

National Institute for Occupational Safety and Health (NIOSH)

Board of Scientific Counselors Update

September 2020

September 2020 Budget

- FY 2020 Budget is 342.8M, an increase of \$6.5M from FY 2019 Enacted level
- NIOSH Enacted Ceiling increased by \$6.5M:
 - \$1M increase to Education and Research Centers, and Agriculture, Forestry, and Fishing
 - \$2M increase to *Total Worker Health*[®] (TWH) Centers
 - \$1M for new Mining Grant to address mandates in the Mine Improvement and New Emergency Response Act of 2006
 - \$1.5M for Firefighter Cancer Registry
- NIOSH received approval of \$32M for COVID-19 activities from CDC
- President's Proposed FY 2021 Budget requested \$190M, a decrease of 150M from the FY 2020 Enacted Level
- House Appropriations Committee approved an FY 2021 budget of \$344.7M, an increase of \$1.9M from the FY 2020 Enacted Level
 - \$1.5M – Increase for creation of a new TWH Center for Workplace Mental Health
 - \$400K - Increase to continue NIOSH efforts to establish a Mesothelioma Patient Registry

Organizational and Personnel Announcements

NIOSH Leadership Updates

- In March 2020, Dr. Brett Green was named Deputy Director for the Health Effects Laboratory Division.
- In May 2020, Dr. Scott Earnest was named Associate Director for NIOSH Office of Construction Safety and Health.
- In August 2020, Dr. Sara Luckhaupt was named Associate Director for Science for the Division of Field Studies and Engineering.
- In August 2020, Dr. Susan Moore was named Associate Director for Science for the National Personal Protective Technology Laboratory.
- In September, Dr. Ameer Schwitters joined NIOSH as Associate Director for Science for the Western States Division.

Retired Staff

- John Myers, branch chief of the Surveillance and Field Investigations Branch, Division of Safety Research, retired July 2020.

New Programs and Initiatives

The Center for Work and Fatigue Research

The Center for Work and Fatigue Research (CWFR) was launched in April 2020 as a culmination of the longstanding efforts among NIOSH researchers in the area of sleep and nonstandard work hours. The new Center brings the total number of NIOSH Centers of Excellence to 8. The CWFR will extend established work to include other sources of fatigue such as physically and mentally demanding work, co-morbidities, hot environments and other co-exposures. It will collaborate with researchers, policy makers and end-users to develop practical, effective solutions to mitigate these risks. Using a multi-disciplinary approach, it will create new and innovative industry-specific approaches and outreach initiatives. Building on the [NIOSH Work Hours, Sleep and Fatigue Forum](#) held in September 2019, CWFR will continue to expand partnerships, nationally and internationally, to achieve greater synergy and impact. Products stemming from the Fatigue Forum include a special issue of the American Journal of Industrial Medicine with industry-specific manuscripts identifying knowledge gaps/needs and future directions for research.

CWFR is co-coordinated by the Division of Science Research (DSI) and the Healthy Work Design and Well-Being program, with Drs. Paul Schulte, Naomi Swanson, Rene Pana-Cryan and Casey Chosewood serving as Co-Managers. Dr. Imelda Wong is the Coordinator for the new Center.

COVID-19 Response

Update on Coronavirus Response

NIOSH leads and staffs the Worker Safety and Health Team as part of the larger CDC COVID-19 response. Over 340 NIOSH staff have participated in the COVID-19 response via field and duty-station assignments through August 31, 2020. Greater than 100 staff have field deployed on more than 165 field deployments, where approximately half directly supported the NIOSH mission while the remainder supported the greater federal government response. In addition to field deployments, staff have filled 437 emergency operations team assignments.

Received over \$24M in additional FY20 funds to support intramural and extramural research, outreach and education, and the NPPTL Respirator Certification Program, including many of the activities described below.

