

Application

Profile

If you have any questions or difficulty submitting this application, please reach out to Alex Guzhnay at aguzhnay@newhavenct.gov or call 203-946-7670.

David	E	Cantonwine
<small>First Name</small>	<small>Middle Initial</small>	<small>Last Name</small>

dcantonw@gmail.com
Email Address

817 Orange Street		
<small>Home Address</small>	<small>Suite or Apt</small>	
New Haven	CT	06511
<small>City</small>	<small>State</small>	<small>Postal Code</small>

What ward do you live in (optional - please select ward if you know)?

Ward 10

Home: (734) 239-4040	
<small>Primary Phone</small>	<small>Alternate Phone</small>

Are any of the above number a cell phone number?

Yes No

If so, which? Also, is it okay to send a text message?

Yes

Are you currently employed by the City of New Haven or the New Haven Public School System?

Yes No

Mass General Brigham	Epidemiologist
<small>Employer</small>	<small>Job Title</small>

To see our list of Boards and Commissions please click here: <https://newhaven-ct.granicus.com/boards/w/976a34cad711af7c/boards>

Which Boards would you like to apply for?

Board of Public Health: Submitted

Is this an appointment or reappointment request? *

Reappointment

Interests & Experiences

Please tell us about yourself and why you want to serve. Please attach any of the follow:

Resume, Curriculum Vitae (CV), Professional Bio, or a Statement of Interest.

[Cantonwine CV 2025.doc](#)

Upload a Resume

If not submitting a Resume or CV, please submit a ~150 word Statement of Interest as to why you are interested in serving on your selected boards/commissions. If you have uploaded a resume OR you are seeking reappointment, you can write n/a.

n/a

Question applies to Board of Public Health

Do you have a doctorate (MD, DMD, etc) in a medical science field? If so, from what school?

Yes PhD in Environmental Epidemiology

Why are you interested in serving on a board or commission?

New Haven is our home and I want to give back to this community. For over 25 years I have studied public health, with a specific emphasis on how our environment can affect us. I want to bring that skill set to the Board's decision making to enrich the lives of everyone in our community. My research focuses on how environmental toxicants impact women and children's health. I would like to address topics like legacy lead exposure in NH and bring more of a focus on how our environment can impact health concerns in NH.

Why do you believe you would be a good fit for your selected board and commission(s)?

As a reproductive environmental epidemiologist my primary research investigates the effects of endocrine disrupting chemicals on pregnancy-related disorders, such as preeclampsia and preterm birth, and their potential links to long-term maternal health issues like cardiovascular disease. Early in my career, I studied the impact of low-level lead exposure on early-life cognition in Mexico and the relationship between phthalate exposure and preterm birth in Puerto Rico. While more data driven, I can understand the topics and challenges specific to New Haven.

Do you have any time commitments that would prevent you from participating in board/commission meetings? Meeting times can be found by visiting newhavenct.gov/boards, but most are usually once a month for 1-2 hours.

No

Demographics

Some boards and commissions require membership to be politically proportionate, per State Statute on minority party representation (CGS § 9-167a). What is your political affiliation on your voter registration (i.e Democrat, Republican, Unaffiliated, Independent, etc)?

Independent

In order to stay compliant with our city's charter, are you registered to vote in New Haven?

Yes No

We strive to maintain diversity in all of our Boards and Commissions. These questions are optional and if you volunteer the information we will only use it to ensure that our boards and commissions are diverse.

Ethnicity

Caucasian/Non-Hispanic

Gender

Male

How did you hear about serving on our Boards & Commissions?

Served Previously

CURRICULUM VITAE

Date Prepared: June 2025
Name: David Cantonwine
Office Address: 230 Thorn, 75 Francis St. Boston, MA 02115
Home Address: 817 Orange St, New Haven, CT 06511
Work Phone: 734-239-4040
Work Email: dcantonwine@bwh.harvard.edu
Work FAX: 617-232-6346
Place of Birth: Ames, IA

Education

1999	BSc/BSc	Biochemistry/Microbiology	Iowa State University
2006	MPH	Global Environmental Health	University of Michigan
2009	PhD	Environmental Health Sciences (Dr. Howard Hu)	University of Michigan

