# National Institute for Occupational Safety and Health (NIOSH)
# Board of Scientific Counselors Update
# October 2022

## Budget

- There have been no changes to the FY 2022 budget information.

- On March 28, 2022, the President's Budget (PB) was released with a proposed request of $345.3M for NIOSH, which is level with the FY 2022 Continuing Resolution (C.R.) that was in place when the budget was created. Due to timing of Congress passing the FY 2022 final appropriations bill, the President's FY 2023 budget does not capture the $6.5M increase that NIOSH received in the final FY 2022 budget.

- On June 29, 2022, the House Appropriations Committee proposed an appropriation of $363.3 million, a $11.5 million increase for NIOSH above the FY 2022 enacted budget level and $18M above the President's budget request. Included in the House bill:
  - $2M increase – Agriculture, Forestry and Fishing (AgFF)
  - $2M increase – Education and Research Centers (ERCs)
  - $2.5M increase – Firefighter Cancer Registry (FFCR)
  - $2M increase – Personal Protective Technologies (PPT)
  - $2M increase - *Total Worker Health®* (TWH)
  - $1M increase – National Occupational Research Agenda (NORA)

- On July 28, 2022, the Senate Appropriations Committee proposed an appropriation of $367.3 million, a $15.5 million increase for NIOSH above the FY 2022 enacted budget level and $22M above the President's budget request. Included in the Senate bill:
  - $3M increase – Agriculture, Forestry and Fishing (AgFF)
  - $2M increase – Education and Research Centers (ERCs)
  - $1.5M increase – Firefighter Cancer Registry (FFCR)
  - $2M increase – Personal Protective Technologies (PPT)
  - $2M increase - *Total Worker Health* (TWH)
  - $5M increase – Mining

## Organizational and Personnel Announcements

**NIOSH Leadership Updates**

**Retired Staff**

Dr. Margaret Kitt, Deputy Director for Program, retired on October 1, 2022.

## Office of the Director

**Algorithms and the Future of Work**

Dr. John Howard, Director of NIOSH, published a new commentary in the [American Journal of Industrial Medicine](#) on September 20, 2022 that focuses on new sources of worker risk that algorithms present in the use of worker management systems, advanced sensor technologies, and robotic devices. An algorithm is a series of precise, step-by-step instructions used by a machine to perform a mathematical operation. The use of algorithm-enabled systems and devices will bring many benefits to occupational safety and health but, as with many new technologies, there are also risks to workers. Determining if an algorithm is safe for workplace use is rapidly becoming a challenge for manufacturers, programmers, employers, workers, and occupational safety and health practitioners. To achieve the benefits that algorithm-enabled systems and devices promise in the future of work, we must study how to effectively manage their risks. An in-depth discussion is available in the article.

## Emergency Response

NIOSH continues to support the CDC COVID-19 response after successfully integrating workplace COVID-19 activities across four Divisions and five Offices within NIOSH. The NIOSH Director designated the Associate Director for Emergency Preparedness and Response to serve as the Responsible Official to coordinate with other parts of CDC and the response. Nearly all the NIOSH-produced COVID-19 informational web pages have now been archived in favor of streamlined community recommendations. NIOSH is working to convert some of the remaining informational web pages into evergreen guidance for future needs.

Additionally, NIOSH is leading the Worker Safety and Health Team as part of the CDC Multi-National Monkeypox Response. NIOSH is supporting the development of informational pages and recommendations for workplaces and businesses, is responding to inquiries about how to protect workers, and supporting activities to improve understanding of potential workplace transmission risk.

## Construction Safety and Health

**Toolbox Talks**

NIOSH published 23 construction industry toolbox talks that have been cobranded with CPWR -The Center for Construction Research and Training. A 'Toolbox Talk' is a plain language document, or other effort (such as an informal group meeting), focusing on a particular safety or health issue and promoting a positive workplace safety and health culture. These toolbox talks address a variety of construction safety and health topics and include case studies, discussion questions, and site specific actions. They are available in English and Spanish; approximately 30% of the construction industry workers are Hispanic.

