

# FRANCES CLAIRE MOORE

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## RESEARCH INTERESTS

Social and economic impacts of climate change; climate change policy and adaptation; environmental economics; econometrics; inference and decision-making under uncertainty; modeling the coupled climate-social system; climate risk assessment and management; detection and attribution of climate change impacts.

## POSITIONS

2025 - Current	Professor, Department of Environmental Science and Policy, University of California Davis
2023 – Current	Chancellor’s Fellow, University of California Davis
2022 – Current	Hurlston Presidential Chair in the Department of Environmental Science and Policy, University of California Davis
2022 - 2025	Associate Professor, Department of Environmental Science and Policy, University of California Davis
2022 – 2023	Senior Economist, Council of Economic Advisors, Executive Office of the President
2016 - 2022	Assistant Professor, Department of Environmental Science and Policy, University of California Davis
2015 – 2016	Ciriacy-Wantrup Postdoctoral Fellow, Department of Agricultural and Resource Economics, University of California Berkeley

## EDUCATION

**Ph.D.** Emmett Interdisciplinary Program in Environment and Resources, Stanford University, 2015

**M.A.** Economics, Stanford University, 2015

**M.E.Sc.** Global Change Science and Policy, Yale School of Forestry and Environmental Studies, 2010

**B.A.** Earth and Planetary Sciences, *summa cum laude*, Harvard University, 2006

## PUBLICATIONS<sup>1</sup>

### Peer-Reviewed Journal Publications

Indumati Roychowdhury\* and Frances C. Moore, submitted, “Spatial Selection Undermines Flood Protection in U.S. Wetland Markets”

Junna Wang, Brunno F. Oliveira, Frances C. Moore, Daniel J. Kozar, Yongshuo Fu and Xiaoli Dong, in review. “A Partial Rescue: Plant Range Shifts Sustain Local Diversity Without Alleviating Global Extinction”

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<sup>1</sup> \* indicates student author; → indicates alphabetical author order, following economics convention. All other publications follow scientific norms for author order (in contributing order, with lab group leader as last author where applicable)

Frances C. Moore and Adam Sobel, 2025. “A Value of Information Framework for Climate Adaptation and Risk Management”, *Environmental Research: Climate*, **4**, 031001, doi: 10.1088/2752-5295/ade0e

Frances C. Moore, Moritz A. Drupp, James Rising, Simon Dietz, Ivan Rudik and Gernot Wagner, 2024, “Synthesis of Evidence Yields High Social Cost of Carbon Due to Structural Model Variation and Uncertainties”, *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.2410733121

Paikea Colligan, Elisabeth Van Roijen, Seth Kane, Frances C. Moore, and Sabbie A. Miller, 2024, “The Unaccounted-For Climate Costs of Materials”, *Environmental Research Letters*, **19** (11), doi: 10.1088/1748-9326/ad796e

Moritz A. Drupp, Martin C. Hansel, Eli P. Fenichel, Christian Gollier, Ben Groom, Geoffrey M. Heal, Peter H. Howard, Anthony Millner, Frances C. Moore, Frikk Nesje, Martin F. Quass, Sjak Smulders, Thomas Sterner, Christian Traeger, and Frank Venmans, 2024, “The Increasing Benefits from Scarce Ecosystems”, *Science*, **383** (6687), pp. 1062-1064.

- Frontiers Planet Prize 2025 National Champion

Bernardo Bastien-Olvera\*, Marc N. Conte, Xiaoli Dong, Tania Briceno, David Bakter, Johannes Emmerling, Massimo Tavoni, Francesco Granella and Frances C. Moore, 2024, “Unequal Climate Impacts on Global Values of Natural Capital”, *Nature*, **625**, pp. 722-727, doi: 10.1038/s41586-023-06769-z

Flavio Lehner, Ed Hawkins, Rowan Sutton, Angeline G. Pendergrass, and Frances C. Moore, 2023, “New Potential to Reduce Uncertainty in Regional Climate Projections by Combining Physical and Socio-Economic Constraints”, *AGU Advances*, **4**, e2023AV000887, doi:10.1029/2023AV000887

Brian Beckage, Frances C. Moore, and Katherine Lacasse, 2022, “Incorporating Human Behavior into Earth System Modeling”, *Nature Human Behavior*, **6**, pp. 1493-1502.

→Bernardo Bastien-Olvera\* and Frances C. Moore, 2022, “Climate Impacts on Natural Capital: Consequences for the Social Cost of Carbon”, *Annual Review of Resource Economics*, **14**, pp. 512-532.

Kevin Rennert, Frank Errickson, Brian Prest, Lisa Rennels, Richard G. Newell, William Pizer, Cora Kingdon, Jordan Wingenroth, Roger Cooke, Bryan Parthum, David Smith, Kevin Cromar, Delavane Diaz, Frances C. Moore, Ulrick K. Muller, Richard. Plevin, Adrian E. Raftery, Hana Sevcikova, Hannah Sheets, James H. Stock, Tammy Tan, Mark Watson, Tony Wong, and David Anthoff, 2022, “Comprehensive New Evidence Implies a Higher Social Cost of CO<sub>2</sub>”, *Nature*, **610**, pp.687-692.

Bernardo Bastien-Olvera\*, Francesco Granella\* and Frances C. Moore, 2022, “Persistent Effect of Temperature on GDP Identified from Lower Frequency Temperature Variability,” *Environmental Research Letters*, **7** (8), doi: 10.1088/1748-9326/ac82c2

Bruno Oliveira, Frances C. Moore, and Xiaoli Dong, 2022, “Biodiversity Mediates Ecosystem Sensitivity to Climate Variability,” *Communications Biology*, doi: /10.1038/s42003-022-03573-9

Chaopeng Hong, Hongyan Zhao, Yue Qin, Jennifer A. Burney, Julia Pongratz, Kerstin Hartung, Yu Liu, Frances C. Moore, Rob Jackson, Qiang Zhang, Steven Davis, 2022, “Land-use Emissions Embodied in International Trade”, *Science*, **376** (6593), pp. 597-603.

Frances C. Moore, Katherine Lacasse, Katharine J. Mach, Yoon Ah Shin, Louis J. Gross, and Brian Beckage, 2022, “Determinants of Emissions Pathways in the Coupled Climate-Social System”, *Nature*, **603**, 103-111, doi: 10.1038/s41586-022-04423-8

Frances C. Moore, Arianna Stokes\*, Marc Conte, and Xiaoli Dong, 2022, “Noah’s Ark in a Warmer World: Climate Change, Biodiversity Loss and Public Adaptation Costs in the United States”, *Journal of the Association of Environmental and Resource Economists*, **9** (5), pp. 981-1015, doi: 10.1086/716662

R. Daniel Bressler\*, Frances C. Moore, Kevin Rennert, and David Anthoff, 2021, “Estimates of Country-Level Temperature-Related Mortality Damage Functions”, *Scientific Reports*, **11**, 20282, doi: 10.1038/s41598-021-99156-5.

→ Tatyana Deryugina, Frances C. Moore, and Richard Tol, 2021, “Environmental Applications of the Coase Theorem”, *Environmental Science and Policy*, **120**, 81-88.

Jesus Gonzalez\*, Amir AghaKouchak, Morgan C. Levy, Yue Qin, Jennifer Burney, Steven J. Davis, and Frances C. Moore, 2021, “Adaptive Benefits of Agricultural Water Markets in California”, *Environmental Research Letters*, **16**, 044036.

Cicero Z. de Lima, Jonathan R. Buzan, Frances C. Moore, Uris L. C. Baldos, Matthew Huber, and Thomas Hertel, 2021, “Heat Stress on Agricultural Workers Exacerbates Crop Impacts of Climate Change”, *Environmental Research Letters*, **16** (4), 044020.