Postdoctoral Training

5/09-5/10	Research Fellow	Reproductive Sciences Program, OB/GYN Department	University of Michigan
5/10-7/13	Research Fellow	Environmental Health Sciences	University of Michigan

Faculty Academic Appointments

7/13- 10/16	Instructor	Obstetrics, Gynecology and Reproductive Biology	Harvard Medical School
11/16	Assistant Professor	Obstetrics, Gynecology and Reproductive Biology	Harvard Medical School

Committee Service

Regional

2014 – 2017 Member PhD Dissertation Committee Boston University School of Public Health,
Department of Epidemiology

Professional Societies

2007- 2020 *International Society of Environmental Epidemiologists*

2009-2012 *American Association for the Advancement of Science*

Grant Review Activities

2021	SBIR/STTR Study Section	NIH
	2021 Jan/July	Ad hoc Member

Editorial Activities

ad hoc reviewer

Environmental Health Perspectives

Pediatrics

Environmental Research

Environmental Health

Environment International

Environmental Science & Technology

International Journal of Environmental Research and Public Health

American Journal of Obstetrics and Gynecology

Biomedical and Environmental Science

Chemosphere

Biomarkers

British Journal of Obstetrics and Gynecology

British Medical Journal

Journal of Toxicology and Environmental Health, Part B: Critical Reviews

Other Editorial Roles

2021-2022	guest/section editor	<i>Current Obstetrics and Gynecology Reports</i>
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Honors and Prizes

Report of Funded and Unfunded Projects

Funding Information

Past

2008-2009 Mercury Exposure and Neurodevelopmental Outcomes in Children Living in Mexico City, Mexico
No Grant Number – University of Michigan Rackham Graduate Student Research Grant
PI (\$2,500)

This pilot study aimed to utilize archived samples to determine trimester-specific blood mercury levels in N=100 women residing in Mexico City and relate the exposure levels to neurocognitive outcomes in their children at two years of age.

- 2010-2011 Toxic Metal Exposure and Women of Reproductive Age in Ghana
No Grant Number – University of Michigan African Studies Center
Co-PI (\$9,500)
This pilot study aimed to determine levels of metal exposure in women of childbearing age at three distinct locations within Ghana
- 2011-2013 Prenatal Exposures and Early Life Health Outcomes
NIEHS/NIH (L40 ES020610)
PI (\$16,000)
This loan repayment award focused on research into lead and mercury exposure and adverse neurocognitive effects in early life
- 2013-2015 Estrogen Metabolites and Preeclampsia
NCI/Internal Award (CSAS 15799)
Co-Investigator (\$13,500)
This study aimed to investigate the association between estrogen metabolites and preeclampsia.
- 2014-2016 Longitudinal Evaluation of Predictive Value for Preeclampsia of Urinary Inhibin A Through Pregnancy
No Grant Number - Harvard Catalyst Clinical Research Center

Co-PI (\$9,855)
This study aims to investigate whether longitudinal assessed inhibin A concentrations throughout pregnancy can predict onset of preeclampsia
- 2016-2017 Perfluorinated Chemicals and Risk of Preeclampsia
No Grant Number – Shore’s Foundation Award, Brigham and Women’s Hospital, Department of Obstetrics and Gynecology Research Foundation
PI (\$30,000)
This pilot study aims to investigate whether early levels of perfluorinated chemicals are associated with the risk of developing preeclampsia
- 2016-2018 Circulating Microparticle based Spontaneous Preterm Birth Study
No Grant Number – Private Funded (NXPrenatal Inc.)
Co-PI (\$180,000)
This study aims to independently validate different proteomic profiles exhibited in isolated peripheral circulating microparticles at 10 weeks gestation in sPTB and term controls.
- 2017-2018 *Circulating serpinB1 and vulnerability to gestational diabetes*
NIH (P30 DK036836)
Co-I (2% FTE)
This study is investigating the role serpinB1 might play in development of gestational diabetes

