

Environmental Health

The Division of Environmental Health (DEH), Bureau of Epidemiology (Bureau), Michigan Department of Community Health (MDCH) supports programs in Environmental Exposures Related to Asthma, Air Pollutant Exposures and Health, Environmental Hazards and Poisonings, and Anti-Chemical Terrorism and Preparedness. DEH currently has six staff with advanced degrees and training in epidemiology; three have doctoral degrees. For further information, please explore the DEH website at the following URL: www.michigan.gov/mdch-toxics.

The CSTE Fellow will have the opportunity to participate in a wide variety of applied epidemiologic activities in collaboration with knowledgeable and experienced scientists. There are numerous opportunities throughout the Bureau as well as with the Michigan Department of Environmental Quality (DEQ), the Division of Chronic Disease and Injury Control, MDCH, and our academic partners. In addition, the Bureau has ArcGIS software, mapping and printing hardware, and a staff geographer to assist in conducting spatial analyses.

Current analytic projects in DEH include:

- A. Spatial and temporal analyses to determine the effects of exposure to specific air pollutants and proximity to traffic and industry on occurrences of asthma urgent care utilization in the pediatric Medicaid population in Detroit. Project team members include the University of Michigan School of Public Health (UM SPH); the Department of Epidemiology, Michigan State University (MSU); and DEQ.
- B. Assessment of the relationships between exposure to specific air pollutants and occurrences of adverse birth outcomes in Detroit. The project team (same as #1 above) has completed an analysis of low birth weight, and continues to assess pre-term births and births with intrauterine growth retardation (IGR).
- C. Healthy Homes asthma and injury hazards intervention demonstration project. This project involves in-home indoor air quality (IAQ) assessments, questionnaires and asthma trigger interventions at baseline, three months, and six months in 300 homes. Project staff members are currently analyzing questionnaire data from the first three years of the project to evaluate the effectiveness of the project on improving quality of life for people with asthma. The project received an additional three years of funding and will add 250 homes to the project.
- D. Assessment of statewide syndromic surveillance as an early warning system for bio- or chemical-terrorism incidents, or for early detection of outbreaks of communicable or environmental disease.

Day-to-day activities-

The Fellow will have the opportunity to use data sets of varying size and complexity; to learn how to link exposure data files with health outcome data files; edit data and maintain quality control; and to

manage projects. The Fellow will be expected to participate in the design of studies, in data collection, and in the analysis and interpretation of study results.

Potential projects-

This position provides the CSTE Fellow the opportunity to pursue a wide range of topics under the broad area of Environmental Epidemiology. Program areas, which are all available to the Fellow, are described below:

- A. DEH has been collaborating closely with the Air Quality Division, DEQ to examine air-monitoring data including criteria air pollutant and urban air toxics data. These data have been used to assess air pollutant exposures and health outcomes (see above). The Fellow could join our project team and examine the effects of exposure to a specific air pollutant on a health outcome, such as asthma exacerbation or births IGR.
- B. The Healthy Homes project has been completing IAQ assessments and questionnaires for the last three years and will continue the project over the next three years (see above). The Fellow could assist in the analysis of the completed questionnaire data (first three years) and/or assist in the collection, preparation and analysis of data from the next three years
- C. DEH collaborated with the Drinking Water and Environmental Health Division, DEQ, to evaluate levels of arsenic in private wells and link these data to underlying causes of death known to be associated with chronic arsenic ingestion and adverse birth outcomes. Michigan has low to moderate levels of arsenic in private well water in specific regions. The Fellow could pursue continued analysis of arsenic exposure and health.
- D. Opportunities are available for the Fellow to participate in communicable disease or environmental field investigations, as time and interest permits.

Program or surveillance system evaluation

- A. The DEH currently generates the CSTE State Injury, Occupational Health, and selected Environmental Health (EH) Indicators. In addition, Michigan is currently collaborating with the State Environmental Health Indicators Collaborative (SEHIC) to develop asthma, cardiovascular and climate change EH Indicators. The Fellow could evaluate the utility of selected indicators on the county (local health department) level and could be involved with the development of the cardiovascular and/or climate change indicators nationally.
- B. Questionnaire data from the Healthy Homes project were used to evaluate the effectiveness of the first three years of the project and will be used again to evaluate the last three years and all six years overall. The Fellow could participate in this activity.

C. Other evaluation opportunities will arise that may be of interest to the Fellow.

Role in state emergency preparedness plan-

There will also be opportunities for the Fellow to participate in trainings and exercises through the Division's Chemical Terrorism and Emergency Preparedness Section.

Assignment Location: Lansing, Michigan

Primary Mentor: Robert Wahl, DVM, MS

Environmental Epidemiologist, Division of Environmental Health, Michigan
Department of Community Health

Advanced Degrees: MS, Colorado State University (1999)

DVM, Colorado State University (1991)

Secondary Mentor: Lorri Cameron, PhD, MPH

Lead State Environmental Epidemiologist

Manager, Epidemiology and Surveillance Section, Division of Environmental
Health, Michigan Department of Community Health

Advanced Degrees: PhD, Johns Hopkins (1985)

MPH, University of Michigan (1976)