weiser), Founding Co-Director Sapna Thottathil, Managing DirectorBerkeley campus reps: David Ackerly, Meghana Gadgil, Michael Lu The UCSF CCHE seeks to drive climate action that safeguards health through four pillars - research, education, health system sustainability, and policy:* We will establish a transformational [research](https://climatehealth.ucsf.edu/research) program to generate a solution-focused body of evidence on climate-health pathways and interventions and encourage multidisciplinary and cross-campus collaborations.
* We are building a world-class [education](https://climatehealth.ucsf.edu/education) hub on climate and health for all health professionals, including community stakeholders.
* We will help make UC [health systems](https://climatehealth.ucsf.edu/healthcare-sustainability)responsive to the climate-sensitive needs of patients and communities.
* Finally, we aim to make our climate work [actionable](https://climatehealth.ucsf.edu/policy) by translating evidence and best practices into effective policy and patient care.
 | 2023 4th Annual NorCal Symposium Recordings - [This year's symposium](https://urldefense.com/v3/__https%3A/r20.rs6.net/tn.jsp?f=0018vof9H3f14Mh5sKhIbHHatSaCr91xQGvs2yUYtyIZDFNwJym_tYWgE9j5SdKuudmgAHBWPV5stIR8dE9mp2cHOyAzhp9fzBRV0lp04DZQXMy_8tIwIqU3cieo_piOzPTCh23WsbjkewOEDN7iTWiliyLLE619Okt71rrNjPCjvU=&c=0OT0jxJqapuVSY-Jb2y_-FVrFN8rShisSR0W8iEW99jVq_sTW7BnhQ==&ch=mXgtQ7RTYP6ZS18TkfoAs4CAinLRc_W02wQECgxjqRN3q3Egx-DS5g==__;!!LQC6Cpwp!vC0bGRCeTSZ_cGlISV-FilvnLP4Cm-OigGzZ-dY6mTUWULHjXuLvmed_j9NBA_O7GxVNxrv-WeN6nTr4O-hPhNSQ0g$) was focused on how climate change presents a critical challenge to medical education, as future medical professionals will be tasked with treating patients and managing healthcare systems in a constantly changing world. All 5 sessions are now available to watch on our YouTube Channel.[Health Care Equity at COP27](https://health.universityofcalifornia.edu/news/health-care-equity-spotlight-global-climate-summit)How Climate Impacts Health (panel discussion) |  |
|  | [UC Center for Climate Justice](https://centerclimatejustice.universityofcalifornia.edu/)  |  | Campuswide | Climate Equity/Environmental Justice | The UC Center for Climate Justice works across all UC campuses and is housed at UC Merced. Tracey Osborne is the Director.Dan Kammen is the Berkeley rep.The Center for Climate Justice’s mission is to leverage and harness the power of the university to support, strengthen, and build an emergent climate justice ecosystem and social movement that solves the climate crisis through science, systems thinking, and social-ecological justice. We do this through innovative broader-impact research, transformative education, and public engagement. We envision a world where extractive systems and economies have been transformed into ones that are regenerative, equitable, and support the sustained wellbeing of all life. |  |  |
|  | [UC Labor Center](https://laborcenter.berkeley.edu/) | [Green Economy Program](https://laborcenter.berkeley.edu/green-economy/) | Campuswide | Climate Equity/Environmental Justice, Labor | The Labor Center [Green Economy Program](https://laborcenter.berkeley.edu/green-economy/) conducts research on issues of job creation, quality, access, and training in the emergent green economy. In addition, we provide research and technical assistance to state agencies, labor, and other stakeholders who are engaged in developing and implementing policy related to energy and climate change in California and nationally.[Jessie Hammerling, Co-Director](http://jesshf@berkeley.edu)[Francisco Arzu, Co-Director](http://farzu@berkeley.edu) | [Fossil Fuel Layoff: The Economic and Employment Effects of a Refinery Closure on Workers in the Bay Area](https://laborcenter.berkeley.edu/fossil-fuel-layoff/)[The Green Revolution Will Not be Painless](https://www.theatlantic.com/ideas/archive/2023/04/oil-refinery-workers-california-green-new-deal/673852/) (The Atlantic)[The Inflation Reduction Act Charts a Path that is Pro-Climate and Pro-Worker](https://laborcenter.berkeley.edu/ira-charts-a-path-that-is-both-pro-climate-and-pro-worker/)[Hi-Road Jobs and Climate Action: Lessons from California for the Nation](https://laborcenter.berkeley.edu/high-road-jobs-and-climate-action-lessons-from-california-for-the-nation/)[Putting California on the High-Road: A Jobs and Climate Action Plan for 2030](https://laborcenter.berkeley.edu/putting-california-on-the-high-road-a-jobs-and-climate-action-plan-for-2030/) |  |
|  | [UC Museum of Paleontology](https://ucmp.berkeley.edu/) | Natural History Museums | Campuswide | Education | Charles Marshall, DirectorLisa White, Assistant DirectorJessica Bean, UGC Chief ArchitectThe UCMP’s mission is to promote the understanding of the history of life and the diversity of the Earth’s biota through research, education, and outreach.  | White leads [ACCESS Bay Area — Advancing Community College Education and Student Success](https://ucmp.berkeley.edu/education-outreach/access-paleo/) — that brings together Community College instructors and students with engaging earth science labs (at LHS and at community college sites).Bean directs the extensive online climate resource [Understanding Global Change](https://ugc.berkeley.edu/) that was designed by UCMP. “Human activities and non-human processes interact to shape the world around us. Whether you are interested in formal education or self-guided exploration, use this website to explore the causes of and solutions to climate and environmental change, and to construct models that explain what drives global changes.” |  |
|  | Vice Chancellor for Research |  | Campuswide | All | Kathy [Yelick](https://vcresearch.berkeley.edu/news/kathy-yelick-named-uc-berkeleys-new-vice-chancellor-research), Vice Chancellor for ResearchTiff Dressen, Strategic Initiatives ManagerYelick is also the Associate Dean for Research in the [Division of Computing, Data Science and Society](https://data.berkeley.edu). She is also the Senior Advisor on Computing at [Lawrence Berkeley National Laboratory](http://www.lbl.gov).Yelick’s research is in high performance computing, programming languages, compilers, parallel algorithms, and automatic performance tuning. She currently leads the [ExaBiome](http://www.exabiome.org) project on scalable tools for analyzing microbial data and co-leads the Berkeley Benchmarking and Optimization ([Bebop](http://bebop.cs.berkeley.edu)) group | [Computing and Data Challenges in Climate Change](http://people.eecs.berkeley.edu/~yelick/talks/ml4sci/MLHPC-Climate2020.pdf) (2020) – Virtual Keynote Presentation, International Conference on High Performance Computing, Data, and Analytics (HiPC ’20)UCOP I&E Project: Accelerating Solutions for Climate in California Maximizing the Impact of UC Berkeley I&E | .  |
|  | [Bakar Institute of Digital Materials for the Planet](https://bidmap.berkeley.edu/) |  | CDSS | All | Christian Borgs, DirectorOmar Yaghi, Co-Director and Chief ScientistThe 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 have in achieving clean air, clean energy, and clean water. | [ChatGPT-based Assistants Redefine Research Landscape in Groundbreaking ACS Central Science Article](https://bidmap.berkeley.edu/news/chatgpt-based-assistants-redefine-research-landscape-groundbreaking-acs-central-science) |  |
|  | [Berkeley](https://ai-climate.berkeley.edu/) AI Research Climate Initiative (BCI) |  | CDSS |  | [Medhini Narasimhan](https://medhini.github.io/) , Co-OrganizerRitwik Gupta, Co-OrganizerThe 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. | [Project: Coral Reef Restoration](https://ai-climate.berkeley.edu/projects.html)The BCI is working with a coral reef restoration non-profit to create machine learning models that can create proxy estimates of coral reef health through the creation of better depth estimation, object detection and tracking, and regression models that work underwater. These models are deployed in real-time inference, low power settings.[The Fate of Snow](https://ai-climate.berkeley.edu/projects.html)BCI is launching a benchmark paired with an international prize competition focused on the 'Fate of Snow' in partnership with Lawrence Berkeley National Laboratory and industrial partners. 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. |  |
|  | [Berkeley Institute for Data Science](https://bids.berkeley.edu/) (BIDS) |  | CDSS | All | [Ashish Sahni](https://bids.berkeley.edu/people/ashish-sahni), Executive DirectorBIDS is a central hub of data-intensive research, open source software, and data science training programs. BIDS’ programs and initiatives are designed to facilitate collaboration across an increasingly diverse and active data science community of domain experts from the life, social, and physical sciences, as well as methodological experts from computer science, statistics, and applied mathematics.  |  |  |
| Josh | [Blumenstock](https://www.ischool.berkeley.edu/people/joshua-blumenstock) | School of Information, Goldman School of Public Policy | CDSS | Migration, Poverty, Forced Displacement | Co-director of the Global Policy Lab and the Center for Effective Global Action. Blumenstock does research at the intersection of machine learning and empirical economics, with a focus on how novel data and technology can better address the needs of poor and vulnerable people around the world.  | Tracking why people migrate: reasons including climate, violence, seasonal work |  |
| JamesBentley | [Brown](https://biosciences.lbl.gov/profiles/ben-brown/) | Statistics | CDSS | Food/Agriculture | Interpretable and explainable artificial intelligence for data science. Statistics, machine learning, deep learning, reinforcement learning, artificial intelligence, developmental biology, genetics, functional genomics, proteomics, hyperspectral imaging, agriculture, control of complex natural and man-made systems, toxicology, and ecotoxicology.Using ML for studies on reducing environmental impact from agriculture. |  |  |
| Jennifer | [Chayes](https://data.berkeley.edu/jennifer-chayes) | EECS, School of Information, Mathematics, Statistics | CDSS |  | Dean, [College of Computing, Data Science, and Society.](https://data.berkeley.edu/)  [Adrian Hill, Executive Director for Interdisciplinary Initiatives](https://data.berkeley.edu/people/adrian-hill) – Ex- Columbia University Research Support[Meredith Lee, Head of Strategic Partnerships and Chief Technical Advisor to the Dean.](https://data.berkeley.edu/people/meredith-lee) Ex- Obama White House[UCSF/UC Berkeley Joint Program in Computational Precision Health (CPH)](https://computationalhealth.berkeley.edu/about/)[Data Science Undergraduate Studies](https://data.berkeley.edu/data-science-undergraduate-studies-faculty)[Department of Electrical Engineering and Computer Sciences](https://www2.eecs.berkeley.edu/Faculty/Lists/faculty.html?_ga=2.196213743.215162755.1689610972-915157624.1677098246)[Department of Statistics](https://statistics.berkeley.edu/people/faculty) | [Tackling Climate Change with Machine Learning](https://slideslive.com/38947095/tackling-climate-change-with-ml?time=37935s) (Chayes 2020 conference video keynote) shows examples of Berkeley/LBNL climate change and ML work by Zilberman, Auffhammer, Hsiang, Persson, Long, Silver, Wainwright, Keenan and others. Q&A delves into topics like how we can help climate experts and ML experts to collaborate, the great role for ML in producing cleaner and more complete data sets, etc.[Spotlight on AI](https://www.berkeley.edu/ai/) at Berkeley[ChatGPT Research Group for optimizing crystallinity of MOFs and COFs. ACS Central Science, 2023](https://pubs.acs.org/doi/10.1021/acscentsci.3c01087)[A GPT-4 reticular chemist for MOF discovery.](https://arxiv.org/abs/2306.14915) [Symmetry-informed geometric representation for molecules, proteins, and crystalline materials.](https://arxiv.org/abs/2306.09375) [ChatGPT Chemistry Assistant for text mining and prediction of MOF synthesis.](https://pubs.acs.org/doi/10.1021/jacs.3c05819) |  |
| Fernando | [Perez](https://bids.berkeley.edu/people/fernando-p%C3%A9rez) | Statistics | CDSS | Water | Perez’s research focuses on creating tools for modern computational research and data science across domain disciplines, with an emphasis on high-level languages, interactive and literate computing, and reproducible research. A computational physicist by training, his research interests include questions at the nexus of software and geoscience, seeking to build the computational and data ecosystem to tackle problems like climate change with collaborative, open, reproducible, and extensible scientific practices. He created IPython while a graduate student in 2001 and co-founded its successor, Project Jupyter. The Jupyter team collaborates openly to create the next generation of tools for human-driven computational exploration, data analysis, scientific insight and education. |  |  |
| Philip | [Stark](https://statistics.berkeley.edu/people/philip-b-stark) | Statistics | CDSS | Climate modeling, Food/Agriculture | Stark has conducted research on the [internal structure of Sun and Earth](https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/92JB00739), climate modeling, clinical trials, earthquake prediction, the Big Bang, the geomagnetic field, [election integrity](https://georgetownlawtechreview.org/wp-content/uploads/2020/07/4.2-p523-541-Appel-Stark.pdf), [gender bias in academia](https://www.scienceopen.com/hosted-document?doi=10.14293/S2199-1006.1.SOR-EDU.AETBZC.v1), geriatric hearing loss, the U.S. census, [the effectiveness of Internet content filters](https://www.stat.berkeley.edu/~stark/Preprints/filter07.pdf), [endangered species](https://www.nature.com/articles/srep10702), spectrum estimation, urban foraging, and information retrieval.He is also interested in nutrition, food equity, and sustainability and studying whether [foraging wild foods in urban environments](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0202450) could contribute meaningfully to nutrition, especially in "food deserts."  | [Climate Costing is Politics Not Science](https://issues.org/climate-models-as-economic-guides-scientific-challenge-or-quixotic-quest/)[Climate Models as Economic Guides: Scientific Challenge or Quixotic Quest?](https://link.springer.com/article/10.1007/s00024-022-03137-2)[Pay No Attention to the Model Behind the Curtain](https://link.springer.com/article/10.1007/s00024-022-03137-2)[Using a statistical tropical cyclone genesis model for assessing differences in climate scenarios and geographic basins](https://ui.adsabs.harvard.edu/abs/2018AGUFM.A43Q3380F/abstract) |  |
| Charisma | [Acey](https://vcresearch.berkeley.edu/faculty/charisma-acey) | City & Regional Planning | CED | Food/Agriculture, Climate Equity/Environmental Justice, Water, Health | Faculty Director, [Berkeley Food Institute](https://food.berkeley.edu/)[Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people)Acey’s work focuses on local and regional environmental sustainability, with special attention to poverty reduction, urban governance, connections between food justice and environmental justice, urban agroecology, and access to basic services. 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](https://vcresearch.berkeley.edu/news/intersection-race-and-environment) – Acey, Polsky, Powell in Berkeley Law-hosted discussion. | [Planning for Sustainability  CYPLAN 119](https://classes.berkeley.edu/content/2023-fall-cyplan-119-001-lec-001) **(FALL 2023)**   |
| Ed | [Arens](https://cbe.berkeley.edu/about-us/people/edward-arens/) | CEDR, CBE | CED | Buildings, heat | Director, [Center for the Built Environment](https://cbe.berkeley.edu/) 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.  | 1) Health effects of high temperatures indoors 2) New devices and design techniques for increasing the use of fans for cooling building occupants3) Protocols for measuring the performance of buildings, thermal comfort |  |
| Gail | [Brager](https://cbe.berkeley.edu/about-us/people/gail-brager/) | Architecture, CBE | CED | Buildings, heat | Director, [Center for Environmental Design Research](https://vcresearch.berkeley.edu/research-unit/center-environmental-design-research) which supports 3 centers including Center for the Built Environment.Associate Director, [Center for the Built Environment](https://cbe.berkeley.edu/) (CBE) Research: Brager leads research efforts in mixed-mode buildings, which combine natural and mechanical ventilation and leads CBE’s research into dynamic comfort and worker performance in alternative office environments. | [Mixed Mode Building Research](https://cbe.berkeley.edu/research/mixed-mode-building-research/) – hybrid space conditioning – comfort with less energy use | [Sustainability Colloquium – ARCH 242 001 (Fall 2023)](https://classes.berkeley.edu/content/2023-fall-arch-242-001-sem-001) |
|  | [Center for Environmental Design Research (CEDR)](https://vcresearch.berkeley.edu/research-unit/center-environmental-design-research) |  | CED | Buildings, Land use | [Gail Brager](https://ced.berkeley.edu/ced/faculty-staff/gail-brager)**, Director**Building science is the largest of CEDR's programs. Its mission is to increase the scientific knowledge used in building design and operation. At Berkeley, building science specializes in environmental aspects of design-how to provide comfortable, healthy and productive conditions for the occupants in economical and energy-efficient buildings.CEDR supports several projects and centers, including:* [Center for the Built Environment (CBE)](http://www.cbe.berkeley.edu/):
* [**Center for Resource Efficient Communities (CREC)**](http://www.crec.berkeley.edu/)
* [**The Green Building Research Center (GBRC)**](http://www.greenbuildings.berkeley.edu/)**:**
* [**International Association for the Study of Traditional Environments (IASTE)**](http://iaste.berkeley.edu/)
 |  |  |
|  | [Center for Resource Efficient Communities (CREC)](https://crec.berkeley.edu/) | CEDR | CED | Buildings, transportation, land use | [Louise Mozingo](https://crec.berkeley.edu/people), DirectorCREC is dedicated to supporting California's climate change and resource efficiency goals through interdisciplinary research, public communication, and professional outreach.CREC conducts cutting edge of climate change mitigation, energy efficiency, and water efficiency. Though focused on California, our work has implications for resource efficient planning everywhere.  | Feasibility Study for Zero Carbon Buildings and CommunitiesIn Collaboration with [UC-Berkeley Department of Civil and Environmental Engineering](https://www.ce.berkeley.edu/); [Fehr and Peers](https://www.fehrandpeers.com/); [Resource Refocus](http://www.resourcerefocus.com/); [Energy Solutions](https://energy-solution.com/); [City of Richmond, CA](http://www.ci.richmond.ca.us/)Phase I of this project assesses the feasibility of building-scale transportation, water, solid waste and operational energy management strategies to supplement existing zero net energy (ZNE) goals to achieve zero carbon building in California. For each of six building types (single-family residential, multi-family residential, large office, strip mall, school, and warehouse), the research team quantified the potential for each identified building-scale strategy to reduce greenhouse gas (GHG) emissions below anticipated future baseline levels and then assembled those strategies as graphical “wedges” in a dynamic spreadsheet tool that can quantify zero carbon building potential for any location in California. Phase II will extend this analysis to include community-scale energy, transportation, water and waste strategies, as potentially implemented in Richmond, CA, to analyze the feasibility of zero carbon communities in California.Evaluation of Transformative Climate Communities Program InvestmentsIn Collaboration with[UCLA Luskin Center for Innovation](https://innovation.luskin.ucla.edu/) and the [California Strategic Growth Council](http://sgc.ca.gov/)CREC is partnering with the UCLA Luskin Center for Innovation to conduct evaluation of the State of California’s landmark Transformative Climate Communities (TCC) program investments in Fresno, Ontario and Watts (Los Angeles). CREC collaborated in the development of the Evaluation Plan that will guide evaluation of these and future rounds of TCC investments, and will continue collaborating with UCLA to conduct a seven-year evaluation of the impacts of these investments on the economy, environment, health, and social well being of the initial three communities receiving TCC monies. |  |
|  | [Center for the Built Environment](https://cbe.berkeley.edu/) | CEDR | CED | Buildings, energy, heat | [Ed Arens](https://cbe.berkeley.edu/about-us/people/edward-arens/), DirectorCBE was founded under the National Science Foundation (NSF) Industry/University Cooperative Research Center program. The Center is supported and guided by a consortium of building industry leaders, including manufacturers, building owners, contractors, architects, engineers, utilities, and government agencies. | [Embodied Carbon in the Built Environment](https://cbe.berkeley.edu/research/embodied-carbon-in-the-built-environment/)Applying life-cycle assessment and other tools to advance the rapid decarbonization of buildings. Funded by the ClimateWorks Foundation. This project will provide design guidance, tools, and knowledge to building industry stakeholders and policymakers to support the rapid and wide adoption of strategies to reduce embodied carbon in the building sector.[Mapping Commercial Building Electrification](https://cbe.berkeley.edu/research/mapping-commercial-building-electrification/)Case studies with a focus on electrification of large existing commercial buildings. The goals of this project are to: 1) develop an interactive map for tracking electrification projects throughout the world; 2) identify common attributes of retrofit and new construction projects; 3) identify best practices and the most salient challenges associated with electrification projects; and 4) facilitate industry outreach and information sharing among design and construction professionals pursuing electrification projects. |  |
| Renee | [Chow](https://ced.berkeley.edu/ced/faculty-staff/renee-chow) | Architecture | CED | Water + Metropolises | [Dean, College of Environmental Design](https://ced.berkeley.edu/ced/faculty-staff/renee-chow)CED includes 3 departments:* [Architecture](file:////Users/bruceriordan/Desktop/WORK/A%20Berkeley%20Climate%20Change%20Network%20/2022%20BCCN%20Umbrella/BCCN%20Master%20List/Urban%20challenges%20of%20the%2021st%20century%20%E2%80%94%20increasing%20porosity%2C%20reducing%20resource%20consumption%2C%20and%20accommodating%20urban%20diversity%20%E2%80%94%20require%20solutions%20that%20are%20locally%20rooted.%20Professor%20Chow%20has%20developed%20analytic%20and%20generative%20design%20tools%20for%20integrating%20urban%20and%20architectural%20systems%20across%20sites%20and%20individual%20buildings.%20These%20tools%20are%20directed%20toward%20encoding%20and%20extending%20local%20conditions%2C%20increasing%20urban%20legibility%20and%20identity%2C%20differentiating%20agency%20and%20time%2C%20embedding%20resource%20strategies%20at%20a%20community%20scale%20and%20facilitating%20design%20collaboration.%20To%20re-shape%20the%20discourse%20about%20the%20forms%20of%20urbanism%20both%20in%20suburbs%20and%20cities%2C%20Professor%20Chow%20has%20written%20Suburban%20Space%3A%20The%20Fabric%20of%20Dwelling%20%282002%29%20and%20Changing%20Chinese%20Cities%3A%20The%20Potentials%20of%20Field%20Urbanism%20%282015%29.)
* [City + Regional Planning](https://ced.berkeley.edu/academics/city-regional-planning/)
* [Landscape Architecture + Environmental Planning](https://ced.berkeley.edu/academics/landscape-architecture-environmental-planning/)
* [Institute of Urban and Regional Development](https://ced.berkeley.edu/iurd)

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. To re-shape the discourse about the forms of urbanism both in suburbs and cities, she has written  | Suburban Space: The Fabric of Dwelling (2002)Changing Chinese Cities: The Potentials of Field Urbanism (2015). |  |
| Stephen | [Collier](https://ced.berkeley.edu/ced/faculty-staff/stephen-colllier) | City and Regional Planning | CED | Governance, water | Collier studies city planning and urban governance from the broad perspective of the critical social science of expertise and expert systems. His work 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. |  | Teaching: CYPLAN 214 – Climate Planning and Urban Systems |
| Elizabeth | [Deakin](https://its.berkeley.edu/people/elizabeth-deakin) | City and Regional Planning, Institute for Transportation Studies | CED  | Transportation, Land Use | Deakin's research focuses on transportation and land use policy and the environmental impacts of transportation.  | Report for the CA Strategic Growth Council (AB 285) (2021)[Evaluation of California State and Regional Transportation Plans and Their Prospects for Attaining State Goals](https://escholarship.org/uc/item/50j4b4r8) (climate, equity, etc.)Paper 1 – History/ How We Got Here   <https://lnkd.in/dHwCcX8W>Paper 2 – State Plans <https://lnkd.in/ddP3fNgx>Paper 3 – MPO Plans <https://lnkd.in/dHcvs5P9>Paper 4 - Funding Issues <https://lnkd.in/dXtv6vsU>Paper 5 – Flexibility for Change <https://lnkd.in/d2YdUyS8> |  |
| Carlos | [Duarte](https://cbe.berkeley.edu/about-us/people/carlos-duarte/) | CEDR, CBE | CED | Buildings, Energy (general), Air Pollution | Duarte’s research interest includes radiant heating and cooling, occupant behavior impact on building energy consumption, and the development of tools that help various building stakeholders.  | He is currently working on a project aimed to standardize semantic descriptions of equipment, control points, and locations along their relationships to make it easier to extract actionable information from the wealth of data that buildings’ systems produce. He is also involved in projects that leverage existing IoT devices and sensor networks to minimize indoor air pollution inside homes. |  |
| Marta  | [Gonzalez](https://ced.berkeley.edu/ced/faculty-staff/marta-gonzalez) | City and Regional Planning | CED | Wildfires and Air PollutionMigration and InfrastructureTransportationStrategies: Land use | With the support of several companies, cities and foundations, Gonzalez’s research team develops computer models to analyze digital traces of information mediated by devices. They process this information to manage the demand in urban infrastructures in relation to energy and mobility. Her recent research uses billions of mobile phone records to understand the appearance of traffic jams and the integration of electric vehicles into the grid, smart meter data records to compare the policy of solar energy adoption and card transactions to identify habits in spending behavior. | [A Data Science Framework to Measure VMT by Mode and Purpose](https://ww2.arb.ca.gov/sites/default/files/2023-11/fixed%20-%20IV.3%20-%20Final%20Report%20-%20UCB%20-%20Measure%20VMT%20by%20Mode%20and%20Purpose%20-%20Contract%2020RD005.pdf) (report for CARB) | Spring: Data Science for Smart Cities; Fall: Human Mobility and Network Science. |
|  | [Green Building Resource Center (GBRC)](http://greenbuildings.berkeley.edu/) | CEDR | CED | Buildings, energy | [Edward Arens](https://cbe.berkeley.edu/about-us/people/edward-arens/), Co-Director [David Lehrer](https://cbe.berkeley.edu/about-us/people/david-lehrer/), Co-Director The GBRC was created to advance and promote sustainable building design and operation on the Berkeley campus and provide resources to aid other universities in similar efforts across California.The primary goals are to:1. Advance the University’s educational mission in green building design.
2. Identify and advance opportunities for green building design and operation on campus.
3. Increase the availability of green building literature that addresses the unique needs of university campuses.
 |  |  |
| Maria Paz | [Gutierrez](https://vcresearch.berkeley.edu/faculty/maria-paz-gutierrez) | Architecture | CED | Buildings | Gutierrez's research focuses on materials invention and cultures across scale lengths in regions under severe water stress and 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](https://bakarfellows.berkeley.edu/profile/maria-paz-gutierrez/) | 2023 UCOP Proposal: Biomass and Living Materials (BALM) for Regenerative Prefabricated Homes |  |
| Zoe | [Hamstead](https://ced.berkeley.edu/ced/faculty-staff/zoe-hamstead) | City and Regional Planning | CED | Climate equity/Environmental justice, Heat, buildings | Hamstead’s work focuses on environmental planning, sustainability, urban governance, and environmental justice, particularly in the context of climate change. Current and past research projects, practice, and service-learning courses include analysis of access to urban parks and ecological amenities, urban resilience scenario development, engaged community solar planning, and climate-exacerbated extreme heat management[Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | In Sensing and Sensitivity, she integrates experiential data on people’s perceptions, subjectivities, capacities, and adaptive practices with objective measures of urban radiative temperature and other thermal indicators to understand residential thermal insecurities. 2023 UCOP Proposal: Enhancing Climate and Housing Security in the cities of Richmond and StocktonHer recent co-edited volume entitled Resilient Urban Futures describes the processes of developing long-range planning capacities for climate resilience in 9 cities across Latin America, the Caribbean, and North America through six years of coordinated participatory scenario workshops.UCOP Proposal: Enhancing Climate and Housing Security in the cities of Richmond and Stockton | Teaching: CYPLAN 290 - Topics in City and Metropolitan Planning: Climate Justice Seminar |
| Kristina | [Hill](https://ced.berkeley.edu/ced/faculty-staff/kristina-hill) | Landscape Architecture & Environmental Planning | CED | Sea Level Rise, Flood, water | Director, [Institute of Urban and Regional Development](https://iurd.berkeley.edu/about/) 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. Current PhD students working on flooding/SLR are Eliza Breder, Emma Lasky and Olivia Won | [Shallow Groundwater Response to Sea Level Rise – 4 Bay Area Counties](https://www.sfei.org/sites/default/files/biblio_files/Shallow%20Groundwater_Sea%20Level%20Rise_Pathways_SFEI_2022_v2_2.pdf) | [Teaching: LDARCH 201 001 - Ecological Factors in Urban Landscape Design (Fall 2023)](https://classes.berkeley.edu/content/2023-fall-ldarch-201-001-lec-001) |
| Charlie | [Huizenga](https://cbe.berkeley.edu/about-us/people/charlie-huizenga/) | CBE | CED | Buildings, energy, heat | Thermal comfort/physiology modelingPersonal comfort systems for energy efficiency and heat stress reductionBuilding energy use and efficiency | [Establishing Maximum Thermal Conditions for California Residential Dwellings](https://cbe.berkeley.edu/wp-content/uploads/2023/04/01-max-thermal-AB209.pdf) |  |
| Nate | Kaufman | Environmental Design and Planning; Sustainable Development | CED | Sea Level Rise, Flooding, Urban Heat, Drought, Wildfire | Kauffman is a Climate Adaptation Planner, consultant and educator specializing in the systematic, strategic and scale-related aspects of climate adaptation, sustainability and environmental governance and justice. His technical work focuses on institutional and organizational roles in resource management related to landscape-based adaptation and the various ecologies (political, material, industrial) linking them in the climate era.He is the Director of UCB's Sustainable Environmental Design program, teaches courses in sustainable design and development and environmental design, planning and site engineering for undergraduate and graduate students alike. | [Climate Change, Adaptation Planning and Institutional Integration: A Literature Review and Conceptual Framework](https://www.mdpi.com/2071-1050/13/19/10708) (2021)[Sediment for Survival: A Strategy for the Resilience of Bay Wetlands in the Lower San Francisco Estuary](https://www.sfei.org/documents/sediment-for-survival) (2021)[Infrastructuring the Imaginary: How Sea-Level Rise Comes to Matter in the San Francisco Bay Area](https://dl.acm.org/doi/10.1145/3290605.3300516) (2019) |  |
| Matt | [Kondolf](https://riverlab.berkeley.edu/index.php/g-mathias-matt-kondolf/) | Landscape Architecture and Planning | CED | Flood, biodiversity | 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. 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.   |  |  |
| Zachary  | [Lamb](https://ced.berkeley.edu/ced/faculty-staff/zachary-lamb) | City and Regional Planning | CED | Water, Flood, Climate Equity/Environmental Justice, Heat, Housing,  | Urban spatial politics, ecological design, and uneven vulnerability to environmental hazards, particularly hazards associated with climate change.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. | UCOP $100M Climate Action LOI lead – January 2023Lau Climate Futures Seed GrantHis 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." Also: "He is conducting research on how the forms of ownership of manufactured home parks shapes residents' vulnerability and resilience to climate change related stresses. | CYPLAN 140 Urban Design: City Building and Place-Making CP241 Research Methods in Environmental DesignCP248 Advanced Urban Design Studio  |
| Sarah | [Lindbergh](https://ced.berkeley.edu/people/sarah-lindbergh) | Landscape Architecture and Environmental PlanningInstitute of Transportation Studies (ITS)/ Soga Research Group | CED | Infrastructure, climate adaptation, coastal flooding, wildfire | Disaster risk reduction and climate adaptation policy. Currently working on airport land use update, wildfire evacuation, and science-diplomacy for energy transition.  | [The Case of Future Flooding of California’s Airports](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4191058) (2022)In progress -With the ITS: Updating California's Airports Land Use Handbook -With Soga Research Group: NSF I-Corps on wildfire evacuation technology-With the National Science-Policy Network: Science-diplomacy program on energy storage solutions for global grid decarbonization |  |
| Elizabeth | [Macdonald](https://vcresearch.berkeley.edu/faculty/elizabeth-macdonald) | City and Regional Planning | CED | Land use | Chair, [Department of Landscape Architecture](https://ced.berkeley.edu/academics/landscape-architecture-environmental-planning/)MacDonald analyzes issues related to urban physical development and the design of the public realm, with a particular focus on livability and environmental sustainability. She investigates how urban places came to be the way they are, analyzes the long-term outcomes of implemented urban design projects and urban plans, and explores how physical form and human behavior interact. Objectives are to provide knowledge that addresses the emerging concerns of urban design and planning practice and to provide that knowledge in a way that is directly useful to practitioners and communities. |  |  |
| Louise | [Mozingo](https://vcresearch.berkeley.edu/faculty/louise-mozingo) | Landscape Architecture & Environmental Planning | CED | Land use | Founding director of CED’s [Center for Resource Efficient Communities](http://www.crec.berkeley.edu/) (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.   | “[Toward sustainable stormwater management: Understanding public appreciation and recognition of urban Low Impact Development (LID) in the San Francisco Bay Area.”](https://doi.org/10.1016/j.jenvman.2021.113716) [“Environmental Regeneration Integrating Soft Mobility and Green Street Networks: A Case Study in the Metropolitan Periphery of Naples.”](https://doi.org/10.3390/su13158195) [“Insisting on Answers.” Black Landscapes Matter.](https://www.upress.virginia.edu/title/5389/)  Walter Hood and Grace Mitchell, eds. University of Virginia Press. 2021. pp. 14-17.[“Challenging anthropocentric stormwater management: Advancing legislation for environmental sustainability in the United States.”](https://doi.org/10.1016/j.wasec.2020.100064) . [“Quality-of-service: toward a standardized rating tool for pedestrian quality of urban streets,”](https://doi.org/10.1080/13574809.2017.1340092) [“Climate co-benefits of green building standards: water, waste and transportation.”](https://doi.org/10.1080/09613218.2016.1204519) [Pastoral Capitalism: A History of Suburban Corporate Landscapes](https://mitpress.mit.edu/9780262526142/pastoral-capitalism/) (MIT Press, 2011)  |  |
| Therese | [Peffer](https://cbe.berkeley.edu/about-us/people/therese-peffer/) | CIEE, CBE | CED | Buildings, energy | Program Director, [CIEE](https://uc-ciee.org/)Researcher @[CBE](https://cbe.berkeley.edu/)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 Eneregy & Climate Change Conference](https://escholarship.org/uc/bie_becc)[Manager, EcoBlock Project](https://ecoblock.berkeley.edu/) |  |
| Paul  | [Raftery](https://cbe.berkeley.edu/about-us/people/paul-raftery/) | CEDR, CBE | CED | Buildings | Raftery’s overarching purpose is to reduce carbon emissions from buildings, primarily focusing on HVAC systems. Deep hands-on experience in a range of areas: HVAC engineering, energy modeling, building automation systems and controls, fault detection and diagnosis, full-scale laboratory experiments, measurement and verification, machine learning, and software development. | Currently a Principal Investigator on two CEC research projects: one on reducing carbon emissions from existing commercial building HVAC systems and one on the low carbon affordable multifamily housing | .  |
| Carolina | [Reid](https://ced.berkeley.edu/people/carolina-reid) | IURD | CED | Housing, land use, flood, wildfire, health, poverty, just transition, buildings, transportation, land use, housing, risk/insurance, governance policy | Carolina specializes in housing and community development, with a specific focus on access to credit, housing and mortgage markets, urban poverty, and racial inequality. . | Current projects with the Terner Center include research to understand the rising costs of construction in California, the benefits of affordable housing for low-income families, and the role of inequalities in mortgage lending post-recession on the racial wealth gap2023 UCOP Proposal: Housing Policy is Climate Policy: Aligning Affordability and Sustainability Goals* Housing, land use policy and intersections with climate
* The role of land use and housing policy in shaping GHG emissions, from embodied carbon to land conversion and transportation implications, including residential mobility
* Building decarbonization, including benefits/risks to renters and low-income communities
* Insurance, housing stock vulnerability to climate hazards
* Linkages between climate and homelessness
 |  |
| Danielle  | [Rivera](https://vcresearch.berkeley.edu/faculty/danielle-rivera) | Landscape Architecture & Environmental Planning | CED | Climate Equity/Environmental Justice; Flood, Extreme Storms; Water, Infrastructure, Ecosystems; Land Use, Governance | 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. 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](https://www.just-environments.org/)[Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | Rural Flood Mitigation (Central Coastal California and South Texas) | LDARCH 254: Disaster Studies Seminar; LA202: LAEP Studio |
| Daniel | [Rodriguez](https://ced.berkeley.edu/ced/faculty-staff/daniel-rodriguez) | City and Regional Planning | CED | Transportation, health, heat, air pollution | Director, Institute for Transportation StudiesExamining the mortality consequences of past extreme heat events; whether greenspaces and air pollution ameliorate or exacerbate those effects; and how mortality will change as heat events increase under global emissions scenarios for the midcentury. | In partnership with a dozen organizations in Latin America andthe US, we received funding for Salurbal-Climate, a multi-year projectfocused on climate change and urban health in Latin America. It aims tocatalyze the creation of a climate change and health research, policy and practice community across the Latin American region that generates,requests, and uses evidence to drive urgent policy and community actions.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.Funded by the Wellcome Trust to work with the World Resources Institute (WRI) and other partners examine how urban heat and mortality if affected by neighborhood characteristics in several Brazilian cities.[City-level impact of extreme temperatures on mortality in Latin America](https://www.nature.com/articles/s41591-022-01872-6) Research Briefing [here](https://www.nature.com/articles/s41591-022-01893-1.epdf?sharing_token=iV0zw7UXB96Hy3DJftaIAtRgN0jAjWel9jnR3ZoTv0N64SnaSnxVBv3UmihNkpKdSRldL2UdqMT1n0vEQfcDXjkNarmsHme9DJXoHawd8ZmnbsPhuH_XLWqM4aaAdBhQLq6XlhIG9iQyhNLyp_iu7uBbYCHii2kid8_qnzn7Ymc%3D)Manuscript results portal [here](https://drexel-uhc.shinyapps.io/MS85/)[Whether SES modifies the relationship between heat and mortality in Latin American cities](https://www.sciencedirect.com/science/article/pii/S0277953622008322) (2023)[Research brief on Green spaces and climate change -- strategies for adaptation and mitigation for Latin American cities](https://drexel.edu/~/media/Files/lac/Briefs/policy-briefs/brief-AREASVERDES-Nov22.ashx?la=en) (2022) |  |
| Stefano | [Schiavon](https://ced.berkeley.edu/ced/faculty-staff/stefano-schiavon) | Architecture, CEDR, Civil and Environmental Engineering | CED | Building, Heat, Cooling | Schiavon’s research is focused on finding ways to reduce energy consumption in buildings while improving occupant health, well-being and productivity. He has researched sustainable architecture, air conditioning and occupant satisfaction. Recent research on use of fans to reduce AC demand and cool non-AC building spaces | [CBE Thermal Comfort Tool](https://comfort.cbe.berkeley.edu/) is a free online tool for thermal comfort calculationsHeat stress — [a Python library for thermal comfort and heat stress calculations](https://www.linkedin.com/pulse/pythermalcomfort-python-package-thermal-comfort-stefano-schiavon/), Building energy use and efficiency — [metrics for the design and assessment of resilient buildings](https://www.linkedin.com/pulse/ventilation-thermal-luminous-autonomy-metrics-design-process-stefano/), [air distribution](https://www.sciencedirect.com/science/article/abs/pii/S0378778819307893), [radiant systems](https://www.sciencedirect.com/science/article/abs/pii/S0378778813003472) | [Building Energy Simulations ARCH 246 001](https://classes.berkeley.edu/content/2023-fall-arch-246-001-sem-001)[Arch 140 Energy and Environment](https://classes.berkeley.edu/content/2024-spring-arch-140-001-lec-001) |
| Neyran | [Turan](https://vcresearch.berkeley.edu/faculty/neyran-turan) | Architecture | CED | Buildings | Turan's work draws on the relationship between geography and design to highlight their interaction for new aesthetic and political trajectories within architecture and urbanism. Her current work speculates on the role of architectural representation in relation to climate change and on new conceptions of the ordinary and the familiar in architecture.  |  |  |
| Hui | [Zhang](https://cbe.berkeley.edu/about-us/people/hui-zhang/) | CEDR, CBE | CED | Buildings, heat | Her work focuses on human thermal comfort in complex environments, and comfort modeling. How to reduce heat stress in extreme conditions using fans and evaporative cooling. | * Working with Ronnen L at LBNL on DOE-funded “Resilient Cooling” project
* Fans for resilient cooling (can be used higher than recommended temp limit)
 |  |
| Nitash | [Balsara](https://chemistry.berkeley.edu/faculty/cbe/balsara) | Chemical and Biomolecular Engineering | Chemistry | Energy, storage | The lithium-ion battery is a remarkable device. It is the first time humanity has access to a reusable box for storing and using energy. We work on the development of **polymer electrolytes** that enable the rapid transport of lithium ions between the battery electrodes.  | [Blue Current](https://bluecurrent.com/) is a battery start-up that Balsara cofounded. "Blue Current has worked in stealth mode since 2016....The company is betting on solid-state silicon as a superior technology to batteries that rely on lithium and liquid electrolytes, which are highly flammable." - The New York Times DealBook |  |
| Kristie | [Boering](https://chemistry.berkeley.edu/faculty/chem/boering) | Chemistry, EPS | Chemistry | Climate Modeling | Physical and Analytical Chemistry; Atmospheric Chemistry and Transport -- Chemistry and mass transport in Earth's and extraterrestrial atmospheres are studied through kinetics and photochemistry lab experiments, modeling, and observations from high-altitude aircraft and balloons. |  |  |
| Jonas | Borgel | Chemistry | Chemistry | Methane | Post-Doc in the Long Lab | [Capturing Wellhead Gasses for a Profit and a Cleaner Environment](https://vcresearch.berkeley.edu/news/capturing-wellhead-gases-profit-and-cleaner-environment) |  |
| Christopher | [Chang](https://chemistry.berkeley.edu/faculty/chem/chris-chang) | Chemistry, Molecular & Cell Biology | Chemistry | Carbon removal and storage  | Our work in artificial photosynthesis addresses global challenges in climate change. We use design concepts from biology to develop molecular electrocatalysts for carbon dioxide capture and conversion and nitrogen/phosphorus cycling.  |  |  |
| Doug | [Clark](https://chemistry.berkeley.edu/faculty/cbe/clark) |  | Chemistry | Carbon removal and storage, energy | [Doug Clark, Dean, College of Chemistry](https://chemistry.berkeley.edu/faculty/cbe/clark)The College of Chemistry is comprised of:* [The Department of Chemistry](https://chemistry.berkeley.edu/chem)
* [The Department of Chemical and Biomolecular Engineering](https://chemistry.berkeley.edu/cbe)

