



# NIOSH Construction Program Update

**G. Scott Earnest, PhD, PE, CSP**

**CDR Elizabeth Garza, MPH, CPH**

**LCDR Melissa Edmondson, MS, CIH, CPH**

NIOSH Office of Construction Safety & Health

17 - 18 November 2020



# COVID-19 and the Response



[https://www.cdc.gov/niosh/emres/2019\\_ncov\\_default.html](https://www.cdc.gov/niosh/emres/2019_ncov_default.html)

**CPWR-NIOSH COVID-19 Webinar Series:  
Mental Health During the COVID-19 Pandemic**

**Thursday, August 27<sup>th</sup>, 2020**

**Welcome:** Chris Trahan Cain, CIH, Executive Director, CPWR

**Moderator:** G. Scott Earnest, Ph.D., P.E., C.S.P., Associate Director for Construction, Office of Construction Safety and Health, NIOSH

**Panelists:**

Douglas Wiegand, PhD, Behavioral Scientist, Division of Field Studies & Engineering, NIOSH

Ann Marie Dale, PhD, OTR/L, Professor, Washington University School of Medicine

Randall Krocka, Administrator, Sheet Metal Occupational Health Institute Trust

**COVID-19 Response:  
Webinars**

**COVID-19 Webinar Series: Contact Tracing—How  
it's done, and how you can help**

- Richard Rinehart, ScD Deputy Director CPWR
- G. Scott Earnest, Ph.D., P.E., C.S.P., Associate Director for Construction, Office of Construction Safety and Health, NIOSH
- CAPT Sara Luckhaupt, MD, MPH, Medical Epidemiologist, NIOSH
- Travis Parsons, MS, Associate Director of OSH, Laborer's Health and Safety Fund of North America



# COVID-19 Response: Webinars

## CPWR-NIOSH COVID-19 Webinar Series

### What We've Learned: Health Risks and Prevention

September 10, 2020



#### Welcome:

G. Scott Earnest, Ph.D., P.E., C.S.P., Associate Director for Construction, Office of Construction Safety and Health, NIOSH

#### Moderator:

Chris Trahan Cain, CIH, Executive Director, CPWR

#### Presenters:

**Eileen Betit**, Director, Research to Practice, CPWR

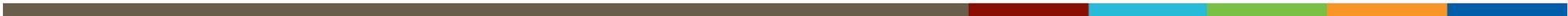
**Rosemary K. Sokas, MD, MOH**, Professor, Department of Human Science, Georgetown University School of Nursing and Health Studies; and Professor, Department of Family Medicine, Georgetown University School of Medicine

**Melissa A. McDiarmid, MD, MPH, DABT**, Medical Director, DVA Depleted Uranium and Toxic Embedded Fragment Surveillance Centers; and Professor of Medicine and Epidemiology & Public Health and Director, Division of Occupational & Environmental Medicine, University of Maryland School of Medicine

## COVID-19 Response: Webinars

- Responding to COVID-19 on the Job Site -- News from the Oregon COVID-19 Joint Construction Safety Task Force (September 24, 2020)
- Mental Health During the COVID-19 Pandemic (August 27, 2020)
- Addressing COVID-19's Health Disparities (July 30, 2020)
- Safety in Action – An Example from the Job Site (July 2, 2020)
- Updates on CDC Guidance (June 17th, 2020)
- Data-Driven Insights on Job Site Activity (June 3rd, 2020)
- COVID-19 and the Construction Industry (April 22nd, 2020)

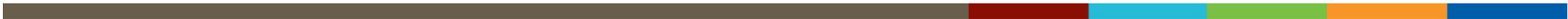
<https://www.cpwr.com/news-and-events/informational-webinar-series/>



## COVID-19 Response: Personnel

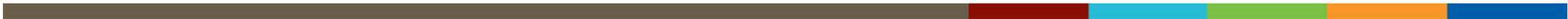


- NIOSH leads and staffs the Worker Safety and Health Team as part of the larger CDC COVID-19 response.
- Over 340 NIOSH staff have participated in the COVID-19 response via field and duty-station assignments through August 31, 2020.
- Greater than 100 staff have field deployed on more than 165 field deployments
- Staff have filled 437 emergency operations team assignments.



