**NIOSH**

**and**

**WVU School of Public Health**

**Student Opportunities**

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**NIOSH and WVU School of Public Health**

**Student Opportunities**

**Contact: Tricia Boyles,** **tboyles@cdc.gov**

**Opportunity 1: Division of Safety Research (DSR): Analysis of Work-Related Injuries**

**Opportunity 2: Division of Safety Research (DSR): Public Health Communication Project**

**Opportunity 3: Division of Safety Research (DSR): Literature Review**

**Opportunity 4: Division of Safety Research (DSR): Analysis of Nonfatal Transportation-Related Injuries**

**Opportunity 5: Respiratory Health Division (RHD): Assisting with Health Hazard Evaluation Responses**

**Opportunity 6: Respiratory Health Division (RHD): Literature Review**

**Opportunity 7: Respiratory Health Division (RHD): Review of State Reporting Requirements for Silicosis**

**Opportunity 8: Emergency Preparedness and Response (EPRO): Emergency Response**

**Opportunity 9: Respiratory Health Division (RHD)**

**Literature review - Occupational safety and health issues among childcare workers**

**Opportunity 10: Health Effects Laboratory Division (HELD)**

**Assist in analysis of associations between police** **work stressors and health outcomes**

**Opportunity 11: Respiratory Health Division (RHD)**



**Opportunity 12: Opportunity 14: Respiratory Health Division (RHD)**

**Laboratory Work – Assessing aerosol and chemical emissions from 3-dimensional printers**

**Opportunity 13: Respiratory Health Division (RHD)**

**Laboratory Work – Assessing Aerosol Size Distribution of Electronic Cigarette Emissions**

**Opportunity 14:  Respiratory Health Division (RHD)**

**Assist in analysis of work-related asthma data from state-based surveillance systems**

**Opportunity 15: Respiratory Health Division (RHD)**

**Analysis of Data from Epidemiologic Studies of Respiratory Health**

**Opportunity 16: Respiratory Health Division (RHD)**

 **Literature review – Inhalational exposures occurring in dental clinics and
 laboratories**

**Opportunity 1: Division of Safety Research (DSR)**

**Analysis of Work-Related Injuries**

**Overview of the National Institute for Occupational Safety and Health:**

The Occupational Safety and Health Act of 1970 established the National Institute for Occupational Safety and Health (NIOSH). NIOSH is part of the U.S. Centers for Disease Control and Prevention, in the U.S. Department of Health and Human Services. NIOSH is mandated to assure “every man and woman in the Nation safe and healthful working conditions and to preserve our human resources.”  NIOSH has more than 1,300 employees across multiple geographic locations, from a diverse set of fields including engineering, epidemiology, health communication, medicine, nursing, industrial hygiene, safety, psychology, chemistry, statistics, and economics. NIOSH works closely with the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA) in the U.S. Department of Labor to protect American workers and minors.  Visit the [NIOSH](http://www.cdc.gov/niosh/) website for more information.

**Overview of Division or Program:**

The [Division of Safety Research](http://www.cdc.gov/niosh/contact/im-dsr.html) (DSR) works to address the safety issues of the 21st century workplace, and is the focal point for traumatic injury research at NIOSH. DSR conducts high-quality research to prevent work-related injury and death from trauma across all industries. Our research leverages the public health approach to identify the most compelling risks to workers through: surveillance, analytic epidemiology, and field investigations. We also use protective technology and the engineering sciences as a means to improve personal protective equipment, tools, and workspaces to keep workers safe on the job.

Within DSR, the Surveillance and Field Investigations Branch, Special Studies Team (SST) is responsible for analyzing a variety of data sets to identify the leading causes of occupational injuries and fatalities within the United States. The branch focuses on:

• Motor vehicle related injuries and fatalities

• Occupational fatalities to high risk and vulnerable workers

• Nonfatal injuries to high risk and vulnerable workers.

**Overview of opportunity:**

Working with the Special Studies Team, you would be responsible for: conducting an analysis of nonfatal or fatal work-related injuries using available surveillance data; conducting a literature review of occupational injuries or fatalities related to the analysis; and developing a product. As part of the Team, you would have the opportunity to attend meetings related to the Team’s work, interact with other branch staff, as well as staff from other DSR branches. You will gain insight into how the Team enhances occupational injury prevention through the analysis of occupational injury surveillance data and dissemination of findings to the broader occupational safety and health public health community.