Both disciplines provide the opportunity and means for addressing major scientific and technological challenges, such as climate change, increasing the world's food supply, synthesizing new materials, and discovering and delivering important drugs. Research: Clark's research is in the field of biochemical engineering, with particular emphasis on enzyme technology, biomaterials, and bioenergy. Current projects include the structural characterization and activation of enzymes in non-aqueous media, the development of metabolic biochips for high-throughput catalysis and bioactivity screening, protein design and assembly for the development of advanced biomaterials, and enhanced conversion of lignocellulosic feedstocks to biofuels. |  |  |
| Ronald  | [Cohen](https://chemistry.berkeley.edu/faculty/chem/cohen) | Chemistry, EPS, CDSS | Chemistry | Air pollution, GHG emissions, carbon removal | Cohen’s research is focused on understanding basic processes that impact air quality and climate. Especially mapping atmospheric composition using ground and spaced based sensors. | [Using Berkeley technology, Glasgow debuts new GHG monitoring network](https://chemistry.berkeley.edu/news/using-berkeley-technology-glasgow-debuts-new-ghg-monitoring-network)[BEACO2N](http://beacon.berkeley.edu/about/) is a strategy for understanding greenhouse gases (GHGs) and air quality at street level in near real time, giving pedestrians, companies, and policy-makers unique insight into their GHG emissions and air quality experiences. Instead of using a small number of highly sensitive instruments to measure GHGs and air quality, we blanket interesting locations with a network of sensors - called 'nodes' - approximately 1 mile (2km) apart from each other. Although our individual nodes are less precise than the highly sensitive traditional sensors, when working as part of a network, our nodes create a highly detailed map of CO2 and pollutants in our air. Our nodes are sampling the air for 6 gases and also aerosol in the same locations, every minute of the day. The data provides a clear route to evaluating the effectiveness of local and regional efforts to reduce GHG emissions, improve air quality, improve environmental equity and reduce the detrimental effects of emissions on public health.[Deploy a National Network of Air-Pollution and CO2 Sensors in 300 American Cities by 2030](https://fas.org/publication/deploy-a-national-network-of-air-pollution-and-co2-sensors-in-300-american-cities-by-2030/) |  |
| Jeffrey | [Long](https://chemistry.berkeley.edu/faculty/chem/long) | Chemical & Biomolecular Engineering | Chemistry | Carbon removal and storage | A major focus in the [Long Group](http://alchemy.cchem.berkeley.edu/home/) is the design and study of metal–organic frameworks—porous, inorganic solids built of metal nodes connected by organic linkers—for applications ranging from gas storage and molecular separations to catalysis and battery applications. In particular, they discovered MOFs that capture CO2 through a unique cooperative mechanism, enabling its low-energy removal from a variety of gas streams, including flue gases, natural gas, biogas, and air. These materials are now being developed for large-scale deployment by the start-up company Mosaic Materials. Using machine learning in MOF development with the Gonzalez Group in EECS. | 2023 UCOP Proposal: The Early-Stage Materials Testing Laboratory for Accelerating Decarbonization Materials DeploymentBerkeley Institute for Decarbonization Materials |  |
| Haiyan | [Mao](https://www.researchgate.net/profile/Haiyan-Mao-4) | Chemistry | Chemistry | Carbon removal and storage |  | [Berkeley scientists develop cheap and easy carbon capture and storage using Melamine (Aug 2022)](https://interestingengineering.com/innovation/berkeley-scientists-develop-carbon-capture-storage)Lead Author: [A scalable solid-state nanoporous network with atomic-level interaction design for carbon dioxide capture](https://www.researchgate.net/publication/362456438_A_scalable_solid-state_nanoporous_network_with_atomic-level_interaction_design_for_carbon_dioxide_capture) (Aug 2022) |  |
| Ali | [Mesbah](https://chemistry.berkeley.edu/faculty/cbe/mesbah) | Chemical and Biomolecular Engineering | Chemistry | Food/Agriculture | Using ML, waste | 2023 UCOP Proposal: Sustainable Plasma Processing of Biowaste to Reduce Adverse Climate Impacts of Fertilizer Production |  |
| Jeffrey | [Reimer](https://chemistry.berkeley.edu/faculty/cbe/reimer) | Chemical & Biomolecular Engineering | Chemistry | Carbon removal and storage | The goal of Reimer’s research is to generate new knowledge that will deliver environmental protection, human sustainability, and fundamental scientific insights via materials chemistry, physics, and engineering. Reimer’s most recent scholarly works span a range of materials studies, including the structure and proprieties of metal organic frameworks for carbon capture and electrical and optical control of nuclear polarization in semiconductors. |  |  |
| Omar | [Yaghi](http://yaghi.berkeley.edu/) | Chemistry | Chemistry | Carbon removal and storage | MOFs, COFs, and ZIFs[Co-Director and Chief Scientist Bakar Institute of Digital Materials for the Planet (BIDMaP)](https://bidmap.berkeley.edu/)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 have in achieving clean air, clean energy, and clean water. | 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](https://pubs.acs.org/doi/10.1021/acscentsci.3c01087)[A GPT-4 reticular chemist for MOF discovery.](https://arxiv.org/abs/2306.14915) [Symmetry-informed geometric representation for molecules, proteins, and crystalline materials.](https://arxiv.org/abs/2306.09375) [ChatGPT Chemistry Assistant for text mining and prediction of MOF synthesis.](https://pubs.acs.org/doi/10.1021/jacs.3c05819) |   |
| Peidong | [Yang](http://nanowires.berkeley.edu/) | Chemistry | Chemistry | Carbon removal and storage | The Yang research group is developing materials and systems for the purpose of fixing CO2 using sunlight.* *Solar-driven CO2 fixation*
* *Artificial photosynthesis*
* [Nanowires for Solar to Fuel Conversion](http://nanowires.berkeley.edu/index.php/nanowire-for-solar-to-fuel-conversion/)
 | [Liquid Sunlight: The Evolution of Photosynthetic Biohybrids](https://chemistry.berkeley.edu/news/liquid-sunlight-evolution-photosynthetic-biohybrids) |  |
|  | [Berkeley Center for Green Chemistry](https://bcgc.berkeley.edu/) | Chemistry | Chemistry, Public Health | Health, Materials | [Megan Arnett, Executive Director](https://communities.acs.org/t5/GCI-Nexus-Blog/Looking-Forward-The-Next-Chapter-for-the-Berkeley-Center-for/ba-p/86731)The mission of the Berkeley Center for Green Chemistry is to bring about a generational transformation toward the design and use of inherently safer chemicals and materials. Embedding the principles of green chemistry into science, markets and public policy will provide the foundation for safeguarding human health and ecosystems and provide a cornerstone for a sustainable, clean energy economy. BCGC collaborates with public and private organizations, offering training and technical advice, advocating for safer products and informed policies, the placement of graduates in the workforce, and informal instruction. | d |  |
| Helen | [Fitzmaurice](https://corelab.berkeley.edu/2022/11/09/helen-fitzmaurice/) |  | Education | Education, Awareness | Helen is a postdoctoral scholar with the CoRE lab. She holds a PhD in Earth and Planetary Science and taught HS Physics and Chemistry. Her scientific focus is quantifying neighborhood-scale emissions of CO2 and PM2.5. As a high school teacher, Helen led her students in an air monitoring campaign in a successful grassroots effort to halt the installation of a crude oil terminal in the neighborhood in which many of her students lived. She has led the OTACA teacher professional collaboration for three years. | 2023 UCOP Proposal: Supporting Teachers in Implementing Justice-Centered Climate Change Pedagogy FUNDED |  |
| Michael | [Ranney](https://vcresearch.berkeley.edu/faculty/michael-ranney) | Education, Psychology, Cognitive Science | Education | Education, Public Awareness  | Ranney's research explores the nature of explanation and understanding, in both formal and informal domains. His work is intended to foster the incorporation of challenging information (e.g., on global climate change).  | Ranney and students/colleagues have produced the website [“How Global Warming Works,”](https://www.howglobalwarmingworks.org/) that features a series of 5-minute-or-shorter interventions/instructions, including videos that explain the scientific basis of climate change. [Video Interview with Ranney about his work and the movie The 12th Hour.”](https://www.facebook.com/12thhourfilm/videos/567427747960365) [Frontiers in Communication](https://www.frontiersin.org/articles/10.3389/fcomm.2019.00007/full). [For more such papers](https://convinceme.com/publications.html#rtmd), For public-outreach site, visit [How Global Warming Works](http://www.howglobalwarmingworks.org/). [Explanatory refutation texts increase epistemic trust in climate scientists and anthropogenic global warming acceptance](https://convinceme.com/downloads/papers/SenthilkumaranVelauthamAndRanney-ICLS-2023-Reprint.pdf).  | Michael |
| Michelle | [Wilkerson](https://vcresearch.berkeley.edu/faculty/michelle-wilkerson) | K-12 math and science | Education | Education/Awareness | Michelle Wilkerson studies how young people learn with and about computational representations – things like computer simulations, data visualizations, or interactive graphics. Her research explores how young students learn to make sense and make use of these tools, and how to support them through the design of software, curricula, and teacher professional learning experiencesWilkerson leads the Computational Representations in Education (CoRE) research group, .  |  |  |
| Michelle | Young |  | Education | Education | [Michelle D. Young, Dean, School of Education](https://bse.berkeley.edu/message-dean-michelle-d-young)[MA and PhD Programs](https://bse.berkeley.edu/what-we-do/maphd-program)[Professional Programs](https://bse.berkeley.edu/academics/professional-programs)[Leadership Programs](https://bse.berkeley.edu/leadership)[Undergraduate Programs](https://bse.berkeley.edu/academics/undergraduate-programs)[Additional Degree Programs](https://bse.berkeley.edu/academics/additional-degree-programs) | New undergraduate major in Education Sciences coming Fall 2024. |  |
| Alice | [Agogino](https://me.berkeley.edu/people/alice-m-agogino/) | Mechanical Engineering | Engineering | Food, Energy, Water, Wildfires, methane | Intelligent learning systems, informational retrieval and data mining. | NSF INCLUDES Alliance: Broadening Career Pathways in Food, Energy, and Water Systems with and within Native American Communities (Native FEWS Alliance), $8.1M coop agreement, 8/2021Applications: Early detection of wildland fires; Early detection, characterization and remediation of methane in industrial plants. |  |
| Joshua | [Apte](https://ce.berkeley.edu/people/faculty/jsapte) | Civil and Environmental Engineering | Engineering | Air Pollution, wildfireClimate equity/Environmental justice | Research interests:* Air pollution
* Atmospheric aerosols
* Exposure assessment
* Risk assessment
* Environmental justice
* Environmental engineering
* Environmental sensors
* Climate change mitigation
* Environmental issues in developing countries
 | [“Inequitable Exposure to Air Pollution from Vehicles in California” (2021)](https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles-california-2019)[How Much Wildfire Smoke is Infiltrating our Homes](https://publichealth.berkeley.edu/news-media/research-highlights/how-much-wildfire-smoke-is-infiltrating-our-homes/) (2021)2023 UCOP Proposal: Safe Air for All Americans | [Exposure Assessment and Control PBHLTH 270A 001](https://classes.berkeley.edu/content/2023-fall-pbhlth-270a-001-lec-001) |
| Adam | [Arkin](https://vcresearch.berkeley.edu/faculty/adam-arkin) | BioEngineering | Engineering | Food/Agriculture, Ecosystems/Biodiversity,  | Studying systems and Synthetic Biology, Environmental Microbiology of Bacteria and Viruses, bioenergy, Biomedicine, Bioremediation, space  | Director, [Center for the Utilization of Biological Engineering in Space](https://cubes.space/)CUBES seeks to develop low energy/mass, autotrophic and regenerable in situ resource utilizing close-loop biomanufacturing processes for production of food, medicine and incidental building materials for operation in extreme, supply-chain limited environments. Lead Scientist, [ENIGMA](https://enigma.lbl.gov/)ENIGMA is a collaborative program to develop a predictive and mechanistic understanding of terrestrial subsurface bioprocesses for the control of major mineral cycles, fate of contaminants and restoration of sediment properties under the action of microbial communities.Lead PI, [DOE Systems Biology Knowledgebase](https://www.kbase.us/)The KBase is a collaborative, open and extensible platform for the sharing of complex heterogeneous data, tools and analyses linked to the genomes of microbes, plants and other organisms of environmental and industrial interest.  |  |
| Adda | [Athanasopoulos-Zekkos](https://vcresearch.berkeley.edu/faculty/adda-athanasopoulos-zekkos) | Civil and Environmental Engineering | Engineering | Infrastructure, Water | Assessing and mitigating the impact of multi-hazard stressors on geotechnical 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.  | [When Extreme Events Area No Longer Rare: Lessons from Hurricane Ida](https://vcresearch.berkeley.edu/news/when-extreme-events-are-no-longer-rare-lessons-hurricane-ida)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.  |  |
| Roger | [Bales](https://ce.berkeley.edu/people/faculty/bales) | Civil and Environmental Engineering | Engineering | Water, Ecosystems/Biodiversity | 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. |  |  |
| Alex | [Bayen](https://bayen.berkeley.edu/alex-bayen) | Electrical Engineering and Computer Science | Engineering | Transportation, water | Bayen’s general area of research lies at the intersection of control, optimization, and machine learning. Current applications include mobile robotics and transportation, including reinforcement learning for traffic to reduce energy use and GHGs.[Berkeley Mobile Sensing Lab](https://bayen.berkeley.edu/home)Announced as new Director of CITRIS DEC 17, 2023 | [Self-Driving Trucks](https://bayen.berkeley.edu/research/self-driving-trucks) |  |
|  | [Berkeley Fire Research Lab](https://firelab.berkeley.edu/) |  | Engineering | Wildfire | The Berkeley Fire Research Lab, led by [Michael J. Gollner](https://me.berkeley.edu/people/michael-gollner/) is broadly interested in fire science problems, utilizing experiments and combustion and fluid dynamics theory to solve problems. The work is centered around the fundamental physics that governs fire phenomena, applying knowledge from fluid mechanics, heat transfer and combustion to solve problems related to fire safety, climate and public health. We have also applied numerical modeling to understand experiments and investigate fire risk and spread.The lab is part of the [Department of Mechanical Engineering](http://me.berkeley.edu) and is closely affiliated with the [Combustion and Fire Processes Laboratory](http://cfp.berkeley.edu) led by [Carlos Fernandez-Pello](https://me.berkeley.edu/people/carlos-fernandez-pello/). It is also affiliated with the Berkeley [Fire Research Group](https://frg.berkeley.edu) and the [Designated Emphasis in Energy Science and Technology (DEEST)](https://me.berkeley.edu/graduate/special-programs/deest/) | [Gollner testifies to House Oversight Committee (2022) on wildfire policy and mitigation.](https://firelab.berkeley.edu/2022/03/professor-gollner-testifies-to-congress/) | . |
|  | [Berkeley Sensor and Actuator Center](https://bsac.berkeley.edu/) |  | Engineering | Food/agriculture, air pollution, carbon removal and storage | [John Candelaria, Executive Director](https://bsac.berkeley.edu/people/jonathan-candelaria)This Industry/University Cooperative Research Center (I/UCRC) is devoted to interdisciplinary engineering research on micro- and nano-scale sensors, moving mechanical elements, microfluidics, materials, and processes that take advantage of progress made in integrated-circuit, biological, and polymer technologies. BSAC includes a multi-disciplinary research team of 100+ graduate students and post-doctoral researchers led by more than ten BSAC Directors from the engineering faculties of electrical, mechanical, and bio engineering at UC Berkeley and UC Davis.  |  |  |
|  | [Berkeley Water Center](https://bwc.berkeley.edu/) |  | Engineering | Water | [David Sedlak](https://bwc.berkeley.edu/staff/), Faculty DirectorThe 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.BWC manages the [Berkeley Water Portal](https://waterportal.berkeley.edu/) with links to courses, research, funding and more.  | [Water for All – Global Strategies for a Changing Climate](https://www.amazon.com/Water-All-Solutions-Changing-Climate/dp/0300256930) (published 2023)Berkeley Climate Change Network [podcast](https://podcasters.spotify.com/pod/show/bruce-riordan/episodes/The-BCCN-Podcast---David-Sedlak-e2d8jjk) with Sedlak about Water for All |  |
| Maya | [Carrasquillo](https://ce.berkeley.edu/people/faculty/mcarrasquillo) | Civil and Environmental Engineering | Engineering | Water, Climate equity/Environmental justice | 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. 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. Principal Investigator of J.E.D.I. (L)ab. [Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) |  |  |
| Fotini | [Chow](https://ce.berkeley.edu/people/faculty/chow) | Civil and Environmental Engineering | Engineering | Climate Modeling, wildfire, wind  | Chow’s [research](https://chow.ce.berkeley.edu/research/) focuses on developing analytical and computational methods that help quantify climate change mitigation strategies, air quality effects, and cloud representation and feedback in regional climate models. Her current research projects include studies of wind turbine interactions with boundary layer dynamics over steep terrain, urban dispersion modeling, improved numerical turbulence techniques, topography representation, and grid nesting.  |  |  |
|  | [Disaster Lab (D-Lab)](https://disasterlab.berkeley.edu/) |  | Engineering | All | The D Lab **Develops and Validates Practical Innovations for Disaster Preparation, Response, and Recovery.** | UCOP Climate Action I&E funding for DLab 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. |  |
|  | [Fire Research Group](https://frg.berkeley.edu/) |  | Engineering | Wildfire | [Tarek Zohdi](https://me.berkeley.edu/people/tarek-i-zohdi/), DirectorConsistent with UC’s mission to serve the best interests of the State, the Fire Research Group is working toward the development and implementation of more effective technological solutions for uncontrolled fires in wildlands, cities and industrial complexes. It is our belief that by engaging a broad range of talent across the State of California and beyond, we can innovate new approaches to address this challenge for the State of California, the nation and the world. |  |  |
| Cynthia | [Gerlein-Safdi](https://sites.google.com/berkeley.edu/gerlein-safdi/people/cynthia-gerlein-safdi-pi?authuser=0) | Civil and Environmental Engineering | Engineering | Water, methane, ecosystems/biodiversity | [Water and Carbon Lab](https://sites.google.com/berkeley.edu/gerlein-safdi/)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. |  |
| Joseph  | [Gonzalez](https://www2.eecs.berkeley.edu/Faculty/Homepages/jegonzal.html) | Electrical Engineering and Computer Sciences | Engineering |  | Gonzalez is a founding member of the [UC Berkeley RISE Lab.](https://rise.cs.berkeley.edu/) – Real-time Intelligent Secure Explainable Systems [Berkeley Artificial Intelligence Research Lab (BAIR)](http://bair.berkeley.edu/)Research interests are at the intersection of machine learning and data systems and his students are working on a wide range of projects including: real-time model serving; machine learning life-cycle management; accelerated deep learning for computer vision; new cryptographic primitives for federated learning; frameworks for deep reinforcement learning and parameter tuning; model based cloud resource management; software platforms for autonomous vehicles research; computational efficient representations for asynchronous time series; smf frameworks for graph query processing. | Using ML with Jeff Long (Chemistry) on MOF development. |  |
| Grace | [Gu](https://me.berkeley.edu/people/grace-x-gu/) | Mechanical Engineering | Engineering | Transportation, hydrogen |  | 2023 UCOP Proposal: Development of high-pressure hydrogen storage solution for fuel cells used in zero-emission aircraft |  |
| Robert | [Harley](https://ce.berkeley.edu/people/faculty/harley) | Civil and Environmental Engineering | Engineering | Air pollution | Air quality; assessment and control of gasoline and diesel engine emissions; sustainable transportation; photochemical modeling of urban/regional air quality | [Responses of Photochemical Air Pollution in California's San Joaquin Valley to Spatially and Temporally Resolved Changes in Precursor Emissions](http://dx.doi.org/10.1021/acs.est.1c07011). | [Air Quality Engineering – CIVENG 218A](https://classes.berkeley.edu/content/2023-fall-civeng-218a-001-lec-001) |
| Arpad | [Horvath](https://ce.berkeley.edu/people/faculty/horvath) | Civil and Environmental Engineering | Engineering | Infrastructure, water, transportation  | Head of the [Energy, Civil Infrastructure and Climate](https://ce.berkeley.edu/programs/ecic) Graduate Program, Director of the [Transportation Sustainability Research Center](https://tsrc.berkeley.edu), and Director of the [Engineering and Business for Sustainability Certificate Program](http://sustainable-engineering.berkeley.edu).Horvath’s research focuses on life-cycle environmental and economic assessment of 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. | 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)CE11 Engineered Systems and Sustainability (Spring 2024) |
| Cesunica | [Ivey](https://ce.berkeley.edu/people/faculty/iveyc) | Civil and Environmental Engineering | Engineering | Climate Equity/Environmental Justice, air pollution | Ivey’s research centers on atmospheric modeling, source apportionment, data assimilation, exposure monitoring, and environmental justice applications. PI of the [Air Quality Modeling and Exposure Lab](https://www.iveylab.com/)She works in partnership with community organizations across California to prevent over-industrialization of already overburdened neighborhoods. [Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | *Journal of Aerosol Science*:["A Data-Driven Approach For Characterizing Community Scale Air Pollution Exposure Disparities In Inland Southern California"](https://www.sciencedirect.com/science/article/abs/pii/S0021850220301890?via%3Dihub) (Science Direct)Ivey recently served on a panel at a public hearing for the congressional Environmental Justice for All Act, sponsored by the U.S. Democratic Natural Resources Committee to support the regulation of cumulative burdens in impacted communities.  | [CE 190-2](https://classes.berkeley.edu/content/2023-fall-civeng-190-002-lec-002.) is taught Fall 2023 The course focuses on equity in environmental engineering |
| Tsu-Jae King | [Liu](https://engineering.berkeley.edu/about/leadership-team/meet-the-dean/) |  | Engineering | Water, buildings, energy | [Tsu-Jae King Liu, Dean, College of Engineering](https://engineering.berkeley.edu/about/leadership-team/meet-the-dean/)College of Engineering includes 7 departments:* Bioengineering
* Industrial Engineering and Operations Research
* Nuclear Engineering
* Civil and Environmental Engineering
* Materials Science and Engineering
* Electrical Engineering and Computer Sciences
* Mechanical Engineering

Research: Dean [Tsu-Jae King Liu](https://www2.eecs.berkeley.edu/Faculty/Homepages/king.html) is internationally recognized in academia and industry for her innovations in semiconductor devices and technology. |  |  |
| Philip | [Marcus](https://vcresearch.berkeley.edu/faculty/philip-marcus) | Mechanical Engineering | Engineering | Water | Marcus' areas of research focus on computational fluid dynamics as applied to turbulent, geophysical, and astrophysical flows. He is especially interested in water desalination, strongly rotating and/or stratified flows, vortices and vortex dynamics and their applications in engineering, atmospheres, oceans, and astrophysics. | UCOP $100M Climate Action LOI lead – January 2023 |  |
| Baoxia | [Mi](https://ce.berkeley.edu/people/faculty/mi) | Civil and Environmental Engineering | Engineering | Water, Health | 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. |  |  |
| Mohammad | [Mofrad](https://me.berkeley.edu/people/mohammad-r-k-mofrad/) | Mechanical Engineering | Engineering | Health, Wildfire | Multiscale Biomechanics of Cardiovascular Disease and Brain Injury; Molecular and Cellular Mechanobiology; Mechanics of Integrin-Mediated Focal Adhesions; Mechanics of the Nuclear Pore and Nucleocytoplasmic Transport | PI for UCOP $100M Climate Action LOI lead — Developing Predictive Models to Mitigate Health Impacts of Smoke Downwind of Wildfire |  |
| Scott | [Moura](https://ce.berkeley.edu/people/faculty/moura) | Civil and Environmental Engineering | Engineering | Energy, Transportation | Modeling, estimation, and control of energy systems: advanced batteries, vehicle electrification, distributed energy resources. PI for the [ecal Lab.](https://ecal.berkeley.edu/)Across the world, communities are rapidly urbanizing. These growing cities are characterized by a tightly woven infrastructure where mobility and energy networks are diversifying and merging. For example, electrified transportation creates unique mobility options and constraints while simultaneously imposing new energy demands and storage opportunities. Maximizing the efficiency of such interconnected systems requires strong fundamental science for modeling, estimation, and control, contextualized within energy and mobility applications. |  |  |
| Mark | [Mueller](https://hiperlab.berkeley.edu/members/mark-w-mueller/) | Mechanical Engineering | Engineering | Wildfire | At the High Performance Robotics Laboratory (HiPeRLab), our research focuses on increasing the capabilities of aerial robotics systems. We are motivated, in part, by understanding how aerial robots can be used to respond to the climate crisis. Specific examples include creating robots that are capable of operating through forest fires for data collection or understanding the tradeoffs when doing aerial sampling in-flight.  |  | . |
| Kristin | Persson | Materials Science and Engineering | Engineering | Energy | [Materials Project](https://materialsproject.org/about), DirectorMaterials design for lithium-ion Batteries, multivalent batteries, organic electrolytes, polar materials, datamining of materials properties for energy applications The Persson Group studies the physics and chemistry of materials using atomistic computational methods and high-performance computing technology, particularly for clean energy production and storage applications. |  |  |
| Per | [Peterson](https://vcresearch.berkeley.edu/faculty/per-peterson) | Nuclear Engineering | Engineering | Energy | Peterson's research focuses on problems in energy and environmental systems, including high-temperature reactors, high level nuclear waste processing, and nuclear materials management. |  |  |
| Thomas | [Schenkel](https://nuc.berkeley.edu/people/thomas-schenkel/) | Nuclear Engineering | Engineering | Energy |  | 2023 UCOP Proposal: Volumetric Non-destructive Carbon-in-soil Measurements |  |
| David  | [Sedlak](https://ce.berkeley.edu/people/faculty/sedlak) | Civil and Environmental Engineering | Engineering | Water | Director, [Berkeley Water Center](https://bwc.berkeley.edu/)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](http://renuwit.org/)), [National Alliance for Water Innovation](https://www.nawihub.org). Author of "[Water 4.0](http://www.water4point0.com/)", [Water for All – Global Strategies for a Changing Climate](https://www.amazon.com/Water-All-Solutions-Changing-Climate/dp/0300256930) (published 2023)Berkeley Climate Change Network [podcast](https://podcasters.spotify.com/pod/show/bruce-riordan/episodes/The-BCCN-Podcast---David-Sedlak-e2d8jjk) with Sedlak about Water for All |  |
| Susan  | [Shaheen](https://ce.berkeley.edu/people/faculty/shaheen) | Civil and Environmental Engineering Institute for Transportation StrategiesTransportation Sustainability Research Center | Engineering | Transportation  | Co-Director, [Transportation Sustainability Research Center](https://tsrc.berkeley.edu/)Policy and behavioral research as it relates to the adoption of emerging transportation technologies and innovative services including carsharing (short-term vehicle access), bikesharing (short-term bicycle access), ridesharing, transportation network companies, and smart parking management, as well as user acceptance of alternative fuel vehicles and automation. Her work highlights social equity and justice, particularly in the context of transportation infrastructure and mobility services.  | California Air Resources Board (CARB) member |  |
| Kenichi | [Soga](https://ce.berkeley.edu/people/faculty/soga) | Civil and Environmental Engineering | Engineering | Buildings, water | 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.  | Proposal for Smart Infrastructure Center – a holistic collaborative environment with the water industry for infrastructure, water supply, climate change, water and wastewater operations, and emergency/community preparedness.UCOP $100M Climate Action LOI lead – January 2023 |  |
| Mark | [Stacey](https://ce.berkeley.edu/people/faculty/stacey) | Civil and Environmental Engineering | Engineering | Sea Level Rise, Flood | Professor, Civil & Environmental EngineeringMathematical analyses of interesting coastal and estuarine challenges, and the policies that govern them.Environmental fluid mechanics, transport and mixing in stratified flows, dynamics of estuaries, lakes and the coastal ocean, interdisciplinary applications of environmental fluid mechanics  | [Resilient Infrastructure as Seas Rise (RISeR SF Bay)](https://www.criberkeley.org/projects/resilient-infrastructure-as-seas-rise-riser-sf-bay) deals with sea level rise, transportation mobility and governance for the Bay Area. | [Climate Change Adaptation](https://classes.berkeley.edu/content/2023-fall-civeng-108-001-lec-001) (Fall 2023, undergrads)[Climate Resilient Infrastructure](https://classes.berkeley.edu/content/2023-fall-civeng-290-003-lec-003) (Fall 2023, grads) |
|  | [USDA-NIFA AI Institute for Next Generation Food Systems (AIFS)](https://aifs.ucdavis.edu/) |  | Engineering | Food/Agriculture, water | [Tarek Zohdi](https://me.berkeley.edu/people/tarek-i-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.Berkeley has extensive expertise in simulation technologies, which can be applied to create virtual food systems that will leverage the monumental leaps in high-performance computer simulation, AI and machine learning. This new effort will be centered around the concept of the ‘Digital Twins’ of physical reality — digital replicas of complex food systems that can then be inexpensively and safely manipulated, improved and optimized in a virtual setting. | 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. |   |
| Evan | Variano | Civil and Environmental Engineering | Engineering | Water, energy | Environmental fluid dynamics, novel imaging for flow measurements, mixing and transport by turbulence, flow and transport in wetlands, hydrodynamic effects on aquatic organisms, aerosol transport, inquiry education, inclusive education, and mental wellness. | 2023 UCOP Proposal: Empowering California to Access Water Savings from Floating Solar |  Environmental Fluid Mechanics CE200B Spring 2024 |
| Sascha | [von Meier](https://www2.eecs.berkeley.edu/Faculty/Homepages/vonmeier.html) | Electrical Engineering & Computer Science | Engineering | Energy | PI, [Eco Block Project](https://ecoblock.berkeley.edu/)Director in CIEE’s Electric Grid program area, focused on power distribution systems, Smart Grid issues, and the integration of distributed and intermittent generation. Her current research projects center on the use of high-precision micro-synchrophasor measurements for situational awareness, diagnostics and control applications in distribution grids.  |  | Von Meier teaches a course on Electric Power Systems.  |
| Joan | [Walker](https://ce.berkeley.edu/people/faculty/walker) | Civil and Environmental Engineering | Engineering | Transportation  | Walker’s research focus is behavioral modeling, with an expertise in discrete choice analysis and travel behavior. She works to improve the models that are used for transportation planning, policy, and operations.  | [Quantified Traveler: Travel Feedback Meets the Cloud to Change Behavior](https://www.accessmagazine.org/wp-content/uploads/sites/7/2015/11/access47.1sengupta.pdf) |  |
| Junqiao | [Wu](https://wu.mse.berkeley.edu/) | Materials Science and Engineering | Engineering | Energy, buildings | The Wu group at UC Berkeley / LBNL is focused on manipulation and optimization of thermal energy at large scales, such as in buildings. We develop material coatings that keep a surface cool in the summer and warm in the winter at zero consumption of electricity and natural gas. | [New smart roof coating enables year-round energy savings.](https://newscenter.lbl.gov/2021/12/16/roof-year-round-energy-savings/)  |  |
|  | [Berkeley Blockchain Xcelerator](https://www.f6s.com/berkeleyblockchainxcelerator/about) |  | Engineering, Haas | All | [Jocelyn Weber Phipps, Director](https://www.f6s.com/member/jocelynweberphipps)Non-dilutive, world-class blockchain / crypto accelerator open to global teams, launched in Jan 2019 Member of “climate incubators” coordinating group on campus | Looking for companies: * In [Cryptocurrency](https://www.f6s.com/programs?skills%5b%5d=103408&sort=open), [Blockchain](https://www.f6s.com/programs?skills%5b%5d=150516&sort=open)
* Located in [Africa](https://www.f6s.com/programs?regions%5b%5d=5&sort=open), [Antarctica](https://www.f6s.com/programs?regions%5b%5d=10&sort=open), [Asia](https://www.f6s.com/programs?regions%5b%5d=4&sort=open), [Australia/NZ](https://www.f6s.com/programs?regions%5b%5d=6&sort=open), [Caribbean](https://www.f6s.com/programs?regions%5b%5d=8&sort=open), [Eastern Europe](https://www.f6s.com/programs?regions%5b%5d=9&sort=open), [Europe](https://www.f6s.com/programs?regions%5b%5d=1&sort=open), [Middle East](https://www.f6s.com/programs?regions%5b%5d=7&sort=open), [North America](https://www.f6s.com/programs?regions%5b%5d=2&sort=open), [South America](https://www.f6s.com/programs?regions%5b%5d=3&sort=open)

