NORA news
National Occupational Research Agenda
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Message from NIOSH

2001 was a year of mixed emotions for NIOSH. It marked our 30th anniversary of service as the nation's lead agency for occupational safety and health research. We are proud of what we have accomplished since opening our doors in 1971.

At the same time, the horrific events of September 11 shocked and saddened us. The attacks on the World Trade Center and Pentagon and the subsequent anthrax incidents resulted in occupational hazards of an unprecedented scale. Along with many other organizations, NIOSH acted quickly, applying its knowledge and skills to help limit and prevent further injury, illness, and death among the many heroic workers who responded—from firefighters and hazmat teams to construction workers and other laborers.

I want to personally thank the NIOSH staff who responded to the World Trade Center attack and subsequent anthrax investigations for their tremendous contributions. In recognition of their activities at the World Trade Center, the NIOSH Disaster Response Worker Protection Team received the Secretary's Recognition Award for Heroism, Exceptional/Volunteer Service for their "exceptional service protecting emergency responders and disaster relief and recovery workers from dangerous hazards and exposures at the World Trade Center site." Secretary Tommy Thompson presented the award in New York last November.

NORA is relevant to our current and planned research efforts related to terrorist events and other disasters. NORA priority research areas, such as Infectious Diseases, Traumatic Injuries, Organization of Work, and Control Technology and Personal Protective Equipment are directly related and provide a focus for this work—whether done by NIOSH or its many NORA partners. Together, we need to identify research gaps and explore new ways that the research community can address these needs.

NIOSH has found itself in extraordinary circumstances over the past months. However, we continue to meet the challenges of this critical time in public health while maintaining our commitment to the health and safety of this nation's workforce. ■

Kathleen M. Rest, Ph.D., M.P.A.
Acting Director

National Institute for Occupational Safety and Health
NIOSH

Safe Handling of Hazardous Drugs Among Healthcare Workers

NIOSH, through the National Occupational Research Agenda (NORA), has formed a working group to examine how to minimize worker exposure to hazardous drugs used in the healthcare industry. Hazardous drugs are defined by the American Society of Health-Systems Pharmacists (ASHP) as those which are genotoxic, carcinogenic, teratogenic, cause fertility impairment, or those which cause some other type of serious toxicity at low doses.

Although hazardous drugs, chiefly those used for cancer chemotherapy and HIV treatment, have been in regular clinical use for about 30 years and have handling guidelines, recent evidence has documented the failure of biologic safety cabinets to contain them. Evidence also suggests fairly widespread variability in other forms of control technology, such as handling practices by nursing and pharmacy personnel and the lack of information on the effectiveness of commonly used protective clothing, such as gloves. With the increasing use of these agents for cancer treatment, as well as their use in non-malignant diseases, exposure opportunities are multiplying. The mounting use of these agents in home care settings also enlarges the scope of

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NORA Symposium 2001:
Leading Research in Occupational Safety and Health

NIOSH hosted the 3rd biannual NORA Symposium in June 2001. Over 400 people attended, including occupational safety and health researchers, stakeholders, and policymakers from the public and private sectors. For the first time, the program included new scientific research in NORA priority areas. Response to the call for papers was excellent: over 180 abstracts were submitted, and the symposium featured 19 oral and 20 poster presentations. The main session speakers and a brief description of their presentations are listed below:

Shunichi Araki, Dr.Med.Sc., M.Sc., D.I.H., A.F.O.M.
President, National Institute of Industrial Health, Japan

National Occupational Health Research Strategy of Japan

Dr. Araki discussed the selection of priority research topics in occupational health based on their importance and urgency, attainability of research aim, usefulness, and the possibility for further development of research results. He stressed Japan's strategy for resolving issues around workplace health and safety, which involves understanding the interaction of key research areas.

Edward Baker, Jr., M.D., M.P.H.
Assistant Surgeon General and Director, Public Health Practice Program Offices, CDC

Preventing Occupational Illness and Injury: The Role of Public Health Agencies in the 21st Century

Dr. Baker presented ideas for creating partnerships with state and local agencies and stressed the importance of using familiar approaches, such as public and professional education. Challenges in partnership development involve identifying and speaking a common language among partners, identifying effective interventions, and translating research findings into practice.

Thomas F. Bresnahan, M.S., C.S.P.
Deputy Executive Director and Director of Professional Affairs, American Society of Safety Engineers

How to Develop a Research Agenda for the Non-governmental Sector

Mr. Bresnahan discussed the role of the American Society of Safety Engineers Foundation in providing training and educational grants, scholarships, and mentoring programs. Effective training is part of the multifaceted approach that is needed to ensure the success of a research agenda.

