

Julie Beth Herbstman

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TRAINING:

Columbia University, Mailman School of Public Health, New York, NY 2006-2010
Postdoctoral Research Fellow
Columbia Center for Children's Environmental Health
Mentor: Dr. Frederica P. Perera, DrPH

Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD 2007
PhD, Environmental Epidemiology (degree completed: June 2006)
Dissertation: "Prenatal Exposure to Polybrominated Diphenyl Ethers:
Effect on Birth Weight, Gestational Age, and Thyroid
Function"
Advisor: Dr. Lynn R. Goldman, MD MPH

Johns Hopkins University, School of Public Health, Baltimore, MD 2002
ScM, Epidemiology
Thesis: "Respiratory Effects of Inhalation Exposure Among Workers
During the Clean-Up Effort at the World Trade Center Disaster
Site"
Advisor: Dr. Margo Schwab, PhD

Johns Hopkins University, School of Public Health, Baltimore, MD 2001
Certificate in Risk Sciences and Public Policy

Tufts University, Medford, MA 1998
B.A. (*cum laude*), Major: Comparative Religion; Minor: Engineering
Science; Certificate in Community Health

FELLOWSHIPS AND AWARDS:

Career Development Award 2012-2014
*Center for Environmental Health in Northern Manhattan,
Columbia University*

K99-R00 "Pathway to Independence" Career Development Award (NIEHS) 2009-2014
Sponsor (for K99 phase): Dr. Frederica Perera

National Cancer Institute Postdoctoral Fellowship 2006-2009
Principal Investigator: Dr. Alfred Neugut

Center for a Livable Future Research Award 2004, 2005
Principal Investigator: Dr. Lynn Goldman

Doctoral Fellowship in Environmental Public Health Tracking 2004-2005
Principal Investigator: Dr. Thomas Burke

The Charlotte Ferenze Fellowship 2004
Johns Hopkins Department of Epidemiology

Maternal Child Health – Epidemiology Fellowship in Applied Epidemiology	2003-2004
<i>Principal Investigator: Dr. Pat O’Campo</i>	
National Cancer Institute Summer Fellowship	2001
<i>Mentor: Dr. Montserrat Garcia-Closas</i>	
 <u>SCIENCE ADVISORY BOARD/REVIEW PANELS:</u>	
Columbia’s Center for Environmental Health in Northern Manhattan, Pilot grant review	2012
Einstein-Montefiore Institute for Clinical and Translational Research, Mentored Clinical and Translational Research Career Development Awards review	2012
University of Michigan Environmental Health Science Core Center, Pilot grant review	2012
Harvard School of Public Health NIEHS Center, Pilot grant review	
NIEHS R13 Peer Review Panel	October 2012
U.S. EPA Science Advisory Board Panel on Perchlorate	2012-2013
NIH, Infectious Disease, Reproductive Health, Asthma and Pulmonary Conditions Study Section (IRAP), Ad Hoc Member	June 2013
New York Academy of Sciences, Scientific conferences review	2013
Canadian Institutes of Health Research, external reviewer.	2013
NIH, Neurological, Aging, Musculoskeleton, and Epidemiology Study Section (NAME), Ad Hoc Member	October 2014
South African Medical Research Council (MRC), external reviewer.	2014
 <u>RESEARCH EXPERIENCE:</u>	
Assistant Professor	2010-present
Research Fellow/Scientist	2006-2010
Columbia Center for Children’s Environmental Health NIEHS Center for Environmental Health in Northern Manhattan Herbert Irving Cancer Center Member Department of Environmental Health Sciences Columbia Mailman School of Public Health New York, NY	
Research Investigator	2006-present
Research Assistant	2003-2006
“Tracking Health Related to Environmental Exposures” (THREE) Study Department of Environmental Health Sciences Johns Hopkins Bloomberg School of Public Health Baltimore, MD	
Research Fellow	2003-2006
Johns Hopkins Center of Excellence in Environmental Health Tracking Department of Health Policy and Management Johns Hopkins Bloomberg School of Public Health Baltimore, MD	

