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## **From the Director's Desk**



Research and outreach efforts at the NIOSH Agricultural Centers are improving the health and safety of agricultural workers.

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Research demonstrates use of spectrometry to identify bacterial species known to cause tuberculosis.

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IAFC calls for stand down to raise fire fighter safety awareness.

## **NIOSH Director John Howard, M.D. Receives ASSE President's Award**

Recognized for strong support and cooperative efforts to improve workplace safety and health.

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**MALDI-TOF MS**

## From the Director's Desk

The Centers for Agricultural Disease and Injury Research, Education, and Prevention represent a major NIOSH effort to protect the health and safety of agricultural workers and their families. The Centers were established in 1990 through the NIOSH Agricultural Health and Safety Initiative to conduct programs in research, education, and prevention. Geographically, the Centers are distributed throughout the nation to be responsive to the agricultural health and safety issues unique to the different regions.



In the 15 years since the creation of the program, the Centers have become trusted resources for farmers, farm families, and their communities. Their research has spanned the diverse range of issues that concern farmers and agricultural workers. The results have been instrumental for advancing safety and health, and include:

- Developing an innovative collection bag to reduce risk of stress to the backs and shoulders of apple harvesters
- Developing a GIS-based risk system to identify areas where mosquitoes may swarm, posing risk of West Nile Virus transmission
- Examining the relationship between mineral dust exposure and cellular changes in farmworkers' lungs that may signal a risk of job-related lung disease
- Evaluating the utility of an electronic field tool for detecting, identifying, and quantifying exposures to airborne contaminants from animal wastes
- Conducting studies to address the question of whether farmers have a higher-than-expected risk of suicide
- Performing intervention assessments that led to employers and employees adopting effective measures for reducing take-home contamination from pesticides

The Centers utilize various means of communicating with colleagues and the entire farming population to disseminate research results and new safety and health information. These activities include:

- Hosting and maintaining the National Agricultural Safety Database (NASD), a national central repository of resource materials. <http://www.cdc.gov/nasd>
- Implementing a multi-state program to help nursing schools prepare graduates as occupational health nurses for rural and agricultural populations
- Hosting train-the-trainer programs for community leaders to discuss changes in State laws and tips for training youth on operating farm equipment
- Conducting a 40-hour Agricultural Occupational Health Certificate Course for health professionals
- Developing information for minority populations, such as Amish and Mennonite youth, and publishing safety information in Spanish and Creole
- Hosting an interactive televideo conference for preventing agroterrorism, the deliberate contamination of the food supply. [http://www.swagcenter.org/agroterrorism\\_workshop.htm](http://www.swagcenter.org/agroterrorism_workshop.htm)
- Developing and disseminating the quarterly newsletter, AgConnections, highlighting activities from each of the nine Centers. <http://www.cdc.gov/niosh/topics/agriculture/agconnarchive.html>

We encourage you to visit the NIOSH Agricultural Centers' topic page, <http://www.cdc.gov/niosh/agctrhom.html>, where you will find links to each of the nine Centers.

In addition to the nine Agricultural Centers, NIOSH provides funding to support the National Children's Center for Rural and Agricultural Safety and Health. Focusing solely on the health and safety of children in relation to working and living on farms, the Center has become a leading resource for professionals and agricultural producers to obtain guidance regarding childhood agricultural injury prevention. The Center's newsletter, *Nurture*, disseminates news and information on farm youth safety and health. <http://research.marshfieldclinic.org/children/Resources/newsletters/news.asp>. More information on the National Children's Center can be found at <http://research.marshfieldclinic.org/children>.

Collaboratively, the nine Agricultural Centers and the National Children's Center have developed recommendations for a nationwide action plan to reduce the number of tractor-related injuries and fatalities in the U.S. Details of the *National Agricultural Tractor Safety Initiative* can be found at [http://depts.washington.edu/pnash/files/Tractor\\_Initiative.pdf](http://depts.washington.edu/pnash/files/Tractor_Initiative.pdf).

Information on agricultural safety and health can be found by accessing the NIOSH topic page, <http://www.cdc.gov/niosh/topics/agriculture>. Specific information regarding children and agricultural safety and health can be accessed at <http://www.cdc.gov/niosh/childag>.