- 2016-2021 Phthalates, Gestational Diabetes, and Markers of Future Type 2 Diabetes Risk in Women
NIEHS/NIH (R01 ES026166)
Co-I (10% FTE)
This study aims to investigate the association between phthalate exposure during pregnancy, risk of developing gestational diabetes, and risk of developing Type 2 diabetes postpartum.
- 2018-2020 Healthy Starts to Life – Transformative Award in Newborn Research
Brigham Research Institute
Co-I (15% FTE)
This study aims to add a more comprehensive newborn data collection component to LIFECODES
- 2019-2020 Consumer product chemical exposures in pregnancy and their cumulative impact on disorders of fetal growth
No Grant Number – Internal Funding NIEHS
Co-I (25% FTE)
This is the pilot phase to an internal grant application (PI – Ferguson) at NIEHS that is proposing to investigate the relationship between exposure to chemical mixtures and fetal growth trajectories.
- Fetal growth and exposure to consumer products
NIH/NIEHS HHSN273201600003I/HHSN27300002
Co-I (25% FTE)
- 2020-2023 *This is an internal grant application (PI – Ferguson) at NIEHS that is proposing to investigate the relationship between exposure to consumer chemical mixtures and fetal growth trajectories.*
- Validating an environmental history questionnaire for use in OB/GYN
No Grant Number – Harvard Catalyst
- 2021-2023 PI (5% FTE)
This study aims to develop an environmental screening questionnaire for use in OB/GYN and validate it for metals exposure
- Current**
- 2020-2025 Applying and Advancing Modern Approaches for Studying the Joint Impacts of Environmental Chemicals on Pregnancy Outcomes
NIH/NIEHS R01ES031591-01A1
Co-I (20% FTE)
This study aims to investigate the associations between chemical mixtures and preterm birth.
- 2022-2027 No Grant Number – Mirvie Inc.
Subcon PI (10% FTE)
This study validates a microRNA platform in predicting PTB and PE

2022-2027 Molecular antecedents of miscarriage
NIH/NICHD
Co-I (15% FTE)

This study utilizes multiple molecular biomarkers to better elucidate the molecular underpinnings of spontaneous abortion

2022-2027 Integrative omics of preeclampsia in TOPMED and maternal cardiovascular health
NIH R01HL163234
Co-I (10% FTE)

This study takes advantage of the existing genomic and proteomic data from TOPMED to investigate future maternal cardiovascular health

Current Unfunded Projects

2013- LIFECODES Birth Cohort Based at BWH OB/GYN Department (Mentor & Investigator)
I supervise various manuscripts and ancillary research projects, conduct independent research projects, and supervise the daily logistics for these birth cohort studies

2016- Exposure to Phenols, Parabens, and Phthalates During Pregnancy, Markers of Placental Function, and Risk of Developing Preeclampsia (PI)
This is a resubmission and reorganization of a scored NIEHS K22 application that focuses upon the role between endocrine disrupting chemical exposure and preeclampsia.

Report of Local Teaching and Training

Teaching of Students in Courses

Teaching prior to Harvard Appointment

1999-2003	Introductory Chemistry 1 st year undergraduate students	Iowa State University (3) 1 hr. lectures per week and (1) 2 hour lab lecture/mentoring per week during each ~3 month semester (taught 2 semesters each year and 1 summer session).
2001-2002	Introductory Biology 1 st year undergraduate students	Iowa State University (3) 1 hr. lectures per week and (1) 2 hour lab lecture/mentoring per week – 2 semesters
2004 - 2006	Introductory Biology 1 st year undergraduate students	University of Michigan (1) 1.5 hr lecture and (1) 2 hour lab lecture/mentoring per week – 2 semesters each

		year
2006	Introduction to Environmental Health 1 st year MPH students	University of Michigan (3) 1 hr. lectures per week – 1 semester
2009-2011	Summer Short Course in Biostatistics incoming MPH students	University of Michigan (5) 1 hr. lectures per week – 1 week
2009-2011	Supplement Biostatistics Review 1 st year MPH students	University of Michigan (1) 1.5 hr. lecture per week – 1 semester