Ellen Galinsky
President, Families and Work Institute

Feeling Overworked: When Work Becomes Too Much

Ms. Galinsky presented findings from her Institute's study of over 1,000 employed adults. The results showed the more employees feel overworked, the greater likelihood they will make mistakes, have higher levels of stress, and suffer from poorer health. Feeling overworked can be a challenge for both employers and employees who will need to consider what steps can be taken to reduce this problem.

Irina Nemirovsky, M.S.
Research Program Specialist, Commission on Health and Safety and Workers' Compensation, California State Department of Industrial Relations

California Occupational Research Agenda

Ms. Nemirovsky introduced California's Commission on Health and Safety and Workers' Compensation, which uses a new model for policy development by utilizing independent research as the basis for policy recommendations. The California Occupational Research Agenda (CORA) was patterned after NORA and is responsible for making considerable progress in improving workplace health and safety.

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Partner Perspective

A Strategic Plan for Reducing Occupational Dermatitis in Oregon

We are honored to receive the 2001 NORA Partnering Award for Health and Safety. Our project, "A Strategic Plan for Reducing Occupational Dermatitis in Oregon" included the following partners:

- Oregon Department of Human Services' Health Division
- Liberty Northwest Insurance Co.
- Columbia Helicopters Inc.
- Oregon Restaurant Association
- United Food and Commercial Workers Union, Local 555
- Enviroderm Pharmaceuticals Inc.
- Environmental services personnel from the county health departments in Clackama, Coos, Hood River, Jackson, and Marion counties, Oregon

We began the project by conducting a statewide study of occupational dermatitis claims filed in the state workers' compensation system. We broadened our research by partnering with Liberty Northwest, a private workers' compensation insurance company in the state. Through this partnership, we were given access to all medical claims related to dermatitis. By 2001, through the disease tracking system, we identified high numbers of plant-induced dermatitis cases in the agriculture & forestry industry in addition to latex glove-related dermatitis cases in food service workers. The Oregon Health Division, Liberty Northwest, Columbia Helicopters Inc., and Enviroderm Pharmaceuticals collaborated on a training program for loggers to prevent dermatitis from poison oak exposure. These efforts are resulting in notable declines in the incidence of medical claims for occupational dermatitis in logging

In another partnership resulting from the data sharing, the Oregon Health Division and the Oregon Restaurant Association launched an effort that provided food service employers and employees with information for recognizing and reducing the risk of latex allergy. The alerts used in this effort were subsequently utilized by other states. The United Food and Commercial Workers Union, Local 555 partnered to help disseminate information to its members. Intensive collaborative resulted in the elimination of latex glove use in many restaurants throughout Oregon.

This project demonstrates how diverse resources can be mobilized for the prevention of work-related injury and illness. The Oregon Health Division believes the greatest successes of the project are yet to come. The partnership project has served as a springboard for an expanded collaboration involving the sharing of Liberty Northwest's entire claims file for the purpose of expanding surveillance to other NORA targeted conditions. The findings continue to be applied in ever widening circles beyond those companies served by the insurance company and in areas of the country beyond Oregon. This ongoing collaboration is meeting both the goals of the business community and of public health. ■

Michael A Heumann
Oregon Health Division
Environmental & Occupational

Partner Perspective

Crab Related Respiratory Illness In Dutch Harbor, Alaska

We greatly appreciate the Honorable Mention for the 2001 NORA Partnering Award, which recognized the collaboration between UniSea management, UniSea workers, and NIOSH. Eva Milo (representing the UniSea Safety Committee) and I were honored to travel to Washington, DC to receive the award at the 2001 NORA Symposium. This partnership developed when UniSea supervisors and workers requested that we investigate respiratory-related problems among our employees. When preliminary analyses showed an increase in respiratory-related problems, we began investigating the link between crab processing and respiratory illnesses and partnered with NIOSH to pursue this issue. With help from NIOSH and the UniSea Safety Committee, we found that workers were being exposed to crab proteins while crushing shells, boiling whole crabs, and separating legs and claws.

We generated recommendations based on our study and incorporated several of these actions into employee safety orientations and procedures. We established a medical monitoring program for early detection and prevention of acute and chronic work-related health effects. Workers are now given information about potential hazardous materials, instructed on the risks of occupational asthma and other respiratory symptoms, taught strategies for prevention and early detection, and educated on the use of personal protective equipment. We also created engineering controls to modify the ventilation system and direct airflow away from workers who are in high-risk exposure areas.

