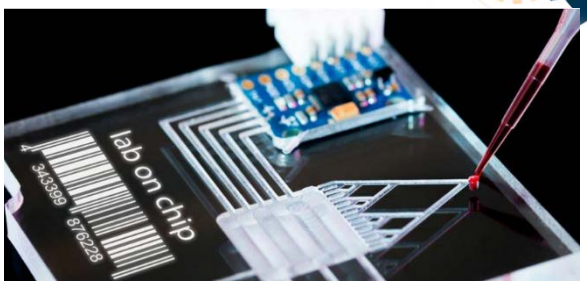
December 2019,
Issue 99

Army Industrial Hygiene News and Regulatory Summary

Hazardous Substances

Screen Could Offer Better Safety Tests For New Chemicals

It's estimated that there are approximately 80,000 industrial chemicals currently in use, in products such as clothing, cleaning solutions, carpets, and furniture. For the vast majority of these chemicals, scientists have little or no information about their potential to cause cancer.



The detection of DNA damage in cells can predict whether cancer will develop, but tests for this kind of damage have limited sensitivity. A team of MIT biological engineers has now come up with a new screening method that they believe could make such testing much faster, easier, and more accurate.

The National Toxicology Program, a government research agency that identifies potentially hazardous substances, is now working on adopting the MIT test to evaluate new

Read more:
https://www.eurekalert.org/pub_releases/2019-12/miot-sco121719.php

Special Interest Articles:

Contents:

Is There A Link Between Lifetime Lead Exposure And Dementia?

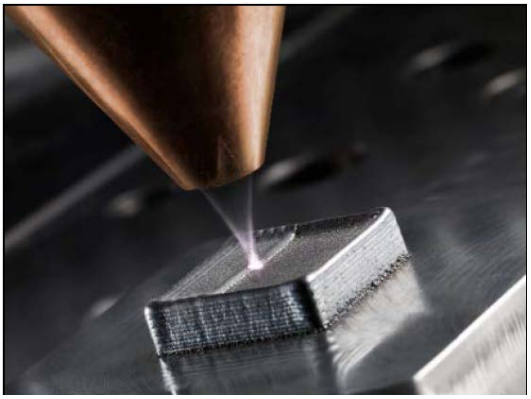
To the medical community's surprise, several studies from the US, Canada, and Europe suggest a promising downward trend in the incidence and prevalence of dementia. Important risk factors for dementia, such as mid-life obesity and mid-life diabetes, have been increasing rapidly, so the decline in dementia incidence is particularly perplexing.

A new hypothesis by University of Toronto Professor Esme Fuller-Thomson, recently published in the Journal of Alzheimer's Disease, suggests that the declining dementia rates may be a result of generational differences in lifetime exposure to lead. U of T pharmacy student ZhiDi (Judy) Deng, co-authored the article.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/uot-ita121819.php

Characterizing Particle Emissions from a Direct Energy Deposition Additive Manufacturing Process and Associated Occupational Exposure to Airborne Particles

This study aims to characterize airborne particles emitted from a metal additive manufacturing machine and related levels of occupational exposure. To achieve this, a complete measurement methodology was deployed around a direct energy deposition machine. Different operating conditions were investigated, based on configurations of two materials and two injection nozzles. Two replicates were performed for each condition. Airborne particles emitted during repeated manufacturing cycles were measured simultaneously at the source, in the near field, in the far field and on the operator. Real-time instruments were used to characterize the machine emissions (10 nm–10 µm) associated with respirable and inhalable samplers and cascade impactors. Measurements were made during both the manufacturing process and transient operating phases. In parallel, personal exposure to hexavalent chromium was assessed. The number of particles measured for the different machining phases show that high levels of particles (> 5 × 105 # cm−3, 0.3–1.3 mg m−3 inhalable particles, 0.2–6 µg m−3 CrVI) were emitted in the machine enclosure. The size distributions indicate that more than 90% of the particles are smaller than 250 nm. Occupational exposure to CrVI was found to be below the LOQ of 0.098 µg m−3 for the two alloys investigated. During the machining process, near-field number and



mass concentrations were ~ 104 # cm−3, and below 0.04 mg m−3, respectively. Far-field number concentrations were also on the order of 104 # cm−3 throughout the whole monitoring period. The transient phase of door opening was found to result in high levels of exposure (> 105 # cm−3), which were also detected in the near-field, confirming the need to implement preventative actions. To address this issue, a collective protective measure, consisting of setting a time delay of about 8 min between the end of the manufacturing process and opening of the door, could be employed. This collective measure should also be accompanied by the wearing of personal protective equipment by the operator when an intervention in the machine enclosure is necessary.

Read more: Journal of Occupational and Environmental Hygiene, Published online:

12 Dec 2019(Available with AIHA membership)

Chemical Decontamination of Hazardous Drugs: A Comparison of Solution Performances

OBJECTIVES:
Over the past 40 years, numerous actions have been undertaken to decrease the contamination of hospital facilities by intravenous conventional antineoplastic drugs (ICADs) such as centralizing compounding in pharmacies, using personal protective equipment, specific compounding, or infusion devices. As recently proposed in the <USP800> monograph, an additional specific decontamination step must be envisaged. A recent literature review analysed and discussed the different solutions tested in terms of decontamination efficacy. This article aims to discuss the performance of these solutions in the framework of aseptic compounding.

METHODS:
The same dataset used in the previous literature review was reanalysed according to other parameters so as to select decontamination solutions: overall decontamination efficiency (EffQ), tested contaminants, and the risks of use in daily practice.