Formally Supervised Trainees

2008-2010	Myriam Afeiche, PhD, MPH / Visiting Research Scientist, Harvard T.H. Chan School of Public Health. <i>I mentored Dr. Afeiche during her last two years of her PhD at the University of Michigan which resulted in two publications and three more independent conference abstract posters.</i>
2009-2010	Siyng Huang, PhD / Postdoctoral Fellow, University of Toronto Dalla Lana School of Public Health. <i>I mentored Dr. Huang during her tenure at University of Michigan before she moved to the University of Toronto to complete her PhD. This resulted in one publication.</i>
2010-2011	Lauren Rodriguez, MD / Resident, Emergency Medicine, Wayne State University <i>I mentored Dr. Rodriguez for a 4 month summer internship in Mexico City where she completed a market basket seafood survey and refined a seafood intake questionnaire as part of a mercury exposure and neurodevelopment project. This resulted in one publication.</i>
2012-2014	Ryan Lewis, PhD, CIH / Managing Scientist, Exponent <i>I mentored Dr. Lewis for two years at the University of Michigan which resulted in two publications regarding exposure to pesticides among pregnant women in Puerto Rico.</i>
2013-2014	Michael Honigberg, MD / Resident Internal Medicine, BWH Harvard Medical School <i>I mentored Dr. Honigberg during his last year of medical school at HMS which resulted in one publication.</i>
2013-2015	Christina Yarrington, MD / Instructor of Medicine, Boston University School of Medicine <i>I mentored Dr. Yarrington during the last two years of her maternal fetal medicine fellowship at BWH as part of her research thesis requirement. This has resulted in two publications.</i>
2013-2016	Carolina Bibbo, MD / Maternal Fetal Medicine Fellow, BWH Harvard Medical School <i>I mentored Dr. Bibbo as part research thesis requirement for her fellowship. This has</i>

resulted in one conference abstract and two papers under review.

- 2014-2015 **Melinda Lee, MD** / Resident, Brigham and Women's Hospital
I mentored Dr. Lee in a focused research project that resulted in one publication
- 2014-2017 **Sarah Rae Easter, MD** / Maternal Fetal Medicine Fellow, Brigham and Women's Hospital
I am mentored Dr. Easter as part of her research thesis requirement for her fellowship. I began mentoring her during her residency at BWH which resulted in two publications.
- 2014-2017 **Caroline Rouse, MD** / Maternal Fetal Medicine Fellow, Brigham and Women's Hospital
I mentored Dr. Rouse as part of her research thesis requirement for her fellowship. This has resulted in two conference abstracts and preparation of two manuscripts.
- 2014-2017 **Anne Marie Darling, PhD** / PhD Candidate, Boston University School of Public Health
I was a thesis advisor and mentor to Anne Marie as part of her PhD which resulted in two published manuscripts.
- 2016-2019 **Erica Holland, MD** / Maternal Fetal Medicine Fellow, Brigham and Women's Hospital
I mentored Dr. Holland as part of her research thesis requirement for her fellowship.
- 2017-2019 **Natalie Mendez** / Student Success Jobs Program, Brigham and Women's Hospital
I mentored Ms Mendez for two years as part of Brigham's SSJP program that provides onsite job experience to Boston high school students
- 2018-2020 **Linda Zhao, MS** / PhD Candidate, Harvard University
I am currently mentoring Ms. Zhao as part of her PhD with the Department of Sociology.
- 2018-2019 **David Alexander Goodson, MPH** / Master's of Public Health Candidate, Harvard School of Public Health
I was Mr. Goodson's MPH Thesis advisor at HPSH which has resulted in one submitted manuscript
- 2019-2020 **Alexandria Lee, MPH** / Master's of Public Health Candidate, Harvard School of Public Health
I mentored Ms. Lee as part of her MPH program in which she utilizing LIFECODES for her thesis work.
- 2021-2022 **Sam Paltrow-Krulwich** / Master's of Public Health Candidate, Harvard School of Public Health
I am Ms. Paltrow-Krulwich's MPH Thesis advisor at HPSH in which she is finalizing her MPH practicum.
- 2021-2022 **Jose Villa-Uribe, MD** / Master's of Public Health Candidate, Harvard School of Public Health
I am Dr. Villa-Uribe's MPH Thesis advisor at HPSH in which he is finalizing his analysis for a manuscript
- 2022-2024 **Christina Boulineaux** / Medical Degree Candidate, Harvard Medical School
I am Ms Boulineaux's research advisor for her extended 5th year in medical school in

