

National Institute for Occupational Safety and Health (NIOSH)

Board of Scientific Counselors Update

May 2021

May 2021 Budget

- FY 2021 Budget is \$345.3M, an increase of \$2.5M from FY 2020 Enacted level.
 - \$1.5M increase to create a new Total Worker Health Center for Excellence for Workplace Mental Health
 - \$1M increase to support Underground Mine Evacuation Technologies and Human Factors
- The President submitted a request for FY 2022 discretionary funding on April 9, 2021, with the expectation of submitting the President's Budget with additional detail in the months ahead.

Organizational and Personnel Announcements

NIOSH Leadership Updates

- In March 2021, Sam Glover, Ph.D., was named Senior Laboratory Quality Advisor in the Office of the Director.

Retired Staff

- Alice Kelley, Lead Attorney, retired on January 2, 2021.
- Martha DiMuzio, Fiscal Resources in the Office of the NIOSH Deputy Director for Management, retired in January 2021.

New Programs and Initiatives

Improvement of Mental Health in the Health Care Workforce

Through the American Rescue Package, Congress appropriated \$20M to HHS/CDC to launch a national education and awareness campaign designed to: improve working conditions within health care settings; prevent mental health and substance use disorders among this population of workers; and expand related screenings, intervention and services. The campaign will target the 20 million workers in the nation's health care sector as well as first responders, such as emergency medical service/technician (EMS/EMT) providers. **NIOSH is tasked with carrying out this effort.**

The project will assimilate evidence-based prevention approaches and interventions, highlight best practices, and identify current programs and resources to address the challenges. Through a national, multi-faceted social media campaign; the development of new tools, resources, and training products; and a network of partnerships, the project helps to advance the overall well-being of these workers. NIOSH will also seek to advance new research in this area and build a sustainable program to enhance the health, safety and well-being of workers using healthy work design and *Total Worker Health*® approaches that prioritize improved working conditions and primary prevention.

The work in this sector often involves intense physical and emotional labor in a complex social environment with unique pressures arising from the relationships among the patient, family, the employing/care-providing institution, and the health care workers themselves. Some of these workers experience unstable and unpredictable work lives, report financial strain, experience high levels of stress and burnout, and routinely face hazardous conditions at work. Many lower-paid workers have difficulty accessing health care services, including workers' compensation, and may face an overall lack of dignity on the job, while still facing threats from a variety of occupational safety and health risks, all leading to poorer health outcomes than other workers. The pandemic has introduced additional elements of long work hours and fatigue, strain, loss, and grief. Early in the pandemic health care workers endured shortages in critical personal protective equipment, leading to increased stress, anxiety, and the risk of personal harm. Some health care workers report symptoms consistent with post-traumatic stress disorder related to the pandemic, as well as residual symptoms due to personal infection with COVID-19.

Many health care workers often place the well-being of their patients ahead of their own health and safety. This dedication to their work may delay or prevent them from seeking help or accessing resources. The strong and historical stigma related to seeking care for mental health concerns or substance misuse issues, even among health care providers themselves, also remains a significant barrier to intervention. NIOSH will consider these characteristics and nuances carefully within the context of the campaign. The campaign will also address the racial diversity, gender, and other unique characteristics of the healthcare workforce.

NIOSH Resource for Sharing Occupational Safety & Health Events

An [updated and enhanced webpage](#) for NIOSH and partners to share external Occupational Safety and Health (OSH)-related conferences, meetings, events, and webinars is now available. In addition to expanding the types of events that can be shared, the new page has a search function so the list can be filtered by location or meeting type. This page can be accessed through the link above or from the NIOSH homepage.

COVID-19 Response

Since the start of the pandemic, NIOSH has maintained a significant presence in the federal COVID-19 response. In January 2020, NIOSH stood up the Worker Safety and Health Team (WSHT) as part of the CDC Health Systems and Worker Safety Taskforce. NIOSH formed the Essential Workers Team (EWT) in January 2021 as part of the CDC Vaccine Taskforce. The WSHT provides occupational safety and health guidance, PPE support (including respirator approvals and research), workplace technical assist, and guiding research. The EWT is dedicated to vaccine implementation for essential workers through linkages with NIOSH stakeholders. In January 2021, NIOSH moved some activities to home programs where there was natural alignment of work activity. However, strong coordination with the teams ensures NIOSH has a voice within the response and addresses issues that can impact worker safety and health.

