

**ID: 45537522**

**Environmental Health, Chronic Disease - Host Site Description**

**Oregon Health Authority**

**Assignment Location:** Portland, US-OR  
Oregon Health Authority  
Public Health Division/Environmental Public Health Section

**Primary Mentor:** Carol Trenga, MS, PhD  
Environmental and Occupational Epidemiologist  
Oregon Health Authority

**Secondary Mentor:** Holly Dixon, BS, PhD  
Public Health Toxicologist  
Oregon Health Authority

**Work Environment**

Hybrid

**Assignment Description**

The Oregon Health Authority helps people and communities achieve optimum physical, mental and social well-being through partnership, applying a health equity lens, prevention and access to quality, affordable health care. The Public Health Division (PHD) of the Oregon Health Authority is responsible for leading the science and practice of population health principles in Oregon.

The Fellow will be placed within the PHD's Environmental Public Health section, which aims to identify, assess and report on threats to human health from exposure to environmental and occupational hazards, and advise the people and communities of Oregon to best understand potential risks where they live, work and play in order to remain healthy and safe. The Environmental Public Health Section is part of the Center for Health Protection. The Center for Health Protection consists of programs that work with environmental health, health care facilities and licensing and regulation.

The Fellow will provide epidemiological capacity primarily for the Environmental Public Health Tracking program (EPHT) and for environmental public health programs in general, depending on availability. The Fellowship is cross-cutting with opportunities to learn about and be involved in many environmental health, emergency preparedness and other public health programs. The Fellow will work with mentors, program staff, management, OHA and external agency and community partners to carry out program and project work. Prioritization will be developed by the Fellow and mentors in accordance with the needs of the Fellow's education and EPH programs.

Daily activities include meeting with project teams and partners to ensure proper workflow and smooth communications, conducting literature reviews, evaluating surveillance systems and Tracking program project activities, developing and conducting research and analytical plans, and contributing to risk assessments and risk communication activities. Field work may include site visits, meetings with external stakeholders and risk communication activities.

The Fellow will be encouraged to attend virtual, local and national conferences and webinars, participate in work groups and communities of practice, and present projects at internal and external meeting and conferences.

**Describe Statistical and Data Analysis Support, Such as Databases, Software, and Surveillance Systems Available to the Fellow**

The Fellow will have access to multiple state and federal databases that support environmental health measures and related health outcomes, including Oregon's Electronic Surveillance System for the Early Notification of Community-

**ID: 45537522**

**Environmental Health, Chronic Disease - Host Site Description**

**Oregon Health Authority**

based Epidemics (ESSENCE) and the NSSP-ESSENCE BioSense platform, vital statistics, data systems related to the Environmental Public Health Tracking program, which include demographics, built environment characteristics, environmental hazards, exposure and health outcome data from emergency department and hospitalization discharge systems. Data for toxicological assessments, occupational illness and injury from EMS/trauma registries, exposure data from medical laboratories, and claim and cost data from workers compensation and insurer systems are also available. Primary statistical software available to staff is R, SAS, SPSS, SQL Server, ArcGIS, Tableau and Tableau Prep. During 2023, the Oregon Tracking team will receive training in REDCap in association with CDC National EPHT program projects.

## **Projects**

**Surveillance Activity Title: Syndromic Surveillance for Environmental Hazards**

*Surveillance Activity Description:*

The Fellow will be part of the team monitoring Oregon's Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) near-real time emergency department and urgent care center data for health outcomes that may be associated with exposure to environmental hazards (e.g., heat-related illness, wildfire smoke, cold-related illness, CO poisoning). The Fellow will work with syndromic surveillance (SyS) team members in EPH and ESSENCE data stewards in the Acute and Communicable Disease Program (ACDP) at OHA. Oregon ESSENCE submits data to the National Syndromic Surveillance Program (NSSP) and the Fellow will gain experience working with NSSP data and participate in the NSSP Community of Practice.

*Surveillance Activity Objectives:*

Project objectives include routine SyS of seasonal environmental hazards and health outcomes to inform risk communications, messaging and the public health response. New queries are developed, piloted and evaluated to improve SyS activities. Hazard reports are published for the general public and media communications; daily or weekly situational status reports are provided for internal and external briefings with agency, state and local public health partners.

