

Kristen N. Cowan, MPH

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## EDUCATION

- 2020-Present **The University of North Carolina at Chapel Hill, Gillings School of Global Public Health**, Chapel Hill, NC  
PhD, Environmental Epidemiology with a Graduate Certificate in Geography
- 2016-2018 **Emory University Rollins School of Public Health**, Atlanta, GA  
MPH, Global Epidemiology with a Certificate in Complex Humanitarian Emergencies
- 2012-2016 **The Ohio State University School of Public Health**, Columbus, OH  
BS, Major: Public Health, Minor: Spanish Language

## PROFESSIONAL EXPERIENCE

- 2022-present **Predoctoral Trainee**, Chapel Hill, NC  
Carolina Population Center, Population Science Training Program  
University of North Carolina at Chapel Hill
- 2021-present **Predoctoral Fellow**, Chapel Hill, NC  
Center for Public Health and Environmental Assistance, Epidemiology Branch  
Environmental Protection Agency (EPA)
- 2022-2023 **Research Assistant**, Chapel Hill, NC  
North Carolina Institute for Climate Studies, Carolinas Collaborative on Climate Health, and Equity  
North Carolina State University
- 2020-2021 **Graduate Research Assistant**, Remote  
Real World Evidence and Epidemiology  
GlaxoSmithKlein
- 2018-2020 **Research Fellow**, Atlanta, GA  
National Center for Environmental Health, Asthma and Community Health Branch  
Centers for Disease Control and Prevention (CDC)
- 2017-2018 **Data Analyst Intern**, Atlanta, GA  
Biostatistics Collaboration Core  
Emory University Rollins School of Public Health
- 2017-2017 **Practicum Student**, Restauración, Dominican Republic  
Foundation for International Medical Relief of Children
- 2017-2017 **Emergency Management Apprentice**, Atlanta, GA  
Emergency Management Branch  
Centers for Disease Control and Prevention (CDC)
- 2016-2017 **Associate**, Atlanta, GA  
Disaster Doc Consulting
- 2015-2016 **Minority Outreach Assistant**, Columbus, OH  
Equitas Health
- 2015-2015 **PLLUSS Program Fellow**, Cincinnati, OH  
National Institutes of Occupational Safety and Health & University of Cincinnati
- 2014-2015 **Nutrition Educator**, Columbus, OH  
Children's Hunger Alliance

## HONORS AND AWARDS

2022	<b>Anne Cynthia Price Travel Award</b> University of North Carolina Chapel Hill Gillings School of Public Health
2021	<b>GIS Day Map Contest 2<sup>nd</sup> Place Award</b> University of North Carolina Chapel Hill Geography Department <b>Environmental Epidemiology T32 Training Grant</b> University of North Carolina Chapel Hill
2020	<b>Mary Fran Myers Award for Excellence in Disaster Research</b> National Hazards Center Workshop
2019	<b>CDC 2019 Fellows Collective Award Nominee</b> CDC Fellows Collective Annual Meeting <b>SAS 2019 New Professional Award</b> SAS Global Forum 2019
2017	<b>2017 Atlanta Health Data Challenge 1<sup>st</sup> Place Award</b> Deloitte Health Data Challenge

## **GRANT SUPPORT**

<u>2020-2021</u>	<b>Source:</b> Natural Hazards Center/National Science Foundation
	<b>Title:</b> <i>Maria Mortality Study: Ascertaining the excess mortality and associated risk factors following Hurricane Maria in Puerto Rico.</i>
	<b>Amount:</b> \$25,000

