



eNews: Volume 22, Number 2 (June 2024)

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Volume 22, Number 2 (June 2024)

From the Director's Desk

John Howard, M.D., Director, NIOSH

Illuminating Science in the Shadows: Short Wavelength UV Light Can Kill Germs

As we transition from spring to summer, we should be mindful that overexposure to the sun's ultraviolet (UV) rays can pose health problems. There are three main types of UV rays. UVA rays are responsible for sunburns, blistering, and aging skin, while UVB rays cause most types of skin cancer. But what most people do not know is that the sun also releases UVC rays.

UVC rays are generally not an exposure concern because the earth's atmosphere totally absorbs them. And while all types of UV rays can kill germs, UVC rays provide the most germicidal effect. They can also be produced by special lamps. This technology is called germicidal ultraviolet (GUV) or ultraviolet germicidal irradiation.

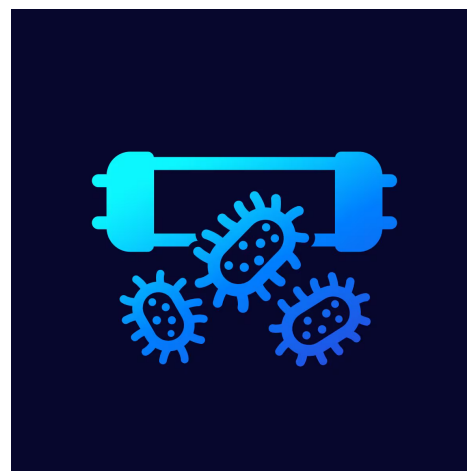


Photo by ©Getty Images

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GUV air treatment dates back decades. Historically, the technology helped to control measles and tuberculosis (TB), two infections spread through the air. However, interest in its use faded with the development of effective antibiotics and vaccines. Limited availability of UV lamps and concern about eye and skin toxicity from inadvertent overexposure also curtailed interest. However, when TB cases in the United States reemerged in the 1980s, so did interest in GUV.

Since 1990, CDC has recommended GUV air treatment to aid building ventilation systems in reducing germs in the air. In 2009, NIOSH published [Environmental Control for Tuberculosis: Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings](#) . This report became the design standard for safe, effective GUV systems in the United States and other parts of the world.

Having more GUV systems in workplaces before the COVID-19 pandemic could have better protected indoor workers from disease transmission. During the pandemic, NIOSH engineers wrote CDC guidance for [Ventilation in Buildings](#). One key recommendation is to have at least 5 air changes per hour of clean air supplied to occupied spaces. This guidance also notes traditional GUV as an effective, energy-efficient way to help meet that recommendation and reduce airborne germs in occupied spaces. As we prepare for possible future respiratory disease outbreaks, employers should consider using these traditional GUV systems.

NIOSH scientists are working with researchers from across the federal government and private sector on GUV research. Currently, they are developing improved GUV installation guidance and validation methods for system performance.

In addition, NIOSH researchers are investigating emerging “far UV” systems. Far UV systems use newer lamps that produce energy safer for human exposure while also killing germs. Unfortunately, these new systems produce ozone at higher levels than traditional GUV systems, which can be harmful. While far UV is promising, we need more research to better understand its effectiveness and safe use. This ongoing GUV research at NIOSH will help inform future ventilation guidance to protect workers from airborne germs.

Research Rounds

Creating Shared Perspectives for Worker Well-being: A Community Health-focused Certificate in *Total Worker Health*[®]

Study authors: Camie Schaefer, PhD, Utah Center for Promotion of Work Equity Research; and Emily Ahonen, PhD, University of Utah

Certificate in Total Worker Health[®]

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Why is this [study](#) important?

To improve worker well-being, it is essential to understand how knowledge gaps may deter professionals otherwise interested in workplace safety, health, and well-being. Collaboration between safety and health professionals in occupational settings and community health professionals in nonoccupational settings can benefit everyone. These collaborations can also advance *Total Worker Health*® approaches by reaching across disciplines or environments.

However, community health professionals can face barriers to benefiting from free occupational safety and health resources due to differing language or jargon. To that end, we created an accessible resource to support collaboration between different groups interested in worker health.


How did you do the study?

