Ellen Considine

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Skills

- Synthesis of quantitative and qualitative information → idea generation, study design
    - Expertise in environmental and social applications of data science; foci include air pollution / extreme heat / climate change-related exposures and public health / social justice
- Statistical analysis (technical toolbox includes R, Python; GitHub, AWS, Linux; ArcGIS, QGIS)
    - Advanced spatial / longitudinal analysis methods, causal inference, Bayesian methods
    - Machine learning (including reinforcement learning) with large observational data sets
    - Processing diverse environmental and social data, including remotely sensed imagery
- Written and oral communication / presentation, formal and informal
- Interdisciplinary collaboration and leadership

Education

Ph.D. in Biostatistics | 5th Year (class of 2025) | Harvard T.H. Chan School of Public Health (HSPH)

- National Science Foundation Graduate Research Fellow (2020-2025)
- M.A. in Biostatistics, May 2022
- Thesis (working title): Advancing the use of statistical / data science methods in environmental health policy design

B.S. in Applied Mathematics | 2020 | University of Colorado (CU) Boulder

- Outstanding Graduate of the College of Engineering & Applied Science, May 2020
- Minors: Statistics, Economics, Geography
- Emphases: Global Public Health, Remote Sensing & GIS, International Development

Other Awards & Recognition

- Winner in the Joint Statistical Meetings (JSM) Student Paper Competition | American Statistical Association, Section on Statistical Learning and Data Science (SLDS) Applied Track| Jan. 2024
- Astronaut Scholar | Astronaut Scholarship Foundation | May 2019
- Goldwater Scholar | Barry Goldwater Foundation | Apr. 2019
- Norlin Scholar | CU Boulder Special Undergraduate Enrichment Programs | Aug. 2018 – May 2020
- Engineering Honors Program (EHP) | CU Boulder | Aug. 2016 – May 2020

Research / Data Science Experience

- Biostatistics Researcher | National Studies on Air Pollution & Health Group, HSPH | Jan. 2021 – present
- Environmental Health Data Science Intern | CU Earth Lab | Sept. 2017 – Jul. 2020
- Research Consultant | Denver Department of Public Health & Environment | May 2019 – Jul. 2020
- Statistical Collaborator | CU Laboratory for Interdisciplinary Statistical Analysis | Jan. 2020 – May 2020
- International Mathematical / Interdisciplinary Contest in Modeling | COMAP | Jan. 2017, 2018, 2019
    - "Outstanding" paper (top 0.1%) on modeling the spread of the opioid epidemic | 2019
    - "Finalist" paper (top 1%) on balancing economic growth & happiness through taxation | 2017

- Drone Mapping Team | CU Engineers Without Borders Nepal Team | May 2017 – Dec. 2018
- Independent research project modeling the long-term economic outcomes of college choice | May 2016 – Aug. 2016

List of peer-reviewed scientific publications can be found on my Google Scholar page.

Select Presentations

- **Considine EM.** "Reinforcement Learning Methods to Optimize Heat Alert Issuance for Public Health in the United States." Annual conference of ENAR, the Eastern North American Region of the International Biometric Society. Baltimore, MD. March 12, 2024.
- deSouza P and **Considine EM**. "Investigating Use of Low-Cost Sensors to Increase Accuracy and Equity of Real-Time Air Quality Information." Air Sensors International Conference (hybrid). May 11, 2022.
- **Considine EM.** "The Promise of Blue Skies: Air Pollution, Health, and Data Science." Harvard Science in the News (SITN) Speaker Series (virtual). March 30, 2022.
- **Considine EM.** "Investigating the Health Impacts of Air Pollution from Wildfires." Astronaut Scholarship Foundation Technical Conference. Washington DC. August 24, 2019.

Extracurricular Experience

Writing:

- Review Editor for the Fifth National Climate Assessment, Focus on Western Wildfires| U.S. Global Change Research Program | Nov. 2022 – May 2023
- Columnist / Fellow: "Breathing Data" blog on air pollution, health, and data science | *HPHR Journal* (formerly the *Harvard Public Health Review*) | May 2021 – Sept. 2021
- Reflections on Professional Experiences | Personal website / blog | Oct. 2020 – present

Service / Leadership / Teaching:

- Peer Reviewer | *Environ. Sci. Technol., Environ. Res.: Health* | Apr. 2023 – present
- Alumni Mentor | Goldwater Foundation Diversity, Equity, & Inclusion Program | Jan. 2021 – present
- Vice-President / E-board | Harvard Griffin GSAS Science Policy Group | Sept. 2022 – May 2024
    - During academic year 2023-2024, co-organized an event series on multiple dimensions of climate & health, prioritizing translation of research into policy
- Teaching Fellow for graduate-level biostatistics courses | HSPH | Fall 2021, Fall 2023, Spring 2024
- Founding Member | HSPH Spatial Methods in Public Health Journal Club | Feb. 2023 – May 2024
- Pedagogy Fellow for the Biostatistics Department | HSPH| Aug. 2022 – May 2023
    - Developed curriculum for PhD-level (bio)statistical consulting / collaboration course
    - Created online short course "Overview of Data Science Tools for Climate & Health"
- Data Science Instructor | Camps (for grades 9-12) to increase diversity in STEM | Jul. 2019, 2022
- Member | Environmental Justice Student Organization at HSPH | 2021
- Science Manager | CU Engineers Without Borders Chapter Board | Jan. 2019 – May 2020
- Sustainability Lead | CU Engineers Without Borders Nepal Team | Jan. 2017 – Jan. 2019
- CU Diversity in Engineering Programs (BOLD Center, AWM, SWE) | Aug. 2016 – Mar. 2020