Read more:
https://www.ncbi.nlm.nih.gov/pubmed/31848570

Work Tasks as Determinants of Respirable and Inhalable Indium Exposure among Workers at an Indium–Tin Oxide Production and Reclamation Facility

In 114.8

Increased global demand for touch screens, photovoltaics, and optoelectronics has resulted in an increase in the production of indium–tin oxide (ITO). Occupational exposure to indium compounds is associated with the development of indium lung disease. Although many previous

epidemiologic investigations highlight an excess of lung abnormalities in workplaces where ITO is produced, few assessments of occupational exposure to respirable and inhalable indium are reported to date. The objective of this study was to identify the determinants of respirable and inhalable indium at an ITO production facility to target exposure interventions. In 2012 and 2014, we conducted exposure assessments at an ITO production facility and collected full-shift personal respirable (n = 159) and inhalable (n = 57) indium samples. We also observed workers and recorded information on task duration and location, materials used, and use of personal protective equipment (PPE). Tasks (n = 121) recorded in task diaries were categorized into 40 similar task groups using the Advanced REACH Tool and process-related information.

Read more: https://academic.oup.com/annweh/advance-article/doi/10.1093/annweh/wxz091/5658593?searchresult=1

Biocidal Spray Product Exposure: Measured Gas, Particle, and Surface Concentrations Compared with Spray Model Simulations

The purpose of the study was to compare measured air and surface concentrations after application of biocidal spray products with concentrations simulated with the ConsExpo Web spray simulation tool. Three different biocidal spray products were applied in a 20 m3 climate test chamber with well-controlled environmental conditions (22 ± 1 °C, 50 ± 2% relative humidity, and air exchange rate of 0.5 h−1). The products included an insect spray in a pressurized spray can, another insect spray product, and a disinfectant, the latter two applied separately with the same pumped spray device. The measurements included released particles, airborne organic compounds in both gas and particle phase, and surface concentrations of organic compounds on the wall and floor in front of the spraying position and on the most remote wall. Spraying time was a few

seconds and the air concentrations were measured by sampling on adsorbent tubes at 9–13 times points during 4 hr after spraying. The full chamber experiment was repeated 2–3 times for each product. Due to sedimentation the concentrations of the particles in air decayed faster than explained by the air exchange rate. In spite of that, the non-volatile benzalkonium chlorides in the disinfectant could be measured in the air more than 30 min after spraying. ConsExpo Web simulated concentrations that were about half of the

measured concentrations of the active substances when as many as possible of the default simulation parameters were replaced by the experimental values. ConsExpo Web was unable to simulate the observed faster decay of the airborne concentrations of the active substances, which might be due to underestimation of the gravitational particle deposition rates. There was a relatively good agreement between measured surface concentrations on the floor and calculated values based on the dislodgeable amount given in the selected ConsExpo Web scenarios. It is suggested to always supplement simulation tool results with practical measurements when assessing the exposure to a spray product.

Read more: Journal of Occupational and Environmental Hygiene, Published online: 09 Dec 2019 (Available with AIHA membership)

Radiation

Portable RFG Gel Scanner Rapidly Creates 3D Images of Radiation Fields

The ability to create 3D images of radio-fluorogenic (RFG) gels following radiation exposure could enable visualization of the dose deposited during a radiation treatment. To achieve this, researchers in the Netherlands have created a portable, user-friendly device – called FluoroTome 1 – that can rapidly read out an irradiated gel to produce a series of fluorescence images (Polymers 10.3390/polym11111729).

RFG gels become permanently fluorescent when exposed to high-energy photon or particle radiation, with the emission intensity proportional to the local absorbed dose. One important application of this property is use in high-resolution radiotherapy dosimetry. FluoroTome 1, developed by John Warman and researchers at TU Delft, enables on-site scanning of RFG gels, creating multiple tomographic slices of the fluorescence signal.

Read more:
https://physicsworld.com/a/portable-rfg-gel-scanner-rapidly-creates-3d-images-of-radiation-fields/

Ventilation

Reducing Exposure to Diesel Exhaust: IOSH Publishes Pocket Card

The Institution of Occupational Safety and Health has released a pocket card intended to help protect workers from diesel exhaust fumes.

At least 38,000 people die worldwide each year as a result of overexposure to nitrogen oxide emissions from diesel vehicles, according to IOSH. These emissions can cause lung cancer, asthma and chronic pulmonary disease.

Advice provided on the card includes turning off engines when they are not required to run. Also recommended is the use of workplace air extraction and tailpipe exhaust extraction systems. For taxi drivers,

couriers and other vehicle operators, IOSH advises they keep their windows rolled up.

Read more:
https://www.safetyandhealthmagazine.com/articles/19195-reducing-exposure-to-diesel-exhaust-iosh-publishes-pocket-card

PPE

What to Look for in Head-to-Toe PPE Solutions

From oil rigs to shipping docks, factory floors to refineries, the world's laborers rely on head-to-toe personal protective equipment (PPE) to keep them safe while working in some of the most extreme conditions on Earth. When it comes to selecting PPE, it's critical to provide workers with effective solutions that will stand up against the hardest work, the highest safety

standards and the best possible comfort while on the job.

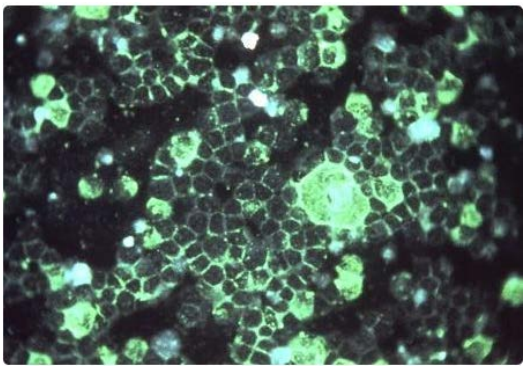
Securing the ideal PPE for your specific working environment will not only help ensure that your workers are protected from injury, but it can also pay off in other ways, leading to improved employee morale, higher productivity and lower turnover for your company. Here are some pointers on what to look for when selecting PPE solutions, specifically for the safety of workers' eyes, hands, bodies and feet.

