Assignment Description

The CSTE fellow will be working primarily in the Occupational Health Surveillance Program (OHSP) within the Bureau of Community Health and Prevention (BCHAP) at the Massachusetts Department of Public Health (MDPH). OHSP has strong ties to other state agencies and programs within MDPH as well as with local academic institutions and community groups. The fellow will also work closely with the Office of Statistics and Evaluation (OSE), also located within BCHAP at the MDPH. The position is located at the MDPH main office in downtown Boston. The primary supervisor, Dr. Sparer-Fine, is the Director of OHSP, and the secondary supervisor, Dr. Ursprung, is the Director of OSE. Together, Drs. Sparer-Fine and Ursprung oversee all epidemiologists within BCHAP, which allows for coordination and collaboration across program areas.

The fellow will likewise work in close proximity to other program and departmental staff, including physicians, epidemiologists, statisticians, and health educators, facilitating active collaboration. The staff at MDPH and OHSP is committed to assuring that fellows have a fruitful applied public health experience that furthers their career in the field.

The overall mission of OHSP is to promote the health, safety and quality of life of working people in Massachusetts. OHSP collects, analyses, interprets, and disseminates data on work-related injuries and illnesses in the Commonwealth and collaborates with a wide range of government and community partners to address identified problems. Special emphasis is placed on identifying and addressing the needs of underserved workers and on integrating occupational health considerations into mainstream public health. The program has a broad array of projects that encompass data analysis, program evaluation, and intervention activities. Potential projects and focus areas are described below. Many of these projects provide for flexibility to accommodate the interest and initiative of the fellow.

The Office of Statistics and Evaluation supports the research, evaluation, surveillance, strategic planning, dissemination, and data infrastructure needs of the seven divisions within the Bureau of Community Health and Prevention covering a wide range of topics from violence/injury to chronic disease to health access. OSE’s mission is to use data to identify: the most pressing health issues facing the commonwealth, who is disproportionately affected by them, how effective the bureau has been in addressing them, and how the bureau could better deploy their resources to address them in the future.

The Bureau of Community Health & Prevention recognizes that systems of cultural oppression need to be acknowledged, repaired, and prevented by the entities that helped create them. The history of structural racism – the public policies, institutional practices, and social norms that together maintain racial hierarchies – and its impact across the country and within the Commonwealth is often overlooked or unacknowledged, yet it is pervasive and unmistakably harmful to everyone. The social marginalization and inequities that racism cultivates in housing, education, employment, the built and social environments, and health care are felt across generations, most acutely in communities of color. The Bureau is committed to improving the quality of life for all Commonwealth residents while eliminating the marginalization and inequities that disproportionately threaten the lives of communities of color.
MDPH has the capacity and capability to identify infectious disease outbreaks, including outbreaks caused by the deliberate use of biological agents by terrorists. The fellow will be given opportunities to participate in the public health emergency response activities and assist in infectious disease outbreak investigations. Specifically, the fellow will be trained in the area of epidemiology and surveillance: disease reporting, vulnerability assessments, and the broader scope of surveillance and intervention.

**Day-to-Day Activities**

As an occupational epidemiologist at OHSP, the CSTE fellow will serve as a member of the team conducting case follow-up activities including injured worker interviews and field investigations as opportunities arise that are triggered by OHSP’s routine sentinel event surveillance of work-related poisonings, work-related burns, occupational lung disease, teen and young adult injuries at work, and workplace fatalities. The fellow will also be involved in using population-based data sets to characterize these and other work-related health problems in the state, with an emphasis on generating actionable information to guide prevention priorities. The fellow will be encouraged to formulate innovative surveillance research ideas under the direction of the primary mentor. Integration of occupational health with the mainstream public health is one of our program missions.

S/he will also collaborate with other programs in MDPH such as the Injury Surveillance Program, Worksite Wellness Program, Asthma Prevention and Control Program, and the Office of Data Management and Outcomes Assessment. Likewise s/he will have the opportunity to participate in statewide planning efforts and community coalitions, such as the Massachusetts Occupational Safety and Health Team, the Massachusetts Preventing Injury Network and the Youth Employment Safety team.

The program has a broad array of potential projects that encompass working with multiple data sets, data collection, quantitative and qualitative analyses, program evaluation, and intervention activities. The CSTE fellow will be responsible for the evaluation of one of the OHSP surveillance systems, take the lead on a “primary project,” and assist on other projects as time and interest allows – in order to gain a wide range of experiences. The choice of project(s) will depend on both the interest of the fellow and program priorities and will be based on discussion with project staff including the fellow’s primary and secondary mentors.

**Potential Projects**

**Surveillance Activity**  **Characterizing Injuries and Illnesses Among Temporary Agency Workers**

Over the last two decades, there has been a marked increase in use of workers hired through temporary agencies across all sectors of the U.S. labor market. These workers are often placed in high-risk jobs without adequate safety controls or training, and there is increasing evidence that they are at high risk of occupational injury. Labor laws that establish employer responsibility for workplace safety and health have not kept pace with the changing nature of the labor market, resulting in ambiguous lines of responsibility for complying with workplace health and safety standards. In 2012, Massachusetts passed a landmark legislation, the Temporary Workers Right to Know Law, that gives temporary agency
workers’ rights to information about the jobs they are assigned, including health and safety information. This new law offers a unique intervention option for worksite follow-up of temporary workers injured on the job.

