Occupational Health

Washington State Department of Labor and Industries, Safety and Health and Research for Prevention (SHARP) Program

Tumwater, Washington

Assignment Description

The prospective fellow will be placed within the Safety and Health Assessment and Research for Prevention (SHARP) program at the Washington Department of Labor and Industries (WA L&I). SHARP is an internationally recognized research program who partners with business and labor to develop practical solutions to identify and eliminate workplace hazards and reduce human and economic costs of on-the-job illnesses and injuries.

SHARP’s offices are located in Olympia, Washington, ideally situated for an abundance of outdoor recreation. Many of SHARP employees live in Olympia, but there are also currently members of SHARP who live in Seattle and Tacoma. L&I offers flexible schedules, telecommuting options, and incentives to help commuters, which would also be available to the prospective fellow.

SHARP typically employs approximately 20 scientists who offer expertise in economics, epidemiology, ergonomics, industrial hygiene, occupational medicine, occupational health psychology, safety, and data management. SHARP’s researchers are recognized as leaders in their fields, with their high-quality research frequently cited in the scientific literature. SHARP participates locally, nationally, and internationally by delivering seminars, presenting research activities and results, providing independent scientific review of issues, and publishing information.

L&I/SHARP is recognized by the federal government as the lead state agency to address occupational illnesses and injuries in Washington State. SHARP has been successful in securing about $725,000 per year in federal research funds and is currently funded for core occupational health surveillance and capacity building from CDC’s National Institute of Occupational Safety and Health’s (NIOSH) surveillance fund awarded in five-year cycles. SHARP also receives additional NIOSH funding for the Washington Fatality Assessment and Control Evaluation (FACE) program; the Adult Blood Lead Epidemiology Surveillance (ABLES) system; occupational respiratory disease surveillance; the Trucking Injury Reduction Emphasis through Surveillance (TIRES) program; and a project aimed at identifying risk of musculoskeletal disorders in home health care.

SHARP research focuses on the primary prevention workplace injuries and illnesses. Aside from the federally-funded projects mentioned above, some areas of focus in SHARP include: workplace violence and bullying; effectiveness of consultation and enforcement activities on workers’ compensation claims; research and surveillance of work-related musculoskeletal disorders; health and safety of firefighters; injury prevention in the logging industry; and utility of administrative workers’ compensation claims data in predicting future workers’ compensation claims. SHARP also recognizes the disparities that exist making some workers much more vulnerable to poor outcomes than others. SHARP has recently began to initiate work describing these disparities by race and ethnicity of the worker, as well as investigating injuries among temporary workers.
Day-to-Day Activities

The fellow will be incorporated into the SHARP program, whose day-to-day activities will be indistinguishable from the other entry-level epidemiologists. The fellow will attend weekly staff meetings, participate in SHARP’s journal clubs, and other regular work-group meetings in SHARP such as the Communications, Occupational Health Disparities, and the SHARP Epidemiologists work groups. The fellow will also have the opportunity to attend agency-wide meetings and trainings, as well as monthly epidemiology seminars at the Department of Health.

During their placement in SHARP, the fellow will have several projects that will be their primary responsibility and occupy much of their daily activities. The fellow’s projects, as described in detail below, will both contribute to SHARP’s occupational safety and health mission and allow the fellow to complete all of the CSTE fellowship methods and communication requirements. The fellow will fully integrate into SHARP-- becoming competent in the use of workers’ compensation data and unemployment insurance data for occupational health research and surveillance; using surveys, such as the Behavioral Risk Factor Surveillance System, to describe work-related injuries and illnesses; applying their epidemiological skills to develop surveys and design studies to answer specific public health questions; aiding in primary collection of data in the field; employing appropriate methods to analyze data and interpret results; following all Washington State Institutional Review Board (IRB) policies and guidelines for human subjects research; and finally, communicating findings widely. The fellow will serve as a valuable epidemiological resource to our team, applying their knowledge and gaining experience in a research-to-practice environment.

The fellow will have the opportunity to interact with a variety of different groups collaborating with SHARP, as described earlier. The fellow will be encouraged to attend meetings that bring together occupational health and safety stakeholders, to interact with other occupational health epidemiologists and other professionals nationally and develop relationships with other public health practitioners at the Washington Department of Health.

