NIOSH Hearing Loss Research Program

Selected NIOSH-Sponsored Workshops and Conferences Related to the HLR Program

Overview

The HLR program has used a number of workshops and conferences to foster interaction with outside stakeholders to obtain input for the program planning and evaluation. These workshops have stimulated discussion and coordination among internal staff from different organizational units. A summary of eight workshops that NIOSH has sponsored or co-sponsored in recent years is provided below, in reverse chronological order of occurrence. Outputs from these workshops have also been included in the chapters on specific research goals. HLR investigators have participated in other conferences and workshops that provided similar interactions. These are among the most important.

Mining Hearing Loss Prevention Workshop
Practical tools and techniques to prevent noise-induced hearing loss

Date: June 21-22, 2005

Location: Charleston, WV.

Host: NIOSH

Co-sponsors: Bituminous Coal Operators' Association (BCOA)

Mine Safety and Health Administration (MSHA)

National Mining Association (NMA)

United Mine Workers of America (UMWA)

Presenters: 15 invited speakers representing industry, government, labor, professional and trade organizations, and academia.

Number of attendees: 85

Primary products:

- CD of the presentations
- CD of the Hearing Loss Simulator
- Handout on how to use hearing protectors more effectively (NIOSH-ROLL- PULL- HOLD technique)
- Handouts on training exercises: IC 9472 "Wearing Hearing Protection Properly" and IC 9473 "Drill Rig Incident"

The above products were distributed to the workshop participants and can also be requested through the NIOSH website.

Assessment of value and/or impact:

Participants in the workshop provided direct input related to its value. The majority of the participants were satisfied with information from the workshop that could be used in their own workplaces. That information included practical approaches to noise control technology for their specific sites, as well as training materials on the hearing loss simulator, wearing hearing protection properly and the drill rig training exercises. There have been over 500 requests for the hearing simulator package. Due to the success of this workshop for the coal industry, an additional workshop was requested by the metal/nonmetal mining industry for April of 2006.

Hearing Loss Prevention – Futures Workshop

Date: April 7-8, 2005

Location: College Corner, Ohio

Host: NIOSH

Co-sponsors: National Hearing Conservation Association (NHCA)

Presenters: 6 invited speakers representing industry, government, labor, professional and trade organizations, and academia.

Number of attendees: 32

Assessment of value and/or impact:

The futures workshop was convened to develop a strategic research agenda for the HLR program based on input from the scientific and occupational safety and health communities. The workshop participants identified important areas of occupational hearing loss research, discussed the role of NIOSH in advancing research in those areas, and proposed recommendations for how NIOSH can address the research needs of the 21st century workplace in occupational hearing loss.

U.S. Environmental Protection Agency Workshop on Hearing Protection Devices

Date: March 27-28, 2003

Location: Washington, D.C.

Host: EPA

Co-sponsor: NIOSH

Presenters: 13 invited speakers representing industry, government, labor, professional and trade organizations, and academia.

Number of attendees: 70

Primary products:

- Proceedings and papers were published on the EPA website: http://docket.epa.gov/edkpub/do/EDKStaffCollectionDetailView?objectId=0b0007d48013c330

- All presentations and related papers have been included in the EPA electronic docket (OAR-2003-024) that was opened following the workshop.

Assessment of value and/or impact:

The U.S. EPA held this workshop to collect information relevant to its anticipated action to revise the federal regulation at 40 CFR Part 211 regarding the effectiveness rating and labeling of HPDs.

Three principle issues were addressed in the workshop:

- What fitting protocol will be used when testing HPD products for labeling?

- What methods will be used to assess performance of electronically augmented HPDs?

- What methods will be used when calculating the noise reduction rating of HPDs?

Following the conference, the HLR program coordinated a six-lab inter-laboratory study to test a variety of protectors using two protocols (experimenter-supervised and naïve subject fit as described in ANSI S12.6-1997). Two labs have completed the testing; the other four labs are in different stages of completion. EPA and NIOSH requested an analysis of rating methods which ANSI S12 Working Group 11 completed in 2003. ANSI S12 WG11 has developed a draft standard for hearing protection rating which will be submitted for approval in late 2005. Methods for conducting measurements on augmented devices have continued to be developed and were discussed at the ANSI S12 Working Group 14 meeting during October 2005. The overall goal is to include the proposed methods in the revised regulation.

Best Practices Workshop on Impulsive Noise and its Effects on Hearing

Date: May 8-9, 2003

Location: Cincinnati, Ohio

Host: NIOSH

Co-sponsors: NHCA

Presenters: 14 invited speakers representing industry, government, labor, professional and trade organizations, and academia.

Number of attendees: 43

Primary products:

- Journal article: NIOSH/NHCA Best Practices Workshop on Impulsive Noise. Kardous CA, Franks JR, Davis RR [2005] – Noise Control Engineering Journal, *53 (2) 53-60.* The slides of the presentations and the workshop charges are available to the public at the NIOSH website: http://www.cdc.gov/niosh/topics/noise/research/impulse_conf.html

Assessment of value and/or impact:

The workshop brought together leading international experts from labor, industry, and government, including experts from the military, to provide an overview of the current state of knowledge on the effects of impulsive sounds on the human auditory system. The workshop participants identified research needs and priorities for future research studies to develop internationally accepted criteria for evaluating the risk to human hearing from impulsive sounds. Following the workshop, in October 2004, NIOSH started funding the project New Methods for Evaluating Exposure to Impulsive Noise.

