

July 2022

Issue 130

Army Industrial Hygiene News and Regulatory Summary

Hazardous Substances

Special Interest Articles:

- [Ultraviolet Wands](#)
- [Sound Absorbers](#)
- [Glyphosate](#)
- [Blue Light](#)
- [Heat Legislation](#)

Team Creates First Ever VX Neurotoxin Detector

City College of New York associate professor of physics Ronald Koder and his team at the Koder Lab are advancing the field of molecular detection by developing the first proteins that can detect a deadly nerve agent called VX in real-time and without false positives from insecticides.

VX is classified as a neurotoxin and an incredibly deadly chemical warfare agent that has been used in assassinations by some nations. It can cause permanent brain damage in those who survive exposure.



These potentially life-saving findings are published in the July 2022 edition of Science Advances, with lab member Jim McCann serving as the paper's primary author. It outlines the design of two proteins that detect the neurotoxin by changing their shape in the presence of VX.

Read more: <https://phys.org/news/2022-07-team-vx-neurotoxin-detector.html>

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EPA Announces New PFAS Health Advisory Levels, Releases Additional Funding for PFAS Remediation



The Biden Administration has made PFAS reduction a cornerstone of its environmental policy and with that goal in mind, the Environmental Protection Agency on June 15 announced new, lower Health Advisory Levels for four PFAS chemicals under its Safe Drinking Water Act (SDWA) authority. The Health Advisory Levels are non-regulatory and non-enforceable, and in the case of

PFOA and PFOS interim in nature, but PFAS levels above these thresholds are now considered to be potentially harmful to human health, and they can be used in the development of drinking water regulations, influence state and local regulations, and certainly will shape public debate around the safety of these chemicals.

Read more:

<https://www.natlawreview.com/article/epa-announces-new-pfas-health-advisory-levels-releases-additional-funding-pfas>

Brass, Woodwind Instruments Emit Respiratory Particles, Study Finds



Just like coughing, sneezing, talking and singing, playing wind instruments - particularly those in the brass section -- can spread respiratory particles that may carry the COVID-19 virus, according to a



Colorado State University study.

Early in the pandemic, CSU engineers led by Professor John Volckens teamed up with musicians and performers to try and quantify respiratory particle emissions from various activities like singing and music-playing. They were

seeking to provide insight into just how much performance arts could spread COVID-19 and to inform safety measures moving forward.

Read more:

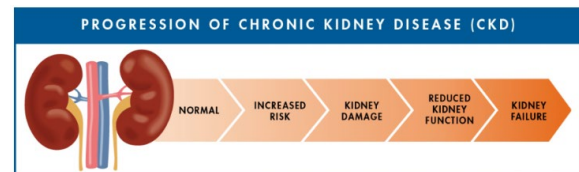
<https://www.sciencedaily.com/releases/2022/07/220715142135.htm>

Long-Term Exposure to Air Pollution Associated With CKD

A population-based cohort study found that carbon monoxide and sulfur dioxide exposure was associated with chronic kidney disease (CKD).

A study published in *Ecotoxicology and Environmental Safety* found that ambient air pollution, specifically carbon monoxide (CO) and sulfate dioxide (SO₂), were associated with chronic kidney disease (CKD) in Southwest China, where air pollution is more concentrated.

The researchers used the China Multi-Ethnic Cohort (CMEC) study for participants of this study. There were 80,225 participants for this study aged 30 to 79 years and were collected from 5 provinces from May 2018 to September 2019. Face-to-face interviews were conducted to collect baseline data based on an electronic questionnaire.

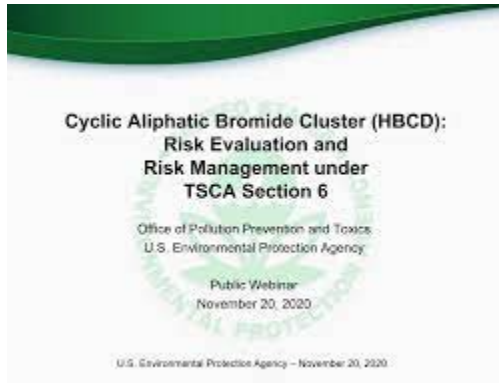


Participants were excluded if they didn't have a recorded residential address, were at their residential address for less than 3 years, didn't have serum creatinine data, or had missing information on covariates. Fasting blood was collected from all participants and air pollution data was collected from the ChinaHighAirPollutants Data set.

Read more:

<https://www.ajmc.com/view/long-term-exposure-to-air-pollution-associated-with-ckd>

Final Revision to HBCD Risk Determination Finds HBCD, as a Whole Chemical Substance, Presents an Unreasonable Risk



The U.S. Environmental Protection Agency (EPA) announced on June 29, 2022, the availability of the final revision to the risk determination for the cyclic aliphatic bromide cluster (HBCD) risk evaluation issued under the Toxic Substances Control

Act (TSCA). 87 Fed. Reg. 38747. The revision reflects EPA policy changes intended to ensure the public is protected from unreasonable risks from chemicals in a way that is supported by science and the law. EPA states that it determined that “HBCD, as a whole chemical substance, presents an unreasonable risk of injury to health and the environment when evaluated under its conditions of use

Read more:

<https://www.natlawreview.com/article/final-revision-to-hbcd-risk-determination-finds-hbcd-whole-chemical-substance>

Framework to Study Ozone Levels on Realistic Indoor Surfaces

A Penn State-led research collaboration set out to improve the understanding of indoor ozone concentrations by modeling how the pollutant interacts with common indoor surfaces.

Ground-level ozone, the pollutant in smog that adversely affects respiratory and circulatory health, isn't limited to the outdoors. The Environmental Protection Agency reports that indoor ozone concentrations can be as high as 80% of outdoor levels, but determining how bad indoor levels are is difficult.



Existing models that predict how ozone transfers from the air to indoor surfaces are primarily applied for ideal smooth surfaces. Information on this dynamic for irregular indoor surfaces, such as carpet, is limited. Donghyun Rim, associate professor of architectural engineering, and his team developed a new modeling framework to

study ozone transfer based on realistic indoor surfaces and airflow conditions.