Selected teams to receive -- Access to unparalleled technical expertise and talent from the student to faculty level- Hands-on mentorship from Silicon Valley veterans and blockchain industry leaders (see our full list of mentors [here](http://www.xcelerator.berkeley.edu/x-network) - - Proven entrepreneurship curriculum from industry and academic experts through Berkeley Engineering Method of Entrepreneurship and Berkeley Haas Entrepreneurship - Enhanced visibility of your startup through association with UC Berkeley - Connections to our deep network of Silicon Valley and crypto/ blockchain investors- Non-dilutive, equity free programming & support |  |
| Angela Glover | [Blackwell](https://gspp.berkeley.edu/faculty-and-impact/faculty/angela-glover-blackwell) |  | Goldman | Climate Equity/Environmental Justice, Policy | Founder, Policy LinkRace & Ethnicity, Cities, Equitable Development | [The Curb Cut Effect](https://ssir.org/articles/entry/the_curb_cut_effect) — Laws and programs designed to benefit vulnerable groups, such as the disabled or people of color, often end up benefiting all of society. |  |
|  | [Center for Environmental Public Policy](https://gspp.berkeley.edu/faculty-and-impact/centers/cepp) |  | Goldman | Policy, wind, solar | [David Wooley](https://gspp.berkeley.edu/faculty-and-impact/faculty/david-wooley) , Executive DirectorThe **Center for Environmental Public Policy (CEPP)** at the **Goldman School of Public Policy (GSPP)** takes an integrated approach to solving environmental problems. By synthesizing scientific, economic, technical, social, financial, and political understanding, CEPP collaborates to support the creation and implementation of public policies based on exacting analytical standards that carefully define problems and match them with the most impactful solutions. **CEPP’s primary focus is on climate change, the key environmental challenge of our time.** | David Wooley and team at the Goldman have released 2035 and [Beyond: Abundant, Affordable Offshore Wind Can Accelerate Our Clean Electricity Future](https://www.2035report.com/). The new report, from GridLab, Berkeley, and Energy Innovation, shows that over 4,000 gigawatts of offshore wind potential is available along the U.S. coastline, including theGreat Lakes, which could greatly complement onshore solar and wind to help achieve a 95%clean electricity grid by 2050.[California 100 Releases First Round of Policy and Scenario Reports Focused on State’s Infrastructure Future](https://california100.org/california-100-releases-first-round-of-policy-and-scenario-reports-focused-on-states-infrastructure-future/)Lead author: [The Future of Energy, Environment and Natural Resources](https://california100.org/app/uploads/2022/03/The-Future-of-Energy-Environment-and-Natural-Resources-ISSUE-REPORT-Single-pages-Round-3.pdf) for the California 100 Project[CEPP Awarded a California 100 Grant to Evaluate Energy, Environment, and Natural Resources in California’s Future](https://gspp.berkeley.edu/faculty-and-impact/centers/cepp/projects)[Berkeley Carbon Trading Project](https://gspp.berkeley.edu/faculty-and-impact/centers/cepp/projects/berkeley-carbon-trading-project)UCOP $100M Climate Action LOI lead – January 2023 |  |
|  | [Center for Security in Politics](https://csp.berkeley.edu/) |  | Goldman  | Migration, Food/Agriculture water, policy | Janet Napolitano, Founder and Faculty Director[Adrienne Fulk, Executive Director](http://adrienne_fulk@berkeley.edu)The Center for Security in Politics (CSP) supports research, curriculum, and convenings that bring students, academics, and leading political practitioners together to address critical global risks, to translate research and analysis into actionable solutions for policymakers, thought leaders and elected officials, and to train a diverse generation of security professionals for careers in public service.[Research areas](https://csp.berkeley.edu/research-areas/) include Institutional Resilience, Climate Change and Cybersecurity and Emergent Technologies.Climate change is fundamentally a risk that is redefining politics in the United States and across the globe. From climate-induced migration to food, water and weather security, the earth’s evolving temperature is changing the nature of policymaking and politics. CSP scholars analyze these risks and develop proposals for understanding and mitigating them at the global, national, and state levels. | UCOP Letter of Intent – January 2023Napolitano is a member of the [Climate Migration Council](https://www.climatemigrationcouncil.org/)Napolitano put UC on a path to 100 percent reliance on clean electricity across all campuses and medical centers by 2025, the same year the university aims to achieve systemwide carbon neutrality. In 2017, she also spearheaded the formation of the [University Climate Change Coalition](https://secondnature.org/initiative/uc3-coalition/), or UC3. This group of 18 leading North American research universities and systems are working to help local communities achieve their climate goals and accelerate the transition to a low-carbon future.  |  |
| Lee | [Friedman](https://gspp.berkeley.edu/faculty-and-impact/faculty/lee-friedman) |  | Goldman | Policy, finance, governance  | Friedman’s research is on a wide variety of issues, including climate change policies, utility regulation, educational finance, criminal justice policies, agricultural subsidies, and consumer decision-making. His work strives to improve the effectiveness of microeconomic policy analysis on actual public policies and practices.  | [Electricity Pricing and Electrification for Efficient Greenhouse Gas Emissions](https://gspp.berkeley.edu/research-and-impact/publications/electricity-pricing-and-electrification-for-efficient-greenhouse-gas-reduct)  |  |
| Barbara | [Haya](https://gspp.berkeley.edu/faculty-and-impact/faculty/barbara-haya) |  | Goldman | Policy | Haya combines research and outreach with a focus on the effectiveness of carbon offset programs. She directs the [Berkeley Carbon Trading Project](https://gspp.berkeley.edu/faculty-and-impact/centers/cepp/projects/berkeley-carbon-trading-project), which examines the outcomes of California's and voluntary offset programs and performs outreach to ensure the Project's research results inform offset program design. | 2023 UCOP Proposal: Keeping California Climate Funding in California: Piloting Local Climate Investment Funds[The California Air Resources Board’s US Forest offset protocol underestimates leakage](https://gspp.berkeley.edu/research-and-impact/working-papers/policy-brief-arbas-us-forest-projects-offset-protocol-underestimates-leaka) |  |
| Solomon | [Hsiang](https://gspp.berkeley.edu/faculty-and-impact/faculty/solomon-hsiang) |  | Goldman | Policy, Migration, Health | *NOTE: I am currently serving as the Chief Environmental Economist at theWhite House Office of Science and Technology Policy.* Hsiang directs the [Global Policy Laboratory](http://www.globalpolicy.science/) at Berkeley, where his team is integrating econometrics, spatial data science, and machine learning to answer questions that are central to rationally managing planetary resources--such as the economic value of the global climate, how the UN can fight wildlife poaching, the effectiveness of treaties governing the oceans, and whether satellites and AI can be combined to monitor the entire planet in real time. Hsiang is a Leader of the [Climate Impact Lab](https://impactlab.org/about/) (with Rhodium Group, Rutgers, Univ of Chicago) | [Financial Impacts of Extreme Weather (White House, Slide Talk, November 2022)](https://www.whitehouse.gov/wp-content/uploads/2022/11/Hsiang_Weather_Nov-2022.pdf)[In White House meeting, Berkeley scholar says advanced tech can support nature (April 2022)](https://news.berkeley.edu/2022/04/22/in-white-house-meeting-berkeley-scholar-says-advanced-tech-can-support-nature/)[Economic Risks of Climate Change (An American Prospectus) (2014)](https://news.berkeley.edu/2014/06/24/researcher-calls-report-on-economic-impacts-of-u-s-climate-change-like-a-flashlight-at-night/)[Valuing the Global Mortality Consequences of Climate Change Accounting for Adaptation Costs and Bene](https://gspp.berkeley.edu/research-and-impact/working-papers/valuing-the-global-mortality-consequences-of-climate-change-accounting-for-adaptation-costs-and-bene-5ed6a78c791e22.18164241)fits[Air conditioning in a changing climate: a growing rich-poor divide](https://vcresearch.berkeley.edu/news/air-conditioning-changing-climate-growing-rich-poor-divide)(published in Nature Oct 2021)[Estimating a Social Cost of Carbon for Global Energy Consumption](https://www.nature.com/articles/s41586-021-03883-8)[Presentation by Sol Hsiang](https://www.youtube.com/watch?v=U9jxrPWbIPA) (video)[Global Policy Lab papers on Migration](http://www.globalpolicy.science/migration)[Social and Economic Impacts of Climate](https://www.science.org/doi/10.1126/science.aad9837)[Potential Extreme Population Displacement in the Tropics Under Non-Extreme Warming](https://www.nature.com/articles/srep25697)[Non Linear Permanent Migration Response to Climatic Variations But Minimal Response to Disasters](https://www.pnas.org/doi/pdf/10.1073/pnas.1317166111)Using ML to understand the economic impacts of climate |  |
| Kiran | [Jain](https://gspp.berkeley.edu/faculty-and-impact/faculty/kiran-jain) |  | Goldman | Policy, Resilience | Jain is the former Chief Resilience Officer for the City of Oakland. She also served as a senior deputy city attorney focusing on land use, urban redevelopment and municipal law.  |  |  |
| Amy | [Lerman](https://gspp.berkeley.edu/research-and-impact/faculty/amy-e-lerman) |  | Goldman | Policy | [Director, Possibility Lab](https://gspp.berkeley.edu/research-and-impact/faculty/amy-e-lerman)The Possibility Lab brings together public policy experts who are committed to evidence-based policymaking and who use quantitative, participatory, and experimental methods to understand the potential of new ideas to improve people’s lives. Based at the University of California, our small-but-mighty team works with partners across the country to produce rigorous research that advances data-driven innovation for the public good.  | 2023 UCOP Proposal: Equitable Decisions for the CA Energy Transition: Collaboration with the CPUC and Local Stakeholders |  |
| Robert | [Reich](https://gspp.berkeley.edu/faculty-and-impact/faculty/robert-reich) |  | Goldman | Policy | Industry, Policy, Labor, Poverty & InequalityLeadership and Social ChangeMacroeconomic PolicySocial and Economic Policy | [The Solutions to the Climate Crisis No One is Talking About](https://robertreich.org/post/616127145976184832)Robert Reich and Dan Kammen: [Inequality, Climate Change and the Economy](https://www.youtube.com/watch?v=dwPzVNpKgL0) (video) |  |
| David | [Roland-Holst](https://gspp.berkeley.edu/faculty-and-impact/faculty/david-roland-holst) |  | Goldman | Policy | EnvironmentClimate ChangeFood PolicyAgricultural PolicyDevelopmentEnergyInternational Trade | [Climate Change in California: Risk and Response](https://www.ucpress.edu/book.php?isbn=9780520271814)UCOP $100M Climate Action LOI lead – January 2023 |  |
| Steven | [Weissman](https://gspp.berkeley.edu/faculty-and-impact/faculty/steven-weissman) |  | Goldman | Energy | Energy policy in all forms. Former Administrative Law Judge at the CPUC. | [Why Doesn’t PG&E Bury the Power Lines to Prevent Wildfires?](https://www.kqed.org/news/11851411/why-doesnt-pge-bury-the-power-lines-to-prevent-wildfires) (KQED 2020) | [California Must Prepare Its Electric Grid for Complex Climate Risks](https://www.sfchronicle.com/opinion/openforum/article/California-must-prepare-its-electric-grid-for-15517975.php) (SF Chronicle, 2020)[California Needs Clean, Healthy and Safe Local Energy Systems – Microgrids](https://calmatters.org/commentary/my-turn/2020/06/california-needs-clean-healthy-and-safe-local-energy-systems-microgrids/)(Cal Matters) |
| David | [Wilson](https://gspp.berkeley.edu/) |  | Goldman |  | Dean, [Goldman School of Public Policy](https://gspp.berkeley.edu/)[Master of Public Affairs](https://gspp.berkeley.edu/)[Master of Public Policy](https://gspp.berkeley.edu/)[Master of Development Practice](https://gspp.berkeley.edu/)[Berkeley Global Executive Education](https://gspp.berkeley.edu/global) (BGEE) offers short-term Custom Programs and long-term Scholar Programs for senior and mid-career government officials and public policy practitioners from the United States and nations around the world. Centers assemble the Goldman School's expertise around specific topics and are a venue for collaboration across departments, disciplines, and institutions. Some centers are officially affiliated with the Goldman School. Others are led by GSPP faculty. All centers offer opportunities for students to make a policy impact through research and by working with clients.[Berkeley Institute for Young Americans](https://gspp.berkeley.edu/research-and-impact/centers/berkeley-institute-for-young-americans)[Berkeley Opportunity Lab](https://gspp.berkeley.edu/research-and-impact/centers/berkeley-opportunity-lab)[California 100](https://gspp.berkeley.edu/research-and-impact/centers/ca-100)[California Policy Lab](https://gspp.berkeley.edu/research-and-impact/centers/california-policy-lab)[Center for Security in Politics](https://gspp.berkeley.edu/research-and-impact/centers/center-for-security-in-politics)[Center for Studies in Higher Education](https://gspp.berkeley.edu/research-and-impact/centers/center-for-studies-in-higher-education)[Center on Civility and Democratic Engagement (CCDE)](https://gspp.berkeley.edu/research-and-impact/centers/ccde)[Center on Environmental Public Policy (CEPP)](https://gspp.berkeley.edu/research-and-impact/centers/cepp)[Global Policy Lab](https://gspp.berkeley.edu/research-and-impact/centers/global-policy-lab)[India Energy and Climate Center](https://gspp.berkeley.edu/research-and-impact/centers/india-energy-and-climate-center)[Institute for Research on Labor and Employment](https://gspp.berkeley.edu/research-and-impact/centers/institute-for-research-on-labor-and-employment)[Risk Resilience Research Lab](https://gspp.berkeley.edu/research-and-impact/centers/risk-resilience-research-lab)[The Possibility Lab](https://gspp.berkeley.edu/research-and-impact/centers/the-possibility-lab) |  |  |
| Katherine | [Baird](https://www.linkedin.com/in/katherine-baird/) |  | Haas | Policy | Associate Director, Sustainability and Climate Change at HaasBackground in sustainable finance, advocacy and public engagement. |  |  |
|  | [Berkeley Haas Entrepreneurship Program](https://entrepreneurship.berkeley.edu/) |  | Haas | All | [Rhonda Shrader, Executive Director](https://haas.berkeley.edu/faculty/rhonda-shrader/)The mission of the Berkeley-Haas Entrepreneurship Program is to integrate entrepreneurial thinking into the Haas student experience and to assist Haas and Berkeley students in launching new ventures. The program gives students multidisciplinary experiential learning opportunities, seed funding for selected startups, and connections to the greater Berkeley and Bay Area entrepreneurial ecosystems.The program targets students interested in:* learning about entrepreneurship,
* starting a company,
* working on venture capital careers, or
* integrating entrepreneurial thinking into corporate environments.
 | In addition to a wide range of courses, many featuring the Lean Launchpad methodology, the Berkeley-Haas Entrepreneurship Program offers opportunities to get exposure, acquire skills and gain real-world experience in startups. We offer multidisciplinary hackathons and pitch-a-thons, mentoring from industry experts, startup seed funding, competitions, accelerators, internships and events with Berkeley’s extensive entrepreneurial network. | Our courses and offerings guide or immerse Haas and Berkeley students through the three phases of the entrepreneurial journey:* ideation and team formation,
* customer discovery and validation, and
* startup acceleration
 |
| Severin | [Borenstein](https://haas.berkeley.edu/faculty/borenstein-severin/) | Energy Institute at Haas | Haas | Policy, energy | Faculty Director, Energy Institute at HaasResearch interests * Energy Policy and Climate Change
* Electricity Deregulation, Market Formation and Competition
* US and International Airline Competition
* Oil and Gasoline Market Pricing and Competition
 | Current research projects include the economics of renewable energy, economic policies for reducing greenhouse gases, and alternative models of retail electricity pricing. |  |
|  | [Center for Responsible Business](https://haas.berkeley.edu/responsible-business/) |  | Haas | Business, food/agriculture, human rights | [Robert Strand, Executive Director](https://haas.berkeley.edu/faculty/strand-robert/)The Center connects students, businesses, and faculty to mobilize the positive potential of business to create a more responsible, resilient, and sustainable society. Building on more than a decade of research, teaching, and engaging with business, we educate and provoke thoughtful debate. The Center encourages sustainability-minded research and its application in the marketplace of commerce and ideasWe use the words “sustainable” and “sustainability” in the broadest sense to include social, environmental, and economic considerations. This allows us to explore a wide array of issues, while retaining the flexibility to focus resources and attention for maximum impact. Our current [focus areas](https://haas.berkeley.edu/responsible-business/about/focus-areas/) are human rights and business, sustainable innovation, and sustainable food. | [Events](https://haas.berkeley.edu/responsible-business/events/)Join the CRB at one of our upcoming events to hear from top minds in corporate responsibility and sustainability. | [Curriculum](https://haas.berkeley.edu/responsible-business/curriculum/)Learn more about the dynamic learning opportunities our courses provide through real-world consulting projects and engagement with world-class instructors |
|  | [Cleantech to Market (C2M)](https://haas.berkeley.edu/c2m/) |  | Haas | All | [Brian Steel, Co-Director](https://haas.berkeley.edu/faculty/steel-brian/)[Sheeraz Haji, Co-Director](https://haas.berkeley.edu/c2m/about-us/)**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](https://haas.berkeley.edu/c2m/events/annual-climate-tech-summit/) featured [8 companies](https://haas.berkeley.edu/c2m/previous-projects/2023-c2m-projects/) 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 generators

Water purification |  |
| Lucas | [Davis](https://haas.berkeley.edu/faculty/davis-lucas/) |  | Haas | Energy, policy | Davis’s research focuses on energy and environmental markets, and, in particular, on electricity and natural gas regulation, pricing in competitive and non-competitive markets, and the economic and business impacts of environmental policy.  | [How Effective is Energy Efficient Housing: Evidence from a Field Experiment in Mexico](https://haas.berkeley.edu/wp-content/uploads/WP288.pdf)**[The Economic Determinants of Heat Pump Adoption](https://faculty.haas.berkeley.edu/ldavis/Davis%20NBER%20EEPE%202023.pdf)***NBER Environmental and Energy Policy and the Economy*, forthcoming, University of Chicago Press.**[What Matters for Electrification? Evidence from 70 Years of U.S. Home Heating Choices](https://haas.berkeley.edu/wp-content/uploads/WP309.pdf)***Review of Economics and Statistics*, forthcoming.**[Transmission Impossible? Prospects for Decarbonizing the U.S. Grid](https://haas.berkeley.edu/wp-content/uploads/WP338.pdf)**(with Catherine Hausman and Nancy Rose), *Journal of Economic Perspectives*, 2023, 37(4), 155-180.**[Who Will Pay for Legacy Utility Costs?](https://faculty.haas.berkeley.edu/ldavis/Davis%20and%20Hausman%202022%20JAERE.pdf)**(with Catherine Hausman), *Journal of the Association of Environmental and Resource Economists*, 2022, 9(6), 1047-1085.**[Air Conditioning and Global Inequality](https://doi.org/10.1016/j.gloenvcha.2021.102299)**(with Paul Gertler, Stephen Jarvis, and Catherine Wolfram), *Global Environmental Change*, 2021, 69, 102299 | Energy and Environmental Markets, Full-time MBA Program plus Evening & Weekend MBA Program |
| Michele | [De Nevers](https://www.linkedin.com/in/michele-de-nevers-78311524/?originalSubdomain=es) | Sustainability Programs | Haas | Business, Forestry, carbon removal and storage | Executive Director, Sustainability Programs at HaasDe Nevers’ work spans a wide range of environmental issues from biodiversity to industrial pollution to climate finance to carbon removal and storage. |  |  |
|  | [Energy Institute at Haas](https://haas.berkeley.edu/energy-institute/) |  | Haas | Energy, Policy | [Andrew Campbell](https://haas.berkeley.edu/energy-institute/about/people/andrew/), Executive DirectorTo support current and future energy sector leaders in making important decisions, the Energy Institute’s approach is to focus on business and policy challenges:* [Train](https://haas.berkeley.edu/energy-institute/education/) the business and policy leaders of tomorrow on market, policy, and technology commercialization challenges in the energy industry.

