

*Curriculum Vitae*  
**Christine L. Gray, PhD, MPH**

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<b>CONTACT INFORMATION</b>	Center for Health Policy and Inequalities Research Duke Global Health Institute Duke University 310 Trent Drive, CB# 90392 Durham, NC 27708	<i>Mobile:</i> +1 301.787.7634 <i>E-mail:</i> <a href="mailto:clg56@duke.edu">clg56@duke.edu</a> <i>Skype:</i> gray.christine78
<b>EDUCATION</b>	<b>PhD, Epidemiology</b> University of North Carolina at Chapel Hill, Chapel Hill, NC	2017
	<b>MPH, Policy</b> Emory University, Atlanta, GA	2005
	<b>BA, Economics and International Studies</b> Minors: Spanish, English La Salle University, Philadelphia, PA	2000
<b>PROFESSIONAL EXPERIENCE</b>	<b>Research Scholar</b> Center for Health Policy and Inequalities Research Duke Global Health Institute, Duke University Durham, NC	2018 – present
	<b>Oak Ridge Institute for Science and Education (ORISE) Fellow</b> Environmental Protection Agency Chapel Hill, NC	2013 – 2017
	<b>Graduate Research Assistant</b> Department of Epidemiology University of North Carolina at Chapel Hill Chapel Hill, NC	2011 – 2016
	<b>Graduate Research Assistant</b> Carolina Population Center University of North Carolina at Chapel Hill Chapel Hill, NC	2012 - 2014
	<b>Program Manager and Scientist</b> Center for the Study of Traumatic Stress Uniformed Services University of the Health Sciences Bethesda, MD	2008 – 2011
	<b>Fellow, Public Health Prevention Service (PHPS)</b> Centers for Disease Control and Prevention Division of Violence Prevention, Atlanta, GA Global Immunization Division, Atlanta, GA Field Assignment: Yellowstone City-County Health Department/ Rocky Mountain Tribal Epidemiology Center Billings, MT	2005 – 2008 2005 2006 2006 – 2008
	<b>American Schools of Public Health Intern</b> Office of Smoking and Health Centers for Disease Control and Prevention Atlanta, GA	Summer, 2005

	<b>Graduate Research Assistant</b> Division of HIV/AIDS Prevention, Epidemiology Branch Centers for Disease Control and Prevention Atlanta, GA	Spring, 2005
	<b>Social Services Intern</b> International Rescue Committee	2004 – 2005
	<b>Graduate Research Assistant</b> Department of Health Policy and Management Emory University Atlanta, GA	2003 – 2004
	<b>Senior Operations Coordinator and Training Manager</b> International SOS, Inc. Philadelphia, PA	2000 – 2003
<b>HONORS</b>	Gary G. and Carolyn J. Koch Merit Scholarship in Public Health School of Public Health, University of North Carolina at Chapel Hill	2016 – 2017
	First Author, Editor’s Choice of “Top 12 High Impact Articles, 2015” (#6) <i>Global Health: Science and Practice</i>	2016
	2008 Peer Award, Public Health Prevention Service Centers for Disease Control and Prevention	2008
	Center Director’s Day Off Award for work on post-Katrina review Centers for Disease Control and Prevention	2006
	Delta Omega Public Health Honor Society Inductee Emory University	2005
	Editor-in-Chief, <i>La Salle Collegian</i> (college newspaper) La Salle University	1999 – 2000
	Omicron Delta Epsilon Economics Honor Society Inductee La Salle University	1999
	OLNEY Journalism Award La Salle University	1999
	University Honors Program La Salle University	1996 – 2000
	Full-Tuition University Scholarship La Salle University	1996 – 2000

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**PEER-REVIEWED PUBLICATIONS                      H-INDEX: 6                      I-10 INDEX: 6                      IF = JOURNAL IMPACT FACTOR**

1. Jagai JS, Messer LC, Rappazzo KM, **Gray CL**, Grabich SC, Lobdell DT. County-level cumulative environmental quality associated with cancer incidence. *Cancer*. 2017 Aug 1; 123(15):2901-2908. (IF: 6.072)
2. Jian Y, Messer LC, Jagai JS, Rappazzo KM, **Gray CL**, Grabich SC, Lobdell, D. T. (2016). Associations between Environmental Quality and Mortality in the Contiguous United States, 2000-2005. *Environmental Health Perspectives*. 2017 Mar; 125(3): 355-362. (IF: 9.776)