Read more: <https://phys.org/news/2022-07-framework-ozone-realistic-indoor-surfaces.html>

Adsorbent Material Filters Toxic Chromium, Arsenic from Water Supplies



Researchers at the Department of Energy's Oak Ridge National Laboratory are tackling a global water challenge with a unique material designed to target not one, but

two toxic, heavy metal pollutants for simultaneous removal.

ORNL's Santa Jansone-Popova of the Chemical Sciences Division, and Ping Li, now at Elementis Global, have discovered an adsorbent with high selectivity for chromium and arsenic in real conditions where water resources contain many chemically similar elements.

Read more: <https://phys.org/news/2022-07-adsorbent-material-filters-toxic-chromium.html>

Radiation

FDA Warns of Unsafe Radiation Given Off by Some Ultraviolet Wands

Some ultraviolet wands marketed as being effective against germs could expose their users to dangerous levels of radiation, causing injuries to their skin and eyes, the U.S. Food and Drug Administration has warned.

In a news release issued on Thursday, the FDA advised against using certain brands and models of UV wands, recommending that people seek safer alternatives for home disinfection.



Read more: <https://pix11.com/news/us-world-news/fda-warns-of-unsafe-radiation-given-off-by-some-ultraviolet-wands/>

Ventilation

NIST's Indoor CO2 Tool Can Help Assess Ventilation and Indoor Air Quality



A key ingredient for good indoor air quality is good ventilation. One simple method that can be used to determine if a space is well ventilated is to measure indoor carbon dioxide (CO2) levels.

This greenhouse gas drifts through more than just our skies. CO2 can be found in the buildings where we live, work and shop too, as it is part of the air we breathe out. Good ventilation will keep the concentrations of CO2 and an array of contaminants low. Poor ventilation will allow them to accumulate.

How do you know which category your ventilation fits into?

A new online tool developed by researchers at the National Institute of Standards and Technology (NIST) offers answers. The free tool calculates target CO2 levels based on the user's desired ventilation rate and information about a building and its occupants. In many buildings, ventilation is often misunderstood or infrequently assessed, but with NIST's new resource, building professionals can use CO2 readings to routinely check ventilation, detecting potentially unfavorable conditions that could lead to the buildup of harmful contaminants.

Read more: <https://www.nist.gov/news-events/news/2022/07/nists-indoor-co2-tool-can-help-assess-ventilation-and-indoor-air-quality>

PPE

Face Shields No Match for COVID Spread

Clear shields that cover in front of the face have been a fairly frequent sight since the COVID-19 pandemic began.

They're worn with or without a mask on the nose and mouth.

Though these face shields do offer some protection, none of 13 styles studied offered high protection against potentially infectious droplets, according to researchers from the University of East Anglia (UEA), in the United Kingdom.

"Face shields have been popular because they don't hinder breathing, they allow more natural communication than face masks and they provide splash protection,"



said Paul Hunter, a COVID expert and professor at UEA's Norwich Medical School.

Read more:
<https://consumer.healthday.com/b-7-28-2657724902.html>

Noise

Banned Pesticides Still Present in the Environment Linked to Hearing Loss

Banned pesticides still persistent in the environment pose an increased risk of hearing impairment for U.S. adults, according to research published this month

in Scientific Reports. Although regular use of DDT and hexachlorobenzene (HCB) no longer occurs in the United States, exposure to these persistent chemicals can still occur

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through a range of sources, including air, water, sediment, soil and food. As new science continues to find harmful health

effects of older pesticides, advocates say new laws are needed to ensure long term hazards don't arise from the more than 1,200 active ingredients currently registered by the US Environmental Protection Agency (EPA) with little to no independent scientific oversight.

Read more:

<https://beyondpesticides.org/dailynewsblog/2022/07/banned-pesticides-linked-to-hearing-loss-still-present-in-the-environment/>

Creating Eco-Friendly Sound Absorbers from Seaweed

From airplanes to apartments, most spaces are now designed with sound-absorbing materials that help dampen the droning, echoing and murmuring sounds of everyday life. But most of the acoustic materials that can cancel out human voices, traffic and music are made from plastic foams that aren't easily recycled or degraded. Now, researchers reporting in ACS Sustainable Chemistry & Engineering have created a biodegradable seaweed-derived film that effectively absorbs sounds in this range.



Read more: <https://phys.org/news/2022-07-eco-friendly-absorbers-seaweed.html>

Preventive Medicine

**COVID Shield: First-Of-Its-Kind Sprayable Coating to Protect Surfaces
from Viruses, Bacteria**



A first-of-its-kind sprayable coating that can prevent the surface spread of infection from bacteria and viruses, including COVID-19, over a sustained period has been developed by a team of Australian researchers.

Described in the journal *Advanced Science*, the spray works two ways: repelling viruses and bacteria through an air-filled barrier, and killing pathogens through microscopic materials if the layer becomes damaged or submerged for extended periods.

The spray uses a combination of plastics strong enough to be considered an alternative to bullet-proof glass.

Read more:

<https://medicalxpress.com/news/2022-07-covid-shield-first-of-its-kind-sprayable-coating.html>

**Widely Used Hospital Gowns Show Signs of Exposing Workers to
Infection**

Disposable gowns designed to deflect the splatter of bodily fluids, used in thousands of U.S. hospitals, have underperformed in recent and ongoing laboratory tests and may fall short of safety standards, leaving health care workers with a greater risk of infection than advertised.

A peer-reviewed academic study, published to little notice amid the coronavirus



pandemic, found that isolation gowns commonly worn in medical units or intensive care units ripped too easily and allowed about four to 14 times the expected amount of liquid to seep through when sprayed or splashed.

Read more: <https://www.news-medical.net/news/20220706/Widely-used-hospital-gowns-show-signs-of-exposing-workers-to-infection.aspx>

New Report Calls for Expanded PFAS Testing for People with History of Elevated Exposure, Offers Advice for Clinical Treatment



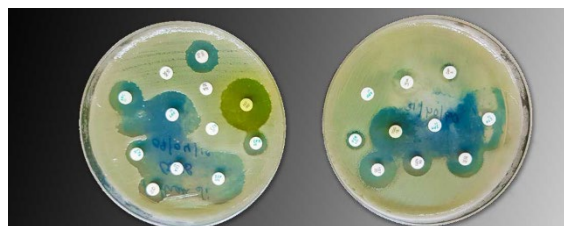
Testing for exposure to perfluoroalkyl and polyfluoroalkyl substances, also known as PFAS, should be offered to patients who are likely to have a history of elevated exposure — such as those exposed to PFAS through their work or who live in areas with known PFAS contamination, says a new report from the National Academies of Sciences, Engineering, and Medicine. The report finds evidence of association between PFAS exposure and increased risk of decreased antibody response, dyslipidemia

(abnormally high cholesterol), decreased infant and fetal growth, and increased risk of kidney cancer. Intended to inform CDC clinical guidance, the report says if testing reveals PFAS levels associated with an increased risk of adverse effects, patients should receive regular screenings and monitoring for these and other health impacts.

