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## From the Director's Desk

A year after the Sago mine disaster of January 2, 2006, the impact of the tragedy continues to be felt. As safety and health professionals, we are reminded that our work to identify, understand, and mitigate risks of injury and death in work environments has a profound human dimension.

The Sago disaster and the subsequent fatal explosion at the Darby mine in Kentucky on May 20, 2006, prompted the landmark Mine Improvement and New Emergency Response Act of 2006 (*The MINER Act*) which was signed on June 15, 2006 <http://www.msha.gov/MinerAct/2006mineract.pdf>. Among the charges given to NIOSH and its partners in the federal government, the Act:

- Establishes an Office of Mine Safety and Health in NIOSH, with responsibilities for stimulating new mine safety technologies and equipment.
- Mandates NIOSH research on alternatives for safe refuge of miners inside a mine during and following an emergency, with results of the research to be reported by the end of 2007.
- Gives NIOSH an important role in assisting a new technical study panel on the utilization of belt air and the composition and fire retardant properties of belt materials in underground coal mining.

NIOSH is working intently with its partners in the Mine Safety and Health Administration, other federal and state agencies, and the mining community to carry out its duties under the Act. Elsewhere in this issue, you will see news items about our solicitation of proposals for refuge chamber research, and about the formation of the technical study panel. The items provide links to further information about these initiatives, which I encourage you to read.

In coming months, as these and other efforts progress, we will keep you informed through new postings to the NIOSH web page, NIOSH eNews coverage, and other channels. We welcome your interest and comments as we proceed.

## Update of Study of Asbestos Disease in Libby Miners Published

An updated NIOSH study of asbestos-related diseases among vermiculite miners, millers, and processors in Libby, Montana, was published on-line by *Environmental Health Perspectives*, a peer-reviewed research journal of the National Institute of Environmental Health Sciences, on January 3. The study followed the Libby workers through 2001 and found that they had significantly higher than expected incidences of fatal asbestosis, lung cancer, and cancer of the pleura. The findings were consistent with previous mortality studies of workers from this cohort, which were published by NIOSH researchers in the 1980s. The article is available online at <http://www.ehponline.org/members/2007/9481/9481.pdf>. NIOSH information and recommendations for minimizing the generation and inhalation of dust during the handling of asbestos-contaminated vermiculite from Libby are on the NIOSH topic Web page at <http://www.cdc.gov/niosh/topics/vermiculite/>.

## Broadening the Reach for Best Practices of Handling Antineoplastic Drugs

Work of NIOSH researchers providing recommendations on best practices for controlling occupational exposures involving antineoplastic drugs in health care settings appears in the December 2006 issue of *CA: A Cancer Journal for Clinicians* (<http://caonline.amcancersoc.org/current.shtml>). The journal, which is published by the American Cancer Society, describes itself as the most widely circulated cancer journal in the world. The article, "Preventing Occupational Exposures to Antineoplastic Drugs in Health Care Settings," broadens the audience reach of the 2004 *NIOSH Alert on Hazardous Drugs* (DHHS (NIOSH) Publication No. 2004-165, <http://www.cdc.gov/niosh/docs/2004-165/>) to include oncologists, primary care physicians, and nurses. This is the most recent information available promoting safe handling of antineoplastic drugs for the more than 5.5 million healthcare workers potentially exposed. Recent studies have shown that workers continue to be exposed despite improvements in safety policies and procedures since the 1980s. Contact Tom Connor at [TConnor@cdc.gov](mailto:TConnor@cdc.gov) for more information.