Produce [research](https://haas.berkeley.edu/energy-institute/research/) and analysis backed by rigorous empirical evidence and the frontiers of economic research so that energy and environmental policy and business decisions are based on sound economic and business principles. | [Energy Institute Blog](https://energyathaas.wordpress.com/)The Energy Institute [Working Paper Series](https://haas.berkeley.edu/energy-institute/research/working-papers/) presents new research on energy and environmental topics authored by our faculty affiliates and graduate students. | The Energy Institute is at the forefront of energy and environmental education, sponsoring courses for [UC Berkeley graduate students](https://haas.berkeley.edu/energy-institute/education/graduate-students/), offering [professional and executive education programs](https://haas.berkeley.edu/energy-institute/education/executives/) for business and government and training the next generation of researchers. |
| Ann | [Harrison](https://haas.berkeley.edu/about/leadership/dean-ann-harrison/) |  | Haas | Business | [Ann Harrison, Dean, Haas School of Business](https://haas.berkeley.edu/)Haas includes an extensive menu of [research centers and institutes](https://haas.berkeley.edu/faculty-research/):The Institute for Business Innovation[O'Donnell Center for Behavioral Economics](https://haas.berkeley.edu/behavioral-economics/)[Fisher Center for Business Analytics](https://businessanalytics.berkeley.edu/)[Garwood Center for Corporate Innovation](http://corporateinnovation.berkeley.edu/)[Berkeley Culture Initiative](https://haas.berkeley.edu/culture/)[Berkeley Haas Entrepreneurship](http://entrepreneurship.berkeley.edu/)[Center for Growth Markets](https://haas.berkeley.edu/growth-markets/)[Innovation, Creativity, and Design Practice](https://designthinking.berkeley.edu/)[Tusher Initiative for Management of Intellectual Capital](https://haas.berkeley.edu/ibi/research/intellectual-property/)The [Institute for Business & Social Impact](https://haas.berkeley.edu/IBSI) (IBSI) [Center for Responsible Business](https://haas.berkeley.edu/responsible-business/)[Center for Equity, Gender, and Leadership](https://haas.berkeley.edu/equity/)The [Energy Institute at Haas (EI)](https://haas.berkeley.edu/energy-institute/) [Cleantech to Market](https://haas.berkeley.edu/c2m/)[Berkeley Center for Economics and Politics](http://bcep.haas.berkeley.edu/)[Center for Financial Reporting and Management](http://groups.haas.berkeley.edu/accounting/)[Center for Social Sector Leadership](http://socialsector.haas.berkeley.edu/)[Fisher Center for Real Estate and Urban Economics](https://haas.berkeley.edu/realestate/) |  |  |
| Christine | [Meisner Rosen](https://haas.berkeley.edu/faculty/rosen-christine/) |  | Haas | Policy, Energy | Rosen is expert on history of business leadership of anti-pollution movements and today’s struggles over how to transition to clean energy. Her work includes:* Sustainable Business Strategy
* Business History
* Green Chemistry
* Sustainable Product Design
* Business History and the Environment
* American Environmental History
 | Green Beginnings: Business Leadership and the Problem of Industrial Pollution in America, 1840-1920 (forthcoming, under contract with Harvard University Press). | UGBA 193B F23 Energy & Civilization  |
| Adair | [Morse](https://haas.berkeley.edu/faculty/morse-adair/) | [Sustainable and Impact Finance](https://haas.berkeley.edu/saif/) | Haas | Finance | Founding Faculty Director of the Sustainable and Impact Finance Initiative (SAIF)Morse’s research spans multiple areas of finance: climate finance and sustainable investing, household finance, discrimination and corruption, venture capital, and pension management. Her work is driven by her interest in leveling economic playing fields. Recent work includes papers on algorithmic discrimination, small business policy during the pandemic, impact and sustainable investment, pension governance, and communication from the Federal Reserve. |  | **Fall 2023**Sustainable, Climate and Impact Investing Landscape**Spring 2024**[Haas Impact Fund](https://haas.berkeley.edu/saif/curriculum/haas-impact-fund/)**Fall 2024**[Climate Solutions Fund](https://haas.berkeley.edu/saif/curriculum/csf/) |
|  | [Sustainable and Impact Finance Initiative (SAIF)](https://haas.berkeley.edu/saif/) |  | Haas | Finance  | Founding Faculty Director, [Adair Morse](https://haas.berkeley.edu/faculty/morse-adair/)[Megan Morrice, Program Manager](https://haas.berkeley.edu/saif/about/our-team/)Morrice has a background in ESG data and sustainable finance | [Mobilizing Capital to Achieve Net Zero by 2050 (March 2023)](https://haas.berkeley.edu/saif/events/past-programs/mpcanz/)[Harnessing Finance for Climate – Stockholm (May 2023)](https://www.hhs.se/en/houseoffinance/outreach/conferences/container/harnessing-finance-for-climate/)[SAIF Project: MBA Students Step Up to Help Oakland’s Small Businesses](https://newsroom.haas.berkeley.edu/mba-student-volunteers-rally-to-help-oaklands-small-businesses/)[What’s the Climate Risk of Your Insurance Company?](https://sustainablebrands.com/read/finance-investment/what-s-the-climate-risk-of-your-insurance-company) (blog) |  |
| Reed  | [Walker](https://haas.berkeley.edu/faculty/walker-reed/) | Energy Institute at Haas, Opportunity Lab | Haas | Policy, air pollution, energy | Walker’s research explores the social costs of environmental externalities, such as air pollution and how regulations to limit these externalities contribute to gains and/or losses to the economy. He is also a Research Associate at the Energy Institute at Berkeley.Faculty co-director of the [Opportunity Lab’s Climate and Society Initiative](https://www.olab.berkeley.edu/climate-environment-papers)  |  |  |
| Nancy  | [Wallace](https://haas.berkeley.edu/faculty/wallace-nancy/) |  | Haas | Wildfire, land use, finance | Chair of the Real Estate Group and co-chair of the Fisher Center for Real Estate and Urban Economics. Wallace is an expert in mortgages, mortgage-related securities, and other real estate topics. | [Mortgage Markets with Climate-Change Risk: Evidence from Wildfires in California](https://www.frbsf.org/economic-research/events/2021/november/nancy-wallace-climate-seminar/) (2021 Seminar, Federal Reserve Bank)2023 UCOP Climate Action Seed Grant Proposal: Helping California Communities Adapt to Wildfire: Information, Adaptation, and Risk Mitigation  |  |
|  | Master of Business Administration + Master of Climate Solutions (MBA/MCS) |  | Haas, RCNR | All | [Master of Business Administration + Master of Climate Solutions  -- MBA/MCS](https://climatesolutions.berkeley.edu/mcs/joint-degrees/)  Berkeley now offers a concurrent degree (a.k.a. “joint degree” or “dual degree”) that combines the Master of Climate Solutions program from the Rausser College of Natural Resources, and one of the top MBA programs in the world through the Haas School of Business. MBA/MCS is a 2.5 year program, as opposed to spending 3 years if taken consecutively. Applications are open now for the first cohort.  |  |  |
| Geeta  | [Anand](https://vcresearch.berkeley.edu/faculty/geeta-anand) |  | Journalism | Education, Public Awareness | [Dean, School of Journalism](https://vcresearch.berkeley.edu/faculty/geeta-anand)Pulitzer Prize-winning journalist and author who serves as dean and professor at Berkeley Journalism. Her stories on corporate corruption won the Wall Street Journal a Pulitzer Prize in 2002, and she was lead reporter in a series on healthcare that was a finalist in 2003. She worked as a journalist for 27 years, most recently as a foreign correspondent for The New York Times and the Wall Street Journal in India.  | UCOP Proposal: Who will tell the story? Climate solutions, community engagement, and journalism partnerships | [Reporting the News](https://classes.berkeley.edu/content/2023-fall-journ-200-001-sem-001) – Journ 200 001 (Fall 2023) |
| Jason | [Spingarn-Koff](https://journalism.berkeley.edu/person/jason-spingarn-koff/) |  | Journalism | Education, Public Awareness | Jason Spingarn-Koff is an award-winning documentary filmmaker, journalist and media executive.He is Professor of Journalism and Knight Chair of Climate Journalism at UC Berkeley. In this role, he’s working to reinvent how stories about climate change are told, unite the brainpower of top science experts on the UC Berkeley campus with the expertise of the journalism school, and build partnerships with media organizations and broadcasters to cover multidimensional issues around climate change. |  |  |
| Balthazar | [Beckett](https://english.berkeley.edu/users/478) | English | L&S A&H | Education, Public Awareness |  |  | Teaching: ENGLISH R1B – Petrofiction and Climate Fiction[Writing the American City: From Redlining to Climate Change ENGLISH R1B 008 (FALL 2022)](https://classes.berkeley.edu/content/2022-fall-english-r1b-008-lec-008) |
| Teri | [Crisp](https://writing.berkeley.edu/people/teri-crisp) | College Writing Programs | L&S A&H | Education, Public awareness | Crisp teaches Reading & Composition courses that encourage collaborative learning, critical thinking, research and writing on ecological themes. |  | [COLWRIT R1A](https://guide.berkeley.edu/courses/colwrit/) – Magnificent Diversity: Eco-Thinking in the Age of Climate Change[COLWRIT R4B](https://guide.berkeley.edu/courses/colwrit/) – For Neighbor and for the Earth |
| Sara | [Guyer](https://english.berkeley.edu/profiles/678) | English | L&S A&H |  | [Dean, Arts and Humanities](https://english.berkeley.edu/people/sara-guyer)Guyer served as the President of the international [Consortium of Humanities Centers and Institutes (CHCI)](https://chcinetwork.org/) and continues to serve as a board member-at-large. She regularly speaks on the global and public humanities and currently edits The World Humanities Report. This Report is a large scale project with over a dozen research teams on six continents that demonstrates the rich, varied, and necessary contributions the humanities are making to knowledge and society throughout the world. The Report is the first collaboration between the two leading international organizations for the humanities: CHCI and the International Council of Philosophy and the Human Sciences (CIPSH) who are in further partnership with UNESCO. |  |  |
| Geoffrey | [Lee](https://vcresearch.berkeley.edu/faculty/geoffrey-lee) | Philosophy | L&S A&H  |  | Lee was on the 7-person group that developed a [proposal](https://www.dropbox.com/s/gq87rqqfw9ervm7/FAQ%20for%20AS%20Climate%20Change%20Proposal.pdf?dl=0) for a standing committee of the Academic Senate on Climate Change and also worked on the divestment vote campaign.Much of his work centers around problems to do with consciousness and the mind-body problem. How does consciousness emerge from the brain? What would count as an answer to this problem? He is also interested in foundational questions about representation and computation in cognitive science, particularly in the area of perception, and in questions in metaphysics and philosophy of science about the structure of the high-level world. |  |  |
| Katherine | [Snyder](https://english.berkeley.edu/users/70) | English | L&S A&H | Education, Public Awareness | Over the past several years, Snyder has turned in her research and teaching to contemporary fiction, with a particular interest in post-apocalyptic, post-traumatic, and post-9/11 novels. | Her current book project, Novel Traces: Rewriting the Past in the Post-9/11 Present, identifies a hitherto unrecognized cluster of post-9/11 novels that extensively rewrite canonical works of literature from various historical moments.  | [Research Seminar: Climate Change Fiction, or Cli-Fi](https://english.berkeley.edu/courses/6731) (2021)In this class, we will consider the rise of the literary genre known since 2008 as Cli-Fi, with an eye to the generic and narrative forms that are used to figure forth the eco-cataclysm we now face. Over the past several years, I have turned in my research and teaching to contemporary fiction, with a particular interest in post-apocalyptic, post-traumatic, and post-9/11 novels. |
| Rauri | Bowie | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity | Although I primarily focus on birds (particularly from Africa). I also have a keen interest in the evolutionary biology of small mammals, marine molluscs, inshore rockfish and insects. | UCOP $100M Climate Action LOI lead |  |
| Todd | [Dawson](https://ib.berkeley.edu/people/faculty/dawsont) | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity, water | 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](https://ib.berkeley.edu/node/366) |  |
| Paul  | [Fine](https://ib.berkeley.edu/people/faculty/finep) | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity | Director, Pt. Reyes Field StationFine’s research investigates the origin and maintenance of Amazonian rain forest tree diversity. He is especially interested in the role that biotic interactions and environmental heterogeneity play in the morphological, functional, and genetic diversity of tropical trees, and how these factors influence the distribution and speciation of plants.NRS University-wide Advisory Committee | Pt Reyes Field Station research: Researchers from the [Terrestrial Ecosystem Sciences](https://eesa.lbl.gov/programs/terrestrial-ecosystem-science/) group in the [Earth and Environmental Sciences Division](https://eesa.lbl.gov) at Lawrence Berkeley Lab are conducting a soil warming experiment to measure changes in soil carbon and respiration in grassland habitat dominated by perennial grasses. | Ecosystems of California [- INTEGBI 157LF 001](https://ib.berkeley.edu/people/faculty/finep) |
| Seth  | [Finnegan](https://ib.berkeley.edu/people/faculty/finnegans) | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity | Finnegan is broadly interested in the processes that have shaped the composition of the marine biota and the development of marine ecosystems from the origin of animals in the late Neoproterozoic to the present day.  Much of my recent and continuing work focuses on the Ordovician Period (488 to 444 million years ago) because it is widely agreed (by me) to be the most interesting interval in Earth history, including as it does a broad-based and very rapid global biodiversification and a major mass extinction.   |  |  |
| Cindy | [Looy](https://vcresearch.berkeley.edu/faculty/cindy-looy) | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity | Looy is a plant ecologist who investigates the response of Paleozoic plants and plant communities to environmental change during periods of mass extinction and deglaciation, and the possible evolutionary consequences. Her primary research is focused on several aspects of the end-Permian biotic crisis and its aftermath, and the transition from a glacial-dominated world to an ice-free one during the Late Carboniferous to the Middle Permian.  | [In Earth’s largest extinction, land die-offs began long before ocean turnover](https://vcresearch.berkeley.edu/news/earths-largest-extinction-land-die-offs-began-long-ocean-turnover) |  |
| Charles | [Marshall](https://ib.berkeley.edu/people/faculty/marshallc) | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity | Director, University of California Museum of Paleontology Marshall is a paleontologist /deep-time evolutionary biologist broadly interested in how life has evolved on Earth, and in understanding the processes responsible for shaping life’s long-term evolution.  His primary sources of data are from the fossil and geological records, as well as historical information derived from the living biota (including their genomes).    |   |  Biology 1B (Evolution)Paleobiological Perspectives on Ecology and Evolution (IB 113L) |
| Brent | [Mishler](https://ib.berkeley.edu/people/faculty/mishlerb) | IntegrativeBiologyUniversity andJepson Herbaria | L&S Biological Sciences Vice Chancellor for Research | Ecosystems/BiodiversityLand useEducation | Mishler’s team has created a computer model for the flora of California to prioritize areas needing preservation, linking this for the first time with the areas’ suitability for preservation.The model will allow conservation groups, ranging from state and national parks to the Nature Conservancy, to determine whether land harboring species in need of preservation is already protected, unprotected but salvageable or degraded to the point where saving it would be pointless: necessary triage given limited funds for preservation.  | [As Climate and Land Use Change Accelerate, So Must Efforts to Preserve State’s Plants](https://news.berkeley.edu/2018/11/19/as-climate-and-land-use-change-accelerate-so-must-efforts-to-preserve-states-plants/)*(2018)*Mishler contributed to an analysis documenting which plants in North America have already gone extinct. Available data suggest 65 vascular plant taxa from this region have become extinct since European settlement, 19 from California alone (*2020*):  <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/cobi.13621>[Speciesism in Biology and Culture: How Human Exceptionalism is Pushing Planetary Boundaries.  Springer Nature.  [*2022*. Open access book]](https://link.springer.com/book/10.1007/978-3-030-99031-2) A new NSF grant starting Jan 2024 will study the drivers of plant functional diversity, phylodiversity, and geographic distributions, past, present, and future for the whole North American Flora.  This work will be usable for predicting the resilience of lineages and communities in the face of rapid global change, and for assessing conservation priorities.  | Fall 2023: IB/ESPM 105, "Natural History Museums and Biodiversity Science"Spring 2024:IB/ESPM 290, “Principles of Phylogenetics" |
| Dipti  | [Nayak](https://plantandmicrobiology.berkeley.edu/profile/dipti-d-nayak) | Molecular and Cell Biology | L&S Biological Sciences | Energy, methane | Nayak’s lab studies a group of microorganisms called methanogens that produce the vast majority of methane released in the atmosphere.  Some of their recent research is moving in the direction of identifying drug targets for an enzyme that catalyzes methane formation in these organisms that could then be fed to cows or introduced in rice paddies or wetlands to mitigate emissions from these key sources.  | UCOP $100M Climate Action LOI lead – January 2023 |  |
| Rasmus | [Nielsen](https://ib.berkeley.edu/people/faculty/nielsenr) | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity | Rasmus Nielsen’s research focuses on statistical and computational aspects of evolutionary theory and genetics.  One of the central problems he has been interested in is the molecular basis of evolutionary adaptation.  What happens at the molecular levels as one species is transformed into another over evolutionary time?  | [Temporal genomic contrasts reveal rapid evolutionary responses in an alpine mammal during recent climate change](https://journals.plos.org/plosgenetics/article?id=10.1371/journal.pgen.1008119) (2019) |  |
| Mary | [Power](https://ib.berkeley.edu/people/faculty/powerm) | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity, water | Director, Angelo Coast ReservePower’s research centers on river food webs—interactions among fish, birds, invertebrates, and algae in temperate and tropical rivers. She is particularly interested in how attributes of species affect food web structure and dynamics, and how strengths of these interactions change under different environmental regimes. * Effects on river food webs of changes in hydrology, temperature, nutrient loading, energy source, and community structure.
* Impacts on meadow ecosystems of precipitation changes forecast by leading climate models for the California North Coast.
 |  |  |
| Patrick | [Shih](https://vcresearch.berkeley.edu/faculty/patrick-shih) | Plant and Microbial Biology | L&S Biological Sciences | Ecosystems/Biodiversity, carbon removal and storage | Assistant Professor in PMB with appointments at IGI and JBEI. At JBEI Shih’s lab is focused on plant synthetic biology. He is involved in carbon removal and climate innovation work at IGI.  |  |  |
| Jonathon | [Stillman](https://ib.berkeley.edu/people/faculty/stillmanj) | Integrative Biology | L&S Biological Sciences | Heat, Ocean Acidification Health, Ecosystems for Environmental Justice, Public Awareness | The Stillman Laboratory studies the effects of climate change and human impacts on marine and aquatic organisms in response to warming, increasing frequency and severity of heat waves, carbon dioxide acidification, salinity gradients, hypoxia and other environmental stressors.  |  | INTEGBI 230 – Marine Ecosystems and Global Change |
| Caroline  | [Williams](https://ib.berkeley.edu/people/faculty/williamsc) | Integrative Biology | L&S Biological Sciences | Ecosystems/Biodiversity,Snowpack, Drought | The Williams lab studies the evolution of metabolic physiology in ectotherms, using insects as models. We are interested in the mechanisms and consequences of metabolic responses to emerging winter environments. This is important because winter climate change is altering energy balance, phenology, and cold stress in overwintering organisms leading to cascading biological impacts that carry over into the growing season and affect survival and fitness. Academic Senate committee on climate |  | IB24: Biological Impacts of Climate change |
| Dave   | [Savage](https://vcresearch.berkeley.edu/faculty/david-savage) | Molecular and Cell Biology | L&S Biological Sciences, IGI | Food/Agriculture | Savage is using [CRISPR](https://innovativegenomics.org/glossary/crispr/) genetic screens and [gene](https://innovativegenomics.org/glossary/gene/) editing to optimize photosynthesis in crop plants for increased food yield and enhanced carbon capture. |  |  |
|  | [Berkeley Atmospheric Sciences Center](https://atmosphere.berkeley.edu/) | Earth and Planetary Sciences | L&S Physical Sciences | Climate modeling | The [Berkeley Atmospheric Sciences Center](https://atmosphere.berkeley.edu/) (BASC) is the hub for UC Berkeley's research on the science of the atmosphere, its interactions with Earth systems, and the future of Earth's climate Christie Boering, DirectorInez Fung, Co-DirectorBill Boos, Co-Director |  |  |
| William | [Boos](https://eps.berkeley.edu/people/william-boos) | Earth and Planetary Science | L&S Physical Sciences | Heat, Drought, Extreme storms, Flood, Climate modeling | Atmospheric science, climate dynamics, monsoons, Earth's hydrological cycle, heatwaves, extreme precipitation  | [Mechanical forcing of the North American monsoon by orography](https://boos.berkeley.edu/publication/boos2021/) (2021)Academic Senate Committee on Climate | EPS c181 (Atmospheric Physics & Dynamics, Fall 2023); EPS 81 (Extreme Weather & Climate, Spring 2024) |
| Bruce | [Buffett](https://eps.berkeley.edu/people/bruce-buffett) | Earth and Planetary Sciences | L&S Physical Sciences | Climate modeling | Physical modeling of [gas hydrates](https://en.wikipedia.org/wiki/Clathrate_hydrate) and consequences for climate change. Dynamics and evolution of planetary interiors, including mantle convection, plate tectonics, and planetary dynamos.  |  |  |
| Roland  | [Burgmann](https://www.google.com/search?q=roland+burgmann&source=hp&ei=VVRuZLyXHsLKkPIPnM6R6Ak&iflsig=AOEireoAAAAAZG5iZUH_5ahPiLN8Sok66neO2WrK7nLK&ved=0ahUKEwj8ldbyx47_AhVCJUQIHRxnBJ0Q4dUDCAo&uact=5&oq=roland+burgmann&gs_lcp=Cgdnd3Mtd2l6EAMyBQguEIAEMgUIABCABDIGCAAQFhAeMgYIABAWEB4yBggAEBYQHjICCCY6CwguEIoFELEDEIMBOggIABCABBCxAzoLCC4QgAQQsQMQgwE6FAguEIAEELEDEIMBEMcBENEDENQCOhEILhCABBCxAxCDARDHARDRAzoLCAAQgAQQsQMQgwE6CwguEIAEEMcBENEDOg4ILhCKBRCxAxCDARDUAjoRCC4QigUQsQMQgwEQxwEQ0QM6DgguEIAEELEDEIMBENQCOg4ILhCABBCxAxDHARDRAzoLCAAQigUQsQMQgwE6CAguEIAEELEDOgsILhCABBDHARCvAToICC4QgAQQ5QQ6CAguEIAEENQCOgsILhCDARCxAxCABDoHCAAQgAQQCjoWCC4QgwEQxwEQ1AIQsQMQ0QMQgAQQCjoICAAQigUQhgNQAFiqGGDQGmgAcAB4AIABhgSIAdkVkgELNi40LjIuMS4xLjGYAQCgAQE&sclient=gws-wiz) | Earth and Planetary Sciences | L&S Physical Sciences | Flooding, sea level rise | Land subsidence, tectonics | 2018 study on land subsidence for infill around SF Bay – subsidence will work with sea level rise to flood key bayside infrastructure and lands. <https://www.youtube.com/watch?v=NaRCmGjRGy0>New (accepted) review paper on "[Climate- and Weather-Driven Solid-Earth Deformation and Seismicity](https://eartharxiv.org/repository/view/6049/)" |  |
| William | [Dietrich](https://eps.berkeley.edu/people/william-e-dietrich) | Earth and Planetary Science | L&S Physical Sciences | Drought, wildfire, extreme storms, ecosystems/biodiversity | Seeking mechanistic, quantitative understanding of the form and evolution of landscapes. In addition, we are seeking linkages between ecological and geomorphic processes, and building tools to tackle pressing environmental problems.   | NCALM –National [Center for Airborne Laser Mapping](http://calm.geo.berkeley.edu/ncalm/dtc.html) co-director  |  |
| Michael  | [Manga](https://eps.berkeley.edu/people/michael-manga) | Earth and Planetary Sciences | L&S Physical Sciences | Water, energy | Effects of volcanic eruptions on climate; effects of climate change on natural hazards from volcanoes and earthquakes. Controls on streamflow variability.  |  | . |
| Rusen  | [Oktem](https://eesa.lbl.gov/profiles/rusen-oktem/) | EPS | L&S Physical Sciences | Clouds, climate modeling, water | 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](https://abc7news.com/weather-patterns-uc-berkeley-research-team-california-drought-using-clouds-to-predict-end-of/851533/) — 4D Stereophotogrammetry leads to new data sets.Use stereo photogrammetry to collect data on atmospheric clouds. Analyze observation data to understand the cloud processes. |  |
| David  | [Romps](https://eps.berkeley.edu/people/david-romps) | Earth and Planetary Sciences | L&S Physical Sciences | Climate modeling, heat, drought, water | Romps’ work on atmospheric dynamics includes research on cloud dynamics, microphysics, and the interaction of clouds with Earth’s climate. Participant in [proposal](https://www.dropbox.com/s/gq87rqqfw9ervm7/FAQ%20for%20AS%20Climate%20Change%20Proposal.pdf?dl=0) for a new Academic Senate Climate Change Standing Committee.Yi-Chuan Lu is grad student working with Romps on heat and other issues | [A list of Romps’ research](https://romps.berkeley.edu/research/index.html#21water): [Berkeley Researchers Look to Clouds for Drought Clues](https://abc7news.com/weather-patterns-uc-berkeley-research-team-california-drought-using-clouds-to-predict-end-of/851533/) — 4D Stereophotogrammetry leads to new data sets.[13-minute Youtube video (May 2022) examining the techniques of climate denial.](https://www.youtube.com/watch?v=UNgArVu-Qvc)2023 UCOP Proposal: Ranking California's climate-intensified heat waves using downscaled metrics of heat stress |  |
| Nicholas  | [Swanson-Hysell](https://eps.berkeley.edu/people/nicholas-swanson-hysell) | Earth and Planetary Sciences | L&S Physical Sciences | Climate history | Earth history revealed through the geologic record; paleogeography; long-term drivers of Earth's climate; geomagnetic field evolution | [Ice Ages Triggered When Tropical Islands and Continents Collide](https://vcresearch.berkeley.edu/news/ice-ages-triggered-when-tropical-islands-and-continents-collide) | [Advanced Field Course – EPS 118](https://classes.berkeley.edu/content/2024-spring-eps-118-001-lec-001) |
| Inez  | [Fung](https://ourenvironment.berkeley.edu/people/inez-fung) | EPS, ESPM | L&S Physical Sciences, RCNR | Climate Change, Carbon Cycle | 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](https://classes.berkeley.edu/content/2023-fall-eps-c183-001-lec-001) |
| Clair  | [Brown](https://www.econ.berkeley.edu/faculty/807) | Economics | L&S Social Sciences  | Climate Equity/Environmental Justice, Risk  | Economics, labor, labor market institutions, inequality, climate change.Her research interests focus on creating a sustainable economy that shares prosperity and cares for all people.Brown is on the working group that developed a [proposal](http://tinyurl.com/Berkeley-CCC-FAQ) for a Climate Change Committee within the Academic Senate. | [Sustainable Share-prosperity Policy Index (SSPI)](https://irle.berkeley.edu/research-centers/center-for-work-technology-and-society/creating-a-sustainable-shared-prosperity-policy-index-sspi/) that evaluates 50 countries’ economic policies according to how well they would protect the environment (sustainability), structure markets to achieve social goals (equity), and provide basic goods and opportunities (wellbeing). [Genuine Progress Indicator for California and the United States.](https://irle.berkeley.edu/research-centers/center-for-work-technology-and-society/genuine-progress-indicator-gpi/) This index integrates measurements of inequality and environmental degradation as well as value of nonmarket activities and consumption to provide an inclusive measurement of sustainable economic performance.*Buddhist Economics: An enlightened approach to the dismal science*(Bloomsbury Press)You can listen to podcasts with Brown:  <https://buddhisteconomics.net/podcasts/>UCOP $100M Climate Action LOI lead – January 2023 | Research seminars with independent research credit to work on Divestment from Fossil Fuel Industry, and on Sustainable, Shared-Prosperity Policy Index [both undergraduates and graduates]. |
| Silvia  | [Bunge](http://bungelab.berkeley.edu/silvia-bunge/) | Psychology | L&S Social Sciences | Wildfire smoke (and indoor air filtration) on brain function | Bunge studies abstract reasoning and goal-directed behavior. She is interested in studying how to combat psychological factors like motivated reasoning and fatalism that contribute to apathy with regards to fighting climate change.  Bunge was on the working group that developed a [proposal](http://tinyurl.com/Berkeley-CCC-FAQ) for a Climate Change Committee within the Academic Senate. | 2023 UCOP Proposal: A School-Based Indoor Air Pollution Intervention Aimed at Improving Cognitive and Brain Health |  |
| Jeffrey | [Chambers](https://vcresearch.berkeley.edu/faculty/jeffrey-chambers) | Geography | L&S Social Sciences | Ecosystems/Biodiversity, Wildfire, Drought, water | Chamber’s research is focused on forest impacts from climate change and other disturbances (hurricanes, drought, fire), biogeography, and land-atmosphere interactions.  current activities in Puerto Rico, Panama, the Brazilian Amazon, and California. |  |  |
| John | [Chiang](https://geography.berkeley.edu/john-chiang) | Geography | L&S Social Sciences | DroughtFlood  | 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](https://classes.berkeley.edu/content/2023-fall-geog-142-001-lec-001) |
| Daniel Aldana  | [Cohen](https://sociology.berkeley.edu/faculty/daniel-aldana-cohen) | Sociology | L&S Social Sciences | Climate Equity/Environmental justice, policy, migration | Cohen works on the intersections of the climate emergency, housing, political economy, social movements, and inequalities of race and class in the United States and Brazil. As Director of [Socio-Spatial Climate Collaborative](https://sc2.berkeley.edu/) (SC)2, he is leading qualitative and quantitative research projects on Whole Community Climate Mapping, green political economy, and eco-apartheid.[Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | [Should We Start Preparing for the Evacuation of Miami?](https://sociology.berkeley.edu/professor-daniel-cohen-writes-about-climate-migrants-nation) | Teaching: SOCIOL 139 – Sociology of the Climate Emergency |
| Kurt | [Cuffey](https://geography.berkeley.edu/kurt-cuffey) | EPS, Geography | L&S Social Sciences | Ecosystems/Biodiversity, Climate modeling | Cuffey’s research emphasizes the environmental change of polar regions, with a focus on glaciologic problems. The choice of polar glaciology reflects the unique and powerful contributions that this subdiscipline makes to environmental change research. Ice core reconstructions of environmental history offer the most comprehensive, varied, and high-resolution view yet achieved of past environments. The ice sheets themselves are a major control on global sea level and albedo, and on high-latitude atmospheric and oceanic circulations, and on physical landscape characteristics. No other topographic features of this size and importance are changeable on such short time scales. |  | Glaciology (EPS C242 / Geog C241) |
| Al-An | [deSouza](https://art.berkeley.edu/alla-desouza) | Art Practice | L&S Social Sciences | Education, Public awareness | **deSouza** works across different disciplines, including photography, digital media, text, performance, and pedagogy. Their work examines and restages colonizing legacies through strategies of humor, fabulation, and (mis)translation. |  | Teaching: ART 160 - Art Criticism for a Changing WorldThis course encourages multiple approaches to writing, emphasizing how climate crisis and recent social reckonings around racial and gender equity have placed new expectations on art and its criticism. Students can enroll from any major and without prior experience of art or art history. We will consider “art” in its broadest sense, from museum and gallery culture… |
| Junko | [Habu](https://vcresearch.berkeley.edu/faculty/junko-habu) | Anthropology | L&S Social Sciences | Food/Agriculture, and Ecosystems/Biodiversity | Habu conducts research on human-environmental interaction, human rights, and the long-term sustainability of human cultures and societies in the past and present. Using the theoretical framework of historical ecology, the research focuses on the importance of food and subsistence diversity, social networks and local autonomy for understanding the resilience of socioeconomic systems. |  | [Environmental Archeology ANTHRO 135B 001 - LEC 001](https://classes.berkeley.edu/content/2023-fall-anthro-135b-001-lec-001) |
| Susan  | [Hyde](https://vcresearch.berkeley.edu/faculty/susan-hyde) | Political Sciences | L&S Social Sciences | Governance, International institutions/organizations | Chair, [Institute of International Studies](https://iis.berkeley.edu/)Hyde is chair of the Department of Political Science, and the co-director of the Institute of International Studies. She studies international influences on domestic politics, teaches courses on international relations and comparative politics, and is active in promoting policy-relevant research. She is an expert on international election observation, election fraud, democracy promotion, and international norms.  |  |  |
| Rich  | [Ivry](https://psychology.berkeley.edu/people/richard-ivry) | Psychology | L&S Social Sciences | Education/Public Awareness | Ivry was part of the working group that developed a [proposal](http://tinyurl.com/Berkeley-CCC-FAQ) for a Climate Change Committee within the Academic Senate.The CognAc lab explores various aspects of human performance with a focus on how people select, plan, and produce movement.   We use a variety of methods, including behavioral studies in healthy and neurologically impaired populations, TMS, fMRI, EEG, ECoG, and computational modeling.   |  |  |
| Laurel  | [Larsen](https://geography.berkeley.edu/laurel-larsen) | Geography | L&S Social Sciences | Water, Ecosystems/Biodiversity | 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](https://www.esdlberkeley.com/) | 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. |
| Ayesha  | [Mahmud](https://vcresearch.berkeley.edu/faculty/ayesha-s-mahmud) | Demography | L&S Social Sciences | Health, Migration, Vectors | Mahmud is a demographer who is broadly interested in the interplay between human population changes, environmental factors, and infectious disease dynamics. Her research draws on theory and methods from demography and disease ecology, to answer questions such as - why do outbreaks occur at certain times of the year? How and why does the mortality burden of infectious diseases vary over time? How do population travel patterns drive the spatial dynamics of outbreaks? How will global environmental and demographic changes alter the landscape of infectious disease burden in the future?  | [The Impact Of Current And Future Climates On Spatiotemporal Dynamics Of Influenza In A Tropical Setting](https://academic.oup.com/pnasnexus/article/2/9/pgad307/7277025) (2023)[Infectious Disease in an Era of Global Change](https://www.nature.com/articles/s41579-021-00639-z) (2021)[The Impact of Climate Change on Vaccine-Preventable Diseases: Insights From Current Research and New Directions](https://link.springer.com/article/10.1007/s40572-020-00293-2) (2020)[Epidemic Dynamics of Respiratory Syncytial Virus in Current and Future Climates](https://www.nature.com/articles/s41467-019-13562-y) (2019)[Dynamic Response of Airborne Infections to Climate Change: Predictions for Varicella](https://link.springer.com/article/10.1007/s10584-018-2204-4#:~:text=Our%20simulations%20suggest%20that%20the,and%20a%20decrease%20in%20winter) (2018) | 10/20 |
| Ayesha | [Mahmud](https://vcresearch.berkeley.edu/faculty/ayesha-mahmud) | Demography | L&S Social Sciences | Health, Climate modeling, Migration, Disease | Ayesha Mahmud is a demographer, who is broadly interested in the interplay between human population changes, environmental factors, and infectious disease dynamics. Her research draws on theory and methods from demography and disease ecology, to answer questions such as - why do outbreaks occur at certain times of the year? How and why does the mortality burden of infectious diseases vary over time? How do population travel patterns drive the spatial dynamics of outbreaks? How will global environmental and demographic changes alter the landscape of infectious disease burden in the future? She uses statistical methods and biologically mechanistic models to answer these questions in the context of multiple diseases in countries in Asia, Africa, and Central America, using data from disease surveillance systems, hospital databases, climate models, human mobility data, and population surveys and censuses. | [The impact of current and future climates on spatiotemporal dynamics of influenza in a tropical setting (2023)](https://academic.oup.com/pnasnexus/article/2/9/pgad307/7277025) |  |
| Norman  | [Miller](https://geography.berkeley.edu/norman-miller) | Geography | L&S Social Sciences | Climate modeling, Water, Heat, Drought, Extreme storms, Flood | 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. |  | [GEOG 149A: Climates of the World.](https://classes.berkeley.edu/content/2023-fall-geog-149a-001-lec-001)  |
| David | [Montejano](https://vcresearch.berkeley.edu/faculty/david-montejano) | Ethnic Studies | L&S Social Sciences | Climate equity/Environmental justice | Montejano’s major areas of interest include Comparative and Historical Sociology, Political Sociology, Social Change, Race and Ethnic Relations, and Community Studies.  Chair, [Latinx Research Center](https://lrc.berkeley.edu/) |  |  |
| Alison | [Post](https://polisci.berkeley.edu/people/person/alison-post) | Political Science | L&S Social Sciences | Policy, Water, Governance | Post is an Associate Professor of Political Science and [Global Metropolitan Studies](http://metrostudies.berkeley.edu/).  Her research lies at the intersection of comparative urban politics and comparative political economy, with regional emphases on Latin America and South Asia.  It examines several related themes: regulation and business-government relations, decentralization, and the politics of urban policy more broadly.   | Principal Investigator, “City Size and Public Service Delivery in Comparative Perspective,” National Science Foundation, 2023-2025. Co-Principal Investigator (with Jeffrey Paller, George Bob-Milliar, Intissar Kherigi, Ellen Lust), “Political Change and Local Governance in Emerging Cities,” Swedish Research Council.   | **On sabbatical** |
| Robert | [Rhew](https://geography.berkeley.edu/robert-rhew) | Geography | L&S Social Sciences | Air pollution, food/agriculture, short-lived climate pollutantsmethane, tropospheric ozone, HCFCs, long-lived climate pollutants, CFCshydrogen, education, public awareness, land use | Trace gas fluxes. Rhew’s research includes trace gas biogeochemistry, effect of land cover on trace gas exchange, biosphere-atmosphere interactions, and atmospheric pollution.  Our focus has been on three groups of Biogenic Volatile Organic Compounds (BVOCs):  halocarbons, reduced sulfur gases, and light hydrocarbons.  We are increasingly interested in the impacts that agriculture, invasive species, and fire management have on the atmosphere.   | Also: [Communicating Climate Science](https://geography.berkeley.edu/sites/default/files/geog147fall2015.pdf) (with Lawrence Hall of Science educators) | NatRes24: Global Environment Theme House seminar (fall and spring) |
| Nathan  | [Sayre](https://geography.berkeley.edu/nathan-sayre) | Geography | L&S Social Sciences | Ecosystems/Biodiversity, water, drought, wildfire | 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. | He co-teaches a course on Global Warming. |
|  | [Social Science Matrix](https://matrix.berkeley.edu/) |  | L&S Social Sciences | Wildfire, Migration | Marion Fourcade, Executive Director, [Social Science Matrix](https://live-ssmatrix.pantheon.berkeley.edu/)Eva Seto, Associate Director, [Social Science Matrix](https://matrix.berkeley.edu/)**Our purpose is captured in our name: we provide an organizational framework—a “matrix”—that supports cross-disciplinary research pursued by social scientists across the University of California, Berkeley campus and beyond.****Conducts workshops and other activities on climate change. Developed an extensive directory of Berkeley social science researchers working on climate.** | [Disaster and Displacement: Inequalities in Climate Migration](https://live-ssmatrix.pantheon.berkeley.edu/research-article/video-disaster-and-displacement-inequalities-climate-migration/) **(video)**[The Labor of Fire: Wildlands Firefighting and Incarceration in California](https://live-ssmatrix.pantheon.berkeley.edu/research-article/the-labor-of-fire-wildlands-firefighting-and-incarceration-in-california/) **(video)**[Advanced Workshop in Climate Change Economics](https://live-ssmatrix.pantheon.berkeley.edu/research-article/2020-advanced-workshop-climate-change-economics/) **(video)** |  |
| Sarah | [Vaughn](https://anthropology.berkeley.edu/sarah-e-vaughn) | Anthropology | L&S Social Sciences | Education, Public Awareness, Climate Equity/Environmental Justice, sea level rise, floods, governance, finance, risk/insurance | 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 change has in shaping the materiality of expertise, an ethics of (re)distribution, and narrative form.   | Author: [Engineering Vulnerability in Pursuit of Climate Adaptation](https://www.dukeupress.edu/engineering-vulnerability) | Teaching: ANTHRO 189 - Special Topics in Social/Cultural Anthropology: Climate Change and the Senses |
| Ken | [Alex](https://www.law.berkeley.edu/research/clee/about/people/ken-alex/) | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) | Law | Energy, Policy, Wildfire, Methane  | Director, [Project Climate](https://www.law.berkeley.edu/research/clee/research/climate/projectclimate/) Project Climate is focused on moving promising climate solutions **more quickly** to policy and scale. [GrizzlyCorps](https://grizzly.berkeley.edu/)[Methane](https://www.law.berkeley.edu/research/clee/research/climate/projectclimate/methane/)Low Hydrocarbon Plastics StandardProcurement[Climate Break](http://climatebreak.org)[Trump Environmental Rollbacks](https://www.law.berkeley.edu/research/clee/reversing-environmental-rollbacks/)Climate and Wildfire InstituteClimate Corporate Risk DisclosureTrump Judges Project | 2023 UCOP Proposal: Cutting Climate & Health Super-Pollutant Emissions through Next Generation Landfill Monitoring |  |
| Alexey | [Berlind](https://humanrights.berkeley.edu/about/faculty-staff-and-consultants/alexey-berlind) |  | Law | Human Rights Center | Fellowship Program and Events Associate Director of the Human Rights Center. He curates and manages the center's events and thematic event series, oversees the center’s office operations and logistics, and manages transactions for the center and its programs.  |  |  |
| Eric | [Biber](https://ccci.berkeley.edu/people/ccci-biber-eric) | Environmental and Energy Law | Law | Policy, Law, Governance | Biber is Director for Environmental and Energy Law Programs. His research interests are environmental law, natural resources law, energy law, land-use law, federal Indian law, administrative law, and property. | Climate policy sequencing and the political economy of decarbonization. Regulatory obstacles to clean energy development. Law in the Anthropocene Epoch, 106 Geo. L.J. 1 (2017) Keeping it All In the Ground, 63 Arizona L. Rev. 279 (2021) (with Jordan Diamond) A Policy Roadmap for Negative Emissions Using Direct Air Capture, Nature Communications (2021) (with Jonas Meckling), available at https://doi.org/10.1038/s41467-021-22347-1 Regulating greenhouse gas emissions under the Endangered Species Act, Mich. J. Envt’l & Admin. L. (forthcoming 2023) |  |
| Molly | [Bruce](https://www.law.berkeley.edu/research/clee/about/people/molly-bruce/) | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) | Law | Water | Research Fellow with the Wheeler Water Institute at CLEE. Her work concentrates on sustainable water and environmental management, with a focus on groundwater recharge innovation. She seeks to understand the institutional and political hurdles that stymie effective stewardship of natural resources as well as the role interdisciplinarity can play in overcoming these hurdles. | [CBA](https://www.nature.com/articles/s44221-023-00141-1) of ReNeM program in Nature Water; [EPA](https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract_id/11297/report/0) Enhanced Aquifer Recharge Grant; [UCOP](https://uckeepresearching.org/wp-content/uploads/2023/08/Climate-Action-Seed-and-Matching-Grants_2023.pdf) Climate Action Grant about levee setbacks |  |
|  | [California-China Climate Institute](https://ccci.berkeley.edu/) |  | Law | Transportation, Energy, Policy | [Fan Dai](https://ccci.berkeley.edu/people/ccci-dai-fan), Executive Director[Jessica Gordon, Senior Climate Policy Fellow](https://ccci.berkeley.edu/people/ccci-gordon-jessica)[Jennifer Perron, Senior Climate Policy Fellow](https://ccci.berkeley.edu/people/ccci-perron-jennifer)CCCI is led by former California Governor Jerry Brown and Vice Chair Mary Nichols. CCCI is a UC-wide initiative housed jointly at Berkeley Law — through its [Center for Law, Energy & the Environment](https://www.law.berkeley.edu/research/clee/) — and [Rausser College of Natural Resources](https://nature.berkeley.edu/) and partners with the Institute of Climate Change and Sustainable Development at Tsinghua University — one of China’s preeminent research institutions. The Institute also works closely with other University of California campuses, departments and leaders.Launched in September 2019, CCCI was established to spur further climate action through joint research, training and dialogue in California and China. This Institute informs national policy makers, fosters dialogue and cooperation, and promotes the implementation of climate solutions at all levels. | [Renewable Energy Pathways to Carbon Neutrality in China](https://ccci.berkeley.edu/sites/default/files/Renewable%20Energy%20Pathways%20to%20Carbon%20Neutrality%20in%20China%20May%202023.pdf) (May 2023)In collaboration with UC San Diego and Tsinghua University, this report defines feasible and efficient renewable energy pathways, by decade, to support a more effective and equitable clean energy transition for China. This work uncovers deployment priorities across time and space and provides recommendations for near- and long-term action.[Reducing Methane Emissions from the Solid Waste Sector: Lessons from California's Experiences](https://ccci.berkeley.edu/sites/default/files/Reducing%20Methane%20Emissions%20from%20the%20Solid%20Waste%20Sector%20Lessons%20from%20Californias%20Experience_March%202023.pdf) (March 2023) This paper provides an overview of California's policies and implementation strategies aimed at mitigating waste methane emissions, and identifies policy gaps and recommendations for future action. [Forging A Shared Path to a Net-Zero Future: U.S.-China Climate Action Opportunities Paper Series](https://ccci.berkeley.edu/us-china-paper-series) (March 2023) The California-China Climate Institute published an eleven-paper series of new research, "Forging A Shared Path to a Net-Zero Future: U.S.-China Climate Action Opportunities Paper Series," authored by more than three dozen experts from across the U.S. and China. The series identifies key opportunities for the world’s biggest emitters to accelerate climate action and deliver on the U.S.-China Joint Glasgow Declaration they agreed to at COP26. [Read the full series](https://ccci.berkeley.edu/us-china-paper-series) |  |
|  | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) |  | Law | Water, Energy, Wildfire, Transportation, Short-Lived Climate Pollutants (Methane), Land Use, Policy, Risk/Insurance | [Daniel Farber](http://dfarber@law.berkeley.edu/), Faculty Director[Louise Bedsworth, Executive Director](http://louise.bedsworth@berkeley.edu/)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](https://www.law.berkeley.edu/research/clee/research/climate/)
* [Water](https://www.law.berkeley.edu/research/clee/research/wheeler/)
* [Oceans](https://www.law.berkeley.edu/research/clee/research/law-of-the-sea-institute/)
* [Land Use](https://www.law.berkeley.edu/research/clee/research/land-use/)
 | Bay Area Heat Health Climate Project[Looking Forward: A Guide to Climate Risk Scenario Analysis Design](https://www.law.berkeley.edu/wp-content/uploads/2023/04/Looking-Forward-April-2023.pdf)[for California’s Insurance Regulator](https://www.law.berkeley.edu/wp-content/uploads/2023/04/Looking-Forward-April-2023.pdf) |  |
| Erwin | [Chemerinsky](https://www.law.berkeley.edu/our-faculty/faculty-profiles/erwin-chemerinsky/#tab_profile) |  | Law | Policy | Erwin Chemerinsky, Dean, [Berkeley Law](https://www.law.berkeley.edu/)Berkeley Law includes the a number of institutes, centers and initiatives working in the climate space, including:* [Center for Law, Energy & the Environment](http://www.law.berkeley.edu/research/clee/)
* [Human Rights Center](https://www.law.berkeley.edu/research/human-rights-center/)
 |  |  |
| Gil  | Damon | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) | Law | Energy | Researching the methane policies of California and sub-nationals outside of U.S. with a focus on livestock and waste emissions. Damon contributed to CLEE’s Methane Frameworks — practical guides to help governments develop strong methane strategies. |  |  |
| Holly | [Doremus](https://www.law.berkeley.edu/our-faculty/faculty-profiles/holly-doremus/#tab_profile) | Law of the Sea Institute | Law | Water, Policy | Co-Director, Law of the Sea InstituteCo-Faculty Director, Berkeley Institute for Parks, People, and Biodiversity |  |  |
| Ethan | [Elkind](https://www.law.berkeley.edu/research/clee/about/people/ethan-elkind/) | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) | Law | Transportation, energy, policy, carbon removal and storage | Director, [CLEE Climate Program](https://www.law.berkeley.edu/research/clee/research/climate/) [Climate Change and Business Research Initiative](http://www.climatepolicysolutions.org/), Lead AuthorThe [Climate Change & Business Research Initiative](https://www.law.berkeley.edu/research/clee/research/climate/climate-change-and-business-research-initiative/) engages business, nonprofit and government leaders in a collaborative project to achieve economic and environmental benefits from California’s climate policies and program. The series includes over 20 reports spanning seven sectors of the economy, all of which are available at [climatepolicysolutions.org](http://climatepolicysolutions.org/). | [Investing in Nature as a Climate Solution](https://www.law.berkeley.edu/research/clee/research/climate/climate-change-and-business-research-initiative/investing-in-nature-as-a-climate-solution/) (June 2021)[**Priorities for Sonoma County’s Wildfire Settlement Vegetation Management Funds**](https://www.law.berkeley.edu/research/clee/research/climate/california-climate-action/priorities-for-sonoma-countys-vegetation-management-funds/)**(March 2021)**[**Data Access for a Decarbonized Grid**](https://www.law.berkeley.edu/wp-content/uploads/2021/02/Data-Access-for-a-Decarbonized-Grid-February-2021.pdf) **(February 2021)**[**Setting Priorities for Building Decarbonization**](https://www.law.berkeley.edu/research/clee/research/climate/climate-change-and-business-research-initiative/setting-priorities-for-building-decarbonization/) (January 2021)[Capturing Opportunity: Law and Policy Solutions to Accelerate Engineered Carbon Removal in California](https://www.law.berkeley.edu/research/clee/research/climate/climate-change-and-business-research-initiative/accelerating-engineered-carbon-removal-in-california/) (December 2020)[**Insuring Extreme Heat Risks**](https://www.law.berkeley.edu/research/clee/research/climate/california-climate-action/insuring-extreme-heat-risks/) (December 2020)[The California Roadmap](https://www.law.berkeley.edu/research/clee/research/climate/climate-risk-initiative/the-california-responsible-investment-roadmap/) (September 2020)[**Sustainable Drive, Sustainable Supply: Priorities to Improve the Electric Vehicle Battery Supply Chain**](https://www.law.berkeley.edu/research/clee/research/climate/transportation/building-a-sustainable-electric-vehicle-battery-supply-chain/) **(July 2020**)[Clean and Resilient: Policy Solutions for California’s Grid of the Future](https://www.law.berkeley.edu/research/clee/research/climate/california-climate-action/clean-and-resilient/)(June 2020)[**Legal Grounds: Law and Policy Options to Facilitate a Phase-out of Fossil Fuel Production in California**](https://www.law.berkeley.edu/research/clee/research/climate/california-climate-action/legal-grounds/)(April 2020)[**Building a Sustainable Electric Vehicle Battery Supply Chain: Frequently Asked Questions**](https://www.law.berkeley.edu/research/clee/research/climate/transportation/building-a-sustainable-electric-vehicle-battery-supply-chain/)(April 2020)[California Climate Risk: Insurance-Based Approaches to Mitigation and Resilience](https://www.law.berkeley.edu/research/clee/research/climate/california-climate-action/california-climate-risk/)(December 2019)[**Electric Vehicle Batteries: A Guidebook for Responsible Corporate Engagement Throughout the Supply Chain**](https://www.law.berkeley.edu/research/clee/research/climate/transportation/electric-vehicle-batteries/)[Clean Takeoff: Policy Solutions to Promote Sustainable Aviation in California](https://www.law.berkeley.edu/research/clee/research/climate/transportation/policy-options-for-sustainable-aviation-in-california/) |  |
| Dan | [Farber](https://www.law.berkeley.edu/our-faculty/faculty-profiles/daniel-farber/#tab_profile) | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) | Law | Energy, Policy  | Faculty Director, [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/)Farber is the Co-Chair of the Academic Senate committee exploring climate change education and research on the campus. |  |  |
| Nell  | [Green](https://www.law.berkeley.edu/research/clee/about/people/nell-green-nylen/) [Nylen](https://www.law.berkeley.edu/research/clee/about/people/nell-green-nylen/) | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) | Law | Water, Drought, Flood, Law, Policy | 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 SystemsProject (US EPA 2022-2025): A knowledge-to-implementation framework for Enhanced Aquifer RechargeProject (USDA: 2021-2026): Securing a climate resilient water future for agriculture and ecosystems through innovation in measurement, management, and marketsReport (2023): Managing Water Scarcity: A Framework for Fair and Effective Water Right Curtailment in CaliforniaPaper (2021): Surface Water Quality Regulation as a Driver for Groundwater Recharge: The Case of Virginia’s Sustainable Water Initiative for TomorrowReport (2017): Trading Sustainably: Critical Considerations for Local Groundwater Markets Under the Sustainable Groundwater Management Act |  |
| Katherine | [Hoff](https://www.law.berkeley.edu/research/clee/about/people/) | Center for Law Energy and Environment | Law | Wind, Energy, Just Transition, Climate Equity/Environmental JusticeTribes | Hoff is a research fellow at CLEE where she currently works on offshore wind, wildfire mitigation and resilience metrics, plus energy retrofits for low-income communities. |  |  |
| Alan | [Iijima](https://humanrights.berkeley.edu/about/staff-profiles/alan-iijima) | Human Rights Center | Law | Poverty, health, policy | Development Manager, Human Rights Center (Berkeley Law)**Iijima** is the Development Manager of the Human Rights Center. In this position, he develops and implements the Human Rights Center’s fundraising programs and donor relations strategy, as well as coordinates development-related outreach and solicitation.  | UCOP $100M Climate Action LOI lead |  |
| Dave | Jones | Center for Law Energy and Environment | Law | Law, Risk/Insurance, Wildfire | Jones is the Director of the [Climate Risk Initiative](https://www.law.berkeley.edu/research/clee/research/climate/climate-risk-initiative/) at Berkeley’s Center for Law, Energy and the Environment (CLEE) and a Senior Fellow at The ClimateWorks Foundation.CLEE has established the *Climate Risk Initiative* to research and develop market based, regulatory and public policy tools to assist the insurance and financial industries in recognizing, addressing and responding to the risks caused by climate change. The Initiative will develop high-impact market based, regulatory, and public policy approaches to address climate risk facing the insurance sector and the broader financial sector. It will produce policy guidance for key decision-makers, create a space to convene industry and other stakeholders for action-oriented discussion, promote research to the public via events and media outreach, and serve as a resource to policy makers seeking to implement new and innovative tools. | [**Scenario Analysis for California’s Insurance Regulator**](https://www.law.berkeley.edu/research/clee/research/climate/climate-risk-initiative/insurance-scenario-analysis/)California’s insurance industry faces significant risks from climate change, including both the transition risks facing all financial institutions as the global economy shifts toward decarbonization and the singular combination of physical risks–wildfire, drought, coastal hazards, extreme heat—that threaten California’s communities and businesses. CLEE’s report [*Looking Forward*](https://www.law.berkeley.edu/wp-content/uploads/2023/04/Looking-Forward-April-2023.pdf) explores the field of climate risk scenario analysis—a key instrument to assess financial risk in projected future scenarios—and makes recommendations for the California Department of Insurance to design scenario analysis exercises and engage California insurance companies in forward-looking risk assessment. |  |
| Michael | [Kiparsky](https://www.law.berkeley.edu/research/clee/about/people/michael-kiparsky/) | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/)[Wheeler Institute](https://www.law.berkeley.edu/research/clee/research/wheeler/) | Law | Water, Policy | Director, [Wheeler Water Institute](https://www.law.berkeley.edu/research/clee/research/wheeler/)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. Examples include: Developing capacity of groundwater systems to weather climate disruption by fostering sustainable groundwater management and innovative strategies for groundwater recharge:  |  |
| Ted | [Lamm](https://www.law.berkeley.edu/research/clee/about/people/ted-lamm/) | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) | Law | Transportation, climate equity/EJ, law, policy, finance, risk/insurance | Ted’s work focuses on the development of state and local climate policies, transportation and building electrification, and climate-related risks.  | [EV Equity Initaitive](https://www.law.berkeley.edu/research/clee/ev-equity/) (ongoing), [Climate Risk Scenario Analysis for the California Department of Insurance (2023)](https://www.law.berkeley.edu/research/clee/research/climate/climate-risk-initiative/insurance-scenario-analysis/), [The Future of California Consumer Energy Finance 2023)](https://www.law.berkeley.edu/research/clee/research/climate/energy-efficiency/financing/), [Funding San Francisco Climate Action (2022)](https://www.law.berkeley.edu/research/clee/research/climate/california-climate-action/funding-sf-cap/) |  |
| Claudia | [Polsky](https://www.law.berkeley.edu/our-faculty/faculty-profiles/claudia-polsky/#tab_profile) | Environmental Law Clinic | Law | Policy, Climate Equity/Environmental justice | Founding Director, Environmental Law ClinicThe clinic tackles critical environmental health and environmental justice issues through litigation, administrative agency practice, legislation, and policy analysis on behalf of real-world clients.  | [The Dark Side of the Sun: How PACE Financing Has Under-Delivered Green Benefits and Harmed Low-Income Homeowners](https://www.law.berkeley.edu/wp-content/uploads/2021/02/ELC_PACE_DARK_SIDE_RPT_2_2021.pdf) (Feb. 2021) | Environmental Law Clinic (F, S)Environmental Law Clinic Seminar (F, S)Advanced Environmental Law Clinic (F, S)Environmental Health Law Through Film (F) |
| Shruti | [Sarode](https://www.law.berkeley.edu/research/clee/about/people/shruti-sarode/) | CLEE | Law | Transportation, Policy | Sarode is a Climate Change Research Fellow at the Center for Law, Energy, & the Environment (CLEE). Shruti’s research focuses on climate change policy, with an emphasis on the challenges of decarbonizing our transportation & energy systems and moving promising climate solutions to policy and scale.  | 1. [How Much Credit Can California Take for the Electric Vehicle Revolution](https://legal-planet.org/2023/06/27/how-much-credit-can-california-take-for-the-electric-vehicle-revolution/)2. [How Major Corporate Fleets Can Drive Responsible and Sustainable EV Battery Supply Chains](https://legal-planet.org/2023/09/07/how-major-corporate-fleets-can-drive-responsible-and-sustainable-ev-battery-supply-chains/)3. [Accelerating Freight Decarbonization](https://legal-planet.org/2023/06/08/accelerating-freight-decarbonization/)[How Can Cities Ensure EV Charging Accessibility for Lower-Income Drivers?](https://legal-planet.org/2024/01/17/how-can-cities-ensure-ev-charging-accessibility-for-lower-income-drivers/)[Watsonville, California as a Case Study for Policymakers](https://legal-planet.org/2024/01/17/how-can-cities-ensure-ev-charging-accessibility-for-lower-income-drivers/) |  |
| Katie | [Segal](https://www.law.berkeley.edu/research/clee/about/people/katie-segal/) | [Center for Law, Energy and Environment](https://www.law.berkeley.edu/research/clee/) | Law | Policy | Segal is a Climate & Ocean Research Fellow at CLEE. Her past work has focused on climate and energy policy and she is especially interested in U.S. state-level policy.  |  |  |
| Eric | [Stover](https://humanrights.berkeley.edu/about/staff-profiles/eric-stover) | Human Rights Center | Law | [Co-Faculty Director, Human Rights Center,](https://humanrights.berkeley.edu/about/staff-profiles/eric-stover) Health, Wildfires, Food/Agriculture |  | 2023 UCOP Proposal: Protecting the Health, Safety, Economic Security of Agricultural Workers During Wildfire Evacuations |  |
| Paul  | [Adams](https://biosciences.lbl.gov/profiles/paul-d-adams/) | [Biosciences Area](https://biosciences.lbl.gov/) | LBNL | Energy, Health | Associate Laboratory Director, [Biosciences Area](https://biosciences.lbl.gov/)The Biosciences Area forges multidisciplinary teams to solve national challenges in energy, environment, and health issues, as well as advance the engineering of biological systems for sustainable manufacturing. 4 Divisions* Biological Systems & Engineering
* DOE Joint Genome Institute
* Environmental Genomics & Systems Biology
* Molecular Biophysics & Integrated Bioimaging