## MANUSCRIPTS

### Published in Peer Review Journals:

1. Cardwell, J. and **Cowan, K.N.** (2023), Local News Sentiment Towards FEMA Recovery Efforts after Hurricane Florence in North Carolina. Disasters. Accepted Author Manuscript. <https://doi.org/10.1111/disa.12574>
2. Maner, M. Behne, M.F., Cullins, Z., **Cowan, K.N.**, Peterson, M and Brinkley-Rubinstein, L. (2022), Where Do You Go When Your Prison Cell Floods? Inadequacy of Current Climate Disaster Plans of US Departments of Correction. *American Journal of Public Health*, e1\_e3, <https://doi.org/10.2105/AJPH.2022.307044>
3. **Cowan, K. N.**, Peterson, M., LeMasters, K., & Brinkley-Rubinstein, L. (2022). Overlapping Crises: Climate Disaster Susceptibility and Incarceration. *International journal of environmental research and public health*, 19(12), 7431. <https://doi.org/10.3390/ijerph19127431>
4. Slawsky E.D., Hoffman J.C., **Cowan K.N.**, Rappazzo K.M. Beneficial Use Impairments, Degradation of Aesthetics, and Human Health: A Review. *International Journal of Environmental Research and Public Health*. 2022; 19(10):6090. <https://doi.org/10.3390/ijerph19106090>
5. **Cowan, K.N.**, Pennington, A. F., Sircar, K., & Flanders, W. D. (2021). Asthma-related emergency department visits in North Carolina following Hurricane Irene. *Disaster Medicine and Public Health Preparedness*, 1–4. <http://doi.org/10.1017/dmp.2021.143>
6. **Cowan, K.N.**, Pennington, A., Gregory, T., & Hsu, J. (2021). Impact of hurricanes on children with asthma: A systematic literature review. *Disaster Medicine and Public Health Preparedness*, 1-6. Doi: 10.1017/dmp.2020.424
7. **Cowan, K.N.**, Qin, X., Ruiz Serrano, K., Sircar, K. & Pennington, A.F. (2020) Uncontrolled asthma and household environmental exposures in Puerto Rico, *Journal of Asthma*, DOI: 10.1080/02770903.2020.1858861

8. Chatham-Stephens K, Roguski K, Jang Y, Cho P, Jatlaoui TC, Kabbani S, Glidden E, Ussery EN, Trivers KF, Evans ME, King BA, Rose DA, Jones CM, Baldwin G, Delaney LJ, Briss P, Ritchey MD; **Lung Injury Response Epidemiology/Surveillance Task Force**; Lung Injury Response Clinical Task Force. Characteristics of Hospitalized and Nonhospitalized Patients in a Nationwide Outbreak of E-cigarette, or Vaping, Product Use-Associated Lung Injury – United States, November 2019. *MMWR Morb Mortal Wkly Rep.* 2019 Nov 22;68(46):1076-1080. Doi: 10.15585/mmwr.mm6846e1. PMID: 31751326; PMCID: PMC6871898.

Under review:

9. Quist, A., Holloman, D. E., **Cowan, K.N.**, Walsh, A., Woods, C. (2023) Community engagement through a mold tool-lending library after Hurricane Florence: methods and lessons learned. *Environmental Justice*.
10. Runkle, J.D., Sugg, M.M., Berry, A., Reed, C., **Cowan, K.N.**, Wertis, L., Ryan, S., (2023) Prenatal Psychiatric Emergency Visits Attributable to Warm Ambient Temperature: A time-stratified case-crossover study. *JAMA Psychology*.
11. **Cowan, K.N.**, Wyatt, L., Luben, T., Rappazzo, K. (2023) Air pollution and respiratory-related hospitalizations among a cohort of patients with Chronic Obstructive Pulmonary Disease (COPD) in North Carolina. *Environmental health*

In Preparation:

12. Rappazzo, K., **Cowan, K.N.**, Sacks, J., Lee, E. Pursell, I.W. (2023) Association between air pollution and unexpected sudden deaths in North Carolina: A case-crossover study. In drafting.
13. **Cowan, K.N.**, Engel, L., Werder, E., Sadler, D. (2023) Impacts of BTEX-H and total hydrocarbons (THC) on neurological symptoms reported in the Gulf Study among workers during the Deepwater Horizon Gulf oil spill cleanup phase. In drafting.
14. **Cowan, K.N.**, Zavala, D. (2023) Social vulnerability and chronic disease mortality in the six months following Hurricane Maria in Puerto Rico. In drafting.
15. **Cowan, K.N.**, Jimenez, M., Luben, T.J., Rappazzo, K.M. (2023) Impact of neighborhood deprivation on birth defects among North Carolina singleton live births from 2011-2015. In drafting.