To date, there is little information about specific risks to temporary agency workers in Massachusetts. The fellow will take the lead in preparing a report on temporary worker health and safety in Massachusetts to inform policy development and intervention activities to reduce workplace risks. The project will involve using employment and injury data to describe the temporary agency industry in the state, as well as designing and conducting an analysis of workers’ compensation claim data to characterize work-related injuries and illnesses among temporary agency workers. The fellow will also assist the Young Worker Project staff in a new initiative to collect data directly from young temporary agency workers who have been injured on the job. The fellow will help in developing the survey instrument, assist in conducting interviews with these workers, and analyze the interview data to add to the findings of the workers’ compensation data analysis. If the fellow is interested, this study could be coupled with field investigations of workplace fatalities involving temporary workers conducted by OHSP’s Fatality Assessment and Control Evaluation project staff. The fellow could also collaborate with agency and community partners to develop and implement an outreach strategy to disseminate prevention information to temporary agency workers and other key stakeholders.

**Surveillance Evaluation**

The Massachusetts Work Fatality Surveillance System Evaluation

The two main projects within the Massachusetts Work Fatality Surveillance System are the NIOSH funded Fatality Assessment and Control Evaluation (FACE) project and the Bureau of Labor Statistics (BLS) funded Census of Fatal Occupational Injuries (CFOI). CFOI produces comprehensive, accurate, and timely counts of fatal work injuries. CFOI uses multiple sources to identify, verify, and profile fatal worker injuries. Information about each workplace fatal injury—occupation and other worker characteristics, equipment involved, and circumstances of the event—is obtained by cross-referencing source records, such as death certificates, workers’ compensation reports, and Federal and State agency administrative reports. The FACE project is a research program designed to identify and study fatal occupational injuries. The goal of the FACE is to prevent occupational fatalities by investigating work situations at high risk for injury and then formulating and disseminating prevention strategies to those who can intervene in the workplace. Following CDC’s Guidelines for Evaluating Public Health Surveillance Systems, the fellow will take the lead on the evaluation of this surveillance system and examine all system attributes. The fellow will work on this under the supervision of both her/his mentors and the coordinator of the Massachusetts Work Fatality Surveillance System.

**Major Project**

Occupational Health Intersectionality with Bureau of Community Health and Prevention (BCHAP) Initiatives

The Bureau of Community Health and Prevention (BCHAP), which houses both OHSP and OSE, places a strong emphasis on applying a health equity lens to all of its work. In particular, BCHAP has been working for the last few years to provide training on racial equity issues to the entire Bureau, so that staff have the capacity to include focused efforts around racial and ethnic disparities in all aspects of the
work, both surveillance and prevention. There is interest from the Bureau to further build capacity around other social determinants of health, such as work, into all Bureau efforts. The CSTE fellow would engage in a project that aims to work with different groups within the Bureau (Chronic Diseases, Sexual and Reproductive Health, Youth Assault, Suicide, Sexual and Domestic violence) to identify common root causes that relate to occupational health factors. The fellow would also help individual programs to better understand how they can use their data to identify health disparities that relate both to their topic and occupational health, as well as how to even measure and assess work-related factors with their available data, and identify data gaps and new areas of collaboration. By further understanding occupational disparities, similar root causes, disproportionately impacted populations, data resources, definitions, and methodology, the fellow will help the Bureau build capacity around work as a social determinant of health. Data identified through this process could be incorporated into data dissemination products and public facing data platforms such as the MDPH’s Population Health Information Tool (PHIT), an online portal that presents information about health outcomes, and exposures at the community level. The fellow would work with programs to develop a Bureau-wide report that reflects all of the various efforts around occupational health. This process and report would serve as a template that can be used to further build capacity around other social determinants of health in the future.

**Surveillance Activity  Developing a Surveillance System for Casino Worker Injuries and Illnesses**

As of 2019, Massachusetts is now home to two large casinos, bringing a new industry and associated hazards to the Commonwealth. Overseeing the health and safety of this new workforce requires planning and a sophisticated surveillance system that addresses work-related exposures. Well-recognized occupational hazards for casino workers include problem gaming, indoor air quality concerns, and risks for alcohol, substance abuse issues, musculoskeletal injuries (including repetitive strain, overexertion, and acute traumatic injuries), shift work disorder and disrupted sleep, stress, workplace violence, and blood borne pathogen exposures (which may occur as a result of assisting impaired patrons or in the setting of assaults on workers by visitors or coworkers). These health conditions are highly prevalent both among casino dealers and among service jobs on the hotel side of operations, such as room cleaners, food preparation and service workers, and others. Many jobs in the hospitality industry are physically demanding, require evening and night work, and involve many psychosocial stressors such as constant vigilance and electronic monitoring as well as low decision-making opportunities. Often, these jobs are held by members of racial and ethnic minorities, who may be disproportionately impacted even within a given occupation. Beyond casino workers themselves, other populations and occupations in host communities will also likely experience adverse health impacts from the opening of these casinos (transportation workers, teen employees, restaurant workers, etc.). More surveillance data are needed to understand the full impact on the casinos on Massachusetts workers and communities in order to identify which populations may be most adversely impacted and to develop informed and impactful interventions for their protection. The CSTE fellow would help develop a surveillance system for these workers using data generated from health care centers (such as community health centers in the cities and towns surrounding the casino) where casino workers seek medical treatment. The system should have the capacity to track current health and early work-related injuries and sentinel health events as well as underlying chronic disease among this contained community. In addition, the fellow could develop a job exposure matrix that looks at common
jobs and tasks of those working at the casino (both in the games and hospitality portions of the facility). This surveillance system would help inform future interventions to improve health and safety conditions for casino workers.