- which she is lead authoring several manuscripts
- 2022-2023 **Rachel Herz-Roiphe** / Medical Degree Candidate, Harvard Medical School
I am Ms Herz-Roiphe's research advisor at HMS in which she is finalizing her analysis for a manuscript
- 2023-2023 **Emma Kohrt**/ Undergraduate Candidate ROUTES Program Scholar, Northeastern University
I am Ms. Kohrt's ROUTES Scholar advisor in conjunction with NEU which she is assisting in several manuscripts and finalizing an analysis for her own lead author manuscript
- 2023-2023 **Ashvika Boothpathy**/ Undergraduate Candidate ROUTES Program Scholar, Northeastern University
I am Ms. Boothpathy's ROUTES Scholar advisor in conjunction with NEU which she is assisting in several manuscripts and finalizing an analysis for her own lead author manuscript
- 2024-2024 **Sonia Vasquez**/ Undergraduate Candidate ROUTES Program Scholar, Northeastern University
I am Ms. 's ROUTES Scholar advisor in conjunction with NEU which she is assisting in several manuscripts and finalizing an analysis for her own lead author manuscript
- 2024- **Grace Wang**/ Medical Degree Candidate, Harvard Medical School
I am Ms Wang's research advisor at HMS in which she is initiating her analysis for a manuscript looking at longitudinal trajectories of blood pressure during pregnancy

Local Invited Presentations

No presentations below were sponsored by outside entities

- | | | |
|------|--------------|---|
| 2013 | Grand Rounds | <i>Refining the Understanding of Neonatal Susceptibility to Environmental Toxicants</i>
Department of OB/GYN, Brigham and Women's Hospital |
| 2016 | Lecture | <i>Bias and Misconceptions in Reproductive Environmental Epidemiology</i>
Harvard T. H. Chan School of Public Health, Division of Epidemiology Seminar Series |
| 2016 | Lecture | <i>Utilizing diagnosis as a tool to refine our understanding of potential mechanisms in reproductive environmental epidemiology</i>
Harvard T.H. Chan School of Public Health, Reproductive Epidemiology Guest Lecture |
| 2022 | Grand Rounds | <i>Environmental Chemicals in Pregnancy</i>
Department of OB/GYN, Brigham and Women's Hospital |
| 2025 | Plenary Talk | <i>BWH MFM Divisional Biorepository: LIFECODES</i>
Department of OB/GYN, Mass General Brigham |

Report of Regional, National and International Invited Teaching and Presentations

Those presentations below sponsored by outside entities are so noted and the sponsor is identified

Invited Presentations and Courses

Regional

- | | | |
|------|---------|--|
| 2012 | Lecture | <i>Challenges of Studying Developmental Toxicity in Environmental Epidemiology: Lead Exposure and Neurodevelopment</i>
Division of Environmental Health Seminar Series, Department of Public Health, University of Massachusetts. Amherst. MA |
| 2012 | Lecture | <i>Understanding Neonatal Susceptibility to Lead in Environmental Epidemiology</i>
Department of Environmental Health Seminar Series, School of Public Health, Northeastern University. Boston, MA |
| 2016 | Lecture | <i>Environmental endocrine disrupting chemical exposure and preeclampsia</i>
Division of Environmental Health Seminar Series, Department of Public Health, University of Massachusetts. Amherst. MA |

National

- | | | |
|------|--------------|--|
| 2008 | Plenary Talk | <i>Timing of Fetal Lead Exposure, Length of Gestation, and Risk of Prematurity</i> (abstract)
International Society for Environmental Epidemiologists Annual Meeting, Pasadena, California |
| 2009 | Lecture | <i>Refining the Understanding of Neonatal Susceptibility to Lead Exposure</i>
Environmental Research Committee Seminar Series, Department of Environmental Health, Johns Hopkins School of Public Health |
| 2012 | Plenary Talk | <i>Exposure to Endocrine Disrupting Chemicals among Pregnant Women Living in Northern Puerto Rico</i> (abstract)
25 th Annual Superfund Research Program Conference. Environmental Protection Agency /National Institutes of Environmental Health. Raleigh, NC |
| 2012 | Lecture | <i>Understanding Neonatal Susceptibility to Lead in Environmental Epidemiology</i>
Department of Environmental Health Seminar Series, School of Public Health, Emory University. Atlanta, GA |
| 2016 | Plenary Talk | <i>Circulating Microparticles as an Effective Means to Stratify the Risk of Spontaneous Preterm Birth</i> (abstract)
Society of Maternal Fetal Medicine Annual Meeting. Atlanta, GA |
| 2017 | Lecture | <i>Utilizing diagnosis to inform mechanistic pathways: Phthalate/BPA</i> |

exposure during pregnancy and risk of preeclampsia
Department of Environmental Health Sciences, School of Public Health,
Yale University. New Haven, CT

