

Infectious Disease

Assignment Description

The New York State (NYS) Emerging Infections Program (EIP) has many exciting opportunities for an Applied Epidemiology Fellow. EIP is a population-based network that includes the CDC and ten state health departments, working with academic partners and other collaborators to assess the public health impact of emerging infections and evaluate methods for their prevention and control. The NYS EIP was launched in the seven-county Rochester region in mid-1997. By 2004, some components of EIP activities had expanded to 34 counties with a population base in excess of 4.3 million.

One core activity is active, laboratory-based surveillance for five invasive Active Bacterial Core pathogens (ABCs), which include Group A streptococcus, Group B streptococcus, *Haemophilus influenzae*, *Neisseria meningitidis*, and *Streptococcus pneumoniae*.

A second core activity is active laboratory-based surveillance for nine bacterial/parasitic foodborne pathogens through FoodNet, including *Campylobacter*, *Cryptosporidium*, *Cyclospora*, *Escherichia coli* O157:H7 and other STECS, *Listeria*, *Salmonella*, *Shigella*, *Vibrio*, and *Yersinia*.

The EIP also conducts studies on influenza, hepatitis, Creutzfeldt-Jakob Disease, MRSA, and *Clostridium difficile*; vaccine efficacy studies for influenza, *Streptococcus pneumoniae*, and *Neisseria meningitidis*; and case-control or cohort studies for a number of enteric pathogens. EIP staff also collaborates with BCDC and the Food Protection Program (Bureau of Community Environmental Health and Food Protection) in outbreak investigations. With the wide range of issues and diseases addressed by the EIP, CSTE Applied Epidemiology fellows will have numerous options to evaluate a surveillance system, design an epidemiologic study to address a health problem, participate in bioterrorism and emergency preparedness activities, and respond to a disease cluster/outbreak. The fellow will be able to attend training sessions, seminars, conferences, and collaborative meetings. The fellowship will emphasize enhancement of writing and presentation skills. There will be opportunities for the fellow to develop and give presentations to groups, including the Zoonoses course provided by Dr. Eidson to the UAlbany SPH. The fellow will write a field investigation report and a surveillance report, and will be supported in developing an oral presentation for a national conference and a scientific journal publication for the major investigation.

Day-to- Day Activities

The CSTE Fellow will be fully integrated into EIP's and the Department's daily activities. The flexibility structure and staffing of the EIP facilitates the Fellow's close collaboration and leadership. The CSTE Fellow's anticipated day-to-day activities may include (depending on Fellow interest and projects chosen):

- Surveillance assessment
- Statistical data analysis
- Writing scientific papers, fact sheets, brochures, and EIP website and newsletter
- Preparing scientific and public presentations, including for conferences
- Developing scientific posters

- Working with CSTE Fellowship Primary Mentor and Secondary Mentor on most work days, with scheduled meetings to review progress biweekly
- Attending scientific conferences within NYS, the region, and nationally, including the annual Northeast Epidemiology Conference, the CSTE Annual Conference, and the International Conference on Emerging Infectious Diseases
- Participating on conference calls and collaborating with other scientists on climate change and EIP diseases
- Working with the public and environmental justice groups to determine a needs assessment for climate change and health
- Leading the investigation of a disease outbreak caused by an EIP organism
- Attending training classes on public health emergency preparedness
- Attending training classes on Project Management and statistical packages
- Directing UAlbany graduate student work to assist in CSTE Fellow projects
- Providing lectures to UAlbany public health graduate courses
- Working with local health departments, hospitals, the Clinical Laboratory Information Management System (CLIMS), the Communicable Disease Electronic Surveillance System (CDESS), and hospital discharge data to assess their utility in EIP climate change surveillance systems.
- Developing research papers for submission to scientific journals

Potential Projects include:

The potential projects will include opportunities to fulfill all of the CSTE Fellow assignment deliverables.