We assessed the needs and priorities of community health professionals in nonoccupational settings and compared the results with existing core competencies in *Total Worker Health* certificate programs. This allowed us to determine learning objectives for the certificate. Next, we developed content based on a faculty-student mentoring program.

What did you find?

We developed a free six-module training program. It aims to prepare community health professionals to work with occupational safety and health professionals. The first module sets the stage for recognizing work as a social determinant of health. This approach gives users a starting point from which to collaborate across disciplines.

What are the next steps?

The certificate will be available in the fall of 2024 through [Professional Education](#)  at the University of Utah. Occupational and community health professionals will receive course content for the certificate through virtual and local presentations. Planned future outreach will focus on worker associations and unions as well as undergraduate- and graduate-level programs interested in *Total Worker Health*.

NIOSH eNews is Brought to You By:

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[What's this?](#)

Literature Review on Safety Perception and Trust During Human–robot Interaction With Autonomous Mobile Robots That Apply to Industrial Environments

NIOSH study authors: Justin M. Haney and Ci-Jyun Liang

Why is this [study](#) important?

Rapid advances in artificial intelligence have led to more autonomous, or self-directed, mobile robots in the workplace, especially in manufacturing and warehousing. The benefits are clear: robots can perform dangerous or repetitive tasks for human workers. As well as benefits, potential risks may arise as human-robot interactions increase in the [workplace](#).

Understanding current research into these interactions and identifying future needs can help ensure safety and trust among workers around robots.

How did you do the study?

We reviewed studies published before August 2022 on the use of autonomous mobile robots in industrial workplaces. We identified 50 studies that met our requirements for research on safety and trust among workers who interact with these robots.


What did you find?

Only 20% of the studies used questionnaires to directly evaluate perceived safety, and 14% used them to evaluate trust. However, 44% of the studies evaluated perception of robot traits, and 32% evaluated comfort level. Factors such as robot appearance and approach speed and direction greatly affected how safe workers felt during interactions. Projecting signals on the floor and employing haptic, or tactile, communication devices improved the predictability and overall safety of robot navigation.

We found a lack of field experiments and limited research involving multiple autonomous mobile robots. We also noted few experiments using industrial mobile robots interacting with human participants.

Highlights

What are the next steps?

Future studies should include demographic information, including worker age and experience with robots in the workplace. Another important area for future studies is field experiments in actual workplaces where workers interact with different types of robots. **Employer and Worker Resource for Hurricane Season** highlights recommendations for responding to specific hazards associated with hurricanes, storms, and floods. It is available in [multiple languages](#) for employers, emergency response and recovery workers, and volunteers. Another important area for future studies is field experiments in actual workplaces where workers interact with different types of robots. NIOSH offers a [hurricane key messages](#)  document that June 1 is the start of the Atlantic Hurricane Season.

The New NIOSH@CDC.Gov Is Live!

NIOSH is thrilled to announce the new [NIOSH @ CDC.gov](https://www.niosh.gov) is live! The new site is a direct result of a CDC -wide effort to modernize and transform digital communication at CDC. We streamlined our previous web content by more than 65%, updated navigation, and designed a new look and feel. We are excited to share the new CDC.gov with you and hope you find it enriching to your work. Please contact [Tanya Headley](#) at NIOSH or the [CDC Office of Communications](#) if you have any feedback or questions.



Join our team!



Deadline Extended: Associate Director for Mining Program Position

The application deadline has been extended to June 21 for the NIOSH Associate Director for Mining position. The position is responsible for managing, directing, coordinating, overseeing, and evaluating all activities of the Institute's mining programs. This position is in the Excepted Service under Title 42. Applicants may reside in Washington, DC; Morgantown, West Virginia; Atlanta, Georgia; Cincinnati, Ohio; Pittsburgh, Pennsylvania; Denver, Colorado; or Spokane, Washington. The duty location will be determined upon selection. Read the [full announcement](#) to learn more about the position and how to apply.

NIOSH Congratulates the Chemical Methods Research Team for AIHA Award

The NIOSH Chemical Methods Research team in Cincinnati was recently recognized by the American Industrial Hygiene Association (AIHA). Their lab has been accredited in the industrial hygiene laboratory accreditation program for 50 years! Team members include Christine Toennis, Ronnee Andrews, Jennifer Roberts, Dawn Farwick, Angela Stastny, Robert Streicher, and Pramod Kulkarni. The team is one of only ten laboratories to have ever receive this recognition.