Over 480 NIOSH staff have contributed more than 312,000 hours to the COVID-19 response via field and virtual deployments through March 2021. Over 110 staff members have supported a total of 218 field deployments; half have directly supported the NIOSH mission and the remainder supported the overall federal response. In addition to field deployments, over 450 staff have completed 996 virtual deployments; over 80% supported the NIOSH mission. In March, staff responded to requests to support

the Unaccompanied Children at the Southwest Border Mission, completing one field and six virtual deployments. The resilience and dedication of staff in sustaining these intense operations is noteworthy.

NIOSH has received an additional \$32.75M in FY21 COVID-19 funds to support intramural and extramural research on a wide range of topics including vaccine attitudes, knowledge, and hesitancy; workplace safety and the psychosocial health impacts of COVID-19; and prevention measures (source control methods, respirators, and PPE.) Funds also support vaccine-related outreach and education for workers in a variety of occupations. NIOSH has received a total of over \$50M in COVID-19 funds to support these critical areas.

Response accomplishments include:

Guidance Documents

- Developed over 30 guidance documents (25 have been updated at least once); 40 factsheets; 20 science blog entries; 5 videos; 40 manuscripts; 10 tool kits; 1 web application; 80 social media messages; and 15 frequently asked questions (FAQ) pages.
- With the availability of vaccine, new key products have focused on vaccine implementation including:
 - [Workplace Vaccination Program](#) — This information helps employers prepare for vaccination either at the workplace or when vaccine becomes available in the community.
 - [Essential Workers COVID-19 Vaccine Toolkit](#) — This toolkit helps employers across various industries educate their workforces about COVID-19 vaccines, raise awareness about the importance and benefits of vaccination, and address common questions and concerns. The toolkit includes FAQs and digital and print communication resources, such as posters and fact sheets.
 - [Interim list of categories of essential workers mapped to standardized industry codes and titles](#) — This list maps the U.S. Department of Homeland Security’s Cybersecurity and Infrastructure Security Agency’s guidance to standardized industry codes and titles for ease of use.
 - [Quick Start Guide to Vaccinating Essential Workers](#) — A 10-step guide intended to help health departments identify and quantify sub-populations of essential workers and create a specific plan to arrange to vaccinate them.
- NIOSH is updating key cobranded guidance with OSHA and FDA to reflect the current state of the pandemic and new science, including:
 - [COVID-19 Guidance: Businesses and Employers](#)
 - [COVID-19 Critical Infrastructure Sector Response Planning](#)
 - [Meat and Poultry Processing Workers and Employers](#)
 - [Manufacturing Workers and Employers](#)
 - [Agriculture Workers and Employers](#)
 - [Protecting Seafood Processing Workers from COVID-19](#)
 - [Strategies for Protecting K-12 School Staff from COVID-19](#)

Outreach

- NIOSH subject matter experts presented at over 490 virtual events between January 29, 2020 and March 31, 2021. This includes over 200 webinars, 110 calls, 5 podcasts, and 2 in-person meetings.

- Examples of presentations includes:
 - Occupational Health and COVID-19 in the Hispanic population (event delivered in Spanish) Webinar presented with the Mexican Consulate in Utah
 - Guidance for Masks and Personal Protective Equipment (Wear it, Don't Share it) Webinar presented during the CDC Partners Call
 - COVID-19 Partner Update Call — Healthy Workplaces — Tips and Tools for Operating your Business presented during the CDC Partners Call
 - Ventilation and Air Handling in K-12 Schools Webinar presented with the Texas Department State Health Services
 - COVID-19 Testing for US Merchant Mariners Webinar presented with Committee for the Marine Transportation System
 - COVID-19 Vaccine, distribution, new vaccines on the horizon presented with Oil and Natural Gas Sub Sector Coordinating Council
 - An Update on COVID-19 Vaccines and the Workplace Webinar presented with the Society for Human Resource Management
- NIOSH responded to over 15,000 inquiries received through the CDC-Info and PPE Concerns mailboxes. Questions received by the PPE Concerns mailbox increased from 500 per year to over 6,000 due to COVID-19 questions.

