

Emma M. Rosen

Doctoral student

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EDUCATION

Doctor of Philosophy Expected May 2024

Epidemiology

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

Master of Science in Public Health May 2017

Environmental Health & Epidemiology

Rollins School of Public Health, Emory University, Atlanta, GA

Thesis title: The Effect of Polybrominated Biphenyl Exposure on Rate of Digestive Cancer Diagnosis in the Michigan Cohort

Thesis advisor: Michele Marcus, PhD, MPH

Bachelor of Arts May 2014

Biology, Chemistry (minor)

Oberlin College, Oberlin, OH

RESEARCH AND PROFESSIONAL EXPERIENCE

Post Masters Fellow Sept. 2017 – July 2019

Perinatal & Early Life Epidemiology Group, Epidemiology Branch

National Institute of Environmental Health Sciences, Research Triangle Park, NC

Principal Investigator: Kelly Ferguson, PhD

- Conducted survival analyses using various methods such as Cox Proportional Hazards models and Accelerated Failure Time models.
- Analyzed repeated measures of phthalates in urine in relation to outcomes such as preterm birth, preeclampsia, and small for gestational age.
- Applied methodological techniques such as multiple imputation, inverse probability of selection weighting, and dimension reduction techniques in mixtures analyses.
- Collaborated with intramural and extramural experts in reproductive health outcomes to carry out research in prospective pregnancy cohorts.
- Drafted manuscripts for submission to peer-reviewed journals.
- Participated in and led weekly branch-wide journal clubs discussing recent developments in the field of reproductive epidemiology.

Epidemiology Research Assistant

Sept. 2015 – Aug. 2017

Department of Epidemiology
Michigan Polybrominated Biphenyl Registry
Rollins School of Public Health, Emory University
Atlanta, GA

Principal Investigator: Michele Marcus, PhD, MPH

- Investigated the long-term and multigenerational health effects of a cohort of Michigan residents following an agricultural contamination incident involving polybrominated biphenyls.
- Assisted in drafting of R01 grant proposal and performed literature reviews on recent human and animal studies investigating health effects associated with flame retardant exposure.
- Supervised projects such as the writing and mailing of participants' results letters and developed and oversaw tasks for undergraduate volunteers.
- Communicated scientific findings to a lay population and managed communication with community participants.
- Performed qualitative and quantitative data analyses on various health outcomes such as reproductive endpoints, diabetes, and autoimmune conditions.
- Developed in-depth participant health questionnaire for monitoring and identification of health concerns among thousands of registry participants.

Environmental Health Teaching Assistant

Jan. 2017 – May 2017

Department of Environmental Health
Rollins School of Public Health, Emory University
Atlanta, GA

Instructor: Jeremy Sarnat, ScD

- Helped revise curriculum and develop discussion questions for lecture sessions.
- Tutored graduate-level students one-on-one in environmental health concepts and principles.

Health Scientist Intern

Summer 2016

Regulatory Support and Science Policy Division
Office of Children's Health Protection
US Environmental Protection Agency, Washington, D.C.

- Conducted a comprehensive literature review on lead exposure routes in children and authored a Lead Source Apportionment Report
- Evaluated over 200 risk assessments and identified pesticides that disproportionately affect infants to assist in future policy decisions.

AmeriCorps VISTA – Community Engagement Coordinator

Aug. 2014 – July 2015

Asheville City Schools Foundation
Asheville, NC

- Organized and hosted eight successful school events to encourage parental involvement among low-income and minority families.
- Generated approximately \$23,000 in volunteer hours, in-kind donations, and grants for the school.

- Spearheaded leadership and planning team of 10 VISTAs and 15 volunteers to coordinate all-district community event that involved 80+ participants and 100+ attendees.
- Won “VISTA Star” award from cohort of 16 people, highlighting exemplary achievements.

Teaching Assistant and Group Learning Facilitator

Jan. 2013 – May 2014

Department of Biology

Oberlin College, Oberlin, OH

- Worked as Teaching Assistant in Introductory Biology Laboratory course and led investigative dissections, taught experimental design, and graded student assignments.
- Facilitated twice-weekly discussion and designed relevant activities for two semesters in the Oberlin Workshops and Learning Sessions program for Introductory Biology courses.