[Biosciences Area Strategic Plan](https://biosciences.lbl.gov/strategic-plan/)[Biosciences ORG CHART](https://biosciences.lbl.gov/wp-content/uploads/2022/01/BSA-Org-Chart-012822.pdf) |  |  |
| David | [Alumbaugh](https://eesa.lbl.gov/profiles/david-alumbaugh/) | Energy Geosciences Division | LBNL | Carbon removal and storage | Lead, [Carbon Storage Program](https://eesa.lbl.gov/programs/geologic-carbon-sequestration/)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)](https://eesa.lbl.gov/projects/best-brine-extraction-and-storage-test/)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 CO2 in deep geologic formations with CO2 permanence of 99% or better.  |  |
| Bhavna | [Arora](https://eesa.lbl.gov/profiles/bhavna-arora/) | Energy Geosciences Division | LBNL | Carbon removal and mineralization | Bhavna Arora is the [Head of the Carbon Removal and Mineralization Program](https://eesa.lbl.gov/profiles/bhavna-arora/). Her research primarily involves reactive transport modeling to provide a comprehensive and predictive understanding of biogeochemical processes in various types of subsurface environments and at different space-time scales.   | Projects: 1) Increasing carbon storage and persistence in soils (RESTOR-C); 2) Enhanced weathering via soil amendments for negative C emissions; 3) Silicate Rock Amendments for Reduced Methane Emissions and Increased Carbon Storage in Rice Fields. A relevant paper: [here](https://www.nature.com/articles/s41598-023-36113-4) |  |
|  | [Belowground Biochemistry](https://tes.lbl.gov/) |  | LBNL | Carbon removal and storage, Food/Agriculture, Forests | We seek to better understand the role of soils in the global climate system. As soils warm, we seek to improve this understanding of belowground biogeochemistry in the soil- plant-climate system, and use this understanding to inform prediction models. | The work utilizes [3 UC field stations](https://tes.lbl.gov/research/research-sites/) at Point Reyes, Hopland and the Georgetown Divide in Sierra Nevada |  |
| Sebastien | [Biraud](https://eesa.lbl.gov/profiles/sebastien-biraud/) | Climate & Ecosystem Sciences Division | LBNL | Climate modeling | [Climate Sciences Department](https://eesa.lbl.gov/departments/climate-sciences/), HeadBiogeochemist at LBL where he leads the Climate Sciences Department. His work has taken him to the tropical rainforests of the Amazon, the great plains of the United States, and the Arctic tundra. Currently operating projects for DOE and other entities. | L[BNL PI for the Undocumented Orphaned Well Program](http://catalog.energy.gov/) Monitoring: PI for [Atmospheric Radiation Project](https://www.arm.gov/) (DOE)Monitoring: PI for [SUper eMitters of Methane Detection Project](https://newscenter.lbl.gov/2019/05/21/berkeley-lab-project-to-pinpoint-methane-super-emitters/)[AmeriFlux Management Project](https://ameriflux.lbl.gov/about/ameriflux-management-project/): Deputy and lead for Tech team These projects involve integrating and applying high-precision greenhouse gas observations to advance research on the atmospheric carbon cycle and to enhance measurement, reporting, and verification of greenhouse gas emissions. |  |
| Jens | [Birkholzer](https://eesa.lbl.gov/profiles/jens-birkholzer/) | Energy Geosciences Division | LBNL | Carbon removal and storage, water | Director, [Energy Geosciences Division](https://eesa.lbl.gov/our-divisions/energy-geosciences/) (in EESA)The mission of the Energy Geosciences Division is to create basic and use-inspired knowledge, methods, and capabilities for sustainable utilization and management of the Earth’s subsurface. | Birkholzer Research: Geologic carbon sequestration — bringing sequestration to scale by solving issues like leakage, induced seismicity, etc. Enhanced weathering (carbon mineralization). Project with UC Davis: Enhanced weathering with crushed rocks on ag fields  |  |
| Hanna | [Breunig](https://eta.lbl.gov/people/hanna-breunig) | Energy Analysis & Environmental Impacts Division | LBNL | Carbon removal and storage | Deputy-Head of the Sustainable Energy and Environmental Systems Department in the Energy Analysis and Environmental Impacts Division. Breunig specializes in techno-economic analysis, process modeling, market analysis, and environmental and human health impact assessment (life-cycle assessment) of emerging energy and negative emissions technologies. These include circular economy, bioenergy and biochar, enhanced weathering, and gas (H2, CO2, CH4) capture, production, storage, utilization, and management technologies.  | [Techno-economic analysis of a CO2 direct air capture-cooling tower hybrid process at a geothermal facility](https://eta-publications.lbl.gov/publications/techno-economic-analysis-co2-direct) (Chemrxiv)[Emerging concepts in intermediate carbon dioxide emplacement to support carbon dioxide removal](https://eta-publications.lbl.gov/publications/emerging-concepts-intermediate-carbon)  |  |
| Donald | [DePaolo](https://eesa.lbl.gov/profiles/donald-j-depaolo/) | Earth and Environmental Sciences Area | LBNL | Carbon removal and storage | DePaolo served as Chair of the Department of Geology and Geophysics 1990-1993 and was Director of the LBNL Earth Sciences Division from 2007-2012.  From 2010-2016 he was Associate Laboratory Director for Energy Sciences.His research involves the use of isotopic measurements as tracers and chronometers of Earth processes.  * Enhanced weathering
* Carbon storage
* Novel disposal concepts in basaltic rocks
* Co-chair on mineralization report (Energy Futures Initiative) – reports will be in language for policy makers
 |  |  |
| Emiley | [Eloe-Fadrosh](https://jgi.doe.gov/our-science/scientists-jgi/emiley-eloe-fadrosh/) | DOE Joint Genome Institute | LBNL | Ecosystems/Biodiversity | Lead for the [National Microbiome Data Collaborative](https://microbiomedata.org/) (NMDC), an initiative for sharing environmental microbiome data, allowing microbial ecologists to explore relationships between microbiome communities and environments. One of our driving strategic intents over the next few years is exploring the relationships between microbes and climate change. | Microbes and Climate Change- Science, People, and Impacts ([Colloquium Report](https://www.ncbi.nlm.nih.gov/books/NBK580166/))[Microbes and Climate Change: a Research Prospectus for the Future. mBio, 13, e00800-00822](https://doi.org/10.1128/mbio.00800-22)  |  |
| Peter | [Fiske](https://eesa.lbl.gov/profiles/peter-sewell-fiske/) | Earth and Environmental Sciences Area | LBNL | Water, energy | Fiske is the Director of the [National Alliance for Water Innovation (NAWI)](https://www.nawihub.org/) and [Water-Energy Resilience Research Institute (WERRI)](https://www.werri.lbl.gov/) 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 use of biomimicry to develop innovative and energy efficient technologies for the water industry. | [Desalination for a Circular Water Economy](https://pubs.rsc.org/en/content/articlelanding/2020/ee/d0ee01653e)– Energy and Environmental Science 2020 |  |
| Jessica | [Granderson](https://eta.lbl.gov/people/jessica-granderson) | Building Technologies and Urban Systems Division | LBNL | Buildings | Dr. Jessica Granderson is the Deputy of Research Programs for the [Building Technology and Urban Systems Division](https://eta.lbl.gov/building-technology-urban-systems). She is a member of the Whole Building Systems Department. NOTE: Currently on temporary leave working with the Building Emissions Team at the White House Council on Economic Quality. |  |  |
| Tianzhen | [Hong](https://eta.lbl.gov/people/tianzhen-hong) | Building Technologies and Urban Systems Division | LBNL | Buildings | Deputy Head of the Building Technologies Department. He leads the Urban Systems Group and a team with research on data, methods, computing, occupant behavior, and policy for design and operation of low energy buildings and sustainable urban systems.  | Projects: (1) [Enhancing utility operations during heatwaves through large-scale sensing and data fusion](https://gridintegration.lbl.gov/enhancing-utility-operations-during-heat-waves-through-large-scale-sensing-and-data-fusion), (2) [Clean Energy to Communities](https://www.energy.gov/eere/clean-energy-communities-program), (3) [Modeling and simulation of city building stocks to prioritize strategies to decarbonizing buildings](https://CityBES.lbl.gov). |  |
| Andy | [Jones](https://eesa.lbl.gov/profiles/andrew-d-jones/) | Climate and Ecosystem Sciences Division | LBNL | Climate modeling, Heat, Water | Jones leads the [Earth Systems and Society Program Domain](https://eesa.lbl.gov/program-domains/earth-systems-society/).   He is the Hydroclimate theme lead for LBL’s [Water-Energy Resilience Research Institute (WERRI)](https://www.werri.lbl.gov/) and the Resilient Systems Grand Challenge lead for the [Earth and Environmental Sciences Strategic Vision](https://eesa.lbl.gov/about/strategic-vision-2025/). 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. | Jones is a lead scientist for the [HyperFACETS Project](https://hyperfacets.ucdavis.edu/) 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 SeminarScience plays a key role in shaping our understanding of climate change, its impacts on society, and the option space for responding to it. An emerging ﬁeld examines the space of actionable knowledge generation for climate-related decision making, including efforts to support decision-making within the context of deep uncertainty. |
| Tom | [Kirchstetter](https://eta.lbl.gov/people/thomas-kirchstetter) | Energy Analysis & Environmental Impacts Division | LBNL | Energy, Wildfire, heat | Director, [Energy Analysis & Environmental Impacts Division](https://energyanalysis.lbl.gov/)EAEI conducts research on energy consumption and related impacts to inform policy, standards, and decision-making for the benefit of society and the environment.* [Environmental Science and Technology](https://energyanalysis.lbl.gov/environmental-science-technology)
* [Healthy and efficient buildings](https://energyanalysis.lbl.gov/healthy-efficient-buildings)
* [Cal THRIVES toolkit](https://energyanalysis.lbl.gov/cal-thrives)
* [Technoeconomic and lifecycle modeling](https://energyanalysis.lbl.gov/technoeconomic-life-cycle-modeling)
* [Energy efficiency](https://energyanalysis.lbl.gov/energy-efficiency)
* [Energy markets and policy](https://energyanalysis.lbl.gov/energy-markets-policy)
* [Renewable energy](https://energyanalysis.lbl.gov/renewable-energy)
* [Transportation systems](https://energyanalysis.lbl.gov/transportation-systems)
* [Research Facilities](https://energyanalysis.lbl.gov/research-facilities)
* [Tools](https://energyanalysis.lbl.gov/tools)

Kirchstetter’s current research interests in air pollution science and technology include the evaluation of in-use performance of vehicle emission controls, environmental impacts of freight transportation and decarbonization, inventing and benchmarking air pollution sensors, air pollution monitoring in communities, climate and air pollution footprints of municipal solid waste-to-energy, and the drivers of airborne transmission of SARS-CoV-2.   | 2023 UCOP Proposal:Wildfire Forest Recovery and Air Pollution Monitoring/Mitigation Using a Scalable Infrastructure |  |
| Christian | [Kohler](https://eta.lbl.gov/people/christian-kohler) | Building Technologies and Urban Systems Division | LBNL | Buildings | Kohler is the department head for Building Technologies. For over 20 years he has been involved in all aspects of building energy efficiency research such as simulation, measurement and technology development. He has been deeply engaged in software development for various windows related tools, e.g., THERM, WINDOW, and Optics5. He has also led the development of new technologies for highly insulating and dynamic windows.  |  |  |
| Robert  | [Kostecki](https://eta.lbl.gov/people/robert-kostecki) | Energy Storage & Distributed Resources | LBNL | Energy | Director, [Energy Storage and Distributed Resources Division](https://appliedenergyscience.lbl.gov/)ESDR enables and accelerates the development and adoption of new advanced technologies for sustainable transportation, renewable power and energy efficiency. We work closely with academic, government and industry partners to conduct foundational and applied research that provides the groundwork for the development of transformative new energy technologies in the areas of energy storage and conversion, electrical grid, advanced materials for the energy infrastructure, science of manufacturing and water-energy nexus.[Grid Integration](https://appliedenergyscience.lbl.gov/grid-integration)[Energy Storage](https://appliedenergyscience.lbl.gov/energy-storage)[Energy Conversion](https://appliedenergyscience.lbl.gov/energy-conversion)[Laser Technologies](https://appliedenergyscience.lbl.gov/laser-technologies)[Thermal Science](https://thermalenergy.lbl.gov/)[Applied Energy Materials](https://appliedenergyscience.lbl.gov/applied-energy-materials) |  |  |
| Ronnen | [Levinson](https://eta.lbl.gov/people/ronnen-levinson) | Building Technologies and Urban Systems Division | LBNL | Heat, Land use, buildings | Levinson is the Leader of the [Heat Island Group](https://heatisland.lbl.gov/) at LBNL. Within his research portfolio he develops cool roof, wall, and pavement materials; improves methods for the measurement of solar reflectance; and quantifies the energy and environmental benefits of cool surfaces.  |  |  |
| Jiang  | [Lin](https://ccci.berkeley.edu/people/ccci-lin-jiang) | Energy Technologies Area | LBNL | Energy | Lin's research is focused on energy and climate policy, energy and emissions pathways with a focus on non-CO2 GHGs (methane, F-gas, etc.), electricity market and planning, low-carbon economic transition, and appliance efficiency issues in China.From 2016-2020, he was a co-Director of the Berkeley-Tsinghua Joint Research Center on Energy and Climate Change, a collaborative initiative between Berkeley Lab, the University of California-Berkeley, and Tsinghua University in China. From 2007-2016, Lin was the Director of the Energy Foundation's China Sustainable Energy Program (2007-2013) and Senior Vice President for Strategy and Analysis (2014-2016) where he managed the growth of Energy Foundation China into one of the largest international NGOs devoted to promoting clean energy and climate solutions in China. Before joining the Energy Foundation, Dr. Lin was previously at LBNL from 1994-2007, researching the Appliance Standards and China Energy Groups. |  |  |
| Paul | [Mathew](https://eta.lbl.gov/people/paul-mathew) | Building Technologies and Urban Systems Division | LBNL | Buildings | Paul Mathew is Department Head of Whole Building Systems at Lawrence Berkeley National Laboratory (LBNL), where he conducts applied research and market transformation activities on energy use in buildings. His current work is focused on integrated building systems, energy epidemiology, benchmarking tools, and energy-related risk analysis for building valuation and resilience |  |  |
| Nigel  | [**Mouncey**](https://biosciences.lbl.gov/profiles/nigel-mouncey/) | [DOE Joint Genome Institute](https://jgi.doe.gov/) | LBNL | Energy, Ecosystems/Biodiversity | **Nigel Mouncey, Facility Director,** [DOE Joint Genome Institute](https://biosciences.lbl.gov/area-organization/jgi/)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 Water:](https://jgi.doe.gov/when-the-blob-made-it-hotter-under-the-water/) 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](https://www.nature.com/articles/nature14238)[Switchgrass and Sustainable Biofuels](https://jgi.doe.gov/jgi-at-25-mapping-switchgrass-traits-with-common-gardens/) |  |
| Chris | [Mungall](https://biosciences.lbl.gov/profiles/chris-mungall/) | Environmental Genomics and Systems Biology | LBNL | Ecosystems/Biodiversity | Head of the Biosystems Data Science dept in Environmental Genomics and Systems Biology Division at Berkeley Lab. Co-lead for development of the Environment Ontology. Metadata lead for National Microbiome Data Collaborative. Interested in all data integration and data standardization problems for integrating environmental and climate data, from molecular and geological through to social. |  |  |
| Peter | [Nico](https://eesa.lbl.gov/profiles/peter-s-nico/) | [Resilient Energy, Water and Infrastructure Program](https://eesa.lbl.gov/program-domains/resilient-energy-water-infrastructure/) | LBNL | Carbon removal and storage, Food/agriculture | Nico is the Program Lead for the [Resilient Energy, Water and Infrastructure Program](https://eesa.lbl.gov/program-domains/resilient-energy-water-infrastructure/). His research involves:* Enhanced weathering projects
* Soil organic carbon processes
* Carbon accounting models
* CA SGC-funded [Working Lands Innovation Center](https://www.workinglandsinnovation.com/) — negative emissions on CA crop and rangelands
* Energy and water issues
* Water quality issues with CCS
 |  |  |
| Curt | [Oldenburg](https://eesa.lbl.gov/profiles/curtis-m-oldenburg/) | Energy Geosciences, Berkeley Lab | LBNL | Carbon removal and storage | Oldenburg’s expertise is in geologic carbon sequestration with emphasis on modeling CO2 injection for enhanced gas recovery, and near-surface leakage processes and related risk assessment.  A recent focus area is mechanistic simulation of underground hydrogen storage. NOTE: Curt officially retired July 1, 2021 but works part time as a rehired retiree. | He is a co-author of the textbook [Introduction to Carbon Capture and Sequestration](http://www.worldscientific.com/worldscibooks/10.1142/p911).Oldenburg is Editor in Chief of [Greenhouse Gases: Science and Technology](http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%292152-3878).  |  |
| Arun | [Persaud](https://atap.lbl.gov/persaudmentor/) | Accelerator Technology and Applied Physics Division | LBNL | Carbon removal and storage | Persaud works on an instrument that can measure carbon in a 50x50x50 cm3 volume using neutron scattering technique. This is a non-destructive method (no digging needed) that will allow measurement of C (but also Fe, Al, Si, O). The unique feature of the instrument is that it measures the 3D distribution of these elements with a resolution of a few centimeters. They see several applications for this, the main one would be to estimate total C in soil over large fields (acre sized) to quantify carbon sequestration in an agricultural context. | UCOP $100M Climate Action LOI lead – January 2023Current Project: OTT-FECM: soil core analysis using inelastic neutron scattering |  |
| Mary Ann | [Piette](https://eta.lbl.gov/people/mary-ann-piette) | Building Technology and Urban Systems Division | LBNL | Buildings | Division Director, [Building Technology & Urban Systems](https://buildings.lbl.gov/) (LBNL)Oversees Berkeley Lab's building technology research activities for the U.S. DOE which covers appliance standards, technology analysis and tools to accelerate deployment, new building technologies, modeling and analysis, commercial and residential building systems integration, grid interactive communications, and integration with EVs, storage and PVs. Piette’s most recent work is exploring how to accelerate decarbonization while ensuring equity and affordability.  BTUS works closely with industry, government and policy makers to inform and develop building technology and urban systems that increase energy efficiency, save money and improve health and safety for building occupants. We engage in innovative and creative research to advance energy efficiency in the built environment, one of the world's most critical energy and environmental challenges because buildings are the world's largest energy-users.[Programs:](https://buildings.lbl.gov/)Windows and DaylightingFLEXLABLighting and ElectronicsModeling and SimulationIndoor Air QualityHigh Tech and Industrial Design ScienceEnergy AnalyticsGrid and Demand ResponseCool Roofs and WallsEnergy Financing |  |  |
| Ravi  | [Prasher](https://eta.lbl.gov/people/ravi-prasher) | Energy Technologies | LBNL | Energy, water | Associate Laboratory Director, [Energy Technologies Area](https://eta.lbl.gov/)[4 Divisions](https://eta.lbl.gov/divisions)* Building Technology and Urban Systems
* Energy Analysis & Environmental Impacts
* Energy Storage & Distributed Resources
* Cyclotron Road

[Research Themes](https://eta.lbl.gov/research)* 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
* Innovation Economy
 |  |  |
| Alan | [Rhoades](https://eesa.lbl.gov/profiles/alan-rhoades/) | Climate & Ecosystem Sciences | LBNL | Drought, Extreme Storms, Water, Climate Modeling | 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. | [Managing Water Resources in a Low-to-No-Snow Future –](https://newscenter.lbl.gov/2021/10/26/managing-water-resources-in-a-low-to-no-snow-future/)[Limiting Global Warming Now Can Preserve Valuable Freshwater Resource](https://newscenter.lbl.gov/2022/11/22/limiting-global-warming-freshwater-resource/) – [EESA Study Predicts Larger, Wetter Atmospheric Rivers –](https://eesa.lbl.gov/as-the-world-warms-the-coastal-western-u-s-is-slated-to-experience-more-dramatic-atmospheric-rivers-and-increased-flood-damages/)[Mountains Vulnerable to Extreme Rain from Climate Change](https://newscenter.lbl.gov/2023/06/28/mountains-vulnerable-to-extreme-rain-from-climate-change)  |  |
| Corinne | [Scown](https://eta.lbl.gov/people/corinne-scown) | [Energy Analysis & Environmental Impacts Division](https://energyanalysis.lbl.gov/), Energy & Biosciences Institute | LBNL | Energy, Carbon Dioxide Removal and Storage | Deputy for Research, [Energy Analysis & Environmental Impacts Division](https://energyanalysis.lbl.gov/)Scown’s research includes:* Technoeconomics analysis
* Waste biomass to energy
* Liquid fuels
* Plastic waste management and recycling