<i>Research Fellow</i>	2001-2004
Johns Hopkins World Trade Center (WTC) Research Team Department of Environmental Health Sciences Johns Hopkins Bloomberg School of Public Health Baltimore, MD	
<i>Research Intern, Environmental Epidemiology Branch</i>	2001
Department of Cancer Epidemiology and Genetics National Cancer Institute Rockville, MD	
<i>Research Assistant</i>	2000
North Dakota Children's Health Study Department of Epidemiology Johns Hopkins School of Public Health Baltimore, MD	
<i>Research Assistant</i>	1998-2000
Nurses' Health Study Channing Laboratory Brigham and Women's Hospital Boston, MA	
<i>Research Intern</i>	1998
Silent Spring Institute Newton, MA	
<u>TEACHING EXPERIENCE:</u>	
<i>Instructor, Postgraduate Course at the American Thoracic Society Meeting</i>	2012, 2014
• The Epigenetics of Lung Disease (1 day)	
<i>Instructor, Workshop in Risk Assessment and Molecular Epidemiology Shanghai Fudan University</i>	2010
• Molecular Epidemiology (1 week)	
<i>Course Director/Instructor, Department of Environmental Health Sciences</i>	2006-Present
Columbia Mailman School of Public Health	
• Analysis of Environmental Data (2013, 2014), Course Director	
• Molecular Epidemiology (2006-present), Lecturer	
• Journal Club (2011), Lecturer	
<i>Teaching Assistant, Department of Epidemiology</i>	
Johns Hopkins Bloomberg School of Public Health	
• Introduction to Epidemiology (2 years)	2001-2002
• Intermediate Epidemiology (2 years)	2004
• Quantitative Methods (4 years)	2002-2005
• Health Services Research (1 year)	2003
Johns Hopkins Krieger School of Arts and Sciences	
• Introduction to Epidemiology (1 year)	2003

Instructor, Experimental College

Tufts University

- Freshman literature course (1 year) 1998

MENTORING/ADVISING (COLUMBIA UNIVERSITY, UNLESS NOTED):

Jelena Vujcic, MPH, Department of Epidemiology	2009
Susan Edwards, MPH, Department of Environmental Health Sciences	2009
Erin Paxson, MS, Department of Human Nutrition	2009
Jennifer Mall, MPH, Department of Environmental Health Sciences	2010
Steven Cook, MPH, Department of Environmental Health Sciences	2011
Rosie Martinez, MPH, Department of Environmental Health Sciences	2012-2014
Shoko Kubotera, MPH, Department of Environmental Health Sciences	2012-2014
Whitney Cowell, PhD candidate, Department of Environmental Health Sciences	2012-present
Kristin White, MPH, Department of Epidemiology	2012
Zaynah Abid, MPH, Yale School of Public Health	2012
Katherine Schleiss, MPH, Department of Epidemiology	2013
Madeleine Hopson, MPH, Department of Environmental Health Sciences	2013-present
Erin Eimutus, MPH, Department of Environmental Health Sciences	2014-present

SELECTED ORAL PRESENTATIONS:

Prenatal Programming and Toxicity (PPTox) IV: Environmental Stressors in Disease and Implications for Human Health. (2014, Boston, MA)

Title: Cell distribution prediction from DNA methylation data using a reference set derived from umbilical cord blood

Northeast Regional Chapter of the Society of Toxicology Annual Meeting: Toxicological Aspects of Epigenetics (2014, Storrs, CT)

Title: DNA methylation and the challenge of linking prenatal exposures to childhood health outcomes

Duke University Integrated Toxicology and Environmental Health Program Spring Symposium (2013, Durham, NC)

Title: Detecting Methylation Changes Associated with Prenatal Exposure to Air Pollutants

Third Symposium on Anesthesia and Neurodevelopment in Children (2012, New York, NY)

Title: Use of Epigenetic Analyses in Studies of Neurodevelopment

American Academy of Pediatrics Julius B. Richmond Center of Excellence Visiting Lectureship and Grand Rounds (2012, Baton Rouge, LA)

Title: Human Epigenetics of Air Pollution

NIEHS Core Centers Meeting: Young Investigator Presentation (2012, Boston, MA)

Title: Using Sibling Pairs to Identify PAH-related Methylation Differences

International Society for Environmental Epidemiology (2011, Barcelona, Spain)

Title: Prenatal Exposure to PBDEs and Child Behavior at 3-7 Years

12th Annual Brominated and Other Flame Retardants (2011, Boston, MA)

Title: PBDE Levels In Children Determined Longitudinally From Birth To Age 9

Dioxin 2010 (2010, San Antonio, TX)

Title: Prenatal Exposure to PBDEs and Neurodevelopment

Am. Assoc. of Cancer Research, Future of Molecular Epidemiology (2010, Miami, FL)

Title: Using sibling pairs to study the epigenetic effects of prenatal PAH exposure

International Society for Environmental Epidemiology (2009 Dublin, Ireland)