Preceding these changes, there were 34 reported cases of work-related respiratory problems between 1994 and 1998. There were no reported cases after the changes were made. We have disseminated the findings of our study to others in the crab and fishing industries to promote further research efforts.

There are still large hurdles to overcome, but we believe that even in our remote location in Dutch Harbor, cooperation and sharing of information can make a substantial difference for all of us. The management and workers at UniSea strive to make our company the leader and best in the industry in all aspects of business, and we feel this project is just another example of the way a proactive business should operate. ■

Gregg M. Bishop, CSP
UniSea Safety Manager

Extramural Awards in FY 2001 November 2001

NORA grant and cooperative agreement awards for fiscal year 2001 totaled more than $15 million. Below is the list of recipients, grouped by NORA priority area.

Allergic and Irritant Dermatitis

Dermal Hazards in the Workplace: Assessment of Protection & Exposure
Timothy Buckley, Ph.D.
The Johns Hopkins University

Dermatopharmacokinetics and Pharmacodynamics: In Vivo Analysis of Common Paint Product
Karla D. Thrall, Ph.D.
Battelle Memorial Institute

Asthma & Chronic Obstructive Pulmonary Disease

Disease in Chinese Textile Workers
David C. Christiani, M.D.
Harvard School of Public Health

Validated Asthma Questionnaire for Healthcare Workers
George L. Delclos, M.D.
University of Texas

PNOR/PNOC Exposures & the Development of COPD
Henry Glindmeyer, D.Engr.
Tulane University

Pulmonary Effects of Machining Fluid Aerosols
Terry Gordon, Ph.D.
New York University

Environmental Factors in PI*Z Alpha 1-Antitrypsin Deficiency
Lee S. Newman, M.D.
National Jewish Medical & Research

Fertility & Pregnancy Abnormalities

Endocrine Disruptors and Neurodevelopmental Outcome
Brenda Eskenazi, Ph.D.
University of California, Berkeley

Reproductive Effects from Occupational Exposure to Boron
Wendie A. Robbins, Ph.D.
University of California

Hearing Loss

Adverse Effects of Noise on Hearing: Basic Mechanisms
Barbara A. Bohne, Ph.D.
Washington University

Musculoskeletal Disorders: Low Back

Occupational Low Back Pain in Residential Carpentry: Elements of Posture and Strain
Robin E. Herron, Ph.D.
Colorado State University

Biomechanical and Psychosocial Risks for Low Back Disorders
William S. Marras, Ph.D.
Ohio State University

Floor Slope Effects on Lifting Kinematics and Kinetics
Raoul F. Reiser, II, Ph.D.
University of Wyoming

Musculoskeletal Disorders: Upper Extremities

Effects of Repetitive Work on Fatigue of Long Duration
Steven L Lehman, Ph.D.
University of California

Musculoskeletal Disorder Follow-up in Automobile Manufacturing
Laura Punnett, Sc.D.
University of Massachusetts

A Model for Wrist and Elbow Musculoskeletal Disorders
David Michael Rempel, M.D.
University of California

Cumulative Trauma Disorder: Skeletal Muscle Dysfunction
William T. Stauber, Ph.D.
West Virginia University

Traumatic Injuries

Wisconsin Dairy Traumatic Occupational Injury Intervention
Larry John Chapman, Ph.D.
University of Wisconsin

Evaluation of Traumatic Injuries in Health Care Workers During Surgery
Denise M. Korniewicz, DNSc
University of Maryland

Work-Related Assault: Impact of Training and Policy
Nancy Nachreiner, M.P.H.
University of Minnesota

Trucking Firm Characteristics, Driver Injury and Outcome
Arthur Oleinick, M.D.
University of Michigan

Work-Related Motor Vehicle Crashes: Reducing the Burden
Pamela B. Peele, Ph.D.
University of Pittsburgh

A Strong Construction Injury Prevention Intervention at the Subcontractor Level
Robert J. Pleasure, J.D.
Centers to Protect Workers' Rights

Indoor Environment

Floor-Supply Displacement Ventilation System
Qingyan Chen, Ph.D.
Massachusetts Institute of Technology

Health and Socioeconomic Consequences of Non-Specific Building-Related Illness
Carrie Redlich, Ph.D.
Yale University

An Indoor Environment Design Tool for Entire Buildings
Jelena Srebric, Ph.D.
Pennsylvania State University