Deputy Director for Research of the Energy Analysis and Environmental Impacts (EAEI) Division at LBNL, Vice President and founder of the Life-cycle, Economics, and Agronomy Division (LEAD) at the Joint BioEnergy Institute (JBEI), and Head of Sustainability at the Energy and Biosciences Institute (EBI). She holds a secondary appointment in the Biological Systems and Engineering Division at LBNL. Scown’s expertise includes life-cycle assessment, technoeconomic analysis, biofuels and bioproducts, air quality impacts of vehicle electrification, strategies for atmospheric carbon removal, and co-management of energy and water.  | [Life-Cycle Assessment Considerations for Batteries and Battery Materials](https://onlinelibrary.wiley.com/doi/full/10.1002/aenm.202100771)[Complementary roles for mechanical and solvent-based recycling in low-carbon, circular polypropylene](https://www.pnas.org/doi/abs/10.1073/pnas.2306902120)Techno-economic analysis and life-cycle greenhouse gas mitigation cost of five routes to bio-jet fuel blendstocks[†](https://pubs.rsc.org/en/content/articlehtml/2019/ee/c8ee03266a%22%20%5Co%20%22Electronic%20supplementary%20information%20%28ESI%29%20available%3A%20Input%20data%20for%20process%20modeling%20and%20detailed%20probabilistic%20cost%20and%20emission%20results%20for%20each%20production%20step.%20See%20DOI%3A%2010.1039/c8ee03266a) |  |
| Blake  | [Simmons](https://biosciences.lbl.gov/profiles/blake-simmons/) | [Biological Systems & Engineering Division](https://biosciences.lbl.gov/bse/) | LBNL | Energy | **Division Director, Biological Systems & Engineering** Departments:* [Biodesign](https://biosciences.lbl.gov/bse/biodesign/)
* [BioEngineering and BioMedical Sciences](https://biosciences.lbl.gov/bse/bioengineering-biomedical-sciences/)
* [Process Engineering and Analytics](https://biosciences.lbl.gov/bse/process-engineering-analytics/)
 |  |  |
| Rachel | [Slaybaugh](https://eta.lbl.gov/people/rachel-slaybaugh) | [Cyclotron Road](https://cyclotronroad.lbl.gov/) | LBNL | Energy | Division Director, [Cyclotron Road Division](https://cyclotronroad.lbl.gov/)Empowering Tomorrow's Technology Leaders: Cyclotron Road, a division of Lawrence Berkeley National Laboratory, supports leading entrepreneurial scientists as they advance technology projects with the potential for global impact. The division’s keystone program is a fellowship that supports entrepreneurial scientists and engineers as they develop globally impactful and commercially viable technology products. Since 2015, in partnership with the non-profit Activate.org, fellows have collaborated with more than 70 Berkeley Lab scientists, and the organizations they’ve founded have raised more than $315 million in follow-on funding, hired more than 330 employees, and introduced new products across industries. |  | Slaybaugh is developing programs to train and inspire the next generation to innovate in clean energy, including founding the Nuclear Innovation Bootcamp, and also focuses on improving transparency and reproducibility in computational science and scientific publication. Slaybaugh engages in programs that help level the playing field for underrepresented minorities in STEM.  |
| Elizabeth  | Stuart |  | LBNL | Health, heat, energy | Energy efficiency and load flexibility policies, programs and markets with a concentration on energy savings performance contracting/the ESCO industry.Financial vehicles and providers that can contribute to mitigating the effects of extreme heat on humans   |  |  |
| Claudia | [Tebaldi](https://eesa.lbl.gov/profiles/claudia-tebaldi/) | Climate & Ecosystem Sciences Division | LBNL | Climate modeling | Tebaldi is the [Climate and Atmospheric Process Program Domain](https://eesa.lbl.gov/program-domains/climate-atmosphere-processes/) Lead and Technical Co-Manager / Staff Scientist for [CASCADE](https://eesa.lbl.gov/projects/cascade/).Tebaldi has been working on climate change science since the early 2000s mainly centered around uncertainty characterization of future projections, with focus on regional and extremes change, and observation-based detection studies.  Over time her research has moved increasingly towards impact risk analysis.  |  |  |
| Margaret | [Torn](https://eesa.lbl.gov/profiles/margaret-s-torn/) | Biosphere-Atmosphere Interactions Program | LBNL | Climate modeling, wildfire, ecosystems/biodiversity | Lead, [Biosphere-Atmosphere Interactions Program Domain](https://eesa.lbl.gov/program-domains/biosphere-atmosphere-interactions/)Her research includes:* Carbon sequestration
* Human impacts on the carbon cycle – Climate change mitigation
* [AmeriFlux Management Project](http://ameriflux.lbl.gov/)
* Belowground Biogeochemistry Scientific Focus Area
* Land-Atmosphere Interactions
 |  |  |
| Susannah | [Tringe](https://biosciences.lbl.gov/profiles/susannah-tringe/) | [Environmental Genomics & Systems Biology Division](https://biosciences.lbl.gov/egsb/) | LBNL | Sources of GHGs: Agriculture; short-lived climate pollutantsCarbon dioxide removal and storage | Tringe is the Division Director, [Environmental Genomics & Systems Biology Division](https://biosciences.lbl.gov/egsb/)**Mission**: Linking genome biology to ecosystem dynamics.Departments:* [BioSystems Data Science](https://biosciences.lbl.gov/egsb/biosystems-data-science/)
* [Comparative and Functional Genomics](https://biosciences.lbl.gov/egsb/comparative-functional-genomics/)
* [Molecular EcoSystems Biology](https://biosciences.lbl.gov/egsb/molecular-ecosystems-biology/)

  | [RESTOR-C: Center for the RESTORation of Soil Carbon by Precision Agricultural Strategies](https://arpa-e.energy.gov/sites/default/files/2023-11/21_SusannahTringe_LBNL_Nov2_150PM.pdf)RESTOR-C will cultivate ways for plants and microbes to remove carbon dioxide from the atmosphere and stably store it for more than 100 years in the soil.Wetland microbiomes and GHG emissions |  |
| Pouya | [Vahmani](https://eesa.lbl.gov/profiles/pouya-vahmani/) | Climate and Ecosystem Sciences Division | LBNL | Heat, Flood, water | 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.  |  |  |
| Haruko | [Wainwright](https://ar1k.org/team/) | Earth and Environmental Sciences Area | LBNL | Ecosystems/Biodiversity, water, Forests, soil | Wainwright is a research scientist using ML for detailed ecosystem models.Wainwright’s research focuses on environmental informatics, aiming to improve understanding and predictions in Earth and environmental systems through mechanistic modeling and machine learning.  | [ARIK7](https://ar1k.org/) |  |
| Michael | [Wehner](https://crd.lbl.gov/assets/Uploads/Wehner/Wehner-bio.pdf) | Computational Research Division | LBNL | Heat, Climate modeling, water | The behavior of extreme weather events in a changing climate, especially heat waves, intense precipitation, drought and tropical cyclones | [The effect of anthropogenic climate change on heat waves in the United States.](https://crd.lbl.gov/assets/Uploads/CONUS-2021-heat-wave-attribution-statement-071221.pdf) [Attribution study for the 2021 Western U.S. Heat Wav](https://crd.lbl.gov/assets/Uploads/CONUS-2021-heat-wave-attribution-statement-071221.pdf)e.[Attribution for the 2020 California heatwave](https://crd.lbl.gov/assets/Uploads/California-heatwave-attribution-and-projection.pdf)[The Impact of Moisture and Temperature on Human Health in Heat Waves](http://naturalhazardscience.oxfordre.com/view/10.1093/acrefore/9780199389407.001.0001/acrefore-9780199389407-e-58) [The deadly combination of heat and humidity in India and Pakistan in summer 2015](https://journals.ametsoc.org/view/journals/bams/97/12/bams-d-16-0145.1.xml?tab_body=pdf) [Benefits of mitigation for future heat extremes under RCP4.5 compared to RCP8.5](https://link.springer.com/article/10.1007/s10584-016-1605-5). [Explaining the unexplainable: leveraging extremal dependence to characterize the 2021 Pacific Northwest heatwave, submitted to Journal of Agricultural, Biological, and Environmental Statistics.](https://arxiv.org/abs/2307.03688) [Focus on compound events. In: Fifth National Climate Assessment. U.S. Global Change Research Program, Washington, DC, USA.](https://doi.org/10.7930/NCA5.2023.F1)[Anthropogenic contributions to the 2021 Pacific Northwest heatwave. Geophysical Research Letters 49, e2022GL099396.](https://doi.org/10.1029/2022GL099396) |  |
| Max | [Wei](https://eta.lbl.gov/people/max-wei) | Energy Analysis and Environmental Impacts Division | LBNL | Heat, buildings, health, Energy | Wei’s projects are with the Energy Efficiency Standards Group, as well as with the Sustainable Energy Systems Group.  | Wei is conducting a multi-year study of extreme heat in Fresno vulnerable communities.Wei and LBL have developed CAL-THRIVES – [A California Toolkit for Heat Resilience in Underserved Environments.](http://indiciaconsulting.com/projects/heat-resilience-cal-thrives.html) |  |
| Junko  | [Yano](https://biosciences.lbl.gov/profiles/junko-yano-2/) | [Molecular Biophysics & Integrated Bioimaging](https://biosciences.lbl.gov/mbib/) | LBNL | Energy | **Division Director, Molecular Biophysics & Integrated Bioimaging****Mission*:***To generate a mechanistic and predictive understanding of biological processes, by developing and applying molecular- and meso-scale visualization and advanced spectroscopies, enabling the control, manipulation and generation of biological function.Departments * [Bioenergetics](https://biosciences.lbl.gov/mbib/bioenergetics/)
* [Cellular and Tissue Imaging](https://biosciences.lbl.gov/mbib/cellular-tissue-imaging/)
* [Structural Biology](https://biosciences.lbl.gov/mbib/structural-biology/)
 |  |  |
| Nan | [Zhou](https://eta.lbl.gov/people/nan-zhou) | China Energy Group,Building Technology & Urban Systems Division | LBNL | Buildings | Zhou is Head of the International Energy Analysis Department, and Lead of the [China Research Program](https://international.lbl.gov/china-program) at LBL.Zhou is also the Technical Program Lead for the [Net Zero World Action Center](https://www.energy.gov/articles/us-launches-net-zero-world-initiative-accelerate-global-energy-system-decarbonization), an initiative launched by the U.S. government to work with countries to implement their climate ambition pledges and accelerate transitions to net zero, resilient, and inclusive energy systems. In addition, she is a Co-Chair of the Academic Advisory Committee of California -China Climate Institute.  | Zhou received the Outstanding Research and Contribution Prize for her 2019 publication in Applied Energy entitled, A roadmap for China to peak carbon dioxide emissions and achieve a 20% share of non-fossil fuels in primary energy by 2030, led a Berkeley Lab team. |  |
| William | [Collins](https://profiles.lbl.gov/11626-william-collins) | Earth and Environmental Sciences Area and Earth and Planetary Science | LBNL, Berkeley | Climate modeling, carbon removal and storage, water, energy | Professor in Residence, EPSAssociate Lab Director, [Earth and Environmental Sciences Area](https://eesa.lbl.gov/)[Climate and Ecosystem Sciences](https://climatesciences.lbl.gov/) DivisionCESD scientists focus on enhancing understanding of the impacts of global climate change. Through extensive field research and innovative climate modeling, the division aims to identify effective pathways to mitigate climate change and minimize its environmental and societal consequences.[Energy Geosciences Division](https://energygeosciences.lbl.gov/)EGD focuses on advancing tools and capabilities to help support sustainable use of Earth’s energy resources, especially as they relate to energy infrastructure, carbon capture and sequestration, water resource management, and the societal and environmental impact of energy production.Research: Interactions among sunlight, heat, the coupled climate system, and global environmental change. Using ML and AI in studies of extreme events. | [The Calibrated and Systematic Characterization, Attribution, and Detection of Extremes (CASCADE)](https://cascade.lbl.gov/)[Scientific Focus](https://cascade.lbl.gov/) Area.  [The Energy Exascale Earth System Model (E3SM).](https://e3sm.org/)  | Fall 2023: EPS 230 -- Radiation and Its Interactions with Climate" |
| John | [Balmes](https://publichealth.berkeley.edu/people/john-balmes/) | Environmental Health Sciences | Public Health | Wildfire, Health, Heat | Director, [Northern California Center for Occupational and Environment Health](https://www.coeh.berkeley.edu/) (COEH)Physician Member, [California Air Resources Board](https://ww2.arb.ca.gov/homepage) (overall CA GHG planning) Balmes’ research is focused on the respiratory, cardiovascular and metabolic health effects of various air pollutants and occupational agents. | [What You Need to Know about Wildfire Smoke and Its Impacts on Health](https://www.ucsf.edu/news/2019/10/415806/what-you-need-know-about-wildfire-smoke-and-its-health-impacts)[The Changing Nature of Wildfires: Impacts on the Health of the Public (2020](https://pubmed.ncbi.nlm.nih.gov/33153694/)Dangers Lurk in the San Joaquin Valley’s Dust – Interviewed by PPIC 2022[Children’s Health and Air Pollution Study (CHAPS](https://www.chapssjv.org/)). The overall specific goal of CHAPS is to assess the impact of air pollution on the health of children living in the San Joaquin Valley, including adverse effects on immune and metabolic function.  |  |
| Jason | [Corburn](https://publichealth.berkeley.edu/people/jason-corburn/) | Environmental Health Sciences | Public Health | Urban Health, Climate Equity/Environmental justice | Director, Center for Global Healthy CitiesThe 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 –](https://sgc.ca.gov/meetings/council/2022/docs/20221027-Item6_StaffReport_B.pdf) [Water and sanitation for all: Citizen science, health equity, and urban climate justice](https://journals.sagepub.com/doi/full/10.1177/23998083221094836)[Urban Climate Justice, Human Health, and Citizen Science in Nairobi’s Informal Settlements](https://www.mdpi.com/2413-8851/6/2/36) | PH150e&CP117Urban & Community Health |
| Brenda | [Eskenazi](https://publichealth.berkeley.edu/people/brenda-eskenazi/) | Center for Environmental Research and Children’s Health  | Public Health | Health | Director, [Center for Environmental Research and Children’s Health](https://cerch.berkeley.edu/home) (CERCH)CERCH works to understand and reduce the risk of environmental threats to children's health, locally and globally. |  |  |
| Meghana | [Gadgil](https://publichealth.berkeley.edu/people/meghana-gadgil/) |  | Public Health | Health | Professor Department of Medicine, UCSFDirector of Innovation The Better Lab, UCSFCo-Director Climate Health & Sustainability Education (CHASE) Initiative, UCSFUC Berkeley Faculty Co-Lead UC Center for Climate, Health & Equity (CCHE) | Decarbonization of hospital systems |  |
| David | [Gonzalez](https://www.davidjxgonzalez.me/) | Environmental Health Sciences | Public Health | Health, Communications, Environmental Justice | I study how pollution from extractive industries and climate-driven disasters affects reproductive health and contributes to health disparities. I teach courses on epidemiology, environmental justice, geospatial methods, and science communication in Spanish. I serve in several capacities to work towards achieving equity and justice in the sciences, including work with the Diversity and Inclusion Committee of the Society for Epidemiologic Research.  |  |  |
| Rohini | [Haar](https://publichealth.berkeley.edu/people/rohini-haar/) | Human Rights Center (Berkeley Law) | Public Health | Health, Human Rights, Heat, wildfire, Climate equity/Environmental Justice | Haar is an emergency physician with expertise in health and human rights. Her work focuses on the protection of human rights in times of complex humanitarian crisis and conflict. She is particularly interested in the protection of health workers and health services. She is a research fellow at the Human Rights Center and works clinically at Kaiser Medical Center in Oakland.  | [Health and social impacts of California wildfires and the deficiencies in current recovery resources: An exploratory qualitative study of systems-level issues](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0248617)  |  |
|  | [Health Initiative of the Americas](https://hia.berkeley.edu/) |  | Public Health | Health, Migration | [Xochitl Castaneda,](https://hia.berkeley.edu/our-facultystaff/xochitl-castaneda/) DirectorOne of the world’s leading programs on health and migration. Established in 2001, HIA works binationally with Latin American governments and public and private institutions, and agencies, as well as with grassroots organizations in the U.S. to improve health outcomes, address health inequities, enhance the cultural competency of healthcare personnel, and put innovative strategies into action to address unmet health needs of the migrant population through its diverse programs. | [HIA Directory of Berkeley Researchers for Migration and Health](https://hiaucb.files.wordpress.com/2021/03/uc-binational-reseachres-directory.pdf) |  |
| Carly | Hyland |  | Public Health  | Heat, Wildfire, Extreme storms, Health, Air pollution, Food/Agriculture, Climate Equity/Environmental Justice, and Education | Assistant Professor of Cooperative Extension in SPH focused on 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.  | New faculty with proposed projects to minimize heat stress among agricultural workers in California |  |
| Ann | [Keller](https://publichealth.berkeley.edu/people/ann-keller/) | Community Health Sciences | Public Health | Health, governance | Keller studies the politics of science and expertise in public policy, focusing on environmental, health and technological innovation. Recent publications focus on how politics shapes aspects of the implementation of the Affordable Care Act. She is also researching the effects of hyperpolarization on executive branch agency capacity and studies the management challenges involved in responding to infectious disease outbreaks. |  |  |
| Layla | [Kwong](https://vcresearch.berkeley.edu/faculty/laura-kwong) | Environmental Health Sciences | Public Health | Health, Heat, Air Pollution | Kwong’s work with the Global Environmental Health Equity Lab focuses on identifying pathways of disease transmission; developing products and services to reduce exposure to climate change, air pollution, pathogens, and irritants; and evaluating intervention impacts on child health.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](https://ceej.berkeley.edu/people) | Quantifying exposure to heat stress and the impact of heat stress on children, pregnant women, rickshaw pullers, and older individuals. Developing interventions to reduce exposure to indoor heat stress | PBHLTH292 Thesis seminar for Environmental Health Science students (EHS students only) |
| Michael  | [Lu](https://publichealth.berkeley.edu/people/michael-lu/) |  | [Public Health](https://publichealth.berkeley.edu/) | Health, Climate equity/Environmental justice | Dean [School of Public Health](https://publichealth.berkeley.edu/)The School of Public Health includes 7 graduate academic divisions:* Biostatistics
* Community Health Sciences
* Environmental Health Sciences
* Epidemiology
* Health Policy and Management
* Infectious Diseases and Vaccinology
* Interdisciplinary Division

Senior Advisor, California-China Climate InstituteAdvisory Board, UCSF Center for Climate, Health, and EquityResearch: Improving maternal and child health. The development, testing, and translation of a new theory on the origins of maternal and child health disparities. | Community Event (January 2022) : [Community-Based Participatory Research (CBPR)](https://publichealth.berkeley.edu/news-media/school-news/innovators-changemakers-and-arc-benders-community-based-participatory-research/) |  |
| Mahasin | [Mujahid](https://publichealth.berkeley.edu/people/mahasin-mujahid/) |  | Public Health | Health, Climate Equity/Environmental Justice  | Mujahid’s current research examines how features of neighborhood environments impactcardiovascular health and health disparities. Using data from several U.S. based cardiovascularcohorts, Dr. Mujahid seeks to improve the measurement of specific features of neighborhood physical and social environments and use state of the art statistical methods to estimate“causal” neighborhood health effects. | Neighborhoods and Cardiovascular Risk and Resilience in Rural Communities, $3.0M ([www.theruralstudy.org](http://www.theruralstudy.org))  |  |
| Elizabeth | [Noth](https://www.coeh.berkeley.edu/people/elizabeth-noth) |  | Public Health | Health, Wildfire, Heat | Director, Industrial Hygiene Program | 2023 UCOP Proposal: Heat and Wildfire Smoke Impacts on Prison Residents and Workers |  |
| Emily | [Ozer](https://publichealth.berkeley.edu/people/emily-ozer/) |  | Public Health | Health, Education |  | 2023 UCOP Proposal: Engaging and Scaling Youth Research and Changemaking to Promote Wellbeing and Climate Resilience | Community-Based Participatory Research PH219C (Spring 2024) |
| Ajay | [Pillaresetti](https://ajayp.org/about-ajay) | Environmental Health Sciences | Public Health | Air Pollution, health, Climate Equity/Environmental justice, heat | Pillarisetti's research focuses on measuring and modeling the health, climate, and economic impacts of air pollution, with a focus on household energy use and related behaviors in low- and middle-income countries. Science-backed, policy-relevant recommendations on the benefits of clean energy transitions at scale. Pillarisetti is committed to inclusive teaching and research environments and to increasing access to environmental health research and mentorship opportunities for high school, undergraduate, and graduate students. [Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) |  |  |
| Justin | [Remais](https://publichealth.berkeley.edu/people/justin-remais/) | Environmental Health Sciences | Public Health | HeatDroughtExtreme stormsFloodWildfireAir PollutionVectorsHealthFood/AgricultureWaterInfrastructureEcosystems/BiodiversityLand useClimate Modeling | 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. | Projects:NIH R01 - [**Climate change and the epidemiology of Valley fever in California**](https://publichealth.berkeley.edu/news-media/research-highlights/berkeley-public-health-launches-major-research-initiative-to-tackle-valley-fever-in-california-and-beyond/) (2019-2026; $4.2mil); NIH R01 - [**Climate change and the expansion of fungal diseases in the U.S.**](https://publichealth.berkeley.edu/news-media/research-highlights/bph-launches-major-study-on-deadly-fungal-infections/) (2023-2028; $3.9mil) | PBHLTH 271G – Health Implications of Climate Change; PBHLTH 273 – Environment and Infectious Diseases  |
| Anne | Rosenthal |  | Public Health | Health, Heat | Associate Director, CARE Program  | [Health and social impacts of California wildfires and the deficiencies in current recovery resources: An exploratory qualitative study of systems-level issues](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0248617)  |  |
| Marieka | [Schotland](https://i4y.berkeley.edu/Our%20team) | I4Y – Innovations for Youth | Public Health | Education | Executive Director, i4Y – [Innovations for Youth](https://i4y.berkeley.edu/home)i4Y is a cross-disciplinary, innovative research hub addressing issues of youth equity through collaborative research, training and community engagement.Schotland is a community psychologist. She has a wide range of substantive expertise in positive school climate and connection, restorative justice, youth program evaluation and health promotion among diverse adolescents.  | UCOP $100M Climate Action LOI lead |  |
| Cara | Schulte | Climate Impacts + Human Rights; Global Environmental Health Equity Lab  | Public Health | Heat, Health, Human Rights; Equitable Access to Sustainable Cooling | DrPH student working on heat + human rights  | Working with Dr. Layla Kwong to study heat impacts on pregnant women, children, and labor rights in BangladeshConsulting on heat-related projects for Climate Rights International and Human Rights Watch | TA for Global Health Ethics |
| Jason | [Su](https://publichealth.berkeley.edu/people/jason-su/) | Environmental Health Sciences | Public Health | Climate Modeling, Heat, Wildfire, Air pollution, Health, Climate Equity/Environmental Justice, Transportation, Industry, Short-Lived Climate Pollutants (Methane, black carbon, HFCs, tropospheric ozone), Education, Public Awareness, Land use | Applying multi-petabyte catalogs of satellite imagery and geospatial datasets for planetary-scale analysis of Earth’s surface environments including air pollution, weather and climate, land use and land cover through Google Earth Engine;Developing machine learning land use regression modeling algorithms that incorporate multiple types of measurements into a single modeling frame for the purpose of developing high spatial (e.g., 30m) and temporal (e.g., daily) resolution air pollution surfaces.Developing machine learning algorithms such as Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNNs) to model wildfire spread.Applying dispersion modeling techniques such as Stochastic Time-Inverted Lagrangian Transport (STILT) to understand the impact of wildfire, port operations or railway locomotives on air pollution levels at the disadvantaged communities.Investigating associations of environmental exposure (including air pollution, heat, vegetation) on population health through machine learning techniques and biostatistics analyses. | [Impact of Air Pollution Exposure on Metabolic Outcomes for California Residents](https://ww2.arb.ca.gov/sites/default/files/2023-11/edited%20-%20fixed%20-%20III.1%20Augmentation%20-%20UCB%20-%20Air%20Pollution%20Exposure%20Metabolic%20Outcomes%20-%20Contract%2022RD010.pdf)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 StudiesImpacts of Train and Port Pollution and Air Toxics on Respiratory Symptoms and ED Visits Within Vulnerable Communities in Southern California.Participatory design of effective risk communication about wildfire smoke for hard-to-reach populationsSources of on-road vehicle emissions and their impacts on respiratory disease symptoms in CaliforniaA Scenario Tool for Assessing the Health Benefits of Conserving, Restoring and Managing Natural and Working Lands in California | Guide undergraduate students for research through the Berkeley URAP program. |
| David | [Ackerly](https://ib.berkeley.edu/people/faculty/ackerlyd) |  | RCNR | Ecosystems/Biodiversity | Dean, [Rausser College of Natural Resources](https://nature.berkeley.edu/) (RCNR)[RCNR Strategic Plan](https://nature.berkeley.edu/strategic-plan) is based around three priorities:* **Build interdisciplinary science initiatives, with strengthened community engagement and private-public partnerships.**
* **Improve undergraduate first-year experience and expand discovery opportunities.**
* **Deepen our diversity, equity, and inclusion commitment and programming.**