##### Location: 1095 Willowdale Rd, Morgantown, WV

##### POC: Audrey Reichard

**Mentor:** SST member with expertise in selected subject area

**Opportunity 2: Division of Safety Research (DSR)**

**Public Health Communication Project**

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**Overview of Opportunity** Public Health Communication Practicum

##### [Health communication and social marketing](http://www.cdc.gov/HealthCommunication/HealthBasics/WhatIsHC.html) are an integral part of promoting and protecting the health of people and the communities where they live and work. Under the direction of the Division of Safety Research’s experienced doctoral-level Health Communications Specialist, you will have the unique opportunity to expand your public health skills and expertise beyond biostatistics, epidemiology, and healthy policy to include health communication. As noted by former CDC Director, Thomas Frieden, “Public health communication is likely to become more critical and complex in the years to come, requiring each of us to adapt in order to reach audiences with the right message at the right time to save lives.” Don’t miss the opportunity to hone your public health communication skills and provide actionable safety information to the fire service.

##### Working with the [Fire Fighter Fatality Investigation and Prevention Program (FFFIPP)](https://www.cdc.gov/niosh/fire/default.html) you will be responsible for:

##### reviewing, codifying, and re-writing fatality investigation report recommendations in plain language as well as developing a repository of recommendations for investigators to use

##### enhancing the usability of the FFFIPP’s website

##### leveraging social media channels to promote recently published fatality investigation reports and other firefighter-related safety topics

##### You may also be given the opportunity to assist the Specialist with Division-level health communication projects and products, and participate in forums with other health communications staff across NIOSH.

##### Minimum qualifications:

* Excellent oral and written communication skills
* Strong attention to detail
* Knowledge of plain language and social media best practices
* Exceptional organizational skills
* Strong work ethic
* Positive “can do” attitude

##### Location: 1095 Willowdale Rd, Morgantown, WV

##### Mentor: Sydney Webb, PhD

**Opportunity 3: Division of Safety Research (DSR)**

**Literature Review**

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Within DSR, the Protective Technology Branch (PTB) designs and develops new and improved safety engineering systems and controls, work practices, and personal protective equipment through the testing and evaluation of existing and new technological approaches to worker protection in the laboratory, simulated workplaces, and actual work sites.

**Overview of opportunity:**

Working with researchers in the Protective Technology Branch, you would be responsible for conducting a literature review of Human Factors Engineering related topics and their applications in public health practice. The topics may include: occupational fall prevention and protection; vehicle safety; machine safety; robotic safety; and personal protective technology. As part of PTB, you would have the opportunity to participate in project activities in our state-of-the-art laboratories, attend meetings related to the programs’ work, and interact with various program and project partners. You will gain insight into how Human Factors Engineering interacts with Public Health to impact occupational safety and health.

##### Location: 1095 Willowdale Rd, Morgantown, WV

##### Mentor: Hongwei Hsiao, PhD

**Opportunity 4: Division of Safety Research (DSR)**

**Analysis of Nonfatal Transportation-Related Injuries**

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Within DSR, the Analysis and Field Evaluations Branch (AFEB) identifies causes or specific risk factors and hazards associated with fatal and nonfatal occupational traumatic injuries and determines the impact and efficacy of intervention strategies and safety systems for the prevention worker injuries.

**Overview of opportunity:**

Working with researchers in the Analysis and Field Evaluations Branch, you would be responsible for conducting an analysis of nonfatal transportation-related injuries for all US workers, with a particular focus on high risk workers, such as taxicab drivers. Taxicab drivers face high rates of transportation-related deaths due to the constant driving exposure, which is second only to homicide. As part of the branch, you would gain knowledge of two work-related nonfatal injury surveillance systems, such as the Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses and the National Electronic Injury Surveillance System—Occupational Supplement (NEISS-Work); understand the different perspectives of the two major work-related nonfatal injury surveillance systems and coding systems used to categorize nonfatal injuries, such as the Occupational Injury and Illnesses Classification System and the North American Industry Classification System; applying the above knowledge to an analysis that describes transportation-related injuries to US workers; and serve as a co-author for a scientific manuscript.