2018	Plenary Talk	<i>Associations between high Phthalate and Bis-Phenol exposures and the risk of Preeclampsia and Pregnancy Associated Hypertension</i> Society of Reproductive Investigations Annual Meeting. San Diego, CA
2022	Plenary Talk	<i>Associations between high Phthalate and Bis-Phenol exposures and the risk of Preeclampsia and Pregnancy Associated Hypertension</i> Society of Reproductive Investigations Annual Meeting. San Diego, CA
2022	Plenary Talk	<i>LIFECODES Brigham & Women's Birth Cohort</i> Department of Environmental Health Sciences, Ann Arbor, MI
2023	Plenary Talk	<i>HEARTS</i> <i>NIEHS, Research Triangle, NC</i>
International		
2007	Plenary Talk	<i>Modification of Lead Biomarker Effects Upon Infant Birth Weight by Presence of HFE Genotype Variants/ (abstract)</i> International Society for Environmental Epidemiologists Annual Meeting. Mexico City, Mexico
2015	Lecture	<i>Endocrine Disrupting Chemical Exposure during Pregnancy and Risk of Developing Preeclampsia</i> CoLaboratory Consortium Annual Meeting. Oxford. England
2016	Lecture	<i>Molecular Mechanisms of Phthalate and BPA Exposure and the Relationship with Preeclampsia</i> Environment Canada: Invited Talk. Ottawa, Canada
2019	Lecture	<i>Neighborhood Effects upon Subtypes of Preeclampsia</i> CoLaboratory Consortium Annual Meeting. Oxford, England
2024	Lecture	<i>Molecular and phenotypic examination of environmental exposures and hypertensive disorders of pregnancy</i> CoLaboratory Consortium Annual Meeting. Oxford, England
2024	Lecture	<i>Associations between endocrine disrupting chemicals and preeclampsia</i> CoLaboratory Consortium Annual Meeting. Oxford, England

SCIENTIFIC INNOVATIONS

1. Elective Rotation in OB for Environmental Health Education

Training in environmental health is largely absent from medical school curriculum as well as OB/GYN residency or fellowship training. With this lack of general knowledge for OB/GYN providers, assessment for environmental hazards among their patient population is not standard practice, highlighting a critical deficiency in how OB providers assess the overall health of their patients. Another critical gap in knowledge/training is how OB providers communicate risk of potential environmental hazards to their patient population. A simple example is if a patient asks their provider about the hazards of methylmercury exposure during pregnancy and if they should avoid fish. Types of fish vary dramatically in levels of methylmercury and other contaminants (PCBs, Dioxins, etc.) but they also contain beneficial fatty acids and selenium. Without prior knowledge of the topic or understanding of what materials are available for consumers it is impossible for OB providers to give a scientifically accurate advice. I have developed a three month elective rotation for OB/GYN fellows in Reproductive Environmental Health Education and built a simple environmental history form for use in our obstetrical population. By creating didactic and clinical curriculum in reproductive environmental health, gauging potential environmental exposure risks in our clinical population, and providing an initial set of resources that our clinical staff can tap into for patient queries, I hope to establish a unique framework in our clinic that will ultimately better serve the health of our obstetrical population.

2. **The Role of Common Environmental Toxicants in Adverse Pregnancy Events**

Spontaneous preterm birth and preeclampsia represent two of the most common, debilitating, and costly adverse pregnancy conditions affecting women and their fetuses worldwide. Our understanding into the role that everyday environmental exposures play in the complex etiology for each of these conditions is severely lacking. Bisphenol-A and phthalates are high production volume chemicals utilized in a wide array of consumer products and have been demonstrated to have ubiquitous exposure among a variety of populations, including pregnant women. To date, I have the only publications assessing the relationship between longitudinal Bisphenol-A levels during pregnancy and risk of preterm birth and preeclampsia. Additionally, I have one of the most robust publications assessing the relationship between longitudinal phthalate levels and preeclampsia. Taken together these publications highlight the need for policy makers and clinicians to consider the hazard everyday chemicals may pose to pregnant women and their fetuses.