**RCNR Mission:**The Rausser College of Natural Resources embraces the University of California’s public mission, serving the people of California, our nation, and the world.We conduct fundamental and applied research in the biological, physical, and social sciences. We train and educate future leaders and scholars, and engage with public and private partners to meet the pressing social and environmental challenges of our time. Through our research, teaching, and outreach, we seek equitable, scalable, and innovative solutions that address the climate crisis, promote ecological and economic sustainability, and improve human health and well-being. | The Ackerly lab is focused on studies of climate change impacts on California biodiversity, including distribution modeling, long-term vegetation dynamics and focal studies of selected plant species. Our primary field site is the Pepperwood Preserve, Santa Rosa, CA. Graduate students and post-docs are working on evolution of physiological traits, demography of alpine plants, and species distributions on fine-scale spatial gradients. See [ackerlylab.org](http://ackerlylab.org).Lead Coordinating Author: [CA 4th Climate Assessment – Bay Area Regional Report.](https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-005_SanFranciscoBayArea_ADA.pdf) |  |
| Ronald  | [Amundson](https://vcresearch.berkeley.edu/faculty/ronald-g-amundson) | ESPM | RCNR | Ecosystems/Biodiversity | The Amundson laboratory studies (1) the processes of ecosystem carbon and nitrogen cycling, (2) environmental and ecological conditions of the past, and (3) ways of developing improved means of dating soils and landscapes, using a combination of stable and radiogenic isotope geochemistry.They are actively engaged in better understanding the climatic and geological controls on the rates of carbon and nitrogen cycling in soils from around the world and the way in which soils serve as an important control on the chemical composition of the atmosphere.  | UCOP $100M Climate Action LOI lead Great Valley and Sierra Nevada, California: Currently studying the rates of carbon and nitrogen cycling in soils that range in age from about 1,000 to 3,000,000 years in the Great Valley of California, and along elevation (climate) gradients of the western slope of the Sierra Nevada. |  |
| David | [Anthoff](https://vcresearch.berkeley.edu/faculty/david-anthoff) | Energy Resources Group | RCNR | Policy, Economics | Environmental economist who studies climate change and environmental policy. He co-developed the integrated assessment model *FUND* that is used widely in academic research and in policy analysis. He has advised numerous organizations (including *US EPA* and the Canadian *National Round Table on the Environment and the Economy*) on the economics of climate change.Academic Senate committee on climate | [“Researchers provide social cost of carbon roadmap”](https://vcresearch.berkeley.edu/news/researchers-provide-social-cost-carbon-roadmap)In a newly published [analysis in the journal Nature](https://www.nature.com/articles/d41586-021-00441-0),  a team of researchers lists a series of measures the administration should consider in recalculating the SCC.Using ML to assess the economic impact of climatic change on agriculture, health, energy use, etc. | [Climate Change Economics – ENERES C176 001](https://classes.berkeley.edu/content/2023-fall-eneres-c176-001-lec-001) |
| Max | [Auffhammer](https://www.auffhammer.com/) | Agricultural & Resource Economics | RCNR | Policy, energy, water, Food/agriculture | Auffhammer’s research focuses on environmental and resource economics, energy economics and applied econometrics.  | [Heat in the Heartland: Crop Yield and Coverage Response to Climate Change Along the Mississippi](https://link.springer.com/epdf/10.1007/s10640-018-0271-7?author_access_token=qbVuM8nCxjJnxVaMbUeCc_e4RwlQNchNByi7wbcMAY5lo-MLK-RsimIQA_MozXNOMbx7m6TZdFvolAEcAOoGgQXhnEnphGVr7CWqPcOuw2XC06tNlxNBrj79QvGfQStzLa5J9ZuE8r5EzKNtQqMWHw%3D%3D) (2018)[Disco Shower or Consumption Shaming](file:////Users/bruceriordan/Desktop/WORK/A%20Berkeley%20Climate%20Change%20Network%20/BCCN%20Umbrella%20%26%20MAP/AddaAthanasopoulos-Zekkos%20%20EngineeringCivil%20and%20Environmental%20EngineeringInfrastructure%2C%20WaterAssessing%20and%20mitigating%20the%20impact%20of%20multi-hazard%20stressors%20on%20geotechnical%20engineering%20infrastructure%2C%20with%20particular%20emphasis%20on%20challenges%20due%20to%20age-related%20deterioration%2C%20population%20growth%20and%20densification%2C%20natural%20and%20human-made%20hazards%2C%20and%20new%20demands%20from%20climate%20change.%20%20%20%20%20When%20Extreme%20Events%20Area%20No%20Longer%20Rare%3A%20Lessons%20from%20Hurricane%20Ida%20%20Berkeley%20News%20interview%20with%20Athanasopoulos-Zekkos%20after%20her%20small%20scientific%20group%20studied%20Ida%20and%20Katrina%E2%80%99s%20impacts%20on%20infrastructure%20in%20Southeast%20Louisiana.%20Includes%20CNN%20interview.) (2023)[Quantifying Economic Damages from Climate Change](https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.32.4.33) (2018) – Using ML to quantify climate impacts |  |
| John  | [Bailey](https://hrec.ucanr.edu/About_Us/Staff_Directory/?facultyid=35319) | ANR | RCNR | Carbon removal, Food/Agriculture | Director, [ANR Hopland Research Center](https://hrec.ucanr.edu/About_Us/Staff_Directory/?facultyid=35319)UC ANR Hopland Research and Extension CenterBiochar application to lands  | Installing grid-interconnected biogasifier units to generate electricity and sequester carbon through biochar. UCOP Carbon Offset Program grant to help fund research on biochar and develop utilization network.Conducting field trial examining the potential of composted biochar to develop additional soil carbon above the amounts directly added, collaborating with Jennifer Pett-Ridge at LLNL. Installing CA Healthy **Soil**s Program hedgerow for demonstration of rangeland application of hedgerow for soil health and carbon sequestration.~~Developing~~ Implementing Carbon Farm Plan developed with guidance from Resource Conservation District to map out plans to maximize carbon sequestration on HREC property |    |
| Dennis | [Baldocchi](https://ourenvironment.berkeley.edu/people/dennis-baldocchi) | ESPM | RCNR | Ecosystems/Biodiversity, water, heat | Baldocchi’s lab measures and models co2 and co2 exchange between ecosystems and the atmosphere. The long-term measurements are telling us how ecosystems function in a warmer world, with more co2 and variable rainfall. Lessons from our work informs us about natural climate solutions.Baldocchi was a member of the 7-person group that developed a [proposal](https://www.dropbox.com/s/gq87rqqfw9ervm7/FAQ%20for%20AS%20Climate%20Change%20Proposal.pdf?dl=0) for a new standing committee of the Academic Senate on climate change.  |  | [The Biosphere - ESPM 2 001 - LEC 001](https://classes.berkeley.edu/content/2023-fall-espm-2-001-lec-001)Ecosystem Ecology, ESPM 111, Spring 2024Biometeorology, ESPM 129, Fall 2024 |
| Jill | [Banfield](https://ourenvironment.berkeley.edu/people/jill-banfield) | ESPM, Innovative Genomics Institute | RCNR | Ecosystems/Biodiversity, Food/Agriculture | Geomicrobiology, environmental biogeochemistry, microbial community ecology and evolution[Banfield Lab](https://nanogeoscience.berkeley.edu/) – Nanogeoscience[Deputy Director, Microbiology, Innovative Genomics Institute](https://innovativegenomics.org/leadership/)How do soil microbial communities respond to global climate?Working in a large, long term, well replicated grassland climate change experimental system in the Angelo Coastal Reserve, CA, we are studying how microbial communities respond to predicted changes in rainfall timing and abundance. Specific questions include: (i) do different rainfall patterns alter microbial community membership? (ii) do above ground changes in vegetation correlate with, and drive, changes in subsurface consortia? (iii) how do communities vary with seasons, as the result of the first rain after the dry season, and as the result of extreme weather events? | [**“Engineering the Microbiome with CRISPR to Improve our Climate and Health.”**](https://innovativegenomics.org/news/audacious-project-crispr-microbiome/?mc_cid=f4e1627188&mc_eid=b84c39ef90) Led by IGI Founder **Jennifer Doudna** and IGI's Microbiology Director **Jill Banfield**, the projectis a collaboration of IGI, UC Davis, and UCSF and is funded by a $70M grant from The Audacious Project. | [Research Review in Plant and Microbial Biology - **PLANTBI 292 007**](https://classes.berkeley.edu/content/2023-fall-plantbi-292-007-sem-007) |
| John | [Battles](https://vcresearch.berkeley.edu/faculty/john-j-battles) | ESPM | RCNR | Wildfire, Ecosystems/Biodiversity | Co-chair, [Science Advisory Panel, California Forest Management Task Force](https://fmtf.fire.ca.gov/)Forest Ecology.  The goal of his research program is to know how and why forests change. His efforts are guided by the conviction that our understanding must apply to specific forests with all the attendant complexities and idiosyncrasies. Thus robust, quantitative field studies form the core of his approach | [Wildfires emit more greenhouse gases than assumed in state climate targets](https://vcresearch.berkeley.edu/news/wildfires-emit-more-greenhouse-gases-assumed-state-climate-targets) (2015) |  |
|  | [Beahrs Environmental Learning Program](http://beahrselp.berkeley.edu/) | International and Executive Programs | RCNR | Education | Director, [Mio Katayama Owens](http://beahrselp.berkeley.edu/people/owens-mio) The Beahrs Environmental Leadership Program (Beahrs ELP) is a rigorous, unique learning experience that transforms mid-career environmental professionals into exceptional leaders. Through exposure to innovative approaches and case studies, ELP participants develop the skills necessary to tackle complex and dynamic environmental issues.Established in 2000 with seed funding from Berkeley alumni Carolyn and Richard Beahrs, this three-week intensive interdisciplinary training includes workshops taught by award-winning Berkeley faculty members from the Rausser College of Natural Resources, Haas School of Business, and School of Environmental Design, as well as the departments of Environmental Science, Policy, and Management and Agricultural and Resource Economics. Participants in the Beahrs ELP receive Berkeley's certificate in Sustainable Environmental Management, as well as lifetime membership in an alumni network comprising of 731 members from over 114 countries.  |  |  |
| Steven | [Beissinger](https://ourenvironment.berkeley.edu/people/steven-beissinger) | ESPM | RCNR | Ecosystems/Biodiversity | Beissinger studies conservation, behavior and population biology toward the goals of understanding the influence of climate change, managing endangered or commercially valuable wildlife, or by understanding the factors shaping life histories to satisfy our curiosity about how nature works.  | Current research includes “response of California birds and mammals to 20th century climate change as part of the [Grinnell Resurvey Project](https://mvz.berkeley.edu/Grinnell/).” |  |
|  | [Berkeley Forests](https://forests.berkeley.edu/) | ESPM | RCNR | Wildfire, Ecosystems/Biodiversity | Bill Stewart, Co-Director Scott Stephens, Co-Director Global climate change will have far reaching impacts on forest ecosystems. Conservation in this era of change is confronted by the reality that no ecosystem, no matter how remote or wild, is protected. It is essential to develop and test appropriate management strategies for forested watersheds that will flourish under different climate change scenarios. Active research is needed to better understand the interactions of the changing climate and changing social needs on the growth and yields of timber species; water supply and quality; greenhouse gas fluxes related to forest vegetation, soils and harvested wood products; current and future risks from fires, air pollution, pests and diseases; and how all of these will affect rare plant and animal species. |  |  |
|  | [Berkeley Institute for People, Parks and Biodiversity](https://parks.berkeley.edu/) |  | RCNR | Ecosystems/Biodiversity; Wildfire; Ecosystem carbon; Policy; Public Awareness | [Patrick Gonzalez, Executive Director](https://ourenvironment.berkeley.edu/people/patrick-gonzalez)Steven Beissinger, Co-Faculty DirectorHolly Doremus, Co-Faculty DirectorThe Berkeley, Institute for Parks, People, and Biodiversity advances science and solutions to halt climate change, conserve biodiversity, and improve the experience of nature for all. The Institute conducts new scientific research and helps managers and policymakers apply the results to conservation of ecosystems around the world, especially in national parks and other protected areas.Patrick Gonzalez is a climate change scientist and forest ecologist. He served as Principal Climate Change Scientist of the U.S. National Park Service and Assistant Director for Climate and Biodiversity of the White House Office of Science and Technology Policy.  | 2023 UCOP Proposal: Restoring wildfire resilience and forest carbon stocks under climate change in Yosemite, CaliforniaCurrent project: Preventing catastrophic wildfire under climate change in national parks in CaliforniaUnnatural accumulation of fuel by outdated policies of suppression of all fires, including natural fires, and the heat of climate change have increased burned area across the western U.S. Yet, managers still use unattainable pre-European settlement conditions as a reference condition for fire management. In response, I have been conducting research to spatially analyze fire risk under climate change in Yosemite, Sequoia, Kings Canyon, and Lassen Volcanic National Parks. The data will enable parks to target prescribed burning and managed wildland fire ate effectively prevent catastrophic wildfire under climate change.Planned project: Halting tropical deforestation -- I plan to develop an applied research project to contribute to halting tropical deforestation in an underserved country in the Amazon or Congo rainforests. Halting tropical deforestation would reduce global carbon dioxide emissions 10% and conserve globally-important biodiversity. Published research and field experience show that national parks and protected areas are one of the most effective means to reduce deforestation. [Intergovernmental Panel on Climate Change 2022. Chapter on Ecosystems](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter02.pdf)[Disproportionate magnitude of climate change in United States national parks.](https://doi.org/10.1088/1748-9326/aade09.)[Aboveground live carbon stock changes of California wildland ecosystems, 2001-2010. F](https://doi.org/10.1016/j.foreco.2015.03.040)[Global patterns in the vulnerability of ecosystems to vegetation shifts due to climate change. Global Ecology and Biogeography](https://doi.org/10.1111/j.1466-8238.2010.00558.x) | Environmental Science, Policy, and Management 150 - Anthropogenic Climate Change and Natural Resource Management (Spring 2023, Spring 2025) |
| Benjamin | [Blonder](https://ourenvironment.berkeley.edu/users/1681101) | ESPM | RCNR | Ecosystems/Biodiversity | Blonder is an ecologist focusing on plant response to climate change, past and present.  He is also interested in improving science education through experiential approaches. Blonder co-founded and currently works with the [University of Arizona Sky School](http://skyschool.arizona.edu), a program that provides inquiry-based outdoor science education to K-12 students throughout the southwest.  |  |  |
| Carl | [Boettiger](https://ourenvironment.berkeley.edu/people/carl-boettiger) | ESPM | RCNR | Ecosystems/Biodiversity | Boettiger works on problems in ecological forecasting and decision making under uncertainty, with applications for global change, conservation and natural resource management. In the [Boettiger lab](https://boettiger-lab.github.io/conservation-gym/), active projects include applications of deep reinforcement learning to complex conservation decision problems, from fisheries to tipping points and climate.Faculty advisor to the [Schmidt Center for Data Science & Environment](https://dse.berkeley.edu/),  | Our newest focus has been on bridging the social science dimensions raised by the rise of "conservation by algorithm."  I touch on this theme in relation to our other work in this recording of a recent talk from a virtual seminar at Harvard's CRCS, ["Will algorithms save our planet and will we regret it when they do?"](https://www.youtube.com/watch?v=jFVLTRq3KDo)October 2023 workshop of the Bezos Earth Fund on Tackling the challenges of Climate & Nature with AI. See 9-minute Boettiger talk [here](https://www.youtube.com/watch?v=yTqd0qREoPU). | ESPM 157: Data Science for Global Change Ecology (every Fall)ESPM-288: Reproducible and Collaborative Data Science (every Spring), Both courses involve a data-driven look at climate change and impacts.Part of faculty team for new Masters in Climate Solutions (2025) |
| Timothy | [Bowles](https://ourenvironment.berkeley.edu/people/bowles) | ESPM, Berkeley Food Institute | RCNR | Food/Agriculture, Drought, water | Co-Associate Faculty Director, [Berkeley Food Institute](https://food.berkeley.edu/)Agroecology, soil ecology and biogeochemistry, plant-soil-microbe interactionsHow can reliance on biodiversity and ecological processes create productive, resilient, and healthy agricultural systems? This question frames Bowles’ 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.  | [Quantifying direct yield benefits of soil carbon increases from cover cropping](https://www.nature.com/articles/s41893-023-01131-7)[Long-Term Evidence Shows that Crop-Rotation Diversification Increases Agricultural Resilience to Adverse Growing Conditions in North America](https://www.cell.com/one-earth/pdf/S2590-3322%2820%2930088-9.pdf)[How does building healthy soils impact sustainable use of water resources in irrigated agriculture?](https://online.ucpress.edu/elementa/article/10/1/00043/194830/How-does-building-healthy-soils-impact-sustainable)  | [Agricultural Ecology ESPM 118 001 (Fall 2023)](https://classes.berkeley.edu/content/2023-fall-espm-118-001-lec-001) |
| Justin | [Brashares](https://ourenvironment.berkeley.edu/people/justin-brashares) | ESPM | RCNR | Ecosystems/Biodiversity | The biological, economic and social consequences of depauperate oceans, tundras, savannas and forests remain unclear and in desperate need of study. Our research attempts to understand how the consumption of wild animals and conversion of natural habitats affects the dynamics of animal communities and the persistence of populations.Work in the group extends beyond traditional animal conservation to consider the economic, political and cultural factors that drive and, in turn, are driven by changes in wildlife abundance and diversity.  |  | [Seminar in Wildlife Biology and Management – ESPM 281 001 (Fall 2023)](https://classes.berkeley.edu/content/2023-fall-espm-281-001-lec-001) |
| Ellen | [Bruno](https://are.berkeley.edu/user/13761) | Agricultural & Resource Economics | RCNR | Water, Food/Agriculture, 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](https://iopscience.iop.org/article/10.1088/1748-9326/ac54cb)." Environmental Research Letters 17.3: 034021.        Ellen M. Bruno and Katrina Jessoe. 2021. "[Missing Markets: Evidence on Agricultural Water Demand from Volumetric Pricing.](https://www.sciencedirect.com/science/article/abs/pii/S0047272721000104)" Journal of Public Economics 196: 104374. |  |
| Van | [Butsic](https://ourenvironment.berkeley.edu/people/van-butsic) | ESPM | RCNR | Wildfire, Ecosystems/Biodiversity | Cooperative Extension SpecialistLand systems science, conservation, environmental economics and policy, coupled human natural systems, GIS applications |  |  |
| Duncan | [Callaway](https://erg.berkeley.edu/people/callaway-duncan/) | ERG, Energy Institute @Haas | RCNR | Energy, Storage, Electricity generation | Chair, [Energy Resources Group](https://erg.berkeley.edu/)His research group focuses on emerging energy technologies by quantifying their impacts on power system operations and developing control, optimization and data analysis tools to facilitate their integration into power systems | .   | [Data Environment and Society ENERES 131 001 (Fall 2023)](https://classes.berkeley.edu/content/2023-fall-eneres-131-001-lec-001) |
| Stephanie | [Carlson](https://ourenvironment.berkeley.edu/people/stephanie-carlson) | ESPM | RCNR | Ecosystems/Biodiversity, drought, water | Evolutionary ecology and conservation of freshwater fishes, with a focus on migratory species. * Habitat mosaics and connectivity
* Migration
* Life history portfolios
* Resilience"
 | 2023 UCOP Proposal: Building climate resilience through life history diversity: a tool to allocate restoration effort[Closing the gap between science and management of cold-water refuges in rivers and streams](https://doi.org/10.1111/gcb.16844)[Spatial Patterns and Sensitivity of Intermittent Stream Drying to Climate Variability](https://doi.org/10.1029/2021WR030314)[Refuges and ecological traps: Extreme drought threatens persistence of an endangered fish in intermittent streams](https://onlinelibrary.wiley.com/doi/10.1111/gcb.15116) | "Fish Ecology" class taught in spring although not 2024 due to sabbatical |
| Federico | [Castillo](https://ourenvironment.berkeley.edu/people/federico-castillo) | Berkeley Food Institute | RCNR | Food/Agriculture, Climate Equity/Environmental justice, Heat, Migration, Labor, Health | Castillo’s research is centered on technology transfer and innovation,  the socio-economic impacts extreme events associated with climate change, the economic aspects of protected areas and migration. Works with the Tropical Agricultural Research Center (CATIE), the National Autonomous University of Mexico (UNAM), LBNL, UCSB, and UC Davis in projects dealing with ecosystem-based adaptation to climate change, the socio-economic impact of weather extremes in California agriculture and climate change impacts on migration from Mexico to the US.    | [Extreme Heat and COVID-19: A Dual Burden for Farmworkers](https://www.frontiersin.org/articles/10.3389/fpubh.2022.884152/full) (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 expendituresJoint impact research on COVID and heatwaves: 360 farmworkers surveyed—impacts on income and health. Issues related to gender in the ag. labor force/ Mx and USA relationsUC-Mexico Alianza Program– Recently funded grant to establish a “UC-Mexico Farm Labor Research Cluster” with participation of UC and Mexican researchers, public and private sector and CBOs. Latinos & the Environment – helping people of color enter into the climate research space.Conference in Mexico City, March 14-15, for researchers to discuss farm labor, migration and climate change drivers impacting both.  |    |
| Youjin | [Chung](https://erg.berkeley.edu/people/youjin-chung/) | ESPM, Energy Resources Group | RCNR | Food/Agriculture, energypoverty + climate equity/environmental justice. y | Chung’s research lies at the intersection of the political economy of development, historical and feminist political ecology, critical agrarian and food studies, African studies, and science and technology studies/feminist science studies. [Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | Project focuses on the process of ‘**sustainable livestock intensification**,’ the transformation of subsistence-oriented pastoral and agropastoral systems into modern industrial livestock operations to increase meat and dairy yields while mitigating climate change. This project is supported by the UC Berkeley Climate Equity and Environmental Justice Seed Grant and the Fulbright-Hays Faculty Research Abroad Fellowship. The project investigates the human and environmental implications of the ‘**rare earth rush**’ or the global scramble for rare earth elements, the demand for which is growing for the production of green and high-end technologies, such as wind turbines, electric cars, to military defense systems. This research is supported by the National Science Foundation.  | Spring 2024 — Gender and Environment (undergrad) and Agrarian Questions (grad) which include some modules related to the climate crisis.  |
|  | [Climate Futures Lab](file:////Users/bruceriordan/Desktop/WORK/A%20Berkeley%20Climate%20Change%20Network%20/BCCN%20Umbrella%20%26%20MAP/OCTOBER%202023%20UPDATE/oKey%20research%3A%20hurricane%20impact%3B%20Afro-Latinx%20and%20Latinx%20migration%3B%20FEMA%20expenditures%3B%20heat%20waves-COVID%20joint%20impacts%20on%20farm%20workers.%20%20%20oCurrent%20research%20on%20hurricane%20Harvey%20impacts%20on%20Afro-Latinx%20and%20Latinx%20community%20and%20FEMA%20expenditures%20%20oJoint%20impact%20research%20on%20COVID%20and%20heatwaves%20%20%EF%82%A7360%20farmworkers%20surveyed%E2%80%94impacts%20on%20income%20and%20health.%20Issues%20related%20to%20gender%20in%20the%20ag.%20labor%20force.%20r%20force/%20Mx%20and%20USA%20relations%20%20UC-Mexico%20Alianza%20Program%E2%80%93%20Recently%20funded%20grant%20to%20establish%20a%20) | ESPM | RCNR | **Equity** | Meg Mills-Novoa, DirectorCarol Tapia, Research Manager[Climate Futures Lab](file:////Users/bruceriordan/Desktop/WORK/A%20Berkeley%20Climate%20Change%20Network%20/BCCN%20Umbrella%20%26%20MAP/OCTOBER%202023%20UPDATE/oKey%20research%3A%20hurricane%20impact%3B%20Afro-Latinx%20and%20Latinx%20migration%3B%20FEMA%20expenditures%3B%20heat%20waves-COVID%20joint%20impacts%20on%20farm%20workers.%20%20%20oCurrent%20research%20on%20hurricane%20Harvey%20impacts%20on%20Afro-Latinx%20and%20Latinx%20community%20and%20FEMA%20expenditures%20%20oJoint%20impact%20research%20on%20COVID%20and%20heatwaves%20%20%EF%82%A7360%20farmworkers%20surveyed%E2%80%94impacts%20on%20income%20and%20health.%20Issues%20related%20to%20gender%20in%20the%20ag.%20labor%20force.%20r%20force/%20Mx%20and%20USA%20relations%20%20UC-Mexico%20Alianza%20Program%E2%80%93%20Recently%20funded%20grant%20to%20establish%20a%20) **is a hub of social science research on the impact and equity of climate change responses**  | [After Adaptation](https://nature.berkeley.edu/ClimateFuturesLab/after-adaptation/)[Decarbonizing Adaptation](https://nature.berkeley.edu/ClimateFuturesLab/decarbonizing-adaptation/)[Hydropower Development](https://nature.berkeley.edu/ClimateFuturesLab/hydropower-development/)[Deforestation Frontiers](https://amazonagfrontiers.weebly.com/) |  |
| John | [Coates](https://vcresearch.berkeley.edu/faculty/john-coates) | Plant & Microbial Biology, Energy Biosciences Institute | RCNR | Energy, Carbon removal and storage | Director, [Energy Biosciences Institute](https://energybiosciencesinstitute.org/)At the EBI, we believe that the vast scientific toolbox, combined with the human intellect and creative spark, can provide pioneering solutions to some of the pressing challenges we face today. The EBI combines a portfolio of industry-sponsored research, entrepreneurial support, and multi-leveled education to facilitate the advancement of clean energy technologies that lead to a reliable, economical, and sustainable energy future. | Research: Coates Lab specific research interests include renewable clean energies and manufacturing processes, carbon sequestration, and bioremediation of diverse toxic compounds (metals, radionuclides, and organics). |  |
| Devin | [Coleman-Derr](https://plantandmicrobiology.berkeley.edu/profile/coleman-derr) | Plant and Microbial Biology, IGI | RCNR | Food/Agriculture, water, drought | The laboratory investigates the effects of drought and other abiotic stresses on the microbiomes associated with Sorghum bicolor and other grass species. With the world population expected to reach 9 billion by 2050, it is estimated that the global food supply will need to increase by 70 percent to meet rapidly rising demand.  Changes in the global climate may well compound this challenge, as predicted increases in environmental stresses, such as drought and high salinity, are expected to reduce crop productivity.   |  |  |
| Brandon  | [Collins](https://nature.berkeley.edu/stephenslab/lab-members/dr-brandon-collins/) | Berkeley Forests | RCNR | Wildfire, Ecosystems/Biodiversity | [Collins Lab of Fire Dynamics and Forest Management](https://nature.berkeley.edu/collins_lab/)Our research aims to understand how fire influences forest ecosystems and how management in these ecosystems influences fire and forest health. We work directly with forest managers to both address specific research questions and interpret results in a management-relevant context. We frequently communicate our research findings to and learn from a broad host of audiences including policy makers, land management agencies, private forestland managers, students, and interested public.  | Regional relationships between climate and wildfire burned area in the Interior West Sierra Nevada Adaptive Management Plan (SNAMP)  [[SNAMP Website](http://snamp.cnr.berkeley.edu/)]Managing Natural Wildfires in Sierra Nevada Wilderness AreaSpatial Patterns of Large Natural Fires in Sierra Nevada Wilderness Areas [Initial Changes in Forest Understory Communities Following Fuel Reduction Treatments Fire regimes of mixed conifer forests in the north-central Sierra Nevada at multiple spatial scalesRegional relationships between climate and wildfire burned area in the Interior West, USA  |  |
| Paolo | [D'Odorico](https://ourenvironment.berkeley.edu/people/paolo-dodorico) | ESPM | RCNR | Water, Ecosystems/Biodiversity | Research focuses on the role of hydrological processes in the functioning of terrestrial ecosystems. Through the analysis of the soil water balance, we have highlighted important nonlinearities in the coupling between soil moisture dynamics and plant water stress, biogeochemical cycling, land-atmosphere interactions, plant community composition, and soil susceptibility to wind erosion.   |  |  |
| Richard | [Dodd](https://ourenvironment.berkeley.edu/people/richard-dodd) | ESPM | RCNR | Ecosystems/Biodiversity | Climate change and habitat fragmentation are two major concerns for the future health of forests and woodlands and the diversity of organisms that depend on these ecosystems. Research in the Dodd lab uses molecular methods to investigate the evolutionary dynamics of populations of species and species complexes in response to past and future environmental change.  |  |  |
| Iryna  | [Dronova](https://vcresearch.berkeley.edu/faculty/iryna-dronova) | ESPM, Landscape Architecture (CED) | RCNR | Ecosystems/Biodiversity | 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
 | [What Putin’s War in Ukraine Means for Our Global Climate Crisis (2022)](https://vcresearch.berkeley.edu/news/what-putins-war-ukraine-means-our-global-climate-crisis)2023 UCOP Proposal: Planning Restoration of San Francisco Bay’s Wetlands to Co-benefit Human- Wildlife Climate Resilience | Ecological Analysis [LDARCH C110A 001](https://classes.berkeley.edu/content/2023-fall-ldarch-c110a-001-lec-001) (Fall 2023) |
|  | [Energy and Resources Group (ERG)](https://erg.berkeley.edu/) | Energy Resources Group | RCNR | Energy | [Duncan Calloway, ERC Chair](https://erg.berkeley.edu/people/callaway-duncan/)ERG is a col­lab­o­ra­tive com­mu­nity of grad­u­ate stu­dents, core fac­ulty, nearly 200 affil­i­ated fac­ulty and researchers across the cam­pus, and over 600 alumni across the globe. Our stu­dents work­ across dis­ci­plines and depart­ments to cre­ate poten­tially trans­for­ma­tive knowl­edge for the planet. ERG is a world-renowned pro­gram with a 50-year his­tory of out­stand­ing research, edu­ca­tion and outreach to gov­ern­ment, indus­try, and civil soci­ety at the state, national and inter­na­tional levels.The ERG model com­bines a rig­or­ous core cur­riculum, a shared learn­ing environment, and the free­dom to access the entire Berke­ley fac­ulty. The core cur­ricu­lum pro­vides stu­dents with relevant ana­lyt­i­cal tools from ecol­ogy, eco­nom­ics, engi­neer­ing and the social sci­ences. ERG research is strongly evidence-based and hypothesis-driven; its inter­dis­ci­pli­nary culture equally encourages student‐ and faculty‐led research. [**ERG Programs**](https://erg.berkeley.edu/academics/program/) include:* Master of Science (M.S.)
* Master of Arts (M.A.)
* Doctor of Philosophy (Ph.D.)
* Undergraduate Minor in Energy and Resources
* Sustainability Summer Minor or Certificate