# COVID-19 Response: Guidance Documents

- Developed over
  - 30 guidance documents
  - 40 factsheets
  - 15 science blog entries
  - 5 videos, 25 manuscripts
  - 5 tool kits
- Products are published on the web or have been shared with response partners



# COVID-19 Response: Respiratory Protection

## NPPTL Respirator Assessments to Support the COVID-19 Response

Updated September 30, 2020



### International Assessment Results – Not NIOSH-approved

Manufacturer	Model Number/Product Line	International Standard	Filtration Efficiency (%)		Test Report
			Maximum	Minimum	
3M	9502+	GB2626	98.56	98.24	<a href="#">2020-168.1</a> 
Anhui Baishidun Protective Equipment Co., Ltd.	Baishidun FFP2	EN149, GB2626	53.00	46.10	<a href="#">2020-51.1</a> 

# Interagency Personnel Act



- The Interagency Personnel Act or (IPAs) is a vehicle used to increase current NIOSH's capacity to provide technical assistance
- NIOSH currently has agreements with 27 universities and centers and overall have brought on about 40 to 50 people.
- The length of an IPA appointment is set for 1 year with the possibility for renewal.
- Some of the topics that an IPA candidate will help with are:
  - Exposure Assessment
  - Risk/Hazard Evaluation and Mitigation
  - Engineering Controls
  - Epidemiology
  - Personal Protective Equipment
  - Education and Training
  - Guidance Development



# Falls Campaign and Stand-down



# NATIONAL CAMPAIGN TO PREVENT FALLS IN CONSTRUCTION



## **PLAN**

*ahead to get the job done safely.*

## **PROVIDE**

*the right equipment.*

## **TRAIN**

*everyone to use the equipment safely.*

<https://www.cdc.gov/niosh/construction/stopfallscampaign.html>

# National Fall Stand Down Virtual Events

Monday, September 14th, 1:00 p.m. ET (1 hr.)

## 2020 Kickoff: National Safety Stand-Down to Prevent Falls in Construction

**Presenters:**

**Loren Sweatt**, Principal Deputy Assistant Secretary of Labor for Occupational Safety and Health

**Scott Ketcham**, Director, OSHA's Directorate of Construction

**John Howard**, M.D., NIOSH Director

**G. Scott Earnest**, PhD, PE, CSP, NIOSH, Associate Director for Construction, Office of Construction Safety and Health

**Chris Trahan Cain**, Executive Director, CPWR

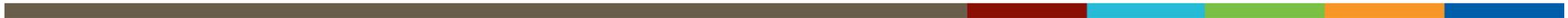


Thursday, September 17th, 2:30 p.m. ET (45 min.)

### Investigating Fall Fatalities and Injury Claims on Prevention Efforts

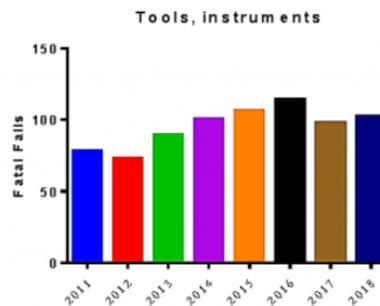
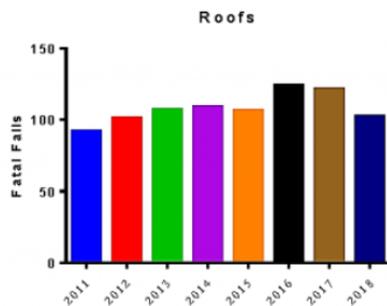
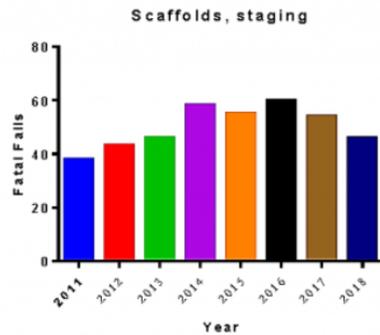
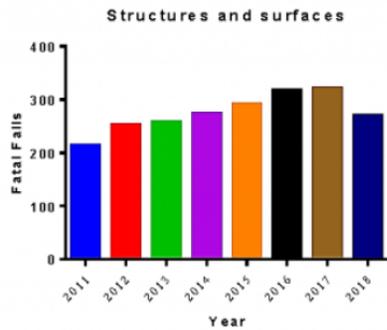
Friday, September 18th, 12:00 p.m. ET (45 min.)