## Study of Effects in Women Cyclists Reported

Women who participated in prolonged, frequent bicycling had decreased genital sensation and were more likely to have a history of genital pain than women runners, a study by researchers from NIOSH, Yale University's School of Medicine, and Albert Einstein College of Medicine found. The findings were published in the November 2006 issue of the *Journal for Sexual Medicine*. An abstract is available on line at <http://www.blackwell-synergy.com/doi/abs/10.1111/j.1743-6109.2006.00317.x>. The study did not address the long-term effects of bicycling on genital sensation or women's sexual health. It proceeded from earlier research among police bicycle patrol officers, which suggested that prolonged bicycle riding may have negative effects on nocturnal erectile function in men and indicate a need for innovative bicycle saddle designs. More information about NIOSH occupational health research on bicycle saddles and reproductive health is available at <http://www.cdc.gov/niosh/topics/bike/>.

## NIOSH-Funded Study Links Long Hours with Patient Risk

First-year doctors-in-training reported that working five extra-long shifts, of 24 hours or more at a time without rest, per month led to a 300 percent increase in their chances of making a fatigue-related preventable adverse event that contributed to the death of a patient, according to a new study funded by NIOSH and the Agency for Healthcare Research and Quality. Preventable adverse events are defined as medical errors that cause harm to a patient. "In conjunction with earlier research showing that medical interns also have an increased risk for car crashes after leaving work at the end of an extra-long shift, this new study adds further evidence that issues of occupational safety, health, and quality of patient care in the health-care setting are closely linked," said NIOSH Director John Howard M.D. The study was published December 12, 2006, in the on-line, peer-reviewed journal *PLoS Medicine* <http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371/journal.pmed.0030487>. More information about the earlier study on medical interns' risk for car crashes linked with extra-long shifts can be found in the February 2005 NIOSH *eNews*.

## NIOSH Chief of Staff Receives Meritorious Service Medal

Frank J. Hearl, NIOSH Chief of Staff and a Captain in the Commissioned Corps of the U.S. Public Health Service, received the Meritorious Service Medal, the second highest award available to Public Health Service officers, in recognition of an exemplary career at NIOSH that began in 1974. This award is given in recognition of meritorious service of a single, particularly important achievement, a career notable for accomplishments in technical or professional fields, or unusually high-quality and initiative in leadership. The award cited Captain Hearl's outstanding leadership and scientific accomplishments, creative engineering, innovative and adaptive approaches to complex occupational safety and health issues, and contributions to engineering leadership, which had a major impact on worker health.



*Captain Frank Hearl (left) receives his Meritorious Service Medal from Captain Greg Kullman, NIOSH.*

## NIOSH Mine Research Official Named to Technical Panel

Dr. Jurgen F. Brune, chief of the Disaster Prevention and Response Branch of NIOSH's Pittsburgh Research Laboratory, was named to a federal Technical Study Panel on the utilization of belt air and the composition and fire retardant properties of belt materials in underground coal mining. The panel was created under Section 11 of the Mine Improvement and New Emergency Response (MINER) Act of 2006 and will prepare and submit a report to the Secretary of Labor, the Secretary of Health and Human Services, and Senate and House Committees. Dr. Brune is one of six panel members. More information on the study panel is available from the Mine Safety and Health Administration at <http://www.msha.gov/MinerAct/BeltAir/BeltAir.asp>.

## NIOSH Invites Applications for Mine Refuge Chamber Project

On December 18, 2006, NIOSH invited applications for a contract to develop engineering guidelines for [refuge chambers](#) in mines. The work will support a mandate for NIOSH research under the MINER Act of 2006. In several countries, refuge chambers are accepted as a means of survival for miners in underground mines after a disaster, if escape is not feasible. In the U.S., as a result of the Sago and Darby mine disasters, several states now require or will require the use of refuge chambers. The NIOSH solicitation is available at <http://www.fbo.gov/spg/HHS/CDCP/CMBP/2007%2DN%2D09190/listing.html>.