Additionally, the fellow will have several opportunities for professional development. SHARP creates a very supportive environment encouraging employees to learn and grow also, part of the agency’s strategic plan. The SHARP program has developed their own format for internal professional development, known as SHARP’en Up talks, which have recently included trainings on qualitative research methods and using R for analysis and display of data. L&I also offers a variety of professional development trainings to its employees, such as SQL courses, an intro into the legislative process, and a series of selected TED Talks, which will also be available to the fellow. The fellow will also be encouraged to seek out other trainings of interest in the area. For example, many of SHARP’s epidemiologists have attended Edward Tufte’s course on data visualization in Seattle.
Potential Projects

Surveillance Activity

Option 1: Development of a system to enhance monitoring of workplace violence in Washington

The SHARP program employs researchers that specialize in occupational health psychology, with expertise in the area of safety climate, and bullying and violence among health care workers. The fellow would contribute to this area by developing an enhanced system to monitor workplace violence in the state. The fellow would research and gather relevant data on this topic from sources, such as workers’ compensation claims and death records, to describe the epidemiology of injuries resulting from workplace violence. The fellow would use these data to describe recent trends, populations most at risk, circumstances when available, and risk factors. The fellow would also be responsible in developing a reporting format that clearly outlines the most useful information for the agency and other stakeholders.

This project will involve collaboration with the SHARP experts on workplace violence and allow the fellow to work on a topic of high visibility to WA leaders, while applying key epidemiological methods in surveillance.

Option 2: Surveillance of firefighter occupational safety and health with a statewide survey

In 2018, SHARP surveyed firefighters in Washington State to describe their current overall health status, work demands, health and safety behaviors, and the impact of traumatic events on their lives (https://www.lni.wa.gov/Safety/Research/Files/WashingtonFirefighterSurvey_2018.pdf). The results from this survey have already provided useful information to the agency about where to direct prevention resources, and to inform new statewide safety and health programs aimed at firefighters.

There is interest in continuing the survey to evaluate the effectiveness of the new safety programs and to monitor trends over time. The fellow would revise the current survey based on current needs, and lead data collection and analysis of results. This project will provide the opportunity to work with Washington State firefighter stakeholders in revising the current survey, become familiar with principles of survey development, and experience in survey data analysis.

Option 3: Describing epidemiology of workers’ compensation claims among immigrant workers

WA is one of the largest recipients of workers that come into the state with an H-2A visa. The H-2A program brings in workers from other countries, such as Mexico, on a temporary basis for agriculture work. Workers in other industries may also enter the country, using the temporary H-2B visa program. Immigrant workers are often described as a vulnerable working population because, for example, they may be less likely to speak up or leave unsafe working conditions, aren’t properly educated on their rights as workers, and don’t report when they’re injured due to fear of losing their job or becoming black-listed for future employment opportunities.

There is little information on the work-related injuries and illnesses in this specific population of vulnerable workers. These workers are covered by the WA workers’ compensation system, however. This workers’ compensation system is one of the most comprehensive systems in the country and provides the unique ability describe the epidemiology of the work-related injuries and illnesses among these workers. The fellow will work to develop an indicator in the workers’ compensation system to
identify workers on a temporary work visa, such as foreign home address, industry they work in, and/or employer. The fellow will then describe recent trends and patterns, for example, by type of injury, exposure or event leading to the injury, demographics, claim duration, and cost among these workers. These data will be compared to non-immigrant workers in similar industries to identify and describe any disparities that may exist.

**Surveillance Evaluation**

Option 1: Evaluation of system to identify occupational injury and illness case clusters by employer

Ability to identify clusters of workers injured by similar exposures by time and employer/ worksite offers a great opportunity for response and prevention of future injuries. SHARP researchers have already begun working on a system to identify respiratory disease clusters, and we would like to expand this system to look at additional occupational injuries and diseases. The fellow would be involved in the system expansion and evaluate its utility in identifying clusters and prevention of future injuries and illnesses. The fellow would have the opportunity to work directly with our state OSHA program who is responsible for enforcement of safety and health protections in Washington. We anticipate sharing information from the cluster identification system to the state OSHA program so they can inspect worksites with workers at high risk of exposure. This is an exciting opportunity to use epidemiological methods for direct impact on worker safety.