Title: Prenatal exposure to polycyclic aromatic hydrocarbons and CpG methylation

International Society for Environmental Epidemiology (2008 Pasadena, CA)

Title: Prenatal Exposure to PBDEs and Neurodevelopment

International Society for Environmental Epidemiology (2007 Mexico City, MX)

Title: PBDE Exposure, Maternal-Fetal Transfer and Birth Outcomes

American Public Health Association (2005 Philadelphia, PA)

Title: State Capacity to Address Non-Communicable Disease Clusters

Dioxin 2005 (2005 Toronto, ON)

Title: PCBs and PBDEs and Thyroid Hormone Levels in Umbilical Cord Blood in an Urban U.S. population: A Feasibility Study.

Johns Hopkins Center for a Livable Future Research Day (2005 Baltimore, MD)

Title: The Effect of Brominated Flame Retardants (PBDEs) on Thyroid Hormone Status, Birthweight and Gestational Age.

American Industrial Hygiene Association, Chesapeake Section (2002 Baltimore, MD)

Title: Respiratory Health of Rubble Removal Workers at the World Trade Center Disaster Site

International Society of Environmental Epidemiology (2002 Vancouver, BC)

Title: Respiratory Health of Rubble Removal Workers at the World Trade Center Disaster Site

Title: Comparison of Exposure Surrogates for Predicting Health Status among Rubble Removal Workers at the WTC Disaster Site.

RESEARCH INTERESTS:

Perinatal and developmental epidemiology, health effects of endocrine disrupting chemicals, neurodevelopment, environmental public health surveillance, cancer, and children's health

PEER-REVIEWED PUBLICATIONS:

Barr RG, **Herbstman J**, Speizer FE, Camargo CA Jr. Validation of self-reported chronic obstructive pulmonary disease in a cohort study of nurses. *American Journal of Epidemiology*. 2002 May 15;155(10):965-71. [PMID: 11994237]

Garcia-Closas M, **Herbstman J**, Schiffman M, Glass A, Dorgan JF. Relationship between serum hormone concentrations, reproductive history, alcohol consumption and genetic polymorphisms in pre-menopausal women. *International Journal of Cancer*. 2002 Nov 10;102(2):172-8. [PMID: 12385014]

- Landrigan PJ, Liroy PJ, Thurston G, Berkowitz G, Chen LC, Chillrud SN, Gavett SH, Georgopoulos PG, Geyh AS, Levin S, Perera F, Rappaport SM, Small C; **NIEHS World Trade Center Working Group**. Health and environmental consequences of the World Trade Center disaster. *Environmental Health Perspectives*. 2004 May;112(6):731-9. [PMID: 15121517]
- Herbstman J**, Frank R, Schwab M, Williams DL, Samet J, Breyse P and Geyh A Respiratory effects of inhalation exposure among workers during the clean-up effort at the World Trade Center disaster site. *Environmental Research*. 2005 September; 99(1):85-92. [PMID: 16053932]
- Geyh AS, Chillrud S, Williams D, **Herbstman JB**, Symons JM, Turpin, BJ, Lim, HJ, Kim, SR, Breyse PN. "Assessing truck driver exposure at the World Trade Center disaster site: personal and area monitoring for particulate matter and volatile organic compounds during October 2001 and April 2002." *Journal of Occupational and Environmental Hygiene*. 2005 March;2(3):179-93. [PMID: 15764541]
- Breyse P, Williams, DL, **Herbstman J**, Symons JM, Chillrud, S, Ross J, Henshaw S, Rees K, Watson M, Geyh A. Asbestos Exposures to Truck Drivers During World Trade Center Clean-Up Operations. *Journal of Occupational and Environmental Hygiene*. 2005 August;2(8):400-5. [PMID: 16009648]
- Herbstman JB**, Sjödin A, Paterson DG, Apelberg BJ, Witter FR, Halden RU, Heidler J, Needham LL, Goldman, LR. PCBs and PBDEs and Thyroid Hormone Levels in Umbilical Cord Blood in an Urban U.S. population: A Feasibility Study. *Organohalogen Compounds*, 2005.
- Juzuch NS, Resnick B, Streeter R, **Herbstman J**, Zablotsky J, Fox M, Burke TA. State Capacity to Address Non-Communicable Disease Clusters: Is it Adequate in the Era of Environmental Public Health Tracking. *American Journal of Public Health*. 2007 Apr; 97 Suppl 1: S163-9. [PMID: 17413060]
- Apelberg BJ, Goldman LR, Calafat AM, **Herbstman JB**, Kuklennyik Z, Heidler J, Neeham LL, Halden RU, Witter FR. Determinants of Fetal Exposure to Perfluorinated Compounds in Baltimore, Maryland. *Environmental Science and Technology*. 2007 Jun 1; 41(11):3891-7. [PMID: 17612165]
- Apelberg BJ, Witter FR, **Herbstman JB**, Calafat AM, Halden RU, Needham LL, Goldman LR. Cord serum concentrations of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in relation to weight and size at birth. *Environmental Health Perspectives*. 2007 Nov; 115(11):1670-6. [PMID: 18008002]
- Herbstman JB**, Sjödin A, Apelberg BJ, Witter FR, Paterson DG, Halden RU, Jones RS, Park A, Zhang Y, Heidler J, Needham LL, Goldman, LR. Determinants of prenatal exposure to polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDEs) in an urban population. *Environmental Health Perspectives*. 2007 Dec; 115(12):1794-800. [PMID: 18087602]

