Department of Environmental and Occupational Health Sciences

ENVIRONMENTAL HEALTH News

School of Public Health and Community Medicine ▪ University of Washington ▪ Autumn 2003

SAFETY CULTURE IN THE WORKPLACE

For years, industrial hygienists have worked with companies and their employees to solve workplace safety problems. These efforts were often successful, though over time conditions would sometimes revert to "business as usual." To support lasting change, industrial hygienists have started collaborating with social scientists to support shifts in individual and organizational thinking. This issue of Environmental Health News describes successful programs from construction, sawmilling, plastic production, agriculture, and fishing that can serve as models for other industries.

INSIDE

Safety Culture in the Workplace 1
Overcoming Resistant Work Cultures 4
APHA Meeting 5
Hearing Loss Among Carpenters 6
Creating a Safe Workplace on the Farm 8
Continuing Education 9
People & Places 10
Hazards to Children 11
Farm Workers' Health 12

Since February's loss of the space shuttle *Columbia*, safety culture has been in the news. The Columbia Accident Investigation Board report found that "NASA's organizational culture and structure had as much to do with the accident as the external tank foam."

It took a high profile disaster, the loss of the *Columbia*, to focus more attention in "the other Washington" on the importance of having a safety culture, according to Sharon Morris, assistant chair for outreach in the Department of Environmental and Occupational Health Sciences. In "our" Washington, she said, many companies have been quietly working to understand what it means to have a workplace safety culture and to make the necessary organizational changes.

Three of those companies talked about their programs in a short course organized by the Governor's Industrial Safety and Health Advisory Board and the department's continuing education program at the September Governor's Health and Safety Conference.

What, then, is a safety culture? How can a bad one be fixed or a good one made better?

One academic study, by Mearns and Flin, suggests that measuring the safety culture of an organization requires looking not just at individual attitudes and practices, but also paying attention to the way an organization handles risks and contemplates safety practices. Safety cultures mirror the organization's shared attitudes, perceptions, values, and beliefs around safety.

At the short course, Morris described a shift, in recent decades, in how we talk about worker injuries. "We used to talk a lot about accidents—accidents happen." The solution would be to "blame the worker; train the worker." Since then, she said, we have largely gone from talking about preventing accidents to preventing injuries and disease.

Here are three companies that could, in Morris' words, "teach NASA a thing or two about safety."

MORTENSON

"Why pursue zero injuries?" asked Keith Dyer, safety director of Mortenson, a Minneapolis-based construction company that rehabilitated the legislative building in Olympia. "Because that means that about 1,200 construction

Courtesy of Welco Lumber Company, Skookum Division

An employee at Welco Lumber doing an ergonomic stretch

workers are killed each year in the US, and one is simply too many."

His company established a "zero accidents" task force in 1989 to research the total cost and human impact of accidents. It was a radical notion at the time, but the company president recognized that accepting current industry safety standards would be saying to 100 of his workers, "eight of you will be hurt on this job." That was an unacceptable goal for a family-owned business.

In 1995, the company launched its zero-injuries campaign. It instituted mandatory training for foremen, field engineers, superintendents, project managers, and senior leadership. In annual performance reviews, safety was counted as much as quality and productivity. Another radical concept was to charge the cost of accidents to the project budget.

Since then, cultural change can be seen, for example, in the daily stretching and bending classes. In a recent survey, 99% of its workers rated Mortenson as a safe place to work. In 2003, Mortenson was awarded the Association of General Contractors' national construction safety excellence award.

WELCO SKOOKUM

Welco Lumber Company's Skookum division sawmill in Shelton makes red cedar siding, decking, and fencing. It sought the University of Washington's Field Research and Consultation Group's help with its noisy and dusty environment.

Industrial Hygienist Gerry Croteau and Mary Ellen Flanagan worked with the company to build an enclosure for a very loud and dusty process, the bevel resaw area. Skookum workers built it, then installed a "made in the USA" sign. Morale in that work group improved, Flanagan said, and noise levels dropped and wood dust levels fell from 140% of the permissible exposure limit to 20%, "an impressive reduction."

That was only one example of how Skookum has "engaged nearly everyone in safety," said Dick Bullard, vice president and general manager.