### **CDC Award Recognizes Exemplary Work by NIOSH Scientists**

On June 22, 2005, NIOSH researchers Justin Hettick, Michael Kashon, Janet Simpson (retired), Paul Siegel, and David Weissman along with Gerald Mazurek from the CDC National Center for HIV, STD and TB Prevention were presented with the 2005 Charles C. Shepard Science Award for excellence in science. The manuscript, "Proteomic Profiling of Intact Mycobacteria by Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry," won in the category of Laboratory and Methods.

Appearing in the journal *Analytical Chemistry*, the article describes research which demonstrated that [MALDI-TOF mass spectrometry](#) can be used to identify species of mycobacteria, like those that cause tuberculosis. The MALDI-TOF method identifies unique patterns of protein and peptides extracted from bacterial cells. By identifying new TB proteins, this research may contribute to development of new methods for detecting TB, new tests for diagnosis of TB infection, and to TB vaccine development.

In 2004, there were 14,511 confirmed cases of TB reported in the U.S. Industries with significantly higher TB deaths include health care, agricultural production and industries with significantly elevated silicosis mortality. More information on TB can be found on the NIOSH topic page, <http://www.cdc.gov/niosh/topics/tb>.

### **NIOSH Spotlights Resources During the National "Stand Down" Safety Initiative**

During the week of June 20, 2005, NIOSH highlighted our web-based resources for identifying, correcting, and preventing risks to fire fighters for fatal injuries in the line of duty. This action occurred in conjunction with the "Stand Down for Fire Fighter Safety," sponsored by the International Association of Fire Chiefs (IAFC) and several other agencies and organizations, including NIOSH. The safety stand down began on June 21, 2005. According to the IAFC, "a stand down is a method used by the military to correct an issue that has been identified as a problem throughout its ranks." The stand down urges fire departments to suspend all non-emergency activity and focus entirely on fire fighter safety. It is intended to raise awareness of fire fighter safety and call attention to the unacceptable number of deaths and injuries among these workers.

NIOSH resources available through the fire fighter topic page, <http://www.cdc.gov/niosh/firehome.html>, include a summary of NIOSH fire fighter fatality investigation and prevention program, copies of reports from all fire fighter fatality investigations NIOSH has conducted under the program, and copies of NIOSH research documents providing findings and recommendations on specific fire fighter safety issues. NIOSH is listed on the IAFC's Web page, <http://www.iafc.org/standdown/resources.asp>, as a resource to help fire departments plan their safety stand downs.

### **NIOSH Director John Howard, M.D. Receives ASSE President's Award**

On June 14, 2005, Gene Barfield, past President of the American Society of Safety Engineers (ASSE) presented NIOSH Director John Howard, M.D., with the ASSE President's Award. This distinguished award recognizes Dr. Howard's "extraordinary support of the Society and his leadership in our cooperative efforts to reduce workplace injuries and illnesses."

Dr. Howard was instrumental in developing a historic partnership between NIOSH and ASSE to explore, design, evaluate, and introduce innovative tools and approaches for making workplaces safer. In accepting the ASSE President's Award, he did so on behalf of his 1500 colleagues at NIOSH who have a great interest in getting their research into the hands of ASSE members for application in the workplace.

ASSE is the oldest and largest professional safety organization with approximately 30,000 members. ASSE is a global organization that works to advance the technical, scientific, managerial and ethical knowledge and skills of occupational safety, health and environmental professionals, and is committed to protecting people, property and the environment. More information on ASSE can be found at <http://www.asse.org>.

### **NIOSH and AIHA Partner to Advance Research and Promote Safe Workplace Practices**

NIOSH and the American Industrial Hygiene Association (AIHA) have signed an agreement to advance the protection of workers, promote the transfer of research into industrial hygiene practice and develop new and innovative prevention strategies and technologies.