Mixed Exposures

Organic Solvent Mixtures & Neuropsychological Outcomes
Ellen Kirrane, M.S.
University of North Carolina

Silica Exposure & Silicosis: Effect of Mixed Exposures
Gurumurthy Ramachandran, Ph.D.
University of Minnesota

Microbiological Air Contamination from Machining Fluids
Tiina Reponen, Ph.D.
University of Cincinnati

Experimental and Computational Methods for Quantitating the Absorption of Complex Chemical Mixtures Through Skin
Jim Riviere, D.V.M., Ph.D.
North Carolina State University

Complex Mixture Modeling of Organophosphate Pesticides
Charles Timchalk, Ph.D.
Battelle Memorial Institute

Organization of Work

Extended Work Schedules and Health Outcomes in the US
Fabio Barbone, M.D., Ph.D.
University of Alabama

Effects of Extended Work Hours on Intern Health and Safety
Charles Andrew Czeisler, M.D., Ph.D.
Brigham and Women's Hospital

Impacts of Demanding Work Schedules: National Survey Findings
Allard E. Dembe, Sc.D.
University of Massachusetts

Work Hours, Musculoskeletal Disorders and CVD Risk
Paul A. Landsbergis, Ph.D.
Mount Sinai University

Work Organization and Health Among Home Care Workers
Carles Muntaner, M.D.
University of Maryland

Difficult Work Conditions and Youths' Mental Health
Elizabeth M. Smailes, M.P.H.
Research Foundation for Mental Hygiene, Inc.

Extended Work Schedules and Workplace Injury in Nurses
Alison M. Trinkoff, Sc.D.,
University of Maryland

Special Populations

Casa A Campo: Pesticide Safety for Farmworkers' Families
Thomas Arcury, Ph.D.
Wake Forest University

Worker Genetic Susceptibility to Mutagenic Risk
Paul Wesley Brandt-Rauf, M.D.
Columbia University

Effects of Aging on the Biomechanics of Slips and Falls
Thurmon Eddy Lockhart, Ph.D.
Virginia Polytechnic Institute

Sustained Work Indicators of Older Farmers
Deborah B. Reed, Ph.D.
University of Kentucky

Cancer Research Methods

Development of a Simplified 2-Stage Cancer Model
David Kriebel, Sc.D.
University of Massachusetts at Lowell

Control Technology

Field Studies with Innovative Safe Excavation Technologies
Leonhard E. Bernold, Ph.D.
North Carolina State University

Sunscreens, Agricultural Chemicals & Dermal Absorption
Rhonda Brand, Ph.D.
University of Nebraska

Safe Alternative Solvents for Antibiotics Extraction
Jennifer F. Clark, Ph.D.
Eltron Research, Inc.

Respiratory Protection Against Bioaerosols in Agriculture
Tiina Reponen, Ph.D.
University of Cincinnati

Hearing Protector Allowing Acoustic Communication
Patrick M. Zurek, Ph.D.
Sensimetrics Corp.

Exposure Assessment Methods

Investigating Principles of Workroom Exposure
Charles E. Feigley, Ph.D.
University of South Carolina

Numerical Modeling of Size-Specific Aerosol Concentration
Michael Riordan Flynn, Sc.D.
University of North Carolina

Comparison of Concentrations at Personal Exposure Sampling Locations
Steven E. Guffey, Ph.D.
West Virginia University

Evaluation of Air Samples with Field Analysis for Lead
Martin Harper, Ph.D.
University of Alabama

Germicidal UV Occupational Exposure Personal Monitoring
Gary D. Havey, MEE
Advanced Medical Electronics Corp.

Novel Hydrogen Sulfide Sensors for Portable Monitors
Matthew Hooker, Ph.D.
Nanomaterials Research Corporation

Workplace Surface Contamination & Dermal Exposure to Isocyanate
Roy Rando, Sc.D.
Tulane University

Real-Time Personal Monitor for the Drycleaning Industry
Ross C. Thomas, Ph.D.
Eltron Research, Inc.

