Berkeley Climate Change Network

BERKELEY CLIMATE MAP – CLIMATE & TRANSPORTATION FEB 2025

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

First	Last	Primary Affiliation	Summary	Selected Projects/Reports/Classes
Alex	Bayen	Engineering - Electrical Engineering and Computer Science	Director of CITRIS. 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.	Self-Driving Trucks Berkeley Mobile Sensing Lab
	California-China Climate Institute	Berkeley Law	Exploring strategies in China and the U.S. to reduce emissions from transportation	"Driving to Zero: California and China's Critical Partnership on Zero Emission Vehicles" "Electric Vehicle Growth in China: What's Next?": Low Carbon Transportation and Zero Emission Vehicles
	California Partners for Advanced Transportation Technology (PATH)	Campuswide	James Fishelson, Executive Director Scott Moura, 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	Qijian Gan – 2023 UCOP Proposal: A Macroscopic Approach to Prioritizing Charging Infrastructure for Statewide Deployment of ZEVs

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			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.	PI 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.
Elizabeth	Deakin	CED - City and Regional Planning, Institute for Transportation Studies	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 (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
Ethan	Elkind	Law -- Center for Law, Energy and Environment	Director, CLEE Climate Program The Climate Change & Business Research Initiative engages business, nonprofit and government leaders in a collaborative project to achieve economic and environmental benefits from California's climate policies	Webinar and report "Possible Options for Sustainable Aviation in California" The California Roadmap (September 2020)

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			and program. The series includes over 20 reports spanning seven sectors of the economy, all of which are available at climatepolicysolutions.org.	Sustainable Drive, Sustainable Supply: Priorities to Improve the Electric Vehicle Battery Supply Chain (July 2020) Building a Sustainable Electric Vehicle Battery Supply Chain: Frequently Asked Questions (April 2020) Electric Vehicle Batteries: A Guidebook for Responsible Corporate Engagement Throughout the Supply Chain Clean Takeoff: Policy Solutions to Promote Sustainable Aviation in California
Grace	Gu	Engineering - Mechanical Engineering	Composites, additive manufacturing, fracture mechanics, topology optimization, machine learning, finite element analysis, and bioinspired materials.	2023 UCOP Proposal: Development of high-pressure hydrogen storage solution for fuel cells used in zero-emission aircraft
Mark	Hansen	Engineering - Civil and Environmental Engineering	Hansen's research focuses on urban transportation planning, modeling air transport systems, air traffic flow management, and aviation systems performance analysis.	Berkeley co-director of the National Center of Excellence in Aviation Operations Research, a multi-university consortium sponsored by the Federal Aviation Administration.

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Arpad	Horvath	Engineering - Civil and Environmental Engineering	Head of the Energy, Civil Infrastructure and Climate Graduate Program, Director of the Transportation Sustainability Research Center, and Director of the Engineering and Business for Sustainability Certificate Program. Horvath's research focuses on life-cycle environmental and economic assessment of 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)
	Institute for Transportation Studies	Campuswide	Daniel Rodriguez, Director Laura Melendy, Assistant Director 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 Berkeley DeepDrive	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)

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			Transportation Sustainability Research Center Safe Transportation Research and Education Center Smart Cities NEXTOR UC Pavement Research Center And two education centers TechTransfer Transportation Library	
Tom	Kirchstetter	LBNL - Energy Analysis & Environmental Impacts Division	Director, Energy Analysis & Environmental Impacts Division 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 • Healthy and efficient buildings • Cal THRIVES toolkit • Technoeconomic and lifecycle modeling • Energy efficiency • Energy markets and policy • Renewable energy • Transportation systems • Research Facilities • 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 x and decarbonization, inventing and benchmarking air pollution sensors, air pollution monitoring in communities, climate and air pollution footprints of	

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			municipal solid waste-to-energy, and the drivers of airborne transmission of SARS-CoV-2.	
Tim	Lipman	Institute for Transportation Studies	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)
Daniel	Rodriguez	CED - City and Regional Planning	Director, Institute for Transportation Studies Examining 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. CEEJ Advisory Council	
Corinne	Scown	LBNL - Energy Analysis & Environmental Impacts Division, Energy & Biosciences Institute	Deputy for Research, Energy Analysis & Environmental Impacts Division Scown's research includes: • Technoeconomics analysis • Waste biomass to energy • **Liquid fuels** • Plastic waste management and recycling 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).	Life-Cycle Assessment Considerations for Batteries and Battery Materials Complementary roles for mechanical and solvent-based recycling in low-carbon, circular polypropylene Techno-economic analysis and life-cycle greenhouse gas mitigation cost of five routes to bio-jet fuel blend stocks

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	Smart Cities Research Center	Institute for Transportation Strategies	Jane MacFarlane, Director, Smart Cities Research Center 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.	
	Transportation Sustainability Resource Center	Institute of Transportation Studies	Susan Shaheen, Co-Director Tim Lipman, Co-Director Arpad Horvath, Co-Director. 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 2. Energy & Infrastructure 3. Future of Mobility 4. Goods Movement 5. Mobility for Special Populations 6. Shared Mobility	2024 Advanced Air Mobility Hackathon (AAM)

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Joan	Walker	Engineering – Civil and Environmental Engineering	Walker's research focuses on behavioral modeling, with expertise in discrete choice analysis and travel behavior. She works to improve the models that are used for transportation planning, policy, and operations.	
David	Wooley	Goldman - CEPP	Director, Center for Environment and Public Policy davidwooley@berkeley.edu	Project 2025 Report on Transportation Much work with Port of Oakland Lead author: The Future of Energy, Environment and Natural Resources for the California 100 Project CEPP Project: Policy Options for Decarbonizing Ocean-Going Vessels