### Investigating Fall Fatalities: Lessons Learned and Tools for Prevention

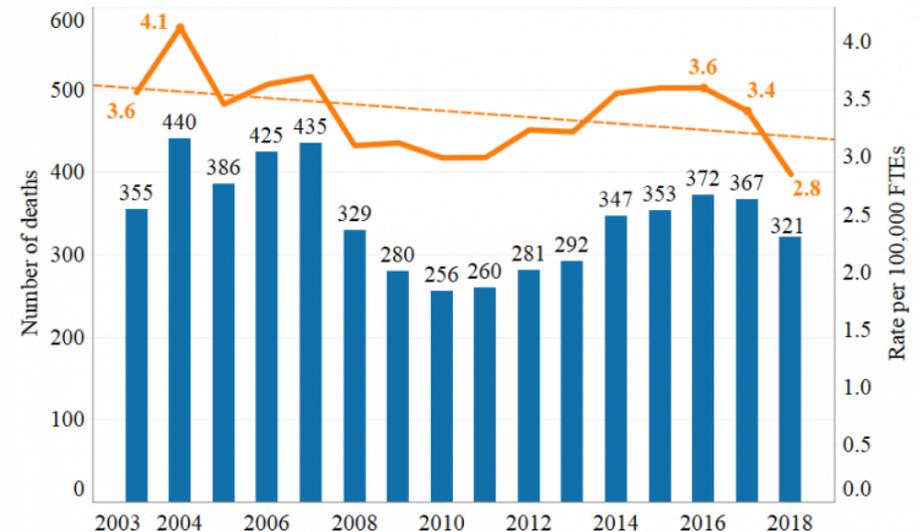


# Stand-Down for Falls in Its 7th Year: Fatal Falls are Falling

Posted on August 10, 2020 by Scott Breloff, PhD; Elizabeth Garza, MPH, CPH; Scott Earnest, PhD, PE, CSP; Alan Echt, DrPH, CIH; Christina Socias-Morales, DrPH; Jeanette Novakovich, PhD



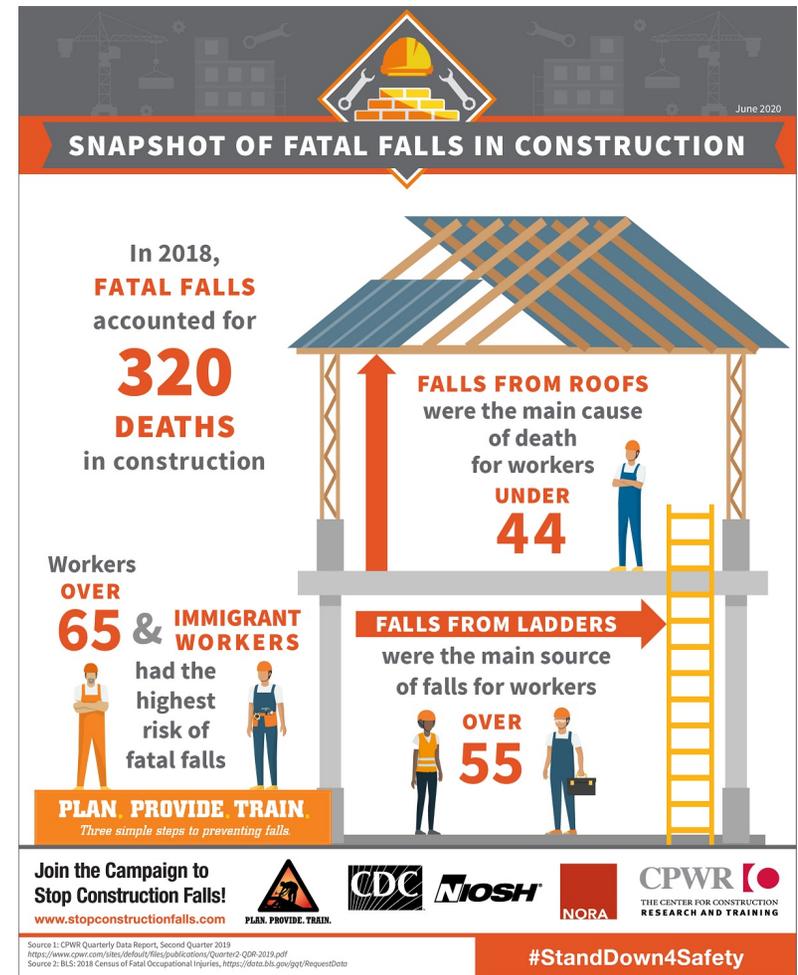
Number and rate of fatal falls to a lower level, construction, 2003-2018