**Preferred qualifications:**

* MPH-level student
* Proficiency using SAS
* Completed an Introductory Epidemiology Course

##### Location: 1095 Willowdale Rd, Morgantown, WV

**Mentors:** Cammie Chaumont Menendez, PhD, Christina Socias-Morales, PhD, Guang-Xiang Chen, MD

##### Opportunity 5: Respiratory Health Division (RHD)

##### Assisting with Health Hazard Evaluation Responses

**Overview of NIOSH of the National Institute of Occupational Safety and Health:**

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**Overview of Division or Program:**

The Respiratory Health Division (RHD) seeks to advance protection against work-related hazards and exposures that cause or contribute to respiratory illness, injury, and death and to promote workplace-based interventions that improve respiratory health. Major focus areas of RHD include:

(1) Preventing work-related respiratory disease and improves workers’ respiratory health by generating new knowledge and transferring that knowledge into practice;

(2) planning, designing, and conducting national research and surveillance programs relevant to preventing occupational respiratory disease and optimizing workers’ respiratory health;

(3) upon request, conducting hazard evaluations and providing technical assistance to address challenges, including emerging issues, in occupational respiratory disease; and,

(6) administering a program of legislatively mandated medical monitoring services for coal miners.

**Overview of opportunity:**

This opportunity will provide a student with practical experience in supporting Federal Occupational Health surveillance and research programs. This experience will include working with Dr. Jean Cox-Ganser on responding to requests for respiratory disease health hazard evaluations (depending on availability of funds, this may include experience conducting site visits).

##### Location: Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

##### Mentor: Randy Nett and Brie Blackley, RHD

##### Opportunity 6: Respiratory Health Division (RHD)

##### Literature Review

**Overview of NIOSH of the National Institute of Occupational Safety and Health:**

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(3) upon request, conducting hazard evaluations and providing technical assistance to address challenges, including emerging issues, in occupational respiratory disease; and,

(4) administering a program of legislatively mandated medical monitoring services for coal miners.

**Overview of opportunity:**

##### This opportunity will provide a student with practical experience in supporting Federal Occupational Health surveillance and research programs. This experience will include working with Dr. Jean Cox-Ganser on conducting literature reviews on work-exacerbated asthma.  This would be to update existing reviews re: incidence and an account of existing exposures as revealed in publications.

##### Location: Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

##### Mentor: Jean Cox-Ganser, Associate Director for Science, Office of the Director, RHD

##### Opportunity 7: Respiratory Health Division (RHD)

**Review of State Reporting Requirements for Silicosis**

**Overview of NIOSH of the National Institute of Occupational Safety and Health:**

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(3) upon request, conducting hazard evaluations and providing technical assistance to address challenges, including emerging issues, in occupational respiratory disease; and,

(4) administering a program of legislatively mandated medical monitoring services for coal miners.

**Overview of opportunity:**

This opportunity will provide a student with practical experience in supporting Federal Occupational Health surveillance and research programs. This experience will include working with State Health Departments or their bona-fide agents, some stakeholders are NIOSH funded for Occupational Safety and Health Surveillance, to identifying state reporting requirements for silicosis and prepare a document of the findings. These findings will give insight to State laws and will provide important information for silicosis reporting through electronic health records and the CDC’s National Notifiable Diseases Surveillance System.

##### Location: Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

##### Mentor: Patricia Schleiff, Statistician, Surveillance Branch, RHD

**Opportunity 8: Emergency Response**

**Overview of NIOSH of National Institute of Occupational Safety and Health:**

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**Overview of Division or Program**

The National Institute for Occupational Safety and Health (NIOSH) Emergency Preparedness and Response Office (EPRO) prepares for and responds to chemical, biological, radiological, and natural events. The program integrates occupational safety and health into responses to protect response and recovery workers with the help of partners from industry, labor, trade associations, professional organizations, academia, and other federal agencies. EPRO’s main activities include:

* Manage policy, legislation, science, and program activities associated with worker safety and health during emergency responses and for emergency preparedness activities at NIOSH.
* Support the Centers for Disease Control and Prevention’s (CDC) emergency response efforts.
* Participate in response planning activities at the local, state, national, and international levels to ensure the identification of health hazards and protection of responders.
* Train Responders on the Emergency Responder Health Monitoring and Surveillance (ERHMS) Program.
* Use the Disaster Science Responder Research Program (DSRR) to improve and encourage the scientific study of response workers during emergencies.
* Support efforts to select and safely deploy staff and coordinate technical assistance from NIOSH during emergencies.

**Overview of opportunity**

Working with the Emergency Preparedness and Response Office you would have the opportunity to assist in the development of guidance for workers in a response, work with EPRO to prepare for training exercises, learn the relationships between local, state and federal partners in an emergency, and gain a basic understanding of the ERHMS Program. One possible outcome would be the assessment of how to best leverage the Office’s plans, recommendations, and ERHMS training with state and local emergency planning activities.