Respiratory Protection

- Shortened the timeline for approval of new N95 filtering facepiece respirators (FFRs) from 60–90 days to a sustainable 30–45 days as part of the national effort to increase supplies during the COVID-19 response. Over 100 new FFRs were approved since January 2020.
- Added a virtual site qualification assessment procedure for new domestic manufacturers. Prioritizing air-purifying particulate respirators, including surgical N95 filtering facepiece respirators, has resulted in over 800 decisions in calendar year 2020, which far exceeds the annual Government Performance and Results Act (GPRA) measure target of 400. This includes three elastomeric half mask respirators that address source control concerns: two with no exhalation valves and one with a filtered exhalation valve.
- Increased the number of post-market audit activities in calendar year 2020 to over 780 decisions. These numbers far exceed the annual GPRA measure target of 250.
- Responded to over 1,000 potential international applicants requesting information to achieve NIOSH approval. Typically, 5–10 international requests are made annually. Over 900 of these requests were rejected, most due to fraud and false statements, diverting significant resources from other manufacturers, many of which were small U.S. businesses.
- Completed and posted more than 500 assessments of international or potentially counterfeit respirators. Formal dissemination of results for the international respirators also occurred through Phase 1 and Phase 2 [PPE CASE reports](#), a manuscript to Health Security, and a pending presentation to the American Industrial Hygiene Conference and Expo.
- Assessed the effects of decontamination methods on the performance of N95 FFRs submitted by universities, commercial companies, and research institutions. To date, [44 reports](#) are posted on the web presenting the results from 29 models of N95 FFRs and 19 decontamination methods, many of which are novel. Results will be disseminated in a PPE CASE report.
- Continued research on the implementation and use of elastomeric half mask respirators (EHMRs) in healthcare settings. This work has produced (1) three webinars on the effectiveness of rapid fit testing healthcare staff to EHMRs, (2) a NIOSH blog on [Advancements in](#)

[Elastomeric Respirator Technology for Use as Source Control](#), and (3) a partnership between NIOSH and the Strategic National Stockpile (SNS) where the SNS will provide EHMRs to healthcare and first responder organizations and NIOSH will collect survey data on their experience. 78 potential organizations with approximately 147,000 individual participations have been identified so far; 14 organizations have signed an MOU.

- Source Control
 - During the COVID-19 pandemic source control using cloth masks has been recommended to help reduce the spread of infection by droplets and aerosols. CDC and NIOSH assembled a research team to develop methods and evaluate how well masks control aerosols and protect wearers as well as the effects of social distancing and room ventilation to reduce aerosol transmission of SARS-CoV-2. The group has published 3 manuscripts and has 3 more in preparation.
 - Chaired an ASTM International's Committee F23 on Personal Protective Clothing and Equipment workgroup which recently [published a new Standard Specification for Barrier Face Coverings](#).

Technical Assistance

- Provided field and virtual occupational technical assistance to state, tribal, local, and territorial public health agencies at 259 sites between April 2020 and March 2021. Assessments have been performed for schools, manufacturing facilities (including vaccine manufacturing), agriculture, and government facilities directly impacting more than 100,000 workers.
- Hosting weekly seminars for health department vaccination programs, on topics such as migrant, seasonal, and mobile workers; small businesses; temporary workers; rural and remote workers; and building vaccine confidence among workers. Also, providing consultations to health departments upon request.
- Awarded 47 interagency personnel agreements (IPA) from 27 universities and NIOSH-funded research centers to increase capacity to provide technical assistance to assist with responding to the pandemic. Since August 2020, the IPA program has provided occupational technical assistance in a wide variety of workplaces. The program has provided expert occupational technical assistance to guidance documents and input in key projects, such as designing worker questionnaires on COVID-19 vaccine behaviors and attitudes and outreach to the construction industry to help disseminate guidance and present on vaccine messaging. The program has provided valuable training to stakeholders, including the Illinois Department of Labor Back to Business program, which trained 23 consultants.
- Funded two cooperative agreements with AIHA and the National Safety Council (NSC) to further COVID-19 planning, training programs, and efforts to vulnerable, priority populations in occupational health and safety.