Response accomplishments include:

- Field and Virtual Assistance
 - Provided field and virtual occupational technical assistance to 107 different companies or agencies between April 1 and August 31, with additional technical assistance efforts ongoing. Field requests originate from state, tribal, local, and territorial public health agencies. Workplace assessments have been conducted in 16 industry types in 25 states,

- including 2 tribal nations. Assessments have been performed for meat and seafood processing facilities, manufacturing facilities (including produce and food manufacturing), agriculture, and long-term care facilities, just to name a few. As a result of these efforts, NIOSH has had a direct impact on more than 60,000 workers through field and virtual technical assistance.
- Awarded 47 interagency personnel agreements from 27 universities and NIOSH-funded research centers to increase capacity to provide technical assistance to assist employers, workers, government, and public health officials with responding to the COVID-19 pandemic. Awardees will provide virtual assistance, assist with speaking engagements, and conduct outreach or education and training, among other activities.
 - Guidance Documents
 - Developed over 30 guidance documents, 40 factsheets, 15 science blog entries, 5 videos, 25 manuscripts, and 5 tool kits. These products are published on the web or have been shared with response partners. Key products include:
 - Guidance documents and tools for businesses
 - [Interim Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 \(COVID-19\), May 2020](#)
 - [General Business FAQ](#)
 - [Resuming Business Toolkit](#)
 - [Prepare your Small Business and Employees for the Effects of COVID-19](#)
 - Guidance documents for specific industries
 - [Meat and poultry processing](#), co-branded with Occupational Safety and Health Administration (OSHA)
 - [Manufacturing](#), co-branded with OSHA
 - [Agriculture](#), co-branded with the Department of Labor
 - [Seafood processing](#), co-branded with OSHA and developed in consultation with the Food and Drug Administration
 - [K-12 School Staff](#)
 - More than [40 fact sheets](#) for workers and employers in specific occupations
 - Other documents
 - [Optimizing Supply of PPE and Other Equipment during Shortages](#) including [Strategies for Optimizing the Supply of N95 Respirators](#)

- [Personal Protective Equipment \(PPE\) Burn Rate Calculator](#) (also available as a mobile phone app)
 - [Investigating and responding to COVID-19 cases in non-healthcare work settings](#)
 - [Case Investigation and Contact Tracing in Non-healthcare Workplaces: Information for Employers](#)
 - [Testing Strategy for Coronavirus \(COVID-19\) in High-Density Critical Infrastructure Workplaces after a COVID-19 Case Is Identified](#)
 - [Interim Guidance for Conserving and Extending Filtering Facepiece Respirator Supply in Non-Healthcare Sectors](#)
- Speaker's Bureau
 - Managed requests for NIOSH subject matter experts to speak at virtual events via the establishments of a Speaker's Bureau. Between May 6 and August 31, NIOSH participated in over 120 speaking engagements: 70 webinars, 50 calls, 1 podcast, and 1 in-person meeting.
- Surveillance Data Analysis
 - Worked with partners to collect, analyze, and interpret information about COVID-19 cases and deaths among U.S. workers in order to improve situational awareness and guide recommendations. Manuscripts/MMWRs include:
 - [Increases in Health-Related Workplace Absenteeism Among Workers in Essential Critical Infrastructure Occupations During the COVID-19 Pandemic — United States, March–April 2020](#)
 - [Characteristics of Health Care Personnel with COVID-19 — United States, February 12–April 9, 2020](#)
 - Worked within the response to advocate for the collection of occupation and industry variables; served as subject matter experts in health equity, infection prevention and control, engineering controls, and other areas; and provided technical reviews of worker safety and health guidance, research protocols, and public health surveillance efforts.
- Respiratory Protection
 - Made 502 respirator approval decisions as of August 12, 2020. By comparison, in the full calendar year 2019, the approval program made 552 decisions. As of August, there are 101 approval holders located in 15 countries and 192 manufacturing sites across 26 countries.

