

Sandy Sum

PH.D. CANDIDATE · ECONOMICS & ENVIRONMENTAL SCIENCE

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Education

UC Santa Barbara (UCSB)

PH.D. ECONOMICS & ENVIRONMENTAL SCIENCE

2019 - 2025 (expected)

Committee: Tamma Carleton (Chair), Chris Costello, Olivier Deschênes, Kyle Meng

Natural science advisor: Ashley Larsen

UC Santa Barbara

M.A., ECONOMICS

2015 - 2016

National University of Singapore

B.A., ECONOMICS

2009 - 2013

Research Positions

- 2024 **Graduate Student Researcher**, Green Water Economics, UCSB [Environmental Markets Lab](#) (emLab)
PI: Tamma Carleton & Ram Fishman
- 2023-2024 **Graduate Associate**, UCSB Broom Center for Demography
- 2020-2021 **Graduate Student Researcher**, California EPA Carbon Neutrality Study, UCSB emLab
- 2016-2019 **Research Analyst**, Quantifying Sustainable Development, UC Berkeley [Global Policy Lab](#)
PI: Solomon Hsiang
- 2015-2016 **Ecological Data Intern**, National Center for Ecological Analysis and Synthesis

Publications

- Sum, S.** “[Impact of Droughts on Served Drinking Water Disparities in California, 2007–2020](#)” *Am. J. Public Health*, August 2024.
- Deshmukh, R., Weber, P., Deschenes, O., Hernandez-Cortes, D., Kordell, T., Mallow, C., Magin, T., Meng, M., **Sum, S.**, Thivierge, V., Uppal, A., Lea, D., & Meng, K. “[Well setbacks limit California’s oil supply with larger health benefits and employment losses than excise and carbon taxes](#)” *Nature Energy*. Policy Brief, June 2023.
- Deshmukh, R., Weber, P., Deschenes, O., Hernandez-Cortes, D., Kordell, T., Mallow, C., Magin, T., Meng, M., **Sum, S.**, Thivierge, V., Uppal, A. & Meng, K. “[Equitable low-carbon transition pathways for California’s oil extraction](#)” *Nature Energy*, May 2023.

Working Papers

- Sum, S.** “[Trading Water and Work: Labor and Production Shifts under California’s Groundwater Markets](#)” (Job market paper)
- Proctor, J., Carleton, T., and **Sum, S.** “[Parameter recovery with remotely sensed variables](#)”
Revisions requested at *Journal of the Association of Environmental and Resource Economists*
(equal authorship; order randomized)
- Sum, S.**, Carleton, T., Fishman, R., et al. “The Unequal Economic Risks and Opportunities of Global Atmospheric Moisture Recycling” (In prep)

Selected Works in Progress

- “Parched Lands, Polluted Air: Respiratory Health Impacts of Agricultural Water Savings” (with Anna Boser)
- “Risk-Return Tradeoffs of Small Farms under Increased Climate Variability” (with Olivier Deschênes and Bryan Leonard)
- “Tracking Agricultural Return Flows: Implications for Satellite-Based Water Monitoring” (with Anna Boser)

Policy Reports

- “[The Economics of Water: Valuing the Hydrological Cycle as a Global Common Good](#)”
Commissioned report for [Global Commission on the Economics of Water](#), 2024
- “[Enhancing equity while eliminating emissions in California’s supply of transportation fuels](#)”
Commissioned report for California EPA with emLab, 2021

Awards, Fellowships, & Grants

- 2024 **Graduate Summer Research Fellowship**, Property & Environmental Research Center ([PERC](#))
- 2023 **Bren Summer Research Fellowship**, UCSB Bren School
- 2022 **California Coastal Regional Equity Research Award***, UCSB Blum Center
H. William Kuni Research Award*, (with Anna Boser) UCSB Bren School
Berkeley Summer School in Environmental and Energy Economics Diversity Fellow, UC Berkeley & Sloan Foundation
Bren Summer Research Fellowship, UCSB Bren School
Travel Grant (x3), UCSB Bren School & Graduate Student Association
- 2021 **Graduate Summer Fellowship Grant***, California Policy Lab
Bren PhD student grant for equity research, UCSB Bren School

* indicates grant is over \$10K

Presentations

- 2024 **Environmental & Resource Economics Workshop**, CU Boulder
Water Markets for Conservation Workshop, PERC
Summer Seminar Series, PERC
Summer Conference, Association of Environmental and Resource Economists (AERE)
Interdisciplinary PhD Workshop on Sustainable Development, Columbia University
- 2023 **Engaging The World panel on Health Equity**, Chapman University
The Bren School PhD Research Symposium, UCSB Bren School
The Occasional Workshop in Environmental and Resource Economics, UCSB
- 2022 **The Workshop in Environmental Economics and Data Science**, University of Oregon
Social Cost of Water Pollution Workshop, Cornell Atkinson Center for Sustainability & US EPA
Berkeley/Sloan Summer School in Environmental and Energy Economics, UC Berkeley
Annual Environmental Justice Symposium, UCSB Bren School
Interdisciplinary PhD Workshop on Sustainable Development, Columbia University
- 2021 **The Bren School PhD Research Symposium**, UCSB Bren School

Teaching Experience

Teaching Assistant, University of California, Santa Barbara

- Spring 2025 **Master's Capstone Project Course II (EDS 411B)**, Prof. Carmen Galaz García
- Winter 2024 **Master's Capstone Project Course I (EDS 411A)**, Prof. Carmen Galaz García
- Spring 2022 & 2023 **Economics of Environmental Management (ESM 204)**, Profs. Christopher Costello and Tamma Carleton
- Fall 2022 & 2023 **Statistics for Environmental Data Science (EDS 222)**, Prof. Tamma Carleton
- Winter 2021 **Environmental Economics (ECON 115)**, Prof. Kyle Meng

Student Q&A respondent

- November 2023 **BREAD-IGC Virtual PhD Course on Environmental Economics**, Prof. Tamma Carleton

Professional Activities

- 2023 **Bren School Masters in Environmental Data Science Lecturer Search Committee**, Student Representative
- 2022-present **Economics and Environmental Science Student Group**, Student Representative
- 2021-2022 **The Bren School PhD Research Symposium**, Committee Member
- 2024 **AERE Summer Conference, Agricultural Water Management**, Reviewer