**Major Project  Analysis of Occupational Health Indicators (OHIs)**

The occupational health indicators (OHIs) annually track the occupational health status of the working population in Massachusetts and describe the burden of certain health effects, exposures, and hazards using multiple state data sources. OHSP has developed efficient methods for accessing the data sources for all CSTE/NIOSH recommended OHIs as well as several Massachusetts specific OHIs (e.g., prevalence of musculoskeletal disorders associated with patient handling). Massachusetts fares well compared to the nation on many indicators of a population’s health; however, the occupational health indicators tell a mixed story. OHSP has collected at least 15 years of data for most of the OHIs and is proposing to analyze trends over time to better understand the extent of the issues revealed through the OHI data and summarize findings in an OHI report. Furthermore, the OHI’s will be used to explore intersectionality with other areas within the Bureau of Community Health and Prevention, where both OHSP and OSE sit. To expand reach and usability of OHIs, OHSP plans to create a new, more visually appealing format for the OHI report for electronic dissemination and explore inclusion of specific indicators into the Massachusetts MA Environmental Public Health Tracking portal.

**Preparedness Role**

Emergency Preparedness: Role of the Fellow in Emergency Preparedness: OHSP’s working relationships with bureaus across the department offer the fellow opportunities to learn and participate in emergency preparedness trainings, public health emergencies, bioterrorism response, and/or outbreak investigations as they develop, and as time and interest of the fellow permit. As public health emergencies are difficult to predict, the exact topic of this investigation will be subject to the fellows interest as well as the emergence of pressing health issues in Massachusetts. Some examples of current health crises include the emergence of vaping related lung injuries, the drastic increase in opioid overdoses, and unprecedented outbreaks of eastern equine encephalitis. The fellow will work with BCHAP colleagues to identify an emerging public health concern relevant to them, and to investigate what industries/occupations and subpopulations may be either 1) most impacted by the crisis or 2) not equally benefitting from the public health response to said crisis. Past collaborations of this nature included working closely with the Bureau of Infectious Disease and Laboratory Sciences, who oversees the reporting and follow-up of foodborne illnesses, emerging and re-emerging infectious illnesses, tick-borne disease, rabies, and other communicable diseases in the state. Additionally, the Office of Preparedness and Emergency Management (OPEM) offers emergency preparedness trainings throughout the year that the fellow can participate in, such as for the Emergency Dispensing Toolkit, the National Incident Management and Command Systems, and activities related to their Homeland Security Exercise and Evaluation Program, Hospital Preparedness Program, and Public Health Emergency Preparedness Cooperative Agreement with CDC. The fellow can also register as a volunteer with MA Responds, a MDPH initiative partnering with local Medical Reserve Corps units and volunteer organizations, to directly assist in public health-related emergencies in the state.
Additional Activities

Population sample survey data analysis using the Massachusetts BRFSS - Other Project

Massachusetts has been conducting the CDC-funded BRFSS sample survey since 1986. The BRFSS is the largest, on-going telephone health survey system in the world and asks about major behavioral risk factors, health indicators, and health outcomes on an annual basis. Since 2010, the MA BRFSS has collected additional occupation and industry information of respondents, offering opportunities for further analyses of the role of work on health. The full dataset, as well as the detailed occupation and industry codes for multiple years, can be available to the fellow for occupational health-related analyses and research questions. The fellow can design and implement analyses using the BRFSS data to examine health indicators and conditions (e.g. obesity, depression, health care access) as well as population specific demographic data (e.g. race, age, gender) in relation to occupation and industry. They could also explore the use of more advanced data proxies and approaches (e.g. area based socioeconomic measures) with which to further explore what populations may be most impacted. These analyses may lead to a peer-reviewed publication. The particular focus of the analysis will depend on the fellow’s interest and will be guided by his/her mentors. Additionally, the fellow has the opportunity to engage with the Department’s Health Survey Program, participate in their monthly BRFSS workgroup meetings, and learn more about survey design, sampling, weighting procedures, as well as carry out his/her own complex survey analyses. This work will support on-going Bureau-wide efforts to incorporate social determinants of health and a racial equity lens into all of our work.

Mentors

Primary
Emily Sparer-Fine MS, ScD
Director, Occupational Health Surveillance Program

Secondary
W.W. Sanouri Ursprung PhD
Director, Office of Statistics and Evaluation