CONFERENCE PRESENTATIONS

Oral:

1. Hoffman, J., E. Slawsky, **K.N. Cowan**, and K. Rappazzo. Human health impacts from degraded aesthetics of blue and green spaces. St. Louis River Summit, Superior, Wisconsin. March 2023.
2. **Cowan, K.N.**, Zavala, D.E., Hurricane Maria Mortality Study: Excess Mortality and Social Vulnerability Risk Factors Following Hurricane Maria in Puerto Rico. Natural Hazards Center Disease Researcher's Meeting, July 2022, Virtual.
3. **Cowan, K.N.**, Zavala, D.E., Hurricane Maria Mortality Study: Ascertaining the Excess Mortality and Social Vulnerability Risk Factors Following Hurricane Maria in Puerto Rico. Population Association of America, April 2022, Atlanta, GA.
4. **Cowan, K.N.**, Pennington, A., Sircar, K. & Flanders, D. Asthma-related emergency department visits in North Carolina following Hurricane Irene. Natural Hazards Center Workshop Researchers Meeting, July 2020, Virtual
5. **Cowan, K.N.**, Gregory, T. Pennington, A. Sircar, K. Children with Asthma: Post-Hurricane Burden and Risk Factors, National Center for Environmental Health Cooperative Agreement Mid-Award Meeting, April 2019, Atlanta, GA.

Poster:

1. **Cowan, K.N.**, Luben, T.J., Krajewski, A.K., Alman, B.L., Vaidyanath, A., Rappazzo, K.M., Near-birth diurnal temperature differences and preterm birth in North Carolina 2011-2015. International Society for Environmental Epidemiology-North America Chapter June 2023. Corvallis, OR.
2. **Cowan, K.N.**, Jimenez, M.P., Messer, L.C., Krajewski, A.K., Luben, T.J., Rappazzo, K.M., Neighborhood deprivation does not modify the association between air pollution and birth defects in North Carolina, 2011-2015. Society for Epidemiology Research June 2023. Portland, OR.
3. Baxter, L., Wilkie, A., Jimenez, M., **Cowan, K.N.**, Butts, C., Arogbokun, F., Luben, T., Rappazzo, K., Weaver, A., Racial and Economic Disparities in Exposure to and Health Effects Associated with Air Pollution: Recent Research Related to Environmental Justice. EPA Children's Environmental Health Summit April 2023, Durham, NC.
4. Baxter, L., Wilkie, A., Jimenez, M., **Cowan, K.N.**, Butts, C., Arogbokun, F., Luben, T., Rappazzo, K., Weaver, A., Racial and Economic Disparities in Exposure to and Health Effects Associated with Air Pollution: Recent Research Related to Environmental Justice. Health Effects Institute Annual Meeting, April 2023, Durham, NC.
5. **Cowan, K.N.**, Werder, E.J., Kwok, R.K., Lawrence, K.J., Stewart, P.A., Stenzel, M.R., Sandler, D.P., Engel, L.S. Associations between BTEX-H/THC and neurological symptoms among Deepwater Horizon oil spill workers. International Society for Environmental Epidemiology, September 2022. Athens, Greece.
6. **Cowan, K.N.**, Wyatt, L.H., Luben, T.J., Sacks, J.D., Rappazzo, K.M. Effect measure modification of short-term PM<sub>2.5</sub> exposure by long-term PM<sub>2.5</sub> exposure and hospitalizations in a time-referent case-crossover analysis of COPD Patients, North Carolina, USA 2004-2015. International Society for Environmental Epidemiology, September 2022. Athens, Greece.
7. **Cowan, K.N.**, Jimenez, M., Luben, T.J., Rappazzo, K.M. Impact of neighborhood deprivation on birth defects among North Carolina singleton live births from 2011-2015. Society for Pediatric and Perinatal Epidemiologic Research, June 2022, Chicago, IL.
8. **Cowan, K.N.**, Wyatt, L., Luben, T., Rappazzo, K. Air pollution and respiratory-related hospitalizations among a cohort of patients with Chronic Obstructive Pulmonary Disease (COPD) in North Carolina. Society for Epidemiologic Research. June 2022, Chicago, IL.
9. **Cowan, K.N.**, Pennington, A. Gregory, T. Hsu, J. Impact of Hurricanes on Children with Asthma. Society for Epidemiologic Research, December 2020, Virtual.
10. **Cowan, K.N.**, Pennington, A. Sircar, K. Flanders, D. Asthma-related emergency department visits in North Carolina following Hurricane Irene. Society for Epidemiologic Research, December 2020, Virtual.
11. **Cowan, K.N.**, Pennington, A. Dunn, M. Sheth, K. Guerrero, R. Using existing survey infrastructure to measure disease burden following a disaster at the state and local level. Public Health Preparedness Conference, August 2020, Virtual
12. **Cowan, K.N.**, Sircar, K. Gregory, T. Existing Tools and Opportunities to Improve Health Among Children with Asthma After Hurricanes. Public Health Preparedness Conference, April 2019, St. Louis, MO
13. **Cowan, K.N.**, Monitoring and Evaluating a Community Health Worker Program on the border of the Dominican Republic and Haiti. Emory University Rollins School of Public Health Practicum Presentation Session, October 2017, Atlanta, GA.
14. **Cowan, K.N.**, Bridging the Gap Between Consumers, Providers and Policy Makers: A Capstone Project. Ohio State University College of Public Health Capstone Presentation Session, April 2016, Columbus, OH.
15. **Cowan, K.N.**, Risk of HIV and Hepatitis C among Heroin Using Populations. Annual Biomedical Research Conference for Minority Students, November 2015, Seattle, WA.