Option 2: Evaluation of the Syndromic Surveillance system for occupational injury and illness surveillance

Syndromic surveillance systems have become staples in many health departments across the country for early detection of potential outbreaks. The system has expanded beyond infectious disease surveillance and been applied to monitor different outcomes such as injury and violence, sexual assault, poisonings, and adverse health effects during weather-related disasters. The fellow would evaluate the WA syndromic surveillance system’s ability to tracking certain occupational injuries and illnesses in near-real time treated in the Emergency Department. This work will require the fellow to develop a system to identify work-relatedness and injury type using free-text fields and/or ICD-10-CM codes, estimate expected Emergency Department visits due to work-related injury, and make surveillance recommendations based upon these findings.

**Major Project**

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Additional Project Innovative Safety and Health Policy for Firefighters

Washington recently passed two bills related to safety and health of firefighters House Bill 1913 and Senate Bill 5175. SHARP is playing key roles in the implementation of these two bills, and the fellow would gain a unique perspective on how legislation can influence occupational health. The fellow would participate in regular meetings with key stakeholders including union representatives, fire chiefs, and Labor and Industries leadership to learn about how a statewide safety initiative will be implemented and evaluated. The fellow could also be involved in a new committee of expert epidemiologists, led by the SHARP research director formed to review the scientific evidence for certain illnesses, such as cancers, to be caused by exposures at work for firefighters and make recommendations that will have direct impact on health benefits to workers.

Additional Project Adverse Childhood Experiences (Aces) Disparities by Industry and Occupation

The fellow would use the WA BRFSS evaluate whether adverse childhood experiences (ACEs) are related to or influence one’s future occupation. ACEs have been shown to have profound, lasting impacts on health and opportunity. Work is known to be an important determinant of health. This project would allow the fellow to contribute to the current understanding of these two very important health risk factors, ACEs and work, and the relationship between the two.

Preparedness Role

We will partner with the Department of Health to give the fellow experience in emergency preparedness at that agency, including attending staff trainings on emergency planning in preparedness in which the response and roles of the health department staff during different scenarios are presented in detail.
Additional Activities

Field data collection

The SHARP program has expertise in field data collection, our industrial hygienists and ergonomists regularly assess hazards in the workplace. If interested, the fellow would have the opportunity to assist SHARP researchers collect primary data of exposures in the field. The fellow would gain a deeper understanding of the assets of data collected in the field, and the limitations of these types of data. The fellow would also gain valuable experience in planning and executing field studies.

Respond to data requests

The fellow will also be involved in helping with occasional data requests that may come in from agency leadership, outside researchers, or from researchers within SHARP. The fellow will work with the requestor to develop specific questions that may be accurately answered by available data, analyze the data with appropriate statistical methods, and help interpret the results.

Provide epidemiology support to SHARP

SHARP thrives as a multidisciplinary team, with expertise in many different areas in occupational health. The SHARP epidemiologists all maintain their own projects, but also provide support on projects headed by other researchers in other areas such as ergonomics, industrial hygiene, and economics. SHARP epidemiologists often work with other researchers on survey and study design, development of surveillance systems, program evaluation, and analytic methods. The fellow will also have the opportunity to interact on our multidisciplinary project teams and apply their epidemiological knowledge.

Participate in creation of communication products

SHARP regularly publishes a wide variety of products for different audiences, including research findings, statistical briefs, hazard alerts, and fatality investigations. The fellow will produce the appropriate products to communicate findings from their own projects. The fellow may also provide technical assistance such as overall design or idea, data analysis and visualization, and interpretation of findings for other researchers in SHARP.

Evaluate legislation that effect worker health and/or the workers’ compensation system

During each legislative session in WA, SHARP closely follows proposed bills that may affect worker health or the workers’ compensation system in the state. SHARP also provides the agency with expertise in specific areas, and regularly participates in the agency’s bill analysis process. The fellow will be welcomed to follow the legislative sessions, perform literature reviews and provide feedback when SHARP is asked to comment on bills.
**Mentors**

**Primary**
Jennifer Marcum MS, DrPH
Epidemiologist

**Secondary**
Dave Bonauto MD, MPH
Research Director