Bernardo Bastien-Olvera\* and Frances C. Moore, 2021, “Use and Non-Use Value of Nature and the Social Cost of Carbon”, *Nature Sustainability*, **4**, 101-108, doi: 10.1038/s41893-020-00615-0

Jesus Gonzalez\* and Frances C. Moore, 2020, “Intertemporal Arbitrage of Water and Long-Term Agricultural Investments: Drought, Groundwater Banking, and Perennial Cropping Decisions in California”, *American Journal of Agricultural Economics*, **102** (5), 1368-1382, doi:10.1111/ajae.12123

Noah S. Diffenbaugh, Christopher B. Field, Eric A. Appel, Ines L. Azavedo, Dennis D. Baldocchi, Marshall Burke, Jennifer A. Burney, Phillipe Ciais, Steven J. Davis, Arlene M. Fiore, Sarah M. Fletcher, Thomas W. Hertel, Daniel E. Horton, Solomon M. Hsiang, Robert B. Jackson, Xiaomeng Jin, Margaret Levi, David B. Lobell, Galen A. McKinley, Frances C. Moore, Anastasia Montgomery, Kari C. Nadeau, Diane E. Pataki, James T. Randerson, Markus Reichstein, Jordan L. Schnell, Sonia I. Senevirantne, Deepti Singh, Allison L. Steiner and Gabrielle Wong-Parodi, 2020. “The COVID-19 Lockdowns: A Window into the Earth System”, *Nature Reviews Earth & Environment*, **1**, 470-481.

Chaopeng Hong, Nathan Mueller, Jennifer Burney, Yang Zhang, Amir AghaKouchak, Frances C. Moore, Yue Qin, Dan Tong, and Steven J. Davis, 2020, “Impacts of Ozone and Climate Change on California Perennial Crops”, *Nature Food*, **1**, 166-172.

Sabbie Miller and Frances C. Moore, 2020, “Climate and Health Damages of Global Concrete Production”, *Nature Climate Change*, **10**, 439-443, doi: 10.1038/s41558-020-0733-0

Lindsey L. Sloat, Steven J. Davis, James Gerber, Frances C. Moore, Deepak Ray, Paul C. West, and Nathaniel D. Mueller, 2020, “Climate Adaptation by Crop Migration”, *Nature Communications*, **11**, 1243, doi: 10.1038/s41467-020-15076-4

Frances C. Moore and Nick Obradovich, 2020, “Using Remarkability to Define Coastal Flooding Thresholds”, *Nature Communications*, **11**, 530, doi: 10.1038/s41467-019-13935-3

→ Charles Kolstad and Frances C. Moore, 2020, “Estimating the Economic Impacts of Climate Change Using Weather Observations”, *Review of Environmental Economics and Policy*, 1-25, doi: 10.1093/reep/rez024

→ Uris Baldos, Thomas Hertel, and Frances C. Moore, 2019, “Understanding the Spatial Distribution of Welfare Impacts of Global Warming on Agriculture and Its Drivers”, *American Journal of Agricultural Economics*, 101, vol. 5, 1455-1472, doi:10.1093/ajae/aaz027

Frances C. Moore, Nick Obradovich, Flavio Lehner, and Patrick Baylis, 2019, “Rapidly Declining Remarkability of Temperature Anomalies May Obscure Public Perception of Climate Change”, *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.1816541116

Frances C. Moore, James Rising, Niklas Lollo\*, Cecilia Springer\*, Valeri Vasquez\*, Alex Dolginow\*, Chris Hope, and David Anthoff, 2018, “Mimi-PAGE: An Open-Source Implementation of the PAGE09 Integrated Assessment Model”, *Scientific Data*, 5, 180187, doi: 10.1038/sdata.2018.187.

Frances C. Moore, Uris Baldos, Thomas Hertel, and Delavane Diaz, 2017, “New Science of Climate Change Impacts on Agriculture Implies Higher Social Cost of Carbon”, *Nature Communications*, 8, doi: 10.1038/s41467-017-01792-x.

Delavane Diaz and Frances C. Moore, 2017, “Quantifying the Economic Risks of Climate Change”, *Nature Climate Change*, 7, 774-782.

Frances C. Moore, 2017, “Learning, Adaptation, and Weather in a Changing Climate”, *Climate Change Economics*, 8, vol. 4, doi: 10.1142/S2010007817500105

Frances C. Moore, Uris Baldos, and Thomas Hertel, 2017, “Economic Impacts of Climate Change on Agriculture: A Comparison of Process-Based and Statistical Yield Models”, *Environmental Research Letters*, 12, vol. 6, 065008, doi: 10.1088/1748-9326/aa6eb2

Frances C. Moore and David B. Lobell, 2015, “The Fingerprint of Climate Trends on European Crop Yields”, *Proceedings of the National Academy of Sciences*, 112, vol. 9, 2670-2675.

Frances C. Moore and Delavane B. Diaz, 2015, “Temperature Impacts on Economic Growth Warrant Stringent Mitigation Policy”, *Nature Climate Change*, 5, 127-131.

Frances C. Moore and David B. Lobell, 2014, “The Adaptation Potential of European Agriculture in Response to Climate Change”, *Nature Climate Change*, 4, 610-614.

Frances C. Moore, 2012, “Negotiating Adaptation: Norm Selection and Hybridization in International Climate Negotiations,” *Global Environmental Politics*, 12, vol.4, pp. 30-48.

Frances C. Moore, 2012. “Costing Adaptation: Revealing Tensions in the Normative Basis of Adaptation Policy in Adaptation Cost Estimates”, *Journal of Science, Technology and Human Values*, 37, vol. 2, 171-198.

Frances C. Moore, 2011. “Toppling the Tripod: Sustainable Development, Constructive Ambiguity and the Environmental Challenge”, *Consilience: The Journal of Sustainable Development*, 5, vol. 1, 141-150.

Frances C. Moore, 2010. ““Doing Adaptation: The Construction of Adaptive Capacity and its Function in the International Climate Negotiations,” *St Antony’s International Review*, 6 vol. 2, 66-88.

Frances C. Moore, 2009. “Climate Change and Air Pollution: Exploring the Synergies and Potential for Mitigation in Developing Countries,” *Sustainability*, 1, 43-54.

Frances C. Moore and Michael C. MacCracken, 2009. “Lifetime-Leveraging: An Approach to Achieving International Agreement and Effective Climate Protection Using Mitigation of Short-Lived Greenhouse Gases,” *International Journal of Climate Change Strategies and Management*, 1, 42-62.

## Books and Book Chapters

Frances C. Moore and James Rising, submitted, “Critical Perspectives on Climate Change Economics” in *Handbook of Climate Economics vol 2*, Lint Barrage and Solomon Hsiang eds.

Frances C. Moore, 2025. “Learning, Catastrophic Risk and Ambiguity in the Climate Change Era”, in *Environmental and Energy Policy and the Economy vol 6*, Tatyana Deryugina, Matthew Kotchen and Catherine Wolfram eds. University of Chicago Press, Chicago, IL.

Robert Vallario, Katherine J. Mach, Jeffrey R. Arnold, Christa Brelsford, Katherine V. Calvin, Alejandro N. Flores, Jing Gao, Kripa Jagannathan, David Judi, Carlos E. Martin, Frances C. Moore, Richard Moss, Erthea Nance, Brenda Rashleigh, Patrick M. Reed, Linda Shi, and Lynee Turek-Hankins, 2023. “Chapter 18: Sector Interactions, Multiple Stressors, and Complex Systems” in *Fifth National Climate Assessment*, Allison Crimmins, Christopher Avery, David Easterling, Kenneth E. Kunkel, Brooke C. Steward, and Thomas K. Maycock, eds. U.S. Global Change Research Program, Washington DC.

Frances C. Moore, Justin Mankin, and Austin Becker, 2015, “Challenges in Integrating the Climate and Social Sciences for Studies of Climate Change Impacts and Adaptation,” in *Climate Cultures: Anthropological Perspectives on Climate Change*, Jessica Barnes and Michael Dove, eds., Yale University Press, New Haven, CT, pp. 169-195.

Frances C. Moore and Michael C. MacCracken, 2011. “Short-Lived Greenhouse Gases and Climate Fairness”, in *China’s Responsibility for Climate Change: Ethics, Fairness and Environmental Policy*, Paul G. Harris, ed., Bristol, UK: The Policy Press, pp 145-170.

