

# Emma Krasovich Southworth, MPH

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## EDUCATION

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### Stanford University, Doerr School of Sustainability

*In progress*

Ph.D. in Environment and Resources (E-IPER)

*Advanced to candidacy in June 2024*

**Co-advisors:** Dr. Erin Mordecai, Dr. Marshall Burke

**Committee:** Stephen Luby (chair), Scott Fendorf, Solomon Hsiang

### Columbia University, Mailman School of Public Health

2015 – 2017

M.P.H. in Environmental Health Sciences; Global Health certificate

**Thesis:** Downstream Impacts from Upstream Actions: The Toll of Food Production on Water Quality and Health Outcomes in Sub-Saharan Africa

### Colgate University

2011 – 2015

B.A. in Behavioral Neuroscience, Biology minor

**Thesis:** Behavioral Effects of Chronic Low-Dose Exposure to the Environmental Water Pollutant Venlafaxine (Effexor) on the crayfish species *Orconectus rusticus*

## RESEARCH INTERESTS

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planetary health; natural disasters; global environmental change; environmental pollution and toxic exposures; disease ecology; environmental data science; causal inference

## PEER REVIEWED PUBLICATIONS

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\*Indicates corresponding author

†Indicates that authors contributed equally

1. **Krasovich Southworth, E.\***, Qiu, M., Gould, C.F., Kawano, A., Wen, J., Heft-Neal, S., Kilpatrick Voss, K., Lopez, A., Fendorf, S., Burney, B., and Burke, M. “The Influence of Wildfire Smoke on Ambient PM<sub>2.5</sub> Chemical Species Concentrations in the Contiguous US.” *Environmental Science & Technology* (2025). ([Link](#))
2. **Krasovich, E.\***, Lau, P., Tseng, J., Longmate, J., Bell, K., Hsiang, S. “Harmonized nitrogen and phosphorous concentrations in the Mississippi/Atchafalaya River Basin from 1980 to 2018.” *Scientific Data* 9, no. 1 (2022): 1-17. ([Link](#))
3. Hsiang, S.†\*, Allen, D.†, Annan-Phan, S.†, Bell, K.†, Bolliger, I.†, Chong, T.†, Druckenmiller, H.†, Huang, L.Y.†, Hultgren, A.†, **Krasovich, E.†** and Lau, P.†, 2020. “The effect of large-scale anti-contagion policies on the COVID-19 pandemic.” *Nature* 584, no. 7820 (2020): 262-267. ([Link](#))

## WORKS IN PROGRESS

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1. Nonlinear effects of tropical cyclones on dengue transmission across 25 countries. **Krasovich Southworth, E.**, Singleton, A., Jing, R., Childs, M., Lyberger, K., Bendavid, E., Burke, M., Mordecai, E.
2. Honeyman, A., Qiu, M., Nguyen, N., Namayandeh, A., **Krasovich Southworth, E.**, Burke, M., Fendorf, S. Invisible and Far-Reaching Threat of Metal Toxins from Wildfire Smoke. *In review.*
3. Glidden, C., Krasovich Southworth, E., Shragai, T., Rojas-Araya, D., Troyo, A., Chaves-González, L. E., Marin, R., Vargas, I., Mordecai, E. Rural dengue dynamics: the interplay of climate, built environment, and agriculture in Costa Rica. *In prep.*
4. The health impacts of monoculture expansion in Costa Rica. **Krasovich Southworth, E.**, Glidden, C., Vargas, I., Troyo Rodriguez, A., Rojas Araya, D., and Mordecai, E.
5. Who is responsible for damaging the commons? Identifying nonpoint source polluters in national-scale river networks. Lau, P., Longmate, J., **Krasovich Southworth, E.**, Tseng, J., Bell, K., Sum, S., and Hsiang, S.
6. The efficacy of vector control intervention on dengue burden in Guatemala. Lamm-Perez, J., **Krasovich Southworth, E.**, Glidden, C., and Mordecai, E.

## CONFERENCES & OTHER PRESENTATIONS

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*\* indicates poster presentation; otherwise talk was given*

- 2025** Stanford Data Science Conference\*; TWEEDS; Stanford Sustainability Data Science Conference; University of Costa Rica Vector Symposium
- 2024** Big Earth Hackathon: Wildland Fire Challenge\*; Stanford Data Science Conference\*; NASA AMES Biospheric Sciences; Ecology and Evolution of Infectious Diseases Conference\*
- 2023** Stanford Data Science 4 Sustainability Conference; Exploring Intersections in Health, Sustainability, and Data Science Conference; AGU

## MEDIA COVERAGE OF RESEARCH

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Ordner, Niamh. "L.A.'s Fires Reshaped the City. They May Also Have Triggered Changes in Our Bodies." **Los Angeles Times**, August 7, 2025. [Link](#). *Featured for work on wildfire health impacts.*

## GRANTS, FELLOWSHIPS, HONORS & AWARDS

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**NSF Graduate Research Fellowship Program** (3-year tuition stipend) 2022 – 2027

The Graduate Research Fellowship Program (GRFP) is a National Science Foundation-wide program that provides Fellowships to individuals selected early in their graduate careers based on their demonstrated potential for significant research achievements in science, technology, engineering or mathematics or in STEM education.