*Surveillance Activity Impact:*

Reducing exposures to environmental hazards such as wildfire smoke by preparing the public to act when conditions worsen. Demographic analysis of SyS data identifies populations that may be experiencing disproportionate impacts and helps public health agencies and community partners target communications and create more effective public health interventions.

**Surveillance System Evaluation Title: Evaluating New Climate-related Indicators for Syndromic Surveillance**

*Surveillance System Evaluation Description:*

The Fellow will participate in projects to evaluate new SyS queries in Oregon ESSENCE for health outcomes that may be related to drought, extreme heat and occupational exposures.

*Surveillance System Objectives:*

This project will improve environmental and occupational health surveillance in Oregon. Deliverables include a descriptive analysis to investigate temporal trends, correlations, case classification and positive predictive values between different queries and comparison data sets such as Healthcare Cost and Utilization Project hospitalization and emergency department visit data.

**ID: 45537522**

**Environmental Health, Chronic Disease - Host Site Description**

**Oregon Health Authority**

*Surveillance System Impact:*

This project will increase awareness of affected populations, inform risk communications and better prepare workers, employers and communities by improving the completeness and accuracy of SyS data related to climate change and occupational exposures.

**Major Project Title: Creating Data Dashboards for Environmental Health Data**

*Major Project Description:*

The Fellow will work with Environmental Public Health Tracking program (EPHT) program staff to conduct epidemiological analyses of health outcomes and environmental exposure data. The major project involves providing content to the Oregon Tracking Data Explorer, which includes interactive maps and data on environmental quality measures and health outcomes. Examples of available environmental measures include air quality, extreme temperature, built environment, food environment and water quality. Examples of health outcomes include respiratory, cardiovascular, cerebrovascular morbidity, premature births, low birth weight and increased mortality. This project is modeled on the CDC/NCEH National EPHT Data Explorer and includes nationally consistent data measures and those developed by the Oregon Tracking program.

*Major Project Objectives:*

The Fellow will work with the Oregon Tracking team to produce content that includes graphs and other data visualizations, develop community profiles and translate analyses into public-facing Tableau dashboards.

*Major Project Impact:*

Data provided can be used by local public health departments to inform community health assessments, programs and outreach activities. Researchers and community members will have access to environmental health data, much of it at sub-county levels, to inform grant applications and provide information to support community members taking an active role to protect their health and improve quality of life in their communities.

**Additional Project #1 Title: Using Health Information to Inform and Evaluate Oregon's Industrial Air Toxics Regulatory Program**

**Project #1 Type: Surveillance Activity**

*Project #1 Description:*

This project involves helping update health-based information used to regulate air contaminants in Oregon as well as evaluating the impact of industrial toxic air contaminants emissions on health outcomes. The recently implemented Cleaner Air Oregon program is Oregon's state regulatory program to reduce health risks for people who live, work, play and learn near industrial facilities that emit toxic air contaminants. The Environmental Public Health Section of OHA assists the Oregon Department of Environmental Quality (DEQ) in multiple Cleaner Air Oregon projects related to industrial air toxic reduction and health.

*Project #1 Objectives and Expected Deliverables:*

Objectives include

- (1) Updating inhalation toxicity reference values (TRVs) used in health risk assessments. The Fellow would be involved in interpreting key epidemiological studies used to develop the TRV. A TRV is the amount of the chemical in air that may cause health problems when inhaled. For example, the Fellow could help agency staff prepare a recommendation for a cancer TRV for diesel particulate matter. The Fellow will work with internal and external partners including epidemiologists, toxicologists, engineers, chemists, policy analysts, and leadership at DEQ as well as the Oregon Air Toxics Science Advisory Committee.
- (2) Evaluating the health benefit of a reduction in toxic air contaminant emissions due to the implementation of

**ID: 45537522**

**Environmental Health, Chronic Disease - Host Site Description**

**Oregon Health Authority**

Cleaner Air Oregon.

- (3) Piloting an analysis of health outcomes in a small geographic area where there are multiple industrial facilities and air toxics emission sources. This work will support DEQ's cumulative health risk project.