3. Rogawski ET, **Gray CL**, Poole C. An argument for renewed focus on epidemiology for public health. *Annals of Epidemiology*. 2016; 216(10):729-733. (IF: 2.582)
4. **Gray CL**, Pence BW, Messer LC, Ostermann J, Whetten RA, O'Donnell K, Thielman NM, Whetten KW. Civic engagement among orphans and non-orphans in five low- and middle-income countries. *Globalization and Health*. 2016; 12(1):61. (IF: 2.536)
5. Grabich SC, Rappazzo KM, **Gray CL**, Jagai JS, Jian Y, Messer LC, Lobdell DT. Additive interaction between heterogeneous environmental quality domains (air, water, land sociodemographic and built environment) on preterm birth. *Frontiers in Public Health*, 2016; 4, Article 232. (IF: n/a; new journal 2013)
6. **Gray CL**, Whetten KW, Messer LC, Whetten RA, Ostermann J, O'Donnell K, Thielman NM, Pence BW. Potentially traumatic experiences and sexual health among orphaned and separated adolescents in five low- and middle-income countries. *AIDS Care* 2016; 28(7):857-865. (IF: 1.824)
7. **Gray CL**, Pence BW, Ostermann J, Whetten RA, O'Donnell K, Thielman NM, Whetten K. Prevalence and incidence of potentially traumatic experiences in orphans and separated children living in institutional and family-based settings in five low- and middle- income countries. *Global Health: Science and Practice* 2015; 3(3) 395-404. (IF: 2.65)
8. Rappazzo KM, Messer LC, Jagai JS, **Gray CL**, Grabich SC, Lobdell DT. The associations between environmental quality and preterm birth in the United States, 2000-2005: a cross-sectional analysis. *Environmental Health* 2015 14:50. (IF: 3.453)
9. Guidry VT, **Gray CL**, Lowman A, Hall D, Wing S. Study fatigue and data quality in a participatory repeated-measures study of adolescent respiratory health. *Annals of Epidemiology* 2015, 25(7): 532-8. (IF: 1.938)
10. **Gray CL**, Pence BW, Ostermann J, Whetten RA, O'Donnell K, Thielman NM, Whetten K. Gender (in)differences in prevalence and incidence of traumatic experiences among orphaned and separated children living in five low and middle income countries. *Global Mental Health* 2015; 2(e3): 1-11. (IF: n/a; new journal 2015)
11. Gokhale MS, Buse JB, **Gray CL**, Pate V, Marquis MA, Sturmer T. Dipeptidyl-peptidase-4 inhibitors and pancreatic cancer: a cohort study. *Diabetes, Obesity and Metabolism* 2014; 16(12): 1247-56. (IF: 6.360)
12. **Gray CL**, Robinson WR. Throwing out the baby with the bathwater? Comparing two approaches to handling implausible values of change in body size. *Epidemiology* 2014; 25(4): 591-4. (IF: 6.196)
13. Li X, Camelo-Castillo W, Sturmer T, Pate V, **Gray CL**, Simpson RJ, Setoguchi S, Hanson LC, Funk MJ. Use of combination antihypertensive therapy initiation in older Americans without prevalent cardiovascular disease. *Journal of the American Geriatrics Society* 2014. 62(9):1729-35. (IF: 4.572)
14. McKibben JBA, Fullerton CS, **Gray CL**, Kessler RC, Stein MB, Ursano, RJ. Mental health service utilization in the US Army. *Psychiatric Services* 2013; 64 (4): 347-53. (IF: 1.987)
15. Santiago PN, Ursano RJ, **Gray CL**, Pynoos RS, Spiegel D, Lewis-Fernandez M, Friedman M, Fullerton CS. A systematic review of PTSD prevalence and trajectories in DSM5 defined trauma-exposed populations: Intentional and non-intentional traumatic events. *PLoS One* 2013; 8(4):e59236. (IF: 3.534)
16. Fullerton CS, Reissman D, **Gray CL**, Flynn B, Ursano RJ. Earthquake response and public health preparedness: An integrated systems approach. *Disaster Medicine and Public Health Preparedness* 2010; 4: 15-17. (IF: 1.747)
17. **Gray CL**, Wangsmo E, Felton J. Communication, education, and policy: Billings, Montana's response to a norovirus outbreak. *Northwest Public Health*, 2007; 24(2): 12-13. (IF: n/a)

