Stanford Experts on California Climate Policy (AB32)

Click on names for more info. For assistance in locating these faculty members, contact

• Christine H. Black: christineblack@stanford.edu or (650) 725-8240
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Cap and Trade, Legal Challenges

**Michael Wara**

Associate Professor, Stanford Law School; research fellow, Program in Energy and Sustainable Development at Stanford’s Freeman Spogli Institute for International Studies; faculty fellow, Steyer-Taylor Center for Energy Policy and Finance; affiliate with the Stanford Woods Institute for the Environment

Wara’s research focuses on climate policy and regulation, both domestically and internationally. Formally a climate scientist and now a professor of law, Wara looks at the intersection between environmental and energy law, international relations, atmospheric science, and technology policy. Recently, he has focused attention on California’s emissions cap and trade program and the efficacy of state and US climate regulations.

**Expertise:** Environmental law and policy  
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California Climate Policy

**Larry Goulder**

Shuzo Nishihara Professor in Environmental and Resource Economics; Director, Stanford Environmental and Energy Policy Analysis Center; Senior Fellow, Stanford Institute for Economic Policy Research; affiliate of the Stanford Woods Institute for the Environment

Goulder was appointed by CalEPA and the California Air Resources Board to serve as Chair of the Economic and Allocation Advisory Committee, which advised on the implementation of the state’s landmark AB32 legislation and associated cap and trade program. His research examines the environmental and economic impacts of regional, national and international environmental policies. Much of the work focuses on policies that address the prospect of climate change or that deal with local air pollution from power plants and automobiles.

**Expertise:** Climate change, environmental economics and policy, climate policy, emissions cap and trade markets, and air pollution  
**Contact:** goulder@stanford.edu, 650-723-3706
Elizabeth Hadly
Paul S. and Billie Achilles Professor in Environmental Biology; Faculty Director of the Jasper Ridge Biological Preserve; Senior Fellow at the Stanford Woods Institute for the Environment

Hadly has conducted research in the Americas, Asia and Africa on the ecology and evolution of vertebrates in response to changing environments. Recently her work has focused on the impacts of the Anthropocene on biodiversity. In 2012, Hadly co-authored a paper that found that the planet may be nearing a critical threshold beyond which environmental changes will be rapid and unpredictable. Based on the findings, California Gov. Jerry Brown asked the authors to compile a scientific consensus statement on climate change, which Brown has distributed to dozens of world leaders. Her book “Tipping Point for Planet Earth: How Close Are We to the Edge?” was just released.

Expertise: Biology, global climate change ecological impacts, biodiversity and climate adaptation
Contact: hadly@stanford.edu, 650-725-2655

Joe Nation
Professor of the Practice of Public Policy at the Stanford Institute for Economic Policy Research; Director of Graduate Practicum in Public Policy

Former CA Assemblymember Nation studies climate change, health care policy, public finance, and California state policy issues. He is also a principal at Climate Action Partners, where he provides carbon advisory services, decarbonization project development and management, offset portfolio management, community renewable energy assessment and data analysis for multiple clients. He represented Marin and Southern Sonoma Counties in the California State Assembly from 2000-2006. Nation was the principal co-author of AB 32 and served on the Economic and Allocation Advisory Committee, which advised on the implementation of the legislation and associated cap and trade program.

Expertise: California state policy, climate change, public finance, and environmental policy
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James Sweeney
Professor of Management Science and Engineering in Stanford’s School of Engineering; Director of the Precourt Energy Efficiency Center; Senior Fellow of the Stanford Institute for Economic Policy Research; Senior Fellow of the Hoover Institution on War, Revolution and Peace; Senior Fellow of the Freeman Spogli Institute for International Studies; Senior fellow of the Stanford Precourt Institute for Energy, affiliate of the Stanford Woods Institute for the Environment.

Sweeney focuses his research on energy and environmental economic policy and analysis. Sweeney was appointed by CalEPA and the California Air Resources Board to serve on the Economic and Allocation Advisory Committee, which advised on the implementation of the state’s landmark AB32 legislation and associated cap and trade program. He is a member of the State of California Petroleum Markets Advisory Committee. His research includes emissions cap and trade analysis, electricity market analysis, environmental economics, global climate change policy, gasoline market dynamics, energy demand, energy efficiency and energy price dynamics. He is the author of The California Electricity Crisis, an analytical history of the economic and policy issues associated with California's electricity restructuring.
and the subsequent crisis, and Energy Efficiency: Building a Clean, Secure Economy, which shows how energy efficiency has greatly enhanced U.S. energy security by sharply reducing energy imports, has greatly decarbonized the U.S. economy, and has been economically beneficial.

**Expertise:** Energy economics and policy, climate change, energy efficiency, and environmental policy  
**Contact:** jim.sweeney@stanford.edu, 650-723-2847

**John Weyant**  
*Professor of Management Science and Engineering; Director of the Energy Modeling Forum; Deputy Director of the Precourt Institute for Energy Efficiency; affiliate of the Stanford Woods Institute for the Environment*

Weyant studies global climate change, energy security, and energy economics. Weyant is a member of the California Air Resources Board’s Economic and Technology Advancement Advisory Committee (ETAAC) which is charged with making recommendations for technology policies to help implement AB 32. A major contributor and lead author for the Intergovernmental Panel on Climate Change (IPCC) on integrated assessment, greenhouse gas mitigation, integrated climate impacts, and sustainable development, Weyant was review editor for the climate change mitigation working group of the IPCC’s fourth and fifth assessment reports.

