# Emma Krasovich Southworth, MPH

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## EDUCATION

**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

**University of California, Berkeley** 2019 – 2022

Continuing education coursework

**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

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

## PEER REVIEWED PUBLICATIONS

[*] *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 $PM_{2.5}$ 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)

## SELECTED WORKS IN PROGRESS

1. The impact of tropical cyclones on global dengue burden. **Krasovich Southworth, E.,** Singleton, A., Jing, R., Childs, M., Lyberger, K., Bendavid, E., Burke, M., Mordecai, E.

2. 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.

3. 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.

4. The socio-environmental factors driving dengue in Guatemala. Lamm-Perez, J., **Krasovich Southworth, E.,** Glidden, C., and Mordecai, E.

## CONFERENCES & OTHER PRESENTATIONS

** indicates poster presentation; otherwise talk was given*

**2025** Stanford Data Science Conference*; TWEEDS; 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

## GRANTS, FELLOWSHIPS, HONORS & AWARDS

**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

**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

## SELECTED PROFESSIONAL EXPERIENCE

**Global Policy Lab, Goldman School of Public Policy, UC Berkeley** 2019 – 2022
Research Analyst, Quantitative Sustainable Development Project

**Hazen and Sawyer** 2018 – 2019
Environmental Scientist/Proposal Coordinator

**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

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

## UNIVERSITY SERVICE & EXTRACURRICULAR INVOLVEMENT

**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
**Project: Planet Speaker Series,** Stanford University (co-founder) 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),** 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

## TECHNICAL SKILLS

R, Google Earth Engine, Python, Matlab, Git, QGIS/ArcGIS, LaTeX

## REFERENCES

**Dr. Marshall Burke**
Associate Professor, Doerr School of Sustainability
PI, Environmental Change and Human Outcomes Lab
Stanford University
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**Dr. Erin Mordecai**
Associate Professor, Biology
Senior Fellow, Woods Institute for the Environment
PI, Mordecai Lab
Stanford University
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**Dr. Solomon Hsiang**
Professor, Doerr School of Sustainability
PI, Global Policy Laboratory
Stanford University
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**Dr. Jeffrey Shaman**
Professor of Environmental Health Sciences;
Director of the Climate and Health Program,
Mailman School of Public Health
Columbia University Medical Center
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**Dr. Stephen Luby**
Professor, Medicine - Infectious Diseases
Stanford University
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**Dr. Peiley Lau**
Environmental Economist
National Center for Environmental Economics
U.S. Environmental Protection Agency
lau.peiley@epa.gov