When Welco purchased the Shelton mill three years ago, the old mill had a slogan that "Safety is #1," but little follow-through. The company was using a safety video from the 1940s and tolerating unsafe conditions. What the signs really meant, Bullard said, was that "safety was #1—as long as it didn't affect production numbers."

A cultural change was about to hit Shelton.

In Welco's 10-year business plan, the topmost strategic goal is "to achieve the safest work environment in our industry." One of Welco's key strategies was to use the annual audit process to ensure continuous improvement in safety. A core value is to "insist on safe work performance."

The sawmill production line will be shut down rather than tolerate an unsafe shortcut. Remarkably, the plant works at 90% efficiency now, compared with 80% before the changes. Bullard attributes much of the improvement to getting employees involved with safety.

Throughout the mill, employees realized the company was serious about safety when Dallas Schmidt, the mill's business manager, was reprimanded for taking a long-tolerated shortcut. A second reprimand would cost him his job.

Lynn Fleming, the plant's safety manager, said "everybody actively cares about the safety and health of others—it's become like a religion. You practice it all the time, and take it home with you."

PW PIPE

Pacific Western Pipe has a 60-worker operation in Tacoma that makes polyvinyl chloride (PVC) pipe for electrical conduit and irrigation and drainage lines. "We embraced the (Washington state ergonomics) rule as we saw it coming," said Mike Melampy, plant manager. The result was a state "Ergonomics in Action" award in 2002.

The company realized how expensive lost-time injuries can be, and found that, "as safety improved, so did productivity," Melampy said. Another result was improved communication. "Once employees saw that management cared about quality-of-life issues, they started speaking up," he said.

Dusty Hughes, a blender operator on the B shift, came to believe that, as an employee, he could have control over his job. His job involved scooping PVC resin with a straight-handled scoop that required a twisting motion that hurt his arms and wrist. He explained the problem, and company management tried to buy an ergonomic scoop. When that failed, they asked an outside vendor to help design a new handle at a 90° angle to the old one. When the state Department of Labor and Industries heard about the solution, it asked the company to be part of a demonstration project.

The re-handled scoop was only the beginning. Employees from all departments—most of them hourly—were asked to sit on a safety committee. As they started being heard, many concerns were raised. For example, maintenance employees helped redesign a handcart. A wall was removed to make it easier to change blades in a grinder, which previously required working for hours in an awkward posture.

Employee involvement was codified with a near-miss form. "A review of near-misses gave us information on work problems that employees faced," Melampy said. Not only does management get a report, but all near-misses are reviewed by workers.

FOR FURTHER READING

Geller, ES (1996) *The Psychology of Safety*, Radnor, PA.

Mearns, KJ and Flin R (1999). Assessing the state of organizational safety—culture or climate? *Current Psychology* 18(1): 5.

Nelson, EJ (2003). *The Employer Safety Guidebook to Employee Zero Injury*. Nelson Consulting, Inc., Houston, TX.

SAFETY CULTURE C. 1911

©1996 USPS

Alice Hamilton, the nation's first occupational health physician, recognized the importance of a safety culture—and of management's buy-in.

Hamilton's first area of study was the white-lead industry. American lead plants used a "dry separation" process when their European counterparts used an underwater method of changing metallic lead into basic carbonate (white lead). The American process exposed workers to poisonous dust.

Hamilton visited the factory of Wetherill and Brother, an old Philadelphia establishment. Her recommendations for cleaning up dangerous operations were warmly received by Webster King Wetherill, secretary and treasurer of the company, who promised change.

Still, she recognized the importance of involving the plant foreman, a Mr. Foster, who had been her guide on the plant tour. He had been with the company for 38 years, and she thought he might favor the status quo.

In a May 22, 1911 letter to Foster, Hamilton wrote:

… The factory which is safe and clean, is the factory which has a foreman who wishes it to be safe and clean. He is the most important factor …

As long as your roller room has piles of white lead on the floor and in open trucks, you will always be having lead poisoning. You see you will never be able to make your men careful under those circumstances, for they get so used to dust and untidiness, that they do not know it when they see it. Make a rule that the floor must be kept clean and all white lead covered up…

Keep at the men all the time about dust. Teach them to watch each other, and when you see a man raising dust, tell the other men that he is poisoning them and they must watch him …

—Sicherman, Barbara (1984)
Alice Hamilton: A Life in Letters
Cambridge, MA, Harvard University Press

OVERCOMING RESISTANT WORK CULTURES

Commercial fishing is one of the world's deadly occupations. Yet fishers have shown reluctance to implement safety measures, even though their risk of injury is high, and the means to reduce risk are well known and have been proven effective.

