

Environmental Health

The Non-Infectious Conditions Epidemiology (NICE) unit proposes mentoring a CSTE Environmental Health Fellow. NICE provides epidemiologic services to state and local health, other health-related organizations, and the public for chronic disease, injury, and non-infectious aspects of maternal, child, and environmental health. In 2009, the Washington State Department of Health (WS-DOH) was one of three states awarded a Centers for Disease Control and Prevention grant to increase laboratory capacity to monitor human exposure to potentially hazardous chemicals. The WS-DOH Public Health Laboratory, Environmental Health Division, and NICE collaboratively developed the grant proposal.

NICE is responsible for field collection of biological samples, including developing field protocols, working with the Institutional Review Board, enrolling participants, collecting biological samples and related information, field processing of specimens, managing data, and providing feedback to participants. NICE is also responsible for convening an Advisory Committee and working with communities at high risk of exposure to potentially hazardous substances to enlist their participation in the project. In addition to collection of grant-funded biological samples, NICE is collaborating with the Public Health Laboratory and Environmental Health to integrate an environmental sampling component into the project.

Day To Day Activities:

On a day-to-day basis, the Fellow would work with the NICE and the WS-DOH biomonitoring teams and with external partners such as local health, communities at high risk of exposure to potentially hazardous chemicals, and an advisory committee. The work would focus on 1) maintaining data collection; 2) expanding data collection; and 3) analyzing data.

Maintaining data collection includes activities such as monitoring field staff to assure compliance with data collection protocols, assisting with resolving unanticipated logistical problems, and monitoring processes to assure data security and integrity. This experience would steep the Fellow in the complexities of field collection of primary data in general and additional complexities associated with field collection of biological samples.

Expanding data collection involves increasing the number of targeted chemicals, focusing on diverse populations at high risk of exposure, and increasing the types of biological and environmental samples. Day-to-day activities associated with expanding data collection range from working with the advisory committee and communities at high risk of exposure to developing new protocols and training field staff on implementation. This aspect of the fellowship would provide the Fellow with experience in developing and implementing field studies and issues related to the science of environmental health as well as complexities of working with communities whose perspective on collection of biological samples often differs from that of the researcher.

Data analysis would include developing a descriptive epidemiology of residents with high levels of targeted chemicals and more complex analyses assessing the associations of the biological findings with

findings from environmental sampling. In addition to working as a team member, the Fellow would be expected to take a leadership role for some aspects of project implementation.

Potential Projects:

- Developing a protocol for collecting, field processing, and shipping biological samples in the field maximizing consistency with processes used in the National Health and Nutrition Examination Survey; work with the Institutional Review Board for protocol approval; train field staff in protocol implementation.
- Using a community-based research model, work with community representatives to achieve consensus on approaches to biomonitoring that are acceptable to the community and work with the community to implement sample collection.
- Combining information on concentrations of potentially hazardous chemicals from biological samples with similar information from environmental samples, demographics and other relevant information to develop a profile of persons at risk for exposure; comparing levels of potentially hazardous chemicals in Washington to those found nationally.
- Evaluating current surveillance for childhood lead poisoning, West Nile Virus, or indicators in the Washington Tracking Network (Washington State's Environmental Public Health Tracking system).
- Responding to a reported chronic disease cluster by analyzing appropriate data and communicating findings to a lay audience; working with a local health department on an infectious disease outbreak.

Emergency Preparedness Role:

NICE supports several WS-DOH programs in responding to natural disasters, pandemics, and industrial or terrorist events. We are currently providing assistance with several components of the H1N1 influenza surveillance. NICE staff developed a normative seasonal curve for the percentage of Washington deaths associated with influenza and pneumonia. During the coming months, we will compare weekly percentages of pneumonia and influenza deaths reported through the Electronic Death Reporting System and reported by sentinel cities and counties to the normative curve to help determine the extent of the epidemic. Our EIS Officer received training to use and evaluate data for rapid influenza tests reported by laboratories and local health jurisdictions. This component of H1N1 surveillance provides information about the heterogeneity of influenza-like illness (ILI) activity in the state and permits monitoring the percentage of circulating influenza virus that is type A. IN the absence of a real emergency, the Fellow can participate in table top exercises and receive training in handling emergency medical materials and in staffing the public emergency call center.

Assignment Location: Olympia, Washington

Primary Mentor: Juliet VanEenwyk, PhD, MS

State Epidemiologist for Non-Infectious Conditions

Secondary Mentor:

Denise LaFlamme, MS, MPH

Biomonitoring Field Manager