STEPHANIE E. CLELAND

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RESEARCH AREAS

Environmental health, environmental epidemiology, exposure assessment, health impact assessment

EDUCATION

University of North Carolina-Chapel Hill, Gillings School of Global Public Health – Chapel Hill, NC

Doctor of Philosophy, Environmental Sciences and Engineering — May 2023
Advisors: Dr. Ana Rappold and Dr. Jason West
Dissertation: The Human Health Impacts of Short-Term Exposure to Climate Change-Influenced Environmental Hazards

Master of Science in Public Health, Environmental Sciences and Engineering — May 2020
Advisors: Dr. Marc Serre and Dr. Jason West
Thesis: Estimating Wildfire Smoke Concentrations During the October 2017 California Fires Through BME Space/Time Data Fusion of Observed, Modeled, and Satellite-Derived $PM_{2.5}$

Graduate Certificate in Global Health — May 2020

Tufts University – Medford, MA
Bachelor of Science, Computer Science and Community Health — May 2016
GPA: 3.64, Dean's List 7 of 8 semesters, *cum laude*

PROFESSIONAL EXPERIENCE

United States Environmental Protection Agency - Chapel Hill, NC — August 2020 – present
Office of Research and Development, Center for Public Health and Environmental Assessment
Oak Ridge Institute for Science and Education (ORISE) Research Fellow

- Collaborating with a diverse team of scientists to study the acute and chronic health effects of hourly and daily exposure to climate change-influenced environmental hazards, such as wildfire smoke and extreme heat
- Developing exposure surfaces using geostatistical methods, conducting epidemiological analyses on large exposure and health datasets, and performing health impact assessments
- Presenting findings through publications, interactive dashboards, webinars, and oral and poster presentations

Gillings School of Global Public Health, UNC-Chapel Hill - Chapel Hill, NC
The Climate Health and Air Quality Lab — August 2018 – June 2020
Graduate Research Assistant

- Member of the NASA Health and Air Quality Applied Sciences Team (HAQAST) Tiger Team: Air Quality and Health Burden of 2017 California Wildfires
- Researched the air quality and human health impacts of wildfires using geospatial exposure modeling and health impact assessment methods
- Collaborated with researchers at multiple government agencies and academic institutions

- Presented findings through publications and oral and poster presentations

Department of Environmental Sciences and Engineering — August 2018 – May 2019
Graduate Teaching Assistant
- Graded student assignments and worked with students to reinforce course content for 'Temporal GIS & Geostatistics' and 'Space/Time Exposure Mapping & Risk Assessment,' taught by Dr. Marc Serre

CleanAIRE NC – Durham, NC — February 2020 – May 2020
Advocacy & Education Intern
- Engaged in multiple science and health communication activities, including tabling at conferences and writing blog posts on environmental health issues
- Developed county-specific environmental health fact sheets, summarizing data on climate change and environmental health issues in an accessible, community-focused manner, to share with stakeholders across North Carolina

athenahealth - Watertown, MA
athenaClinicals Performance & Analytics — October 2017 – June 2018
Product Analytics Associate
- Supported multiple teams by developing metrics, running analyses, and synthesizing complex data to understand the performance, adoption, and usage of athenaClinicals to inform and solve business decisions and problems
- Performed data-driven research and analysis and applied knowledge of the internal database to drive strategic product development and client performance

athenaClinicals Task Awareness — September 2016 – October 2017
Product Management Associate
- Developed streamlined solutions and executed customer-centric projects to enhance clinicians' experience using their patients' electronic health records
- Performed data-driven research and analysis and conducted end user interviews to inform feature requirements and understand feature usage

Tufts University School of Medicine – Boston, MA — January 2016 – May 2016
The Community Assessment of Freeway Exposure and Health Study
Research Assistant
- Conducted statistical analyses on air quality and blood biomarker data to test for associations between ultrafine particles and adverse health outcomes among the Puerto Rican community living near highways in Boston
- Summarized and presented findings through tables, visualizations, and writing