## Look For Us

- World of Concrete, January 23-26, NIOSH booth # N136
- Construction Safety Conference and Exposition, February 13-14, NIOSH booth #513
- 2007 SME Annual Meeting & Exhibit and 109th National Western Mining Conference, February 25-28, NIOSH booth #1123

### NIOSH Partners in Beryllium Sample Method Validation

In collaboration with a private company and Los Alamos National Laboratory, NIOSH researchers validated a standardized portable fluorescence method for determining trace beryllium in workplace air and wipe samples. Laboratories can now be accredited for this field-portable technique through the American Industrial Hygiene Association (AIHA) Laboratory Accreditation Program. This technique offers a rapid and sensitive analysis of beryllium exposure in the workplace. This method has been published as an ASTM International Standard (ASTM D7202) and is in the approval process for inclusion in the fifth edition of the NIOSH Manual of Analytical Methods. For information, contact Dr. Kevin Ashley at [KAshley@cdc.gov](mailto:KAshley@cdc.gov).



### Nanotechnology Update

#### NIOSH Research Presented at Swedish Nanotoxicology Forum

NIOSH toxicity studies on nano-scale particles were presented at a November 27, 2006, symposium, "Nanotoxicology: Potential Risks and Safety Assessment" at Sweden's Nobel Forum. This symposium on nanotoxicology, the first symposium of its kind in Sweden, covered a wide spectrum of topics of relevance to the understanding of properties and effects of nano-sized particles that have implications for occupational health. The symposium was hosted by the Institute of Environmental Medicine at Karolinska Institutet, and was sponsored, in part, by the Swedish Society of Toxicology. NIOSH joined more than 100 participants from academic institutions, industry, and government agencies, and Swedish Public Radio broadcast short interviews with two of the invited speakers, Dr. Anna Shvedova of NIOSH and Dr. Eva Hellsten of the European Commission. A review based on the Nobel Forum symposium will be published early next year in the journal *Nanotoxicology*.



(left to right) Eva Hellsten (Brussels), Göran Pershagen (Stockholm), Lang Tran (Edinburgh), Lars Wiklund (Stockholm), Bengt Fadeel (Stockholm), Valerian Kagan (Pittsburgh), Magnus Svartengren (Stockholm), Harald Krug (Karlsruhe), Anna Shvedova (Morgantown).

### Update from the NIOSH National Personal Protective Technology Laboratory (NPPTL)

#### Personal Protective Equipment for Healthcare Workers During an Influenza Pandemic



The Institute of Medicine convened a December 13-14, 2006, meeting of an expert committee and NIOSH to examine research directions and certification and testing issues regarding the use of personal protective equipment during an influenza pandemic. The study will focus on face masks and respirators for healthcare professionals. A workshop is scheduled to take place in February 2007. A report will be issued that includes the committee's recommendations on next steps for research on personal protective equipment for use in an influenza pandemic. Information about the committee membership, committee charge, and the first meeting can be found at:

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingID=1762&MeetingNo=1>

#### Changes to NFPA Standard Call for NIOSH Certification

Revisions made for the 2007 edition of the National Fire Protection Association's (NFPA) Standard 1981 require that self-contained breathing apparatus presented for NFPA approval under the standard for use in chemical, biological, radiological, and nuclear (CBRN) incidents must also have certification by NIOSH for such use. For more information, see the December 8, 2006, letter to all manufacturers at <http://www.cdc.gov/niosh/npptl/resources/pressrel/letters/ltr-120806.html> or contact Heinz Ahlers at [hahlers@cdc.gov](mailto:hahlers@cdc.gov).

## **Collaborative Project on Permeation Test Criteria Begin**

NIOSH began a new collaborative project, "Risk-Based Material Permeation Criteria," in December 2006. The objective of this project is to create permeation test end points for toxic industrial chemicals, based on toxicological data. The outcomes of this project will be used to directly support the development of national and international consensus standards to support the certification of appropriate protective clothing ensembles for chemical, biological, radiological, and nuclear (CBRN) incidents. Partners include the U.S. Army Center for Health Promotion, and Preventive Medicine, the Royal Military College of Canada, International Personal Protection, and additional external consultants. Contact Angie Sheperd at [AMSheperd@cdc.gov](mailto:AMSheperd@cdc.gov) for more information.

