Hannah Druckenmiller

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Appointments

California Institute of Technology
Division of the Humanities and Social Sciences
Assistant Professor of Economics — 2023 –
William H. Hurt Scholar — 2023 –

National Bureau of Economic Research
Faculty Research Fellow — 2024 –

Resources for the Future
University Fellow — 2023 –
Fellow — 2021–2023

Education

University of California, Berkeley
Ph.D. in Agricultural and Resource Economics — 2021
Chairs: Solomon Hsiang and Joseph S. Shapiro
M.S. in Agricultural and Resource Economics — 2018

Stanford University
B.S. in Earth Systems, with honors and distinction — 2014

Research Interests

Environmental and resource economics and policy, ecosystem valuation, climate impacts and adaptation, machine learning, remote sensing

Published Papers

"Machine learning predicts which rivers, streams, and wetlands the Clean Water Act regulates" with S. Greenhill, S. Wang, D.A. Keiser, M. Girotto, J.K. Moore, N. Yamaguchi, A. Todeschini, and J.S. Shapiro, Science (2024). Available here.

"Accounting for ecosystem service values in climate policy" Nature Climate Change (2022). Available here.

"Wetlands, Flooding, and the Clean Water Act" with C.A. Taylor, American Economic Review (2022). Available here.

"The effect of large-scale anti-contagion policies on the COVID-19 pandemic" with S. Hsiang, D. Allen, S. Annan-Phan, K. Bell, I. Bolliger, T. Chong, L. Huang, A. Hultgren, E. Krasovich, P. Lau, J. Lee, E. Rolf, J. Tseng, and T. Wu, Nature (2020). Available here.

Working Papers

"Can Removing Development Subsidies promote adaptation? The Coastal Barrier Resources System as a Natural Experiment" with P. Liao, S. Pesek, S. Zhang, and M. Walls. Available here.

Global High-Resolution Estimates of the United Nations Human Development Index Using Satellite Imagery and Machine Learning with L. Sherman, J. Proctor, H. Tapia, and S. Hsiang. Available here.

Accounting for Unobservable Heterogeneity in Cross Section using Spatial First Differences with S. Hsiang. Available here.

Estimating an Economic and Social Value of Forests: Evidence from Tree Mortality in the American West. Available here.

Opportunities for Increasing the Environmental Justice Impact of Earth Observations. Available here.

Grants, Fellowships & Awards

"Wetland Regulation And Us Rural Economic Development", USDA National Institute of Food and Agriculture, $650,000 (with J.S. Shapiro, C. Taylor, and S. Wang)	2024
"New tools for estimating location-specific ecosystem values to inform sustainable management", William H. Hurt Scholar Fund, $200,000 (with G. Gkioxari)	2024
"Adapting To Variable Weather: The Roles And Impacts Of Crop Insurance And Conservation Decisions In Rural Communities", USDA National Institute of Food and Agriculture, $650,000 (with P. Liao and M. Walls)	2022
"Can removing development subsidies promote adaptation? The Coastal Barrier Resources System as a natural experiment", Lincoln Institute of Land Policy, $100,000 (with M. Walls and P. Liao)	2021
"A new approach to measuring the wealth of nations: understanding long-run economic growth using historical aerial photographs", Riksbankens Jubileumsfond, $6,218,140 (with A. Madestam, A. Tompsett, and S. Hsiang)	2020
Outstanding Graduate Student Instructor Award, UC Berkeley	2019
Doctoral Fellow, Global Policy Laboratory, UC Berkeley	2017
National Science Foundation Graduate Research Fellowship Program (NSF GRFP)	2016
The Berkeley Fellowship, UC Berkeley	2016
Firestone Medal for Excellence in Undergraduate Research, Stanford University	2014

Dean's Award for Academic Achievement, School of Earth Sciences, Stanford University — 2014

Invited Talks

2023: University of Chicago EPIC; Yale School of the Environment; ASSA Annual Meeting; The Workshop in Environmental Economics and Data Science (TWEEDS); Caltech Geological and Planetary Sciences; Caltech Environmental Sciences and Engineering

2022: Harvard University Applied Statistics; The Workshop in Environmental Economics and Data Science (TWEEDS); Environmental Defense Fund

2021: Columbia University Sustainable Development; Association of Environmental and Resource Economists (AERE) Summer Conference; World Bank; Online Summer Workshop in Environment, Energy, and Transportation (OSWEET); Resources for the Future; NYU Institute for Policy Integrity

2020: Columbia University Interdisciplinary PhD Workshop in Sustainable Development; UC Berkeley Environmental and Resource Economics Seminar

2019: NBER Summer Institute; Stanford University SEEPAC Research Lunch; Columbia University Interdisciplinary PhD Workshop in Sustainable Development; UC Berkeley Environmental and Resource Economics Seminar

2018: Occasional Workshop in Environmental and Resource Economics. UC Berkeley Climate Economics Workshop

2017: UC Berkeley Climate Change Economics Lunch

Workshop Organization

Co-organizer, The Workshop in Environmental Economics and Data Science (TWEEDS) — 2025

Lead organizer, Innovations in the Science and Policy of Water Quality Measurement, Caltech — 2024

Refereeing

American Economic Review; Journal of Environmental Economics and Management; Journal of Health Economics; Journal of Political Economy: Microeconomics; Journal of Public Economics; Nature Communications; Proceedings of the National Academy of Sciences; Resource and Energy Economics

Teaching

Division of the Humanities and Social Sciences, Caltech:
Ec/BEM/ESE 119 Environmental Economics — 2024

School of International and Public Affairs, Columbia
OMAF 6065 Economics of Energy — 2022