Read more: <https://www.nationalacademies.org/news/2022/07/new-report-calls-for-expanded-pfas-testing-for-people-with-history-of-elevated-exposure-offers-advice-for-clinical-treatment>

Viruses Help Combat Antibiotic-Resistant Bacteria

The World Health Organization (WHO) regards multi-resistant germs as among the largest threats to health. In the European Union alone, 33,000 people die each year as the result of bacterial infections which cannot be treated with antibiotics. Alternative treatments or drugs are therefore urgently needed.



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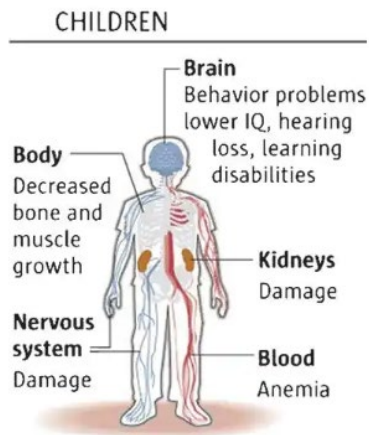
Bacteriophages, the natural enemies of bacteria, are one promising solution. There are millions of different types of these viruses on earth, each of which specializes in certain bacteria. In nature, the viruses use the bacteria to reproduce; they insert their DNA into the bacteria, where the viruses quickly multiply. Ultimately they kill

off the cell and move on to infect new cells. Bacteriophages work as a specific antibiotic by attacking and destroying a particular type of bacterium.

Read more:

<https://www.eurekalert.org/news-releases/960229>

Are Effects of Lead Poisoning 'Reversible' With Early Enrichment? Animal Study



New research shows that the majority of gene changes in the brain caused by lead can be reversed by raising animals in stimulating environments.

Lead exposure in early childhood can lead to severe cognitive and behavioral impairments in children that last well into adolescence and adulthood. Although researchers have looked at effects of early life lead exposure on a small number of genes involved in learning, memory, and brain development, research was lacking as to the full extent of the toxicity. New research from Thomas Jefferson University shows that over 3,500 genes in the hippocampus, a part of the brain involved in learning and memory are affected by lead poisoning.

Read more:

<https://www.sciencedaily.com/releases/2022/07/220725105614.htm>

WHO Director Declares Monkeypox A Public Health Emergency

Over the weekend, Director-General of the World Health Organization (WHO) Tedros Adhanom Ghebreyesus, PhD, said the ongoing international monkeypox outbreak was a public health emergency of international concern (PHEIC) after a



meeting of advisors failed to reach a consensus on the matter.

"We have an outbreak that has spread around the world rapidly, through new modes of transmission, about which we understand too little, and which meets the criteria in the International Health Regulations," Tedros said in statement. "WHO's assessment is that the risk of monkeypox is moderate globally and in all

regions, except in the European region where we assess the risk as high. There is also a clear risk of further international spread."

Read more:

<https://www.cidrap.umn.edu/news-perspective/2022/07/who-director-declares-monkeypox-public-health-emergency>

Exposure to Racism Linked to Brain Changes that May Affect Health



Experiencing racism can impact both physical and mental health, and with this in mind, researchers from Emory University in Atlanta wanted to find out how this form of discrimination impacts the brain's microstructures.

The research team utilized MRI scans to assess the brains of Black women who had experienced racism. According to the researchers, this is the first report of associations between this form of discrimination, white matter integrity, and incidence of medical disorders in Black American women.

Read more:

<https://www.medicalnewstoday.com/articles/exposure-to-racism-linked-to-brain-changes-that-may-affect-health>

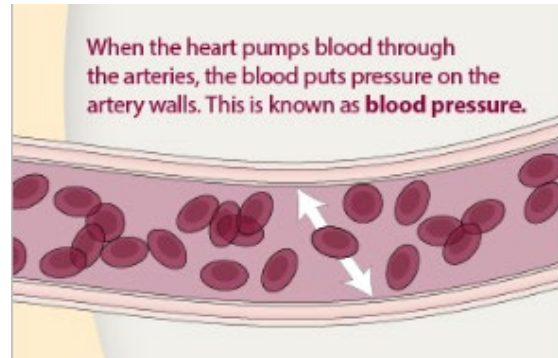
Elevated Blood Pressure and Heart Rate More Common After Physical Activity at Work than Leisure

Previous studies suggested that physical activity at work is associated with decreased heart health, while physical activity for leisure may have an opposite, protective effect. To look at the biological mechanisms underlying this difference,

researchers at NIOSH and The University of Pittsburgh compared heart rate and blood pressure between physically active non-workdays and workdays.

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Study participants included 19 middle-aged men whose jobs in food service, material moving, healthcare, or maintenance involved light physical activity. Their average age was 47 years, and 68% were white. All participants wore activity and heart rate monitors for 7 days and a blood pressure monitor on one non-workday and one workday. The researchers then averaged heart rate and blood pressure readings between non-workdays and workdays with comparable activity levels.



Read more:

<https://www.cdc.gov/niosh/enews/enews20n3.html#research1>

Environmental Health

Post-Hurricane Flood Cleanup in Houston Exposed Residents to Range of Pesticides and Industrial Chemicals

Figure 1.1: Vulnerability and hazards exposure



Flood cleanup in Houston after Hurricane Harvey increased resident exposure to a range of pesticides and other industrial chemical compounds, according to a study

published recently in the International Journal of Environmental Research and Public Health by scientists at Oregon State University (OSU). The findings are particularly concerning for a community already subject to some of the highest rates of environmental contamination in the country. "Houston is one of our most industrialized cities," said study co-author Kim Anderson, PhD, of OSU. "When we look a year after the storm, we see that several neighborhoods that are closer to industrial zones — socioeconomically disadvantaged neighborhoods — had higher concentrations of chemicals right from the get-go, and that was only exacerbated when the hurricane came in."