## **NPPTL Releases October and November Figures on the Respirator Certification and Approval Process**

During November 2006, the Technology Evaluation Branch of NIOSH's National Personal Protection Technology Laboratory (NPPTL) closed a total of 27 projects. There were 14 respirator approval decisions and three denials, and 10 applications were withdrawn by the manufacturer. Of these 27 projects, 16 were for certification of new products, eight were modifications of products that had been previously approved, and three were Certified Product Investigations. During October 2006, NIOSH received 26 applications for extensions of approval and 15 applications for new approvals.

The Engineering Evaluation team conducted two quality assurance manual audits to evaluate the quality assurance process and manufacturing practices. One product audit was initiated. The Certified Product Investigation Process completed three evaluations of previously certified products. Seven new approvals and two modifications of approval were for CBRN respirators.

## **Mark Your Calendars: Important Paper and Poster Submission Deadlines.**

Just a reminder of several upcoming paper and poster submission deadlines for occupational safety and health related conferences.

- National Safety Council 2007 Congress and Expo  
October 12-19, 2007, Chicago, Illinois  
Call for Papers deadline is January 12, 2007  
<http://www.nsc.org>
- Association of Occupational Health Professionals 2007 National Conference  
September 26-29, 2007, Savannah, Georgia  
Call for Posters deadline is February 15, 2007  
<http://www.aohp.org>
- **Occupational and Environmental Exposures of Skin to Chemicals**  
June 17-20, 2007, Golden, Colorado  
Call for Papers deadline is February 17, 2007  
[http://www.mines.edu/outreach/cont\\_ed/oeesc](http://www.mines.edu/outreach/cont_ed/oeesc)
- European Respiratory Society Annual Congress 2007  
September 15-19, 2007, Stockholm, Sweden  
Call for Papers deadline is February 22, 2007  
<http://www.ersnet.org/ers/default.aspx>

## Communication Products

### **Survey and Analysis of Air Transportation Safety Among Air Carrier Operators and Pilots in Alaska**

This document, DHHS (NIOSH), Publication No. 2007-102, describes a comprehensive survey of air taxi and commuter operators and pilots in Alaska in which company and pilot demographics, flight practices, and attitudes about safety were examined. The document provides information about current practices and how industry views potential safety measures, which is critical to designing effective prevention strategies.

<http://www.cdc.gov/niosh/docs/2007-102/>

### **Workplace Solutions: Preventing Work-Related Musculoskeletal Disorders in Sonography**

This document, DHHS (NIOSH) Publication No. 2006-148, addresses risks that sonographers face for developing work-related musculoskeletal disorders. The document provides NIOSH recommendations appropriate engineering controls, work practices, hazard communication, and training to prevent these work-related musculoskeletal disorders.

<http://www.cdc.gov/niosh/docs/wp-solutions/2006-148/>

### **Three New Mining Publications Are Now Available**

NIOSH released the following mining publications:

- Ergonomics and Mining: Charting a Path to a Safer Workplace, NIOSH Report of Investigation 9491, DHHS (NIOSH) Publication No. 2006-141.

<http://www.cdc.gov/niosh/mining/pubs/pubreference/outputid2152.htm>

- Field Evaluation of Seat Designs for Underground Coal Mine Shuttle Cars, NIOSH Information Circular 9491, DHHS (NIOSH) Publication No. 2007-100.

<http://www.cdc.gov/niosh/mining/pubs/pubreference/outputid2227.htm>

- Lower Respirable Dust and Noise Exposure with an Open Structure Design, NIOSH Report of Investigation 9670, DHHS (NIOSH) Publication No. 2007-101.

<http://www.cdc.gov/niosh/mining/pubs/pubreference/outputid2196.htm>

## Word of the Month

**Refuge Chamber:** A fixed or portable chamber at a strategic location in an underground mine, where miners may take haven and survive for an extended period if they are unable to escape from a mine during or after an emergency.

**[NIOSH eNews on the Web: www.cdc.gov/niosh/enews/](http://www.cdc.gov/niosh/enews/)**

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