Research

- Developed a [COVID-19 research agenda](#) to address occupational health research gaps in the context of the ongoing response. This research agenda is a high-level framework for planning and prioritizing COVID-19 research recommended, conducted, or supported by NIOSH. Disaster Science Response Research (DSRR) Program identified nine critical topic areas (CTAs) based on emerging worker safety and health issues related to the response. The Program conducted a rapid review of the literature and continues to evaluate new literature to revise and refine the

NIOSH COVID-19 research agenda. The CTAs include Economics; Engineering Controls; Epidemiology/Surveillance; Mental Health; Occupational Environmental/Exposure Assessment; Occupational Violence; Personal Protective Equipment; Transmission/Occupational Health; Zoonosis.

- Participated in a Broad Agency Announcement (BAA) funding opportunity to award contracts to address COVID-19. Seven projects were funded, including work related to respirators, face coverings, smart-fit sensor technology, and novel materials.

Division of Field Studies and Engineering (DFSE)

Local exhaust ventilation control in 3D printing

Published a three-dimensional (3D) model for a local exhaust ventilation (LEV) control to reduce ultrafine particle emissions during 3D printing to the [NIH 3D print site](#) (model #: 3DPX-015467). The model can be downloaded for free and 3D printed (by the very printer on which it is intended to be installed). It is then paired with an off-the-shelf fan, filter, and tubing for a total cost of less than \$60 to reduce ultrafine particle emissions by more than 98% during 3D printing.

All-Industry Ergonomic Solutions

In 2020, the NORA Musculoskeletal Health (MUS) Council started a project to post all-industry information on ergonomic solutions/interventions/guidelines in collaboration with the International Ergonomics Association (IEA). The guidelines document was completed in September 2020 and posted on the [IEA website](#).

COVID-19 Response Contributions

Many COVID-19 response activities have been integrated into DFSE's regular operations including:

- Leading computational fluid dynamics modeling to quantify the effects of airline policies restricting the purchase of middle seat tickets as a strategy to reduce the risk of airborne exposure to SARS-CoV-2 on commercial flights.
- Managing supplemental funding to State health departments to increase collection of industry and occupation data on COVID-19 cases.
- Managing the COVID-19 Worker Safety and Health Technical Assistance Unit, which provides virtual and field technical assistance to businesses, health departments, and other organizations.

Division of Science Integration (DSI)

Occupational Health Equity Program

The OHE program is playing a central role in addressing COVID-19 health inequities for essential immigrant workers. Most notably OHE serves as the lead technical monitor for cooperative agreements with two national networks of immigrant serving organizations, Centro de los Derechos de los Migrantes and Alianza Americas, to provide outreach to these workers across the United States. These collaborations leverage our partners' existing outreach networks, relationships with workers, and linguistic and cultural skills to reach these historically underserved workers and their families. OHE has secured \$8.5M in funding for the first two years of these 5-year projects. These projects build on a

partnership model that the OHE program developed in its work with the Mexican Consulate Ventanillas de Salud program which is highlighted in two recent journal articles. The OHE program is also collaborating on three NIOSH-funded investigations that are assessing the impact of COVID-19 on essential workers from diverse ethnic and racial groups in the grocery industry and immigrant workers from various linguistic groups in the seafood and meat packing industries.

Safe-Skilled-Ready Workforce (SSRW) Program

The SSRW Program has developed a new training curriculum, *Safety Skills at Work*, that is designed to equip contingent workers seeking employment and training opportunities through workforce development organizations with the foundational OSH knowledge and skills needed to benefit from and contribute to safe and healthy workplaces. The curriculum includes new modules on stress, health, and well-being and safety and health for temporary agency workers, and the SSRW program is now gearing up to pilot test the curriculum in partnership with the Pacific Mountain Workforce Development Council. The findings from this pilot test will help establish an evidence base for a new, foundational OSH training program customized to meet the unique needs of workforce development organizations and the contingent workers they serve. If found to be effective, the training will be modified based on the lessons learned through the pilot test and disseminated for use by workforce development organizations across the country.

