



Stanford Experts on Climate Change

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

- *Christine H. Black: christine.harrison@stanford.edu or (650) 725-8240*
- *Rob Jordan: rjordan@stanford.edu or (415) 760-8058*

Carbon and Methane Accounting

[Rob Jackson](#)

Jackson studies the effects of climate change and droughts on forests and grasslands, including interactions between wildfires and the carbon cycle. He has mapped thousands of natural gas leaks across cities such as Boston and Washington, D.C. He chairs the Global Carbon Project, which compiles data on fossil fuel emissions and deforestation, and previously chaired the Department of Energy's National Institute for Climate Change Research in the southeastern U.S. His work has focused on what window of time is left to limit warming to below 2 degrees Celsius. Jackson is the 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.

Contact: rob.jackson@stanford.edu, 650-497-5841

Expertise: Climate change, drought, land use, full life-cycle carbon accounting, effects of climate and drought on forest mortality, fracking and drinking water quality, and urban natural gas leaks.

Climate Science, Resilience and Adaptation

[Noah Diffenbaugh](#)

Diffenbaugh studies the climate system, including the processes by which climate change could increase extreme weather events such as drought and impact agriculture, water resources, and human health as well as lead to longer, more intense wildfire seasons. He has served as a lead author for Working Group II of the IPCC, and has provided testimony and scientific expertise to the White House, the Governor of California, and U.S. congressional offices. Diffenbaugh is the Kara J Foundation Professor of Earth System Science at Stanford's School of Earth, Energy & Environmental Sciences and the Kimmelman Family Senior Fellow at the Stanford Woods Institute for the Environment.

Contact: diffenbaugh@stanford.edu, (650) 223-9425

Expertise: The climate system, including the processes by which climate change could impact agriculture, water resources, extreme weather events, and human health.

[Chris Field](#)

He studies climate change impacts, adaptation and vulnerability, with a focus on disaster risk reduction, especially from wildfires. He was co-chair of Working Group II of the IPCC from 2008 to 2015. He is the Perry L. McCarty Director of the Stanford Woods Institute for the

Environment; founding director of the Carnegie Institution for Science's Department of Global Ecology; the Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies at Stanford's School of Humanities and Sciences and School of Earth, Energy & Environmental Sciences; and senior fellow at the Precourt Institute for Energy.

Contact: cfield@stanford.edu, (650) 736-4352

Expertise: Climate change, including impacts, adaptation and vulnerability. Global perspective crossing regions and sectors. Special expertise on ecosystems and agriculture.

Michael Mastrandrea

Mastrandrea is an interdisciplinary scientist whose work focuses on climate risks and resilience and the design and implementation of energy and climate policy. He helped lead development of the IPCC Fifth Assessment Report and has also served as an author for the Fourth U.S. National Climate Assessment and as an associate editor for California's Fourth Climate Change Assessment. He is Research Director of the Climate and Energy Policy Program and a Senior Research Scholar at the Stanford Woods Institute for the Environment. He also serves as Chief Advisor for Energy and Climate Research at the California Energy Commission.

Contact: mikemas@stanford.edu, (650) 224-2070

Expertise: Climate change risks and resilience, climate and energy policy implementation, scientific assessment.

Jenny Suckale

Suckale focuses on understanding disaster risk and resilience by exploring the processes that govern extreme events in different natural systems and working with private and public partners to increase community resilience using a scientific co-production approach. She leads the Stanford Future Bay Initiative, a partnership committed to co-production of actionable intelligence to shape a more equitable, resilient and sustainable urban future for Bay Area communities. Her group's research priorities span natural climate hazards, such as ice-sheet instability and permafrost disintegration, and hazards that arise from the interaction between natural processes and human interventions, such as flooding in urban areas and induced earthquakes. Suckale is an assistant professor of geophysics; assistant professor, by courtesy, of civil and environmental engineering; and center fellow at the Stanford Woods Institute for the Environment.