Michael C. MacCracken, Frances Moore, and John C. Topping, Jr., eds., *Sudden and Disruptive Climate Change: Estimating the Real Risks and How We Can Avoid Them*, London: Earthscan Publications, 2008

## Government Publications with Significant Intellectual Contribution

“Opportunities for Better Managing Weather Risk in a Changing Climate” in *Economic Report of the President*, Council of Economic Advisers, March 2023 pp. 273-308.

*Methodologies and Considerations for Integrating the Physical and Transition Risks of Climate Change into Macroeconomic Forecasting for the President’s Budget*, Council of Economic Advisers and Office of Management and Budget White Paper, March 2023.

## Other Publications

Zeke Hausfather and Frances C. Moore, 2022. “Net-Zero Commitments Could Limit Warming to Below 2°C”, *Nature*, **604**, pp.247-248.

Frances C. Moore and Katherine Lacasse, 2022. “Social, Political and Technical Feedback Processes will Drive Future Climate Policies and Emissions” *Nature Research Briefing*, doi: 10.1038/d41586-022-00351-9

Katrina Jessoe and Frances C. Moore, 2021. “The Cost of Changes in Energy Use in a Warming World”, *Nature*, **598**, pp. 262-263

Frances C. Moore, 2021. “The Expanding and Maturing Field of Climate Change Economics”, *Nature Climate Change*, **11**, p. 284.

Gernot Wagner, David Anthoff, Maureen Cropper, Simon Dietz, Kenneth T. Gillingham, Ben Groom, J. Paul Kelleher, Frances C. Moore and James H. Stock, 2021. “Eight Priorities for Calculating the Social Cost of Carbon”, *Nature*, **590**, pp. 548-550.

Alex Bowen, Marshall Burke, Charles Donovan, Kenneth Gillingham, Frances C. Moore, Robert Stavins, Gernot Wagner and Bob Ward, 2020. “The Economic Case for the United States to Remain in the Paris Agreement on Climate Change”, *Grantham Research Institute of Climate Change and the Environment Policy Brief*.

Frances C. Moore, 2018. “Valuing Climate Damages at the Country Level”, *Nature Climate Change*, doi: 10.1038/s41558-018-0285-8

## **HONORS AND AWARDS**

Distinguished Scholarly Public Service Award, UC Davis 2024

Graduate Program Advising and Mentoring Award, UC Davis, 2021

Hellman Fellow, 2018-2019

Stanford Interdisciplinary Graduate Fellow, 2012-2015

National Science Foundation Graduate Research Fellow, 2009-2012

Switzer Foundation Fellow, 2009

Undergraduate: Phi Beta Kappa, John Harvard Scholar, Harvard College Scholar, Detur Book Prize, National Merit Scholar, Fisher Prize for Excellence in Geographic Information Science

## **GRANT FUNDING**

“Collaborative Research: Developing a Theoretical Framework for Information to Support Climate Risk Management and Adaptation” (2025-2028), co-PI with Adam Sobel (Lead-PI, Columbia University), *Climate and Large-Scale Dynamics*, National Science Foundation, \$1.15 million (\$570,000 to UC Davis).

“Taking Root Under Climate Change: Climate, Yield, and Economic Impacts on Orchard Tree Crops in California” (2024-2025), lead-PI with co-PI Erwan Monier (UC Davis), Giannini Foundation of Agricultural Economics, \$34,956

“Developing a Comprehensive Framework for Estimating the Social Costs of Emissions of Criteria Pollutants and Air Toxics in California” (2021-2023), with Mark Delucci (Lead PI, UC Davis), California Air Resources Board, \$456,245

“CNH2-S: Understanding the Coupling Between Climate Policy and Ecosystem Change” (2019-2024), lead-PI with co-PIs Marc Conte (Fordham University) and Xiaoli Dong (UC Davis), *Dynamics of Integrated Socio-Environmental Systems*, National Science Foundation, \$749,586.

“Quantifying the Costs of Ecosystem Damages from Climate Change for Improved Climate Policy Analysis” (2018-2019), Hellman Foundation, \$30,000

“Monitoring and Managing Food, Energy, and Water Systems Under Stress: The California Crucible” (2017 – 2022), with Steve Davis (Lead PI, UC Irvine), Jennifer Burney (UCSD), Jack Brouwer (UC Irvine), Scott Samuelson (UC Irvine), and Amir AghaKouchak (UC Irvine). *Innovations at the Nexus of Food, Energy, and Water Systems*, National Science Foundation and USDA. \$2,887,132.

## **PRESENTATIONS**

### **Conference and Workshop Presentations**

Frances C. Moore, Curriculum Vitae

Frances C. Moore, 2025, “Learning, Catastrophic Risk and Ambiguity in the Climate Change Era”, at *Allied Social Sciences Association*, San Francisco CA, 6<sup>th</sup> January.

Frances C. Moore, 2024, “Learning, Catastrophic Risk and Ambiguity in the Climate Change Era”, at *Climate Change and Economic Policy: Navigating Uncertainty and Agent’s Heterogeneity*, University of Zurich, 5<sup>th</sup> September.

Frances C. Moore, 2024, “Learning, Catastrophic Risk and Ambiguity in the Climate Change Era”, at 6<sup>th</sup> *Annual NBER Environmental and Energy Policy and the Economy Conference*, Washington DC, 23<sup>rd</sup> May.

Frances C. Moore, James Rising, Moritz Drupp, Simon Dietz, Ivan Rudik and Gernot Wagner, 2023, “Synthesis of Evidence Yields Higher Social Cost of Carbon Due to Model Extensions and Uncertainties”, at *American Economic Association*, San Antonio TX, 6<sup>th</sup> January.

Frances C. Moore, James Rising, Moritz Drupp, Simon Dietz, Ivan Rudik and Gernot Wagner, 2022, “Distribution, Drivers of Variance, and Structural Uncertainty in the Social Cost of Carbon” at *Association of Environmental and Resource Economists Summer Conference*, Miami FL, 3<sup>rd</sup> June.

Frances C. Moore, Arianna Stokes, Marc Conte, and Xiaoli Dong, 2021, “Noah’s Ark on Rising Seas: Climate Change, Biodiversity Loss and Public Adaptation Costs in the United States” at 22<sup>nd</sup> *Annual BIOECON Conference: Integrating Natural and Social Science for Conserving Biodiversity*, Jackson Hole WY, 19<sup>th</sup> Sep.

Frances C. Moore, Arianna Stokes, Marc Conte, and Xiaoli Dong, 2021, “Noah’s Ark on Rising Seas: Climate Change, Biodiversity Loss and Public Adaptation Costs in the United States” at *Association of Environmental and Resource Economics Summer Conference*, virtual via Zoom, 2<sup>nd</sup> June.

Frances C. Moore, Katherine Mach, Katie Lacasse, Yoon-Ah Shin, Lou Gross and Brian Beckage, 2020. “Linking Social, Political, and Technical Feedbacks to Model Tipping Points in the Climate-Social System” at *American Geophysical Union Fall Meeting*, virtual via Zoom, 11<sup>th</sup> December.

Frances C. Moore and Nick Obradovich, 2020. “Using Remarkability to Detect Coastal Flooding Thresholds” at *The Workshop on Environmental Economics and Data Science*, hosted by University of Oregon, virtual via Zoom, 20<sup>th</sup> October.

Frances C. Moore, 2020. “Noah’s Ark on Rising Seas: Climate Change, Biodiversity Loss, and Public Adaptation Costs in the United States”, at *Climate Adaptation Research Symposium: Measuring and Reducing Societal Impacts*, hosted by UCLA Luskin Center for Innovation, virtual via Zoom, 21<sup>st</sup> Sep.

Frances C. Moore, 2020. Invited. “Macroeconomic Damage Functions”, at *Strengthening Understanding of the Economic Impacts of Climate Change*, hosted by Grantham Research Institute and University of Oxford, virtual via Zoom, 13<sup>th</sup> July.

Bernie Bastien-Olvera and Frances C. Moore, 2020. “Use and Non-Use Value of Nature and the Social Cost of Carbon”, at *Association of Environmental and Resource Economics Summer Conference*, virtual via Zoom, 4<sup>th</sup> June.