## MANUSCRIPTS UNDER REVIEW

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1. **Gray CL**, Messer LC, Rappazzo KM, Jagai JS, Grabich SC, Lobdell DT. *Environmental quality modifies the association between physical inactivity and obesity at the county level in the U.S*
2. **Gray CL**, Lobdell DT, Rappazzo KM, Patel AP, Jian Y, Jagai JS, Messer LC, Deflorio-Barker SA, Lyttle C, Solway J, Rzhetsky A. *Association between environmental quality and adult asthma prevalence in medical claims data.*
3. **Gray CL**, Whetten K, Daniels JL, Hudgens MG, Pettifor AE, Hobbie A, O'Donnell K, Thielman NM, Ostermann J, Whetten RA, Pence BW. *Orphans living in families: Stability in the adult family structure and associations with orphan wellbeing.*
4. Patel A, Jagai JS, Messer LC, **Gray CL**, Rappazzo KM, Deflorio-Barker S, Lobdell DT. *Associations between environmental quality and infant mortality in the United States, 2000-2005.*
5. Jian Y, Neas LM, Messer LC, **Gray CL**, Jagai JS, Rappazzo KM, Lobdell DT. *Divergent trends in life expectancy across rural-urban gradient among races in the contiguous U.S.*
6. DeLong SM, Graham LM, Magee EP, Treves-Kagan S, **Gray CL**, McClay AM, Zarnick SM, Kupper L, Macy RJ, Ashley OS, Pettifor AE, Moracco KE, Martin SL. *Are university sexual assault policies related to the prevalence of sexual assault?*

## BOOK CHAPTERS

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1. **Gray CL**, Ariely S, Pence BW, Whetten K. Why institutions matter: empirical data from five low- and middle-income countries indicate critical role of institutions for orphans. In Rus A, Parris SR & Stativa E (Eds.) Child maltreatment in residential care: History, research, and current practice. 2017; Springer International Publishing.
2. Biggs QM, Guimond J, Fullerton C S, Ursano RJ, **Gray CL**, Goldenberg MN, McCarroll JE, Reissman D, Benedek DM, Tyler M. The epidemiology of acute stress disorder and early responses to trauma in adults. In Beck JG, Sloan D. (Eds.) Handbook of traumatic stress disorders. 2012;New York, NY: Oxford University Press.

## SELECTED PRESENTATIONS

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1. **Gray CL (session chair)**, Hirsch AG (co-chair), Keyes KM, Messer LC, Rappazzo KM, Schwartz B, Seamans MJ. *Rural health in the U.S.: Do we have the right measures for the right questions?* Society for Epidemiologic Research Annual Meeting, (Symposium accepted for June 2018).
2. **Gray CL**, Deflorio-Barker SA, Jimenez MP, Neas LM, Messer LC, Rappazzo KM, Jagai JS, Patel AP, Lobdell DT. *The association between environmental quality and diabetes among older adults in the U.S.* (oral), Society for Epidemiologic Research Annual Meeting, Seattle, WA, June 2017.
3. Jagai JS, Messer LC, Rappazzo KM, Yun J, **Gray CL**, Grabich SC, Lobdell DT. *Urban-rural status affects associations between domains of environmental quality and childhood cancer.* American Public Health Association Meeting, Denver, CO, November 2016.
4. Jian Y, Messer LC, **Gray CL**, Grabich SC, Rappazzo KM, Jagai JS, Lobdell DT. *Racial/ethnic disparities in the associations between environmental quality and mortality in the contiguous U.S.* (poster), International Society of Environmental Epidemiology, Rome, Italy.
5. Messer LC, **Gray CL**, Grabich S, Jagai JS, Yun J, Rappazzo KM, Lobdell DT. *The combination of environmental quality with increasingly rural residence and associations with adverse birth outcomes* (oral), Epidemiology Congress of the Americas, Miami, FL, June 2016.