Potential deliverables include

- Written summaries on the epidemiological studies used to develop TRVs
- Preparing written documents on recommendations and findings to agency leadership and advisory committees

*Project #1 Impact:*

This project will help protect the health of neighbors around industrial facilities by making sure the Cleaner Air Oregon program is based on up-to-date science. In addition, evaluating health benefits and outcomes related to toxic air contaminant emissions will demonstrate the importance of the Cleaner Air Oregon program and other efforts to regulate air pollutants.

**Additional Project #2 Title: Lead in Gardening Soil Community Events**

**Project #2 Type: Surveillance Activity**

*Project #2 Description:*

Depending on project funding and the Fellow's interest, a Fellow can assist with "soilSHOP" events. The Environmental Health Assessment Program will be hosting "soilSHOP" events across the state where community members can bring in soil from their yards to have it tested for lead.

*Project #2 Objectives and Expected Deliverables:*

A Fellow could help develop science communication materials for these events as well as attend these events.

*Project #2 Impact:*

The goal of these events is to help the public better understand risks in their garden and provide tailored information on how they can reduce risk of exposure in their household.

**Please Describe the Fellow's Anticipated Role in Preparedness and Response Efforts – Include Activities and Time Allocation (Required Competency of Fellowship)**

The Fellow will serve as part of the EPH Hazards planning and response team. Members of this team meet regularly (monthly or more often as needed) with internal OHA partners in Health Security Preparedness & Response (HSPR), OHA Public Health Division leadership and Oregon Department of Human Services (ODHS) team members to discuss program implementation, surveillance and coordinate responses to emergent environmental health threats. This will also be an opportunity for a CSTE Fellow to learn and contribute to our ongoing emergency preparedness efforts. This work builds capacity in OHA-ODHS for responding to acute environmental threats and provides ongoing opportunities for staff in EPH to prepare for acute environmental threats before they occur. The Fellow will also be expected to complete Incident Command System (ICS) trainings through ICS-300, Intermediate ICS for Expanding Incidents, ideally by the end of their first year in order to be prepared to participate in an incident management team. An estimated 10-15% of the Fellow's time will be dedicated to emergency preparedness and response.

**Please Describe the Fellow's Anticipated Role in Cluster and Outbreak Investigations – Include Activities and Time Allocation (Required Competency of Fellowship)**

Outbreak investigations in EPH might include responding to mass pesticide exposure incidents; community requests to investigate a potential cancer cluster; a carbon monoxide exposure in a public building such as a school; responding to a

**ID: 45537522**

**Environmental Health, Chronic Disease - Host Site Description**

**Oregon Health Authority**

chemical spill, gas leak or other environmental event that results in community exposures. Outbreak investigations would provide the opportunity for the Fellow to become familiar with OHA's notifiable conditions database. (5-10% FTE on average over the course of the fellowship)

**Please Describe the Fellow's Anticipated Role in the COVID-19 Response – Include Activities and Time Allocation**

An EPH Epidemiology Fellow would also have an opportunity to participate in COVID-19 or other communicable disease-related epidemiology projects and outbreak investigations. Time allocated for outbreak investigations would be flexible based on Fellowship requirements and other projects--it could be ongoing (e.g., 5-10% FTE for duration of Fellowship) or concentrated as a rotational assignment. Both Dr. Trenga and Dr. Dixon have been involved in the OHA COVID-19 response.

**Please Describe Opportunities for Fellows to Work in Health Equity as well as Incorporating Diversity, Equity, and Inclusion into their Work**

OHA has adopted health equity as one of its core values and set a goal to eliminate health inequities in Oregon by the end of this decade (2030). In order to prioritize achieving health equity for all people in Oregon, all projects apply an equity lens. Oregon has implemented standardized Race, Ethnicity, Language and Disability (REALD) data collection across all state data systems to help identify and address health disparities. The Fellow will have opportunities to analyze REALD data and participate in anti-racism trainings that are available to OHA staff. The Fellow will also be encouraged to participate in CSTE and national EPHT workgroups that focus on health equity and environmental justice projects.