The partnership will provide outreach, communication, and professional development opportunities to promote worker health and safety through:

- Developing and disseminating worker safety and health information at appropriate conferences and media outlets;
- Participating at conferences, meetings, and other key events where occupational and environmental health and safety (OEHS) issues are proactively addressed;
- Advancing the effectiveness of OEHS research;
- Promoting and facilitating the transfer of research results to practice in preventing occupational illnesses and injuries, and;
- Strengthening recruiting efforts for students to enter OEHS graduate and undergraduate training programs.

"NIOSH and the AIHA both work to prevent workplace illness and injury; this partnership is a significant step forward in preventing health and safety problems by directly linking NIOSH researchers and AIHA practitioners," said NIOSH Director John Howard, M.D.

AIHA has more than 12,000 members from every industry worldwide who are dedicated to health and safety in the workplace, community, and environment. More information on AIHA can be found at <http://www.aiha.org>.

## Office of Extramural Programs

NIOSH is inviting applications for Occupational Safety and Health Training Project Grants (TPGs). The new program announcement (PAR-05-126) was published on June 23 in the National Institutes of Health (NIH) Guide for Grants and Contracts, and the application receipt date is August 24 each year, for three years. The complete program announcement, which includes further details on the objectives of the funding, the features on which applications will be judged, types of information required from applicants, and procedures for submitting applications, can be found at: <http://grants1.nih.gov/grants/guide/pa-files/PAR-05-126.html>. NIOSH anticipates that awards will be announced in summer 2006.

TPGs are programs at academic institutions that provide graduate training and continuing education in the core occupational safety and health areas of industrial hygiene, occupational health nursing, occupational medicine residency, occupational safety, as well as other closely related occupational safety and health fields. Special technical and other programs for long-term training of occupational safety and health technicians or specialists may also be supported.

## Data from NIOSH-Funded System Highlight Unintentional Lindane Ingestion Risk

Data from the NIOSH-funded Sentinel Event Notification System for Occupational Risks-Pesticides (SENSOR-Pesticides) highlight a risk of poisoning from unintentional ingestion of the pesticide lindane, according to a report in the June 3, 2005, issue of CDC's *Morbidity and Mortality Weekly Report*. Lindane is used in certain prescription shampoos and topical lotions to treat some parasitic skin infections. A study found that 870 cases of unintentional lindane ingestion occurred between 1998 and 2003, likely because the liquid was mistaken for cough syrup or similar oral medications. The *MMWR* article emphasizes the importance of precautionary measures, including compliance with FDA guidelines for dispensing the product from properly marked containers. Information is available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5421a2.htm>.

While the SENSOR program is designed to boost state and national capacity for identifying work-related hazards associated with pesticide use, it can also help scientists flag other potentially hazardous exposures as well.

## CSTE Recognizes Professional Contributions by John Sestito

Congratulations to John Sestito who received the Occupational Health Surveillance Award from the Council of State and Territorial Epidemiologists (CSTE). John, an Environmental Health Specialist in the NIOSH Division of Surveillance, Health Evaluations and Field Studies, was presented the award during the annual CSTE conference in Albuquerque, New Mexico on June 7. John was recognized for his outstanding commitment to improving the health, safety and quality of life of working people through the collection and use of health data and for his enduring support of states in their efforts to develop effective occupational health programs.

## r2p Corner

Agriculture is one of the most hazardous industries in Minnesota and the United States. In rural Minnesota, adolescents are frequently employed in both agricultural and non-agricultural jobs and are injured at a higher rate than older workers. Recently, with support from NIOSH the Minnesota Department of Health evaluated the effectiveness of a pilot occupational safety and health curriculum for adolescents in rural Minnesota high schools. *Work Safe Work*

*Smart* contains nine lessons to enhance knowledge, attitudes and beliefs related to occupational safety and health. Evaluation measured changes in attitudes and beliefs related to prevention, identified critical factors for incorporating the curriculum into existing school curricula, and promoted dissemination and utilization of the curriculum in rural schools.



Allan Williams, Principal Investigator, reported that “adolescents exposed to the curriculum demonstrated measurable changes in several outcomes that may be associated with beneficial behaviors in occupational safety and health. The measured changes in knowledge, attitudes, and beliefs were largely limited to the same school year in which the curriculum was taught, suggesting that adolescents may need to be exposed to concepts of occupational safety and health on an ongoing or repetitive basis.”