Sources: Fatal injury data: U.S. Bureau of Labor Statistics, 2003-2018 Census of Fatal Occupational Injuries; Employment data: 2003-2018 Current Population Survey. Calculations by the CPWR Data Center.

Falls Blog

# 2020 Falls Infographics



# Future of Work



<https://www.cdc.gov/niosh/topics/future-of-work/default.html>

# CDC/NIOSH Future of Work Initiative Priority Topics



## Issues that Impact Workplace, Work, and Workforce

Emergency and Disaster Preparedness and Response • Exposures and Hazards • Extreme Weather Conditions • Globalization • Industry 4.0 • OSH 4.0 • Policies • Politics • Resources • Social Disruption

### WORKPLACE

<b>ORGANIZATIONAL DESIGN</b>	Autonomy • Burnout and Stress Prevention • Healthy Leadership • Job Flexibility • Leave Systems • Scheduling • Social and Corporate Responsibility • Workplace Built Environment • Workspace • Work-Life Fit
<b>TECHNOLOGICAL JOB DISPLACEMENT</b>	Automation • Digitalization • Job Quantity and Quality • Occupational Polarization • Productivity Enhancement and Quality Improvement through Automated Manufacturing • Stable, New, and Redundant Work
<b>WORK ARRANGEMENTS</b>	Alternative • App-Based • Contingent • Contractual • Direct Hire • Distributed • Free-Lancer • Job Sharing • Non-Standard • On-Call • On-Demand • Part-Time • Platform • Precarious • Seasonal • Single vs. Multi-Employers • Temporary

### WORK

<b>ARTIFICIAL INTELLIGENCE</b>	Deep Learning • Machine Learning • Neural Networks
<b>ROBOTICS</b>	Autonomous, Collaborative, Industrial, Managerial, Service, and Social Robots • Autonomous Vehicles • Human-Machine Interaction • Unmanned Aerial Systems • Wearable Exoskeletons and Exosuits
<b>TECHNOLOGIES</b>	Additive and Smart Manufacturing, and 3D Printing • Advanced, Cloud, and Quantum Computing • Bio-Manufacturing • Bio-Technology • Clean and Green Technologies • Digitalization • Information and Communication Technologies • Internet-of-Things • Nanotechnology and Advanced Materials • Sensors • Sensor Surveillance • Smart Personal Protective Equipment

### WORKFORCE

<b>DEMOGRAPHICS</b>	Diversity and Inclusivity • Multi-Generational • Productive Aging • Vulnerable
<b>ECONOMIC SECURITY</b>	Adequate Wages • Equitable and Commensurate Compensation and Benefits • Minimum Guaranteed Hours
<b>SKILLS</b>	Continual Education, Learning, and Training • Re-Skilling and Up-Skilling

# Potential Scenarios and Hazards in the Work of the Future: A Systematic Review of the Peer-Reviewed and Gray Literatures FREE



Paul A Schulte [✉](#), Jessica M K Streit, Fatima Sheriff, George Delclos, Sarah A Felknor, Sara L Tamers, Sherry Fendinger, James Grosch, Robert Sala

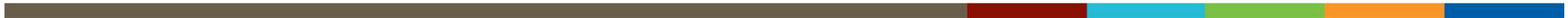
*Annals of Work Exposures and Health*, wxaa051,

<https://doi.org/10.1093/annweh/wxaa051>

**Published:** 28 July 2020 **Arti**

## Envisioning the future of work to safeguard the safety, health, and well-being of the workforce: A perspective from the CDC's National Institute for Occupational Safety and Health