6. **Gray CL**, Messer LC, Rappazzo KM, Grabich SC, Jagai JS, Jian Y, Lobdell DT. *The role of environmental quality in gestational weight gain among U.S. pregnant women*, (poster), Epidemiology Congress of the Americas, Miami, FL, June 2016.
7. Grabich SC, **Gray CL**, Jagai JS, Jian Y, Messer LC, Rappazzo KM, Lobdell DT. *Interaction between heterogeneous environmental quality domains (air, water, land, sociodemographic, and built environment) on preterm birth*, (poster), Society for Pediatric and Perinatal Epidemiologic Research, Miami, FL, June 2016.
8. Jian Y, Messer LC, Rappazzo K, Jagai J, **Gray CL**, Grabich SC Lobdell DT. *A Bayesian hierarchical model of environmental impact on human mortality and its spatial variation in the United States 2000-2005*. 100<sup>th</sup> Annual Meeting of the Ecological Society of America (poster), Baltimore, MD, August 2015.
9. **Gray CL**, Grabich SC, Messer LC, Rappazzo KM, Jagai JS, Lobdell DT. *Examining the role of environmental quality in asthma-related hospitalizations*. Society for Epidemiologic Research (poster), Denver, CO, June 2015.
10. Jagai JS, Messer LC, Rappazzo KM, **Gray CL**, Grabich SC, Lobdell DT. *Overall environmental quality and cancer incidence*. Society for Epidemiologic Research (oral), Denver, CO, June 2015.
11. Guidry VT, **Gray CL**, Lowman A, Hall D, Wing S. *Assessing data quality in a community-based longitudinal study with middle-school adolescents*. American Public Health Association (oral). Durham, NC, November, 2014.
12. **Gray CL**, Guidry VT, Kinlaw A, Hall D, Wing S. *Prevalence of asthma related-illness in children living near industrial livestock facilities*. International Society for Environmental Epidemiology (poster), Seattle, WA, August 2014.
13. **Gray CL**, Grabich SC, Messer LC, Rappazzo KM, Jagai JS, Lobdell DT. *Physical inactivity and obesity: Using a novel environmental quality measure to control confounding*. Society for Epidemiologic Research (poster), Seattle, WA, June 2014.
14. **Gray CL**, Grabich SC, Messer LC, Rappazzo KM, Jagai JS, Lobdell DT. *Using a novel environmental quality measure to understand population-level physical inactivity*. Society for Epidemiologic Research (poster), Seattle, WA, June 2014.
15. **Gray CL**, Grabich S. *The environmental quality index (EQI): Application to public health and exploration of methodologies*. Environmental Protection Agency, Works in Progress Seminar Series (co-speaker). Chapel Hill, NC, May 2014.
16. **Gray CL**. *Throwing out the baby with the bathwater? Comparing two approaches to handling implausible values of change in body size*. Carolina Population Center Add Health Data Users Seminar Series (invited speaker), Chapel Hill, NC, April 2014.
17. Guidry VT, Wing S, **Gray CL**. *Data Quality Challenges in a Participatory, Repeated-Measures Study with Adolescents Attending Schools near Concentrated Animal Feeding Operations*. Environmental Health Disparities and Environmental Justice Meeting (poster). Durham, NC, July 2013.
18. Guidry VT, **Gray CL\***, Wing S. *Air Pollutants from Concentrated Animal Feeding Operations and Respiratory Health in Middle School Students*. Environmental Justice Summit (oral, presenting author), Whitakers, NC, October 2012.
19. **Gray CL**, Robinson, WR. *Comparison of two approaches to handling BMI measurement bias in growing adolescents*. Society for Epidemiologic Research (poster), Minneapolis, MN, June 2012.
20. McKibben JBA, **Gray CL**, Mason ST, Rios R, Fauerbach JA. *An alternative approach to handling missing data in self-report surveys*. Society for Epidemiologic Research (poster), Minneapolis, MN, June 2012.
21. McKibben JBA, **Gray CL**, Mason ST, Rios R, Fauerbach JA. *Scoring techniques for diagnostic assessment instruments with non-ignorable missingness: The case for non-caseness*. Anxiety Disorder Association of America (poster), Arlington, VA, April 2012.

22. **Gray CL**, Fullerton CS, McKibben JBA, Kodsy N, Probe D, Ursano RJ. *Rates of mental health service utilization in the US Army*. International Society of Traumatic Stress Studies (poster). Washington, DC, November 2011.
23. **Gray CL**, Fullerton CS, Biggs QM, Santiago P, McCarroll JE, Newby J, Riley S, Kodsy N, Spiegel C, Ursano RJ. *Empirical evidence for a Psychological First Aid-based intervention in soldiers post-deployment*. American Psychological Association (poster). Washington, DC, August 2011.
24. Reissman D, **Gray CL\***, Bornemann J, Gifford RK, Howard J, Ursano, RJ. *From War to Work: Understanding the Needs and the Strengths of Reserve and National Guard Service Members Returning from Deployment*. American College of Occupational and Environmental Medicine (symposium speaker). Washington, DC, March 2011.
25. **Gray CL**, Bailey K, Berger B, Schneeman B, Taylor T, Koch B, Hedric D. *The Community Flu Shot Challenge: Testing the public health system's capacity for mass immunization in Yellowstone County, Montana*. National Immunization Conference (oral), Kansas City, MO.
26. Piltch E, Williams B, **Gray CL\***. *Creating healthy places using the built environment: Perspectives from three different states*. Public Health Prevention Service Conference (oral, presenting author), Atlanta, GA, July 2007.