## TEACHING EXPERIENCE

- 2023 **Teaching Assistant**, Chapel Hill NC  
University of North Carolina, Gillings School of Global Public Health  
Epidemiology Data Analysis
- 2018 **Teaching Assistant**, Atlanta, GA  
Emory University, College of Arts and Science  
Introduction to Epidemiology for Undergraduate Students
- 2017 **Teaching Assistant**, Atlanta, GA  
Emory University, Rollins School of Public Health  
Public Health Preparedness for Graduate Students

## INVITED TALKS

- 2023 **Excess Mortality and Associated Risk Factors Related to Hurricane Maria in Puerto Rico**  
Disaster Epidemiology Class for Master of Public Health Students, Ponce Health Sciences University
- 2022 **Examining the association between Extreme Heat and maternal mental health outcomes among a cohort of births in South Carolina**  
University of North Carolina Environmental Epidemiology Doctoral Seminar
- 2022 **Examining the association between Extreme Heat and maternal mental health outcomes among a cohort of births in South Carolina**  
NCEI/NCICS Summer Intern Closeout Meeting
- 2022 **Using spatial methods to examine community-level trends in mortality following Hurricane Maria in Puerto Rico**  
University of Puerto Rico Disasters and Society Seminar Series
- 2022 **Using spatial methods to examine community-level trends in mortality following Hurricane Maria in Puerto Rico**  
University of North Carolina Environmental Epidemiology Doctoral Seminar
- 2021 **Excess Mortality and Associated Risk Factors Following Hurricane Maria in Puerto Rico**  
Natural Hazards Center Public Health Disaster Research in U.S. Territories Webinar
- 2020 **Using Power BI to Help Visualize your Data**  
CDC Asthma and Community Health Branch lecture series
- 2019 **Climate Change and Public Health Emergencies**  
Public Health Preparedness Class Emory University Rollins School of Public Health

## CERTIFICATIONS

- 2018 NEHA Environmental Health Training in Emergency Response (EHTER)
- 2017 FEMA IS.100.b Introduction to Incident Command System  
FEMA IS.200.b: Incident Command System for Single Resource and Initial Action Incidents  
FEMA IS.700.a: National Incident Management System (NIMS)  
FEMA IS.800.b: National Response Framework  
CDC EOC 101: Introduction to Emergency Operations Center  
CDC CERC: Crisis and Emergency Risk Communication  
CDC Public Health Readiness Certificate Program

## VOLUNTEER LEADERSHIP AND WORK

- 2021-present **Organizer**  
University of North Carolina Disaster Research Group

2021-present **Student Leader**  
Epidemiology and Justice Student Group

2021-2022 **Planning Committee Member**  
North Carolina Environmental Justice Network Annual Meeting

2019-2020 **Chair**  
CDC Employee Association of Emory Alumni Committee

2018-2021 **Section Councilor**  
American Public Health Association (APHA) Epidemiology Section

2017-2018 **Student Liaison**  
American Public Health Association (APHA) Epidemiology Section

2017-2018 **Co-Logistician**  
Student Outbreak and Response Team (SORT), Emory University Rollins School of Public Health

2017-2018 **Quality Improvement Coordinator**  
Clarkston Community Health Center

2015-2016 **Ambassador**  
Ohio State University College of Public Health

2015-2016 **Student Director**  
Pay It Forward at the Ohio Union

2013-2016 **Co-President**  
Project Nicaragua at Ohio State University

#### AD HOC REVIEW

##### Manuscripts

Science of the Total Environment  
Journal of Disaster Medicine and Public Health Preparedness  
Journal of Asthma

##### Conferences

American Public Health Association Annual Meeting  
International Society for Environmental Epidemiology Annual Meeting  
International Society for Environmental Epidemiology North America Chapter Meeting