- Created the online [International Respirator Assessment Request](#) to allow point-of-use assessments of non-NIOSH-approved respirators from other countries, and more than 390 assessments have been submitted with over 350 reports posted online. NIOSH continues to receive requests from workers as well as State and Federal government agencies for technical assistance on non-NIOSH approved respirators.
- Published the “Interim Final Rule on Approval Tests and Standards for Air-Purifying Particulate Respirators” with comment on April 14th, 2020. This rulemaking adds parallel performance standards to existing regulatory requirements for Powered Air-Purifying Respirators (PAPRs) to allow for the approval of respirators in a new class, PAPR100, that may be better suited to the needs of workers in the healthcare and public safety sectors currently experiencing a shortage of air-purifying particulate respirators due to COVID-19. Since publishing the rule, NIOSH issued 27 conformity assessment decisions resulting in 5 Public Health Emergency (PHE) and 19 conventional new PAPR approvals.
- Assessed the effects of novel and existing decontamination methods on the performance of N95 FFRs submitted by universities, commercial companies, and research institutions. To date, 24 reports are posted on the web presenting the results from 29 models of N95 FFRs and 14 decontamination methods, many of which are novel.
- Initiated research on Elastomeric Half Mask Respirators (EHMRs) in healthcare including the adverse effects of wearing EHMRs, the impact on patient care, and effective decontamination strategies. This information is critical to hospital systems and national preparedness groups (such as FEMA and the Strategic National Stockpile) for bulk-purchasing and stockpiling of elastomeric respirators in preparation for future pandemics.
- Responded to COVID-19 PPE questions through multiple communication outlets. NIOSH published 7 PPE-related Science Blogs, including [Considerations for Covering N95s to Extend Use](#) and [The Physiological Burden of Prolonged PPE Use on Healthcare Workers during Long Shifts](#). From January through August 2020, the National Personal Protective Laboratory (NPPTL) has responded to over 5,000 public requests for information. This is nearly 17 times the number of public inquiries typically received in an 8-month period.
- Source Control
 - Initiated research on source control, including face masks and face shields, used by workers and the general public. The objective is to compare the efficacy of source control devices to reduce the expulsion of small cough-generated aerosol particles.
 - Initiated research to understand source control associated with respirators with exhalation valves including filtering facepiece respirators and elastomeric half mask respirators.

- Participating in ASTM International's Committee F23 on Personal Protective Clothing and Equipment to help with the development of the newly proposed Standard Specification for Barrier Face Coverings.
- Research
 - Participated in a CDC Broad Agency Announcement (BAA) funding competition to award contracts for applied extramural research to address COVID-19. Five projects recommended by NIOSH were funded in FY20, three on respirators and two on face coverings. We anticipate funding up to 14 additional projects in FY21.
 - Repurposed NIOSH funds 21 short-term research projects through an internal funding competition led by the NIOSH Disaster Science Responder Research initiative, marking the first time that NIOSH has established a coordinated research program alongside an ongoing emergency response. Three interrelated projects will use a health equity lens and look at improving the NIOSH response with frontline workers in the seafood processing, poultry processing, and grocery industries.

Office of the Director (OD)

New 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.

Upcoming International Conferences

The World Congress on Safety and Health at Work is holding a [special session](#) on October 5-6 focused on COVID-19 and OSH. The XXII World Congress has been postponed until September 19-21, 2021 and will be held in Toronto, Canada. For more information, visit <https://www.safety2020canada.com/>.

Division of Field Studies and Engineering (DFSE)

Update on National Firefighter Registry

The National Firefighter Registry (NFR) team is addressing the recommendations in the NFR Subcommittee report approved by the BSC on August 4, 2020. Key recommendations address maximizing firefighter enrollment by overcoming barriers to participation and maximizing the confidentiality and data security of information provided by participating firefighters. The NIOSH NFR Team is also developing an informational brochure and introductory video to promote the registry.

Enhancing Industry and Occupation Coding in Surveillance

NIOSH has released resources to aid stakeholders with coding industry and occupation in surveillance, including the use of the NIOSH Industry & Occupation Computerized Coding System (NIOCCS). A new version of NIOCCS was released in May 2020 which includes enhancements in crosswalks for Census and North American Industry Classification System (NAICS)/Standard Occupational Classification (SOC) codes, company name lookup, and NAICS auto-coding.

A series of three science blogs were released which have enhanced the use of industry and occupation coding in the COVID-19 response. The information is also transportable to other situations.

- [Collecting Occupation and Industry Data in Public Health Surveillance Systems for COVID-19](#) (blog), 6/11/2020
- [Making Industry and Occupation Information Useful for Public Health: A guide to coding industry and occupation text fields](#) (blog), 6/17/2020
- [How Collecting and Analyzing COVID-19 Case Job Information Can Make a Difference in Public Health](#) (blog), 7/31/2020

Additionally, a video is in development that provides further information and guidance to improve industry and occupation data collection.