- Apelberg BJ, Goldman LR, Halden RU, Witter FR, **Herbstman JB**, Needham LL.
Perfluoroalkane acids: Apelberg et Al. Respond. *Environmental Health Perspectives*, 2008 Jun;116(6):A238-9.
- Herbstman JB**, Apelberg BJ, Witter FR, Panny S, Goldman LR. Maternal, Infant and Delivery Factors Associated with Neonatal Thyroid Hormone Status. *Thyroid*. 2008 Jan;18(1):67-76. [PMID: 18302520]
- Herbstman JB**, Sjödin A, Apelberg BJ, Witter FR, Halden RU, Paterson DG, et al. Birth delivery mode modifies the associations between prenatal PCB and PBDE and neonatal thyroid hormone levels. *Environmental Health Perspectives*. 2008 Oct;116(10):1376-82. [PMID: 18941581]
- Perera FP and **Herbstman JB**. Emerging technology in molecular epidemiology: what epidemiologists need to know. *Epidemiology*, 2008 Mar;19(2):350-2. [PMID: 18277170]
- Perera F, Tang WY, **Herbstman J**, Tang D, Levin L, Miller R, Ho SM. Relation of DNA methylation of 5'-CpG island of ACSL3 to transplacental exposure to airborne polycyclic aromatic hydrocarbons and childhood asthma. *PLoS ONE*. 2009;4(2):e4488. [PMID: 19221603]
- Herbstman JB**, Sjödin A, Kurzon M, Lederman SA, Jones RS, Rauh VA, Needham LL, Tang D, Niedzwiecki M, Wang RY, and Perera FP. Prenatal Exposure to PBDEs and Neurodevelopment, *Environmental Health Perspectives*. 2010 May;118(5):712-9. [PMID: 20056561]
- Herbstman JB**, Kurzon M, Lederman SA, Rauh V, Tang D, Perera F. Prenatal PBDEs and Neurodevelopment: Herbstman et al. Respond to Goodman et al. and to Banasik and Strosznajder. *Environmental Health Perspectives*, 2010; 118:a469-a470.
- Wells EM, Jarrett JM, Lin YH, Caldwell KL, Hibbeln JR, Apelberg BJ, **Herbstman J**, et al. Body burdens and descriptors of mercury, lead, selenium and copper among Baltimore newborns, *Environmental Research*. 2011 Apr;111(3):411-7. [PMID: 21277575]
- Wells EM, Navas-Acien A, **Herbstman JB**, Apelberg BJ, Silbergeld EK, Caldwell KL, Jones RL, Halden RU, Witter FR, and Goldman LR. Low Level Lead Exposure and Elevations in Blood Pressure During Pregnancy, *Environmental Health Perspectives*. 2011 May;119(5):664-9. [PMID: 21292600]
- Perera FP and **Herbstman JB**. Prenatal Environmental Exposures, Epigenetics, and Disease. *Reproductive Toxicology*, 2011 Apr;31(3):363-73. [PMID: 21256208]
- Guerrero-Preston, R, **Herbstman J**, and Goldman LR. Epigenomic biomarkers: global DNA hypomethylation as a biosimeter of life-long environmental exposures. *Epigenomics*, 2011 Feb 3(1):1-5. [PMID: 22126146]
- Wells EM, Navas-Acien A, Apelberg BJ, **Herbstman JB**, Jarrett JM, Lin YH, Caldwell KL, Hibbeln JR, Halden RU, Witter FR, and Goldman LR. Selenium and maternal blood pressure during childbirth, *Journal of Exposure Science and Environmental Epidemiology*. 2012 Mar-Apr; 22(2): 191-7. [PMID: 22108761]