**Location**: Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

**Mentors**: Jennifer Hornsby-Myers, MS, CIH and Jill Shugart, MSPH, REHS

##### Opportunity 9: Respiratory Health Division (RHD)

##### Literature review - Occupational safety and health issues among childcare workers

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**Overview of Division or Program:**

The National Occupational Research Agenda (NORA) is a partnership program to stimulate occupational health and safety research and improve workplace practices. NORA consists of ten industry sectors based on the U.S. economy, and seven cross-sectors that address specific occupational health and safety issues. The NORA Healthcare and Social Assistance (HCSA) Program is focused on occupational health and safety issues for workers such as:

* Medical Professionals (i.e.: doctors, dentists, and nurses)
* Social Assistance Workers (i.e.: child care workers, social workers)
* Veterinary and Animal Care Workers (i.e.: veterinarians, vet techs, lab animal handlers)

The HCSA Program works with partners from industry, labor, trade associations, professional organizations, and academia to identify the most important occupational health and safety research needs in the HCSA industry sector.

**Overview of opportunity:**

Childcare workers provide care to children in the absence of their own parents or caregivers. These workers work in a variety of settings including daycare centers, their own homes or the homes of the children they care for. In 2014, there were 1.3 million childcare workers in the U.S. To date, very little work has been done to assess or summarize the occupational health and safety risks to childcare workers. The HCSA Program is interested in conducting a systematic literature review on occupational health and safety risks to childcare workers. Project duties will include reviewing and documenting peer reviewed literature and presenting findings to interested stakeholders. Depending on the results, the review could be a publication opportunity.

##### Location: Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

##### Mentors: Megan Casey, Randall Nett, David Weissman

**Opportunity 10: Health Effects Laboratory Division (HELD)**

**Assist in analysis of associations between police work stressors and health outcomes**

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**Overview of Division or Program:**

HELD is the organizational unit within NIOSH tasked to scientifically establish causes and mechanisms of disease and injury in the workplace. The HELD Research Support Program provides limited direction, coordination, administration and programmatic support to the mission of the Division. This program provides a broad array of administrative and technical support functions essential to the success of the Division. These include 1) research and development Planning 2) animal and exposure facility support 3) quality assurance support 4) institute-wide graphics support, and 5) support of the analytical  services contract for the benefit of the Institute.

The Epidemiology program area focuses on research that identifies and validates occupational factors which influence risk of developing early indicators of disease and dysfunction. The primary research project at present involves application of statistical and epidemiologic analyses to improve understanding of the relation between exposure to chronic stress and its psychosocial and physiological consequences among law enforcement officers. Police officers represent one of the most understudied and highly stressed occupations.   Identification of workplace factors associated with development of subclinical indicators of cardiovascular and metabolic disease and dysfunction will contribute new knowledge that could lead to identifying potentially useful interventions that may reduce clinically apparent disease.

**Overview of opportunity:**

Working with the BioAnalytics Branch, the intern will be responsible for assisting in analysis of associations between police work stressors and health outcomes such as subclinical cardiovascular disease, metabolic disorders, and psychosocial distress. This may include attending project meetings, database management activities, data analysis, and writing methods and results sections for reporting of analysis results. Some training or experience using the SAS analysis system is required.

##### Location: Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

##### Mentor: Mike Andrew, Branch Chief of the BioAnalytics Branch, HELD

##### Opportunity 11: Respiratory Health Division (RHD)

##### Laboratory Work – Performance characteristics of a peltier-cooled preconcentrator for analyzing volatile organic compounds from evacuated canisters

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(4) administering a program of legislatively mandated medical monitoring services for coal miners.

**Overview of opportunity:**

Traditional sorbent-based sampling relies on analyte interaction with the sorbent in the field. A new NIOSH method has been developed to measure volatile organic compounds directly from air collected in evacuated canisters. The student will work with Dru Burns to assess performance of an electrically cooled preconcentrator for analyzing volatile organic compounds from evacuated canisters.

**Location:** Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

**Mentors:** Dru Burns/Ryan LeBouf

##### Opportunity 12: Respiratory Health Division (RHD)

##### Laboratory Work – Characterizing sensor-based instruments for measurement of contaminants in the air

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**Overview of opportunity:**

Additive manufacturing, or 3-D printing, is a rapidly growing industry covering a variety of technological advances and processes. Aerosol and chemical emissions from these processes have the potential for exposing workers and the public. Data collected from this project can be used to estimate exposures in industrial facilities based on facility size and ventilation rates. The student will work with Aleks Stefaniak to assess aerosol and chemical emissions from 3-D printers.