Division of Science Integration (DSI)

The NIOSH Future of Work Initiative

The [Future of Work Initiative](#) was launched in 2019 to proactively protect and advance the safety, health and well-being of the workforce. A Future of Work Group of NIOSH scientists examined and synthesized the literature to center on a list of [priority topics](#). Nine topics capture central issues of particular relevance to the future of work: the workplace (organizational design, technological displacement, work arrangements), work (artificial intelligence, robotics, technologies), and workforce (demographics, economic security, skills). Additional activities include the recently published [systematic review](#) on potential scenarios and hazards in the work of the future [Schulte et al. 2020] and a submitted publication on the NIOSH Future of Work Initiative priority topics and sub-topics. The Future of Work Group is planning a webinar series and exploring developing a research agenda in 2021 for NIOSH scientists to lay the foundation for internal and external funding opportunities. NIOSH is developing strategies to plan for the profound changes the future of work will bring to the OSH field. Using the TWH approach, collaborative Institute-wide activities are underway both within and outside NIOSH to develop an expanded focus for OSH.

Division of Safety Research (DSR)

National Occupational Injury Research Symposium

The 7th National Occupational Injury Research Symposium (NOIRS) took place October 16-18, 2018. A special issue of the Journal of Safety Research comprising manuscripts and short commentaries

developed from NOIRS 2018 presentations and special sessions will be published in September 2020, with six months of open access. Planning for NOIRS 2021, scheduled for October 19-21, 2021, is underway. NOIRS 2021 has six co-sponsors: National Safety Council, American Society of Safety Professionals, Board of Certified Safety Professionals, and West Virginia University's School of Public Health, Statler School of Engineering and Safety & Health Extension. The call for abstracts will go out in October.

Expansion of Center for Occupational Robotics Research Portfolio

The Center for Occupational Robotics Research partnered with the National Science Foundation (NSF) on the National Robotics Initiative (NRI) 2.0 Funding Opportunity Announcement (FOA). The NRI 2.0 FOA sought research to support fundamental research to accelerate the development and use of co-robots (robots whose main purpose is to work with people or other robots to accomplish a goal). NIOSH was included in the FOA along with the NASA and US Department of Agriculture. NIOSH funding two and NSF funded three grants that address the NIOSH Strategic Plan. These new research projects address several robotics technologies (collaborative and service robots, exoskeletons, and drones) and have potential applications in manufacturing, healthcare, and construction. In addition to these extramural grants, NIOSH funded a new intramural project to research hazards and risks factors for demolition robots.

Publication of Center for Motor Vehicle Safety Strategic Plan for 2020-2029

The [NIOSH Center for Motor Vehicle Safety \(CMVS\) Strategic Plan for 2020-2029](#) is now available. The CMVS conducts research and develops strategies to prevent work-related motor vehicle crashes and related injuries using a multidisciplinary approach. The purpose of this strategic plan is to guide NIOSH-funded research to prevent work-related motor vehicle crashes – the leading cause of workplace deaths in the U.S. – and encourage collaboration between the CMVS and external partners. The plan identifies research needs for four priority industry sectors (Oil & Gas Extraction, Public Safety, Transportation Warehousing & Utilities, and Wholesale & Retail Trade) and describes how the CMVS envisions that stakeholders will put research results into practice.

Health Effects Laboratory Division (HELD)

Wearable technologies

Wearable technologies are increasingly available for a variety of applications in the workplace. Wearables are electronic devices that are capable of detecting, analyzing and reporting information about the internal and external environment of the wearer. Combined with the power of smart devices, the internet of things, and cloud computing these devices communicate with the wearer, employers and facilities. Wearables can contribute to worker safety, increase productivity and may someday be part of a comprehensive work life assessment. The Center for Direct Reading and Sensor Technology has been evaluating how wearables are being adopted in the workplace and developing recommendations for their use.