Read more:

<https://beyondpesticides.org/dailynewsblog/2022/07/post-hurricane-flood-cleanup-in->

<https://beyondpesticides.org/dailynewsblog/2022/07/post-hurricane-flood-cleanup-in-pesticides-and-industrial-chemicals/>

Bacteria That Causes Rare Tropical Disease Found in US Soil

A germ that causes a rare and sometimes deadly disease — long thought to be confined to tropical climates — has been found in soil and water in the continental United States, U.S. health officials said Wednesday.

The bacteria was found on the property of a Mississippi man who had come down with the disease, melioidosis. Officials don't know how long it had been there, but they say it likely is occurring in other areas along the Gulf Coast.

U.S. physicians should consider melioidosis even in patients who haven't traveled to other countries, the Centers for Disease



Control and Prevention said in a health alert.

Read more:

<https://www.usnews.com/news/health-news/articles/2022-07-27/bacteria-that-causes-rare-tropical-disease-found-in-us-soil>

Air Quality Can Be Better For Active Commuters than Drivers, Research Shows



New Leicester research has found that people who commute by car can be subject

to higher levels of harmful gases than those who walk or cycle to work.

The study, conducted by researchers at the University of Leicester in partnership with Leicester City Council, is published in the Journal of Transport & Health.

Experts found that in-cabin levels of nitrogen dioxide (NO₂)—a key indicator of air quality and harmful when breathed in by humans—were higher for weekday morning

commuters traveling by car, compared to their counterparts traveling by bike or on foot. However, the concentration of fine particulate matter (PM2.5) was shown to be slightly lower for drivers.

Read more:

<https://www.sciencedaily.com/releases/2022/07/220727110709.htm>

Weed Killer Glyphosate Found In Most Americans' Urine

The chemical, known as glyphosate, is “probably carcinogenic to humans,” the World Health Organization’s International Agency for Research on Cancer has said. Glyphosate is the active ingredient in Roundup, a well-known weed killer.

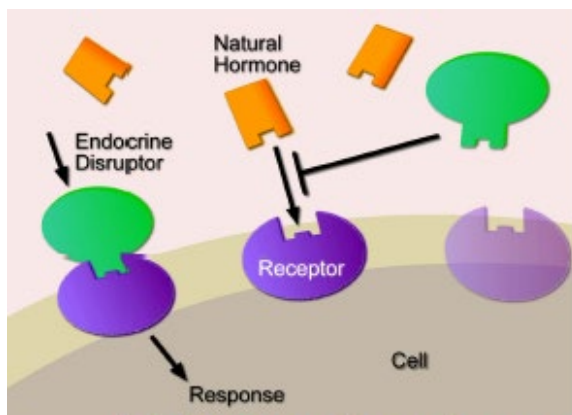


The U.S. National Nutrition Examination Survey found the herbicide in 1,885 of 2,310 urine samples that were representative of the U.S. population. Nearly a third of the samples came from children ages 6 to 18.

Read more:

<https://www.usnews.com/news/health-news/articles/2022-07-12/weed-killer-glyphosate-found-in-most-americans-urine>

Endocrine-Disrupting Chemicals Impair Juvenile Male Fertility Development and Threatens Future Reproductive Health



Endocrine disruptors mimic natural hormones.

A study published in *Toxicology and Applied Pharmacology* finds prepubescent exposure

to endocrine-disrupting chemicals (EDCs), including pesticides, impairs male reproduction through the interruption of testicular homeostasis and development of reproductive Leydig cells. Endocrine disruptors are xenobiotic (i.e., chemical substances like toxic pesticides foreign to an organism or ecosystem). Many reports demonstrate that exposure to endocrine-disrupting chemicals can adversely affect human, animal—and thus environmental—health by altering the natural hormones in the body responsible for conventional reproductive, physical, and mental

development. Scientists and health officials already associate pesticide exposure with a decrease in male fertility, including reduced sperm count, quality, and abnormal sperm development.

Read more:

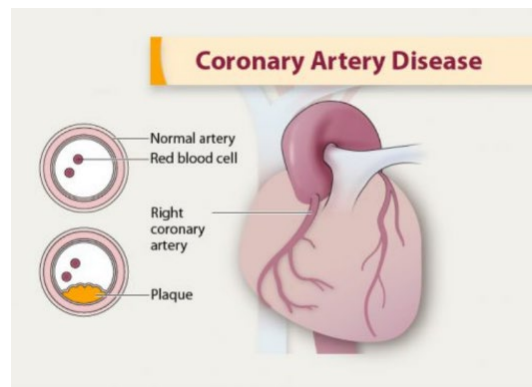
<https://beyondpesticides.org/dailynewsblog/2022/07/endocrine-disrupting-chemicals-impair-juvenile-male-fertility-development-and-threatens-future-reproductive-health/>

Scientists Warn of Links between Soil Pollution and Heart Disease

Pesticides and heavy metals in soil may have detrimental effects on the cardiovascular system, according to a review paper published today in *Cardiovascular Research*, a journal of the European Society of Cardiology (ESC).¹

“Soil contamination is a less visible danger to human health than dirty air,” said author Professor Thomas Münzel of the University Medical Center Mainz, Germany. “But evidence is mounting that pollutants in soil may damage cardiovascular health through a number of mechanisms including inflammation and disrupting the body’s natural clock.”

Pollution of air, water and soil is responsible for at least nine million deaths each year. More than 60% of pollution-related disease



and death is due to cardiovascular disease such as chronic ischaemic heart disease, heart attack, stroke and heart rhythm disorders (arrhythmias).