3. **Leveraging EMR to understand the environment's role in exacerbating post-partum health effects**

For years it is known that certain pregnancy conditions (e.g. preeclampsia) are associated with later life adverse health consequences for women including cardiovascular disease. What is apparent is whether common environmental toxicants enhance this risk either through associations with pregnancy conditions or through other mechanisms. Utilizing the ease to abstract electronic medial record information can help develop robust models of potential disease progression in the presence of varying concentrations of the common everyday chemicals.

Report of Scholarship

Publications

Peer reviewed publications in print or other media

1. Batterman S, Chernyak S, Gwynn E, **Cantonwine D**, Jia C, Begnoche L, Hickey JP. Trends of brominated diphenyl ethers in fresh and archived Great Lakes fish (1979-2005). *Chemosphere*. 2007 Sep; 69(3):444-57.

2. Pilsner JR, Hu H, Ettinger A, Sánchez BN, Wright RO, **Cantonwine D**, Lazarus A, Lamadrid-Figueroa H, Mercado-García A, Téllez-Rojo MM, Hernández-Avila M. Influence of prenatal lead exposure on genomic methylation of cord blood DNA. *Environ Health Perspect.* 2009 Sep; 117(9):1466-71.
3. Meeker JD, Hu H, **Cantonwine DE**, Lamadrid-Figueroa H, Calafat AM, Ettinger AS, Hernandez-Avila M, Loch-Caruso R, Téllez-Rojo MM. Urinary phthalate metabolites in relation to preterm birth in Mexico city. *Environ Health Perspect.* 2009 Oct; 117(10):1587-92.
4. Pilsner JR, Hu H, Wright RO, Kordas K, Ettinger AS, Sánchez BN, **Cantonwine D**, Lazarus AL, Cantoral A, Schnaas L, Téllez-Rojo MM, Hernández-Avila M. Maternal MTHFR genotype and haplotype predict deficits in early cognitive development in a lead-exposed birth cohort in Mexico City. *Am J Clin Nutr.* 2010 Jul; 92(1):226-34.
5. **Cantonwine D**, Hu H, Téllez-Rojo MM, Sánchez BN, Lamadrid-Figueroa H, Ettinger AS, Mercado-García A, Hernández-Avila M, Wright RO. HFE gene variants modify the association between maternal lead burden and infant birthweight: a prospective birth cohort study in Mexico City, Mexico. *Environ Health.* 2010 Jul 26; 9:43.
6. **Cantonwine D**, Meeker JD, Hu H, Sánchez BN, Lamadrid-Figueroa H, Mercado-García A, Fortenberry GZ, Calafat AM, Téllez-Rojo MM. Bisphenol A exposure in Mexico City and risk of prematurity: a pilot nested case control study. *Environ Health.* 2010 Oct 18; 9(1):62
7. **Cantonwine D**, Hu H, Sánchez BN, Lamadrid-Figueroa H, Smith D, Ettinger AS, Mercado-García A, Hernández-Avila M, Wright RO, Téllez-Rojo MM. Critical Windows of Fetal Lead Exposure: Adverse Impacts on Length of Gestation and Risk of Premature Delivery. *J Occup Environ Med.* 2010 Nov; 52(11):1106-1111.
8. Afeiche M, Peterson KE, Sánchez BN, **Cantonwine D**, Lamadrid-Figueroa H, Schnaas L, Ettinger AS, Hernández-Avila M, Hu H, Téllez-Rojo MM. Prenatal Lead Exposure and Weight of 0 to 5 Year-Old Children in Mexico City. *Environ Health Perspect.* 2011 Oct; 119(10):1436-41.
9. Zhang A, Hu H, Sánchez BN, Ettinger AS, Park SK, **Cantonwine D**, Schnaas L, Wright RO, Lamadrid-Figueroa H, Tellez-Rojo MM. Association between Prenatal Lead Exposure and Blood Pressure in Female Offspring. *Environ Health Perspect.* 2012 Mar; 120(3):445-50.
10. Afeiche M, Peterson KE, Sánchez BN, Schnaas L, **Cantonwine D**, Ettinger AS, Solano-González M, Hernández-Avila M, Hu H, Téllez-Rojo MM. Windows of lead exposure sensitivity, attained height, and BMI at 48 months. *The Journal of Pediatrics.* 2012 Jun; 160(6):1044-9.
11. Meeker JD, **Cantonwine D**, Rivera-Gonzalez LO, Ferguson KK, Mukherjee B, Calafat AM, Ye X, Anzalota Del Toro LV, Crespo N, Jimenez-Velez B, Alshawabkeh AN, Cordero JF. Distribution, variability and predictors of urinary concentrations of phenols and parabens among pregnant women in Puerto Rico. *Environ Sci Technol.* 2013 Apr 2; 47(7):3439-47.
12. Téllez-Rojo MM, Cantoral A, **Cantonwine DE**, Schnaas L, Peterson K, Hu H, Meeker JD.