Read more:
https://ohsonline.com/articles/2019/12/02/what-to-look-for-in-head-to-toe-ppe-solutions.aspx?admgarea=ht.ProtectiveApparel

Respiratory Viruses May Linger on Health Care Workers, PPE: Study

Skin exposure to chemicals in the workplace Health care workers commonly carry respiratory viruses on their hands, clothing and personal protective equipment after administering care to patients, accentuating the need to practice "complete hand hygiene and use other PPE to prevent dissemination," results of a recent study suggest.

Researchers from the University of Illinois at Chicago's Epicenter for Prevention of Healthcare Associated Infections analyzed swab samples collected from the PPE of 59 health care workers before further sampling the workers' hands, faces and medical scrubs. Findings showed that viruses were present in 31% of glove samples, 21% of gowns and 12% of facemasks. Additionally,



21% of hand samples tested positive for viruses, as well as 11% of scrubs and 7% of face samples.

Read more:
https://www.safetyandhealthmagazine.com/articles/19287-respiratory-viruses-may-linger-on-health-care-workers-ppe-study

Noise

Three Basic Methods: Workplace Noise Control

Noise-induced hearing loss is a prevalent workplace injury in the modern industrial plant. Employers must manage workplace noise exposure. Doing so is complex in terms of accurately assessing sound levels and noise exposure in the workplace, identifying and ranking the dominant noise sources to be targeted for mitigation, and finding practicable, effective, and affordable noise control solutions.

Many aspects of acoustics and noise control are counterintuitive, and there is a great deal of myth and misinformation cluttering the common knowledge about noise. But there is a "convenient truth" we can use to cut through the confusion. Quite simply, there are really only a few ways to reduce noise indoors. All workplace noise control measures are really just variations of the three basic methods, which are:

1. Reduce the amount of sound that is produced by a given process, operation or activity.
2. Block, or contain-and-dissipate the sound.
3. Reduce excessive room reverberation.

Read more: https://ohsonline.com/articles/2019/12/02/three-basic-methods-workplace-noise-control.aspx

Preventive Medicine

Labelling Foods with Physical Activity Needed to Burn Calories Linked to Healthier Choices

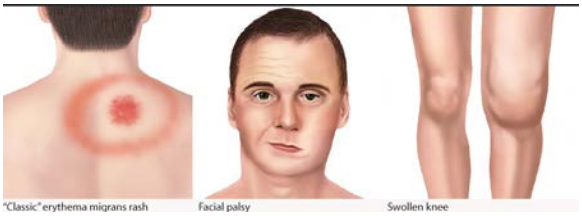
Labelling food and drink with the amount and type of exercise needed to burn off the calories in it might be a more effective way of encouraging people to make 'healthier' dietary choices, indicates research published online in the Journal of Epidemiology & Community Health.

Given that the current system of food labelling by calorie and nutrient content is poorly understood, and there's little evidence that it is altering purchasing decisions or having any impact on obesity levels, it may be worth trying, suggest the researchers.

If widely applied, it might, on average, shave off up to 195 calories per person per day, they calculate.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/b-lfw120619.php

Paper-Based Test Could Diagnose Lyme Disease at Early Stages



After a day hiking in the forest, the last thing a person wants to discover is a tick burrowing into their skin. Days after plucking off the bloodsucking insect, the hiker might develop a rash resembling a bull's-eye, a tell-tale sign of Lyme disease. Yet not everybody who contracts Lyme disease gets the rash. Now, researchers reporting in ACS Nano have devised a blood test that quickly and sensitively diagnoses the disease at early stages.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/acs-ptc121619.php

C. Diff Carriers Are Common Source of Infections in Health Facilities, Study Shows

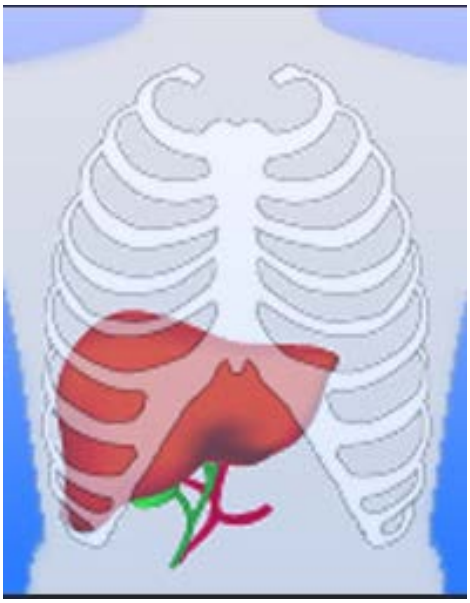
Nearly 1-in-10 patients admitted to a New York hospital with no symptoms of diarrhea were found to be carriers of Clostridioides difficile (C. diff), suggesting infections originate outside the hospital setting more often than thought, according to a study published today in Infection Control & Hospital Epidemiology, the journal of the Society for Healthcare Epidemiology of America.

The results suggest that hospitals and other healthcare facilities could consider identifying carriers of C. diff as a strategy to prevent the spread of the infection. According to a 2015 report, more than 400,000 cases of C. diff, resulting in nearly

30,000 deaths, are reported each year in the United States.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/sfhe-cdc120919.php

Researchers Create Functional Mini-Liver by 3D Bioprinting



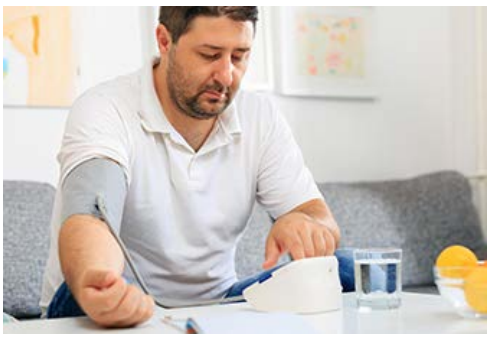
Using human blood cells, Brazilian researchers have succeeded in obtaining hepatic organoids ("mini-livers") that perform all of the liver's typical functions, such as producing vital proteins, storing vitamins, and secreting bile, among many others. The innovation permits the production of hepatic tissue in the laboratory in only 90 days and may in the future become an alternative to organ transplantation.

