NIOSH eNews

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First Year Anniversary

It has been one year since the inaugural issue of NIOSH eNews. eNews was initiated to better deliver our latest information to you, our partners. We now have a subscription of nearly 20,000, making eNews one of the top five most subscribed listservs at CDC. **Thank you for your support**. Feedback and comments from you make each issue better. Please send your comments to us at NIOSHeNews@cdc.gov.

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From the Director's Desk

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NIOSH remembers those workers who have been injured or killed while on the job.

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First current NIOSH employee wins this prestigious award.

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Hand-Arm vibration conference

2004 National Symposium on Agricultural Health and Safety

2nd International Symposium on Work Ability

Word of the Month

Total Inward Leakage

From the Director's Desk

Historically, the mining industry has experienced the highest rates of fatal and nonfatal injury in the U.S. Additionally, miners are also subjected to numerous exposures leading to disabling illnesses, like silicosis. NIOSH is dedicated to decreasing the illnesses and injuries miners face throughout the U.S. and abroad through the development of innovative engineering controls and effective training materials.

Reducing Respiratory Exposures

Underground miners are exposed to the highest levels of diesel particulate matter (DPM)—with an estimated 34,000 exposed to concentrations 20 to 40 times the threshold limit value proposed by the American Conference of Governmental Industrial Hygienists. Partnerships with the Bituminous Coal Operators Association, the National Mining Association, the United Mine Workers of America, the National Stone, Sand and Gravel Association, the MARG Diesel Coalition, and the United Steel Workers of America have allowed NIOSH to conduct in-mine control technology studies resulting in scientifically sound research findings and a DPM filter selection guide for industry. Additionally, these partnerships generated information to assist the Mine Safety and Health Administration (MSHA) in determining that elemental carbon was the proper substitute for DPM. The filter selection guide is available on both the NIOSH and MSHA web sites. http://www.cdc.gov/niosh/mining/diesel/diesel.html. Contact George Schnakenberg at GSchnakenberg@cdc.gov for more information.

Novel Technique Can Reduce Occupational Hearing Loss

An estimated 90% of coal miners will have hearing loss by the age of 52. To reduce this exposure, NIOSH has developed a low-cost engineering noise control to reduce excessive noise exposures experienced by operators of continuous mining machines. The application of a polyurethane coating to the conveyor's flight bars resulted in a total reduction of 7 decibels in sound level at the operator's position when the conveyor was in operation. The coating has been shown to be very durable, displaying almost little or no wear in 3 months under operating conditions in an underground coal mine. For more information, contact R.J. Matetic at RMatetic@cdc.gov.

Preventing Groundfalls

Groundfalls remain the greatest single hazard faced by underground miners. Various roof support systems are employed to prevent these catastrophic events from occurring. Steel rods called "roof bolts" are anchored into the first few feet of the mine roof to bind the layers of rock together to form a stronger rock beam. Other support systems called "standing supports" are assembled in the mine opening to bridge the gap between the mine roof and floor. These systems provide a last line of defense to support isolated pieces of roof rock, which can weigh in excess of 100 tons, from falling and fatally injuring miners. NIOSH evaluates standard roof support systems through stringent full-scale laboratory testing in the Mine Roof Simulator (MRS). The MRS is the world's largest and most powerful hydraulic press, providing up to 3 million pounds of force to simulate the pressures of overburden rock mass on a mine opening. In the past ten years, over 50 new support products have been fully tested in the MRS and commercialized for use in underground mines. Taking it a step further, NIOSH has developed support systems that are smaller, lighter and can be installed with equipment instead of pure physical labor. These efforts reduce the risk to those miners who install these critical support systems. For more information, contact Tom Barczak at TBarczak@cdc.gov.

Tapping on the roof rock above and listening for the hollow sound of loose blocks of rock is an age-old and effective practice for identifying unstable roof rock conditions. Laboratory tests have demonstrated that the acoustic response from direct impacts is evident in rock surface vibrations which can be remotely measured with a laser vibrometer; thereby, making it unnecessary for a miner to stand underneath potentially loose rock. Field tests using a portable, battery-powered, laser Doppler vibrometer determined that vibrations recorded on the loose rock target exhibited higher amplitudes and longer durations than those observed on stable rock. These results demonstrate the feasibility in using both non-contact vibration response measurements and remotely generated mechanical disturbances in a ground fall hazard detection application that removes the miner from the hazard. Contact Peter Swanson at PSwanson@cdc.gov for more information.