**Issues related to Masks and Respirator Use in the Construction Industry**

The Construction Office, working with the NIOSH National Personal Protective Technology Laboratory (NPPTL) and a University of Michigan Assistant Professor, published a Science Blog concerning current issues related to workplace use of masks and respirators with a focus on the construction industry, Education and Training Concerning Masks and Respirators for Construction Workers.  The blog discusses the key differences between masks and respirators and explains how they can be used on a voluntary basis. The blog contains links to related information from the National Academy of Sciences, the American Industrial Hygiene Association and the Occupational Safety and Health Administration.

**Mental Health and Substance Misuse in the Construction Industry**

A two-day workshop – "Combatting Suicide and Overdose Fatalities Among Construction Workers" – occurred on August 1 and 2 at Gallaudet University in Washington, D.C. The workshop was planned and organized by CPWR working with key NIOSH staff in the NIOSH Construction Office and the Office of *Total Worker Health*. The Workshop brought together a diverse group of individuals, organizations, and funders to take stock of existing initiatives and identify new priorities to prevent opioid overdose and suicide among construction workers, and support workers' recovery and reintegration back into work.

## Office of Agriculture Safety and Health (OASH)

**Farm Safety and Health Week 2022: Protecting the Future of Agriculture**

National Farm Safety and Health Week is observed each September to reinforce injury and illness prevention, during harvest season and throughout the year. The theme for National Farm Safety and Health Week 2022 (September 18-24) is "Protecting Agriculture's Future." Throughout the week NIOSH and partners across the country will offer training and educational opportunities on safety and health topics including AgriSafe's twice-daily webinars highlighting the daily themes. Each year, the NIOSH Agricultural "Ag" Centers for Safety and Health also share messaging using a media toolkit developed by the Upper Midwest Agricultural Safety and Health Center.

**Robotics Workshop**

The NIOSH Office of Agriculture Safety and Health (OASH) will co-host the SAFER AG Workshop November 9-10 at the University of Illinois Urbana-Champaign. The workshop will bring together representatives from farm operators, academia, industry, and governmental interests to discuss and provide current information in the following areas:

- Understanding the risk associated with agricultural robotic technology. This includes risk of injury, financial risks, insurability, risk potential for different scales of technology, and evaluating risk due to continuous software improvements.
- The role that regulation and standards will play in the adoption of safe digital technologies.
- Review existing safety research efforts (and gaps in research efforts).
- Workforce implication of new technology adoption, including training needs, cultural implications, impact on labor supply, and rural connectivity.

### Food System Approach

OASH will be adopting a food system approach to more effectively assess and manage occupational safety and health risks associated with the production, manufacture and distribution of food products in the United States."

### Commercial Fishing Occupational Safety Research & Training Program

The U.S. Coast Guard and NIOSH created the [Commercial Fishing Occupational Safety Research and Training Program](#) to advance fishing safety research and provide targeted, regionally appropriate training for the nation's commercial fishermen. This program provides funding opportunities to qualified individuals in academia, members of non-profit organizations, municipalities, and businesses involved in the U.S. commercial fishing industry. The funding supports research on improving the occupational safety of commercial fishermen and critical training for this high-risk occupation. NIOSH and Coast Guard are partnering to raise awareness of this program and to celebrate impacts of these awards.

## Division of Field Studies and Engineering (DFSE)

### DFSE Research on Health Burdens of Uranium Miners and Firefighters

DFSE cancer researchers' recent efforts have resulted in high impact outcomes. The Radiation Exposure Compensation Act (RECA) compensates individuals whose health was affected by uranium industry employment and was debated in Congress for renewal this year. Realizing that NIOSH data on uranium miners had direct applicability to the soon-to-expire RECA, DFSE worked diligently to ensure their analysis was published and made available to legislators before Congressional proceedings occurred. DFSE investigators published [a letter in the Journal of Occupational and Environmental Medicine](#) on health burdens of uranium miners. The letter received significant attention, including by National Public Radio's On Point. Representatives Greg Stanton from Arizona and Teresa Leger Fernandez from New Mexico both directly cited the study on the House floor. The study was also submitted into the record of house proceedings. The bill for an extension of RECA was passed the next day by the House of Representatives. It was previously passed by the Senate and was signed into law by President Biden on June 7, 2022.