- Herbstman JB**, Tang D, Zhu D, Qu L, Perera FP. Prenatal exposure to polycyclic aromatic hydrocarbons, PAH-DNA adducts and genomic DNA methylation in cord blood. *Environmental Health Perspectives*. 2012 May;120(5):733-8. [PMID: 22256332]
- Lee H, Jaffe AE, Feinberg JI, Tryggvadottir R, Brown S, Montano C, Aryee MJ, Irizarry RA, **Herbstman J**, Witter FR, Goldman LR, Feinberg AP, Fallin MD. DNA methylation shows genome-wide association of NFIX, RAPGEF2 and MSRB3 with gestational age at birth. *International Journal of Epidemiology*. 2012 Feb; 41(1): 188-99. [PMID: 22422452]
- Perera F, Vishnevetsky J, **Herbstman JB**, Calafat AM, Xiong W, Rauh V, Wang S. Prenatal Bisphenol A exposure and child behavior in an inner city cohort. *Environmental Health Perspectives*, 2012 Aug; 120(8):1190-4. [PMID: 22543054]
- Tang WY, Levin L, Talaska G, Cheung YY, **Herbstman J**, Tang D, Miller RL, Perera F, Ho SM. Maternal Exposure to Polycyclic Aromatic Hydrocarbons and 5'-CpG Methylation of Interferon- γ in Cord White Blood Cells. *Environmental Health Perspectives*. 2012 Aug; 120(8): 1195-200. [PMID: 22562770]
- Herbstman JB**, Wang S, Perera FP, Lederman SA, Vishnevetsky J, Rundle AG, Hoepner LA, Qu L, Tang D. Predictors and consequences of global DNA methylation in cord blood and at three years. *PLoS One*. 2013 Sep 4;8(9). [PMID: 24023780]
- Abid Z, Roy A, **Herbstman JB**, Ettinger AS. Urinary Polycyclic Aromatic Hydrocarbon Metabolites and Attention Deficit/Hyperactivity Disorder, Learning Disability, and Special Education in U.S. children Aged 6-15. *J Environ Public Health*. 2014; 2014:628508. [PMID: 24624143]
- Herbstman JB** and Mall JK. PBDEs and Neurodevelopment, *Current Environmental Health Reports*. (2014), June; 1(2): 101-112.
- Wells EM, Navas-Acien A, Apelberg BJ, **Herbstman JB**, Jarrett JM, Lin YH, Verdon CP, Ward C, Caldwell KL, Hibbeln JR, Halden RU, Witter FR, Goldman LR. Association of selenium and copper with lipids in umbilical cord blood. *Journal of Developmental Origins of Health and Disease*. 2014 Aug; 5(4):281-7.
- Perera FP, Chang HW, Tang D, Roen EL, **Herbstman J**, Margolis A, Huang TJ, Miller RL, Wang S, Rauh V. Early-life exposure to polycyclic aromatic hydrocarbons and ADHD behavior problems. *PLoS One*. 2014 Nov 5;9 (11).
- Hansmeier N, Chao TC, **Herbstman JB**, Goldman LR, Witter FR, Halden RU. Elucidating the Molecular Basis of Adverse Health Effects from Exposure to Anthropogenic Polyfluorinated Compounds Using Toxicoproteomic Approaches. *J Proteome Res*. 2014 Nov 11 (*in press*).
- Kundakovic M, Gudsnuk K, **Herbstman JB**, Tang D, Perera FP, Champagne FA. DNA methylation of BDNF as a biomarker of early-life adversity. *Proc Natl Acad Sci USA*. 2014 Nov 10 (*in press*).

BOOK CHAPTERS:

Miller RL and **Herbstman JB**. Epigenetic mechanisms in asthma, In: Epigenetics Nutrition and Environmental Health. Wiley Publishers, 2009.

PEER-REVIEW ACTIVITIES: MANUSCRIPT REVIEWER

Chemosphere, Environmental Research, Environmental Health Perspectives, Environmental Science and Technology, Ecotoxicology and Environmental Safety, Environment International, Environmental Health, Pediatrics, Journal of Hazardous Materials, Emerging Health Threats, PLoS ONE, American Journal of Epidemiology, Epidemiology, PLoS Genetics, New England Journal of Medicine, Environmental and Molecular Mutagenesis, Epigenetics, Nature Communications.