PEER-REVIEWED PUBLICATIONS

Cleland, S.E., Wyatt, L.H., Wei, L., Paul, N., Serre, M.L., West, J.J., Henderson, S.B., Rappold, A.G. (2022). Short-term exposure to wildfire smoke and $PM_{2.5}$ and cognitive performance in a brain-training game: A longitudinal study of US adults. *Environmental Health Perspectives, 130(6).* https://doi.org/10.1289/EHP10498

Cleland, S.E., Serre, M.L., Rappold, A.G., West, J.J. (2021). Estimating the acute health impacts of fire-originated $PM_{2.5}$ exposure during the 2017 California wildfires: Sensitivity to choices of inputs. *GeoHealth, 5(7).* https://doi.org/10.1029/2021GH000414

Delang, M.N., Becker, J.S., Chang, K.L., Serre, M.L., Cooper, O.R., Schultz, M.G., Schröder, S., Lu, X., Zhang, L., Deushi, M., Josse, B., Keller, C.A., Lamarque, J., Lin, M., Liu, J., Marécal, V., Strode, S.A.,

Sudo, K., Tilmes, S., Zhang, L., **Cleland**, S.E., Collins, E.L., Brauer, M., West, J.J. (2021). Mapping yearly fine resolution global surface ozone through the Bayesian Maximum Entropy data fusion of observations and model output for 1990-2017. *Environmental Science and Technology, 55*. https://doi.org/10.1021/acs.est.0c07742

Cleland, S.E., West, J.J., Jia, Y., Reid, S., Raffuse, S., O'Neill, S., Rappold, A.G., Serre, M.L. (2020). Estimating wildfire smoke concentrations during the October 2017 California fires through BME space/time data fusion of observed, modeled, and satellite-derived $PM_{2.5}$. *Environmental Science and Technology, 54* (*21*). https://doi.org/10.1021/acs.est.0c03761

Brugge, D., Simon, M.C., Hudda, N., Zellmer, M., Corlin, L., **Cleland,** S., Liu, E.Y., Rivera, S., Byrne, M., Chung, M., Durant, J.L. (2017). Lessons from in-home air filtration intervention trials to reduce urban ultrafine particle number concentrations. *Building and Environment*, *126*. https://doi.org/10.1016/j.buildenv.2017.10.007

SELECT PRESENTATIONS

Cleland, S.E., Wyatt, L.H., Wei, L., Paul, N., Serre, M.L., West, J.J., Henderson, S.B., Rappold, A.G. (2022 November). *Daily and hourly exposure to wildfire smoke and $PM_{2.5}$ and cognitive performance in a brain-training game: A longitudinal study of US adults.* Oral presentation at the 2022 Wildland Fire Canada Conference, Edmonton, Alberta, Canada.

Cleland, S.E., Steinhardt, W., Neas, L., Rappold, A.G. (2022 September). *Urban heat islands and heat-related cardiovascular morbidity in older adults: A time series study of US metropolitan areas.* Poster presentation at the 34th Annual Conference of the International Society for Environmental Epidemiology, Athens, Greece.

Cleland, S.E., Wyatt, L.H., Wei, L., Paul, N., Patil, A., Henderson, S.B., Rappold, A.G. (2021 December). *The cognitive performance effects of short-term $PM_{2.5}$ and wildfire smoke exposure.* Oral presentation at the American Geophysical Union Fall Meeting 2021, New Orleans, LA, USA.

Cleland, S.E., West, J.J., Jia, Y., Reid. S., Raffuse, S., O'Neill, S., Serre, M.L. (2021 September). *Fusing observed, modeled, and satellite-derived concentrations to produce fine-resolution estimates of $PM_{2.5}$ during the 2017 California wildfires.* Invited oral presentation at the 2021 Meteorology and Climate - Modeling for Air Quality Conference, Remote.