CDR Kenny Fent led the exposure assessment team for an International Agency for Research on Cancer (IARC) monograph evaluation of firefighter exposures. After thoroughly reviewing the available scientific papers, many of which were published by DFSE researchers, the Working Group classified occupational exposure as a firefighter as carcinogenic to humans (Group 1).

### 2022 Defense Advanced Research Projects Agency (DARPA) Service Chiefs Fellows Program

LCDR Kevin L Dunn was selected as the lone officer to represent the Commissioned Corps at the prestigious 2022 Defense Advanced Research Projects Agency (DARPA) Service Chiefs Fellows Program (SCFP). The detail will run from September 20th to December 16th. From the program's website "The

DARPA Service Chiefs Fellows Program (SCFP) was established to immerse outstanding military officers and government civilians into imaginative and innovative, fast-paced science and technology research."

## Health-related Workplace Absenteeism Dashboards

Two [new dashboards](#) were added to the health-related workplace absenteeism Tableau storyboard. The public can now view interactive workplace absence charts by race and ethnicity. This addition provides the opportunity to dig into the absenteeism data to better understand how infectious diseases, such as the flu or COVID-19, may uniquely impact Hispanic or Latino, non-Hispanic whites, non-Hispanic blacks, or non-Hispanic Asians.

## Division of Science Integration (DSI)

### Best Practices for Host Employers Document Released

NIOSH, the NORA Services Sector Council, and several partners published a new set of workplace safety and health best practices, [Protecting Temporary Workers: Best Practices for Host Employers](#). Partners included the American Society of Safety Professionals, the American Staffing Association, and the Safety and Health Assessment and Research for Prevention program within the Washington State Department of Labor and Industries. Research shows that the risk of experiencing a work-related injury may be higher for temporary workers (i.e., those who are paid by a staffing company and assigned to work for a host employer company) compared to non-temporary workers.

This new resource provides detailed best practices for host employers that are applicable across industries and occupations. The best practices are organized into three areas: 1) How to evaluate and address workplace safety and health in a written contract; 2) Training for temporary workers and their worksite supervisors; and 3) Injury and illness reporting, response, and recordkeeping. The document also includes scenarios of how host employers can implement the best practices as well as [checklists](#) that can be printed or completed electronically. There is also a complementary [slide deck](#) staffing companies can use to educate their host employer clients about the best practices.

### Adding Employment and Job Characteristics Domain as a Social Determinant of Health

The NIOSH Occupational Health Equity (OHE) program led an interdivisional team of NIOSH researchers to develop the language for the definition of the new "Employment and Job Characteristics" domain of the Social Determinants of Health (SDOH) at the request of the [Community Preventive Services Task Force](#). On June 9, 2022, the Community Preventive Services Task Force expanded their definition of the SDOH to include a new domain for work entitled "Employment and Job Characteristics". While work has always been considered a SDOH, it has traditionally been incorporated into two of the existing Domains of the SDOH, Employment Stability and Social and Community Context, rather than standing on its own. This recent development elevates the profile of work as a SDOH. The OHE program will leverage this new definition to increase awareness among public health researchers of how work is substantially interrelated to other social determinants of health because one's job, or lack thereof, has a significant impact on the ability to secure the basic needs that provide the foundation for health and well-being.

They will also work to foster a greater appreciation of work as an intervention to address health inequities and improve other social determinants of health (i.e., better jobs = better health). The OHE program will also work on getting this new definition adopted by other organizations and agencies.