Reporters and photographers view violence and trauma regularly, yet an unwritten code among journalists holds that no assignment, no matter how dangerous, can prevent them from taking a photograph, gathering facts, and producing a story.

Teenagers may be among the most resistant populations, combining inexperience with a sense of immortality.

Departmental outreach staff discussed the difficulties—and promises—of changing these work cultures in a poster session at the American Public Health Association's annual meeting in San Francisco in November.

Kris Freeman discussed the commercial fishing industry's work culture of high risk. Fishers minimize their feelings of vulnerability through fatalism, denial, and a tendency to "blame the victim" for accidents. The largest improvements in commercial fishing safety have come from regulation or insurance requirements.

She described successful safety programs that draw on fishers' business and problem-solving skills, and are congruent with the industry's individualistic, competitive culture. A successful Norwegian program provided detailed cost-benefit analyses (for example, the cost of safety glasses vs. the cost of an eye injury at sea). Successful programs in the US have organized public safety-drill competitions among vessels, such as "survival suit races."

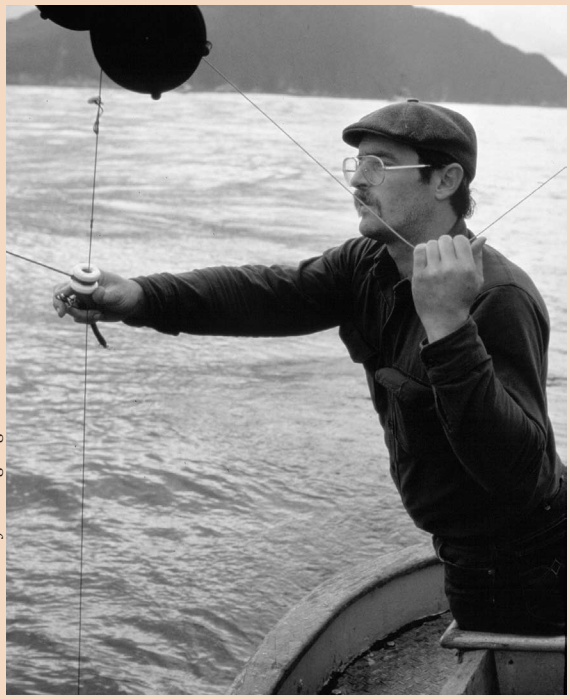
Kathy Hall and Roger Simpson, an associate professor in the Department of Communication, describe how journalists and their employers give little attention to the potential effects of the violence they see. Indeed, the culture of daily journalism resists interventions such as those that have become common for public safety agencies.

Simpson and other researchers have found that

at right: Commercial salmon fisher in Alaska checking his lines

below: Small fishing fleet heading out to open ocean

Photo: Andrew Hendry; Illustration: ©2003 www.clipart.com



Kris Freeman and PacificFishing magazine

journalists on the front lines are strikingly similar to public-safety workers in both their experiences and their emotional responses, yet they generally have little safety training or counseling to help them cope with traumatic events. Three exceptions—media organizations that have developed positive safety cultures—are Cable News Network (CNN), the British Broadcasting Corporation (BBC), and the *New York Times*.

Darren Linker, of the Health and Safety Awareness for Working Teens program, described an interactive Web site that can be used to teach health and safety to students in high school wood shop classes. They learn general safety principles they can use throughout their working life, plus specific instructions about safely using saws, drills, sanders, and other shop equipment.

The goal of the Web site, and of the Health and Safety Awareness program in general, is to educate students about workplace health and safety by promoting an attitude of occupational injury and illness prevention, Linker said.