Prenatal urinary phthalate metabolites levels and neurodevelopment in children at two and three years of age. *Sci Total Environ.* 2013 Jun 4; 461-462C:386-390.

13. **Cantonwine DE**, Cordero JF, Rivera-González LO, Anzalota Del Toro LV, Ferguson KK, Mukherjee B, Calafat AM, Crespo N, Jiménez-Vélez B, Padilla IY, Alshawabkeh AN, Meeker JD. Urinary phthalate metabolite concentrations among pregnant women in Northern Puerto Rico: Distribution, temporal variability, and predictors. *Environ Int.* 2014 Jan; 62C:1-11
14. **Cantonwine DE**, Hauser R, Meeker JD. Bisphenol A and human reproductive health. *Expert Rev Obstet Gynecol.* 2013 Jul 1; 8(4):329-335
15. Smith NA, Bukowski R, Thomas AM, **Cantonwine D**, Zera C, Robinson JN. Identification of pathologically small fetuses using customized, ultrasound and population-based growth norms. *Ultrasound Obstet Gynecol.* 2014 Nov; 44(5):595-9.
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NARRATIVE

My expertise is in the area of reproductive environmental epidemiology. Many lines of epidemiologic, clinical and experimental evidence now indicate that early life exposures, including exposures to toxicants during gestation, can play a critical role in disease susceptibility later in life. In addition, a large majority of adverse pregnancy conditions (preterm birth, preeclampsia, gestational diabetes, altered fetal growth) have not been well researched with regards to environmental exposure, though reducing exposure sources may represent an achievable and cost-effective method to reducing disease burden. In my past and current research I have demonstrated novel adverse links between preterm birth risk and preeclampsia to commonly found endocrine disrupting chemicals (BPA and phthalates).

Approximately 25% of my effort is directed towards being the primary research mentor for incoming MFM clinical fellows at BWH. In this capacity I work with each individual fellow to setup a thesis project which will result in the development of publishable material. During this process I guide the fellows through and help them manage all aspects of their projects including design setup, primary or secondary data collection, cleaning of necessary data and final analysis plan and implementation. I also provide project assistance to a number of OB/GYN residents and medical students. Additionally, recognizing the lack of environmental health education in the medical school curriculum, I have created a three month elective rotation for OB/GYN residents and fellows in reproductive environmental health education.

Another 25% of my effort is directed towards serving as an epidemiologist for the maternal-fetal medicine division, supporting faculty ongoing and future research endeavors. In this role I work with faculty to setup (design, IRB, etc.), manage (logistics and data procurement), analyze and ultimately publish research from their various projects. One notable research project is a large, divisionally supported, ongoing birth cohort/biorepository: LIFECODES. Currently in its 13th year, LIFECODES contains longitudinally collected biological samples and clinical information on +5,500 pregnant women. I spend another 50% of my effort managing all aspects of this project, including a staff of three research techs who oversee recruitment/retention, collection and processing of biological samples, obtainment of relevant information from patient's electronic medical records and data set cleaning.

My research and educational activities are on the cutting edge of an understudied, but critical area of health: how toxicants in our environment impact pregnancy. I am part of a growing multidisciplinary, multi-institute group of clinicians/academics whose desire is to highlight to the next generation of OB/GYN practitioners and policy makers that our environment makes a real, and modifiable, adverse impact upon pregnancy. As such, I am working closely with faculty in the MFM division to integrate environmental health into the curriculum and align/expand our research aims with environmental health concerns.