Center activities have focused on:

- Encouraging employers to recognize the ethical considerations when wearables are used, and the need for protection of personal information and data security (NIOSH has made recommendations to follow an Ethical Framework for Decision Making)
- Define the need and identify how wearable technologies can improve safety and health outcomes
- Describe current and future wearable technologies
- Summarize strategies and applications to turn data into knowledge to improve health and safety

Output from these efforts have included a NIOSH Science Blog [Wearable Technologies for Improved Safety and Health on Construction Sites](#) co-authored with the NIOSH Office of Construction Safety and Health and CPWR – The Center for Construction Research and Training. A presentation in the [Total Worker Health® Webinar series](#), “Where Exposure Meets Sensor Technologies: A Look at the Opportunities and Complexities,” a virtual session at the American Industrial Hygiene Conference and Expo and also Webinars for Occupational Health and Safety News and the NASA Summer Seminar Series.

National Personal Protective Technology Laboratory (NPPTL)

NPPTL has been deeply involved in the Covid-19 response. Please see the Covid-19 Response section for their numerous contributions.

Respiratory Health Division (RHD)

Respirable Crystalline Silica Exposure

A recently published study used OSHA air sampling data to estimate the percentages of workers potentially overexposed to respirable crystalline silica dust. It also assessed proportional mortality rates (PMRs) for silicosis by industry. OSHA air sampling data revealed that approximately 100 000 workers were exposed above the NIOSH REL, and most (79%) worked in the construction industry. Workers in certain industries were exposed at or above 10 times the NIOSH REL, including construction (e.g., poured concrete foundation and structure contractors, commercial and institutional building construction, masonry contractors) and manufacturing (e.g., ready-mix concrete manufacturing, all other nonmetallic mineral product manufacturing, ferrous metal foundries). PMRs were highest for the structural clay product manufacturing (33.2, 95% CI 12.2-72.4) and the foundries industries (24.3, 95% CI 14.6 – 38.0).

Work-Related Asthma

Two reports in CDC’s Morbidity and Mortality Report address important issues in work-related asthma. [Syamlal et al. 2020](#) analyzed data from 2011–2015 to determine the medical expenditures attributed to treatment of asthma and COPD among U.S. workers aged ≥ 18 years who were employed at any time during the survey year. During 2011–2015, 8 million workers had at least one asthma-related medical event and 7 million had at least one COPD-related medical event. The annualized total medical

expenditures, in 2017 dollars, were \$7 billion for asthma and \$5 billion for COPD. Private health insurance paid for 61% of expenditures attributable to treatment of asthma and 59% related to COPD. [Dodd et al. 2020](#) addressed the emerging condition asthma-COPD overlap, in which patients have features of both diseases. During 1999–2016, 18,766 U.S. decedents aged ≥ 25 years had asthma and COPD assigned on their death certificates as the underlying or contributing cause of death. Among adults aged 25–64 years, asthma-COPD overlap mortality was associated with nonworking status among men and women and bartending among women. The association between asthma-COPD overlap mortality and nonworking status suggests that asthma-COPD overlap might be associated with substantial morbidity resulting in loss of employment.

Total Worker Health® (TWH)

Funding Opportunity Announcement for Total Worker Health® Centers of Excellence Publishing Soon

In late August, NIOSH released an [FOA](#) calling for new proposals for Centers of Excellence for TWH. Currently 6 are funded. Both existing and new Center applications are being sought for the FY21-25 funding cycle. Relatedly, the FY21 House budget calls for a \$1.5M increase to TWH funding to create a new TWH center of excellence focused on workplace mental health. Senate mark pending.

TWH Competencies Published for Degree and Certificate Programs in Total Worker Health®

NIOSH and partners released the peer-reviewed publication *Education and Training to Build Capacity in Total Worker Health®: Proposed Competencies for an Emerging Field (JOEM)* in July. This seminal paper explores the need for a transdisciplinary approach to worker safety and health and puts forward an educational framework that includes: a summary of TWH core competencies, identification of priority audiences for education and training, strategies for delivering education and training (e.g. graduate certificates, continuing education and professional degree programs), and practical examples of current, successful programs. Currently there are 6 active certificate and degree programs in TWH around the country underway or under development.