## Division of Safety Research (DSR)

### Workplace Violence during the COVID-19 Pandemic

DSR researchers recently published a paper, "[Workplace violence during the COVID-19 pandemic: March–October, 2020, United States](#)" using a novel method (media scraping) to obtain timely, recent information on workplace violence events (WVEs) during the COVID-19 pandemic. Various publicly available online media sources were scanned to identify and describe WVE characteristics related to COVID-19 in the US during the early part of the pandemic (March to October 2020), finding 400 WVEs. By type, 27% involved non-physical violence, 27% physical violence, and 41% both types. By location, almost half occurred in retail and dining establishments. By offender, 75% were perpetrated by a customer or client, and 15% by a worker. Most perpetrators were males (59%) and acted alone (79%). The majority were related to mask disputes (72%). In 22%, the perpetrator coughed or spit on a worker while threatening infection. This analysis indicated that media scraping may be useful for workplace violence surveillance. More research on workplace training for workers during public health crises is needed.

### Understanding Multi-gas Monitor Readings for Firefighters

DSR released a new safety advisory, "[Understanding Multi-gas Monitor Readings – The Importance of Knowing Your Equipment](#)" to provide recommendations for fire departments to ensure that firefighters are trained to safely use and interpret data from multi-gas monitors to determine if a hazardous atmosphere is present when responding to natural gas and propane incidents. After two related line-of-duty death investigations in the past two years, the NIOSH Fire Fighter Fatality Investigation and Prevention Program released the advisory to address this underrecognized issue for the fire service.

### Indicators of Workplace Violence

The July 2022 report, ["Indicators of Workplace Violence, 2019"](#) presents the most recent data on fatal and nonfatal workplace violence (WPV) and is produced jointly by the Bureau of Justice Statistics, the Bureau of Labor Statistics, and NIOSH. The report provides data on thirteen indicators of WPV, including: characteristics of workplace homicides, characteristics of nonfatal WPV, nonfatal injuries due to WPV treated in emergency departments, and nonfatal injuries due to WPV resulting in days away from work. The impetus for this document was stakeholder input on the often confusing landscape of different WPV statistics from various agencies. This report compiles these data into a single document, which provides information on the various definitions and data sources for WPV and context for the differences in statistics.

## Health Effects Laboratory Division (HELD)

### Motion Capture and Kinematic Analysis for Studying Work-related Musculoskeletal Disorders

HELD has deployed optical motion capture to study residential roofing work-related musculoskeletal disorder (MSD) risk originating from work postures and movements, the force of work-related movements, the repetitive movements associated with work, and the pace at which that work is completed [Breloff et al 2019a, Breloff et al 2019b, Breloff et al 2019c, Wu et al 2019, Dutta et al 2020a, Dutta et al 2020b, Breloff et al 2020,  Breloff et al 2022]. These studies have been performed with an adjustable roofing simulator to best mimic real-world job site conditions and they were able to determine elevated MSD risk in the residential roofing cohort. Some of these findings have been summarized in the National Roofing Contractors Association's trade publication [Breloff 2019d] which is directly distributed to its members. Marker-based optical motion capture is the gold standard of human movement evaluations in laboratory studies. It is usually difficult to use this technique at job sites. To pave the way for future onsite motion analyses, HELD is currently developing deep learning-based marker-less estimation of whole-body kinematics from multi-view videos; preliminary results are encouraging [Wang et al 2021].

## National Personal Protective Technology Laboratory (NPPTL)

### Using Social Vulnerability to Advance First Responder Safety and Health

The CDC's social vulnerability index (SVI) summarizes the extent to which a community is socially vulnerable to disaster. This index considers four themes of social vulnerability including socioeconomic status, housing and transportation, and household composition. Working with the International Public Safety Data Institute as a research partner, NPPTL merged 160,000 emergency response calls from three fire departments with CDC's SVI for the supported communities. Using the infectious disease variable that was added to our partner's database during COVID-19 and community COVID-19 case counts, NPPTL was able to determine how variations in social vulnerability could impact a responder's risk of being exposed to an infectious disease. NPPTL's work in this area was selected by the Administrator of the US Fire Administration for presentation at their upcoming Presidential Summit on Fire Prevention and Control in October of 2022.

