Elizabeth A. Gibson

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EDUCATION

May 2021 **Doctor of Philosophy, Environmental Health Sciences**
Columbia University, Graduate School of Arts and Sciences
- GPA: 3.9

June 2018 **Master of Philosophy, Environmental Health Sciences**
Columbia University, Graduate School of Arts and Sciences
- GPA: 3.8

May 2016 **Master of Public Heath, Epidemiology, Applied Biostatistics**
Columbia University, Mailman School of Public Health
- Master's Thesis: "Molecular effects of in utero cadmium exposure"
- GPA: 4.0

May 2010 **Bachelor of Arts in Environmental Science**
Emory University, College of Arts and Sciences
- Double Major in English
- GPA: 3.9

May 2008 **Associate of Arts**
Emory University, Oxford College
- GPA: 3.9

FELLOWSHIPS & SCHOLARSHIPS

Jan 2019 – May 2021 NIH Individual Predoctoral Fellowship (F31)
- Project: Complex Mixtures of Endocrine Disrupting Chemicals in Relation to Cognitive Development

Aug. 2017 – Jan. 2019 NIH Training Fellowship (T32) ES007322, NIEHS
- Interdisciplinary Training in Environmental Health

Aug. 2016 – Aug. 2017 NIH Training Fellowship (T32) ES023772, NIEHS
- Environmental Life Course Epidemiology Training

2014 – 2016 Epi Scholar (academic scholarship at Columbia)

2006 – 2010 Oxford Scholar (academic scholarship at Emory)

HONORS

2017 Student Travel Award, International Society for Children's Health and the Environment (ISCHE) Bi-Annual Meeting

2015 First Place, Epi Master's Student Day, Columbia University, Mailman School of Public Health, Epidemiology Department

2008 Phi Beta Kappa induction, Emory College

2006 – 2010 Dean's List, Oxford & Emory Colleges

WORK EXPERIENCE

2016 – present **Graduate Researcher**
Department of Environmental Health Sciences, Columbia University
- Conducting analyses of epidemiological and intervention studies focusing on mixtures of environmental exposures such as metals and endocrine disrupting chemicals, using high dimensional data sets.
- Collaborating with computer scientists and engineers to adapt machine learning algorithms to public health problems in a robust, rigorous, and reproducible manner.
- Preparing conference presentations and manuscripts reporting study findings for current applied research and methods development.
- Writing user-friendly R packages for pattern identification.

2015 – 2016 **Climate and Health Intern**
Department of Health and Mental Hygiene, New York, NY
- Constructed and managed database of hypothermia death records in relational databases using Access.
- Performed data analysis in SAS for descriptive and statistical interpretations of hypothermia deaths.
- Compiled results and drafts manuscript for presentation to CDC and publication.

2014 – 2015 **Research Assistant**
Columbia Center for Children's Environmental Health, Columbia University
- Conducted analyses of epidemiological data from a mothers and newborns cohort in Tongliang, China focusing on cadmium exposure, biomarkers, and fetal growth.
- Prepared conference presentation and manuscript reporting study findings for Master's Thesis.

2011 – 2013 **Community Environmental Conservation Volunteer**
U.S. Peace Corps, Republic of Panama
- Developed and managed funds of an Energy and Climate Partnership of the Americas grant, supervising construction of fuel-efficient cook stoves, resulting in 26 improved stoves built and 52 community members trained in renewable energy technologies and natural resource management.
- Formulated lesson plans and facilitated over 300 hours of natural sciences and environmental education for 15 youths from 5-12 years of age.
- Collaborated with government horticultural agency to establish 11 community gardens in homes and primary school, addressing childhood nutritional needs, sustainability, and local access.
- Coordinated recycling program in primary school, confronting waste management as a health, environmental, and social justice problem.
- Facilitated professional interaction between host country nationals and government agencies to promote sustainable community development.

