Environmental Health, Chronic Diseases

Multnomah County Health Department, Public Health Division, Environmental Health Services

Portland, Oregon

Assignment Description

The CSTE fellow will join the Environmental Health Services (EHS) program in the Public Health Division of the Multnomah County Health Department (MCHD). Through this assignment, he or she will have the opportunity to pursue diverse regulatory and non-regulatory aspects of governmental environmental public health at the local level, including food and drinking water safety, vector-borne illness prevention and surveillance, air quality, land use and transportation planning, brownfield redevelopment housing quality and climate and health and disaster preparedness.

Day-to-Day Activities

- MCHD will involve the Fellow in day-to-day activities and research projects that provide "hands on" applied epidemiology experience. Functional responsibilities include:
- Perform environmental epidemiologic studies and developing public health surveillance systems.
- Participating in or leading the response to environmental health events such as foodborne outbreaks or occurrences of novel disease conditions.
- Provide consultation to county leaders and staff on scientific, analytic, and technical aspects of epidemiologic investigations and public health surveillance.
- Working with program managers and community partners to develop health interventions, policies or programs based on epidemiologic findings.
- Working with partners across the Health Department to explore the intersections between environmental health and other aspects of public health (i.e., chronic disease, maternal-child health, etc.).
- Writing materials for internal reports, public information and peer-reviewed journals.
- Participating in internal and external meetings as needed to involve project stakeholders and to learn how public health systems operate.

In addition, we support our fellows in responding to national opportunities that arise through CSTE and CDC requests.

Potential Projects

Surveillance Activity **Lead Exposure in Children and Adults**

Review monitoring system data to identify demographic, geographic, identifiable risk, Elevated Blood Lead Level (EBLL) and other factors to improve prevention, detection and intervention to reduce risk and long-term health impacts of lead exposure.

Surveillance Evaluation **Air Quality Monitoring**

Using air quality monitoring and health outcome data to evaluate publicly available data to measure the impact of newly adopted health-based standards for permitting industrial sources of pollution. Oregon's Department of Environmental Quality and Health Authority have reformed the state's system for ensuring that industrial sources are constrained from emitting pollutants into the environment; shifting from mechanical control standards to health-based standards. This project will select one (or more) of the 80 permit-holders identified as the heaviest polluters and evaluate the health impacts of the new standards.

Major Project **Measuring Structural Racism through an Environmental Health Lens**

Based on Alice R. Riley's work, Neighborhood Disadvantage, Racial Segregation, and Beyond-Lessons for Studying Structural Racism and Health", (J. Racial and Ethnic Health Disparities, DOI 10.1007/s40615-017-0378-5).) this project will utilize relevant resources to identify the health effects of structural racism and health disparities research, develop a local framework and method to operationalize structural racism in Multnomah County. The project will shift the focus census tracts to a locally meaningful unit of analysis; utilize historic and geographic knowledge about race relations; combine data from multiple sources; and challenge conventions that aim to explain racial health disparities without discussing racism or racial hierarchy.

1) Environmental Epidemiology Projects

Develop a list of environmental conditions on which annual (or other regular interval) reports can be conducted, produced and distributed. The CSTE will independently develop protocols for 1-3 regular reports, and work with other members of the Healthy Homes and Communities team on ther other. Options include but are not limited to:

Smaller Scale Projects:

- Analysis of death records related to environmental determinants of health.
- Injuries and fatalities with links to the built environment, such as traffic collisions.
- Chronic diseases and outcomes related to housing.
- Census Tract-level estimates of key health outcomes last compiled for the equity atlas in 2011: asthma, heart disease, diabetes. Design studies to learn from these data.
- Analysis of the impact of current environmental programs, and searching for potential disparate impacts on/support for vulnerable populations.
- Using air quality monitoring data, design and execute a study to determine the contribution of commercial wood, charcoal and other biomass combustion devices used for the purpose of cooking food (smokers, pizza ovens, etc.) to overall particulate and associated pollutant levels in the county.
- Design and implement a project specific evaluation of county intervention (successful attainment and execution of assessment, cleanup or revolving loan fund monies) on an existing Brownfield project.