### Respirator Approval Program Priorities and Changes

Between May and November 2020, NIOSH issued limited, temporary Public Health Emergency (PHE) approvals for N95 filtering facepiece respirators (FFRs) and powered air-purifying respirators (PAPRs) to address respirator supply shortages during that time. These respirators were approved for immediate use during the early months of the pandemic and were not intended for creating or replenishing stockpiles. Because adequate supplies of conventional NIOSH-approved respirators now exist, NIOSH obsoleted all PHE-approved respirators. Obsoleted approvals may longer be manufactured by the approval but can continue to be sold, used, and recognized as NIOSH-approved.

Additionally, while the NIOSH Respirator Approval Program continues to prioritize applications for approval of air-purifying particulate respirators for the COVID-19 Response, as resources allow, NIOSH also considers applications for atmosphere supplying respirators including self-contained breathing apparatus (SCBA). So far this year, NIOSH has approved 42 SCBA configurations collectively and coordinated those approvals with the National Fire Protection Association (NFPA). These respirators are intended for law enforcement users needing a high level of respiratory protection during specific operations.

## Respiratory Health Division (RHD)

**Return to the Field for the Coal Workers' Health Surveillance Program (CWHSP) Mobile Unit**

After a two-year hiatus due to the COVID-19 pandemic, the CWHSP mobile unit conducted a field survey this summer in central Appalachia. The mobile unit had upgraded ventilation and staff followed a new infection control protocol to minimize the exposure of COVID-19 to miners and staff. During the 3-week survey in central Appalachia (August 8-26), 526 miners were screened. Staff also conducted outreach for two weeks prior to the survey to increase participation. Many miners expressed sincere gratitude that the mobile unit was available to them this year. The mobile unit also conducted a two-day survey (July 26-28) at the Mine Rescue Contest in Morgantown, West Virginia where 48 miners were screened. RHD is planning a survey in Texas and Oklahoma in 2023.

**Electronic Health Records Recent Achievements**

The HHS Office of the National Coordinator for Health Information Technology (ONC) has included the data elements "Occupation" and "Occupation Industry" in the latest version of United States Core Data for Interoperability (USCDI) - Version 3 (July 2022), in recognition of their value to public health and importance to health equity. The USCDI is a standardized set of health data classes and constituent data elements for nationwide, interoperable health information exchange. This is a substantial milestone for the NIOSH Electronic Health Records (EHR) project—inclusion in USCDI sets the stage for these data elements to become standard fields available in EHRs and provides policy support for NIOSH-led efforts to include them in key data sharing standards, implement pilots demonstrating their collection and value, and more.

With NIOSH support, the National Association of Community Health Centers (NACHC) engaged three clinic networks to pilot collection of patient work information. NIOSH is about to begin year 2 of this collaboration, and thus far one of the clinics has been able to evaluate the data they've collected. They found that 63 out of 380 patients (17%) were identified as working in dairy or cattle farming and 92% of these are Latinx or Hispanic; 31 of these patients (49%) had a diagnosis of respiratory tract problems and/or asthma. Based on these findings, the clinic conducted COVID vaccination clinics at dairy and cattle farms for both workers and their family members.

## *Total Worker Health®* (TWH)

### 3rd International Symposium to Advance *Total Worker Health and Launch of the New TWH Professional Society*

This is a quick reminder about the [3rd International Symposium to Advance *Total Worker Health*](#), to be held again at the NIH Natcher Center October 11-14, 2022 in Bethesda. This will be the largest TWH symposium ever and the first international convening of TWH professionals and supporters since 2018.