Contact: jsuckale@stanford.edu, (650) 497-6456

Expertise: Climate hazards, community impacts and resilience, physical processes of extreme events

Conservation

Elizabeth Hadly

Hadly has conducted extensive research throughout North and South America on the ecology and evolution of vertebrates. 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 Hadly to compile a scientific consensus statement on climate change, which Brown has distributed to dozens of world leaders. Hadly co-authored the book "Tipping Point for Planet Earth: How Close Are We to the Edge?" about the risks of climate change and overpopulation. Hadly is the Paul S. and

Billie Achilles Professor in environmental biology at Stanford and a senior fellow at the Stanford Woods Institute for the Environment.

Contact: hadly@stanford.edu, (650) 725-2655

Expertise: Biology

Jim Leape

A 30-year veteran of conservation work on every continent, Leape is the former director of WWF International and leader of the global WWF Network, one of the world's largest conservation organizations. Leape is the co-director of the Stanford Center for Ocean Solutions and the William and Eva Price Senior Fellow at the Stanford Woods Institute for the Environment.

Contact: jleape@stanford.edu, 650-498-0916

Expertise: Climate change, conservation and natural resource management; Chinese environmental policy, forest protection, marine conservation, water resources management and sustainability in global commodity markets.

Economics

Charles Kolstad

Kolstad is an internationally known environmental economist with a focus on industrial organization and public economics. He has been a convening lead author for the IPCC. His research interests are in information, uncertainty and regulation, with much of his applied work in the area of climate change and energy markets. He is a professor, by courtesy, of economics; senior fellow at the Precourt Institute for Energy; and senior fellow at the Stanford Institute for Economic Policy Research.

Contact: ckolstad@stanford.edu, (650) 721-1663

Expertise: Economics of greenhouse-gas regulation and climate-change policies.

Marshall Burke

Burke's research focuses on social and economic impacts of environmental change, and on the economics of rural development in Africa. He has published on the global economic impacts of climate change, and on the relationship between high temperatures and human conflict, including armed violence and civil wars. Burke is a professor of Earth System Science at Stanford's School of Earth, Energy & Environmental Sciences; and a senior fellow at both the Freeman Spogli Institute for International Studies and the Stanford Woods Institute for the Environment.

Contact: mburke@stanford.edu, (650) 721-2203

Expertise: Food security, climate change, economic development.

Energy

Sally Benson

Benson is a senior fellow and former director of Stanford's Precourt Institute for Energy. She is the co-director of the Stanford Center for Carbon Storage and the Stanford Carbon Removal Initiative, which is in development. A groundwater hydrologist and reservoir engineer, Benson is

a leading authority on carbon capture and storage, emerging energy technologies and energy systems analysis for a low-carbon future. She is a professor of energy resources engineering in Stanford's School of Earth, Energy & Environmental Sciences, and an affiliate of the Stanford Woods Institute for the Environment. She directed Stanford's Global Climate & Energy Project from 2009 to 2019.

Contact: smbenenson@stanford.edu; (650) 725-0358

Expertise: Geologic storage of CO₂ in deep underground formations, technologies and energy systems for a low-carbon future, energy in the developing world and global energy policy.

Mark Z. Jacobson

The main goal of Jacobson's research is to understand physical, chemical, and dynamical processes in the atmosphere better in order to solve atmospheric problems, such as global warming and urban air pollution, with improved scientific insight and more accurate predictive tools. He has published on how 139 countries can get all of their power from renewable sources. Jacobson is a professor of civil and environmental engineering in Stanford's School of Engineering; director of Stanford's Atmosphere/Energy program; a senior fellow at the Precourt Institute for Energy; and a senior fellow at the Stanford Woods Institute for the Environment.

Contact: Jacobson@stanford.edu, (650) 723-6836

Expertise: Renewable energy, atmospheric science

Arun Majumdar

Majumdar is a senior fellow and former director of Stanford's Precourt Institute for Energy. He was the founding director the U.S. Department of Energy's Advanced Research Projects Agency - Energy (ARPA-E). He is a professor of mechanical engineering in Stanford's School of Engineering and of photon science at SLAC National Accelerator Laboratory. Majumdar's current research focuses on redox reactions and systems that are fundamental to a sustainable energy future; multidimensional nanoscale imaging and microscopy; and an effort to leverage modern AI techniques to develop and deliver energy and climate solutions.

Contact: amajumdar@stanford.edu, (650) 725-4016

Expertise: Majumdar can discuss the role of clean-energy technologies in shaping U.S. and global climate and energy policy, as well as energy in the developing world.