Read more:

<https://www.eurekalert.org/news-releases/957278>

Ergonomics

Understanding the Heat Burden While Wearing Personal Protective Clothing

Environmental factors (e.g., humidity, wind, temperature, radiant heat, clothing, and workload i.e., metabolic rate) are considered when determining if a heat risk

is present indoors or outdoors. There is little doubt that heat stress affects many workers adversely and the additional heat load from protective clothing adds to the



risk. The ACGIH Threshold Limit Value TLVs and the National Institute for Occupational Safety and Health (NIOSH) Criteria Document Recommended Exposure Levels (RELs) for heat stress are two guiding

documents to evaluate heat stress. Adjustment factors have been evaluated to reflect the change in heat stress imposed by different clothing ensembles. While some Clothing Adjustment Factors (CAFs) were calculated with limited experimental data and some professional judgment, heat balance methods in the laboratory have yielded better estimates for a wider selection of clothing ensembles.

Read more:

<https://ohsonline.com/articles/2022/07/29/understanding-the-heat.aspx>

Safety

Oregon OSHA Aims to Prevent Heat Illness, Death with New Requirements for Employers

With temperatures peaking in the 100s this week, there are big concerns for those working outside in the heat. New laws in effect this summer aim to protect workers.

Last year's heat wave brought big changes to Oregon, like new, permanent requirements for employers to protect employees who work in the heat from heat-related illnesses, such as heat exhaustion and heat stroke.

According to Oregon Occupational Safety and Health (Oregon OSHA), when the heat index hits or exceeds 80 degrees Fahrenheit, employers need to provide shady areas for workers to rest, more break time and access to plenty of water. When it



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exceeds 90 degrees, breaks must be longer, communication must become more frequent and each worker must be monitored more closely throughout the shift.

Read more:

<https://www.kgw.com/article/news/local/oregon-osa-rules-protect-workers-heat-illness/283-5e3e4798-5e78-4bca-92cb-c40233b7b768>

Shift Workers 'Can't All Adjust to a Night Shift'



Scientists at the University of Warwick, jointly with those at Université Paris-Saclay, Inserm and Assistance Publique-Hôpitaux de Paris (France), have challenged the widespread belief that shift workers adjust

to the night shift, using data drawn from wearable tech.

By monitoring groups of French hospital workers working day or night shifts during their working and free time, the researchers have not only shown that night work significantly disrupts both their sleep quality and their circadian rhythms, but also that workers can experience such disruption even after years of night shift work.

Read more:

<https://www.sciencedaily.com/releases/2022/07/220720102504.htm>

Proposed Changes of USP 797 Strengthens Documentation Requirements

In a presentation at the American Association of Pharmacy Technicians 2022 Annual Pharmacy Technician Convention, Brenda Jensen, CPhT, CNMT, MBA, founder of Compounding Consultants, LLC, discussed the proposed changes of USP <797> and how it would affect pharmacies if put into action. Once the revisions to <797> become approved, there will be a



**COMPOUNDING
COMMITTEE:
DRAFTED USP <797>**

minimum grace period of 6 months for pharmacies to comply.

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Currently, sterile compounding includes didactic training with a quiz, initial glove fingertip samples that must be performed 3 times in a row without growing any bacteria, a media fill test that mimics the most strenuous process, and an observed competency test, which will include hand-hygiene and garbing, aseptic technique, cleaning, and disinfecting. For low- and

medium-risk compounders, these tests are annually and for high-risk compounders, it is every 6 months.

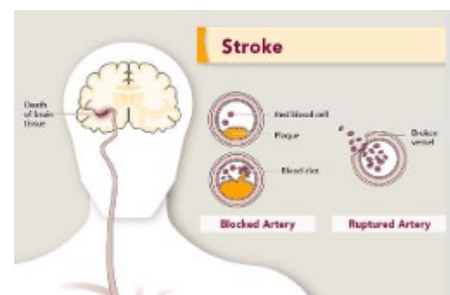
Read more:

<https://www.pharmacytimes.com/view/proposed-changes-of-usp-797-strengthens-documentation-requirements>

Shift Work Increases the Severity of Strokes Later In Life

As most Americans wind down for bed, 15 million people are just clocking into work. These hospital workers, emergency responders, factory operators and others are among the 20 percent of the world's population who do shift work. Their different sleep-wake cycle elevates their risk for numerous health disorders, including diabetes, heart attacks, cancer and strokes.

Now, new research published in Neurobiology of Sleep and Circadian Rhythms shows the adverse effects of shift work can be long-lasting, even after returning to a normal schedule.



Read more:

<https://medicalxpress.com/news/2022-07-shift-severity-life.htm>

Harm from Blue Light Exposure Increases with Age, Research Suggests



The damaging effects of daily, lifelong exposure to the blue light emanating from phones, computers and household fixtures worsen as a person ages, new research by Oregon State University suggests.

The study, published today in npj Aging, involved *Drosophila melanogaster*, the common fruit fly, an important model

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organism because of the cellular and developmental mechanisms it shares with other animals and humans.

Read more:

<https://medicalxpress.com/news/2022-07-blue-exposure-age.htm>

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Emergency Preparedness

FEMA, AARP Release New Resources to Help Local Communities Protect Older Adults Before, During and After Natural Disasters

As the United States enters peak hurricane season, FEMA and AARP have released new resources to help local officials and emergency managers protect older adults in their communities before, during and after natural disasters and support communities in mitigating the effects of extreme weather events.



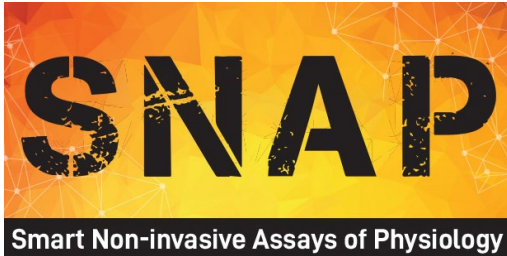
The “Guide to Expanding Mitigation: Making the Connection to Older Adults,” released by FEMA and AARP, highlights how natural hazards uniquely affect older adults and provides recommendations for how emergency managers, planners, local officials and community members can include older adults in community efforts to lower their risks.

Read more:

<https://www.hstoday.us/federal-pages/dhs/fema-aarp-release-new-resources-to-help-local-communities-protect-older-adults-before-during-and-after-natural-disasters/>

Deployment Health

DARPA 'SNAPs' Up New Tools for Predicting Warfighter Readiness



Seeking to revolutionize how the Department of Defense (DoD) objectively measures individual warfighter readiness, DARPA's newest biotechnology funding opportunity aims to develop a hand-held prediction tool for warfighter physiological

states based on molecular biomarkers. The device developed under the Smart Non-invasive Assays of Physiology (SNAP) program would be readily configurable to diverse DoD needs for readiness assessment, training, and mission planning, thereby providing an individualized view into real-time warfighter performance state.