Division of Safety Research (DSR)

COVID-related Work on Workplace Violence

Existing guidance to limit violence towards workers was repackaged to reflect situations that may occur when businesses put in place and attempt to enforce policies and practices to help minimize the spread of COVID-19 (such as requiring masks). This included a webpage ([Limiting Workplace Violence Associated with COVID-19 Prevention Policies in Retail and Services Businesses](#)) with links to useful resources and trainings, actions employers can take, and a printable poster (Basic Dos and Don'ts for Employees to Prevent Workplace Violence) available in English and 8 other languages. The webpage was disseminated via major media outlets, including CNN, The Hill and Bloomberg, and summarized by other federal entities, including the CDC's National Center for Injury Prevention and Control. The webpage was visited more than 45,400 times between August 2020 and January 2021, five times more visits than to the general NIOSH workplace violence webpages.

A surveillance research project using digital disease detection methods (sometimes called web crawling, media scraping) is collecting near real-time data from various web sources on workplace violence and suicide events among workers during the COVID-19 pandemic.

Fighting Row House Fires

A suite of communications products on tactics for fighting row house fires has been developed, including a [factsheet](#) and a [poster](#). The fact sheet and poster, co-branded with key fire service organizations, highlight tactics for fighting fires in this type of building, areas for potential fire extension, and typical features of row houses. Row house fires are particularly challenging for firefighters due to their unique design characteristics such as long, narrow hallways, steep stairways, and walkout basements, frequently run an entire block in length, and are often located on narrow streets. These products were developed based on findings and recommendations made by the [Fire Fighter Fatality Investigation and Prevention Program](#).

Truck Drivers and Unrealistically Tight Delivery Schedules

Authors from DSR and other NIOSH DLOs have published a manuscript entitled “[Truck driver reported unrealistically tight delivery schedules linked to their opinions of maximum speed limits and hours-of-service rules and their compliance with these safety laws and regulations](#)” in the journal Safety Science. The source data were collected as part of the National Survey of Long Haul Truck Driver Health and Injury, and examined the associations between driver-reported unrealistically tight delivery schedules and their opinions on safety and unsafe driving behaviors. The study’s findings highlight drivers’ beliefs that unrealistic delivery schedules contribute to unsafe driving practices, which might be addressed in training. When presented with 11 potential safety strategies, the largest percentage of drivers selected the strategy that building more truck stops/parking areas would improve truck driver safety.

Health Effects Laboratory Division (HELD)

Research

HELD team members participated in the National Academies of Sciences, Engineering, and Medicine workshop [Airborne Transmission of SARS-CoV-2](#). The workshop covered the latest scientific evidence about airborne transmission of SARS-CoV-2 and discussed critical research gaps to inform prevention policies. Panel participants included experts from a range of scientific disciplines including aerosol and atmospheric science, virology, infectious disease, and epidemiology.

Collaborations

External collaborations utilizing NIOSH’s bioaerosol sampler to study SARS-CoV-2 transmission were established with investigators at Hong Kong University, Duke-NUS Medical School in Singapore, Emory University Hospital in Atlanta, GA, and the University of Wisconsin-Madison. These recent collaborations add to the extensive list of influenza-related studies performed with the NIOSH sampler (over 600 samplers have been loaned to 76 intramural and extramural investigators on all seven continents including Antarctica). The NIOSH samplers have been used in research published in 73 journal manuscripts, 33 of which included NIOSH co-authors.

National Personal Protective Technology Laboratory (NPPTL)

NPPTL has had a major presence in the COVID-19 response and their work is represented in that section.

Respiratory Health Division (RHD)

Cochrane review on effectiveness of removal from exposure and reduction of exposure for managing occupational asthma

Published [summary](#) of a review on effectiveness of removal from exposure and reduction of exposure for managing occupational asthma indicated that compared with continued exposure, removal from exposure had an increased likelihood of improved symptoms and change in spirometry. Reduction of exposure also had more favorable results for symptom improvement than continued exposure, but no difference for change in spirometry. Comparing exposure removal to reduction revealed an advantage

for removal with both symptom improvement and change in spirometry for the larger group of patients exposed to low-molecular-weight agents. Also, the risk of unemployment was greater for exposure removal versus reduction. The potential benefits associated with exposure removal versus reduction need to be weighed against the potential for unemployment that is more likely with removal from exposure.