Environmental Law

Michael Wara

Wara's research focuses on climate policy and regulation, both domestically and internationally. His scholarship addresses the performance of the emerging global market for greenhouse gases and mechanisms for reducing emissions, especially in developing countries after the expiration of the Kyoto Protocol. Wara is the director of the Climate and Energy Research Program and senior research scholar at the Stanford Woods Institute for the Environment; a research fellow at the Program in Energy and Sustainable Development in Stanford's Freeman Spogli Institute for International Studies; and a research fellow at the Steyer-Taylor Center for Energy Policy and Finance.

Contact: michael.wara@stanford.edu

Expertise: Environmental and energy law and policy.

Food Security

[David Lobell](#)

Lobell was a lead author for Chapter 7, "Food Production Systems and Food Security", of the report issued in March 2014 by Intergovernmental Panel on Climate Change (IPCC) Working Group II. His research focuses on identifying opportunities to raise crop yields in major agricultural regions, with a particular emphasis on adaptation to climate change. He is the Gloria and Richard Kushel Director of the Center on Food Security and the Environment; a professor of Earth System Science at Stanford's School of Earth, Energy & Environmental Sciences; and William Wrigley Senior Fellow at the Stanford Woods Institute for the Environment and the Freeman Spogli Institute for International Studies.

Contact: dlobell@stanford.edu, (650) 725-2606

Expertise: Food security, crop yields and climate change.

Health

[Kari Nadeau](#)

Nadeau is the director of the Sean N. Parker Center for Allergy and Asthma Research at Stanford University, section chief of Allergy and Asthma at the Stanford School of Medicine, and the Naddisy Foundation Professor of Pediatric Food Allergy, Immunology, and Asthma at Stanford University. Nadeau is one of the nation's foremost experts in adult and pediatric allergy and asthma and holds an MD and PhD from Harvard Medical School. Her work includes investigating the impact of a prescribed burns versus wildfires on the immune and cardiovascular systems of children.

Contact: knadeau@stanford.edu, (650) 724-6780

Expertise: Health effects of wildfire smoke, climate change impacts on allergies and respiratory illness.

Oceans

[Stephen Palumbi](#)

Palumbi is an internationally recognized expert on climate change impacts on marine life. His work focuses on how coral reefs can adapt to climate change and the genetics of marine reserves designed for conservation and fisheries enhancement, with projects in the Philippines, Bahamas and U.S. West Coast. Palumbi is the Jane and Marshall Steel Professor of Marine Sciences and an affiliate of the Stanford Woods Institute for the Environment.

Contact: spalumbi@stanford.edu, (831) 655-6210

Expertise: Climate change and ocean acidification.

Psychology and Human Behavior

[Gabrielle Wong-Parodi](#)

Wong-Parodi is a psychologist who applies social, behavioral, and decision science approaches

to understand how people react and are affected by global environmental change in order to develop interventions to improve adaptive capacity and resiliency. Her work has focused on the impacts of natural hazards and extreme events on individuals and communities coping with hurricanes and floods. Wong-Parodi is a professor of Earth System Science at Stanford's School of Earth, Energy & Environmental Sciences and a center fellow at the Stanford Woods Institute for the Environment.

Additional Stanford climate experts can be found at

<https://news.stanford.edu/expertise/climate-change/>

Contact: gwongpar@stanford.edu, (650) 725-6457

Expertise: Natural disaster psychological and behavioral impacts, climate risk and adaptation

Sea Level Rise, Ice Sheets and Glaciers

Dustin Schroeder

Schroeder's research focuses on subglacial water and assessing the stability of continental ice sheets, such as Antarctica, and their contribution to the rate of sea level rise. Schroeder uses airborne ice-penetrating radar to measure the thickness of ice sheets, bed conditions underneath glaciers, and ice melt from underneath the glacial surface. Schroeder is a professor of geophysics in Stanford's School of Earth, Energy & Environmental Sciences and a center fellow at the Stanford Woods Institute for the Environment.

Contact: Dustin.M.Schroeder@stanford.edu, (650) 725-7861

Expertise: Sea level rise, ice sheets, Antarctica, Greenland, glaciers

Additional Stanford climate experts can be found at
<https://experts.stanford.edu/climate-change>