Frances C. Moore and Alexis Hannart, 2020. “The Fingerprint of Anthropogenic Warming on Global Agriculture” at *Association of Environmental and Resource Economics Summer Conference*, virtual via Zoom, 3<sup>rd</sup> June.

Frances C. Moore and Jesus Gonzalez, 2020. “Intertemporal Arbitrage of Water and Long-Term Agricultural Investments: Drought, Groundwater Banking, and Perennial Cropping Decisions in California” at *Allied Social Sciences Association Annual Meeting*, San Diego, CA, 4<sup>th</sup> Jan.

Frances C. Moore and Jesus Gonzalez, 2019. “Estimating the Adaptive Benefits of Water Markets for California Irrigated Agriculture” at *Association for Environmental and Resource Economists Summer Conference*, Lake Tahoe, CA, 31<sup>st</sup> May.

Frances C. Moore, 2019. Invited. “Applications of Big Data to Problems in Climate Change Impacts” at *Bringing Statistical Methodology to Big Data Problems in Agricultural and Environmental Economics*, Davis, CA, 24<sup>th</sup> May.

Frances C. Moore and Alexis Hannart, 2019. “Characterizing and Detecting the Emerging Influence of Anthropogenic Warming on Global Crop Yields” at *The Workshop on Environmental Economics and Data Science*, Portland, OR, 29<sup>th</sup> – 30<sup>th</sup> March.

Frances C. Moore and Alexis Hannart, 2018. Invited. “Characterizing and Detecting the Emerging Influence of Anthropogenic Warming on Global Crop Yields” at *American Geophysical Union Fall Meeting*, Washington, DC, 10<sup>th</sup> – 14<sup>th</sup> December.

Frances C. Moore, Nick Obradovich, Flavio Lehner, and Patrick Baylis, 2018. “Defining Extreme Temperatures Using Social Remarkability: Evidence from Twitter for Rapidly Shifting Baselines in a Changing Climate” at *American Geophysical Union Fall Meeting*, Washington, DC, 10<sup>th</sup> – 14<sup>th</sup> December.

Frances C. Moore, Nick Obradovich, Flavio Lehner, and Patrick Baylis, 2018. “Rapidly Adjusting Perceptions of Temperature in a Changing Climate” at *17th Occasional Workshop in Environmental and Resource Economics*, University of California Santa Barbara, Santa Barbara, CA, 9<sup>th</sup> – 10<sup>th</sup> November.

Frances C. Moore, Nick Obradovich and Flavio Lehner, 2018. “Rapidly Adjusting Perceptions of Temperature in a Changing Climate” at *NBER Energy and Environmental Economics Summer Institute*, National Bureau of Economic Research, Cambridge, MA, 23<sup>rd</sup> – 24<sup>th</sup> July.

Uris Baldos, Thomas Hertel, and Frances C. Moore, 2018. “Biophysical and Economic Geographies of Climate Change Impacts on Agriculture” at *Trade and Agriculture*, National Bureau of Economic Research, Cambridge, MA, 17<sup>th</sup> – 18<sup>th</sup> May.

Frances C. Moore and Alexis Hannart, 2018. “Characterizing and Detecting the Influence of Anthropogenic Warming on Global Crop Yields” at *International Detection and Attribution Group*, Lawrence Berkeley National Laboratory, Berkeley, CA, 13<sup>th</sup> – 15<sup>th</sup> March.

Frances C. Moore, 2018. Invited. “Using the Climate Impacts Literature to Derive New Damage Functions for the Agricultural Sector” at *Advanced Workshop on Climate Economics*, University of California Berkeley, January 20<sup>th</sup>.

Frances C. Moore and Alexis Hannart, 2017. Invited. “Characterizing and Detecting the Influence of Anthropogenic Climate Change on Crop Yields” at *Environmental Risk Modeling and Extreme Events*, Centre de Recherches Mathematiques, Montreal, Canada, 28<sup>th</sup>-31<sup>st</sup> August.

Frances C. Moore, 2017. “New Science of Climate Change Impacts on Agriculture Implies Higher Social Cost of Carbon” at *International Energy Workshop*, College Park MD, 12<sup>th</sup>-14<sup>th</sup> July.

Frances C. Moore and Charles Kolstad, 2017. “Framing the Problem” at *Advances in Estimating Economic Effects from Climate Change Using Weather Observations*, Stanford CA, 18<sup>th</sup>-19<sup>th</sup> May.

Frances C. Moore, Uris Baldos, Thomas Hertel, and Delavane Diaz, 2016. “Climate Change Impacts on Yield and Welfare: Results from a Meta-Analysis and the GGCM”, oral presentation at *American Geophysical Union Fall Meeting*, San Francisco CA, 12<sup>th</sup>-16<sup>th</sup> December.

Frances C. Moore, 2016. Invited. “Estimating the Importance of Private Adaptation: A Review of Empirical Methods and Framework for Comparison”, poster presentation at *American Geophysical Union Fall Meeting*, San Francisco CA, 12<sup>th</sup>-16<sup>th</sup> December.

Frances C. Moore, 2016. Invited. “Climate Change Impacts on Agriculture: Understanding Global Effects on Yield and Welfare”, *International Agricultural Trade Research Consortium*, Scottsdale, AZ, 10<sup>th</sup> December.

Frances C. Moore, Uris Baldos, Thomas Hertel and Delavane Diaz, 2016. “Welfare Effects of Climate Change Impacts on Agriculture: Evidence from Over 1,000 Yield Studies”, *19<sup>th</sup> Annual Conference on Global Economic Analysis*, Washington, DC, June 15<sup>th</sup> -17<sup>th</sup>

Frances C. Moore, Uris Baldos, Thomas Hertel and Delavane Diaz, 2016. “Welfare Effects of Climate Change Impacts on Agriculture: Evidence from Over 1,000 Yield Studies”, *AERE Summer Conference*, Breckenridge, CO, June 9<sup>th</sup>-11<sup>th</sup>.

Frances C. Moore, Uris Baldos and Thomas Hertel, 2016. “Economic Impacts of Climate Change on Agriculture: Comparing Process-Based and Empirical Yield Models”, *Comparing Methods and Improving the Empirical Foundations of Agriculture Impacts*, Seville, Spain, 6<sup>th</sup>-7<sup>th</sup> June.

Frances C. Moore, 2015. Invited. “Adjustment Costs, Learning, and Extremes in a Changing Climate,” oral presentation at *American Geophysical Union Fall Meeting*, San Francisco, CA. December 14<sup>th</sup>-18<sup>th</sup>.

Frances C. Moore and Marshall Burke, 2015. “Estimating the Importance of Private Adaptation to Climate Change in Agriculture: A Review of Empirical Methods”, poster presentation at *American Geophysical Union Fall Meeting*, San Francisco, CA. December 14<sup>th</sup>-18<sup>th</sup>.

Frances C. Moore and Delavane B. Diaz, 2014. Invited. “Stringent Mitigation Policy Implied by Temperature Impacts on Economic Growth,” oral presentation at *American Geophysical Union Fall Meeting*, San Francisco, CA. December 15<sup>th</sup> – 19<sup>th</sup>.

Frances C. Moore and David B. Lobell, 2014. “The Fingerprint of Climate Change on European Crop Yields,” poster presentation at *American Geophysical Union Fall Meeting*, San Francisco, CA. December 15<sup>th</sup> – 19<sup>th</sup>.

Frances C. Moore and David B. Lobell, 2013. “Empirically Estimating the Potential for Farm-Level Adaptation to Climate Change in Western European Agriculture,” oral presentation at *American Geophysical Union Fall Meeting*, San Francisco, CA. December 9<sup>th</sup>-13<sup>th</sup>.

Frances C. Moore and David B. Lobell, 2012. “A Ricardian Hindcast: Constraining the Rate of Autonomous Adaptation in Agriculture from Observations of European Land Values,” poster presentation at *Adaptation Futures 2012: International Conference on Climate Adaptation*, University of Arizona, Tuscon, AZ. May 29<sup>th</sup> – 31<sup>st</sup>.