NIOSH & Mine Safety and Health Administration Sign New Partnership Agreement

NIOSH and the Mine Safety and Health Administration will jointly explore the health and safety hazards of using lithium-ion (li-ion) batteries in the underground mining industry. They aim to develop guidance and best practices for the mitigation of fires, explosions, and battery thermal runaway hazards. For more information about this partnership or NIOSH's [li-ion battery research efforts](#), contact [Thomas Dubaniewicz](#).

In Memoriam: Roland Berry Ann

It is with profound sadness that we announce the passing of Roland John Berry Ann, Jr., on May 15. Roland was a



proud civil servant, devoting 38 years as a federal employee and having a distinguished career with NIOSH. His contributions were many. He served as the Deputy Director of the NIOSH Personal Protective Technology Laboratory. He also became a hero to more than just his children when he was part of NIOSH's response team at Ground Zero following the tragic events of September 11, 2001. His efforts during this critical time exemplified his courage and deep sense of duty. Read more in the [Dominion Post Obituary](#) [↗](#).

Monthly Features

Meetings and Events

View more occupational safety and health-related [conferences, meetings, webinars, and events](#) hosted by NIOSH and partners.

Communication Products

Fire Fighter Fatality Investigation and Prevention Program Reports

- [Firefighter Killed by the Collapse of the Porch Roof at a Residential Structure Fire—Pennsylvania](#)
- [Lieutenant and Police Officer Struck and Killed at an Interstate Crash Scene, Firefighter Injured and Dies 34 Months Later—Texas](#)

PPE Case Notes

- [Common Site Audit Nonconformance: Lack of Internal Audit Procedures and Documentation](#)

Report

- [NIOSH Healthcare Personal Protective Technology Targets for 2020 to 2030](#)
-

Science Blog

[Sign up](#) to receive updates about new NIOSH Science Blogs delivered directly to your inbox! Here are the blogs from last month:

- [The Problem of Falls From Elevation in Construction and Prevention Resources](#)
 - [The Nanotechnology Research Center Carbon Nanotube Registry](#)
 - [Tackling Mental Health Challenges in the Public Safety Sector: Implementing and Evaluating Mental Health Programs](#)
 - [The Role of Work Arrangements in the Future of Work](#)
 - [Prioritizing our Healthcare Workers: The Importance of Addressing the Intersection of Workplace Violence and Mental Health and Wellbeing](#)
-

NORA

Ag, Forestry, Fishing Sector Council Announces In-Person Spring Meeting

The [NORA Agriculture, Forestry, and Fishing Sector Council](#) will meet on June 20, 8–10 a.m.PST., at the Oregon Health & Science University in Portland. The meeting will feature an interactive brainstorming session on the future of occupational safety and health research and training for the sector. Anyone is welcome to attend. Email nioshagff@cdc.gov to register.

Public Safety Sector Council Announces New Leadership Members

The NORA Public Safety Sector Council welcomes Sean DeCrane, Director of Health and Safety Operational Services for the International Association of Fire Fighters, as the new Council Co-Chair. With more than 25 years of fire service experience, Chief DeCrane's expertise will provide immense value to the leadership team and Council. In addition, the Council welcomes LCDR Sarah Hughes as a NIOSH Program Assistant Coordinator. LCDR Hughes is an Environmental Health Officer at NIOSH with 15 years of experience in the corrections field. The Council is excited to welcome these new leadership members and looks forward to their contributions.

News from Our Partners

CDC Web Tools Provide Local Mental Health Data

This Mental Health Awareness Month, fuel your state or local efforts with data to advance mental health for the community you serve. To help achieve that goal, CDC offers three web tools. These tools can support state and local public health officials in understanding and addressing mental health at the state and local level.