Communicating with Miners

NIOSH has a variety of communication products developed for miners, employers, and safety managers, all of which are available through the NIOSH Mining Topic Page, http://www.cdc.gov/niosh/mining/. These materials include: safety training videos and programs, Reports of Investigations (RI), Information Circulars (IC), downloadable software, and mining toolbox kits.

Upcoming Conference in May

NIOSH researchers will be showcasing these and other mining related control technologies at the 2004 International Joint Conference on Mine Safety and Health. NIOSH Director John Howard and NIOSH Associate Director for Mining Research Lewis Wade will be keynote speakers. The conference will be held May 24-28 in Salt Lake City, UT and includes three events: the 34th Annual Institute on Mining Health, Safety and Research; the International Society for Mine Safety Professionals Critical Issues Conference; and the Train the Trainer program. More information on the conference, including registration information, is available at http://www.ismsp.com/2004.

Workers' Memorial Day

On April 28, NIOSH joined the international labor community in remembering those workers who have died or been injured on the job. Each day in the U.S. fifteen workers die from their injuries, 134 die from work-related diseases, nearly 11,000 are treated in emergency departments and approximately 200 of these workers are hospitalized, all as a result of work-related injuries and illnesses. To commemorate Workers' Memorial Day 2004, a special issue of the U.S. Centers for Disease Control and Prevention's (CDC) Morbidity and Mortality Weekly Report (MMWR) was released on April 23 which included results from NIOSH surveillance and research activities related to trenching and evacuation work, carbon monoxide poisonings while operating motorboats, and fatalities among pilots serving the agricultural community. To view the special issue, visit http://www.cdc.gov/niosh/docs/mmwr/WkrMemDay04.html.

2004 Alice Hamilton Science Awards

Since 1988, the Alice Hamilton Science Award has recognized NIOSH scientists and engineers for scientific excellence in the development of technical and instructional materials. The award is named for Dr. Alice Hamilton, the first American physician to devote her professional life to the practice of occupational health. The 2004 awards were presented on April 28 in four areas: biological science, engineering and physical science, human studies, and educational materials.

The 2004 recipients are:

- *Rapid Detection and Determination of the Aerodynamic Size Range of Airborne Mycobacteria Associated with Whirlpools* identifies a ground-breaking method for rapid detection of respirable airborne mycobacteria that will help reduce health risks associated with contaminated water reservoirs or metalworking fluids.
- *Control of Wake-Induced Exposure Using an Interrupted Oscillating Jet* describes a novel procedure for reducing airborne hazardous exposures experienced by workers standing upstream from the contaminant source. In experiments using computational fluid dynamics, researchers redirected air turbulence with oscillating jets leading to a 99% reduction in upstream exposures.
- *Dying for Work: The Magnitude of U.S. Mortality From Selected Causes of Death Associated with Occupation* provides the most well-documented estimate to date for annual deaths due to occupational disease in the United States. The paper reports an estimated 55,000 occupationally caused deaths per year, placing occupation as the 8th leading cause of death in the U.S.
- *Guidance for Filtration and Air-Cleaning Systems to Protect Building Environments from Airborne Chemical, Biological, or Radiological Attacks* presents practical, easy-to-understand guidance for building owners, designers, engineers and others responsible for ventilation system selection and maintenance.

More information on the Alice Hamilton Science Award, including abstracts for each the winning publications, is available at http://www.cdc.gov/niosh/hamilton/.

James P. Keogh Award

Dawn Castillo has been named the recipient of the 2004 James P. Keogh Award for Outstanding Service in Occupational Safety and Health. Dawn is recognized for her outstanding contributions to the safety and health of adolescent workers through research, raising awareness nationally and internationally through publications and presentations, providing scientific expertise to support regulatory protections for young workers, and collaborating with various youth-oriented advocacy groups. Dawn is the Chief of the Surveillance and Field Investigations Branch in the NIOSH Division of Safety Research. The James P. Keogh Award is presented each year to one current or former NIOSH employee for exceptional service in the field. More information on the Keogh award can be found at http://www.cdc.gov/niosh/hamilton/keoaward.html.