Description of prevalence of e-cigarette use in US workers

A recent [MMWR](#) article described that during 2017–2018, an estimated 5.3 million (3.4%) U.S. workers used e-cigarettes, one half of whom also smoked combustible tobacco products. E-cigarette use was highest among males, non-Hispanic Whites, persons aged 18–24 years, combustible tobacco product users, and workers in the accommodation and food services industry and in food preparation and serving-related occupations. Full implementation of targeted, evidence-based tobacco-control interventions that address the diversity of tobacco products used by U.S. adults, in coordination with regulation of tobacco product manufacturing, marketing, and sales, can reduce tobacco-related disease and death.

Occupations by proximity and indoor/outdoor work: relevance to COVID-19 in all workers and Black/Hispanic workers.

A recent [publication](#) describes the occupations in the U.S. that involve close contact with others and whether the work is outdoors or indoors (risk factors for COVID-19), including the distribution of Black and Hispanic workers over these occupations. Information on 772 detailed occupations and 144,525,054 workers was examined. Researchers found that a high proportion of US workers may be at greater risk for exposure to COVID-19 because their occupations involve either high proximity to others indoors or outdoors (25.2 percent, 36.5 million people) or medium proximity work indoors (48.0 percent, 69.6 million workers). A higher proportion of Black workers perform high proximity indoor work compared to all workers (27.5 percent vs 22.1 percent). In contrast, Hispanic workers had higher representation in outdoor work categories: 5.0 percent Hispanic vs 3.1 percent all workers in high proximity outdoor work and 7.0 percent vs 5.3 percent in medium proximity outdoor work. Prevention strategies should consider worksite conditions, and communication messages should be tailored to the languages and preferred media of the workforce.

Total Worker Health® (TWH)

Opioids and Substance Use Disorder

NIOSH continues to expand resources, publish, and provide presentations and trainings to partners and stakeholders related to work and the risks for substance use disorders and overdose deaths. Recent activities include:

- New resources on [Workplace Supported Recovery](#) have been released.
- Data updates made to [Opioids in the Workplace](#) webpage, keeping the overdose information accurate and timely
- New video released in March, [Addressing Opioids Overdose Deaths in the Workplace](#) features our workplace naloxone rescue programs and resources
- Recent presentations made to the American Public Health Association, grantees of the Department of Labor’s Employment & Training Administration, the NIOSH Center for Workers

Compensation webinar series, the National Institute of Environmental Health Science workforce training webinar, and a podcast production for EH&S.

- In January, NIOSH also provided a webinar on cannabis and workers compensation regulatory issues

TWH Releases New Worker Well-being Questionnaire (the NIOSH WellBQ)

The [NIOSH WellBQ](#) is the first survey instrument developed to provide an integrated assessment of the wellbeing of workers across multiple spheres, including individuals' quality of working life, circumstances outside of work, and physical and mental health status. The questionnaire measures "worker" well-being as a holistic construct and will help researchers, employers, workers, practitioners, and policymakers better measure and understand baseline well-being and target interventions to improve it. The 68-item survey tool takes 12-15 minutes to complete and comprises the five domains of worker well-being identified as essential including work evaluation and experience, workplace policies and culture, the workplace physical environment and safety climate, health status; and a worker's interface with home, community, and society. The survey is publicly available and free for all to use. (NIOSH acknowledges the assistance of the RAND Corporation in the development of this instrument).

Western States Division (WSD)

Silica in the Oilfield Summit

NIOSH participated in The NORA Oil and Gas Extraction Council's 'Silica in the Oilfield Summit 2.0' on April 13-14, 2021. This free virtual event brought together representatives from NIOSH, OSHA, and upstream oil and gas industry partners to provide state-of-the-art knowledge on the control of workers' exposures to respirable crystalline silica (RCS) in the oilfield. Agenda topics included advances in engineering controls and evaluations of their effectiveness, an update from OSHA relevant to upcoming obligations for engineering controls for hydraulic fracturing operations, and companies' experiences in implementing the hierarchy of controls for RCS.