### Substance Use Prevention and Workplace Supported Recovery

NIOSH is continuing its efforts to address substance-related harms and substance use disorders while supporting organizations and workers during the overdose epidemic. Just published in the journal *Occupational Health Science* is a NIOSH-authored, landmark document titled "[Workplace Supported Recovery from Substance Use Disorders: Defining the Construct, Developing a Model, and Proposing an Agenda for Future Research](#)." The article provides a framework underpinning this critical topic, and offers a working definition for workplace supported recovery: an integrated set of evidence-based interventions and policies that reduce workplace hazards promoting the development or perpetuation of substance use disorders and undermining recovery from substance use disorders; increase workplace supports preventing the development or perpetuation of substance use disorders and facilitating recovery from substance use disorders; help employees maintain or regain employment during recovery; and promote overall growth and well-being among employees, work organizations, families, and communities.

### Health Worker Mental Health Initiative

NIOSH recently contributed substantial input to the [Surgeon General's Advisory Addressing Health Worker Burnout](#), which lays out recommendations that the whole-of-society can take to address the factors underpinning burnout, improve health worker well-being, and strengthen the nation's public health infrastructure. NIOSH also continues to develop a national social marketing campaign to address health worker mental health. NIOSH recently contracted with JPA Health, who is also partnered with the Dr. Lorna Breen Heroes Foundation and the Education Development Center, to deliver a national campaign that will first be directed toward employers to promote primary prevention approaches at the organizational level to support health workers' mental health and well-being. Subsequent campaign materials in 2023 will be directed to workers.

NIOSH is also working to quickly develop a series of training modules for public health supervisors to prevent burnout among public health workers. Read more about the long-standing challenges for these workers and link to our growing resource pages here: [Pre-pandemic Mental Health and Well-being of Healthcare Workers](#)

### Update on the NIOSH Worker Well-Being Questionnaire (WellBQ)

The NIOSH WellBQ was launched in 2021 and continues to gain traction. [A recent paper](#) describing the development and validation of the instrument was published in July 2022. A Spanish version of the

questionnaire, certified by CDC, is now available on the NIOSH WellBQ webpage. Thanks to the Center for Health, Work, and Environment, the TWH Center of Excellence in Colorado, for their leadership on this project.

## Western States Division (WSD)

### U.S. Mariner Health and Well-being

CDC researchers, including CDR Alice Shumate from WSD, collaborated with Dr. Marissa Baker at University of Washington to conduct a survey of U.S. mariners on mental health (including scales for stress, depression, anxiety, suicidal ideation); how mental health was impacted by workplace changes due to COVID-19; and accessibility of/barriers to accessing mental healthcare. The survey was developed with input from industry and labor representatives.

The report on U.S. Mariner Mental Health & Well-being provides results of a survey of 1,559 U.S. mariners who sailed during the COVID-19 pandemic, focusing on mental health and the impact of workplace changes due to COVID-19, including longer tours of duty and restricted shore leave. Fifty percent of respondents had a high score for at least one of five mental health outcomes measured (stress, generalized anxiety disorder, major depressive disorder, post-traumatic stress disorder, and suicidal ideation), and mariners reported worse mental health and sleep quality during the pandemic. Mariners also reported numerous barriers to accessing mental healthcare, especially aboard vessels.

### Oil and Gas Health and Safety Survey

WSD researchers supported the Oil and Gas Worker Health and Safety Survey which was designed is to explore on-duty and off-duty factors that may affect the risk of injuries and illness among US onshore oil and gas extraction workers. This project is currently in the data analysis and manuscript development stage. This survey has resulted in three manuscripts thus far. This first manuscript examined work schedules, commuting time, and driving-related outcomes. The second manuscript, pending acceptance, examined self-reported exposure to hazards and mitigation strategies to these hazards. The third manuscript, under development, focuses on risky driving behaviors and employer motor vehicle safety policies.