Dawn Castillo

Nanotechnology at NIOSH

NIOSH has recently initiated three activities to further the understanding of potential occupational health concerns related to nanotechnology, the research and development of technologies at the atomic, molecular, or macromolecular levels (<100 nanometers in diameter).

- In February 2004, NIOSH created the Nanotechnology Safety and Health Program, a five-year multidisciplinary study into the toxicity and health risks associated with occupational nanoparticle exposure. The research will cover laboratory and field studies of aerosol generation and characterization, toxicity studies investigating the significance of aerosol surface area as a dose metric, and cardiopulmonary toxicity and lung disease related to carbon nanotubes and other nanoparticles. For more information on the program, contact Vincent Castanova at VCastranova@cdc.gov.

- On March 4, 2004, NIOSH formerly joined the Nanomaterial Science, Engineering and Technology (NSET) subcommittee of the National Science and Technology Research Council. Participation in this interagency group involves coordinating the federal government's nanoscale research and development activities. NIOSH is also co-chairing a NSET working group addressing the environmental and health impact of nanomaterials. For more information, contact Andrew Maynard at AMaynard@cdc.gov.

- NIOSH is cosponsoring the First International Symposium on Occupational Health Implications of Nanomaterials. The symposium will be held in Derbyshire, United Kingdom on October 12-14, 2004. More information on the symposium is available at http://www.hsl.gov.uk/news/index.htm#nano.

- eNews will continue to keep you in touch with developing Nanotechnology activities at NIOSH. Coming soon… our newly created Nanotechnology topic page.

Kentucky ROPS Project One of Seven Best Practices in Prevention of Neurotrauma

Research completed at the NIOSH Southeast Center for Agricultural Health and Injury Prevention has been featured as one of seven best practices for preventing neurotrauma in the report, *Preventing Neurotrauma: A Casebook of Evidence Based Practices*. Funded under the NIOSH Community Partners for Healthy Farming Program, the Kentucky ROPS (Rollover Protective Structures) Project was a three-year community education program to promote farmers' adoption of ROPS and seat belts in two rural Kentucky counties. Nearly four years after the program began, tractor equipment dealers had sold 81 ROPS to 79 farmers, a dramatic increase compared to the 4 ROPS sold in the year prior to the intervention. The report was prepared by the Ontario Neurotrauma Foundation, Laurentian University's Centre for Research in Human Development, and the Life Span Adaptation Projects of the University of Toronto. More information on the ROPS project is available on the NIOSH Southeast Center's web site at http://www.mc.uky.edu/scahip and on the National Agricultural Safety Database at http://www.cdc.gov/nasd/docs/d000901-d001000/d000997/d000997.html.

HHS Awards $81 Million for Five-Year Health Screening of World Trade Center Rescue and Recovery Workers

NIOSH will administer $81 million in grants for a five-year health screening program of New York City firefighters, workers and volunteers who provided rescue, recovery, and restoration services at the World Trade Center disaster site. Funding from the U.S. Department of Health and Human Services (DHHS) will assist six institutions in providing free standardized clinical examinations to these workers. The new screening program will guide employers and public health professionals in identifying symptoms, injuries, and conditions that may indicate long-term illness stemming from Ground Zero. Senator Hillary Clinton said, “This is a tremendous step toward fulfilling our promise to the firefighters, emergency workers and volunteers who labored at Ground Zero.” The grants are an extension of the 2002 DHHS funding of clinical examinations in which all of the 11,000 New York City firefighters and approximately 11,000 other rescue workers received initial medical examinations. More information can be found at http://www.cdc.gov/niosh/updates/hhs-03-18-04.html.

Third Phase of Project to Evaluate ANSI Machine Safety Guidelines Begins

NIOSH along with partners from business, labor and the insurance industry are entering the final phase evaluation on the effectiveness of an American National Standards Institute (ANSI) voluntary guideline for preventing occupational injuries from industrial machinery. The ANSI guideline, ANSI B11 TR3, describes a strategic process for employers to use in assessing injury risk and determining where to focus prevention efforts. The NIOSH-led study compares operations between companies adopting the ANSI B11 TR3 process and those companies using traditional safety practices. In phase one, company representatives were trained on how to use the software. In phase two, those representatives conducted risk assessments, identified protective measures to reduce risks, and implemented those measures. During phase three, companies will use the protective measures for a one-year period. NIOSH will then reassess occupational injury data to determine differences between those companies who adopted the TR3 process and those using traditional safety practices. For more information on the technical aspects of the study, contact John Etherton at jre1@cdc.gov.

