

PROJECT ID: 5T03OH008609-10

Emory University

Project PI: Paige Tolbert

## **ANNUAL REPORT**

**REPORTING PERIOD July 1, 2014 through June 30, 2015**

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### SECTION I: Summary, Relevance and Contact Information

#### PROJECT SUMMARY

The training program in occupational/environmental epidemiology at Emory University for master's and doctoral level training provides tuition coverage to first and second year MSPH students each year and a stipend to one doctoral student each year. The curriculum provides rigorous training in analytical epidemiology and biostatistics and a strong foundation in occupational and environmental health, including exposure assessment and industrial hygiene, occupational health policy, injury and toxicology. The program faculty have active research programs providing excellent opportunities for thesis and dissertation research, and an extensive supporting faculty is available for mentoring. Graduates of the MSPH program are pursuing productive careers related to occupational/environmental epidemiology or additional doctoral level training. The new doctoral level training component is providing even more depth in training and is producing graduates prepared to be leaders in this field.

#### PROJECT RELEVANCE

Epidemiologic methods have emerged as one of the most important tools in the evaluation of health effects of occupational and environmental exposures. For the stated priorities of each of the sector areas in the NIOSH National Occupational Research Agenda (NORA), epidemiologic research is an essential tool. This training program that combines training in epidemiologic skills and knowledge of the substantive area of occupational and environmental health produces master's and doctoral-level graduates well prepared for research and public health practice careers in occupational epidemiology.

#### KEY PERSONNEL

Paige Tolbert, Program Director/ Principal Investigator

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### SECTION II: Program Highlights

Doctoral student Melanie Hyman Jacobson is working on her dissertation titled, "Polybrominated flame retardants and endocrine disruption: the thyroid as a target organ," co-chaired by Lyndsey Darrow, PhD, Co-Director of the training program. Ms. Jacobson has submitted several articles for publication and has presented at four conferences, including three poster presentations and an oral presentation, "Serum polybrominated diphenyl ether

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concentrations and thyroid function in young children” at the International Society for Environmental Epidemiology, Annual Conference, August 2015, São Paulo, Brazil. Ms. Jacobson has been named a Reach the Decision Makers Fellow for 2015-2016, which is a joint program of the USEPA and the University of California San Francisco’s Program on Reproductive Health and the Environment.

A May 2015 graduate, Jessica Li’s thesis “Serum perfluorooctanoic acid levels in DuPont Washington Works contract workers” was chaired by Kyle Steenland, PhD, Co-Director of the training program. Ms. Li was recently hired as Associate Service Fellow in an Industrial Hygienist position at NIOSH’s Health Hazard Evaluation (HHE) Program in Cincinnati.

Nicole Dzuris, an August 2015 graduate, gained field, lab, and research skills and used these in her thesis, “Impact of insecticide resistance on reproductive fitness and larval performance of the dengue vector *Aedes aegypti*.” Her background and training also helped her obtain a position as an Entomology Research Assistant with the CDC where she is involved with rearing mosquitoes in the insectary, conducts PCR and RNA sequencing in the lab, and performs bottle bioassays to test for resistance. She is analyzing data from Yemen on *An. arabiensis* and *Plasmodium* and conducts field work in Peru.

Alvin Borum, an August 2015 graduate, conducted his thesis on “Associations of the Heavy Metals Lead, Mercury, and Cadmium with Type 2 Diabetes in the United States Population: National Health and Nutrition Examination Survey (NHANES), 2005-2012,” under the supervision of Kyle Steenland, PhD, Co-Director of the training program. He is now working as a laboratory coordinator for the DeKalb County government.

Patrick Feeney, a second year student, conducted his summer practicum as a Graduate Research Assistant at the Ohio State University’s College of Public Health where he worked on tobacco grants conducting literature reviews, manuscript writing, data analysis, and project design. He is also taking on leadership roles at Rollins School of Public Health, serving as department representative to the Student Government Association.

Meghan Stuart, the other second year student supported this cycle, spent the past summer doing a practicum at CDC’s National Center for Environmental Health in a lab quantifying lipids as markers for cholesterol related disease. She is planning a thesis on “Serum PBB levels and Diabetes Outcome” in the Michigan cohort of exposed farmers and their families.

Several first year students are already starting to get involved in research projects. For example, Emma Rosen is working as a Research Assistant with a faculty member in the Department of Epidemiology on a study of multi-generational impacts of polybrominated biphenyls (PBBs) in a cohort of farmers and their families in Michigan.

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Three trainees on this funding cycle graduated from the occupational/environmental epidemiology MSPH program and are employed by local and federal government agencies where they are utilizing their recent training and skills.

#### MANUSCRIPTS AND CONFERENCE PRESENTATIONS

The following are manuscripts and conference presentations by Melanie Hyman Jacobson, the doctoral student supported this cycle:

Jacobson MH, Mertens AC, Spencer JB, Manatunga AK, Howards, PP. Menses resumption after cancer treatment-induced amenorrhea occurs early or not at all. *Fertility & Sterility*. Submitted.

Chin HB, Jacobson MH, Interrante JD, Mertens AC, Spencer JB, Howards PP. Hypothyroidism after cancer and the ability to meet reproductive goals among a cohort of young adult female cancer survivors. *Fertility & Sterility*. Under Review.

Newman KL, Fedewa SA, Jacobson MH, Adams A, Zhang R, Pastan SO, Patzer RE. Racial/Ethnic Differences in the Association between Hospitalization and Kidney Transplantation among Waitlisted End Stage Renal Disease Patients: A Multi-level Mixed Modeling Approach. *Kidney International*. Under Review.

Jacobson MH, Marcus M, Barr DB, Muir AB, Darrow LA. Serum polybrominated diphenyl ether concentrations and thyroid function in young children. *International Society for Environmental Epidemiology, Annual Conference, August 2015, São Paulo, Brazil*.

Jacobson MH, Chin HB, Mertens AC, Spencer JB, Howards PP. Measuring reproductive capacity: Beyond clinical definitions of infertility. *Society of Epidemiologic Research, Annual Meeting, June 2015, Denver, CO*.

Jacobson MH, Chin HB, Interrante JD, Mertens AC, Spencer JB, Howards PP. Cancer treatment-induced hypothyroidism and the ability to meet reproductive goals among a cohort of young adult female cancer survivors. *Society of Pediatric and Perinatal Epidemiologic Research, Annual Meeting, June 2015, Denver, CO*.

Howards PP, Jacobson MH, Fothergill A, Chin HB, Mertens AC, Shandley LM, Spencer JB. Cancer survivors are at increased risk of early menopause and decreased antral follicle count: results from the FUCHSIA Women's Study. *American Society for Reproductive Medicine, Annual Meeting, October 2015, Baltimore, MD*.