TEACHING EXPERIENCE

Spring 2019 – 2020 **Teaching Fellow, Computational Toxicology**
Department of Environmental Health Sciences, Columbia University

Fall 2017 – 2018 **Teaching Fellow, Molecular Epidemiology**
Department of Environmental Health Sciences, Columbia University

Summer 2018 – 2019 **Workshop Guide, Environmental Mixtures Workshop**
Department of Environmental Health Sciences, Columbia University

Summer 2016 **Teaching Assistant, Multilevel Modeling**
Epidemiology and Public Health Summer Institute (EPIC), Columbia University

Spring – Summer 2016 **Teaching Assistant, Analysis of Categorical Data**
Department of Biostatistics, Columbia University

Spring 2016 **Teaching Assistant, Biological & Environmental Determinants of Health**
Department of Environmental Health Sciences, Columbia University

Fall 2007 – 2008 **Writing Tutor**
Oxford Writing Center, Emory University

ACADEMIC SERVICE

Reviewer Environmental Health Perspectives, Environmental Research, Environment International

PROGRAMMING SKILLS

Languages Proficient: R, SAS, Stan
Familiar: MATLAB, Python, SQL, Stata

Tools Proficient: LaTeX, Git/DVCS

CERTIFICATIONS AND TRAININGS

2012 Brick Masonry Construction Training, Ministerio de Ambiente de Panama, Republic of Panama

2010 Agricultural Tractor Safety Training Certificate, U.S. Fish and Wildlife Service, Kansas

PUBLICATIONS

Peer-Reviewed Articles

1. Chen Y, Wu F, Liu X, Parvez F, Lolacono NJ, **Gibson EA**, Kioumourtzoglou M-A, Levy D, Shahriar H, Uddin MN, Islam T, Lomax A, Saxena R, Sanchez T, Santiago D, Ellis T, Ahsan H, Wasserman GA, Graziano JH. Early life and adolescent arsenic exposure from drinking water and blood pressure in adolescence. Environmental Research. 2019 Aug 20:108681.
2. **Gibson EA**, Nunez Y, Abuawad A, Zota AR, Renzetti S, Devick KL, Gennings C, Goldsmith J, Coull BA, Kioumourtzoglou MA. An overview of methods to address distinct research questions on environmental mixtures: an application to persistent organic pollutants and leukocyte telomere length. Environmental Health. 2019 Dec 1; 18(1): 76.
3. **Gibson EA**, Goldsmith J, Kioumourtzoglou M-A. Complex Mixtures, Complex Analyses: an Emphasis on Interpretable Results. Current Environmental Health Reports. 2019 May 8:1-9.
4. **Gibson EA**, Stapleton HM, Calero L, Holmes D, Burke K, Martinez R, Cortes B, Nematollahi A, Evans D, Anderson KA, Herbstman JB. Differential exposure to organophosphate flame retardants in mother-child pairs. Chemosphere. 2018 Dec 4; 219: 567-73.
5. **Gibson EA**, Siegel EL, Eniola F, Herbstman JB, Factor-Litvak P. Effects of polybrominated diphenyl ethers on child cognitive, behavioral, and motor development. International Journal of Environmental Research and Public Health. 2018 Aug 2; 15(8): 1636.
6. **Gibson EA**, Stapleton HM, Calero L, Holmes D, Burke K, Martinez R, Cortes B, Nematollahi A, Evans D, Herbstman JB. Flame retardant exposure assessment: findings from a behavioral intervention study. Journal of Exposure Science & Environmental Epidemiology. 2018 Jun 28: 1.
7. Wasserman GA, Liu X, Parvez F, Chen Y, Factor-Litvak P, Lolacono NJ, Levy D, Shahriar H, Uddin MN, Islam T, Lomax A, Saxena R, **Gibson EA**, Kioumourtzoglou M-A, Balac O, Sanchez T, Kline JK, Santiago D, Ellis T, van Geen A, Graziano JH. A cross-sectional study of water arsenic exposure and intellectual function in adolescence in Araihazar, Bangladesh. Environment International. 2018 Sep 30; 118: 304-13.
8. Lane K, Ito K, Johnson S, **Gibson EA**, Tang A, Matte T. Burden and risk factors for cold-related illness and death in New York City. International Journal of Environmental Research and Public Health. 2018 Mar 30; 15(4): 632.