Read more: <https://www.darpa.mil/news-events/2022-07-13>

Nanotechnology

Washable E-Textile Designed to Integrate Gas Sensors into Clothing

Conventional materials used in electronic gas sensors, like chemiresistive-based nitrogen dioxide (NO₂) sensors, fail to withstand ordinary wash cycles because of the simultaneous action of harsh compounds in washing solutions and mechanical damage.

A recent study published in the journal *Scientific Reports* focuses on the production of very responsive NO₂ sensors on nylon fabric, which is immune to regular washing cycles, to overcome this constraint.

Importance of Wearable Gas Sensors



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Poor outdoor and indoor air quality can be related to thousands of preventable deaths annually. According to epidemiological research, exposure to toxin concentrations beyond the specified limits can be fatal, particularly for infants, pregnant women, and older members of the population.

Read more:

<https://www.azonano.com/news.aspx?newsID=39473>

OECD Publishes New Test Guidelines for Nanomaterials

On June 30, 2022, the Organization for Economic Cooperation and Development (OECD) published six new Test Guidelines (TG) and ten updated or corrected TGs. The new TGs include the first two harmonized methods for measuring certain nanomaterial-specific physical-chemical properties. According to OECD, these harmonized methods were developed to respond to regulatory needs in member and adhering countries, specifically for manufactured nanomaterials.

Read more:

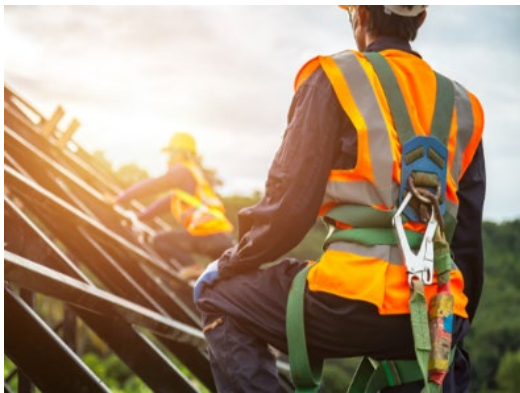
<https://www.natlawreview.com/article/oecd-publishes-new-test-guidelines-nanomaterials>



Regulatory Research & Industrial Hygiene Professional News

Legislation

Bill Mandates Breaks Every 4 Hours for Construction Workers



New legislation would require U.S. construction employers to allow workers to take a paid 15-minute break every four hours year-round. Representative Sylvia Garcia (D-Houston) filed the Construction Injury Prevention Act Wednesday to help

address heat-related illness and death among construction workers.

OSHA's recordkeeping of heat-related deaths is incomplete, but at least 384 workers have died from heat exposure in the past decade — many of them construction workers, according to an analysis of federal data by NPR and Columbia Journalism Investigations. The study found that Latinos accounted for a third of all heat-related fatalities since 2010, though they comprise only 17% of the workforce.

Read more:

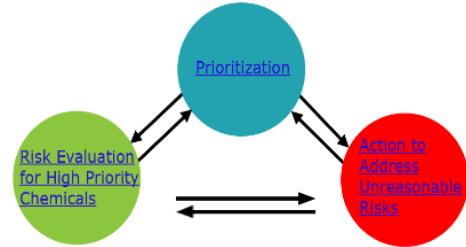
<https://www.constructiondive.com/news/sylvia-garcia-heat-safety-bill-water-breaks-4-hours-construction-workers/628119/>

EPA

US EPA'S Draft Screening Level Approach May Broaden Scope of Chemical Risk Evaluations under TSCA

The United States Environmental Protection Agency (US EPA) continues to advance various aspects of its chemicals regulatory agenda under the Toxic Substances Control Act (TSCA). A key part of the Biden Administration's revisions to the TSCA program is its planned new screening approach for assessing ambient air and water exposures to fence-line communities. This screening approach is intended to broaden the scope of chemical risk evaluations to include exposures to fence-line communities from air emissions and water discharges of chemicals undergoing risk evaluation.

Assessing and Managing Chemicals under TSCA



Read more:

<https://www.natlawreview.com/article/us-epa-s-draft-screening-level-approach-may-broaden-scope-chemical-risk-evaluations>

EPA Requires TRI Reporting for Five Additional PFAS

TRI Reporting Steps

- 1 COLLECT & DETERMINE**
Determine if your facility meets all three TRI reporting criteria. Collect information on TRI chemicals managed at your facility during the calendar year.
- 2 PREPARE**
Register for a Central Data Exchange (CDX) user account. Prepare your facility's TRI reporting forms using the CDX-based TRI-MF-web application.
- 3 CERTIFY & SUBMIT**
Ensure that your facility's certifying official certifies your facility's forms. Submit your forms to EPA and the relevant state or tribe by **July 1**.
- 4 USE**
Look at your facility's data in the online TRI tools. Use the TRI Pollution Prevention Search Tool to learn from other facilities' best practices.

Reporting Criteria

The facility:
has 10 full-time equivalent employees
is in a TRI-covered industry sector (e.g., manufacturing, mining, electric power generation)
meets chemical thresholds for one or more TRI chemicals during the calendar year

The U.S. Environmental Protection Agency (EPA) issued a final rule on July 18, 2022,

updating the list of chemicals subject to toxic chemical release reporting under the Emergency Planning and Community Right-to-Know Act (EPCRA) and the Pollution Prevention Act (PPA). 87 Fed. Reg. 42651. The final rule updates the regulations to identify five per- and polyfluoroalkyl substances (PFAS) that must be reported pursuant to the National Defense Authorization Act for Fiscal Year 2020 (NDAA) enacted on December 20, 2019. According to EPA, as this action is being taken to conform the regulations to a Congressional legislative mandate, notice

and comment rulemaking is unnecessary. The final rule will be effective August 17, 2022.