APHA 131ST ANNUAL MEETING SAN FRANCISCO, NOV. 15-19

Departmental researchers are in bold-faced type

Chetana Acharya, Tanya Kim, Marcia Henning, Stella Chao, and **Thomas Burbacher,** *Community partnerships for culturally competent environmental health education*

Gloria Coronado, Beti Thompson, and **William Griffith,** *Occupational tasks and organophosphate pesticide exposure among farm workers in Eastern Washington State*

Kris Freeman, *Search strategies of e-health consumers and implications for Web page design*

Kris Freeman, *Fatalism and denial: Cultural barriers to improving workplace safety in the commercial fishing industry*

Kris Freeman, *Searching for health information online: How do readers decide which sites to trust?*

Kathy Hall, *Occupational safety and health online: University as an information center*

James Krieger, Donna Higgins, and **Tim Takaro,** *Housing and health: interventions and strategies from Seattle*

Darren Linker, *Using technology to teach safety and health to vocational students: A new tool for wood shop teachers*

Roger Simpson, and **Kathy Hall,** *Journalists and trauma: How newsroom norms can hurt*

Larkin Strong, Beti Thompson, Gloria Coronado, and **William Griffith,** *Reported health symptoms and pesticide exposure among farmworkers in Central Washington*

Tim Takaro, *Beryllium exposure and disease in populations downstream from production: Nuclear weapons workers and the public surrounding production plants*

Laura Welch, Knut Ringen, Eula Bingham, John Dement, **Tim Takaro,** William McGowan, Anna Chen, and Patricia Quinn, *Screening for beryllium disease among construction trade workers at department of energy nuclear sites*

Thomas M. Wickizer, **Gary Franklin, Deborah Fulton-Kehoe,** Judith Turner, and **Terri Smith-Weller,** *Patient satisfaction and its relationship to treatment outcomes among injured workers receiving care through the Washington State Workers' Compensation system*

HEARING LOSS AMONG CARPENTERS

Rick Neitzel

A carpenter uses a Skilsaw to cut wood to build a concrete form

By age 50, two out of three carpenters have lost so much hearing from occupational noise exposure that they need hearing aids. Researchers at the National Institute for Occupational Safety and Health are studying ways to prevent occupational hearing loss and how to teach carpenters to value good hearing.

Doctors Mark and Carol Stephenson of NIOSH were on campus in October to discuss the organizational and behavioral aspects of hearing conservation. Behavioral research, grounded in the social sciences, can explain how beliefs and behaviors develop, and give insight into how they can be changed. Mark gave a seminar in the Department of Environmental and Occupational Health Sciences. He reported on research that NIOSH is doing in partnership with the United Brotherhood of Carpenters and Joiners of America. DEOHS research scientist Rick Neitzel assisted with portions of their research.

Mark and Carol were invited to campus by Professor Noah Seixas, who has been researching noise and hearing loss in carpenters for five years and whose interests have recently turned to behavioral factors. Noah said, "While understanding how noise affects hearing is important, changing the way organizations are structured to support workers' healthy behaviors is also needed to prevent hearing loss."

A senior research audiologist at NIOSH, Mark stated, "Occupational hearing loss is so common among carpenters, many think it's normal to lose their hearing." In a profession where fatal accidents can happen in an instant, a safety culture has evolved around the precept, "If it doesn't bleed, don't worry about it." It's not surprising that the gradual loss of hearing from noise exposure isn't respected as a problem.

Carpenters are not unaware of the danger loud noise poses to hearing. According to the results of a NIOSH survey, 100% agreed or strongly agreed with the statement "loud noise can hurt my hearing." Almost 90% agreed that their own hearing had been damaged by noise. Nevertheless, the Stephensons' studies found that only about 17% of carpenters said they wore hearing protection "most of the time," and actual observations showed that they wore protection less than 10% of the time. The challenge, Mark said, was to develop safety programs that help people become motivated to protect their hearing.

Mark emphasized that effective hearing loss prevention programs are not accidental, but are rooted in sound health communication models that carefully frame hearing loss prevention messages. Such models include the theory of reasoned action, the health belief model, and the health promotion model. Carol added that careful timing is also essential in changing a company's safety culture. "You have to consider what else is happening in the company or in the world that might detract from or facilitate the changes we desire." The stages of change model can be used to help address timing issues in developing safety and training messages.

So, why aren't carpenters wearing hearing protectors? Mark noted that it's not enough for workers to believe they are susceptible to occupational hearing loss and that the problem is serious. Effective programs must apply training messages that target barriers to desired behaviors. For example, Mark explained that barriers to hearing protector use typically involve the "4 Cs": comfort, convenience, cost, and communication. He noted that cost involves more than dollars and cents. There may be a social cost to wearing hearing protectors. Some workers may experience social pressure to be "tough" and not wear them. If training messages ignore social issues, even the best hearing protectors may not be worn. Communication barriers include the ability to hear important sounds such as speech and warning signals. With well over 200 models of hearing protectors to choose from, Mark stated there should be a device to meet every need and address every barrier.