**Expertise:** Global climate change, energy economics, energy security, energy technology, IPCC, and environmental economics and policy  
**Contact:** weyant@stanford.edu, 650-723-3506

**California’s Global Climate Leadership**

**Chris Field**  
*Perry L. McCarty Director of the Stanford Woods Institute for the Environment; the Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies, School of Humanities & Sciences (Biology); Professor of Earth System Science, School of Earth, Energy & Environmental Sciences; Senior Fellow at the Stanford Precourt Institute for Energy*

Field, a world-renowned expert on climate change impacts, was co-chair of Working Group II of the Intergovernmental Panel on Climate Change from 2008-2015. His research emphasizes field and laboratory studies of impacts of climate change, from the molecular to the global scale.

**Expertise:** Global climate change, climate adaptation, IPCC, ecosystems, and agriculture.  
**Contact:** cfield@stanford.edu, 650-736-4352

**Katharine Mach**  
*Senior Research Associate at Carnegie Science’s Department of Global Ecology at Stanford University*

Mach studies the assessment of global climate change risks and response options. From 2010-2015, Mach co-directed the scientific activities of Working Group II of the Intergovernmental Panel on Climate
Change (IPCC), which focuses on impacts, adaptation, and vulnerability. Her past work focused on impacts of climate change on ocean ecosystems.

**Expertise:** Climate adaptation, global climate change, IPCC, climate change assessment, climate change science-policy interfaces, ocean ecosystems  
**Contact:** kmach@carnegiescience.edu, 650-561-5640

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**Carbon Accounting**

**Rob Jackson**  
*Douglas Provostial Professor at Stanford’s School of Earth, Energy & Environmental Sciences; Senior Fellow at the Stanford Woods Institute for the Environment; and Senior Fellow at the Precourt Institute for Energy*

Jackson studies the effects of climate change and droughts on forests and grasslands, and recently mapped the severity of emissions from the Aliso Canyon methane gas leak in the northwest Los Angeles County area. His work also looks at global carbon emissions and he chairs the Global Carbon Project, which compiles data on carbon emissions and seeks to describe the full carbon life-cycle to improve carbon accounting.

**Expertise:** Climate change, full life-cycle carbon accounting, effects of climate and drought on forest mortality, fracking and drinking water quality, drought, land use, and urban natural gas leaks  
**Contact:** rob.jackson@stanford.edu, 650-497-5841

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**Cap and Trade Market Economics**

**Charles Kolstad**  
*Professor, by courtesy, of Economics at Stanford University; Senior Fellow at the Stanford Precourt Institute for Energy; Senior Fellow at the Stanford Institute for Economic Policy Research; affiliate of the Stanford Woods Institute for the Environment*

Kolstad is an internationally known environmental economist and part of a group of economic advisors engaged by the California Air Resources Board to identify the economic costs and benefits impact of AB 32. He has been a convening lead author for the Intergovernmental Panel on Climate Change. His research interests are in information, uncertainty and regulation, with much of his applied work in the area of climate change and energy markets.

**Expertise:** Economics of greenhouse gas regulation and climate change policies.  
**Contact:** ckolstad@stanford.edu, 650-721-1663

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**Frank Wolak**  
*Holbrook Working Professor of Commodity Price Studies in the Department of Economics at Stanford University; Director of the Program on Energy and Sustainable Development in the Freeman-Spogli Institute for International Studies; affiliate of the Stanford Woods Institute for the Environment*
Wolak studies methods for introducing competition into infrastructure industries, such as electricity and water delivery, and on assessing the impacts of these competition policies on consumer and producer welfare. From 1998 to 2011, Wolak was the Chair of the Market Surveillance Committee of the California Independent System Operator for electricity supply industry in California. He was also a member of the Emissions Market Advisory Committee (EMAC) which provided expert analysis to the California Air Resources Board on the AB32 cap and trade market design, operation, and monitoring.

**Expertise:** Economics of greenhouse gas regulation, electricity markets, energy markets and climate change policies  
**Contact:** wolak@stanford.edu, 650-724-1712

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**Renewable Energy for California**

**Mark Z. Jacobson**  
Professor of Civil and Environmental Engineering in Stanford’s School of Engineering; Director of Stanford’s Atmosphere/Energy Program; Senior Fellow of the Stanford Precourt Institute for Energy; Senior Fellow of the Stanford Woods Institute for the Environment

Jacobson’s research focuses on understanding air pollution and global warming problems and developing large-scale clean, renewable energy solutions to them. Toward that end, he develops and applies three-dimensional atmosphere-biosphere-ocean computer models and solvers to simulate air pollution, weather, climate, and renewable energy. He also develops roadmaps to transition cities, states, and countries to 100 percent clean, renewable energy for all purposes and computer models to examine grid stability in the presence of high penetrations of renewable energy. He has recently completed research on how 139 countries can get all of their power from clean, renewable sources.

**Expertise:** Renewable energy, climate, air pollution, weather  
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**Additional Stanford climate experts can be found at**  
[https://experts.stanford.edu/climate-change](https://experts.stanford.edu/climate-change)