The study was conducted at the Human Genome and Stem Cell Research Center (HUG-CELL). Hosted by the University of São Paulo (USP), HUG-CELL is one of the Research, Innovation and Dissemination Centers (RIDCs) funded by São Paulo Research Foundation - FAPESP.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/fda-rcf121719.php

Long Work Hours at the Office Linked to Both Regular and Hidden High Blood Pressure

Office workers who spend long hours on the job are more likely to have high blood pressure, including a type that can go undetected during a routine medical appointment, according to a new study published today in the American Heart Association's journal Hypertension.

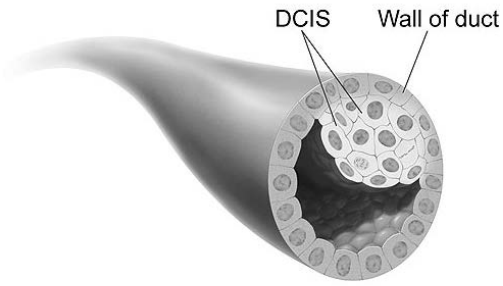


High blood pressure affects nearly half of Americans ages 18 and older and is a primary factor in more than 82,000 deaths per year. Approximately 15-30% of U.S. adults have a type of the condition called masked hypertension, meaning their high blood pressure readings are normal during health care visits but elevated when measured elsewhere.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/aha-lwh121719.php

Environmental Health

Study Shows Link between Precipitation, Climate Zone and Invasive Cancer Rates in the US



National Cancer Institute

In a new study, researchers provide conclusive evidence of a statistical relationship between the incidence rates of invasive cancer in a given area in the U.S. and the amount of precipitation and climate type (which combines the temperature and moisture level in an area). The researchers recommend additional studies to understand how environmental factors such as precipitation and temperature are linked to cancer rates. The current study is published in Environmental Engineering Science, a peer-reviewed journal from Mary Ann Liebert, Inc., publishers.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/mali-ssl120219.php

NTU Singapore Scientists Convert Plastics into Useful Chemicals Using Sunlight

Chemists at Nanyang Technological University, Singapore (NTU Singapore) have discovered a method that could turn plastic waste into valuable chemicals by using sunlight.

In lab experiments, the research team mixed plastics with their catalyst in a solvent, which allows the solution to harness light energy and convert the

dissolved plastics into formic acid - a chemical used in fuel cells to produce electricity.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/ntu-nss121119.php

New Material Design Tops Carbon-Capture from Wet Flue Gases

Generally speaking, "flue gas" refers to any gas coming out of a pipe, exhaust, chimney etc as a product of combustion in a fireplace, oven, furnace, boiler, or steam generator. But the term is more commonly used to describe the exhaust vapors exiting the flues of factories and powerplants. Iconic though they may be, these flue gases contain significant amounts of carbon dioxide (CO2), which is a major greenhouse gas contributing to global warming.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/epfd-nmd120919.php

Potentially Toxic Chemicals from LCDS in Nearly Half of Household Dust Samples Tested

Chemicals commonly used in smartphone, television, and computer displays were found to be potentially toxic and present in nearly half of dozens of samples of household dust collected by a team of toxicologists led by the University of Saskatchewan (USask).

The international research team, led by US ask environmental toxicologist John Giesy, is sounding the alarm about liquid crystal

monomers--the chemical building blocks of everything from flat screen TVs to solar panels--and the potential threat they pose to humans and the environment.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/uos-ptc121019.php

Acoustic Focusing to Amass Microplastics in Water

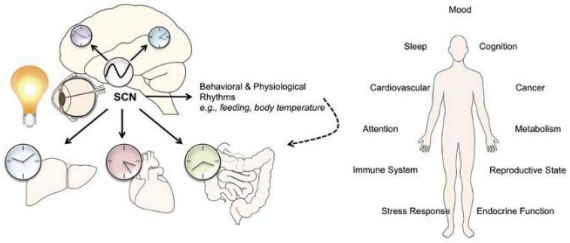
Microplastics are receiving a lot of attention lately due to its difficulty in removal from the environment. Sieves and filtrations are currently the predominant way to capture microplastics in water. However, this is impractical because filters clog easily and regularly need to be cleaned or replaced. Another issue is that it has been impossible to collect anything smaller than 0.3mm, the size of the mesh plankton net pore diameter. This is unfortunate because the majority of microplastics causing havoc are smaller than that, with unknown effects on the eco and biosystems.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/su-aft120919.php

Ergonomics

Combining Science and Design to Measure Our Exposure to Light

How much light do you receive over the course of a day? What type of light enters your eyes? Spectrace, a new piece of wearable tech, could soon provide the answers to these questions. In a groundbreaking move, researchers at EPFL's Laboratory of Integrated Performance in Design (LIPID) have teamed up with teachers and students from Geneva School of Art and Design (HEAD - Genève) to develop a light sensor concept. The device, which rests around the neck like a pair of headphones or can be attached to an item

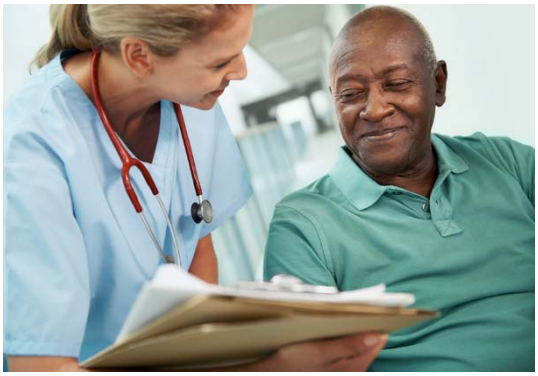


of clothing with a magnetic pin, is designed to be worn all day long - at work, during exercise and in social settings.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/epfd-csa121219.php

Safety

Nurses Sleep Less before a Scheduled Shift, Hindering Patient Care and Safety



Nurses sleep nearly an hour and a half less before work days compared to days off, which hurts patient care and safety, finds a new study by researchers at NYU Rory Meyers College of Nursing. The findings are published in Sleep Health, the journal of the National Sleep Foundation.