[Diversity, Equity and Inclusion at ERG](https://erg.berkeley.edu/about/diversity/) |  | See this link for [ERG climate classes](https://erg.berkeley.edu/academics/courses/), and a list of courses in other units where ERG students often register. |
| Meredith | [Fowlie](https://are.berkeley.edu/users/meredith-fowlie) | Agricultural & Resource Economics, Energy Institute @Haas | RCNR | Climate policy, electricity markets, climate adaptation, wildfire, renewable energy siting, decarbonization policy | Fowlie is faculty director at the Energy Institute at Haas.  She co-directs the National Bureau of Economic Research (NBER), Environmental andEnergy Economics Program.  She has worked extensively on the economics of energy markets and the environment. Her researchinvestigates market-based environmental regulations, the economics of air pollution, electricity market regulation, and incomplete GHG regulations. She currently serves as a Governor-appointed member of California’s Independent Emissions Market Advisory Committee.   | [Negotiating the Clean Energy Transition: California’s Experiment in Progress](https://energy.ucdavis.edu/fowlie/)[(video)](https://energy.ucdavis.edu/fowlie/)Organized National Bureau of Economic Research conference [“Measuring and Reporting Corporate Carbon Footprints and Climate Risk Exposure](https://www.nber.org/conferences/measuring-and-reporting-corporate-carbon-footprints-and-climate-risk-exposure-fall-2021) – Fall 2021”[Climate Policy, Environmental Justice and Local Air Pollution](https://www.brookings.edu/wp-content/uploads/2020/10/ES-10.14.20-Fowlie-Walker-Wooley.pdf)(2020)2023 UCOP Proposal: Designing Climate Policy for an Equitable and Effective Clean EnergyCo-Chair of the Academic Senate committee exploring climate change education and research at Berkeley.   | ENVECON 147 Economics of the Clean Energy Transition |
| Christine | [Gehrig-Downie](https://ourenvironment.berkeley.edu/summer-instructors) | ESPM | RCNR | Ecosystems/Biodiversity |  |  | Teaching: ESPM 152 – Global Change BiologyThe course will focus on understanding how anthropogenic changes to the global environment (e.g., climate change, habitat destruction, global trade) impact organisms. We will evaluate responses to global change in a wide diversity of organisms (from microbes to mammals) and ecosystems (from arctic to temperate to tropical). |
|  | [Geospatial Innovation Facility](http://gif.berkeley.edu/) |  | RCNR | Heat, Drought, Sea Level rise, Wildfire, Flood | [Nancy Thomas, Executive Director](http://gif.berkeley.edu/about/nancy.html)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](http://www.climatechange.ca.gov/adaptation). Through a combination of locally relevant information, visualization tools, and access to primary data, [Cal-Adapt](http://cal-adapt.org) 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](http://www.climatechange.ca.gov/research)) Program, and advisory support from Google.org. Learn more about the development of Cal-Adapt in a highlight article published in the [June 2011 issue of PE&RS](http://gif.berkeley.edu/documents/Cal-Adapt_PE-RS_June_2011.pdf). |  |
| Lau | [Gherardi](https://ourenvironment.berkeley.edu/users/1788980) | ESPM | RCNR | Ecosystems/BiodiversityCarbon dioxide removal and storage, Drought, Extreme Storms  | 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. | NSF-CAREER [proposal](https://www.pnas.org/doi/abs/10.1073/pnas.2006715117) 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](https://www.pnas.org/doi/abs/10.1073/pnas.1506433112)[Effect of interannual precipitation variability on dryland productivity: A global synthesis](file:///Effect%20of%20interannual%20precipitation%20variability%20on%20dryland%20productivity/%20A%20global%20synthesis) | ESPM 116B - Grassland and Woodland Ecology |
| Rosemary | [Gillespie](https://ourenvironment.berkeley.edu/people/rosemary-gillespie) | ESPM | RCNR | Ecosystems/Biodiversity | [PI, EvoLab](https://nature.berkeley.edu/evolab/)Berkeley Evolab is the combined research group of Rosemary Gillespie and George Roderick. Our focus is terrestrial arthropods, the most diverse macrobiota on earth, and the biological communities of which they are a part, from microbes to top predators.  The work includes studies of natural biodiversity in the Pacific and California, as well as the impacts of global change on biodiversity, and solutions.Gillespie’s research focuses on understanding evolutionary patterns and processes among populations and species. Her primary focus is on islands, particularly remote hotspot islands of the Pacific. |  |  |
| Keith | [Gilless](https://ourenvironment.berkeley.edu/people/j-gilless) | ESPM | RCNR | Ecosystems/Biodiversity, Wildfire | [Chair, California Board of Forestry and Fire Protection](https://bof.fire.ca.gov/)Research uses economic analysis and operations research modeling techniques to address forest resource management issues such as: forest products market forecasting, analysis of resource-dependent local economies, the role of forestry in international development, forest harvest scheduling, protected area management, non-market valuation, the impact of climate change on fire control, structure survival in large urban-wildland fires, and wildland fire protection planning. |  |  |
| Manuela | [Girotto](https://vcresearch.berkeley.edu/faculty/manuela-girotto) | ESPM | RCNR | Sea level rise, storms | 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](https://ai.facebook.com/research/) and the [Center for Western Weather and Water Extremes](https://cw3e.ucsd.edu/) using AI techniques to combine measurements from [aircraft observations of snow](https://www.airbornesnowobservatories.com/) and a multitude of openly available weather and satellite data sources.  | ESPM 299 030 – Individual Research (Fall 2023)  |
| Louise | [Glass](https://vcresearch.berkeley.edu/faculty/n-louise-glass) | Plant and Microbial Biology | RCNR | Energy, Ecosystems/Biodiversity | Biofuels, biotechnology, fungal genetics, fungal cell biology | [First patent granted for research at EBI -- biofuels](https://vcresearch.berkeley.edu/news/first-patent-granted-research-energy-biosciences-institute) |  |
| Allen | [Goldstein](https://ourenvironment.berkeley.edu/people/allen-goldstein) | ESPM | RCNR | Air pollution, health, wildfire | Goldstein Group research themes include atmospheric chemistry and biogeochemistry. We investigate anthropogenic and natural contributions to the chemical composition of the troposphere, interactions of air pollution with ecosystems, aerosol composition and chemistry, and the biogeochemistry of greenhouse gases and stratospheric ozone depleting gases. A unifying theme is to understand the balance between natural and anthropogenic sources of trace gases and aerosols in earth's atmosphere, and to elucidate the biogeochemical processes which control their budgets. One major focus is to push the forefront of observational capabilities through the development and deployment of novel analytical instrumentation, making possible new avenues of research to address elusive scientific questions.  | [How Much Wildfire Smoke is Infiltrating our Homes](https://publichealth.berkeley.edu/news-media/research-highlights/how-much-wildfire-smoke-is-infiltrating-our-homes/) (2021)[Understand and Mitigating Wildfire Risk in California (2023)](https://ww2.arb.ca.gov/sites/default/files/2023-11/fixed%20-%20IV.2%20-%20Final%20Report%20-%20UCB%20-%20Understanding%20and%20Mitigating%20Wildfire%20Risk%20-%20Contract%2019RD008.pdf) [Understanding and Characterizing Emission Factors from Burning Structures in California Due to Wildfires](https://ww2.arb.ca.gov/sites/default/files/2023-11/fixed%20-%20III.3%20-%20Augmentation%20-%20UCB%20-%20Emission%20Factors%20Burning%20Wildfires.pdf) (2023) |  |
| Ted | [Grantham](https://ourenvironment.berkeley.edu/people/theodore-grantham) | ESPM | RCNR | Water, Ecosystems/Biodiversity | 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·       California water management and policy·       climate change risk assessment and adaptation  | Coordinating Lead Author: [California 4th Climate Change Assessment, North Coast Region Report](https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-001_NorthCoast_ADA.pdf)[UCOP Climate Action Initiative Project](https://news.berkeley.edu/2023/08/23/five-uc-berkeley-led-projects-awarded-california-climate-action-grants): COEQWAL: Equitable stewardship of California’s water in a changing climate FUNDED | [UC Water Academy](https://nature.berkeley.edu/breakthroughs/fa18/five-lessons) (Spring 2024)  |
| John | [Harte](https://ourenvironment.berkeley.edu/people/john-harte) | ESPM, ERG | RCNR | Biodiversity/Ecosystems | Harte’s research focuses on the effects of human actions on, and the linkages among, biodiversity, ecosystem structure and function, and climate. His work spans a range of scales, from plot to landscape to global, and utilizes field manipulation experiments, the study of patterns in nature, and mathematical modeling. Two specific goals are to understand the nature and causes of patterns in the distribution and abundance of species and to understand the extent to which ecosystem responses to climate change may result in feedbacks to climate that can either ameliorate or exacerbate global warming. An overarching goal of his research is to understand the interdependence of human well-being and the health of ecosystems. | [Global Warming and Soil Microclimate](https://www.researchgate.net/profile/John-Harte-2/publication/255020996_Global_Warming_and_Soil_Microclimate_Results_from_a_Meadow-Warming_Experiment/links/56f083b108aeedbe3ce43ae0/Global-Warming-and-Soil-Microclimate-Results-from-a-Meadow-Warming-Experiment.pdf)[Global Warming: Why the problem is Worse – and Solutions Simpler -- Than You Thought](https://www.dailyclimate.org/climate-change-solutions-2657542453/global-warming-bad-news) (Daily Climate 2022) Speaking [before the Humanist Science Committee](https://vimeo.com/719687216) in Salida, Colorado, earlier this month, Harte used one slide to "demolish" deniers, one slide to show the real stakes—collapse of civilization—and the remainder of his chat to describe impacts he's seen from a lifetime of research in the Rocky Mountains and where he sees hope. "There is no question that the course we have been on for the last 60 years will lead to a crash," he said. "But the alternative future is the careful transition to what we call a soft landing … where we need less than one Earth to support what we do on Earth.”Ecologist John Harte offers a fresh take on the dire topic of climate change. [1 hr. 13 min video presentation](https://www.dailyclimate.org/climate-change-solutions-2657542453/global-warming-bad-news)[Underestimating the Challenges of Avoiding a Ghastly Future](https://www.frontiersin.org/articles/10.3389/fcosc.2020.615419/full) (Frontier, 2021)We report three major and confronting environmental issues that have received little attention and require urgent action. First, we review the evidence that future environmental conditions will be far more dangerous than currently believed. The scale of the threats to the biosphere and all its lifeforms—including humanity—is in fact so great that it is difficult to grasp for even well-informed experts. Second, we ask what political or economic system, or leadership, is prepared to handle the predicted disasters, or even capable of such action. Third, this dire situation places an extraordinary responsibility on scientists to speak out candidly and accurately when engaging with government, business, and the public. |  |
| Elizabeth | [Hoover](https://ourenvironment.berkeley.edu/users/1688049) | ESPM | RCNR | Food/Agriculture, Climate Equity/Environmental justice | Hoover’s research focuses on environmental health and food sovereignty movements. [Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | Hooever’s first book The River is In Us; Fighting Toxins in a Mohawk Community, is an ethnographic exploration of Akwesasne Mohawks’ response to Superfund contamination and environmental health research. Other publications explore environmental reproductive justice, fish advisories, seed sovereignty, and Native American farming and gardening food sovereignty projects.  In addition she is working with community organizations to explore the potential role of kelp farming in promoting food sovereignty, as well as prescribed burn associations across California. | ESPM 60 American Environmental Policy and Law. ESPM 150 Food Justice |
| Lynn | [Huntsinger](https://ourenvironment.berkeley.edu/people/lynn-huntsinger) | ESPM | RCNR | Food/Agriculture | Rangeland and conservation management.Huntsinger’s work seeks to understand coupled human-natural systems, with the goal of learning how long-term, sustainable management of rangelands can be created, and of contributing to the growing body of literature and theory surrounding the concept of coupled systems.  | [California Rangeland Trust: A common ground.  Film. 2018.](https://rangelandtrust.org/2018/09/04/crt-presents-a-common-ground-a-sho...) [California Rangeland Trust: From the ground up. Film 2021.](https://rangelandtrust.org/2022/03/21/california-rangeland-trust-premier...) [Ecosystem Service valuation – 17th Annual Rangeland Summit](https://www.youtube.com/watch?v=0bijLat7zy8&list=PLLjlfxpbNglYajq0z_ULY9...) [Monterey Carbon Sequestration workshop, October 2022, and Oak Symposium plenary, San Luis Obispo, Nov. 2, 2022.  Keeping Carbon in the Bank. 1:19](https://www.youtube.com/watch?v=GNb3bZXi69U&t=2341s) | Teaching: ESPM 280 – Seminar in Range Ecosystem Planning and Policy: California’s Natural and Working Lands Climate Change Strategy |
| Nina | [Ichikawa](https://food.berkeley.edu/about-us/team/) | Berkeley Food Institute | RCNR | Food/Agriculture | Executive Director, [Berkeley Food Institute](https://food.berkeley.edu/)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.The BFI addresses many of the impediments to systemic change in food systems by creating productive connections between members of the scholarly community, farmers and other producers, non-governmental organizations, governments, and civil society. | [2 Days of Soil, Science and Solutions – Report on CalCAN biennial conference on climate change and California agriculture](https://food.berkeley.edu/from-the-field/two-days-soil-science-hope/)[Fostering Resilience and Health of Food Systems in the Face of Drought](https://food.berkeley.edu/fostering-resilient-and-healthy-food-systems/) |  |
| Chris | Jones | Energy and Resources Group | RCNR | Climate Equity/Environmental JusticeJust TransitionBuildingsTransportationFood/AgricultureElectricity GenerationWastePublic AwarenessLand useGovernancePolicyFinanceBusinessEconomics | Chris Jones is Director of the [CoolClimate Network](https://coolclimate.berkeley.edu/), a university-government-industry partnership at Berkeley. He also serves as faculty lecturer in the Haas School of Business, and Program Chair (13th year) of the Behavior, Energy and Climate Change Conference. Jones is a leading expert in carbon footprint analysis, the design of behavior-based programs and regional climate policy. In 2005, he published the first comprehensive carbon footprint calculator, which accounts for the greenhouse gas emissions of all transportation, energy, food, goods and services purchased by U.S. households. Versions of CoolClimate software have since been adopted by governments, businesses and non-governmental organizations throughout the United States and internationally. The research underlying these tools helps inform community and state-level climate policy. promising climate solutions. | [CoolClimate Calculator:](https://coolclimate.org/) California Local Government Policy Tool: https://coolclimate.orgUCOP Climate Action Award: Climate [Action Planning Tools: Empowering Equitable Transitions forCA Communities](https://uckeepresearching.org/climate-seed-and-matching-awards-announced/) FUNDEDCoolClimate develops and evaluates programs to engage, educate, motivate and empower individuals to take climate action. Examples include the Cool Campus Challenge and the CoolCalifornia Challenge. Through research, tools, education, outreach, and networking CoolClimate seeks to help shift talent and resources to the most  | MBA/EWMBA 292T.14 - Carbon Footprint Analysis for Innovation |
| Dan | [Kammen](https://erg.berkeley.edu/people/kammen-daniel-m/) | Energy Resources Group, Goldman | RCNR | Energy, Policy | Director, [Center for Environmental Public Policy](https://gspp.berkeley.edu/faculty-and-impact/centers/cepp) (Goldman)Founding Director, [Renewable and Appropriate Energy Laboratory](http://rael.berkeley.edu/) (RAEL) | Co-PI, [Eco Block Project](https://ecoblock.berkeley.edu/)UCOP Proposal: Climate Action Planning Tools: Empowering Equitable Transitions for CA Communities FUNDED[Accelerating the Timeline for Climate Action in California](https://arxiv.org/abs/2103.07801) (2022)[Driving Research Opportunities at RAEL – California’s electric grid and the move to all EVs](https://rael.berkeley.edu/2023/04/httpsnature-berkeley-edunews202304driving-research-opportunities/) |  |
| Trevor | [Keenan](https://ourenvironment.berkeley.edu/people/trevor-keenan) | ESPM | RCNR | Ecosystems/Biodiversity, Carbon removal and storage | Keenan’s interests are centered on understanding the response of terrestrial ecosystems to climate variability and long-term change, as well as related 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. | [Exacerbated drought impacts on global ecosystems due to structural overshoot.](https://www.nature.com/articles/s41559-021-01551-8) Nature Ecology and Evolution, 5, 1490–1498 [Evidence and attribution of the enhanced land carbon sink. Nature Reviews Earth and Environment, 4, 518–534](https://commons.clarku.edu/faculty_geography/948/)[Exacerbated drought impacts on global ecosystems due to structural overshoot. Nature Ecology and Evolution, 5, 1490–1498](https://www.nature.com/articles/s41559-021-01551-8)[Global variation in the fraction of leaf nitrogen allocated to photosynthesis. Nature Communications, 12, 4866](https://www.nature.com/articles/s41467-021-25163-9) | Spring '24: ESPM 15, Intro. to Environmental Sciences |
| Maggi | [Kelly](https://vcresearch.berkeley.edu/faculty/nina-maggi-kelly) | ESPM | RCNR | Ecosystems/Biodiversity, water, Land Use, climate tech | The [Kelly Lab’s](http://kellylab.berkeley.edu/) motto is "Mapping for a Changing California", and they use a range of geospatial data and analytics – from spatial modeling, remote sensing, drones, lidar, historical archives, surveys, participatory mapping, and the field - to gain insights about how and why California landscapes are changing, and what that change means for those who live on, use, and manage our lands.  | [Canopy structure: An intermediate factor regulating grassland diversity-function relationships under human disturbances](https://www.sciencedirect.com/science/article/pii/S2667325822004198)[Modeling spatial distributions of Amah Mutsun priority cultural plants to support Indigenous cultural revitalization](https://esajournals.onlinelibrary.wiley.com/doi/10.1002/ecs2.4374). [Comparison between field measured and UAV-derived Pistachio tree crown characteristics throughout a growing season.](https://www.mdpi.com/2504-446X/6/11/343) Academic Senate committee on climate @Berkeley |   |
| Lara | [Kueppers](https://erg.berkeley.edu/people/kueppers-lara/) | Energy Resources Group | RCNR | Ecosystems/Biodiversity, carbon removal, wildfire | 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”](https://onlinelibrary.wiley.com/doi/abs/10.1111/gcb.15927)(2021)Kueppers is deputy director of [Next Generation Ecosystem Experiments—Tropics](http://eesa.lbl.gov/ngee-tropics/), a long-term, multi-institution project funded by the Department of Energy, to better understand and project tropical forest feedbacks  |  |
|  | [Latinxs and the Environment](https://nature.berkeley.edu/latinosenvironment/) |  | RCNR | Climate Equity/Environmental Justice | Leadership:[Federico Castillo](https://ourenvironment.berkeley.edu/people/federico-castillo)[Lupe Gallegos Diaz](https://news.berkeley.edu/2020/08/05/on-equal-terms-lupe-gallegos-diaz-student-development-director/)The Latinxs and the Environment Initiative is a 3 year old effort started at UC Berkeley that seeks to establish a comprehensive program designed to generate knowledge and encourage increased study and research on Latinxs and the environment—both in the U.S. and abroad with the coordinated participation of policy makers, community based organizations (CBOs) and the academic community.Our initiative was started as a way of bringing together Latinx whose work, interest, and research focus on the environment. We seek to create a network and bridge policy, organizing, and research.  | [Spring 2023 Research Conference at Berkeley](https://nature.berkeley.edu/latinxenvironment/spring-2023-research-conference/) |  |
| Peggy | [Lemaux](https://plantandmicrobiology.berkeley.edu/users/peggy-g-lemaux) | Plant and Microbial Biology | RCNR | Food/Agriculture | Lemaux’s laboratory performs both basic and applied research focused primarily on cereal crops, like sorghum, wheat, rice and barley. The objectives of these studies are to better understand crop plants and to use that knowledge to improve their performance and quality. More recently efforts with colleagues have focused on bioenergy and climate change – especially in the versatile feedstock, sorghum.  | Lemaux is working on a climate change project focused on carbon sequestration, funded through the Chan-Zuckerberg Initiative. Work will focus on editing Sorghum bicolor to improve photosynthetic efficiency and root biomass.Lemaux is also working on a recently DOE funded Earthshot Energy Research Center project, led by Lawrence Livermore National Lab, that is focused on increasing photosynthetic efficiency and upregulating root exudates, studying how to anchor that increased carbon in the soil. |  |
| Ethan | [Ligon](https://are.berkeley.edu/users/ethan-ligon) | Agricultural and Resources Economics | RCNR | Economics, Food/Agriculture | Ligon works on risk and resilience, particularly in agriculture. Developing methods to measure the effects of climate change on structure of agricultural production and inequality. Ag projects in the U.S. and in low-income countries.  |  | ENVECON153, titled "Population, Environment, & Development" (Spring 2024) includes important focus on climate change. |
| Jeremy | [Magruder](https://are.berkeley.edu/users/jeremy-magruder) | Agriculture and Resource Economics | RCNR | Labor, Migration | Department Chair, Agriculture and Resource Economics  | [Labour Market Responses To Immigration: Evidence From Internal Migration Driven By Weather Shocks](https://are.berkeley.edu/~jmagruder/kleemans_and_magruder.pdf) |  |
| Abigail | [Martin](https://profiles.sussex.ac.uk/p473409-abigail-martin) | ESPM | RCNR | Climate Equity/Environmental justice, Policy | Martin is a Visiting Professor of Climate and Energy Policy at UC Berkeley, and a researcher in the Science Policy Research Unit at the University of Sussex in the UK, where she investigates the policies and politics of collective problem solving for climate change and toxic pollution issues. Her research centers on  questions of how to govern controversial, risky and potentially unjust technological change, with a focus on the need for more accountable industrial policies to address the climate crisis.  | [Advancing Equity in California Climate Policy: A New Social Contract for Low-Carbon Transition](https://laborcenter.berkeley.edu/advancing-equity/) (Center for Labor Research and Education, 2016) | Teaching: ESPM 102D Climate and Energy PolicyThis intermediate level course engages with both the politics and the design of climate and clean energy policy, with a focus on the United States. Key themes include political strategies to climate change, the choice of policy instruments, the role of various state actors and interest groups in policy making, and the interaction of policy and low-carbon technology markets. |
| Michael | [Mascarenhas](https://ourenvironment.berkeley.edu/people/michael-mascarenhas) | ESPM | RCNR | Water, Climate Equity/Environmental justice | Postcolonial theory and development studies, environmental justice and critical race theory, and science and technology studies | 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. |  |
|  | [Masters of Climate Solutions](https://climatesolutions.berkeley.edu/mcs/) |  | RCNR | All | [Master of Climate Solutions — MCS](https://climatesolutions.berkeley.edu/mcs/)The Master of Climate Solutions empowers the next generation of climate and sustainability leaders with the skills and knowledge needed to enact real solutions and create change. The 10 month, in-person program translates fundamental science and groundbreaking discoveries, enabling professionals to learn how to evaluate technologies, develop just climate strategies, and remove barriers to implementing practical climate solutions. Applications will open in September 2024. |  |  |
| Jonas | [Meckling](https://ourenvironment.berkeley.edu/people/jonas-meckling) | ESPM | RCNR | Policy | Meckling studies the politics of climate and clean energy policy. [Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people)Climate Lead, [Berkeley Economy and Society Initiative](https://besi.berkeley.edu) | He is the author of two books, the latest of which is Carbon Coalitions: Business, Climate Politics, and the Rise of Emissions Trading (MIT Press). [National Models of Climate Governance Among Major Emitters](https://enlab.berkeley.edu/national-models-of-climate-governance-among-major-emitters/)[Green Bargains: Leveraging Public Investment to Advance Climate Regulation Green](https://enlab.berkeley.edu/green-bargains-leveraging-public-investment-to-advance-climate-regulationgreen/)[Public Investment Must Be Paired with Regulation to Stop Climate Change](https://enlab.berkeley.edu/public-investment-must-be-paired-with-regulation-to-stop-climate-change/)[Why Nations Lead or Lag in Energy Transitions](https://enlab.berkeley.edu/why-nations-lead-or-lag-in-energy-transitions/)[Latest publications](http://www.jonasmeckling.com/research.html)  |  |
| Sabeeha | [Merchant](https://plantandmicrobiology.berkeley.edu/users/sabeeha-merchant) | Plant and Microbial Biology | RCNR | Ecosystems/Biodiversity Food/AgricultureEnergy (general) | Merchant’s discoveries in chloroplast and trace element metabolism have influenced scholarly thought from biogeochemistry and biological oceanography to photosynthesis, plant biochemistry and human nutrition. Her accomplishments are recognized by a Guggenheim fellowship, major awards from the American Society of Plant Biologists, the National Academy of Sciences and the Alexander von Humboldt Foundation, and election to the National Academy of Sciences, American Academy of Arts and Sciences and the Leopoldina. Merchant was recently selected as a Gordon and Betty Moore Foundation Investigator in Aquatic Symbiosis.  | Jon Lin, a post-doctoral researcher in the group, is using synthetic biology approaches to engineer algal fat to resemble the complex fat found in human milk, the objective being to find a more nutritious and eco-friendly alternative to the use of palm kernel oil fat in infant formula. Jeff Moseley is developing Auxenochlorella protothecoides, which is an alga in the green plant lineage, as a platform for synthetic biology applications. Usha Lingappa, a post-doctoral researcher, is working with Judith Edwards and Eve Sindermann, and Sunnyjoy Dupuis to [understand how algae in the soil contribute fixed carbon to heterotrophic bacteria.](https://www.moore.org/investigator-detail?investigatorId=merchant) | Advanced Plant Biochemistry |
| Adina | [Merelender](https://ourenvironment.berkeley.edu/people/adina-merenlender) | ESPM | RCNR | Ecosystems/Biodiversity | Current focus is on habitat connectivity and climate change resilience of protected area networks and vineyard landscape ecology.  The students and staff who work with me study wildlife in the agricultural matrix, watershed restoration, and sustainable land use.Founder of CA Naturalists and Climate Stewards programs. This community of practice introduces Californians to the wonders of our unique ecology and engages the public in environmental stewardship. In the process of developing a new certification course to prepare UC Climate Stewards to communicate and engage in local solutions to advance community and ecosystem resilience.Other interests include connectivity science, citizen science, ecological monitoring, restoration ecology, cumulative impacts to watersheds, and working landscapes. | UCOP $100M Climate Action LOI lead – January 2023 |  |
| Arthur | [Middleton](https://ourenvironment.berkeley.edu/people/arthur-d-middleton) | ESPM | RCNR | Ecosystems/Biodiversity | Conservation biology, 30x30, wildlife, corridors. Middleton’s group studies the effects of environmental change on the behavioral, population, and community ecology of wide-ranging wildlife. They also contribute to efforts to conserve and restore wildlife habitat, and to reduce human-wildlife conflicts. They partner with interdisciplinary scholars as well as agencies, non-profits, and private landowners. The group also works with photographers, artists, storytellers, and media organizations to communicate about science and conservation to the public. Senior Advisor for wildlife conservation for USDA | [More Than Twice the Size of Texas - That’s how much land Biden wants to conserve over the next decade. But is it possible?](https://www.nytimes.com/2020/12/21/opinion/biden-climate-change-conservation.html) (New York Times Op-Ed)[Plasticity in elk migration timing is a response to changing environmental conditions](https://onlinelibrary.wiley.com/doi/10.1111/gcb.14629) |  |
| Meg | [Mills-Novoa](https://vcresearch.berkeley.edu/faculty/megan-mills-novoa) | ESPM, ERG | RCNR | Water, Ecosystems/Biodiversity, Food/Agriculture | Director, [Climate Futures Lab](https://nature.berkeley.edu/ClimateFuturesLab/)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](https://pnwcirc.org/) at Oregon State University, a climate science-to-action team funded by NOAA.[Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | [What happens after climate change adaptation projects end: A community-based approach to ex-post assessment of adaptation projects](https://www.sciencedirect.com/science/article/pii/S0959378023000213)[Intervention: The Invisible Labor of Climate Change Adaptation.](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4416499) | [Political Ecologies of Climate Adaptation](https://vcresearch.berkeley.edu/faculty/megan-mills-novoa)**[ENERES C266 001](https://vcresearch.berkeley.edu/faculty/megan-mills-novoa)**Climate Justice (ESPM C160/ENERES C176) |
| Rachel | [Morello-Frosch](https://ourenvironment.berkeley.edu/people/rachel-morello-frosch) | ESPM | RCNR | Climate Equity/Environmental justice, health | Morello-Frosch’s research focuses on environmental health and environmental justice. She is particularly interested in addressing the double jeopardy faced by communities of color and the poor who experience high exposures to environmental hazards and who are more vulnerable to the toxic effects of pollution due to poverty, malnutrition, discrimination, and underlying health conditions. | **Understanding & Addressing Cumulative Impacts on California Communities**This project develops scientifically valid and publicly transparent analytical methods to identify disparities in environmental hazard exposures and health status for key population groups identified by race/ethnicity, socio-economic status, and other vulnerability indicators to inform regulatory decision-making and environmental policy.**Environmental Justice & Climate Change**This project convenes advocates and researchers to assess the disparate impact of climate change on communities of color and the poor with a focus on the following issues: (1) health and economic impacts of extreme weather events; (2) environmental justice and social equity implications of proposed greenhouse gas reduction strategies in California associated with the AB32 Scoping Plan; and (3) disparities in community capacity to adapt to environmental impacts of climate change.**Building a Regional Voice for Environmental Health & Justice in Southern CA**This community-academic collaboration combines economic and environmental health research, policy advocacy, and public education and organizing to improve environmental health in low-income communities of color in Southern California.**Integrating Measures of Cumulative Impact and Community-Level Vulnerability**This project studies the relationship between adverse birth outcomes and traffic density in California and how individual and neighborhood-level measures of vulnerability may amplify the toxic impacts of pollution exposures.[Toxic Tides Project](https://sites.google.com/berkeley.edu/toxictides/home?authuser=0&pli=1) looking at sea level rise impact on toxics stored in bayside areas. The Bay Area has at least **400 hazardous facilities** including power plants, refineries, industrial facilities, and hazardous waste sites. SLR poses risks for such facilities experiencing flooding events that can potentially **expose nearby residents to hazardous pollutants**. Because many of these facilities are **disproportionately located in poor communities and communities of color**, climate resilience strategies must address the disproportionate impacts of SLR and associated flooding threats faced by environmental justice communities. See KQED report on project [here](https://www.kqed.org/science/1979645/see-a-map-of-hazardous-sites-at-risk-from-rising-seas).Public Health Oil and Gas Rule-making, 2.3M State of California grantUCOP $100M Climate Action LOI lead – January 2023 |  |
| Peter | [Nelson](https://ourenvironment.berkeley.edu/users/754001) | ESPM | RCNR | Climate Equity/Environmental justice  | Peter Nelson (Coast Miwok and tribal citizen of the Federated Indians of Graton Rancheria) works at the intersection of anthropological archaeology, Indigenous environmental studies, and Native American Studies in collaboration with tribal nations and Indigenous peoples in California and abroad on issues of cultural heritage preservation, settler colonialism, climate change, and Indigenous landscape management.[Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | UCOP Grant: Forging Essential Partnerships in Fire Stewardship to Meet State and Tribal Climate Action Goals FUNDED |  |
| Kris | [Niyogi](https://plantandmicrobiology.berkeley.edu/profile/niyogi) | Plant and Microbial Biology, Innovative Genomics Institute, Molecular Biophysics and Integrated Bioimaging Division LBNL | RCNR | Food/AgricultureCarbon dioxide removal and storage | The lab’s long-term research goals are to understand how photosynthetic energy conversion works in plants and eukaryotic algae, how it is regulated, and how it might be improved to help meet the world’s needs for food, fuel, and carbon sequestration to fight climate change. | Systems Analysis and Engineering of Biofuel Production in Chromochloris Zofingiensis, an Emerging Model Green Alga, $5.4M grant“Technology enabled biological carbon capture and sequestration.” Chan Zuckerberg Initiative Foundation (Co-PI, with PI Brad Ringeisen and several other co-PIs).“Systems engineering of Auxenochlorella protothecoides: from photosynthesis to biofuels and bioproducts.” Co-PI, with PI Sabeeha Merchant “RESTOR-C: RESTORation of soil Carbon by precision biological strategies.” Co-PI, with PI Susannah Tringe  | PLANTBI120/120L Biology of Algae |
| Kate | [O’Neill](https://ourenvironment.berkeley.edu/people/kate-o039neill) | ESPM | RCNR | Governance, Public Awareness, Waste, Law | O’Neill studies and teaches global environmental and climate governance - interstate politics, the UNFCCC process, science and politics, activism and social movements, industry roles, climate justice, pedagogy, history, climate engineering. She also studies links between wastes/recycling and climate change, and disaster waste  | The Environment and International Relations (3rd Edition in prep) Cambridge University Press“Being There: International negotiations as study sites in global environmental politics”  with Peter M. Haas, Global Environmental Politics 19:2, pp. 4-13 (2019)“[Linking Wastes and Climate Change: Bandwagoning, Contention and Global Governance.”](https://doi.org/10.1002/wcc.568) [“Teaching Perspective in an Unequal World: Negotiating Climate Change within the UN System” with Sebastián Rubiano-Galvis](https://teachingenvironmentaljustice.sites.ucsc.edu)/) “Institutions for a New Earth” in Simon Nicholson and Sikina Jinnah, eds., New Earth Politics: Essays from the Anthropocene (Cambridge: MIT Press, 2016)  | ESPM 169: International Environmental Politics (Spring 2024, Summer 2024) |
| Dara | [O’Rourke](https://ourenvironment.berkeley.edu/people/dara-o039rourke) | ESPM | RCNR | Policy, Environmental Justice, Labor | My current research analyzes systems for regulating the environmental and social impacts of industrial activities. Through a range of projects, I have been examining trends in industrial development, and state, firm, and community responses to adverse impacts of industrialization.I work with NGOs and community-based organizations in the US and Asia to analyze the impacts of manufacturing on communities and workers, and to advance more effective strategies for regulating environmental and health hazards. I am currently working on projects in the US, Vietnam, China, and Indonesia.Also working with Amazon |  |  |
| Celine | [Pallud](https://ourenvironment.berkeley.edu/people/c%C3%A9line-pallud) | ESPM | RCNR | Ecosystems/Biodiversity, Carbon removal and storage | Soil carbon removal and storage. The Soil and Environmental Biogeophysics Lab focuses on the analysis and prediction of transport and fate of chemical species that are of importance to the functioning, quality and remediation of soils, surface sediments and water. More specifically, the research aims at a mechanistic understanding and quantitative characterization of microbial processes and their impact on the mobility, bioavailability and distribution of nutrients, metals and contaminants.  |  |  |
| Margiana | [Petersen-Rockney](https://ourenvironment.berkeley.edu/people/margiana-petersen-rockney) | ESPM | RCNR | Food/Agriculture, water | 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](https://www.sciencedirect.com/science/article/abs/pii/S0959378022000954)and [here](https://link.springer.com/epdf/10.1007/s10584-022-03417-9?sharing_token=UpOx46oL1NArNf9mDSKFL_e4RwlQNchNByi7wbcMAY52hXqKn8eMvbimJfdAYJ2yek04ufl3sIIkcitBF5Zgoiaqjd9DYeM9G0W1KclAdMG8N54wpID59g1oei0FOo4Z8oCeofeK06mbJgBzeKSCdGLPdI1q1ScbKf6o0Mwc_7Q=).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](http://www.frontiersin.org/articles/10.3389/fsufs.2021.564900/full?&utm_source=Email_to_authors_&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Sustainable_Food_Systems&id=564900). 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.](https://www.frontiersin.org/research-topics/10856/diversifying-farming-systems-for-adaptive-capacity) | [Narrow and Brittle or Broad and Nimble: Comparing Adaptive Capacity in Simplifying and Diversifying Farming Systems](https://www.frontiersin.org/articles/10.3389/fsufs.2021.564900/full?&utm_source=Email_to_authors_&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Sustainable_Food_Systems&id=564900)."   |  |
| Matthew | [Potts](https://ourenvironment.berkeley.edu/people/matthew-potts) | ESPM | RCNR | Carbon dioxide removal and storage, Wildfire, Food/Agriculture, Ecosystems/BiodiversityJust Transition, Education, Public Awareness, Land usePolicy, Finance ,Business | Associate Director for Sustainable Development, Blum Center for Developing Economies, where he leads an interdisciplinary lab that focuses on the co-production by human and natural systems of ecosystem services and natural pathways for carbon sequestration. Potts is the Chief Science Officer at Carbon Direct Inc. where he leads an international science team working on decarbonizing the global economy. Specifically, Dr. Potts helps clients assess high quality carbon removal from managed landscapes and works to ensure climate actions are just and equitable. He also works closely with Carbon Direct’s technology team to integrate science, software, and product | 2023 UCOP Proposal: Proposal for Increasing CO2 Removal in California Through Science-Based Standards and Industry Engagement | [Criteria for High Quality Carbon-Dioxide Removal](https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RWGG6f)[Redefining “abandoned” agricultural land in the context of reforestation. Frontiers in Forests and Global Change .](https://www.frontiersin.org/articles/10.3389/ffgc.2022.933887/full)[Rates and drivers of aboveground carbon accumulation in global monoculture plantation forests.](https://www.nature.com/articles/s41467-022-31380-7) |
| Isha | [Ray](https://erg.berkeley.edu/people/ray-isha/) | Energy and Resources Group | RCNR | Water, Climate Equity/Environmental justice | Ray’s research interests are water, sanitation and development; water and gender; technology and development; and common property resources. Her research projects focus on access to water and sanitation for the rural and urban poor, and on the role of technology in improving livelihoods.  |  | She teaches courses on research methods in the social sciences, water and development, technology and development, and community-driven development.  |
| Miranda | [Redmond](https://ourenvironment.berkeley.edu/users/255705) | ESPM | RCNR | Forests, Wildfire | My research focuses on understanding the effects of climate and disturbances on forest dynamics as a way of informing land management decisions. My work covers a breadth of topics in forest science and climate change, including the environmental drivers of tree demography (seed production, recruitment, growth, and survival), the causes and consequences of forest disturbances, tree population adaptation, and ecological forecasting of demographic events. Through co-developed research with partners and stakeholders, I also identify strategies to enhance forest resilience to global change and to meet diverse management objectives. | 2023 UCOP Proposal: Improving Social-Ecological Resilience of California Dryland Forest Agroecosystems to Climate Change |  |
|  | [Renewable and Appropriate Energy Lab (RAEL)](https://rael.berkeley.edu/) | Energy and Resources Group, Goldman  | RCNR | Energy | [Daniel Kammen](http://kammen.berkeley.edu/), DirectorThe Renew­able and Appro­pri­ate Energy Lab­o­ra­tory (RAEL) is a unique new research, devel­op­ment, project imple­men­ta­tion, and com­mu­nity out­reach facil­ity based at the Energy and Resources Group and the Depart­ment of Nuclear Engi­neer­ing. RAEL focuses on design­ing, test­ing, and dis­sem­i­nat­ing renew­able and appro­pri­ate energy sys­tems. The laboratory’s mis­sion is to help these tech­nolo­gies real­ize their full poten­tial to con­tribute to envi­ron­men­tally sus­tain­able devel­op­ment in both indus­tri­al­ized and devel­op­ing nations while also address­ing the cul­tural con­text and range of poten­tial social impacts of any new tech­nol­ogy or resource man­age­ment system. |  |  |
| George | [Roderick](https://ourenvironment.berkeley.edu/people/george-roderick) | ESPM | RCNR | Ecosystems/Biodiversity | Roderick’s research focuses on global change, especially the impact of global biological homogenization caused by biological invasions.  The work addresses basic and applied questions, taking advantage of the opportunities associated with the geography of the Pacific Basin, Pacific Islands, Pacific Rim, and California.  Research includes studies of the origins of both endemic and non-indigenous organisms, processes associated with colonization and invasion, population structure, species interactions, and response to climate change.  |  |  |
| Bree | [Rosenblum](https://ourenvironment.berkeley.edu/people/erica-bree-rosenblum) | ESPM | RCNR | Ecosystems/Biodiversity | Global Change Biology.The Rosenblum lab studies the processes that generate and impact biological diversity.  They are particularly interested in both sides of the evolutionary speciation/extinction “coin” and in determining the mechanisms of rapid adaptation of animals to changing environments.  Rosenblum is also deeply committed to educational transformation and holds several leadership roles focused on promoting institutional and cultural change to support diversity, creativity, and self-actualization in academia. |  |  |
| Albert | [Ruhi](https://ourenvironment.berkeley.edu/people/albert-ruhi) | ESPM | RCNR | Ecosystems/Biodiversity, Drought, water | Ruhi’s research seeks to understand how freshwater communities and food webs respond to global change, with a focus on the effects of hydrologic alteration and drought. |  |  |
| Jim | [Sallee](https://are.berkeley.edu/users/james-sallee) | Agricultural & Resource Economics, Energy Institute @Haas | RCNR | Economics, energy, transportation | Sallee is a public economist specializing in environmental and energy economics. His research analyzes policy design and market behavior in transportation and electricity. | [Retiring Old Capital to Foster Decarbonization](https://nature.berkeley.edu/~sallee/research/innovation_paper_final_june.pdf) [Designing Electricity Rates for an Equitable Energy Transition](https://haas.berkeley.edu/wp-content/uploads/WP314.pdf) ([link](https://haas.berkeley.edu/wp-content/uploads/WP314.pdf))Ongoing work includes:The Potential of and Problems with Carbon Markets in US AgricultureRetiring Heavy-Duty TrucksPrice Regulation, Incidence, and the Clean Energy Transition (with Severin Borenstein and Meredith Fowlie)Retiring Heavy-Duty Trucks (with Mark Jacobsen) |  |
| Daniel | [Sanchez](https://ourenvironment.berkeley.edu/people/daniel-sanchez) | ESPM | RCNR | Carbon removal and storage | Carbon dioxide removal, bioenergy, California forests, climate policy, and energy systems modelingSanchez studies engineered biomass & bioenergy systems that remove CO2 from the atmosphere. Trained as an engineer and energy systems analyst, Sanchez’s work and engagement spans the academic, nongovernmental, and governmental sectors. As an Assistant Cooperative Extension Specialist, he runs the Carbon Removal Lab, which aims to commercialize sustainable carbon dioxide removal technologies, and supports outreach to policymakers and technologists in California and across the United States. | [“Near-term deployment of carbon capture and storage from biorefineries in the United States”](http://www.pnas.org/content/pnas/115/19/4875.full.pdf.) PNASs, 115, 4875-4880 (2018)  |  |
| Christopher | [Schell](https://ourenvironment.berkeley.edu/users/1757114) | ESPM | RCNR | Climate Equity/Environmental justice, Ecosystems/Biodiversity | Schell studies the intersections of society, ecology, and evolution to understand how wildlife (mainly mammalian carnivores) are rapidly adapting to life in cities. The work of the Schell lab combines behavioral, physiological, and genomic approaches to demonstrate the myriad consequences of historical and contemporary inequities on organismal, population, and community-level dynamics of wildlife. In addition, Schell and his lab leverage human dimensions and community-engaged data streams to decipher how wildlife adaptation and human perceptions create landscapes of risk that contribute to human-carnivore conflict. [Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | UCOP $100M Climate Action LOI lead – January 2023“[Ecological and evolutionary consequences of systemic racism in urban environments](https://www.science.org/doi/10.1126/science.aay4497),” "Urbanization, climate and species traits shape mammal communities from local to continental scales." Coexistence across space and time: Social‐ecological patterns within a decade of human‐coyote interactions in San Francisco. Urban Biodiversity and Equity: Justice-Centered Conservation in Cities.  | ESPM 189A – Urban Ecology and EvolutionESPM 257 – Creative Writing in Environmental Science |
| Joseph | [Shapiro](https://are.berkeley.edu/users/joseph-shapiro) | Agricultural & Resource Economics, Energy Institute @Haas | RCNR | Air pollution, energy, economics | His research agenda focuses on three general questions: (1) How do globalization and the environment interact? (2) What have been the effectiveness, efficiency, and equity impactsof environmental and energy policies over the last half century, particularly for water, air, and climate pollution? (3) How important are the investments that people make to protect themselves against air pollution and climate change?  | [Is Air Pollution Regulation Too Stringent?](http://joseph-s-shapiro.com/research/IsAirPollutionRegulationTooStringent_maintext.pdf)  [Regulating Untaxable Externalities: Are Vehicle Air Pollution Standards Effective and Efficient?](https://www.nber.org/programs-projects/projects-and-centers/8139-regulating-untaxable-externalities-are-vehicle-air-pollution-standards-effective-and-efficient?page=1&perPage=50) [Pollution Trends and US Environmental Policy: Lessons from the Last Half Century](https://www.joseph-s-shapiro.com/research/pollution_trends_50yrs.pdf)   |  |
| Kristen | Shive | ESPM | RCNR | Wildfires |  | 2023 UCOP Seed Grant Proposal: Leveraging recent wildfires to foster resilience and secure carbon in giant sequoia forest |  |
| Whendee | [Silver](https://ourenvironment.berkeley.edu/people/whendee-silver) | ESPM, IGI | RCNR | Ecosystems, greenhouse gas emissions, emissions reduction, carbon removal and storage, water, drought, energy, waste, agriculture, forests, tropical, temperate, soils, plants | 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](https://www.marincarbonproject.org/), 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.The Silver Lab is exploring the use of biochar alone and in combination with ground rock and compost amendments to sequester carbon and lower greenhouse gas emissions.Using machine learning for studies on greenhouse gas emissions and carbon sequestration in forests and on working lands.We are developing a mesh network of soil sensors for greenhouse gas monitoring in soils.[Global observation gaps of peatland greenhouse gas balances: needs and obstacles - Biogeochemistry](https://link.springer.com/article/10.1007/s10533-023-01091-2)[Soil carbon sequestration in global working lands as a gateway for negative emission technologies](https://onlinelibrary.wiley.com/doi/abs/10.1111/gcb.16884)[Carbon-sink potential of continuous alfalfa agriculture lowered by short-term nitrous oxide emission events - Nature Communications](https://www.nature.com/articles/s41467-023-37391-2)[Compost amendment to enhance carbon sequestration in rangelands](https://www.jswconline.org/content/78/2/163.abstract)[Assessing the climate change mitigation potential from food waste composting - Scientific Reports](https://www.nature.com/articles/s41598-023-34174-z) |   |
| Jennifer | [Sowerwine](https://ourenvironment.berkeley.edu/people/jennifer-sowerwine) | ESPM | RCNR | Health, Food/Ag, Ecosystems/BiodiversityJustice, Tribes, Equity/Justice, Land use; governance; policy | Sowerwine’s research and outreach program engages diverse stakeholders across the food system to examine barriers and co-create solutions to achieve healthy, equitable, culturally relevant, and sustainable food systems under changing climate conditions. In partnership with Tribes, immigrant and urban communities, she examines the cultural politics of resource access and governance, and the relationship between Indigenous and western science, bio-cultural diversity, food security, and health. She is also co-founder of the [Karuk Tribe-UC Berkeley Collaborative](https://nature.berkeley.edu/karuk-collaborative/), a partnership working to advance Tribal food sovereignty and eco-cultural revitalization of ancestral lands, practices and foodways. | [Managing Cultural Foods in a Changing Climate:](https://nature.berkeley.edu/karuk-collaborative/?page_id=1031)[Karuk Agroecosystem Resilience and Cultural Foods and Fibers Revitalization Initiative: xúus nu’éethti – we are caring for it.](https://nature.berkeley.edu/karuk-collaborative/wp-content/uploads/2023/03/Karuk-Resilience-Report_Smallest-file-size.pdf) [Understanding the conservation challenges and needs of culturally significant plant species through Indigenous Knowledge and species distribution models.](https://nature.berkeley.edu/karuk-collaborative/wp-content/uploads/2023/03/2022_Understanding-conservation-challenges-of-culturally-significant-plants.pdf)[Conceptualizing Indigenous Cultural Ecosystem Services (ICES) and benefits under changing climate conditions in the Klamath River Basin and their implications for land management and governance.](https://doi.org/10.2993/0278-0771-41.3.313) |  |
| Brian | [Staskawicz](https://plantandmicrobiology.berkeley.edu/profile/staskawicz) | Plant and Microbial Biology, IGI | RCNR | Food/Agriculture, drought, water | Director, IGI Climate and Sustainable Agriculture Program | 2023 UCOP Proposal: Gene Editing Strategies for Drought Tolerance in California CropsStaskawicz Lab conducts biological research for sustainable agriculture. Crop disease and drought, intensified by climate change, threaten global food security for our growing population. 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. |  |
| Scott | [Stephens](https://ourenvironment.berkeley.edu/people/scott-stephens) | ESPM | RCNR | Wildfire, Ecosystems/Biodiversity | Co-Director, [Berkeley Forests](https://forests.berkeley.edu/)The interactions of wildland fire and ecosystems. This includes how prehistoric fires once interacted with ecosystems, how current wildland fires are affecting ecosystems, and how future fires and management may change this interaction. Stephens also studies wildland fire and forest policy and how it can be improved to meet the challenges of the next decades. |  |  |
| William | [Stewart](https://ourenvironment.berkeley.edu/people/william-stewart) | ESPM | RCNR | Wildfire, Ecosystems/Biodiversity, drought, water | Co-Director, [Berkeley Forests](https://forests.berkeley.edu/)Cooperative Extension SpecialistAreas 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](https://erg.berkeley.edu/people/szinai-julia/) | Energy and Resources Group | RCNR | Energy, water | 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 is also interested in the interaction between, and the resilience of, energy and water systems under climate change. |  |  |
| Sunaura | [Taylor](https://ourenvironment.berkeley.edu/users/1684283) | ESPM | RCNR | Climate Equity/Environmental justice | Taylor's research is rooted in understanding the social and cultural meanings of disability and illness, and their relationship to environmental processes and ecological thought.  [Climate Equity Environmental Justice Core Faculty](https://ceej.berkeley.edu/people) | Taylor's current research project asks how disability studies might alter the way we think about and respond to our current regime of environmental devastation. [Disabled Ecologies](https://belonging.berkeley.edu/video-sunaura-taylor-disabled-ecologies-living-impaired-landscapes) (video) suggests that new and generative understandings of disability and nature emerge when we follow the trails of disability that are created when ecosystems are contaminated, depleted, and profoundly altered. [Disabled Ecologies: Lessons from a Wounded Desert](https://www.ucpress.edu/book/9780520393066/disabled-ecologies) (forthcoming from UC Press) suggests that new and generative understandings of disability and nature emerge when we follow the trails of disability that are created when ecosystems are contaminated, depleted, and profoundly altered.  |  |
| Neil  | [Tsutsui](https://ourenvironment.berkeley.edu/people/neil-tsutsui) | ESPM | RCNR | Ecosystems/Biodiversity, Land use  | The research in Tsutsui lab focuses on the evolution and behavior of social insects, using tools from genetics, genomics, chemical ecology, and behavioral ecology. One line of research examines the thermal physiology and genetics of a cold-adapted species (the winter ant) to understand how species may be affected by a changing climate.Director of the five Central Sierra Field Research Stations —Sagehen Creek Field Station, the Central Sierra Snow Lab, Chickering American River Reserve, Onion Creek Experimental Forest, and the North Fork Association Lands.Vice-chair of the Parks Advisory Committee for the East Bay Regional Parks District.  | [Body size and cuticular hydrocarbon composition determine desiccation resistance in the invasive Argentine ant (*Linepithema humile*). J. Experimental](https://journals.biologists.com/jeb/article/226/16/jeb245578/325938/The-role-of-body-size-and-cuticular-hydrocarbons) .[Phylogeography and population genetics of a widespread cold-adapted ant, *Prenolepis imparis*.](https://pubmed.ncbi.nlm.nih.gov/35866574/)[Transcriptomic signatures of cold adaptation and heat stress in the thermally sensitive winter ant (*Prenolepis imparis*).](https://doi.org/10.1371/journal.pone.0239558) |    |
| Katherine | [Wagner](https://vcresearch.berkeley.edu/faculty/katherine-wagner) | Agricultural & Resource Economics | RCNR | Policy | Her research focuses primarily on Environmental and Energy Economics and Public Finance. She uses a range of empirical tools to study questions related to environmental externalities, climate change, and natural resources. |  |  |
| Ian | [Wang](https://ourenvironment.berkeley.edu/people/ian-wang) | ESPM | RCNR | Ecosystems/Biodiversity | Landscape genetics, ecological and conservation genomics, adaptive radiation | 2023 UCOP Proposal: A Conservation Genomics Analysis Pipeline for Spatial Conservation Prioritization |  |
| Robert | [York](https://ourenvironment.berkeley.edu/people/robert-york) | ESPM | RCNR | Wildfire, Ecosystems/Biodiversity | York works at the intersection of forest science and management, exploring novel approaches to forest management treatments that are guided by ecosystems’ disturbance regimes. As Assistant Cooperative Extension Specialist and through active work at a network of research forests operated by UC Berkeley in the Sierra Nevada, York applies research to management by extending information to a wide variety of stakeholders.  |  |  |
| David | [Zilberman](https://vcresearch.berkeley.edu/faculty/david-zilberman) | Agricultural & Resource Economics | RCNR | Economics, Food/Agriculture | Marketing, biotechnology, water, risk management, biofuels, natural resources, agricultural and environmental policy, the economics of innovation.Economics of renewable energy (using ML).Key Berkeley player in UC Disaster Resilience Network |  |  |
|  | Master of Business Administration + Master of Climate Solutions (MBA/MCS) |  | RCNR, Haas | All | [Master of Business Administration + Master of Climate Solutions  -- MBA/MCS](https://climatesolutions.berkeley.edu/mcs/joint-degrees/)  Berkeley now offers a concurrent degree (a.k.a. “joint degree” or “dual degree”) that combines the Master of Climate Solutions program from the Rausser College of Natural Resources, and one of the top MBA programs in the world through the Haas School of Business. MBA/MCS is a 2.5 year program, as opposed to spending 3 years if taken consecutively. Applications are open now for the first cohort.  |  |  |
| Benjamin | [Blackman](https://plantandmicrobiology.berkeley.edu/profile/benjamin-blackman-phd) | Plant & Microbial Biology; Integrative Biology | RCNR, L&S | Ecosystems/BiodiversityFood/Agriculture | 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 ChangeCCGP: Conservation and climate change genomics of California monkeyflowers with wide and restricted geographic distributions.[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).](http://dx.doi.org/10.1002/ajb2.1589)[Kooyers et al. 2019. Lagging adaptation to climate change supersedes local adaptation to herbivory in an annual monkeyflower. American Naturalist 194: 541-557 (2019).](https://dx.doi.org/10.1086/702312)  | Fall 2023PMB200C: Plant Diversity and EvolutionSpring 2024 Bio1B: General Biology |
|  | [Eric and Wendy Schmidt Center for Data Science and Environment](https://dse.berkeley.edu/) | ESPM/CDSS | RCNR. CDSS |  | [Kevin Koy, Executive Director](https://dse.berkeley.edu/people/kevin-koy)Launched in 2022, the Eric and Wendy Schmidt Center for Data Science and Environment (DSE) is a partnership between Berkeley's Department of Environmental Science, Policy, and Management and the Division of Computing, Data Science, and Society with the financial support of Eric and Wendy Schmidt.The DSE combines the power of computing and environmental science with open science principles and a commitment to inclusivity—all towards the purpose of building tangible, replicable, and accessible solutions to problems compromising the health of our environment. The DSE aims to co-create these solutions in direct partnership with those who hold the knowledge and expertise of their local needs and environmental context.The DSE’s Climate Resilience Program follows these core beliefs:* The climate crisis is the pressing environmental issue of our generation
* Climate impacts are being seen all around us, right now - it is no longer a future risk issue
* Most vulnerable communities are often least resourced to prepare / mitigate
* Often the same actions can simultaneously increase community and ecosystem resilience to climate impacts and reduce contributions to climate change
* The most effective way to have meaningful impact through data science is to understand the real problems people are facing, which can be accomplished through relationship building and active listening

The role of DSE is to bring solutions all the way to the community that needs them by asking about areas of need, building tools to respond to that need, and iterating on those tools through a feedback relationship |  |  |