

## **Environmental Health/Occupational Health**

### Assignment Description:

The CSTE Fellow will be a staff member of, and active participant in, the work of the Environmental and Occupational Health Surveillance program. The CSTE fellow will report directly to the Program Manager, and will work primarily on surveillance and epidemiologic investigations in Environmental Public Health Tracking and Occupational Health Surveillance.

In addition, the Fellow will have the opportunity to work on interdisciplinary projects related to the other groups in the program or Division, such as: community-specific hazardous site-related investigations; non-routine cancer cluster inquiries; water-borne or food-borne disease outbreaks; or issues related to contaminants in consumer products.

### Day-to-Day Activities:

The CSTE Fellow's anticipated day-to-day activities on surveillance and epidemiologic investigations would include the following:

- designing investigations and developing protocols, procedures and methods, for on-going or new surveillance system activities and epidemiologic studies;
- extracting data from surveillance and administrative data sets;
- preparing and analyzing data for environmental public health and occupational health indicators;
- conducting data analyses of surveillance data sets looking for geographic patterns, time trends, or space-time clustering;
- preparing Institutional Review Board applications for surveillance and research projects as needed;
- collecting and transforming environmental data sets for use in population exposure assessments;
- examining surveillance data by environmental gradient or occupation/industry coding; or
- conducting statistical analyses of surveillance data to address community concerns about disease clusters or environmental hazards.

The CSTE Fellow would also: participate in regular meetings with EOHS program units on current investigations; attend ad hoc meetings with other state agencies, other service areas of NJDOH, and local health departments as needed; arrange and attend lectures on topics in public health at in-house seminars.

### Potential Projects:

The Fellow will have numerous opportunities to lead and/or participate in public health surveillance and epidemiologic investigations. Examples of potential projects might include:

- Analyzing time trends and geographic patterns in environmental and occupational health-related outcomes, using state surveillance databases.
  - Example: Analyze time trends and geographical patterns in birth weight among babies born to New Jersey mothers, in relation to demographic and environmental factors
  - Example: Examine geographic patterns in morbidity and mortality due to occupational injuries in the state
  - Example: Examine whether the geographic distribution of specific cancers or birth defects show global or specific space-time clustering.

- Analyzing health outcome surveillance data with respect to the geographic and temporal gradient of environmental factors.
  - Example: Assess and map the relationship between monitored or modeled ambient air toxic levels (such as diesel particulate) and rates of lung cancer incidence
- Conducting an epidemiologic analysis of the relationship between a health outcome and environmental or occupational risk factors.
  - Example: Conduct time-series analysis of daily emergency department events for childhood asthma in relation to ozone, temperature, pollen levels, and demographic factors.
- Evaluating surveillance systems
  - Example: Assess and create guidance for the use of syndromic surveillance system data in environmental and occupational health surveillance, such as for hypothermia, chemical or pesticide poisoning, or waterborne disease.
- Developing Environmental Public Health Indicators or Occupational Health Indicators for a specific content area.
  - Example: Research and develop health indicators of vulnerability or susceptibility to environmental stressors, for analysis of environmental justice concerns
  - Example: Collect data and develop indicators and measures to track hospitalizations due to occupational pneumoconioses over time.

**Preparedness Role:**

In the event of a public health emergency, the fellow may be asked to participate on a NJDOH response team, which includes sub-teams in the areas of business continuity, Emergency Call Center, communications, epidemiology/surveillance, and data management. The fellow could serve in either the epidemiologic/surveillance or data management sub-teams.

Assignment Location: Trenton, NJ

Primary Mentor: Jerald Fagliano, PhD, MPH  
Program Manager/Health Scientist Specialist  
New Jersey Department of Health

Secondary Mentor: Barbara Goun, PhD, MPH  
Research Scientist 1  
New Jersey Department of Health