Brentwood Crisis Exemption Team

The Brentwood Post Office Anthrax Crisis Exemption Team received the U.S. Environmental Protection Agency’s (EPA) Gold Medal Award on April 27. The team consisted of NIOSH scientists Matt Gillen and Greg Burr and scientists from EPA, the Occupational Safety and Health Administration (OSHA) and the Armed Forces Radiological Research Institute (AFRRI). In October 2001, two letters containing the deadly *Bacillus anthracis* (anthrax) spores passed through the U.S. Postal Service Brentwood Processing and Distribution Center in Washington, DC. Fumigation of the facility involved high concentrations of chlorine dioxide gas, requiring a crisis exemption from EPA. The team assisted the USPS by critically reviewing technical plans to ensure public safety while maximizing the likelihood of inactivating the anthrax spores present and to ensure that rigorous clearance sampling would be performed. The intensive and complex review began in June 2002 and continued until the crisis exemption was issued in December 2002.

NIOSH Seeking Public Comments on New Program to Test PPE Leakage

NIOSH is seeking comments concerning the establishment of Total Inward Leakage (TIL) performance requirements and laboratory test capabilities for testing personal protective equipment (PPE). The initial TIL project will address half-mask respirators with other classes of respirators to follow. The program concept can be viewed at http://www.cdc.gov/niosh/npptl/tilcon42004.html. Comments concerning the program can be sent to niocindocket@cdc.gov.

NIOSH Furthers Partnership with ASSE

Hongwei Hsiao has been selected as the newest member of the American Society of Safety Engineers (ASSE) Foundation’s research committee. Hongwei’s appointment is an important step forward in the NIOSH/ASSE partnership which was established in 2003. “By leveraging our resources, we will be able to enhance overall national safety research efforts and accelerate the transfer of research products to industrial practices” said Hongwei. His responsibilities on the committee include assisting with the selection of workplace safety research projects and selecting the two ASSE Foundation/Liberty Mutual Research Fellowships. Hongwei is the Protective Technology Branch Chief in the NIOSH Division of Safety Research. More information on the ASSE can be found at http://www.asse.org/foundat.htm.

NORA

NORA Leaders Reflect on Accomplishments, Plan for Future

Leaders from the National Occupational Research Agenda (NORA) teams met in Cincinnati, Ohio on April 1-2 to discuss past achievements and future goals for NORA sponsored occupational safety and health research. Established in 1996, NORA defines 21 research priorities to guide research in the areas of disease and injury; work environment and workforce; and research tools and approaches. Partners from government, industry, labor, and academia collaborate on teams representing these 21 research areas. During the April meeting team leaders shared their future goals and presented their current accomplishments. These accomplishments include conducting and promoting research, sponsoring conferences and trainings, and developing educational materials for diverse audiences. As a new feature of eNews, upcoming issues will profile the work of individual NORA teams. For more information about NORA please visit http://www2a.cdc.gov/NORA/.

News From Our Partners

Trinational Occupational Safety and Health Workgroup Launches Web Site

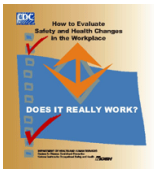
A new information source about the occupational safety and health activities of the U.S., Mexico and Canada is now available on the Trinational Occupational Safety and Health Group's web site, http://www.naalcosh.org. The group, formed under the auspices of the North American Free Trade Agreement's labor arm, the North American Agreement on Labor Cooperation, brings together technical experts from the three nations to advance cooperation and programs in key areas of occupational safety and health. The U.S. chairman is John Henshaw, Assistant Secretary of Labor for Occupational Safety and Health. More information on this working group is available from the Occupational Safety and Health Administration at http://www.osha.gov/as/opa/quicktakes/.

Communication Products

Programs in Brief 2004

The 2004 edition of the NIOSH Programs in Brief is now available at http://www.cdc.gov/niosh/docs/pib. Each of the 20 descriptions includes a statement of the public health issue or problem, describes NIOSH's activities and accomplishments, and identifies steps for future research.