**Location:** Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

**Mentor:** Aleks Stefaniak

##### Opportunity 13: Respiratory Health Division (RHD)

##### Laboratory Work – Assessing Aerosol Size Distribution of Electronic Cigarette Emissions

**Overview of NIOSH of the National Institute of Occupational Safety and Health:**

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**Overview of Division or Program:**

The Respiratory Health Division (RHD) seeks to advance protection against work-related hazards and exposures that cause or contribute to respiratory illness, injury, and death and to promote workplace-based interventions that improve respiratory health. Major focus areas of RHD include:

(1) Preventing work-related respiratory disease and improves workers’ respiratory health by generating new knowledge and transferring that knowledge into practice;

(2) planning, designing, and conducting national research and surveillance programs relevant to preventing occupational respiratory disease and optimizing workers’ respiratory health;

(3) upon request, conducting hazard evaluations and providing technical assistance to address challenges, including emerging issues, in occupational respiratory disease; and,

(4) administering a program of legislatively mandated medical monitoring services for coal miners.

**Overview of opportunity:** Understanding pulmonary deposition of electronic cigarette aerosol emissions is important to predict clearance and retention mechanisms that will result in chemicals being expelled or retained by the lungs, ultimately leading to an assessment of absorbed dose. The student will work with Dr. Ryan LeBouf to assess electronic cigarette emissions. The project will need a minimum of one year to complete, and require, on average, 20 hours of work each week in the laboratory.

##### Location: Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

##### Mentor:  Ryan LeBouf

**Opportunity 14:  Respiratory Health Division (RHD)**

**Assist in analysis of work-related asthma data from state-based surveillance systems**

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**Overview of opportunity:**

This opportunity will provide a student with practical experience in supporting Federal Occupational Health surveillance and research programs. This experience will include working with State Health Departments or their bona-fide agents, these are stakeholders that are NIOSH funded for Occupational Safety and Health Surveillance, to assist in the collection, analysis, and reporting of voluntarily summitted work-related asthma State surveillance data.

**Location:** Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

**Mentors:** Katelynn Dodd, MPH and Patricia Schleiff, MS, Surveillance Branch, RHD

**Opportunity 15: Respiratory Health Division (RHD)**

**Analysis of Data from Epidemiologic Studies of Respiratory Health**

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(4) administering a program of legislatively mandated medical monitoring services for coal miners.

**Overview of opportunity:**

This opportunity will provide a student with practical experience in several aspects of epidemiologic studies of respiratory health. The data for this opportunity has already been collected by questionnaire and testing of participants and will come from either a population-based study of rural residents or a study of healthcare workers. In both instances, the student will be asked to complete multiple functions that could include the following: conducting a literature review and becoming familiar with issues related to the project; reading the study protocol in order to understand the goals and methods of the project; cleaning study data in preparation for statistical analyses; conducting statistical analyses to investigate the association of respiratory health outcomes with indicators of occupational exposures; and contributing to the preparation of a report or publishable paper. The findings generated by this work will help to inform prevention of respiratory diseases. All work will be completed with guidance by the mentor. The student would be able to attend seminars sponsored by RHD and learn more about how NIOSH contributes to the health of US workers.

**Location:** Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

**Mentor:** Paul Henneberger, ScD, Office of the Director of the RHD

**Opportunity 16: Respiratory Health Division (RHD)**

##### Literature review – Inhalational exposures occurring in dental clinics and laboratories

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**Overview of opportunity:**

Dental personnel (n=731,500), including dental assistants, hygienists, technicians, and dentists, perform a variety of tasks that potentially generate gases, vapors, and dusts associated with occupational lung disease. Dental personnel are at higher risk for certain occupational lung diseases. A recent investigation regarding on a cluster of idiopathic pulmonary fibrosis (a severe lung disease) among dental personnel noted the number of dentists in this U.S. patient population sample was 29-times higher than expected. The Respiratory Health Division is interested in conducting a systematic review of the literature that assesses inhalational exposures that occur in dental clinics and dental laboratories. Anticipated project duties will include reviewing and documenting peer-reviewed literature and assisting in development of a scientific manuscript.

**Location:** Morgantown, WV, 1095 Willowdale Rd, Morgantown, WV

**Mentors:** Randall Nett, Brie Blackley