Electrostatic Sampling of Airborne Microorganisms
Klaus Willeke, Ph.D.
University of Cincinnati

Molecular Analysis of Mycobacteria in Cutting Fluids
Jagjit S. Yadav, Ph.D.
University of Cincinnati

Intervention Effectiveness Research Methods

Effectiveness of Computer-Based Training: cTRAIN
Kent W. Anger, Ph.D.
Oregon University

Innovative Health Care Worker Training: Infectious Disease Risk
Robyn Gershon, DrPH
Columbia University

Effects of Physical Conditioning on Lifting Biomechanics
Kevin P. Granata, Ph.D.
University of Virginia

Occupational Safety and Health Traininig for Teleworkers
Susan Shemanski Harrington, M.S.
Harrington Software

Control of Workplace Noise Exposure
Murray R. Hodgson, Ph.D.
University of British Columbia

Effectiveness of Farm Safety Day Camps for Children
Debra Moehle McCallum, Ph.D.
Institute for Social Science

Effectiveness of a Machine Guarding Intervention
David L. Parker, M.D.
Minnesota Department of Health

Evaluation of Farm Safety 4Just Kids Day Camps
Deborah B. Reed, Ph.D.
University of Kentucky

Risk Assessment Methods

Physiologically-Based Pharmacolinetic/Clonal Growth Modeling: Predicting Cancer Potential of Chemical Mixtures
Raymond S.H. Yang, Ph.D.
Colorado University

Social and Economic Consequences of Occupational Illness and Injury

Disability Risk in Work-Related Musculoskeletal Injuries
Gary Michael Franklin, M.D.
University of Washington

Social/Economic Impact of Injury/ Illness in Career Roofers
Laura S. Welch, M.D.
MedStar Research Institute

Surveillance Research Methods

Occupational Surveillance Modules for Prevention
David Bonauto, M.D., M.P.H.
Washington Department of Labor and Industries

Core Occupational Health Surveillance in Massachusetts
Letitia K. Davis, Sc.D.
Massachusetts Department of Public Health

Surveillance Methods for Health Care and Related Workers
John M. Dement, Ph.D.
Duke University

Midwest Information System for Trauma Evaluation & Assessment
David L. Parker, M.D.
Minnesota Department of Health ■

Spotlight on the Extramural Program

NIOSH awarded its first NORA-related grant in 1998. Some of these multi-year projects are coming to an end. Here is an example of research accomplishments made by one NIOSH-funded investigator in the NORA priority area of work-related hearing loss.

Prospective Study of Hearing Damage Among Newly-Hired Construction Workers

Noah Seixas, CIH, PhD,
University of Washington

Noise-induced hearing loss, a common occupational disorder, progresses slowly and is often undetected until hearing impairment interferes with communication and poses a safety hazard issue. Unfortunately, current exposure standards and hearing detection methods are based on outdated research.

This study examined the exposure-response relationships for noise-induced hearing loss and targeted high variable noise exposures found in construction. The prospective study is examining the noise exposures and noise-induced hearing loss of construction apprentices in a variety of trades by tracking hearing changes over four years. The participants will take two types of hearing tests to characterize the effects of hearing acuity. The tests include a standard audiometry and a distortion product otoacoustic emissions (DPOAE) test, which measures sounds generated by the inner ear. The study subjects receive a review of their test results at the conclusion of each test.

An analysis revealed differences in exposure histories between the construction apprentices and controls and significant change in hearing function over time. This study has begun to contribute to the understanding of dose-response relationships for occupational noise exposure on cochlear function, hearing sensitivity, and noise-induced permanent threshold shift, indicating guidance for prevention strategies.

There are no publications to date, but the following Web site describes the procedures and progress of the study in greater detail: http://depts.washington.edu/cnstsafe/NewFiles/nihl.html. ■

NORA Activities

NORA Liaison 2001 Committee Meeting

On December 5, the NORA Liaison Committee met in Washington, DC. Dr. Rest updated members on NIOSH and NORA activities. The Committee discussed ideas for leveraging resources for NORA, as well as the use of NORA for research related to terrorist events and other disasters. Several NORA Team Leaders briefed the Committee on Team activities, followed by an in-depth discussion of NORA implementation issues. The next NORA Liaison Committee meeting is scheduled for June 20, 2002.

The National Occupational Research Agenda (NORA) at Mid-Life: Round Table Discussion

NORA Team Leaders participated in an interactive roundtable discussion at the American Public Health Association annual meeting in Atlanta in November of 2001 to discuss NORA activities and the future of NORA research.

Best Practices in Workplace Surveillance: Identification and Tracking of Workplace Injury, Illness, Exposures, and Hazards

Sponsored by the NORA Surveillance Research Methods Team, this workshop took place in Cincinnati, OH from November 7-9, 2001 and emphasized practical approaches to workplace surveillance. Participants shared best practices, describing both the difficulties encountered and practical examples of successes that can be replicated by others. A CD of the conference presentations is available and can be obtained by sending requests to John Sestito at Jsestito@cdc.gov.