Research Assistant

Sept. 2012 – May 2014

Department of Biology

Oberlin College, Oberlin, OH

Mentors: Taylor Allen, PhD & Adam Haberman, PhD

- In Dr. Taylor Allen’s muscle physiology laboratory, created mutant *C. elegans* phenotypes in order to map mutations to specific genes.
- Assisted in Dr. Adam Haberman’s neural degeneration laboratory. Responsible for crossbreeding *Drosophila melanogaster* and running Western blots.

HONORS AND AWARDS

SPER Student Poster Competition Winner	June 2019
<i>Who’s Who Among Students in American Universities and Colleges</i>	May 2017
Award for Research Excellence in Environmental Health, runner-up	April 2017
NIOSH Training Grant T03OH008609	2015 – 2017
Hope Hibbard Memorial Scholarship in Biology	May 2014
John Frederick Oberlin Scholarship	2010 – 2014

SERVICE AND LEADERSHIP

Rollins Environmental Health Action Coalition, Vice President	2016 – 2017
Rollins School of Public Health Strategic Plan, Selected Student Representative	2016 – 2017
Emory Pipeline Collaborative, Mentor and Instructor	2015 – 2017
Environmental Health Department, Student Government Representative	2016 – 2017
Rollins Student Ambassador	2016 – 2017
Oberlin College Campus Tour Guide and Admissions Intern	2012 – 2014
Oberlin Student Cooperative Food Safety and Kitchen Coordinator	2013 – 2014
America Counts Math Tutor	2013 – 2014

PUBLICATIONS

Rosen EM, Brantsaeter AL, Carroll R, Haug LS, Singer AB, Zhao SS, Ferguson KK. Maternal Plasma Concentrations of Per- and polyfluoroalkyl Substances and Breastfeeding Duration in the Norwegian Mother and Child Cohort. *Environ Epidemiol*, 2018. 2(3). PMID: PMC6173485

Rosen EM, Muñoz MG, McElrath TF, Cantonwine DE, Ferguson KK. Environmental contaminants and preeclampsia: a systematic literature review. *J Toxicol Environ Health B Crit Rev*. 2018;21(5):291-319. PMID: 30582407

Rosen EM, van 't Erve TJ, Boss J, Sathyanarayana S, Barrett ES, Nguyen RHN, Bush NR, Milne GL, McElrath TF, Swan SH, Ferguson KK. Urinary oxidative stress biomarkers and accelerated time to spontaneous delivery. *Free Radic Biol Med*. 2019 Jan;130:419-425. PMID: 30445128

van 't Erve TJ, **Rosen EM**, Barrett ES, Nguyen RHN, Sathyanarayana S, Milne GL, Calafat AM, Swan SH, Ferguson KK. Phthalates and phthalate alternatives have diverse associations with oxidative stress and inflammation in pregnant women. *Environ Sci Technol*. 2019 Mar 19;53(6):3258-3267. PMID: 30793895

*NIEHS Intramural Paper of the Month

Sley E*, **Rosen EM**, van 't Erve TJ, Sathyanarayana S, Barrett ES, Nguyen RHN, Bush NR, Milne GL, Swan SH, Ferguson KK. Omega-3 fatty acid supplementation during pregnancy and urinary oxidative stress levels. *Journal of Maternal & Child Nutrition* (Under review).

*student under my supervision

Ferguson KK, **Rosen EM**, Rosario Z, Feric Z, Calafat AM, McElrath TF, Velez CV, Cordero J, Alshawabkeh A, Meeker JD. Environmental phthalate exposure and preterm birth in the PROTECT birth cohort. *Environment International* (In revisions).

Rosen EM, Minguez-Alarcon L, Meeker JD, Milner GL, Hauser R, Ferguson KK for the EARTH Study Team. Urinary oxidative stress levels and reproductive outcomes among couples undergoing fertility treatments. *Human Reproduction* (Under review).

Ferguson KK, **Rosen EM**, Barrett ES, Nguyen RHN, Bush NR, McElrath TF, Swan SS, Sathyanarayana S. Phthalate exposure and stressful life events in pregnancy have a joint effect on preterm birth. *Environment International* (Under review).

Ferguson KK, Arogbokun O*, **Rosen EM**, Keil A, Swan SS, Barrett ES, Nguyen RHN, Bush NR, Sathyanarayana S. Urinary oxidative stress metabolites in pregnancy and trajectories of fetal to early childhood growth. *In preparation*.

*student under my supervision

PROFESSIONAL SERVICE

ISEE-ISES Annual Conference Session Co-Chair
NIEHS Epidemiology Branch Journal Club Coordinator

2018
Sept. 2018 – July 2019