Best Practices Workshop on Combined Effects of Chemicals and Noise on Hearing

Date: April 11-12, 2002

Location: Cincinnati, Ohio

Host: NIOSH

Co-sponsors: NHCA

Presenters: 14 invited speakers representing national and international governments, industry, labor, professional and trade organizations, and academia.

Number of attendees: 77

Primary products:

- Journal article: Chemical exposure as a risk factor for hearing loss. The Journal of Occupational and Environmental Medicine, 45(7):676-682. The slides of the platform presentations are posted on the NIOSH website: http://www.cdc.gov/niosh/topics/noise/research/noiseandchem/noiseandchem.html

Assessment of value and/or impact:

Following the workshop, in November 2002, NIOSH started funding the project Preventing Hearing Loss from Chemical and Noise Exposures. Knowledge examined at the workshop has impacted occupational health guidance and legislation. The American College of Occupational and Environmental Medicine referenced the workshop report above in its evidence-based statement on noise-induced hearing loss (JOEM 45 [6]:2003), and the US Army Center for Health Promotion and Preventive Medicine has used the information available by NIOSH in its Fact Sheet 51-002-0903: Occupational ototoxins and hearing loss (http://chppm-www.apgea.army.mil/documents/FACT/51-002-0903.pdf).

In February 2003, the European Parliament published the Directive 2003/10/EC on minimum health and safety requirements regarding the exposure of workers to the risks arising from noise (http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_042/l_04220030215en00380044.pdf).

In Article 4 of Section II, Obligations of Employers, the Directive states that when carrying out risk assessments, employers should "…give particular attention to any effects on workers' health and safety resulting from interactions between noise and work-related ototoxic substances…" Member European countries have until 2006 to start the implementation of this new directive.

Best Practices in Hearing Conservation for the Construction Industry

Date: March 30-31, 2000

Location: Washington, D.C.

Host: NIOSH

Co-sponsors: Laborers' International Health and Safety Fund of North America (LHSFNA)

OSHA

Presenters: 16 invited speakers representing industry, government, labor, professional and trade organizations, and academia.

Number of attendees: 100+

Primary products:

- The conference agenda and presentations were published on the LHSFNA website at http://www.lhsfna.org/index.cfm?objectid=BCBAC0BA-D56F-E6FA-993B306AE1F680E7

Assessment of value and/or impact:

The conference has prompted a renewed effort towards noise-control research in construction in the HLR program, which culminated with the development of a NIOSH website on noise levels produced by commonly used construction tools and available control technology information for the construction industry. This web site database was launched in March 2005 (http://www2a.cdc.gov/niosh-powertools/default.html). This conference also was a catalyst in the development of the LHSFNA Best Practices Guide, Controlling Noise on Construction Sites (http://www.lhsfna.org/files/bpguide.pdf).

Best Practices in Hearing Loss Prevention in the Manufacturing Sector

Date: October 28, 1999

Location: Detroit, Michigan

Host: NIOSH

Co-sponsors: NHCA

Wayne State University

Presenters: 18 invited speakers representing industry, government, labor, professional and trade organizations, and academia.

Number of attendees: 125

Primary products:

Proceedings: Best Practices in Hearing Loss Prevention. U.S. Department of Health and Human Services, U.S. Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Cincinnati, Ohio. NIOSH Publication 2001-0157 (http://www.cdc.gov/niosh/pdfs/2001-157.pdf)

Assessment of value and/or impact:

The workshop participants identified and prioritized research needs and existing research gaps. The workshop highlighted an array of proven strategies and new advancements for protecting workers' hearing that participants can implement within their organizations. The HLR program staff pursued collaborations with academia, various industries, scientific organizations, and organized labor to increase awareness about noise and hearing loss prevention through various training and education sessions.

Control of Workplace Hazards for the 21st Century: Setting the Research Agenda

Date: March 10-12, 1998

Location: Chicago, Illinois

Host: NIOSH

Co-sponsors: American Industrial Hygiene Association (AIHA)

American Society of Safety Engineers (ASSE)

Presenters: 10 invited speakers representing industry, government, labor, professional and trade organizations, and academia.

Number of attendees: Over 200 researchers, designers, manufacturers, and users of engineering controls and protective equipment.

Primary products:

NIOSH white paper: Engineering Noise Control and Personal Protective Equipment (http://www.cdc.gov/niosh/ctwpnois.html). The Workshop proceedings are now in final preparation to be published on the NIOSH web site.

Assessment of value and/or impact:

This conference and workshop was designed to stimulate the formulation of a national plan for research on new strategies to control existing health and safety hazards in the workplace and to anticipate and prevent emerging problems. The HLR program began planning to study engineering noise controls by staffing new engineering positions and examining the major issues associated with controlling noise at the source. In October 2001, NIOSH commenced a multi-year, multi-division National Occupational Research Agenda (NORA) project on engineering control of noise in the mining and construction industries.