The Role of Environmental Toxicants in Premature Delivery

The NORA Fertility and Pregnancy Abnormalities Team funded a two-day workshop entitled, *The Role of Environmental Toxicants in Premature Delivery.* The workshop took place in October 2001 and was sponsored by the Institute of Medicine's Roundtable on Environmental Health Sciences, Research and Medicine. Topics of the workshop included the impact of environmental and chemical exposures on premature delivery, toxicological testing models, and clinical and public health interventions. Speakers from various disciplines including epidemiology, medicine, research, molecular biology, and environmental science were present.

Annual Meeting of the American Contact Dermatitis Society

The Allergic and Irritant Dermatitis Team attended the meeting on February 21, 2001 in New Orleans, LA and sponsored a session that focused on occupational skin diseases. Occupational dermatologic issues were presented with related NORA activities highlighted. The session focused on furthering partnerships with leaders in clinical and basic science research of dermatitis and promoting scientific exchange among scientists from academia, government, and industry working in the field of occupational dermatitis.

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

Sponsored by NIOSH (Hearing Loss Team) and the National Hearing Conservation Association, this workshop was held April 11-12, 2002 in Cincinnati, OH and provided information about hearing loss prevention to professionals from labor, industry, and government and the effects of industrial chemicals on the auditory system. This workshop also provided decision makers with key scientific information to guide policies regarding chemical and mixed exposures, assisted investigators in planning studies, and addressed issues faced by professionals who work with populations exposed to chemicals and noise.

Cancer Research Methods Workshop

This workshop, held from May 8-9, 2002 in Washington, DC, brought together researchers who study worker populations and those who are developing new biotechnologies and effective applications to better understand occupational cancer. Topics for discussion included markers of early biological effect, inherited modifiers of risk, gene expression, and DNA damage. ■

Upcoming Events

Mark your calendars for the **3rd National Occupational Injury Research Symposium** (NOIRS), which will be held October 28, 29, and 30, 2003 at the Sheraton Station Square in Pittsburgh, Pennsylvania. This is the only national symposium focusing solely on traumatic occupational injury research and prevention. Detailed information will soon be available at http://www.cdc.gov/niosh/noirs/noirsmain.html. ■

National Institute for Occupational Safety and Health
NIOSH

For more information on NORA contact NIOSH at:
1-800-35-NIOSH (1-800-356-4674)
or visit the NORA Homepage at:
http://www.cdc.gov/niosh/nora

Safe Handling of Hazardous Drugs Among Healthcare Workers *continued from page 1*

worksites that may be potentially contaminated with portions of treatment solutions that might escape onto work surfaces, contaminated supplies, and drug-waste itself.

An initial meeting for interested stakeholders was jointly hosted in September 2000 by two NORA teams: the Fertility and Reproductive Abnormalities Team and the Control Technology/Personal Protective Equipment Team. Stakeholders from a variety of reproductive hazards prevention groups attended. The September meeting was followed by meetings in December 2000 and May 2001, with an increasing number of partners that included expertise from the healthcare industry, government agencies, and academia. Stakeholders discussed establishing a recognized standard of practice in the safe handling of hazardous drugs that would be universally employed throughout all clinical venues in the healthcare industry, including practices during transportation, preparation, administration, and waste handling.

The working group is developing an alert on exposure to hazardous drugs, has initiated a laboratory study on the permeability of protective clothing to hazardous drugs, and proposed additional projects related to control technology. ■

NORA Symposium 2001 *continued from page 2*

NORA Partnership Award

Bonnie Rogers, Dr.P.H., COHN-S, FAAN, Chair of the NORA Liaison Committee, presented the NORA Partnering Award for Worker Health and Safety to a partnership in Oregon for its efforts to reduce occupational dermatitis. The NORA Liaison Committee also awarded Honorable Mention to the workers and management of the Unisea Corporation, who together with NIOSH, investigated and reduced respiratory illness in crab processing workers in Alaska.

This award was created in 1999 to recognize exemplary teamwork, innovative thinking, and strong science in the interest of worker safety and health. It is given only to organizations that conduct collaborative research resulting in the development of new equipment, practices, policies or procedures in order to reduce hazardous exposures and/or adverse outcomes. The award requires a minimum of three partners within the collaboration and can encompass a broad and diverse spectrum of involved parties, such as producers, users, employers, labor, the public health community, academia, and government.

We are pleased by the success of last year's symposium and look forward to the next NORA Symposium in 2003. ■

NORA news
National Occupational Research Agenda

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