- The [Chronic Disease Indicators tool](#) provides national and state-level data on five mental health measures. These include poor mental health among high school students and frequent mental distress among adults. Breakdowns by sex, age, and race/ethnicity are available for most measures.
- [PLACES: Local Data for Better Health](#) offers local estimates for depression among adults and the prevalence of "not good" mental health days in the past month. It covers counties, places, ZIP code areas, and census tracts nationwide.
- The [Behavioral Risk Factor Surveillance System](#) provides data on depression, frequent mental distress and other mental health measures. It also has the ability to easily cross-reference with other health, demographic, and social factors.

OSHA's Beat the Heat Photo Contest Is Open!

In response to the success of last year's contest, OSHA is excited to announce their [new Beat the Heat](#) contest is now open! This year, OSHA is sponsoring a photo contest to showcase effective heat safety in action and encourage workplaces to adopt similar practices.

Methylene Chloride Risk Management Rule

The U.S. Environmental Protection Agency is holding a [webinar](#) on June 4 at 1 p.m. (EDT). The topic will be on its final methylene chloride risk management rule, recently issued under the Toxic Substances Control Act. This webinar will provide an overview of the final regulatory action, the landmark worker protections the rule establishes, and the timeframe for implementation. Read this April 30 [press release](#) to learn more.

Georgia Mental Health Alliance for Workers













The Georgia Department of Health, along with OSHA Atlanta-West Area Office and other partners, has formed the [Georgia Mental Health Alliance](#). They aim to address exposure to mental health hazards, work-related suicide, and drug overdose issues. During May, the Alliance encouraged employers to join the *Nurture the Mental Health of Georgia Workers* [Safety Stand Down](#). The event focused on the importance of workers caring for their mental health.

Study of Infection Control and Practice Behaviors Among Firefighters in Rural Kentucky

A new [study](#) assesses rural Kentucky firefighters' knowledge and practices in infection control. Surveyors from the Western Kentucky University Training Project Grant asked 444 career and volunteer firefighters about their biological


agent exposures. Results suggest the need for strategies to improve training for personal protective equipment use and infection control policies.

Updates From State Fatality Assessment and Control Evaluation (FACE) Programs


- **Construction Falls:** This [Hazard Alert](#)   from the Oregon FACE program provides fatal injury data, case studies, and prevention recommendations and resources to prevent falls from heights.
- **Workers Killed in Falls From Ladders:** The [Hazard Alert](#)   from the Kentucky FACE program provides fatal injury data, case studies, and prevention recommendations and resources to prevent falls while using ladders.
- **Inexperienced Framer Falls 22 Feet From Upper Floor:** The [Fatality Narrative](#)   from the Washington FACE program involves a 30-year-old framer who fell 22 feet. On the job for just 3 days, he fell from a single-family house under construction. To help prevent similar occurrences, the narrative provides recommendations and requirements. The report can also be viewed as a [slideshow](#)   , in [Spanish](#)   , and in Spanish as a [slideshow](#)   .

Federal Register Notice

Meeting of the Advisory Board on Radiation and Worker Health, Subcommittee for Dose Reconstruction Review, National Institute for Occupational Safety and Health

The [notice](#)  was posted on April 15. The meeting will be held on June 4.

Meeting of the Advisory Board on Radiation and Worker Health, National Institute for Occupational Safety and Health

The [notice](#)  was posted on April 15. Comments must be received by June 19. The meeting will be held on June 26.

Proposed Data Collection Submitted for Public Comment and Recommendations: Direct Reading Methodologies, Sensors, and Robotics Technology Assessment in Lab/Simulator-based Settings

The [notice](#)  was posted on April 23. Comments must be received by June 24.


Proposed Data Collection Submitted for Public Comment and Recommendations: Assessing Sexual and Gender Minority (SGM) Occupational Well-being From The PRIDE Study

The [notice](#)  was posted on May 7. Comments must be received by July 8.

Meeting of the Advisory Board on Radiation and Worker Health (ABRWH), Subcommittee for Procedure Reviews, National Institute for Occupational Safety and Health (NIOSH)

The [notice](#)  was posted on May 17. Comments must be received by July 21. The meeting will be held on July 30.

National Institute for Occupational Safety and Health; Human Factors Considerations for the Fire Fighter Fatality Investigation and Prevention Program

The [notice](#)  was posted on May 21. Comments must be received by July 22.

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Last Reviewed: May 30, 2024

Source: [National Institute for Occupational Safety and Health \(NIOSH\)](#)