Sara L. Tamers PhD, MPH<sup>1</sup>  | Jessica Streit PhD, MS<sup>2</sup>  | Rene Pana-Cryan PhD<sup>1</sup> | Tapas Ray PhD<sup>2</sup>  | Laura Syron PhD, MPH<sup>3</sup>  | Michael A. Flynn MA<sup>2</sup>  | Dawn Castillo MPH<sup>4</sup> | Gary Roth PhD, MS<sup>2</sup> | Charles Geraci PhD<sup>2</sup> | Rebecca Guerin PhD, MA<sup>2</sup> | Paul Schulte PhD<sup>2</sup>  | Scott Henn MS<sup>2</sup> | Chia-Chia Chang MPH, MBA<sup>1</sup> | Sarah Felknor PhD<sup>2</sup> | John Howard MD, MPH, JD, LLM, MBA<sup>1</sup> 





## Preventing Struck-by Injuries in Construction

Posted on October 1, 2020 by Christina Socias-Morales, DrPH; Scott Earnest, PhD, PE, CSP; CAPT Alan Echt, DrPH, CIH; CDR Elizabeth Garza, MPH, CPH; Scott Breloff, PhD



## Protecting Machine Operators from Silica Dust: Enclosed Cabs

Posted on September 24, 2020 by Scott Earnest, PhD, PE, CSP; Alan Echt, DrPH, CIH; Scott Breloff, PhD; Elizabeth Garza, MPH, CPH; Christina Socias-Morales, DrPH; Jeanette Novakovich, PhD



# NIOSH Science Blog



## Heat Stress in Construction

Posted on May 21, 2020 by CAPT Alan Echt, DrPH, CIH; Scott Earnest, PhD, PE, CSP; CDR Elizabeth Garza, MPH, CPH; and Christina Socias-Morales, DrPH

## Partnering to Prevent Suicide in the Construction Industry – Building Hope and a Road to Recovery

Posted on September 9, 2020 by Trudi McCleery, MPH; Scott Earnest, PhD, PE, CSP; Christina Socias-Morales, DrPH; and CDR Elizabeth Garza, MPH, CPH



## Cannabis and Work: Implications, Impairment, and the Need for Further Research

Posted on June 15, 2020 by John Howard, MD; L. Casey Chosewood, MD; Lore Jackson-Lee, MPH; and Jamie Osborne, MPH, CHES®

# NORA WG: COVID-19 and Construction

**CORONAVIRUS DISEASE 2019**  
(COVID-19)



**Co-Chairs:**

- **Michael Mills**
- **Travis Parsons**

\*If interested in joining, reach out to Liz Garza [egarza@cdc.gov](mailto:egarza@cdc.gov)