## TEACHING

### Guest Lecturer

Foundations of Maternal and Child Health (MCH 702) 2016, 2018

### Teaching Assistant

Social Epidemiology Methods (EPID 827) 2016

Analytic Methods in Observational Epidemiology (EPID 718) 2013 – 2015

Social Epidemiology Seminar (EPID 799A) 2014

## SERVICE

### UNC – Chapel Hill

Member, Graduate Studies Committee 2015 – 2016

Coordinator, Social Epidemiology Journal Club 2012 – 2015

Member, Staff Awards Committee 2014

Member, Search Committee for Student Services Manager 2014

Secretary, Epidemiology Student Organization 2012 – 2013

### Centers for Disease Control and Prevention

Chair, PHPS Liaison Committee 2008

Member, Review Committee, Agency Applications to PHPS Program 2007

Vaccination Campaign Monitor, Bihar, India 2006

### Local / National / International

Reviewer, Member, Society for Epidemiologic Research (SER) 2012 – present

Member, International Society for Environmental Epidemiology (ISEE) 2014 – present

Member, American Public Health Association (APHA) 2004 – 2008

Member, Public Health Prevention Service Alumni Association 2008 – present

Member, Montana Public Health Association 2007 – 2008

Member, Student Outreach and Response Team (SORT) 2004 – 2005

Dekalb County Health Department, Atlanta, GA  
 Outbreak Response Volunteer, 2008 G8 Summit, Savannah, GA 2004  
 Georgia Division of Public Health

### Scientific Journal Peer Review

Aids Care

Diabetes Obesity and Medicine

Disaster Medicine and Public Health Preparedness

PLoS One

## FUNDING

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### Current

5R01MH112633 Dorsey, Whetten (M-PI) 07/01/2017 - 06/31/2021  
*Building and Sustaining Interventions for Children (BASIC): Task-sharing mental health care in low-resource settings*  
Using a stepped wedge design, *BASIC* will conduct a Hybrid Type II Implementation-Effectiveness trial in Kenya in schools (with teachers as counselors) and villages (with health volunteers as counselors) with the goal of identifying implementation practices and policies that predict implementation and intervention effectiveness and potential sustainability.  
Role: Investigator

5R01HD090984 Whetten (PI) 07/01/2017 - 06/31/2021  
*Positive Outcomes for Orphans (POFO): HIV Risk as Young Adults*  
This study builds on the previous POFO longitudinal study of orphaned and separated children (OSC) across 4 low income countries. Up to 14 years of data will be used to develop models that identify early those OSC at highest risk for HIV infection as young adults. A new sample of OSC from each study site will allow for the proper weighting of the original POFO cohort to ensure the relevance of its outcomes to today's population of OSC. The study will use Discrete Choice Experiments (DCEs) to identify how preferences for HIV prevention programs differ by site and gender. Results may be used to develop targeted HIV prevention programs, while methods can be applied to make programs locally acceptable and thus more effective.  
Role: Investigator

### Completed

5R01HD046345 Whetten (PI) 11/01/2003 - 07/31/2016  
*HIV/AIDS and Orphan Care: Positive Outcomes for Orphans (POFO I and II)*  
*Purpose:* The objective of this 5 country, longitudinal study of orphaned and abandoned children is to examine the influence of orphan placement and caregiver characteristics on child outcomes. The first 4 years focused on emotional adjustment, learning, and health. The next 5 years focus on educational achievement, labor force participation, civic engagement, risk behaviors, marital formation and child bearing. 3,000 children and their caregivers in Cambodia, India, Ethiopia, Kenya and Tanzania are involved in the study.  
Role: Analyst

UNC-CH 2012 Junior Faculty Development Award Robinson (PI) 01/01/2012 – 12/12/2012  
*Throwing out the baby with the bathwater? Comparing two approaches to handling implausible values of body size*  
The purpose of this study is to examine methods for analytically addressing observed height loss (measurement error) in a cohort of growing adolescents.  
Role: Analyst