NIOSH Wildfire Science Blog

The NIOSH Science Blog [COVID-19 and Wildland Firefighters](#) was published in March 2021. Wildfires do not stop during a pandemic. The 2020 fire season saw the first-ever single wildfire to burn over 1 million acres, with 44 days at the highest fire preparedness level (and 30 days higher than the 5-year average) when fire personnel and resources are extremely scarce. Circumstances surrounding wildfire incidents can put wildland firefighters at increased risk for the transmission of infectious diseases including COVID-19. Considerable evidence indicates an association between exposure to air pollution, including particulate matter from wildfire smoke, and increased risk for lower respiratory infections. Wildfire smoke exposure has been associated with lower respiratory infections such as acute bronchitis and pneumonia in many epidemiological studies of the public's exposure to smoke. Preliminary studies have found positive associations between SARS-CoV-2 infection and ambient air pollution levels (including particulate matter).

Social Presence Statistics

NIOSH continues to expand its presence on social networks.

Social Media and Public Outreach Accounts and Services	March 2020	March 2021
Facebook	148,810 likes	155,564 likes
Twitter	@NIOSH account 305094	@NIOSH account 302566* Twitter is continuously deleting inactive accounts
Instagram	4,597 followers	13,613 followers
YouTube	280 videos, 37,143 views	252 videos, 1361632 views
LinkedIn	956 members	1,153 members
Website Views	7,568,163 site views in March 2020	2,437,987 site views in March 2021
eNews Subscribers	60,688	43,504* CDC removes duplicates or invalid emails monthly
TWH Subscribers	62,483	42,775* CDC removes duplicates or invalid emails monthly
Science Blog	Total blog entries: 594 Total comments: 8,879 Blog site views (March 2020): 268,049	Total blog entries: 688 Total comments: 9,499 Blog site views (March 2021): 80,935

* Twitter is actively deleting inactive accounts

NIOSH Publications

April 2021

- Federal Register Notice: [Notice of Closed Meeting – Name of Committee: Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)—PAR 18–812, NIOSH](#)
- NIOSH Update: [New Survey Instrument Available from NIOSH to Help Assess Worker Well-Being](#)
- [NIOSH Worker Well-Being Questionnaire \(WellBQ\)](#) DHHS (NIOSH) Publication 2021-110
- Federal Register Notice: [Notice of Closed Meeting – Name of Committee: Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)—PAR 21–165, Underground Mine Evacuation Technologies and Human Factors Research](#)
- NIOSH Update: [NIOSH Announces Release of ErgoMine 2.0 App Update](#)
- Federal Register Notice: [Board of Scientific Counselors, National Institute for Occupational Safety and Health \(BSC, NIOSH\)](#)
- [NIOSH eNews Volume 18, Number 12 \(April 2021\)](#)

March 2021

- NIOSH Newsroom Feature: [Robotics and Workplace Safety](#)
- Federal Register Notice: [Notice of Closed Meeting: Name of Committee: Safety and Occupational Health Study Section \(SOHSS\), National Institute for Occupational Safety and Health \(NIOSH\)](#)
- Federal Register Notice: [Notice of Closed Meeting: Name of Committee: Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)- RFA–OH–20–002, Commercial Fishing Occupational Safety Research Cooperative Agreement; and RFA–OH–20–003, Commercial Fishing Occupational Safety Training Project Grants](#)
- Federal Register Notice: [Notice of Closed Meeting: Name of Committee: Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)—RFA OH–21–007, Continuation and Expansion of the National Mesothelioma Virtual Bank for Translational Research](#)
- [NIOSH Disaster Science Responder Research Program COVID-19 Research Agenda](#) DHHS (NIOSH) Publication No. 2021-113
- New Topic Page: [Work and Fatigue](#)
- [Addressing Opioid Overdose Deaths in the Workplace Video](#)

- [Authoritative Recommendations](#) Program Performance One-Pager (PPOP)
- Federal Register Notice: [Agency Forms Undergoing Paperwork Reduction Act Review-Proposed Project: Examining Safety and Health Among Aviation Industry Workers in Alaska: A Survey—New—National Institute for Occupational Safety and Health \(NIOSH\)](#)
- Federal Register Notice: [Proposed Data Collection Submitted for Public Comment and Recommendations – Proposed Project: Pre-shift Lighting Interventions to Improve Miner Safety and Well-being—New—National Institute for Occupational Safety and Health \(NIOSH\)](#)
- [Commercial Fishing Occupational Safety Research and Training Program](#)
- [Musculoskeletal Health Program](#) Program Performance One-Pager (PPOP)
- [Odor Fade in Natural Gas and Propane](#) DHHS (NIOSH) Publication No. 2021-106
- NIOSH Update: [New Study Highlights Differences in Access to Health Care Services Among Essential Workers](#)
- NIOSH eNews: [Volume 18, Number 11 \(March 2021\)](#)
- [Center for Direct Reading and Sensor Technologies](#) Program Performance One-Pager (PPOP)