Frances C. Moore, 2011. “Investigating the Effect of Agent Rationality Assumptions on Models of Agricultural Adaptation,” poster presentation at *American Meteorological Society Conference on Climate Adaptation and 19<sup>th</sup> Conference on Applied Climatology*, Asheville, NC. July 18<sup>th</sup>-20<sup>th</sup>.

Frances C. Moore, 2011. “Defining Adaptation: Creating Knowledge in a New Area of Climate Change Policy,” oral presentation at *American Meteorological Society Sixth Symposium on Policy and Socio-Economic Research*, Seattle, WA. January 27<sup>th</sup>. Student presenter award.

Frances C. Moore, 2010. “Negotiating Adaptation: Competing Equity and Development Discourses in the International Adaptation Negotiations,” oral presentation at *Integrating Climate Change and Development Ethics*, Pennsylvania State University, PA. April 14-16<sup>th</sup>.

Frances C. Moore and Michael C. MacCracken, 2009. “Lifetime-Leveraging: Mitigation of Short-Lived Greenhouse Gases as a Pathway to International Agreement and Climate Protection,” poster presentation at *International Scientific Congress on Climate Change*, Copenhagen, Denmark.

Frances C. Moore, 2006. “A Hydrochemical Study of the Linnevatnet Catchment”, poster presentation at *International Arctic Workshop*, Boulder, CO.

### **Seminars and Invited Talks**

“Learning, Catastrophic Risk and Ambiguity in the Climate Change Era”, *US CLIVAR Webinar*, virtual via Zoom, July 10<sup>th</sup> 2025.

“Determinants of Emissions Pathways in the Coupled Climate-Social System”, *Quantitative Social Science Seminar*, Dartmouth College, Hanover NH, May 1<sup>st</sup> 2025.

“Quantifying the Costs of Climate Change: Research and Applications on the Social Cost of Carbon”, *Levitt Center for Public Policy Seminar Series*, Hamilton College, Clinton NY, April 29<sup>th</sup> 2025.

“Economics for the Anthropocene: Understanding Human Welfare in an Age of Climate Change, Biodiversity Loss and Other Global Environmental Challenges”, *2025 Patricia Scheffels Visiting Lecture*, University of Colorado Boulder, Boulder CO, April 3<sup>rd</sup> 2025.

“Synthesis of Evidence Yields Higher Social Cost of Carbon Due to Model Extensions and Uncertainties”, *Center for Environmental Policy Research*, Beijing Institute of Technology, remote via zoom, March 4<sup>th</sup> 2025.

“Learning, Catastrophic Risk and Ambiguity in the Climate Change Era”, *Agriculture and Natural Resources Economics Seminar*, University of California Berkeley, 20<sup>th</sup> February 2025.

“Quantifying the Ecological Costs of Climate Change”, *Applied Economics Seminar Series*, University of Minnesota, Saint Paul, MN, 31<sup>st</sup> January 2025.

“Climate Change Impacts and CGE Modeling”, *Leveraging CGE Models to Understand the Macroeconomic of Large Scale Climate Damages*, Environmental Protection Agency, Washington DC, 12<sup>th</sup> December 2024.

“Synthesis of Evidence Yields Higher Social Cost of Carbon Due to Model Extensions and Uncertainties”, *Revisiting Climate Damages*, International Monetary Fund, Washington DC, 11<sup>th</sup> December 2024.

“Learning, Catastrophic Risk, and Ambiguity in the Climate Change Era”, *Energy Policy Institute of Chicago*, University of Chicago, Chicago, IL, November 19<sup>th</sup> 2024.

“Applying a Value of Information Framework to Climate Change Risk-Management and Adaptation Decision-Making”, *Workshop on Usable Climate Risk Science*, NASA Jet Propulsion Laboratory, Pasadena CA, October 29<sup>th</sup> 2024.

“Issues and Questions in Federal Climate and Energy Policy”, *Heartland Workshop on Environmental Economics*, invited keynote talk, Urbana, IL, October 27<sup>th</sup> 2024.

“Synthesis of Evidence Yields High Social Cost of Carbon Due to Structural Model Variation and Uncertainties”, *Agriculture and Consumer Economics Department Seminar*, University of Illinois Urbana-Champaign, Urbana, IL, October 26<sup>th</sup> 2024.

“Understanding Climate Change Implications for Human Welfare: Research and Policy Applications”, *Bradford Seminar*, Center for Policy Research on Energy and the Environment, Princeton University, Princeton NJ, September 16<sup>th</sup> 2024.

“Synthesis of Evidence Yields High Social Cost of Carbon Due to Structural Model Variation and Uncertainties”, *Yale Environmental Economics Seminar*, Yale School of the Environment, New Haven CT, September 11<sup>th</sup> 2024.

“Embedding Climate Change in Macroeconomic Analysis for Research and Policy”, *27<sup>th</sup> Annual Conference on Global Economic Analysis*, Distinguished Plenary Speaker, Fort Collins CO, June 5<sup>th</sup> 2023.

“Workshop on Natural Capital Measurement and Modeling”, *European Commission Economic and Financial Affairs DG*, invited keynote talk, virtual via Zoom, November 30<sup>th</sup>, 2023.

“Synthesis of Evidence Yields High Social Cost of Carbon Due to Structural Model Variation and Uncertainties”, *Energy Policy Seminar*, Harvard Kennedy School, Cambridge MA, November 13<sup>th</sup> 2023.

“Synthesis of Evidence Yields High Social Cost of Carbon Due to Structural Model Variation and Uncertainties”, *RFF Lunchtime Seminar*, Resources for the Future, Washington DC, September 19<sup>th</sup> 2023.

“Synthesis of Evidence Yields High Social Cost of Carbon Due to Structural Model Variation and Uncertainties”, *Climate Change Economics Seminar*, Federal Reserve Board of Governors, Washington DC, September 18<sup>th</sup> 2023.

“Synthesis of Evidence Yields High Social Cost of Carbon Due to Structural Model Variation and Uncertainties”, *Agricultural and Resource Economics Department Seminar*, University of Maryland, College Park, MD, August 30<sup>th</sup> 2023.

“Risks of Climate Change for the U.S.”, *EPRI 26<sup>th</sup> Energy and Climate Research Seminar*, Washington, DC, May 14<sup>th</sup> 2023.

“Improving Understanding of the Effects of Climate Change on Human Wellbeing”, *NOAA-UCAR Global Change Summer Institute*, Steamboat Springs, CO, July 18<sup>th</sup> 2022.

“Determinants of Emissions Pathways in the Coupled Climate Social System,” *Climate, Climate Change and Society Convent*, University of Hamburg, Hamburg, Germany, June 23<sup>rd</sup> 2022.

“Understanding and Managing Risks of Climate Change for Human Welfare,” *Potsdam Institute for Climate Impact Research*, Potsdam, Germany, June 21<sup>st</sup> 2022.

“Distribution, Drivers of Variance, and Structural Uncertainty in the Social Cost of Carbon”, *Environment and Resources Economics Seminar*, University of California San Diego, May 16<sup>th</sup> 2022.

“Understanding and Managing Climate Risk”, *Department of Environmental Health and Engineering Wolman Seminar*, Johns Hopkins University, April 12<sup>th</sup> 2022.

“Persistent Effect of Temperature on GDP Identified from Low-Frequency Temperature Variability”, *Triangle Resource and Environmental Economics (TREE) Seminar*, North Carolina State University, April 7<sup>th</sup> 2022.

“Understanding and Managing Climate Risk”, *Rohatyn Center for Global Affairs Global Economics Program*, Middlebury College, March 28<sup>th</sup> 2022.

“Revising the Social Cost of Carbon: Key Economic Policy Priorities”, panel session, *American Economic Association*, Jan 9<sup>th</sup> 2022.

“Noah’s Ark in a Warming World: Climate Change, Biodiversity Loss, and Public Adaptation Costs in the United States,” *Department of Economics Seminar*, University of Connecticut, virtual via Zoom, November 15<sup>th</sup> 2021.