Following completion of the evaluation, over 4,000 copies of the curriculum were requested on CD-ROM, and the curriculum was downloaded over 11,000 times from the Health Department Web site. The *Work Safe Work Smart* curriculum is available at <http://www.health.state.mn.us/divs/hpcd/cdee/occhealth/wsws.html>. Please send your comments about this important curriculum to [nioshnews@cdc.gov](mailto:nioshnews@cdc.gov).

## NORA

NIOSH is requesting abstracts for *NORA Symposium 2006: Research Makes a Difference*. This symposium, the fifth in the series, will be held in Washington, D.C., at the Loews L'Enfant Plaza Hotel on April 18-20, 2006. It will convene several hundred occupational safety and health researchers, stakeholders, and policymakers from the public and private sectors to celebrate completion of the first decade of NORA, mark the 35<sup>th</sup> anniversary of NIOSH, and inaugurate the new plan for the future of NORA. An important aspect of this conference will be scientific presentations addressing the original 21 NORA priorities and anticipating research areas for the next ten years. The symposium will be a unique forum for a broad cross-section of the occupational safety and health community to learn about the variety of research accomplishments stimulated or anticipated by NORA.



The call for abstracts can be downloaded at the NORA Web site, <http://www.cdc.gov/niosh/NORA>. For more information about the symposium, please visit the NORA Web site or e-mail the NORA coordinator at [noracoordinator@cdc.gov](mailto:noracoordinator@cdc.gov).

## News From Our Partners

Our international colleagues from the Asia-Pacific Environmental and Occupational Dermatology Group will convene the *8<sup>th</sup> Asia-Pacific Environmental and Occupational Dermatology Symposium (APEODS)* on October 25 -27, 2005 in Manila, Philippines. The symposium will bring together medical practitioners in the fields of dermatology and occupational medicine from about the world for discussions on the topics of contact dermatitis, occupational-related dermatoses, cosmetics and nutraceuticals, occupational health surveillance and the financial costs of disability. More information on the conference can be found at <http://www.apeods2005.org>.

## Communication Products

### Health Hazard Evaluation (HHE): Dust Exposures at a Cement Company

Company managers requested NIOSH assistance in assessing exposures at a new cement production facility. Employee exposures to respirable dust, silica, and metals were below all regulatory and recommended standards, but employees in the raw mill and yard operations were exposed to high levels of total dust. NIOSH investigators offered recommendations to the company managers to reduce total dust exposure through engineering controls, where feasible. Administrative controls and personal protective equipment were recommended if engineering controls were infeasible or ineffective in reducing air contaminants to acceptable levels. The full report is available at <http://www.cdc.gov/niosh/hhe/reports/pdfs/2004-0016-2971.pdf>. More information on HHEs can be found at <http://www.cdc.gov/niosh/hhe>.

## Updated Topic Pages

NIOSH has updated and redesigned two topic pages

- **Organic Solvents** are carbon-based substances capable of dissolving or dispersing one or more other substances. Many organic solvents are recognized by NIOSH as carcinogens, reproductive hazards and neurotoxins. This updated topic page provides links to *NIOSH Alerts*, *Criteria Documents*, *Current Intelligence Bulletins* and other NIOSH publications and Web pages that may serve as resources for information on various organic solvents. The updated topic page can be found at <http://www.cdc.gov/niosh/topics/organsolv>.
- **Adult Blood Lead Epidemiology and Surveillance (ABLES)** is a state-based surveillance program of laboratory-reported adult blood lead levels. Information about the program, links to data, NIOSH publications and reports can be accessed on the updated topic page, <http://www.cdc.gov/niosh/topics/ABLES/ables.html>.

## Upcoming Events

### ***Health Effects of Welding***

NIOSH and the West Virginia University (WVU) Institute of Occupational and Environmental Health (IOEH) are teaming up to sponsor an international seminar, "Health Effects of Welding," on July 23-24, 2005 in Morgantown, W.Va. Leading experts from around the world will gather to share the latest information in key research areas regarding potential respiratory, neurological, and reproductive effects associated with welding fumes or inhaled welding particles. More information about the symposium can be found at <http://www.hsc.wvu.edu/IOEH>.