By removing barriers and developing hearing loss prevention skills, it should be possible to imbue workers with a belief that they are in control of their own hearing health. Only then will hearing loss prevention programs be likely to succeed. Investments in hearing protection programs can bring huge rewards, Mark said, because "occupational hearing loss is 100% preventable."

FOR FURTHER READING

Glanz, K, Rimer, BK, Lewis, FM, eds. (2002). *Health Behavior and Health Education. Theory, Research and Practice.* 3rd edition. Jossey-Bass, San Francisco.

NIOSH Web site on hearing loss prevention
http:www.cdc.gov/niosh/topics/noise/

UW occupational noise Web site
http://depts.washington.edu/occnoise/

Rick Neitzel's web site
http://staff.washington.edu/rneitzel/index.html

200 ATTEND SEMINAR

More than 200 industrial hygienists, safety professionals, occupational medicine physicians, occupational health nurses, and audiologists attended an Oct 15 seminar titled "State of the art concepts in noise and hearing loss." The Pacific Northwest Section of the American Industrial Hygiene Association sponsored the session, which was held at the annual Northwest Occupational Health Conference. Departmental staff and faculty including Rick Neitzel, Sue Swan, Noah Seixas, Janice Camp, and Bill Daniell organized this one-day short course. The seminar featured nationally recognized speakers in the areas of hearing loss biology, epidemiology, exposure assessment, hearing conservation, and noise control.

Creating a Safe Workplace on the Farm

Departmental faculty and associates addressing a wide range of topics played a major role in "Challenges in agricultural health and safety." The annual conference is co-sponsored by the Pacific Northwest Agricultural Safety and Health (PNASH) Center, one of 10 NIOSH-funded agricultural centers in the nation. Its counterpart at the University of California, Davis, hosted this year's event, held in San Francisco in September. About 120 people, mostly researchers from the western United States, attended.

Farming has many hazards, including power equipment, pesticides, and extreme weather

Richard Fenske, professor and PNASH director, assessed federal standards on pesticide illnesses and injuries and found them lacking. The current standard is generic in its approach to such issues as personal protective equipment and does not require exposure monitoring or medical surveillance. Recent Environmental Protection Agency (EPA) recommendations regarding pesticides rely heavily on protective equipment and worker education rather than engineering controls.

Matthew Kiefer, associate professor and PNASH co-director, reviewed new research on health effects of pesticide exposure among agricultural workers. In developing countries, older, more dangerous chemicals remain in use despite their proven ill effects, while the newer, "safer" pesticides used in developed countries may have unforeseen health consequences. Many of them resemble pharmaceuticals in action and similar toxicity may be expected. Since pesticides are rarely tested on humans, however, the side effects have not yet been assessed.

©2003 www.photos.com

Patricia Boiko, outreach director at PNASH, reported on her recent project involving mental health disabilities among Hispanic farm workers in the Yakima valley. She helped develop a new survey tool to work with this population, including people with low literacy in Spanish as well as English. The self-administered, tape recorded survey proved reliable for diagnosing mental illness.

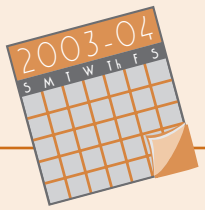
Professor Jane Koenig of the Northwest Center for Particulate Air Pollution and Health and Pete Johnson, an associate professor who specializes in ergonomics, spoke about recent research into diseases associated with farming and tools for measuring agricultural injuries. Koenig, an authority on respiratory ailments, reported that studies of the effects of particulate matter from field burning in Pullman and Spokane indicate increased symptoms in subjects with asthma or chronic respiratory diseases. Johnson introduced two breakthrough ergonomic research tools he is helping to develop: the "Virtual Corset," a pager-sized device that attaches to the subject's body and measures either limb/trunk postures or 360° of limb rotation, and a tattletale logger that will be able to collect physiological data unattended for up to several years.

Discussions of two PNASH-funded projects were also on the conference program. Kathy Pitts of Eastern Washington University spoke about an innovative farm health and safety intervention method, interactive plays, used with Hispanic farm workers. Maria Hernandez-Peck, also of EWU, reported on her study of older farmers in Eastern Washington and the factors in their retirement.