“Noah’s Ark in a Warming World: Climate Change, Biodiversity Loss, and Public Adaptation Costs in the United States,” *Department of Agricultural and Resource Economics Seminar*, Auburn University, virtual via Zoom, October 22<sup>nd</sup> 2021.

“Use and Non-Use Value of Nature and the Social Cost of Carbon”, *Climate and Biodiversity Symposium*, Paris School of Economics, virtual via Zoom, Oct 15<sup>th</sup> 2021.

“Importance of Damage Persistence for Climate Change Costs: New Evidence from Lower-Frequency Temperature Variability”, *Second NAVIGATE Expert Workshop*, virtual via Zoom, Sep 20<sup>th</sup> 2021.

“Use and Non-Use Value of Nature and the Social Cost of Carbon”, *Virtual Seminar on Climate Economics*, San Francisco Federal Reserve, virtual via Zoom, May 13<sup>th</sup>, 2021.

“Noah’s Ark on Rising Seas: Climate Change, Biodiversity Loss, and Public Adaptation Costs in the United States”, *Department of Agricultural and Resource Economics Seminar*, University of California Berkeley, virtual via Zoom, February 18, 2021.

“Use and Non-Use Value of Nature and the Social Cost of Carbon”, *University of California Environmental Economics Seminar*, University of California, virtual via Zoom, January 8, 2021.

“Use and Non-Use Value of Nature and the Social Cost of Carbon”, *Environment, Resource, and Energy Economics Seminar*, Center for Environmental Economics and Sustainability Policy, Arizona State University, virtual via Zoom, November 13, 2020.

“Use and Non-Use Value of Nature and the Social Cost of Carbon”, *Series of Webinars in Environmental and Energy Economics and Policy*, hosted by European Institute on Economics and the Environment, virtual via Zoom, October 14, 2020.

“The Fingerprint of Anthropogenic Warming on Global Agriculture”, *Department of Crop Sciences*, University of Illinois Urbana Champaign, virtual via Zoom, September 16, 2020.

“Adaptive Benefits of Agricultural Water Markets”, *Online Agriculture and Resource Economics Seminar (OARES)*, virtual via Zoom, May 13, 2020.

“Climate Damages in Integrated Assessment Models”, Association for Environmental and Resource Economists Summer Conference, Lake Tahoe CA, *Pre-Conference Workshop*, May 29<sup>th</sup>, 2019.

“Human Perception of Climate Change: Evidence from Twitter for Rapidly Shifting Baselines”, *Climate Change Speaker Series*, Baruch College, City University of New York, April 16<sup>th</sup> 2019.

“Estimating the Adaptive Benefits of Water Market Reform for California Irrigated Agriculture”, *Environmental Markets Lab*, University of California Santa Barbara, April 9<sup>th</sup> 2019.

“Rapidly Adjusting Perceptions of Temperature in a Changing Climate,” *Department of Agricultural Economics Seminar*, Purdue University, September 20<sup>th</sup> 2018.

“Characterizing and Detecting the Influence of Anthropogenic Warming on Global Crop Yields”, *Ocean and Climate Physics Seminar*, Lamont Doherty Earth Observatory, Columbia University, April 20<sup>th</sup> 2018.

“Documenting Adjustment to Environmental Change Using Twitter: Perceptions of Normal and Extreme Weather in a Changing Climate”, *Sustainable Development Seminar*, School of International and Public Affairs, Columbia University, April 16<sup>th</sup> 2018.

“Estimating the Effects of Climate Change on Global Crop Yields: Economic Consequences and Implications for Climate Policy”, *Department of Plant Sciences Seminar*, Penn State University, March 2<sup>nd</sup> 2018.

“Effects of Climate Change on Global Agriculture: Understanding the Past and Projecting the Future”, *Graduate Group in Ecology Seminar*, University of California Davis, February 8<sup>th</sup> 2018.

“Shifting Baselines, Climate Trends, and the Perception of Unusual Weather Events: Evidence from Twitter”, *Department of Economics Seminar*, University of Nevada Reno, September 21<sup>st</sup> 2017.

“Shifting Baselines, Climate Trends, and the Perception of Unusual Weather Events: Evidence from Twitter”, *Climate Change Economics Seminar*, University of California Berkeley, September 7<sup>th</sup> 2017.

“Improving the Empirical Basis of IAM Damage Functions”, *National Center for Environmental Economics*, Environmental Protection Agency, Washington DC, June 15<sup>th</sup> 2017.

“New Estimates of Climate Change Impacts on Agriculture: Implications for the Social Cost of Carbon” *Geography Graduate Group Seminar*, University of California Davis, May 10<sup>th</sup> 2017.

“Welfare Effects of Climate Change Impacts on Agriculture: Evidence from Over 1,000 Yield Studies”, *Agriculture and Resource Economics Department Seminar*, University of California Berkeley, April 27<sup>th</sup> 2016

“Learning, Risk Exposure and Extreme Events in a Changing Climate”, *Lawrence Berkeley National Laboratory*, March 7<sup>th</sup> 2016.

“Growth Rate Impacts and the Social Cost of Carbon”, *Center for Energy and Environmental Policy Research Fall Workshop*, Massachusetts Institute of Technology, November 19<sup>th</sup> 2015.

“Climate Change Impacts on Economic Growth: Empirical Evidence and Policy Implications”, *Energy and Resources Group Colloquium*, UC Berkeley, September 23<sup>rd</sup> 2015.

## TEACHING

### *Instructor*

<b>ESP 106: Introduction to Environmental Data Science</b>	<b>UC Davis, Winter 2021-2024</b>
<b>ENV 203: Environmental Policy Clinic</b>	<b>UC Davis, Spring 2019-2020</b>
<b>ESP 198: Topics in Environmental Justice Speaker Series</b>	<b>UC Davis, Spring 2018</b>
<b>ENV 200b / ECL 212b: Environmental Policy Evaluation</b>	<b>UC Davis, 2018-2022</b>
<b>ESP 168a: Methods of Environmental Policy Analysis</b>	<b>UC Davis, Fall 2016-2021, 2023-24</b>

## ACADEMIC SERVICE AND MEMBERSHIP

**Public Service:** Chapter Author, Chapter 18: Sector Interactions, Multiple Stressors, and Complex Systems, *Sixth National Climate Assessment*; Economic Advisory Council for Environmental Defense Fund.

**Scientific Service:** Global Trade Analysis Project, Scientific Council, 2024 – Current  
WorldTrans Horizons Project Europe, Scientific Advisory Board, 2024 - Current

**Expert Testimony:** California State Senate Judiciary Committee, April 8<sup>th</sup> 2025

**Editorial Board:** Environmental Research Climate

**Peer Reviews:** Science, Nature, Proceedings of the National Academy of Sciences, Quarterly Journal of Economics, Nature Climate Change, Review of Economics and Statistics, Journal of Political Economics Microeconomics, Journal of the Association of Environmental and Resource Economists, American Journal of Agricultural Economics, Journal of Environmental Economics and Management, Environmental Research Letters, Geophysical Research Letters, Climatic Change, Climatic Change Letters, Management Science, Energy Economics, Climate Change Economics, Global Change Biology, Ecological Economics, Agricultural and Forest Meteorology, Bulletin of the American Meteorological Society, Management Sciences, Oxford Bulletin of Economics and Statistics, Environmental Modeling and Assessment, American Anthropologist, Global Environmental Politics, International Environmental Politics, Journal of Global Economic Assessment.

2018 Editor's Citation for Excellence in Refereeing, *Geophysical Research Letters*

**Member:** American Geophysical Union, American Economic Association, American Environmental and Resource Economics Association

**Mentor:** American Environmental and Resource Economics Association Scholar's Program, 2021-2022

**Convenor:** Workshop on Climate Change and Natural Capital, Washington DC, March 2024

## PUBLIC OUTREACH

### Public Lectures

"Understanding Impacts of Climate Change to Inform Climate Change Mitigation and Adaptation", *Second Annual College of Agriculture and Environmental Sciences Symposium*, University of California Davis, May 5<sup>th</sup> 2025.