## Social Presence Statistics

NIOSH continues to expand its presence on social networks*.*

| Social Media and Public Outreach Accounts and Services | | August 2022 |
|---|---|---|
| Facebook - **NIOSH** | Followers | 192,026 |
| | Engagement Rate | 1.8% |
| | Total Engagements | 4,136 |
| | Total Impressions | 233,651 |
| Twitter **@NIOSH** | Followers | 297,981 |
| | Engagement Rate | 2.6% |
| | Total Engagements | 1,580 |
| | Total Impressions | 61,475 |
| Instagram **@NIOSHUSA** | Followers | 47,545 |
| | Engagement Rate | 1.9% |
| | Total Engagement | 1,463 |
| | Total Impressions | 75,294 |
| LinkedIn* - **NIOSH** | Followers | 653 |
| | Engagement Rate | 5.2% |
| | Total Engagements | 248 |
| | Total Impressions | 4,787 |
| YouTube | Total Videos | 307 |
| | Average Monthly Views | 27,000 |
| Website | Average Monthly Site Views | 3,011,000 |
| **eNews** | Subscribers | 38,753 |
| | Average Open Rate | 23.6% |
| | Average Click Thru Rate | 1.2% |
| **Science Blog** | Total Blog Entries | 834 (102 in the last 12 months) |
| | Total Blog Comments | 10,402 (555 in the last 12 months) |
| | Blog Site Views | 72,000 |

*NIOSH transitioned to a public LinkedIn page in June 2022
All rates in the table for social media channels are for the month of August 2022
eNews rates are the average from March 2022 to August 2022

# Recent NIOSH Publications

**August 2022**

[Understanding Multi-gas Monitor Readings – The Importance of Knowing Your Equipment](#)

[Equipment Safety: Forklifts](#)

[Prevent Falls: Guardrails](#)

[Prevent Falls through Holes](#)

[Equipment Safety: Getting On and Off](#)

[Electrical Safety: Extension Cords](#)

[Electrical Safety: Wiring](#)

[Electrical Safety: Power](#)

[Materials Handing: Drywall](#)

[Buried Utilities Safety](#)

[Asphalt Fumes: Roofing Operations](#)

[Arc Welding and Fire Safety](#)

[Eye Protection](#)

[Equipment Safety: Maintenance](#)

[Preventing Falling Objects](#)

[Crane Safety: Stability and Tipping](#)

[Cold Environments](#)

[Repetitive Motion: Carpal Tunnel Syndrome](#)

[Carbon Monoxide Poisoning](#)

[Biohazards](#)

[Electrical Safety and Arc Welding](#)

[Aerial Lifts Safety](#)

**July 2022**

Reducing Work-Related Needlestick and Other Sharps Injuries Among Law Enforcement Officers

Technical Report: Occupational Exposure Sampling for Engineered Nanomaterials

Protecting temporary workers: best practices for host employers

Indicators of Workplace Violence, 2019

Small Business Safety and Health Handbook (Revised 07/2022)

**June 2022**

NIOSH Extramural Research and Training Program, Annual Report of Fiscal Year 2020

NIOSH Skin Notation Profile: Chlorodiphenyl (54% chlorine)

NIOSH SK Notation Profile: 2,4 Toluene diisocyanate, 2,6 Toluene diisocyanate, 2,4- & 2,6- Toluene diisocyanate mixture

NIOSH Skin Notation Profile: Diacetyl and 2,3-Pentanedione

NIOSH Skin Notation Profile: beta-Chloroprene

NIOSH SK Notation Profile: 2,4 Toluene diisocyanate, 2,6 Toluene diisocyanate, 2,4- & 2,6- Toluene diisocyanate mixture

NIOSH Skin Notation Profile: Diacetyl and 2,3-Pentanedione

NIOSH Skin Notation Profile: beta-Chloroprene

NIOSH Skin Notation Profile: Dioxane

Spokane Mining Research Division Fact Sheet (Revised June 2022)

**April 2022**

Hospital Respiratory Protection Program Toolkit (Revised April 2022)