Dr. Zansky has been serving on a nationwide EIP committee to determine the need for future EIP-specific studies related to climate change. Dr. Zansky and Dr. Eidson developed an initial summary for this committee of anticipated climate change impacts on EIP diseases in NYS. Dr. Eidson is the co-Principal Investigator and direct supervisor for a new Project Coordinator on a three-year CDC grant awarded in September 2010 for Assessment and Planning to Develop Climate Change Programs. As part of the grant, NSYDOH will be performing a needs assessment and evaluation of current health surveillance systems for detecting impacts of climate change. The CSTE Fellow could take the lead on evaluating the existing surveillance systems for one or more emerging diseases, to determine their sensitivity and specificity for detecting increases related to climate change.

Dr. Eidson, BCDC, and the Division of Epidemiology's Statistical Unit have prior experience in developing syndromic surveillance systems and real-time indicators of disease risk. The Fellow could play a key role in researching the associations between climate change indicators and changes in the EIP diseases, and developing meaningful summaries of this research for various professional and public audiences. Climate change planning is well underway in NYS, with the NYSDEC as the lead agency. New York has a NYS Climate Action Council (<http://nyclimatechange.us/>), but with limited focus on health issues to date.

Dr. Eidson recently developed a Climate Change and Health web page through NYSDEC (<http://www.dec.ny.gov/energy/68917.html>) and the CSTE Fellow could assist in developing a more meaningful website designed specifically for the NYSDOH website. The CSTE Fellow could play a key role in integrating work on EIP and climate change with the NYSDOH CEH climate change work funded by another 3-year CDC grant on Climate Variability/Change and the Risks for Under-Studied Adverse Health Outcomes. These efforts are part of the NYSDOH Environmental Public Health Tracking (EPHT) effort, which is part of a larger national EPHT Network for public health education, planning, prevention, and control. Many of the EIP diseases have environmental health implications in regards to food, water, and

vectors. There are six specific objectives of Dr. Eidson's CDC climate change grant. The CSTE Fellow will have the opportunity to participate in research, surveillance, planning, and education for any of these objectives that the Fellow is interested in.

1. Conduct a cross-functional, department-wide needs assessment/gaps analysis to identify priority areas to address public health impacts of climate change;
2. Educate opinion leaders regarding the health costs associated with inaction or inadequate action on climate change issues;
3. Enlist support of key climate change collaborators whose stakeholders are most vulnerable to climate change to assist with strategic planning;
4. Develop a comprehensive strategic plan that will outline the steps needed to raise awareness of climate change issues at senior leadership levels and be used as a guide to coordinate and optimize department-wide initiatives to mitigate and adapt to the public health impacts of climate change;
5. Assess existing health/disease surveillance systems and available climate-health indicators for the long-term goal of monitoring for public health impacts of climate change, inform policy makers and partners, and measure the effectiveness of climate change adaptation planning; and,
6. Transfer knowledge of best practices and lessons learned resulting from New York State initiatives to mitigate and adapt to the public health impacts of climate change.

Preparedness Role

Dr. Zansky works closely within BCDC with the Public Health Emergency Epidemiology Program on emergency preparedness, and Dr. Eidson in OPHP works closely with the Office of Health Emergency Preparedness within the Office of Public Health (see organization chart). Through the UAlbany SPH, both Drs. Zansky and Eidson also have connections with the SPH Center for Public Health Preparedness. Through all of these affiliations, the CSTE Fellow will have the opportunity for training and assisting with preparedness projects. The CSTE Fellow will have the opportunity to complete FEMA study courses on the Incident Command System and participate in drills and exercises that occur periodically throughout the state.

Assignment Location:	Albany, New York State
Primary Mentor:	Shelley Zansky, PhD Director, Emerging Infections Program NYS Department of Health
Secondary Mentor:	Millicent Eidson, DVM, MA Acting State Epidemiologist NYS Department of Health