TWH Program Coordinates NIOSH Response to the Opioid and Substance Use Challenges Facing the Nation

A [Federal Register Notice](#) was posted requesting input from stakeholders on a NIOSH plan to develop resources and conduct research on the topic of *Workplace Supported Recovery*. NIOSH received 31 comments total, including input from the National Safety Council, the American Society of Addiction Medicine, and the Utility Workers Union of America, among others. The TWH program will use this feedback to inform the direction of our Workplace Solutions document and the expansion of our web content [Workplace Supported Recovery](#). This project supports the White Task Force on supportive employment with the Office of National Drug Control Policy.

NIOSH published a Science Blog [Cannabis and Work: Implications, Impairment, and the Need for Further Research](#) introduced the concept of viewing impairment through a broader lens, which will be

expanded on further with a NIOSH numbered publication and web content. Dr. Howard and Jamie Osborne have also published a [commentary piece](#) in the American Journal of Industrial Medicine identifying critical areas of research need regarding cannabis consumption and worker safety and health.

Western States Division (WSD)

Cannabis

WSD Staff are evaluating exposures and dermal and respiratory allergic sensitization among cannabis industry workers in Colorado. Building on data collected through recent NIOSH health hazard evaluations (HHEs) at cannabis industry worksites, it represents the first NORA-funded research project in this emerging industry with a fast-growing workforce population. Additionally, WSD and DSR staff on the Center for Motor Vehicle Safety are leading the development of and hosting a webinar scheduled for September 2020 addressing what motor vehicle fleet and health and safety professionals need to know about cannabis and impaired driving.

Alaska Worker Fatality and Injury Surveillance

The Alaska Occupational Injury Surveillance System and workers' compensation claims data was used to estimate the risk of fatalities and nonfatal, work-related injuries among occupations in Alaska, characterize injury patterns, and prioritize future research. The research has resulted in the publication of two manuscripts *Persistent and Emerging Hazards Contributing to Work-Related Fatalities in Alaska* and *Using Workers' Compensation Claims Data to Describe Nonfatal Injuries among Workers in Alaska*.

Social Presence Statistics

NIOSH continues to expand its presence on social networks.

Social Media and Public Outreach Accounts and Services	June 2019	June 2020
Facebook	140,318 likes	151,929 likes
Twitter	@NIOSH account 305,398	@NIOSH account 304,334 *
Instagram	2,975 followers	6,820 followers
YouTube	260 published videos (45 news), 234,000 views in 12 months.	244 published videos (27 new), with 275,000 views in 12 months.

LinkedIn	813 members	1,011 members
Website Views	1,363,629 site views in June 2019	3,778,422 site views in June 2020
eNews Subscribers	CDC transitioned to a new subscription services delivery system in the fall of 2019 and subscriber information is not available	59,022
TWH Newsletter Subscribers	CDC transitioned to a new subscription services delivery system in the fall of 2019 and subscriber information is not available	60,833
Science Blog	<p>Blog entries, 12 months: 54</p> <p>Comments, 12 months: 618</p> <p>Blog site views, 12 months: 386,000</p>	<p>Blog entries, 12 months: 82</p> <p>Comments, 12 months: 658</p> <p>Blog site views, 12 months: 1,800,000</p>

* Twitter is actively deleting inactive accounts

NIOSH Publications

August 2020

NIOSH Topic Page: [Hazard Communication for Disinfectants Used Against Viruses](#)

NIOSH Update: [New Study Illustrates Prevalence of Hearing Loss among Noise-exposed Workers in the Services Sector](#)

NIOSH Update: [Plan Ahead: Seventh Annual Stand Down to Prevent Falls in Construction](#)

July 2020

[Immediately Dangerous to Life or Health \(IDLH\) Value Profile: Ethylene Dibromide \(CAS® No. 106-93-4\)](#)

June 2020

[Fire Fighter Fatality Investigation and Prevention Program \(FFFIPP\)](#)

[NIOSH Center for Motor Vehicle Safety \(CMVS\) Strategic Plan for 2020-2029](#)

May 2020

[Faces of Black Lung II](#) (Video. Revised May 2020)

April 2020

[Assessing the Impact of Safety Climate Constructs on Worker Performance in the Mining Industry](#)

[NIOSH Training for Nurses on Shift Work and Long Work Hours](#) (Revised April 2020)