**Stanford Data Science Scholars** (2-year tuition stipend at 50%) 2023-2025

Data Science Scholars are a select group of interdisciplinary Stanford PhD students who are contributing to data-intensive science, whether through discoveries using data science or through computational, statistical or mathematical data science techniques.

**Enhancing Diversity in Graduate Education (EDGE) Fellowship** (\$12,000) 2022 – 2025

EDGE Doctoral Fellowships are awarded to incoming doctoral students, who are nominated by their degree program after they are admitted.

**E-IPER Summer Research Grant** (\$6,500) 2023, 2025

**Casper Mills Scholarship** (\$12,000) 2022 – 2026

**Jewish Vocational Services Scholarship** (\$19,000) 2015 – 2017, 2022 – 2026

**2nd Place Poster, Big Earth Hackathon** (\$75) 2024

**1st Place, Data for Sustainability Conference Best Student Presentation Award** (\$750) 2023

**Dean's Award, Colgate University** 2014 – 2015

**Beta Beta Beta Biological Honor Society** 2013 – 2015

## TEACHING EXPERIENCE

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**Stanford University**, Disease Ecology 2024

**Stanford University**, Global Change and Emerging Infectious Diseases 2023

**Columbia University**, Risk Assessment & Environmental Chemistry 2017

**Columbia University**, Environmental Determinants of Health 2017

**Hospital Universitario de Canarias (Tenerife)**, ESL Instructor 2014

**Colgate University**, General Chemistry Laboratory 2012 – 2013

## OTHER RESEARCH EXPERIENCE

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**Global Policy Lab, Goldman School of Public Policy, UC Berkeley** 2019 – 2022

Research Analyst, Quantitative Sustainable Development Project

**Pure Earth, formerly Blacksmith Institute** 2017

Environmental Health Research and Programs Intern

**Project Concern International (MPH Practicum)** 2016

Water, Sanitation and Hygiene (WASH) Fellow, Njira Project, USAID

**Agriculture & Food Security Center, Earth Institute, Columbia University** 2016  
Agriculture and Food Security Research Intern

**Dept. of Environmental Health Sciences, Columbia University** 2015 – 2016  
Graduate Research Assistant under Dr. Norman Kleiman

## REFEREE SERVICE

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Science of The Total Environment; Environmental Pollution; Journal of Epidemiology and Population Health

## UNIVERSITY SERVICE & EXTRACURRICULAR INVOLVEMENT

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**Co-founder of GradSEEDs Seminar**, Stanford University 2025-present  
**Mentor, Stanford King Center Undergraduate Fellow**, Stanford University 2024 – present  
- Mentees: Julieta Lamm-Perez  
**E-IPER Social Committee - Student Leadership Council**, Stanford University 2024 – 2025  
**Mentor, Biology Summer Undergraduate Research Program**, Stanford University 2024  
- Mentees: Aspen Singh; Izzy Riley  
**E-IPER Admissions Committee - Student Leadership Council**, Stanford University 2023 – 2024  
**Co-founder of Project: Planet Speaker Series**, Stanford University 2022 – 2024  
**LeadX Fellow**, Stanford University 2023  
**E-IPER Alumni Liaison - Student Leadership Council**, Stanford University 2022 – 2024  
**UC Berkeley Equity Training Series**, Participant 2021 – 2022  
**aeroTRIV ([aerotriv.com](http://aerotriv.com))**, Co-Founder & Co-host 2020 – present  
**GirLAB**, Running team captain 2020 – 2024  
**Strawberry Canyon Track Club**, Board Member; DEI Committee; Editor 2019 – 2020  
**EcoWomen**; Member 2018 – 2020

## REFERENCES

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### **Dr. Marshall Burke**

Associate Professor, Doerr School of Sustainability  
PI, Environmental Change and Human Outcomes Lab  
Stanford University  
[mburke@stanford.edu](mailto:mburke@stanford.edu)

### **Dr. Erin Mordecai**

Associate Professor, Biology  
Senior Fellow, Woods Institute for the Environment  
PI, Mordecai Lab  
Stanford University  
[emordeca@stanford.edu](mailto:emordeca@stanford.edu)

**Dr. Solomon Hsiang**

Professor, Doerr School of Sustainability

PI, Global Policy Laboratory

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**Dr. Stephen Luby**

Professor, Medicine - Infectious Diseases

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