Does It Really Work?



A new NIOSH web page and manual provide guidance to employers in assessing and measuring the effectiveness safety and health changes in the workplace. The manual, *Does it Really Work? How to Evaluate Safety and Health Changes in the Workplace* DHHS (NIOSH) Pub No. 2004-135, provides case studies and useful tips in an easy-to-read format. The accompanying web site, http://www.cdc.gov/niosh/docs/2004-135, is an interactive version of the manual. The manual was developed by the Intervention Effectiveness Team under the National Occupational Research Agenda.

New NIOSH Alert Warns of Risks from Hazardous Drugs

A prepublication version of the new NIOSH Alert, *Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Healthcare Settings*, is now available. The Alert makes recommendations for reducing occupational risks in healthcare settings from antineoplastic drugs and other pharmaceutical agents classified in the scientific literature as hazardous drugs. The recommendations include controlling job-related exposures through written company policies, and issuing proper safety controls and personal protective equipment to employees. The Alert is available at http://www.cdc.gov/niosh/docs/2004-HazDrugAlert.

NMAM 4th Edition

A new edition of the NIOSH Manual of Analytical Methods (NMAM) is now available. NMAM is a collection of methods for sampling and analysis of contaminants in workplace air, and in the blood and urine of workers who are occupationally exposed. The methods have been developed or adapted by NIOSH and our partners and have been evaluated according to established experimental protocols and performance criteria. The new edition is accessible at http://www.cdc.gov/niosh/nmam.

Upcoming Events

Public Meeting to Discuss PAPR Standards Development

NIOSH's National Personal Protective Technology Laboratory (NPPTL) will hold a public stakeholder meeting on May 4, 2004 from 9:00am to 5:00pm at the Pittsburgh/Southpointe Hilton Garden Inn in Canonsburg, PA. The meeting will continue discussions on standards and testing processes for powered air-purifying respirator standards suitable for respiratory protection against chemical, biological, radiological, and nuclear agents. More information on the meeting and registration information is available at http://www.cdc.gov/niosh/npptl/0504meetlttr.html.

Hand-Arm Vibration Conference

NIOSH will cosponsor the 10th International Conference on Hand-Arm Vibration to be held June 7-11, 2004 in Las Vegas, Nevada. Alice Hamilton, the first American physician to devote her life to the practice of industrial medicine, published the first comprehensive study in 1918 on the occupational origin of Raynaud's Phenomenon, now called Hand-Arm Vibration Syndrome (HAVS). Significant progress has been made since that time towards understanding HAVS, risk assessment of vibration exposure, and the development of effective strategies to reduce the prevalence of HAVS. The top scientists and research engineers in this field from all over the world will attend this conference and present information on the most recent scientific discoveries. For more information on this conference can be found at http://www.cdc.gov/niosh/pdfs/10th-Int-Conf-H-A-Vib-final.pdf or by contacting Ren G. Dong at rkd6@cdc.gov. Additional information on NIOSH research pertaining to hand-arm vibration is available at http://www.cdc.gov/niosh/handvibra.html.

2004 National Symposium on Agricultural Health and Safety

The NIOSH High Plains Intermountain Center for Agricultural Health and Safety based at Colorado State University will host the 2004 National Symposium on Agricultural Health and Safety on June 20-24, 2004 at the Keystone Resort in Colorado. More information on the symposium can be accessed at http://www.hicahs.colostate.edu.

2nd International Symposium on Work Ability

The 2nd International Symposium on Work Ability is scheduled for October 18-20, 2004 in Verona, Italy. The Symposium is being organized by the Universities of Milano and Verona, the International Commission on Occupational Health (ICOH) Scientific Committee "Ageing and Work" and the International Ergonomics Association (IEA) Technical Committee "Ageing." Topics include ways to assess and promote work ability and the factors affecting the work ability of older workers. NIOSH is an institutional member of ICOH. For more information on the symposium, go to http://www.cdc.gov/niosh/pdfs/workability-a.pdf.

Word of the Month

Total Inward Leakage (TIL) is a quantitative comparison of the concentration of a test material inside the personal protective equipment (PPE) to the concentration of the test material in an enclosure.

NIOSH eNews on the Web: www.cdc.gov/niosh/enews/

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