In addition, PNASH research scientist Angela Carden and research coordinator Maria Negrete contributed posters to the conference as did several UW students working with the Center: Fabioloa Estrada (MS graduate), Kathryn Toepel (MS student), and Lisa Younglove (MPH student). PNASH faculty and staff mentor students, and the Center further supports them through graduate stipends, tuition, and travel.

PNASH will host next year's conference, "Cultivating a sustainable agriculture workplace," in Portland Oregon, Sept. 12–14.

–Eric Swenson



CONTINUING EDUCATION

To confirm this schedule or find more information about these courses, call 206-543-1069 or visit the Continuing Education Web site at *http://depts.washington.edu/ehce*. Courses are in Seattle unless noted.

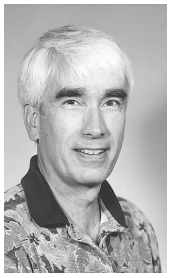
NW CENTER FOR OCCUPATIONAL HEALTH & SAFETY

Jan 16	Diesel exhaust and human health: Current scientific and policy issues
Jan 20, 21, 22, 23	Annual hazardous waste refreshers
Feb 11	Tools and techniques to improve your safety training programs
Feb 12	Puget Sound Occupational and Environmental Medicine Grand Rounds
Feb 19	Pesticide safety, health, and medicine conference
Feb 27	An aging workforce: Developing health and safety strategies that work
Mar 11	Puget Sound Occupational and Environmental Medicine Grand Rounds
Mar 12	Zoonotic and vector-borne disease: Current and emerging issues
Apr 8	Puget Sound Occupational and Environmental Medicine Grand Rounds
Apr 30	Shipping and receiving of hazardous materials for laboratory operations

OSHA TRAINING INSTITUTE EDUCATIONAL CENTER

Not for OSHA rules only! All classes offer training that meets WISHA, OR-OSHA, and Alaska state standards.

Jan 5-8	OSHA 501: OSHA Trainer course for general industry
Jan 5-8	OSHA 510: OSHA Standards for construction (*Portland*)
Jan 12-15	OSHA 3110: Fall arrest systems
Jan 13-16	OSHA 511: General industry standards (*Boise*)
Jan 21-23	OSHA 502: Construction trainer update (*Portland*)
Jan 23	Focus on Safety seminar: Competent person
Jan 26-28	OSHA 2225: Respiratory protection
Jan 26-28	OSHA 503: General industry trainer update (*Portland*)
Feb 2-5	OSHA 510: OSHA Standards for construction
Feb 9-12	OSHA 3010: Excavation, trenching, & soil mechanics (*Portland*)
Feb 17	Focus on Safety seminar: Steel erection
Feb 18-19	Supervisory safety & health duties
Feb 23-25	OSHA 2250: Principles of ergonomics
Feb 23-26	OSHA 500: Trainer course for construction industry (*Portland*)
Mar 1-4	OSHA 511: General industry standards
Mar 8-11	OSHA 6000: Collateral duty for other federal agencies (*Portland*)
Mar 9	Focus on Safety seminar: Scaffolding
Mar 16-19	OSHA 2015: Hazardous materials
Mar 22-24	OSHA 2225: Respiratory protection (*Portland*)
Mar 22-25	OSHA 521: Guide to industrial hygiene
Mar 29-31	OSHA 503: General industry trainer update
Mar 29-Apr 1	OSHA 6000: Collateral duty for other federal agencies (*Spokane*)
Apr 5-8	OSHA 500: Trainer course for construction industry
Apr 5-8	OSHA 511: General industry standards (*Portland*)
Apr 12-15	OSHA 6000: Collateral duty for other federal agencies
Apr 19-22	OSHA 521: OSHA guide to industrial hygiene (*Portland*)
Apr 20-23	OSHA 500: Trainer course for construction industry (*Boise*)
Apr 26-28	OSHA 502: construction trainer update
Apr 27-30	OSHA 3095: Electrial Standards (*Portland*)



Mike Morgan

Professor **Mike Morgan** has been named as the first editor-in-chief of the *Journal of Occupational and Environmental Hygiene*, jointly sponsored by the American Conference of Governmental Industrial Hygienists (ACGIH) and the American Industrial Hygiene Association (AIHA). This journal, which will begin publication in January, will replace journals previously published by these two associations.