Larger Scale Projects:

- Fostering partnership with the local National Weather Service office to look more closely at neighborhood level atmospheric conditions and how that affects air quality.
- Tracking asthma triggers more closely (i.e., establish local pollen counts).
- Establish a mental health surveillance system for chronic stress or climate trauma.
- Develop method to predict growth patterns/outbreaks based on localized weather patterns; predict how those patterns may change with a changing climate.

2) Lead Poisoning Prevention Projects

Environmental Health Services provides key lead poisoning-reducation services for children and pregnant County residents. Blood lead test results are a reportable disease in Oregon, and the State keeps records of initial and confirmatory testing, as well as collow-up testing. The Program offers: education on common lead hazards through public events, the County website, and a phone line; free blood-lead screening to low-income community members; and case management for children and pregnant community members with lead levels over the EPA action level. The Fellow will work with Program staff, the Oregon Health Authority, and the Tri-County Health Officer to use data to improve the impact of the Program's work, and ensure that the Program is protecting high-risk communities, such as recent refugees.

The Fellow will review Oregon's monitoring system data for County residents to identify demographic, geographic, identifiable risk, Elevated Blood Lead Level (EBLL) and other factors to improve prevention, detection and intervention to reduce risk and long-term health impacts of lead exposure.

3) Tobacco Related Projects

The CSTE fellow will work with the Tobacco Prevention and Control Program (TPCP) to develop protocols and conduct routine surveillance and produce reports on a number of issues, including:

- Use rates of various tobacco products.
- Trends from NYTS, BRFSS, YRBS/OHT.
- Attitudes and beliefs about tobacco use and misuse.
- Population specific surveys (i.e. Native Pregnant women, LGBTQ+, youth).
- Chronic diseases and outcomes related to smoking.
- Update of annual fact sheet on tobacco for Multnomah County.

He or she will also have the opporunity to work on additional projects such as the evaluation of Multnomah county's new Tobacco Retail Licensing (TRL) program, including design and implementing and evaluation of the impact of Oregon's new minimum legal sales age (MLSA) of 21, and the program's routine MLSA inspections; tobacco-related disparities including African American, Native Amercial, youth and LGBTQ communities.

4) Air Quality Monitoring

Using air quality monitoring and health outcome data to evaluate publicly available data to measure the impact of newly adopted health-based standards for permitting industrial sources of pollution. Oregon's Department of Environmental Quality and Health Authority have reformed the state's system for ensuring that industrial sources are constrained from emitting pollutants into the environment; shifting from mechanical control standards to health-based standards. This project will select one (or more) of the 80 permit-holders identified as the heaviest polluters and evaluate the health impacts of the new standards.

5) Measuring Structural Racism through an Environmental Health Lens

Based on Alice R. Riley's work, Neighborhood Disadvantage, Racial Segregation, and Beyond-Lessons for Studying Structural Racism and Health", (J. Racial and Ethnic Health Disparities, DOI 10.1007/s40615-017-0378-5).) this project will utilize relevant resources to identify the health effects of structural racism and health disparities research, develop a local framework and method to operationalize structural racism in Multnomah County. The project will shift the focus census tracts to a locally meaningful unit of analysis; utilize historic and geographic knowledge about race relations; combine data from multiple sources; and challenge conventions that aim to explain racial health disparities without discussing racism or racial hierarchy.

Preparedness Role

The Fellow will have the opportunity to participate in emergency preparedness and response activities and to receive online Incident Command trainings. The Fellow may be called upon to represent the Multnomah County Health Department at the local, state, and national level in matters affecting Environmental Health activities, including multi-agency public health emergency preparedness planning and response.

Mentors

Primary	Jae Douglas MSW, PhD Environmental Health Services Director
Secondary	Andrea Hamberg BA Program Supervisor