"Tackling the Climate Crisis", Panel Discussion at The Battery, San Francisco, April 17<sup>th</sup> 2024.

"Using Social Media Data to Improve Measurement and Monitoring of Coastal Flooding", *Climate Change AI Group*, via Zoom, May 21<sup>st</sup> 2021.

"Counting the Costs of Climate Change", *Tahoe Environmental Research Center*, Spring Lecture Series, via Zoom, March 25<sup>th</sup>, 2021.

"Climate Economics", *Effective Environmentalism Facebook Group*, online via Zoom, Aug 9<sup>th</sup> 2020.

“Climate Change Economics Town Hall Panel Discussion”, *American Association for the Advancement of Science*, Seattle WA, Feb 15<sup>th</sup> 2020.

“Climate Change Politics and Policy: From Global to Local”, *RiseUp SF*, San Francisco CA, October 13<sup>th</sup> 2019.

“Climate Policy Since the Paris Agreement”, *Berkeley Breakfast Club*, Berkeley, CA, January 18, 2019.

“Have we Made Progress Since Paris? An Update on Climate Policy”, *Democrats Abroad UK*, London England, July 11<sup>th</sup> 2018.

“Economics of Climate Change”, *Global Climate Change Summit*, University of Nevada Reno, Reno, NV, September 22<sup>nd</sup> 2017.

“New Economic Thinking About Climate Change and Why it Matters”, *The Most Urgent Untold Environmental Stories of Our Time*, Nevada City, CA, Jan 16<sup>th</sup> 2016.

“So You Think You Can Adapt? Heuristics and Biases in the Perception of Climate Risk” with Nik Sawe, *Connecting the Dots 2014: The Climate, Energy, Food and Water Nexus*, Stanford University, April 18<sup>th</sup>, 2014.

“Climate Change and Food Security”, *American Association for University Women*, Walnut Creek, CA, March 8<sup>th</sup>, 2014.

“Modern Climate Change: The Carbon Cycle and Climate vs. Weather,” *Alliance for Climate Education Teacher Workshop*, Sacramento, CA, Aug 5<sup>th</sup>, 2013.

“An Introduction to Modern Climate Change: What Has Happened? What Will Happen? How Do We Know?”, *Geoscape Bay Area Teacher Workshop*, Stanford, CA, July 16<sup>th</sup>, 2013.

### **Blog Posts and Op-Eds**

“Growing Costs of Natural Disasters are Stressing Property Insurance Markets: Fixes Require Addressing Underlying Drivers of Losses and Offer an Opportunity to Improve a Complex and Flawed System” [Briefing Book](#), July 29<sup>th</sup> 2024.

“How Much Hot Air? Hydrogen Tax Credits Highlight the Challenges of Climate Policy Without Economy-Wide Climate Regulation” [Briefing Book](#), Feb 19<sup>th</sup> 2024.

“How to Model Society’s Response to Climate Change”, [Carbon Brief](#), February 25<sup>th</sup> 2022.

“For Americans’ Health, a Dollar of Carbon Emissions Prevented is Worth a Ton of Cure”, [Scientific American](#), April 17<sup>th</sup> 2021. With Timothy G. Singer.

“Climate Change is the New Normal but we Don’t Seem to Notice”, [New Scientist](#), March 2<sup>nd</sup>, 2019.

“The Data is In. Frogs Don’t Boil. But we Might.” [Washington Post](#), February 25<sup>th</sup>, 2019. With Nick Obradovich.

“New Damage Functions for the Agricultural Sector” guest post on [G-FEED](#), December 4<sup>th</sup>, 2017

### **Media Coverage and Appearances (Selected)**

“Major Climate-GDP Study Under Review After Facing Challenge” [Agence France Presse](#), August 6, 2025.

“Could this Major California City see Mass “Abandonment”? New Risk Models Predict Just That” by Aseem Shukla, [San Francisco Chronicle](#), June 2, 2025.

“Estimating the Social Cost of Carbon” podcast interview on [PNAS Science Sessions](#), March 26, 2025.

“Climate Brief: Trump Orders Executive Branch to End Social Cost of Carbon Analysis. But the Tool is Still Critical for State and International Climate Policy” by Richard Blaustein, [CEB DailyNews](#), January 22, 2025.

“Families Dropped by Insurance Struggle After Losing Homes in California Fires” [CBS News: Eye on America](#), January 14<sup>th</sup> 2025.

“Meeting 1.5C Warming Limit Hinges on Governments More Than Technology, Study Says” by Ayesha Tandon, [Carbon Brief](#), August 16<sup>th</sup> 2024.

“How Much will Climate Change Drag Down the Economy?” by Dana Nuccitelli, [Yale Climate Connections](#), July 1<sup>st</sup>, 2024.

“Dilemma on Wall Street: Short-Term Gain or Climate Benefit?” by Lydia DePillis, [New York Times](#), June 20<sup>th</sup> 2024.

“New Study Calculates Climate Change’s Economic Bite will Hit About \$38 Trillion a Year by 2049” by Seth Borenstein, [Associated Press](#), 17<sup>th</sup> April 2024.

“Doing Environmental Economics at the White House” podcast interview on [Resources Radio](#), January 30<sup>th</sup> 2024.

“Should the Government Pay for Your Bad Climate Decisions” [The Daily](#), 24<sup>th</sup> March 2023.

“Hot Spots of Scarcity” by Hana Kisos, *MIT Technology Review*, Jan-Feb 2023.

“Better Climate Models Would Build in Political and Personal Decisions”, by Daniel Baer and Noah J. Gordon, [Washington Post](#), 28<sup>th</sup> August 2022.

“Climate Change Role Clear in Many Extreme Events, but Social Factors Also Key”, by Sofia Quaglia, [The Guardian](#), June 28<sup>th</sup> 2022.

“New Study Offers a Glimmer of Hope for Climate Solutions Success”, by Dana Nuccitelli, [Yale Climate Connections](#), May 24<sup>th</sup> 2022.

“Australia Voted for Climate Action. Here’s how Elections Impact Carbon Cuts”, by Eric Roston, [Bloomberg](#), May 23, 2022.

“Volts Podcast: Fran Moore on How to Represent Social Change in Climate Models”, podcast interview with David Roberts on [Volts Podcast](#), May 4, 2022

“Forecasting our Future: UC Davis Professor Models How Policy Decisions Affect the Severity of Climate Change”, [KCRA3 Sacramento](#), April 15 2022.

“Fitting Behavior and Politics into Climate Models,” podcast interview on [Resources Radio](#), March 22, 2022

“How Human Behavior Shapes Climate Predictions”, interview on [BBC Radio 4: Inside Science](#), February 24<sup>th</sup> 2022.

“How Public Opinion can Help Shape Climate Policies”, by Sara Kiley Watson, [Popular Science](#), February 22<sup>nd</sup> 2022.

“Messy Human Reactions to Climate Change Are a Good Thing for the Planet”, by Akshat Rathi, [Bloomberg Green](#), February 22<sup>nd</sup> 2022.

“How Hot will the Planet Get? Public Opinion is Key Factor, Finds Study”, by Sofia Quaglia, [The Guardian](#), February 16<sup>th</sup> 2022.

“Rainy Days Dampen Economic Growth”, by Jessica Duncombe, [EOS Science News](#), January 12<sup>th</sup> 2022.

“We’re Talking About the Costs of Climate Change All Wrong”, by Zahra Hirji, [BuzzFeed News](#), November 6<sup>th</sup> 2021.

“UN’s Climate Change Report Issued a ‘Code Red for Humanity’. Is there Anything we Can Do to Fix It?” by Jordan Mendoza, [USA Today](#), August 10<sup>th</sup> 2021.

“Episode 6: Fran Moore”, podcast episode with Adam Sobel, [Deep Convection](#), April 13<sup>th</sup> 2021.

“Your Weather Forecast Update: Warmer Climate Will be the New ‘Normal’” by Jennifer Ludden, [NPR](#), April 7 2021.

“The Biden Administration Increases the Social Cost of Carbon”, by Ramin Skibba, [Undark Magazine](#), March 3, 2021.