John Milner, a former occupational medicine physician on our faculty, has been promoted to full professor in the School of Medicine. It is unusual to be promoted to a full professorship unless one is fulltime faculty. This honor reflects his significant contributions to teaching and clinical training. John also received the Faculty Distinguished Teaching Award (Dermatology) in 2000 after retirement.

Elizabeth Gribble

Elizabeth Gribble, a PhD student in the Faustman lab, won two awards at the 2003 Teratology Society Meeting: the Eli Lilly women and minority travel award, and the James Bradford award for best poster. The Bradford award led to an invited talk at the Middle Atlantic Reproductive and Teratology Association 2003 meeting.

Professor **Noah Seixas** attended the Skanska USA safety strategic planning conference in October. He also presented an update on the department's studies in the construction industry to the Western Washington Construction Apprenticeship Coordinators in October.

Jon Hoffman

Graduate student **Jon Hofmann** was in Costa Rica in July to work with investigators at the Central American Institute of Studies of Toxic Substances (IRET) on a cohort mortality study of former banana plantation workers. This is a follow-up study of more than 40,000 people who worked on banana plantations during the 1970s and had high exposures to pesticides. The researchers will look at the causes of death of former workers, to see if any are related to high pesticide exposure levels or other risk factors of working on banana plantations.

Professor **Mike Yost** gave a talk to the Puget Sound Clean Air Agency on optical remote sensing methods in September. In October, he gave a talk in San Francisco to the US EPA standing air monitoring work group on open-path measurements of particulate matter.

Senior Lecturer **Janice Camp** received the Distinguished Industrial Hygienist Award from the Pacific Northwest Section of the American Industrial Hygiene Association.

Noah Seixas, Sue Swan, Rick Neitzel, Rick Gleason, Bill Daniell, Gerry Croteau, Stephanie Carter, Marie Martin, Mike Morgan, Kate Stewart, Steve Russell, Austin Sumner, Joel Kaufman, Mary Ellen Flanagan, and **Richard Fenske** presented their research at the Northwest Occupational Health Conference in mid-October in Seattle.

Professor **Lucio Costa** gave invited presentations at the International Neurotoxicology Association meeting in Dresden, the EUROTOX meeting in Florence, and the Italian Society of Occupational Medicine in Bari.

Assistant Professor **Peter Johnson** traveled some 48,000 miles (the equivalent of twice around the world) collaborating on ergonomic issues. In June and December, he was in Göthenburg, Sweden, working on a physical exposure assessment of cell phone users—teenagers who are wearing out their thumbs by text messaging. In June, he worked with the Danish National Institute of Occupational Health (NIOH) on a muscle fatigue study (see *Environmental Health News,* winter 2001). In August, he presented a software tool to assess exposures of office work at the International Ergonomics Association Conference in Seoul, Korea. In September, he presented exposure assessment tools for agricultural ergonomics at the Challenges in Agricultural Health & Safety Conference in San Francisco (see page 8). In September, he was also at Harvard, working on an exposure assessment system for computer workers. He also worked with Vermont-based Microstrain on hardware for agricultural ergonomic exposure assessment (a virtual corset). In November, he was in Thailand and Vietnam to conduct ergonomics courses for the Fogarty program.

Four investigators from the EPA-funded Northwest Center for Particulate Air Pollution and Health attended meetings in Vancouver, BC, in October.

Tim Larson and **Jane Koenig** spoke at a symposium on Air Quality and Health sponsored by the British Columbia Lung Association. Koenig, Larson, **Joel Kaufman,** and **Jeff Sullivan** attended a discussion of cross-boundary air pollution issues sponsored by the Georgia Basin/Puget Sound Air Quality and Health Impacts Cohort Study.

Rolf Hahne and **Mike Yost** taught a two-day course on Exposure Assessment at Burapha University in Chonburi, Thailand, in June.

Shengli Shi won a second place award for student platform presentations and $100 at the Pacific Northwest Association of Toxicologist (PANWAT) 2003 annual meeting.

Professor **Elaine Faustman** traveled to China in November as the toxicology delegation leader of the People to People ambassador program. Because many Chinese toxicology students obtain their graduate training in the US, it is of value for American scientists to learn more about the toxicological issues, opportunities, and challenges facing China.