### ***Internoise 2005***

The 34<sup>th</sup> *International Congress and Exposition on Noise Control Engineering-InterNoise 2005* will be held August 7-10, 2005 in Rio de Janeiro, Brazil. The conference is sponsored by the International Institute of Noise Control Engineering (I-INCE) and organized by the Brazilian Acoustical Society (SOBRAC) and the Iberoamerican Federation of Acoustics. The conference theme is Environmental Noise Control. More information can be found at <http://www.internoise2005.org.br/welcome.aspx>.

### ***North American Congress of Clinical Toxicology (NAACT) 2005***

The American Academy of Clinical Toxicology and the American Association of Poison Control Centers will host the *North American Congress of Clinical Toxicology 2005*, September 9-14, 2005 in Orlando, Florida. The agenda features three NIOSH-related sessions: Developing an Occupational and Environmental Toxicology Research Agenda, Occupational/NIOSH Case Files, and an EPA/NIOSH/OSHA workshop on risk assessment and n-propyl bromide. More information on the conference can be found at <http://www.clintox.org>.

### ***World Safety Congress and National Safety Council to Meet in September***

Safety and health experts from around the world will gather in Orlando, Florida this fall for two prominent international and national conferences. On September 18-22, 2005, NIOSH along with a number of other private and public sector organizations will co-support the XVII<sup>th</sup> World Congress on Safety and Health at Work. The Congress, jointly organized by the International Labor Organization, the International Social Security Association and the National Safety Council, will serve as an international forum for approximately 3000 professionals to exchange ideas, research, and best practices on highly topical issues in the area of occupational safety and health. This marks the first time the Congress will be held in the U.S. <http://www.safety2005.org>.



Coinciding with the World Safety Congress, the National Safety Council Congress and Expo will run from September 21-23, 2005 at the same location. The Congress will feature over 200 sessions ranging from broad-based to industry-specific topics for the seasoned professional and newcomers to safety and health. The Expo is the world's largest annual safety and health exhibit, where more than 750 exhibiting companies demonstrate and showcase the latest in safety materials and products. <http://www.congress.nsc.org>.



### ***Advanced Personal Protective Equipment - Challenges in Protecting First Responders***

The NIOSH National Personal Protective Technology Laboratory (NPPTL) and the Virginia Polytechnic Institute and State University are sponsoring *Advanced Personal Protective Equipment - Challenges in Protecting First Responders*. The conference will be held October 16-18, 2005 at the Virginia Tech and Skelton Conference Center in Blacksburg, Va.

Attendees will learn about the hazards posed by emerging threats, the application of personal protective equipment (PPE) technology to these threats, and associated challenges with selecting and interfacing different PPE items. The emphasis of the conference will be on practical issues of threat accommodation, standards, regulations, applications of best practices, manufacturing and distribution issues, PPE decision-making and purchasing, and multi-PPE integration. More information on the conference can be found at <http://www.conted.vt.edu/appe> or by contacting Tom Fisher at [TFisher@cdc.gov](mailto:TFisher@cdc.gov).

### ***Work, Stress and Health 2006: Making a Difference in the Workplace***

NIOSH, the American Psychological Association, the National Institute of Justice of the U.S. Department of Justice, the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education, and the U.S. Department of Labor, will convene the sixth international conference on occupational stress and health, *Work, Stress, and Health 2006: Making a Difference in the Workplace* in Miami, Florida., March 2-4, 2006, at the Hyatt Regency Miami Hotel. The conference is designed to address the constantly changing nature of work, and the implications of these changes for the health, safety, and well-being of workers. In keeping with the conference theme of "making a difference in the workplace," there will be a particular focus on the translation of research to practice and workplace programs, policies, practices, case experiences, and other efforts to prevent stress in today's workplace. More information about the conference can be found at: <http://www.apa.org/pi/work/wsh2006.html>.

## **"Acronym" of the Month**

**MALDI-TOF MS (Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry)** is a method for ionizing large molecules such as polymers, peptides, proteins, and oligonucleotides and determining their molecular weight. It can be used to determine molecular weight of biomolecules from both pure samples and mixtures.

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