"Nurses are sleeping, on average, less than recommended amounts prior to work, which may have an impact on their health and performance on the job," said Amy Witkoski Stimpfel, PhD, RN, assistant professor at NYU Rory Meyers College of Nursing and the study's lead author.

Nursing, especially in hospitals, is dominated by shift work, with nurses working outside of the traditional 9-to-5 day in order to be at the bedside around the clock. Research shows that shift work takes a toll on circadian rhythms and can impair the performance of workers.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/nyu-nsl121019.php

Marine Corps Announces Multiple Upgrades for Utility Task Vehicles

The Marine Corps' Utility Task Vehicles are undergoing several upgrades designed to improve the safety and performance of the vehicle.

Using critical feedback from Marines and taking inspiration spanning the automotive industry to desert racing, engineers and logisticians from the Light Tactical Vehicle program office at Program Executive Officer Land Systems have been working diligently

to research, test, procure and implement changes to the UTV. These changes include high clearance control arms, new run-flat tires, floorboard protection, a road march kit, a clutch improvement kit and an environmental protection cover.

Read more:
https://www.marines.mil/News/News-Display/Article/2037310/marine-corps-utility-task-vehicles-receiving-multiple-upgrades/

New Spray Gel Could Help Take the Bite Out of Frostbite

Mountaineers and winter sports enthusiasts know the dangers of frostbite -- the tissue damage that can occur when extremities, such as the nose, ears, fingers and toes, are exposed to very cold temperatures. However, it can be difficult to get treated quickly in remote, snowbound areas. Now, researchers reporting in ACS Biomaterials Science & Engineering have developed a convenient gel that could be sprayed onto frostbite injuries when they occur, helping wounds heal.

Frostbite causes fluids in the skin and underlying tissues to freeze and crystallize, resulting in inflammation, decreased blood flow and cell death. Extremities are the most affected areas because they are farther away from the body's core and already have reduced blood flow. If frostbite is not treated soon after the injury, it could lead to gangrene and amputation of the affected parts

Read more:
https://www.eurekalert.org/pub_releases/2019-12/acs-nsg121119.php

Data Science Institute Researcher Designs Headphones that Warn Pedestrians of Dangers

You see them all over city streets: pedestrians wearing headphones or earbuds - their faces glued to their phones as they stroll along oblivious to their surroundings.

Known as "twalking," the behavior is not without its dangers. Headphone-wearing pedestrians often can't hear the auditory cues - horns, shouts, or the sound of approaching cars - that signal imminent harm. As a result, the number of injuries and deaths caused by twalking in the U.S. has tripled in the last seven years. Last year, moreover, pedestrian deaths in the U.S. were at their highest level since 1990.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/dsia-dsi120919.php

Emergency Preparedness

Bill Offers Military Bases Weather Protections

Sen. Brian Schatz (D-HI) recently espoused the benefits of legislation designed to protect military bases from extreme weather events by requiring potential disaster preparation and severe environmental condition changes.

The Requiring Every American Defense Installation to Nullify Environmental Stresses for Security (READINESS) Act, which was included in the must-pass annual defense authorization bill, requires all Department of Defense bases have military installation resilience plans.

Read more:
https://homelandprepnews.com/stories/41190-bill-offers-military-bases-weather-protections/

Deployment Health

DARPA Program Bolsters Water Resources for Deployed Troops

The Defense Advanced Research Projects Agency (DARPA) has initiated a program providing deployed units technology to capture potable water from the air in quantities sufficient to meet daily needs.

The Atmospheric Water Extraction (AWE) program seeks to aid the water resource effort even in extremely dry areas of the world.

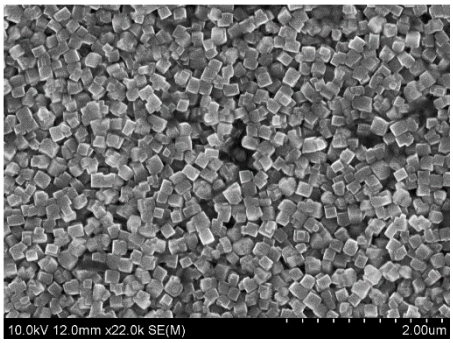
The demand for drinking water is a constant across all Department of Defense missions, and the risk, cost, and complexity that go into meeting that demand can quickly become force limiting factors," Seth Cohen, the AWE program manager, said. "Right now, the military relies on purification of regional fresh and saline water sources, or transported bottled water, neither of which are optimal for mobile forces that operate with a small footprint."

Read more:
https://homelandprepnews.com/stories/41413-darpa-program-bolsters-water-resources-for-deployed-troops/

Nanotechnology

Ultrafast Stimulated Emission Microscopy of Single Nanocrystals in Science

The ability to investigate the dynamics of single particle at the nano-scale and femtosecond level remained an unfathomed dream for years. It was not until the dawn of the 21st century that nanotechnology and femtoscience gradually merged together and the first ultrafast microscopy of individual quantum dots



(QDs) and molecules was accomplished. Ultrafast microscopy studies entirely rely on detecting nanoparticles or single molecules with luminescence techniques, which require efficient emitters to work. However, such techniques cause degradation to the sample, as well as, yield little information about the dynamics of the system in the excited state. Only in recent years, the efforts to find an alternative compatible technique to study fast processes in nano-objects came into the spotlight.