Senior Lecturer **Chuck Treser** attended the Environmental and Occupational Health Education conference in August, which focused on how schools of public health could better address children's environmental health issues. In September, he was invited to a meeting of the national Public Health Training Centers to set a research agenda for rural public health for the US Health Resources and Services Administration (HRSA). He developed a white paper on environmental health research needs, which he is revising for the final report.

Dr. **Patricia Boiko,** director of outreach for the Pacific Northwest Agricultural Safety and Health Center (PNASH), chaired a stakeholder workshop in July in Toppenish. The workshop brought together 18 stakeholders and seven PNASH staff to develop a process for involving affected parties in the center's activities. Attendees came from government, agriculture, labor, agricultural extension, tribes, and community organizations. Others from PNASH were **Richard Fenske, Marcy Harrington, Matt Keifer, Stacey Holland, Karen Snyder,** and **Maria Negrete.**

HAZARDS TO CHILDREN

The Northwest Pediatric Environmental Health Specialty Unit (PEHSU) provides free telephone consultation on pediatric environmental health risks to health care providers, public health professionals, communities, and families.

Consultants include pediatricians, toxicologists, occupational and environmental medicine physicians, and other environmental health specialists affiliated with the University of Washington. PEHSU professionals can assess health risks such as mercury in childhood vaccinations, exposures to silica dust, and well water contaminated with arsenic. For assistance, call 1-877-KID-CHEM (1-877-543-2436).

Consultants can provide educational assistance on pediatric environmental health risks. For example, they could work with providers at community hospitals near a Superfund site. For educational assistance, call 206-341-4448.

Providers also see children and their families at the University of Washington Medical Center, Roosevelt, in Seattle.

Please contact the PEHSU Coordinator, Nancy Beaudet, 206-341-4448, or visit *http://depts.washington.edu/pehsu/*, for general questions or to request a copy of the PEHSU brochure.

NW PEHSU was created by the University of Washington Occupational and Environmental Medicine Program together with the Washington Poison Center. It is federally funded by the Agency for Toxic Substances and Disease Registry (ATSDR) through the Association of Occupational and Environmental Clinics, and covers Region X: Alaska, Idaho, Oregon, and Washington.

FARM WORKER HEALTH

Matthew Keifer, Mary Salazar, and Karen Snyder received a grant to conduct community health interventions with Yakima valley agricultural workers. The four-year grant is funded by the National Institute for Occupational Safety and Health (NIOSH).

The Pacific Northwest Agricultural Safety and Health Center, along with community groups, will assist Hispanic farm workers in responding to occupational and environmental risks. The Northwest Communities Education Center/Radio KDNA, a community-based nonprofit organization and Spanish language public radio station, will lead the outreach effort. Heritage College will be a training site for students and a base for field research.

The Yakima Valley Farm Workers Clinic will serve as a student training site and produce clinical protocols and guidelines on occupational and environmental health concerns. The project is expected to create sustainable partnerships between community organizations, the Yakima valley Hispanic community, and University of Washington scientists.

THE FINE PRINT

Managing Editor
Sharon L. Morris

Senior Writer & Editor
Kathy Hall

Contributing Writer
Eric Swenson

Designer & Illustrator
Cathy Schwartz

Editorial Assistant
Kipling West

Department Chair
David A. Kalman

Environmental Health News is published three times a year by the Department of Environmental and Occupational Health Sciences at the University of Washington. Inquiries should be addressed to *Environmental Health News*, 4225 Roosevelt Way NE, Suite 100, Seattle, WA 98105-6099; Phone: (206) 543-1564;
E-mail: *kjhall@u.washington.edu*.

Find the department on the World Wide Web at *http://depts.washington.edu/envhlth*.

This newsletter is also available online at *http://depts.washington.edu/envhlth/info/publications.html*

Department of Environmental and Occupational Health Sciences, University of Washington.

UNION BUG

Printed by University of Washington Publications Services on recycled paper with vegetable-based inks.

University of Washington
School of Public Health and Community Medicine

Department of Environmental and Occupational Health Sciences
Box 354695
Seattle, Washington 98195-4695

RETURN SERVICE REQUESTED

Nonprofit
US Postage
PAID
Permit No. 62
Seattle, WA

BUDGET BAR CODE 10-5804