February 2021

- Federal Register Notice: [Advisory Board on Radiation and Worker Health \(ABRWH\), National Institute for Occupational Safety and Health \(NIOSH\)](#)
- NIOSH Update: [NIOSH partners with the National Science Foundation for a second year to fund workplace robotics research](#)
- NIOSH Update: [Boeing Mesa Arizona Wins Annual Safe-in-Sound Award](#)
- NIOSH Newsroom Feature: [Protecting Our Farmers](#)
- Federal Register Notice: [Agency Forms Undergoing Paperwork Reduction Act Review – Proposed Project: Factors Influencing the Transmission of Influenza \(OMB Control No. 0920–0888, Exp. 2/28/21\)—Extension](#)
- Federal Register Notice: [Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)—Funding Opportunity Announcement \(FOA\), RFA OH–21–003, Extension of the World Trade Center Health Registry \(U50\); Amended Notice of Meeting](#)
- Federal Register Notice: [Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)—Funding Opportunity Announcement \(FOA\), PAR 20–280, Cooperative Research Agreements to the World Trade Center Health Program \(U01\); and RFA OH–21–004,](#)

[Exploratory/Developmental Grants Related to the World Trade Center Health Program \(R21\); Amended Notice of Meeting](#)

- [NIOSH 50th Anniversary](#)
- NIOSH eNews: [Volume 18, Number 10 \(February 2021\)](#)
- Federal Register Notice: [Notice of Closed Meeting – Name of Committee: Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)—PAR 20–297, NIOSH Centers of Excellence for Total Worker Health \(TWH\)](#)
- NIOSH Newsroom Feature: [Needlestick Injuries are Preventable](#)

January 2021

- Federal Register Notice: [Advisory Board on Radiation and Worker Health \(ABRWH\), National Institute for Occupational Safety and Health \(NIOSH\); Correction](#)
- Federal Register Notice: [Advisory Board on Radiation and Worker Health \(ABRWH\), Subcommittee on Dose Reconstruction Review \(SDRR\), National Institute for Occupational Safety and Health \(NIOSH\); Correction](#)
- Federal Register Notice: [Agency Forms Undergoing Paperwork Reduction Act Review – Proposed Project: Improving Safety of Human-Robot Interaction](#)
- Federal Register Notice: [Proposed Data Collection Submitted for Public Comment and Recommendations – Proposed Project: A Longitudinal Examination of Mental and Physical Health among Police Associated with COVID–19](#)
- Federal Register Notice: [Agency Forms Undergoing Paperwork Reduction Act Review – Proposed Project: Online training for law enforcement to reduce risks associated with shift work and long work hours—Reinstatement without Change](#)
- NIOSH Newsroom Feature: [Firefighter Cancer Awareness](#)
- Federal Register Notice: [Notice of Closed Meeting – Name of Committee: Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)—Funding Opportunity Announcement \(FOA\), PAR 20–280, Cooperative Research Agreements to the World Trade Center Health Program \(U01\); and RFA OH–21–004, Exploratory/Developmental Grants Related to the World Trade Center Health Program \(R21\)](#)
- Federal Register Notice: [Notice of Closed Meeting – Name of Committee: Disease, Disability, and Injury Prevention and Control Special Emphasis Panel \(SEP\)—Funding Opportunity Announcement \(FOA\), RFA OH–21–003, Extension of the World Trade Center Health Registry \(U50\)](#)

- NIOSH Newsroom Feature: [Communicating Science – How A Popular Government Infographic About Beards Came To Be](#)
- [Mining Publication: Technology News 564 – MFIRE 4.0 Enhances Fire Modeling Capabilities](#)
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- NIOSH eNews: [Volume 18, Number 9 \(January 2021\)](#)