**NORA**

# NORA WG: Preventing Falls

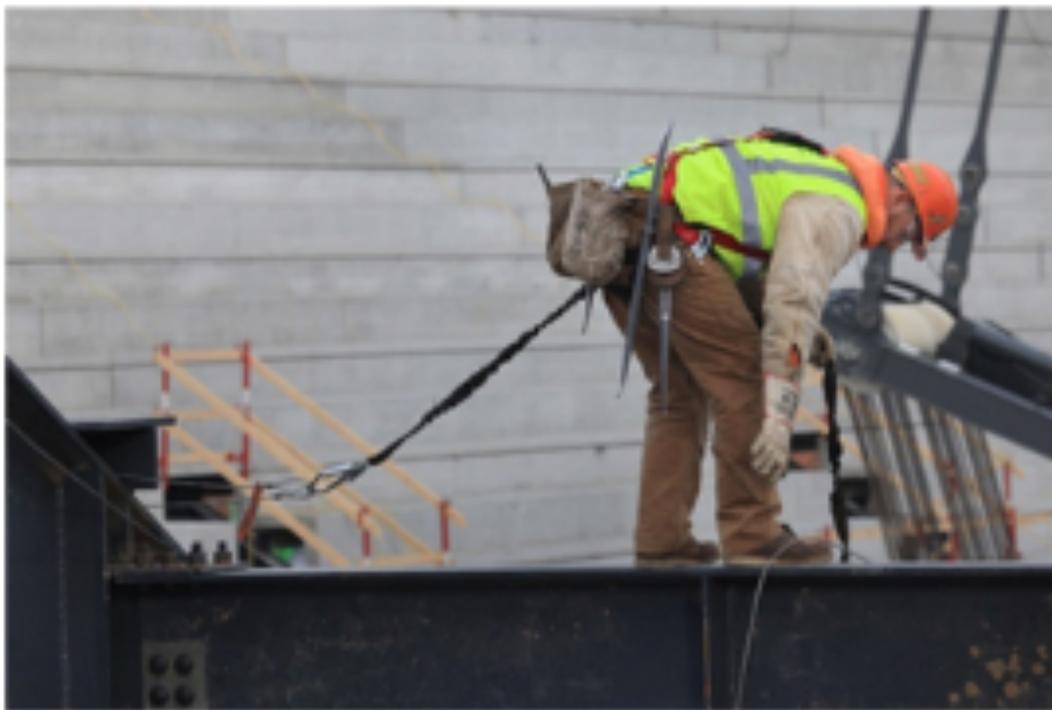


Photo by Turner Construction Earl Dotter

Chair:  
Tom Shanahan

\*If interested in joining, reach out to Liz Garza [egarza@cdc.gov](mailto:egarza@cdc.gov)



# NORA WG: Preventing Struck-By Injuries/Fatalities



Photo by Lane Construction, ARTBA

## Co-chairs

- Michael Mills
- Brad Sant

\*If interested in joining, reach out to Liz Garza [egarza@cdc.gov](mailto:egarza@cdc.gov)

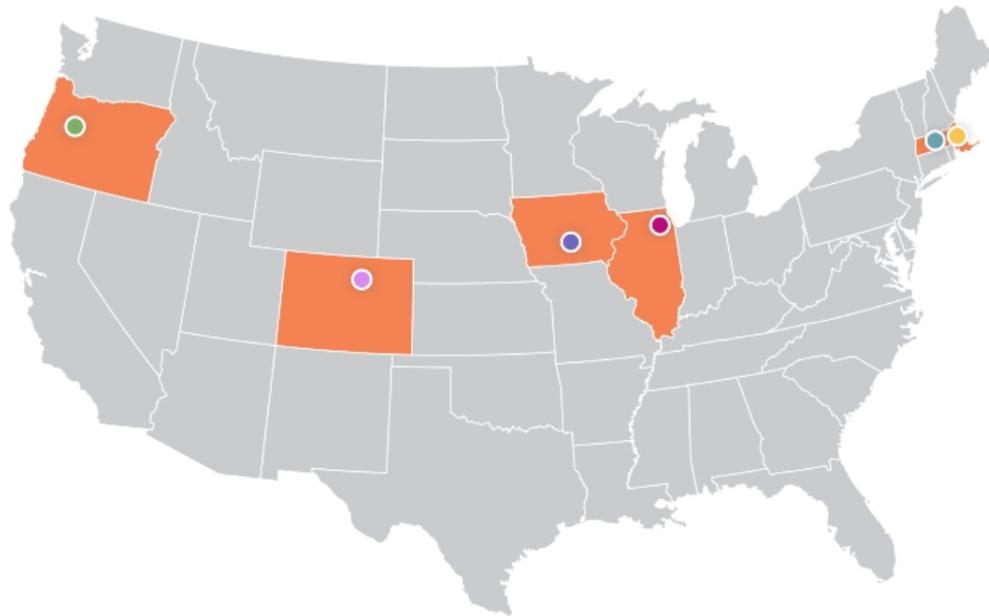
**NORA**

# Total Worker Health: Funding Opportunity



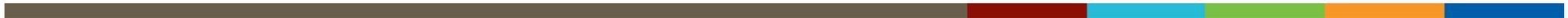
## NIOSH Centers of Excellence for *Total Worker Health*<sup>®</sup>