Read more:

<https://www.natlawreview.com/article/epa-requires-tri-reporting-five-additional-pfas>

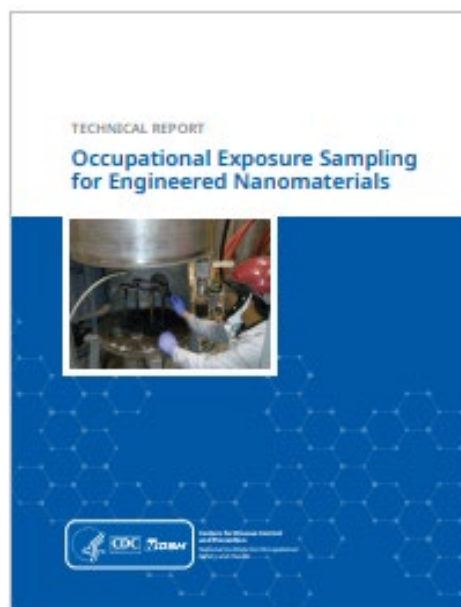
NIOSH

NIOSH Publishes Technical Report on Occupational Exposure Sampling for Engineered Nanomaterials

On July 29, 2022, the National Institute for Occupational Safety and Health (NIOSH) published a Technical Report: Occupational Exposure Sampling for Engineered Nanomaterials. Since 2010, NIOSH has developed guidance for workplace sampling for three engineered nanomaterials: carbon nanotubes (CNT) and nanofiber (CNF), silver, and titanium dioxide, each of which has an elemental mass-based NIOSH recommended exposure limit (REL). NIOSH has also developed a practical approach to exposure sampling for other engineered nanomaterials that do not have exposure limits.

Read more:

<https://www.natlawreview.com/article/nio>



[sh-publishes-technical-report-occupational-exposure-sampling-engineered](https://www.natlawreview.com/article/nio)

OSHA

Steep Rise in Trenching Deaths Spurs Enhanced Enforcement, Outreach from OSHA



Through the first half of this year, the agency has recorded 22 trenching deaths – already a 47% increase from the 15 recorded in all of 2021.

Read more:

<https://www.safetyandhealthmagazine.com/articles/22787-steep-rise-in-trenching-deaths-spurs-enhanced-enforcement-outreach-from-osha>

An “alarming rise” in trench-related worker deaths has prompted OSHA to launch “enhanced enforcement initiatives” and outreach efforts to protect workers from known hazards.

EPA

Biden EPA to Tackle Coal Industry Carbon with Rules on Other Pollutants

The U.S. Environmental Protection Agency plans to use new limits on traditional pollutants like ozone and coal ash to help encourage the retirement of the nation’s remaining coal-fired power plants, after the Supreme Court limited the agency’s ability to impose sweeping climate regulations, according to EPA chief Michael Regan.

The approach reflects how the administration of U.S. President Joe Biden intends to forge ahead with goals to



decarbonize the power sector despite the recent ruling from the court. The power

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industry is the source of a quarter of the nation's greenhouse gases and Biden campaigned on a pledge to cut its net emissions to zero by 2035.

Read more:

<https://www.reuters.com/world/us/exclusive-biden-epa-tackle-coal-industry-carbon-with-rules-other-pollutants-2022-07-29/>

WEBiNAR



As we continue to combat the COVID-19 virus, we are making our best efforts to provide you with Blueprint, Design Review, and Ventilation lessons that otherwise you'd travel to acquire.

Due to the changing MS TEAMS and DCS environments, and the ability to host a live event with hundreds of participants, we've been providing "Pre-recorded" webinar events.

All handouts are made available, and can be downloaded from your Blackboard webinar course shell with recorded material for you to view ad-hoc, and participation certificates awarded for each lesson survey/evaluation completed.

WEBiNAR



You may ask yourself “what’s the difference between a live webinar and a pre-recorded webinar?”

Not only does a pre-recorded webinar allow you to view in your own time zone at a time most convenient for you, it allows us to edit and re-record segments, swap out segments that didn’t work so well, add effects, graphics, and more in the post-production stage.

Pre-recorded webinars give a more polished effect than a live webinar. Right now, we’re all adjusting to having more remote meetings, watching broadcasts instead of attending live events, and spending a little more time on our computers than doing surveys.

It is our goal to connect with you, getting you the relevant and emerging information you need to help your clients. Our sustainment webinars, whether live or pre-recorded, can help you achieve those goals.

WEBiNAR



How to participate in a “pre-recorded” webinar:

1. Navigate to your “Army Industrial Hygiene Webinar” shell on our Blackboard site <https://aiph-dohs.elic.learn.army.mil>
2. Use the left navigation tile to locate SPECIAL EDITION WEBINARS
3. Select each webinar link to view
4. Record case sensitive code words while viewing
5. Use the left navigation tile to locate COLLECT CERTIFICATES
6. Select the link for your webinar and use code word to initiate certificate

NOTE: Our classroom space is not allowing traditional classroom courses due to the pandemic. We continue our efforts to provide relevant content that aligns with these courses via our webinars.

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DOCUMENT LIBRARY

COLLECT CERTIFICATES

NEW WEBINARS

ASK THE SME RECORDINGS

MANAGE YOUR IH MONSTER RECORDINGS

ARMY IH FEILD OP MANUAL RECORDINGS

IH LEADER RECORDINGS

SPECIAL EDITION WEBINAR RECORDINGS

All slide handouts are here

Most recent recordings here

SME recording archive

MONSTER recording archive

FOM recording archive

LEADER recording archive

Special Edition archive



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 **ABOUT THE "ASK THE SME" WEBINARS**

These "Ask the SME" Webinars are about communicating freely with subject matter experts. Most of the subject matter experts have lead in slides to spark conversation, and then take questions from the live audience. If you are here, then you probably missed the live event. That's OKAY. This is why we provide recordings. If you have questions for the subject matter experts that were not addressed during the live event, we encourage you to contact the SME.