PRESENTATIONS

Oral

8. **Gibson EA**, Nunez Y, Abuawad A, Zota AR, Renzetti S, Devick KL, Gennings C, Goldsmith J, Coull BA, and Kioumourtzoglou M-A. An Overview of Methods to Address Distinct Research Questions on Environmental Mixtures: An Application to Persistent Organic Pollutants and Leukocyte Telomere Length. Oral Presentation for Seminar Series, Environmental Health Sciences Department (EHS), Mailman School of Public Health (MSPH), Columbia University. Oct 2019. New York, NY, USA.
9. **Gibson EA**, Kioumourtzoglou M-A, Herbstman JB. Environmental mixtures of endocrine disrupting chemicals and risk to cognitive development. Oral presentation for the American Pediatric Association (APA) Environmental Health Scholars Retreat. October 2018. Providence, Rhode Island, USA.
10. **Gibson EA**, Stapleton HM, Calero L, Holmes D, Burke K, Martinez R, Cortes B, Nematollahi A, Evans D, Anderson KA, Herbstman JB. Flame Retardant Exposure Assessment: Findings from a Behavioral Intervention. Oral presentation for the Brominated Flame Retardant Workshop (BFR). May 2018. Niagara-on-the-lake, Ontario, Canada.

Oral

1. **Gibson EA**, Stapleton HM, Calero L, Holmes D, Burke K, Martinez R, Cortes B, Nematollahi A, Evans D, Anderson KA, Herbstman JB. Intervention efficacy: Differentiating signal from noise. Oral presentation for the International Society for Children's Health and the Environment (ISCHE). August 2016. Whidbey Island, Washington, USA.
2. **Gibson EA**, Stapleton HM, Calero L, Holmes D, Burke K, Martinez R, Cortes B, Nematollahi A, Evans D, Anderson KA, Herbstman JB. Reducing exposure to flame retardants. Does it work? Oral Presentation for Seminar Series, Environmental Health Sciences Department (EHS), Mailman School of Public Health (MSPH), Columbia University. May 2017. New York, NY, USA.
3. **Gibson EA**, Zhou Z, Factor-Litvak P, Perera F, Yu J, Tang D. Molecular effects of in utero cadmium exposure. Oral presentation for Master's Student Day, Epidemiology Department, Mailman School of Public Health (MSPH), Columbia University. October 2015. New York, NY, USA.

Posters

1. **Gibson EA**, Spratlen MJ, Colgan R, Wright J, Goldsmith J, Perera FP, Factor-Litvak P, Herbstman JB, Kioumourtzoglou M-A. Patterns of phenol, paraben & phthalate exposure in NYC women. Poster presentation for the International Society for Environmental Epidemiology (ISEE). August 2019. Utrecht, Netherlands.
2. **Gibson EA**, Nunez Y, Kioumourtzoglou M-A. Overview of Commonly-Used Methods to Analyze Exposure to Mixtures in Environmental Epidemiology. Poster presentation for the Powering Research Through Innovative Methods for Mixtures in Epidemiology (PRIME) Program Meeting, National Institute of Environmental Health Sciences (NIEHS). April 2019. Research Triangle Park, NC, USA.
3. **Gibson EA**, Spratlen MJ, Colgan R, Wright J, Goldsmith J, Perera FP, Factor-Litvak P, Herbstman JB, Kioumourtzoglou M-A. Patterns of phenol, paraben & phthalate exposure in NYC women. Poster presentation for the Powering Research Through Innovative Methods for Mixtures in Epidemiology (PRIME) Program Meeting, National Institute of Environmental Health Sciences (NIEHS). April 2019. Research Triangle Park, NC, USA.
4. **Gibson EA**, Kioumourtzoglou M-A, Wasserman GA, Liu X, Parvez F, Chen Y, Factor-Litvak P, LoIacono NJ, Shahriar H, Nasir Uddin M, Islam T, Saxena R, Balac O, Sanchez T, Kline JK, van Geen A, Graziano JH. Metal Exposure as a Mixture and Intellectual Function in Adolescence in Bangladesh. Poster presentation for the International Society for Environmental Epidemiology (ISEE). August 2018. Ottawa, Ontario, Canada.
5. **Gibson EA**, Zhou Z, Factor-Litvak P, Perera F, Yu J, Tang D. Molecular effects of in utero cadmium exposure. Poster presentation for the International Society for Environmental Epidemiology (ISEE). August 2016. Rome, Italy.
6. Lane K, Ito K, Johnson S, **Gibson EA**, Tang A, Matte T. Investigation of Cold-Related Deaths in New York City, 2009-2015. Poster presentation for the Summit on Environmental Hazards and Health Effects, CDC National Center for Environmental Health. January 2016. Atlanta, GA, USA.