Read more:
https://www.eurekalert.org/pub_releases/2019-12/iiop-use120919.php

Regulatory Research & Industrial Hygiene Professional News

Congress

Federal Safety Agencies Set To Receive Budget Increases in FY 2020

OSHA is in line for a $24 million funding increase as part of a federal budget agreement that passed in the House on Dec. 17.

One of the two fiscal year 2020 appropriations packages (H.R. 1865) allocates $581.8 million for the agency, an increase from $557.8 million in FY 2019 and more than the Trump administration's request of $557.5 million. This amount includes more than $11.5 million for the Susan Harwood Training Grant Program, which received a little more than $10.5 million this past fiscal year. In each of its budget requests, the Trump administration has sought to eliminate the program and phase out the Chemical Safety Board. Congress has rejected the latter request as well, allocating another $12 million for CSB in FY 2020.

Read more:
https://www.safetyandhealthmagazine.com/articles/19249-federal-safety-agencies-set-to-receive-budget-increases-in-fy-2020

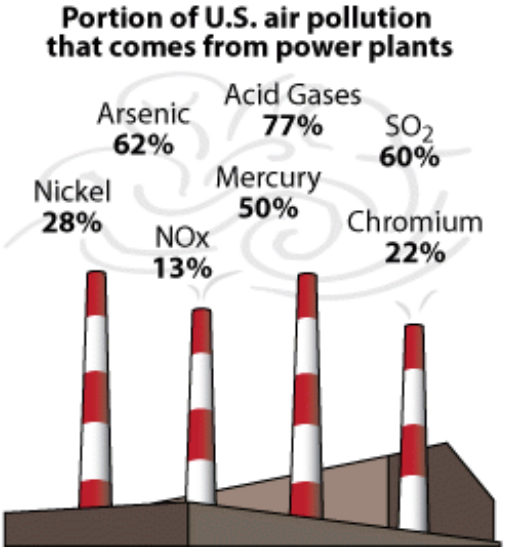
EPA

EPA's Independent Science Board Says Agency Ignored Its Advice on Mercury Rule

The EPA independent board of science advisers took the agency to task Tuesday for ignoring its advice when revising Obama-era protections for mercury pollution from power plants.

In a draft released by the EPA's Science Advisory Board (SAB), members say their recommendations "do not seem to have been taken into consideration in the published analysis."

Under the Obama administration, the EPA's Mercury and Air Toxics Standards (MATS) rule was projected to save between $37 billion and $90 billion dollars when taking into account savings on public health. Under the Trump administration's proposal, the estimate has been reduced to between $4 million and $6 million.



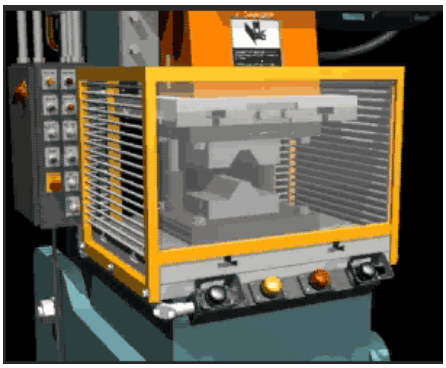
Read more: https://www.aiha.org/news/epa-certain-uses-of-nmp-present-unreasonable-risks-to-workers-consumers

OSHA

Machine Guarding Named on OSHA's Top 10 Violations in 2019

A newly released study from the Bureau of Labor Statistics (BLS) found that more than 34,000 people sustain a lost-time injury in the workplace annually due to machine accidents. Additionally, the Occupational Safety & Health Association (OSHA) included the lack of machine safeguarding in its "Top Ten List" of frequently cited employee safety violations of 2019, with 1,743 violations issued.

While machines play a critical role in the production process and allow employees to work with less effort, they are inherently dangerous. From grinders to milling machines, industrial machines are designed to operate at high speeds and pressures. Without safeguarding in place, any physical contact with a machine's moving parts can result in severe injuries and even death.



Read more:
https://www.qualityassurancemag.com/article/machine-guarding-named-on-osha-top-10-violations-in-2019/

OSHA Final Rule Corrects Errors in Standards

FEDERAL REGISTER
The Daily Journal of the United States Government

OSHA has issued corrections for its Walking-Working Surfaces, Personal Protective Equipment and Special Industries standards to remove "typographical, formatting and clerical errors," publishing a final rule in the Dec. 17 Federal Register.

In its Personal Fall Protection Systems Standard (1910.140), OSHA no longer requires the gate strength of snaphooks and carabiners to be proof tested to 3,600 pounds in all directions. Instead, the "intended requirement" is that the gate of carabiners and snaphooks are "capable of withstanding a minimum load of 3,600 pounds without the gate separating from the nose of the snaphook or carabiner body by more than 0.125 inches."

Read more:
https://www.safetyandhealthmagazine.com/articles/19291-osha-final-rule-corrects-errors-in-standards

NIOSH

WVU and NIOSH Study Ways to Prevent Lung Disease in Dentistry Professionals

Inhaling dangerous particulates is a hazard of coal mining, mold remediation, sandblasting ... and dentistry.

Fotinos Panagakos, associate dean of research at the West Virginia University School of Dentistry, is collaborating with a team at the National Institute for Occupational Safety and Health to study how microscopic, airborne particulates and gases might be generated during dental procedures. NIOSH--a division of the Centers for Disease Control and Prevention--is funding the project.