 **SLIDE HANOUTS: Ask the SME Webinars**

Enabled: Statistics Tracking

Attached Files:

- 11/4/2018 Monitor: All About ANOVA (1.918 MB)
- 11/14/2018 SME: Hexavalent Chromium 48min (451.598 KB)
- 2/27/2019 SME: Ergonomics 51min (402.939 KB)
- 8/8/2019 SME: Pharmacy Hazardous Drug Samples 28min (1.569 MB)
- 3/4/2020 SME: APHC Analytical Lab (1.425 MB)
- 6/17/20 SME: IH Contract Technical Monitors (1.0hr) (773.407 KB)
- OWAS Table.doc (90.5 KB)
- Liberty Mutual Tables.pdf (874.9 KB)
- OWAS Postures.pdf (135.149 KB)
- 12/2/20 SME: DOEHRs-IH Report Standardization 90min (1.438 MB)
- Example Standardized Ergo Survey (4.361 MB)



 **12/2/20 SME: DOEHRs-IH Report Standardization 90min**

Enabled: Statistics Tracking

Look for slide handouts and a copy of the Army DCEHRS IH Buddy v0.7 in the SLIDE HANOUTS above, or the DOCUMENT LIBRARY section of this course site.

 **12/2/20 SME: Downdraft Ventilation Q/A 7min**

Enabled: Statistics Tracking

Description

Handouts

Recordings

Downdraft Day	
12/2/20 Monster: Building Downdraft Tables in DOEHS-IH (52min)	THEME: CONTROLLING AIR CONTAMINANTS
12/2/20 Leader: Measuring Downdraft Tables (42min)	THEME: CONTROLLING AIR CONTAMINANTS
12/2/20 SME: Downdraft Ventilation Q/A	THEME: CONTROLLING AIR CONTAMINANTS
12/2/20 SME: DOEHS- IH Report Standardization (30min)	THEME: MANAGING ARMY IH
12/2/20 Leader: Compressed Air use with Heavy Metals (30min)	THEME: CONTROLLING AIR CONTAMINANTS

Vehicle Maintenance Day	
3/3/21 Monster: Building Vehicle Exhaust Ventilation in DOEHRS-IH (72min)	THEME: CONTROLLING AIR CONTAMINANTS
3/3/21 Leader: Measuring Vehicle Exhaust Ventilation (50min)	THEME: CONTROLLING AIR CONTAMINANTS
3/3/21 Leader: Vehicle Design Review (2hr)	THEME: CONTROLLING AIR CONTAMINANTS
3/3/21 SME: Vehicle Exhaust Ototoxins (40min)	THEME: CONTROLLING AIR CONTAMINANTS
3/3/21 SME: IH Manpower Study Survey (14min)	THEME: MANAGING ARMY IH

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Coating/Painting Day	
6/2/2021 Monster: Building Paint Booths in DOEHS-IH (60min)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 Leader: Measuring Paint Booths (37min)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 Leader: Paint Spray Design (65min)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 SME: Data Mining DOEHS-IH (Paintbooth Accident Investigation) (17min)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 SME: DOEHS Cadmium Data/Protecting Against Cadmium 49min	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 SME: Protecting Against Cadmium (combined with Cadmium Data)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 Leader: Particle Size Selective Sampling 35min	THEME: SAMPLING
6/2/2021 Leader: IH Professional Sampling Kit 20min	THEME: SAMPLING
6/2/2021 SME: Surface Sampling 18min	THEME: SAMPLING

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Laboratory/Healthcare Day	
9/1/2021 Monster: Building Lab Hood Ventilation in DOEHS-IH (64min)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Monster: Building Dilution Ventilation in DOEHS-IH (93min)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Leader: IH Value Strategy Laboratory Engineering Controls (17min)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 SME: Sampling Qualifiers (15min)	THEME: SAMPLING
9/1/2021 Leader: Laboratory Design (2hr)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Leader: Methylene Chloride (Workplace, Data Mining, Virtual Tour) (2hr)	THEME: SAMPLING
9/1/2021 Leader: Healthcare Ventilation and Design (3hr)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Leader: OHS for Laboratory/Healthcare (Overview, Risk Management, IH Role, Virtual Tours) (3hr)	THEME: SAMPLING
9/1/2021 Leader: Modeling Laboratory/Healthcare Exposures in DOEHS-IH (60min)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Leader: Laboratory/Healthcare Compliance Survey Tour (2hr)	THEME: SURVEY
9/1/2021 SME: Ergonomic Patient Handling (28min)	THEME: HAZARD EVALUATION AND CONTROL

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<i>REVIEW</i>	<i>Recommended Healthcare/Laboratory lessons if you have not already viewed these previously)</i>
Leader	Adventures in Ventilation at Natick Laboratories (68min)
Monster	Pathology, Grossing, Morgue, Tissue, and Death Care (1.5hr)
SME	Pharmacy Hazardous Drug Samples (28min)
Leader	Audiometric Booth Testing and Certification (17min)

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This monthly summary is published by the Industrial Hygiene Program Management Division for the Army Public Health Center.

POINTS OF CONTACT:

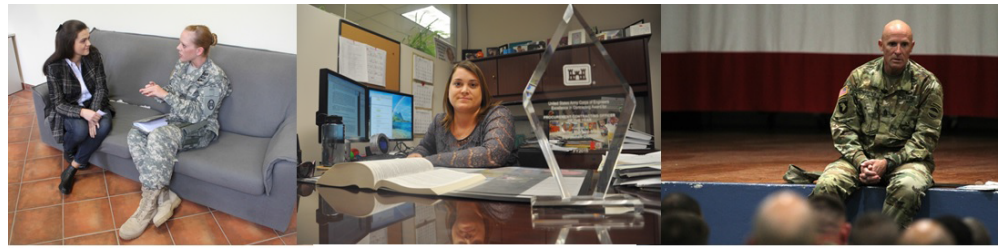
By Phone or FAX:

Office: (410)436-3161

FAX: (410)436-8795

On the Web:

<https://phc.amedd.army.mil/news/Pages/PublicationDetails.aspx?type=Army%20Industrial%20Hygiene%20News%20and%20Regulatory%20Summary>



Professional Development and Career Programs

For Army Industrial Hygienists and Industrial Hygiene Technicians, Professional Development is through the Army Safety and Occupational Health (SOH) Career Program, known as Career Program 12 (CP-12).

Career Programs were established to ensure there is an adequate base of qualified and trained professional, technical, and administrative personnel to meet the Army's current and future needs.

Planned training and development are essential elements to building a successful career.

Articles appearing in this summary are a collection of articles taken verbatim from public sources and do not necessarily represent the opinions/views, policy, or guidance of the Department of the Army, Department of Defense, or the U. S. Government.

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