“Study: Accounting for Value of Nature Reinforces Paris Climate Targets”, by Dana Nuccitelli, [Yale Climate Connections](#), Jan 26<sup>th</sup> 2021.

“U.S. is Formally out of the Paris Climate Agreement”, by Andy Uhler, [NPR Marketplace Morning Report](#), November 4, 2020

“The US is Leaving the Paris Agreement: How that will Affect the Global Mission to Affect Climate Change”, by Julia Jacobo, [ABC News](#), November 2<sup>nd</sup> 2020.

“Normalizing Extreme Weather”, radio interview with Hilary Harper, [Life Matters](#), Australia Broadcasting Corporation Radio National, Oct 23<sup>rd</sup> 2020.

“How California Became Ground Zero for Climate Disasters” by Christopher Flavelle, [New York Times](#), Sep 20<sup>th</sup> 2020.

“Why Aren’t we Heeding Mother Nature’s Warnings?” by Clara Ferreira Marques, [Bloomberg Opinion](#), Sep 19<sup>th</sup> 2020

“The Scariest Thing About Global Warming (and COVID-19)” by David Roberts, [Vox](#), July 7<sup>th</sup> 2020.

“For the Birds”, podcast episode with Jill Leopre, [The Last Archive](#), June 2020.

“Complaining About Climate Change on Twitter Might Actually Help Scientists”, by Tim McDonnell and Daniel Wolfe, [Quartz](#), 6<sup>th</sup> February 2020.

“In Miami, Tweets About Flooded Streets Come Before Actual Floods, a New Study Found”, by Alex Harris, [Miami Herald](#), 4<sup>th</sup> February 2020.

“The Hotter the Planet Grows, the Less Children are Learning”, by Nsikan Akpan, [PBS Newshour](#), 6<sup>th</sup> Sep 2019.

“Why Doesn’t it Feel Dangerous?” podcast interview with Phoebe Lewis, [The Bad Environmentalist](#), 3<sup>rd</sup> July 2019.

“FLI Podcast: The Unexpected Side Effects of Climate Change”, podcast interview with Ariel Conn, [Future of Life Institute](#), April 30, 2019.

“From Ruined Bridges to Dirty Air, EPA Scientists Price Out the Cost of Climate Change”, by Julia Rosen, [LA Times](#), 8<sup>th</sup> April, 2019.

“Why Americans Might Never Notice Climate Change’s Hotter Weather”, by Robinson Meyer, [The Atlantic](#), 1<sup>st</sup> March, 2019.

“Extreme Weather Can Feel ‘Normal’ After Just a Few Years, Study Finds”, by Kendra Pierre-Louis, [New York Times](#), February 26, 2019.

“Your Weather Tweets are Showing Your Climate Amnesia”, by Adam Rogers, [Wired](#), February 26, 2019.

“Humans are Frogs in Hot Water of Climate Change, Research Says”, by Jen Christensen, [CNN](#), February 25, 2019.

“Resources Radio: Agriculture and Climate Change”, podcast interview with Daniel Raimi, [Resources for the Future](#), December 11<sup>th</sup>, 2018.

“La Obligada Transición Ecológica”, by Esther Paniagua, *Ethic Magazine*, December 5<sup>th</sup>, 2018.

American Public Media, [Marketplace](#), November 26<sup>th</sup> 2018

“Ask the Experts: Does Rising CO<sub>2</sub> Benefit Plants?” by Annie Sneed, [Scientific American](#), January 23<sup>rd</sup>, 2018

“Should the Social Cost of Carbon be a Lot Higher?” by Chelsea Harvey, [E&E News](#), November 22<sup>nd</sup>, 2017

“Trump Team’s Wonky CO<sub>2</sub> Calculation is a Big Deal” by Chelsea Harvey, [E&E News](#), October 25<sup>th</sup>, 2017

“UNR Forum Looks at Economic Impacts of Climate Change” by Noah Glick, [KUNR Public Broadcasting](#), September 27<sup>th</sup>, 2017.

“With Climate Change Upon Us, Where is the Safest Place in California to Live?” by Shawn Hubler, [Sacramento Bee](#), September 7<sup>th</sup>, 2017.

“As Climate Changes, Southern States Will Suffer More Than Others,” by Brad Plumer and Nadja Popovich, [New York Times](#), June 29<sup>th</sup>, 2017.

“Trump Signs Executive Order Rolling Back Regulation on Carbon Emissions” by Nathan Rott, [NPR All Things Considered](#), March 28<sup>th</sup>, 2017.

“Report Calls for Revised Method to Chart Cost of Climate Change” by Randy Showstack, [EOS](#), January 17<sup>th</sup>, 2017.

“The Coming Battle Between Economists and the Trump Team Over the True Cost of Climate Change” by Chelsea Harvey, [Washington Post](#), December 22<sup>nd</sup>, 2016.

“How Climate Rules Might Fade Away” by Matthew Philips, [Bloomberg Businessweek](#), December 15<sup>th</sup>, 2016.

“The ‘Social Cost of Carbon’ is the Most Historic Climate Change Decision Yet” by Jay Michaelson, [The Daily Beast](#), August 30<sup>th</sup>, 2016.

“Updated Climate Change Costs Make Coal-Fired Power Less Attractive” by Elizabeth Dunbar, [Minnesota Public Radio](#), April 19<sup>th</sup>, 2016.

“Social Cost of Carbon in Spotlight” by Jeff Tollefson, [Nature](#), Nov 13<sup>th</sup>, 2015.

“Climate Deadline” *Radio Ecoshock*, Feb 25<sup>th</sup>, 2015.

“Climate Change Could Impact the Poor Much More Than Previously Thought” by Dana Nuccitelli, [The Guardian](#), Jan 26<sup>th</sup> 2015.

“How Much is Climate Change Going to Cost Us?” by David Robers, [grist.org](#), Jan 15<sup>th</sup>, 2015.

“The Dangerous Underestimation of Climate Change’s Cost” by Nicholas St Fleur, [The Atlantic](#), Jan 14<sup>th</sup>, 2015.

“Researchers Say the Social Cost of Carbon Will be 6 Times the Obama Administration Estimate” by Evan Lehmann, [Climate Wire](#), Jan 13<sup>th</sup>, 2015.

## WORKSHOPS AND SUMMER SCHOOLS

European Association of Environmental and Resource Economists, *European Summer School on the Economics of Adaptation to Climate Change*, Venice, Italy. July 6<sup>th</sup> – 12<sup>th</sup>, 2014.

Columbia University, *Fourth Interdisciplinary PhD Workshop in Sustainable Development*, New York, NY. April 25<sup>th</sup>-26<sup>th</sup>, 2014.

Santa Fe Institute, *Complex Systems Summer School*, Santa Fe, NM. June 8<sup>th</sup> – July 1<sup>st</sup>, 2011.

## **OTHER WORK EXPERIENCE**

### *Teaching Assistant*

#### **ENVRES 300: Economics for Environmental Management**

Teaching Assistant, Prof. Charlie Kolstad

**Stanford University, Fall 2014**

#### **EESS 184/284: Climate and Agriculture**

Teaching Assistant, Prof. David Lobell

**Stanford University, Spring 2012**

#### **Law 428: Conservation in the Face of Climate Change**

Teaching Assistant, Prof. Buzz Thompson

**Stanford University, Spring 2011**

#### **F&ES 851a,b: Environmental Diplomacy Practicum**

Teaching Assistant, Prof. Roy Lee

**Yale School of Forestry, Fall 2009-Spring 2010**

#### **Research Assistant, Yale Center for Environmental Law and Policy**

September 2008 – August 2009.

**New Haven, CT**

#### **International Climate Policy Intern, Center for Clean Air Policy**

May 2009 – August 2009.

**Washington, DC**

#### **Staff Researcher, Earth Policy Institute**

May 2007 – June 2008.

**Washington, DC**

#### **Research Associate, Climate Institute**

January – May 2007.

**Washington, DC**

#### **Research Assistant, ICF International**

July 2006 – January 2007.

**Fairfax, VA**