Read more:
https://www.eurekalert.org/pub_releases/2019-06/wvu-wan061219.php

Researchers Develop Germ-Killing Fabrics to Prevent Hospital Infections

On any given day, about one in 31 hospital patients in the U.S. picks up at least one health-care-associated infection, according to the Centers for Disease Control and Prevention (CDC).

People get exposed to bacteria, fungi and viruses, including multidrug-resistant pathogens, while they are receiving medical treatment. The resulting infections have led to the loss of tens of thousands of lives and

have cost the country's health care system billions of dollars each year. In addition, health care personnel are exposed to a high

occupational burden of infectious agents, causing illness and affecting the workers' well-being.

Read more: https://www.uml.edu/news/stories/2019/sun-goodyear-niosh-grant.aspx

APHC

January DOEHRS-IH *SUPER STARS*

Training


2020 Army IH Webinar Days
#1 December 4, 2019
0900-1000 MANAGE YOUR IH MONSTER: FY20 Metrics Update
1000-1100 IH LEADERS-A SEG Sample Mystery- RIA
1100-1200 ASK THE EXPERT- OEL Selection
#2 January 8, 2020
0900-1000 MANAGE YOUR IH MONSTER: SEGs
1000-1100 IH LEADERS-Engineering Control Implementation-Ft Campbell
1100-1200 ASK THE EXPERT-Ototoxins-LTC Merkley
1200-1300 ASK THE EXPERT-Hexavalent Chromium Update
#3 March 4, 2020
0900-1000 MANAGE YOUR IH MONSTER: Common Sample Errors
1000-1100 IH LEADERS-Exporting Samples from DOEHRS using LIDS9
1100-1200 IH LEADERS -Steps to Merge SEG Monsters-RIA
1200-1300 ASK THE EXPERT-Army Public Health Center Industrial Hygiene Sample Analysis Laboratory -Kara Zabetakis
#4 June 17, 2020
0900-1000 MANAGE YOUR IH MONSTER: Observations and Notes New Functionality
1000-1100 IH LEADERS-A Historical look at Observations and Notes-Bragg
1100-1200 IH LEADERS -Special IH Case Study- Watervliet
1200-1300 ASK THE EXPERT-TBD
#5 August 5, 2020
0900-1000 MANAGE YOUR IH MONSTER:
1000-1100 IH LEADERS -Special IH Case Study-Region
1100-1200 IH LEADERS -Leaders Creating Leaders-CCAD
1100-1200 ASK THE EXPERT-TBD

IMPORTANT NOTE: DATE CHANGES HAVE TAKEN PLACE

2020 Training Schedule (traditional classroom events)

Aberdeen Proving Ground North Campus, Maryland

December 9-13, 2019 Army DOEHRS-IH Initial Course (1st Quarter)-Mallette Training Facility, APG-N Campus Room 13

February 24-28, 2020 Army DOEHRS-IH Initial Course (2nd Quarter)-Mallette Training Facility, APG-N Campus Room TBD

April 20-24, 2020 Army IH Professional Practice Course - Mallette Training Facility, APG-N Campus Room 23 & 11

April 27-May 1, 2020 Blueprint Reading & Design Review –Havre de Grace, MD NG Armory

May 4-8, 2020 Healthcare & Laboratory Ventilation Course- 10A & 115

May 11-15, 2020 Industrial Ventilation Course - Mallette Training Facility, APG-N Campus Room Rm 10A & 115

May 18-22, 2020 Army DOEHRS-IH Initial Course (3rd Quarter)- Mallette Training Facility, APG-N Campus Room 24

August 17-21, 2020 Army DOEHRS-IH Initial Course (4th Quarter)- Mallette Training Facility, APG-N Campus Room 24

RESERVE SEATING QUOTAS NOW

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil

ENROLLMENT IS OPEN NOW!

2020 ARMY DOEHRS-IH INITIAL COURSE (PHASE 1 ONLINE)

This course adds five new interactive lessons and allows for more space/time in the classroom Phase 2 environment for hands on activities.

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil

Students must request access pass code paula.c.steven.civ@mail.mil

AVAILABLE NOW ON THE APHC BLACKBOARD

DECEMBER COURSE MAINTENANCE CYCLE COMPLETE

https://aiph-dohs.ellc.learn.army.mil

1. APHC reported transcripts to Career Program 12 and cleared rosters.
2. If you'd like to re-take a course, you may re-enroll now.

New Online material (self-enroll/self-development)

Occupational Exposure Limits (30min)

Certificate with 2 easy steps:
1-Completely view 30 minute lecture.
2-Answer the 7 embedded knowledge check questions with 70% minimum score.

ELO1: Describe **What They Are**
ELO2: Explain **Why We Use Them**
ELO3: Explain **How We Use Them**
ELO4: Give Examples of **When We Use Them**

IN *"WEBINAR"* COURSE AT APHC BLACKBOARD

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil

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ELO4: Give Examples of **When We Use Them**

IN *"WEBINAR"* COURSE AT APHC BLACKBOARD

COMING SOON!

