

Anna Boser

Bren School of Environmental Science and Management

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University of California, Santa Barbara

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Santa Barbara, California

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EDUCATION

University of California, Santa Barbara, California

Ph.D., Environmental Science and Management 2025 (expected)

Committee: Kelly Caylor (co-chair), Ashley Larsen (co-chair), and Tamma Carleton

University of California, Berkeley, California

B.A. with Highest Distinction, Statistics 2020

AWARDS, FELLOWSHIPS, & HONORS

UCSB Coastal Fund Major Grant 2023

UCSB Graduate Division Research Accelerator Award 2022

Remote Sensing Technical Committee Best F22 AGU Presentation - Student Award 2022

AGU Ecohydrology Tiny Grant 2022

Kuni Research Fellowship 2022

University Medal, UC Berkeley (most distinguished graduating senior) 2020

National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) 2020

Eugene Cota-Robles Fellowship, UC Santa Barbara 2020

Undergraduate Research Apprenticeship Program Summer Fellowship, UC Berkeley 2018

RESEARCH INTERESTS

Ecohydrology, food systems, water scarcity, machine learning, remote sensing, econometrics, planetary health.

PUBLICATIONS

RESEARCH MANUSCRIPTS

1. **Boser AS**. “Accounting for spatio-temporal structure when validating environmental machine learning models.” *Environmental Modelling & Software*. (In review).
2. **Boser AS**, Caylor K, Larsen A, Pascolini-Campbell M, Reager JT, Carleton T. “Field scale crop water consumption estimates reveal potential water savings in California agriculture.” *Nature Sustainability*. (In review).
3. **Boser AS**, Sousa D, Larsen A, MacDonald A. “Micro-climate to macro-risk: mapping fine scale differences in mosquito-borne disease risk using remote sensing.” *Environmental Research Letters*. (2021).
4. Head JR, ... **Boser AS**..., R Justin. “The effect of school closures and reopening strategies on COVID-19 infection dynamics in the San Francisco Bay Area: a cross-sectional survey and modeling analysis.” *MedRxiv* (2020).
5. Mosnier E, Epelboin L, Guiraud N, Huber F, Adriouch L, Guarmit B, **Boser AS**, . . . Nacher, M. “Spatial dynamics and epidemiology for AIDS in remote areas in French Guiana.” *AIDS Care*,1-7 (2018).

6. **Boser AS**, Bidaud B, Maues S, Guiraud N, Mendes AM, Lacapere F Rhodes S, Huber F, Adriouch L, Nacher M, Mosnier E. “Addressing HIV on the French Guianese-Brazilian border: No choice but collaboration!” AIDS 32, 539–542 (2018).

CONFERENCE PRESENTATIONS AND POSTERS

1. **Boser AS**, Carleton T, Larsen A, Pascolini-Campbell M, Reager JT, Caylor K. American Geophysical Union. Estimating agricultural water consumption and irrigation efficiency in California using machine learning and remote sensing. December 12-16 2022. Chicago, Illinois.
2. **Boser AS**, Stofer R, Caylor K. American Geophysical Union. Super-resolution of Land Surface Temperature Using Deep Learning. December 12-16 2022. Chicago, Illinois.
3. Liddell T, **Boser AS**, Orofino S, Mangin T, Carleton T. American Geophysical Union. Stag: An R Package for Spatiotemporal Aggregation of ERA5 Climate Data. December 12-16 2022. Chicago, Illinois.
4. **Boser AS**, Carleton T, Larsen A, Pascolini-Campbell M, Reager JT, Caylor K. TWEEDS. Machine learning and remote sensing elucidate an 80% water savings potential in California agriculture. October 7-8 2022. Eugene, Oregon.
5. **Boser AS**, Pascolini-Campbell M, Reager JT. American Geophysical Union. ECOSTRESS detects a 20% increase in evapotranspiration over agricultural lands in California. December 2021. New Orleans, Louisiana.
6. **Boser AS**, Sousa D, Larsen A, MacDonald A. Mosquito-borne disease risk mapping at high spatial and temporal resolutions using remotely sensed land surface temperature measurements. Ecological Society of America. August 2021. Long Beach, California.
7. **Boser AS**, White C, Al-Hamdan M. Using Statistical and Machine Learning Models with Remotely Sensed Data to Estimate PM2.5 in the San Francisco Bay Area. American Geophysical Union. December 1-17 2020. San Francisco, California.
8. **Boser AS**, Evans S, Potts MD. The Effect of Prescribed Burn Smoke on Emergency Department Visits and Hospitalizations in California. 3rd International Smoke Symposium. April 20-24 2020. Davis, California.
9. **Boser AS**, Bidaud B, Adriouch L, Epelboin L, Guiraud N, Gaillet M, Carrera C, Brousse P, Mosnier E. VIH sur la frontière franco-brésilienne: mobilité et précarité sur une région en épidémie généralisée. 18th National Congress of the French Society for the Fight Against AIDS (SFLS). 2017 Oct 19-20. Nice, France.

TEACHING AND MENTORSHIP EXPERIENCE

University of California, Santa Barbara

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| Mentor, UCSB EUREKA summer undergraduate internship. Mentee: Jason Perez | 2023 |
| Mentor, Environmental Diversity Leaders and Mentorship Program. Mentee: Yang Hu | 2023 |
| Mentor, WAVES lab undergraduate research. Mentees: Ryan Stofer, Mitali Gaidhani | 2022-2023 |
| Mentor, emLab summer undergraduate internship. Mentee: Tyler Liddell | 2022 |
| Tutor, EDS 217: Principles of Environmental Data Science | 2022 |
| Mentor, Data Science Capstone Project | 2022 |
| Teaching Assistant, ESM 203: Earth Systems Science | 2021 |

OTHER ACADEMIC POSITIONS AND EXPERIENCE

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| CV4Ecology Summer Program participant at California Institute of Technology | 2022 |
| Intern, NASA Jet Propulsion Laboratory. Advisors: JT Reager and Madeleine Pascolini-Campbell | 2021 |
| Intern, NASA Marshall Space Flight Center. Advisor: Mohammed Al-Hamdan | 2020 |

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| Research Assistant, UC Berkeley College of Natural Resources. Advisor: Matthew Potts | 2019-2020 |
| Research Assistant, UC Berkeley School of Public Health. Advisor: Daniel Perlman | 2017-2019 |

PROFESSIONAL SERVICE & MEMBERSHIP

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| Outreach Co-chair, Women in Science and Engineering, UCSB | 2023-Present |
| Member, American Geophysical Union | 2020-Present |
| Member, Ecological Society of America | 2020-2021 |
| Reviewer, World Development | 2022 |
| Bren Anti-Racism Caucus, UCSB | 2021-Present |
| Bren Seminar Committee, UCSB | 2021-2022 |
| Bren PhD Symposium Committee, UCSB | 2021 |

MEDIA COVERAGE & OUTREACH

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| Invited talk: GS3 Seminar Series, Center for Scientific Computing, UCSB | July 20, 2022 |
| Invited talks: NASA ECOSTRESS Annual Team Meeting | April 12-14, 2022 |
| <i>Micro-climate to macro-risk: Mapping fine scale differences in mosquito-borne disease risk</i> | |
| <i>Agriculture's effects on evapotranspiration and runoff generation in California</i> | |
| USGS Earth Resources Observation and Science (EROS) Center "Eyes on Earth" Podcast | June 27, 2022 |
| <i>Episode 76 – ECOSTRESS and Disease Risk</i> | |
| TEDx Youth Talk: <i>How to Save the Earth from Space</i> | February 29, 2022 |