Centers of Excellence for *Total Worker Health*<sup>®</sup>



### Priority Areas

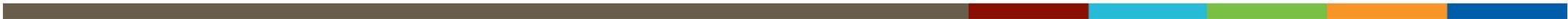
- Opioid and Other Substance Use Disorders in the Workplace
- TWH Outreach, Education, and Training
- Measuring Worker Well-Being
- Future of Work
- Healthy Work Design and Well-Being
- Workplace Mental Health and Worker Well-Being



# New NORA Construction Research Projects



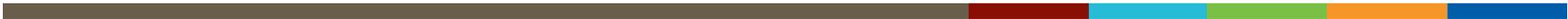
- Begun October 1<sup>st</sup>, 2020
  1. Development of Occupational Safety and Health Questions for a Youth Health Survey
  2. Factors Associated with Opioid Use Among Construction Workers with Back Injuries
  3. Increasing the Impact of NIOSH Heat Stress Products in Outdoor Worker Population
  4. Identification of Hazards and Risk Factors for Demolition Robot Operators
  5. Evaluation of the Department of Navy Voluntary Protection Programs



# New NORA Construction Research Projects



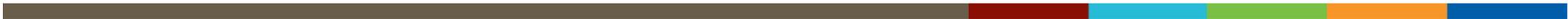
- Begun October 1<sup>st</sup>, 2020
  6. Health risk evaluations of nano-enabled materials in construction
  7. Direct-reading Methods for Measurement of Multicomponent Aerosols in Workplace Atmospheres
  8. Lung Function Screening in Construction Workers exposed to Dusts and Chemicals
  9. Integrating Healthcare and Public Health to Identify and Reduce Work-Related Risk



# New COVID-19 Research Projects (relevant to construction)



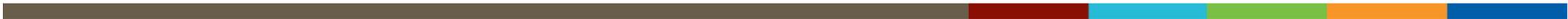
1. Efficacy of face masks for source control of human cough and exhaled breath aerosols
2. Point-of-use Air Purification Systems to Prevent Exposure to Airborne Viruses
3. New Technique to Evaluate Decontamination Methods for Elastomeric Half Masks
4. Fit capability of filtering facepiece respirators without NIOSH certification
5. Using state workers' compensation systems to track and prevent COVID-19



## New COVID-19 Research Projects (relevant to construction)



6. Physiological burden and tolerability of extended respirator use and daily reuse
7. Expanding Real-Time Industry and Occupation Coding for COVID-19 Surveillance
8. Evaluation of Mobile Applications for Digital Contact Tracing
9. Real-Time Surveillance of Suicides Among Workers During the COVID-19 Pandemic
10. Callback survey to collect work-related information from confirmed COVID-19 cases
11. Effects of extended N95 respirator wear on facial thermal burden



# Health Risk Behavior Profile of Construction Workers, 32 States, 2013 to 2016

*Winifred L. Boal, MPH, Jia Li, MS, Xiuwen Sue Dong, DrPH, and Aaron Sussell, PhD*

*JOEM • Volume 62, Number 7, July 2020*

- Research has suggested that several health risk behaviors were more prevalent among construction workers than among the general workforce
- Compared with workers in other industries construction workers
  - Smoking, smokeless tobacco use, binge drinking, no leisure-time physical activity, not always using a seatbelt were significantly more prevalent
  - short sleep significantly less prevalent
- Construction workers may benefit from interventions to reduce these behaviors, particularly since they are also potentially exposed to workplace hazards



# Meetings of Interest



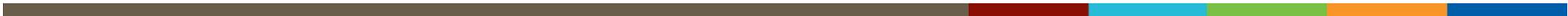
Promoting productive workplaces  
through safety and health research / **NIOSH**<sup>®</sup>

## National Occupational Injury Research Symposium (NOIRS)

NOIRS 2021



The 8th National Occupational Injury Research Symposium is planned for October 19-21, 2021 in Morgantown, West Virginia. Please check back for updates as planning efforts for NOIRS 2021 progresses.



# Questions?

**Scott Earnest, PhD, PE, CSP**  
**513-841-4539**

**GEarnest@cdc.gov**



**CDR Elizabeth Garza, MPH, CPH**  
**202-245-0668**

**EGarza@cdc.gov**

**LCDR Melissa Edmondson**  
**513-533-8248**

**MEdmondson@cdc.gov**

**<https://www.cdc.gov/niosh/construction/>**

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