2020 HAZWOPER REFRESHER 8HR

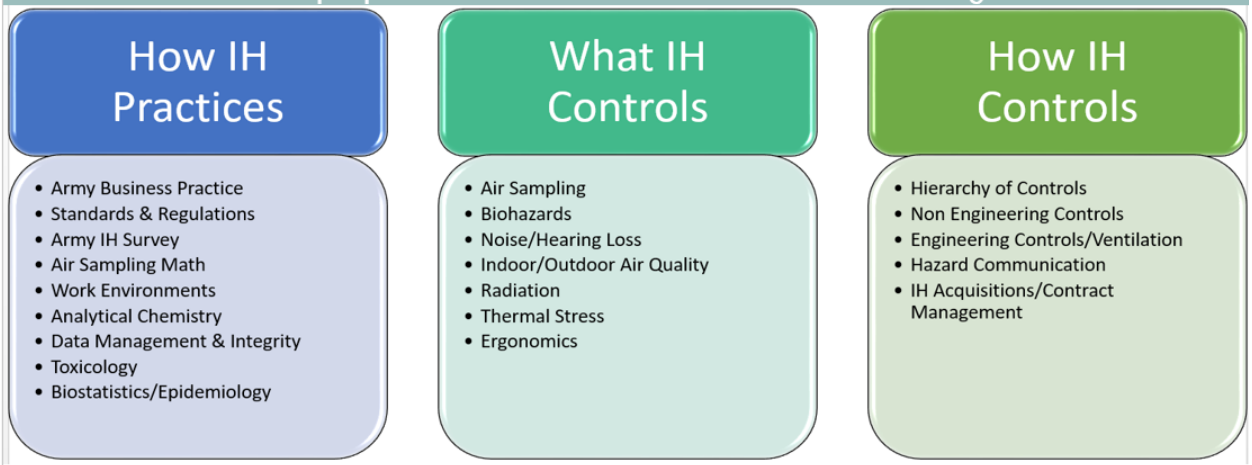
This course will be A-La-Carte. Users will select 8hrs of lecture from over a hundred hours of available related content. Users must upload a valid certificate to participate. This course will be available January 1, 2020 and must be completed before December 31, 2020.

COMING SOON TO APHC BLACKBOARD

New Online material (self-enroll/self-development)

2020 INTRODUCTION TO INDUSTRIAL HYGIENE 40HR COURSE

This course has a new look, shorter lessons, only 25 actual hours of lecture, and will include an interactive project that enforces enhanced stakeholder integration.



SELF-ENROLL NOW ON BLACKBOARD

New Online material (self-enroll/self-development)

IH Professionalism (0.5hr) is short lecture (23min) with *no homework, quizzes, or exam*. Participants receive a certificate from viewing ALL slides and using a code word to initiate a certificate of completion.

SELF-ENROLL NOW ON BLACKBOARD

COMPETENCY VERIFICATION SELF ASSESSMENTS

- Curious about how you stand professionally?
- Not sure what specifics to target with self development?
- Looking for free exam prep questions?

No lessons, lectures, certificates, just sets of short quizzes to help bridge the gaps.

SELF-ENROLL NOW ON BLACKBOARD

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil

Analytical Chemistry
Basic Science & Math
Biohazards
Health Hazards
Indoor/Outdoor Air
Noise
Sampling
Survey Equipment
Thermal Stressors
Toxicology
Industrial Work Environments

LOOKING FOR EXTRA CREDITS/POINTS?

FREE ITRC ONLINE TRAINING CLASSES
Sponsored by EPA http://www.itrcweb.org/training

FREE UNIV ALBANY ONLINE TRAINING CLASSES
Sponsored by Center for Public Health Continuing Education
https://www.albany.edu/sph/cphce/images/phl_topics_19-20.png

NIOSH Respiratory Protection Webinar Recordings
https://www.cdc.gov/niosh/npptl/Respiratory-Protection-Week-2019.html

New Online material (self-enroll/self-development)

Industrial Hygiene Health Hazard Assessment Program (0.5hr)

THERE IS 1 LECTURE IN THIS COURSE (23min) THE LECURE HAS EMBEDDED KNOWLEDGE CHECKS. VIEWING ALL SLIDES AND COMPLETING THESE EMBEDDED KNOWLEDGE CHECKS IS MANDATORY. PARTICIPANTS HAVE TWO ATTEMPTS AT EACH QUESTION AND MUST COMPLETE THE LESSON ONCE STARTED.

SELF-ENROLL NOW ON BLACKBOARD

New Online material (self-enroll/self-development)

Introduction to Radiation (1.25hr)

This is a short lecture (66min) with *no homework, quizzes, or exam*. Participants receive a certificate from viewing ALL slides. This is both a great awareness level, refresher, or certification exam prep lecture.

SELF-ENROLL NOW ON BLACKBOARD

Ventilation Hoods (4hr)

No Exam. Certificate with 3 easy steps:
1-Completely view lecture with embedded knowledge check questions.
2-Watch the Practice Problem Video as calculations are worked out step by step by the instructor.
3-Complete multiple attempt homework assignment.

There's not really 4 hours of work in this course, but we are awarding a 4 hour certificate! This gives you credit for the lesson, the video, and the homework.

SELF-ENROLL NOW ON BLACKBOARD

CIH NOISE MATH (3hr)

Certificate with 3 easy steps:
1-Completely view 22 minute lecture.
2-Watch the Practice Problem Videos as homework calculations are worked out step by step by the instructor.
3-Complete exam 70% minimum score.

There's not really 3 hours of work in this course, but we are awarding a very generous 3 hour certificate! This gives you credit for the lesson, the videos, and the homework.

SELF-ENROLL NOW ON BLACKBOARD

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

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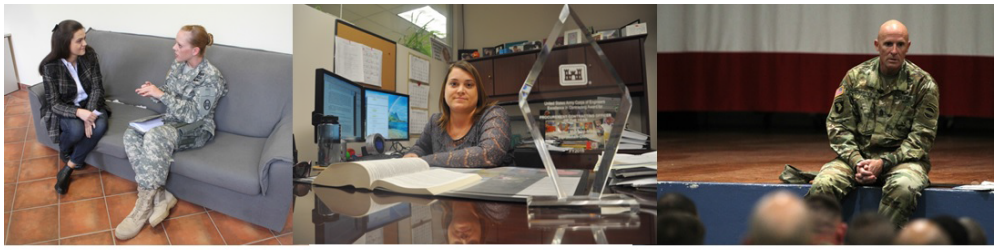

Professional Development and Career Programs

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.