Cleland, S.E., Wyatt, L.H., Wei, L., Paul, N., Patil, A., Henderson, S.B., Rappold, A.G. (2021 August). *Short-term $PM_{2.5}$ exposure impacts cognitive performance: A longitudinal repeated measures study of the Western US 2017-2018.* Lightning talk presentation at the 33nd Annual Conference of the International Society for Environmental Epidemiology, Remote.

Cleland, S.E., West, J.J., Jia, Y., Reid, S., Raffuse, S., O'Neill, S., Rappold, A.G., Serre, M.L. (2020 September). *A data fusion approach for evaluating smoke exposure: Estimating $PM_{2.5}$ during the 2017 California wildfires.* Oral presentation at the International Society of Exposure Science 30th Annual Meeting, Remote.

Cleland, S.E., West, J.J., Serre, M.L. (2020 April). *Evaluating the acute health impact of $PM_{2.5}$ exposure during the October 2017 California wildfires.* Oral presentation at the 3rd International Smoke Symposium, Remote.

Cleland, S.E., Serre, M.L., Becker, J., DeLang, M., West, J.J. (2019 October). *Fusing CMAQ with observations to estimate the air quality and health impacts of the October 2017 California wildfires.* Poster presentation at the 18th Annual Community Modeling and Analysis System Conference, Chapel Hill, NC, USA.

Cleland, S.E., Serre, M.L., Becker, J., DeLang, M., West, J.J. (2019 October). *Estimating the hospital admissions attributable to the 2017 California wildfires.* Poster presentation at the 2019 Triangle Global Health Annual Conference, Durham, NC, USA.

FELLOWSHIPS & AWARDS

- Gary G. Koch and Carolyn J. Koch Student Travel Award 2021
- UNC-Chapel Hill's Three Minute Thesis Competition Finalist 2021
- The National Institute for Occupational Safety and Health (NIOSH) Traineeship 2020
- UNC-Chapel Hill's Department of Environmental Sciences & Engineering: Environmental Sciences Achievement Award 2020
- Best Student Poster: Community Modeling & Analysis System Conference 2019
- Triangle Global Health Annual Conference Student Scholarship 2019
- Weiss Urban Livability Fellowship 2018
- B.B. Parker Fellowship 2018
- Alan and Linda Rimer Endowed Scholarship in Environmental Science 2018
- Gillings Merit Scholarship 2018
- Best in Show: Tufts GIS Poster Expo 2016

SKILLS

Languages: R, MATLAB, Python, SQL, C++, C, Java, HTML, CSS, Javascript

Software: RStudio, MATLAB, ArcGIS, STATA, Jupyter, Adobe Creative Suite, Microsoft Office Suite

RELEVANT COURSES

UNC-Chapel Hill: Space/Time Exposure Mapping & Risk Assessment; Temporal GIS & Geostatistics; Statistics for Environmental Scientists; Fundamentals of Epidemiology; Environmental Epidemiology; Advanced Environmental Epidemiology; Environmental Risk Assessment; Environmental Exposure Assessment; Health Effects of Environmental Agents; Proposal Writing for Environmental Research; Critical Analysis of Environmental Research; Advanced Remote Sensing

Tufts University: Data Visualization; Introduction to GIS; Advanced GIS; Introduction to Statistics for Health Applications; Fundamental Epidemiology

VOLUNTEER EXPERIENCE

CleanAIRE NC – Durham, NC August 2020
- Member of the NC BREATHE Conference planning committee – present

Environmental Sciences Student Organization - Chapel Hill, NC August 2019
- Graduate Student Representative at monthly faculty meetings for the Department of Environmental Sciences and Engineering – May 2020

Science Club for Girls – Cambridge, MA January 2017
- Mentor for hands-on after-school science club for elementary school girls – May 2018

TEDxTufts – Medford, MA October 2014
- Organizer and speaker coach for the independently organized TED event – May 2016