AUT 2010

DEPARTMENT OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH SCIENCES

environmental health news

OUR DEPARTMENT IS ABOUT... PROTECTING WORKERS

Firefighter EMT Jaret Vosburgh sprays disinfectant on a stretcher used by the paramedic unit of Fire District 1, Station 11, during routine cleaning. A DEOHS study of MRSA exposure led to changes in protocol. Story on page 2.

Photo: Sarah Weiser, The Herald

PREVENTION IS OUR PRIORITY

Since the late 1940s, the Department of Environmental and Occupational Health Sciences has provided industrial hygiene services to the state. In 1963, the Legislature appropriated funding to the department from workers' compensation funds for "the prevention of industrial and occupational disease among workmen, the promotion and protection of safer working environments, and dissemination of the knowledge and information acquired..."

This investment makes a big difference. In this issue of *Environmental Health News,* we illustrate the department's commitment to training, research, and service activities that prevent industrial and occupational disease among workers and promote safer working environments. We work with local and state agencies as well as with individual businesses to evaluate health and safety issues in the workplace and offer strategies to reduce occupational hazards. We disseminate findings from our research to raise awareness and help influence policies that will better protect workers and the public.

Highly trained practitioners in the field are key to prevention. We prepare students for careers by training them to identify and reduce hazards in industry as well as in the environment. Preventing environmental and occupational illnesses is foundational to our mission. Prevention is our priority. ■

MRSA STUDY LEADS TO CHANGES

in fire station protocols

Professor Marilyn Roberts was contacted by firefighters who were concerned about potential occupational exposures.

Photo: Yuen Li

Snohomish County Fire District 1 in Washington state comprises 12 fire stations that field, on average, 13,000 emergency calls each year. As wellness coordinator for District 1, firefighter and paramedic Kevin Fetter was interested in a new disinfection system. But first he wanted to find out what kinds of germs were on the surfaces of the fire stations and medic units and which could be transmitted to personnel that might potentially cause infection or illness.

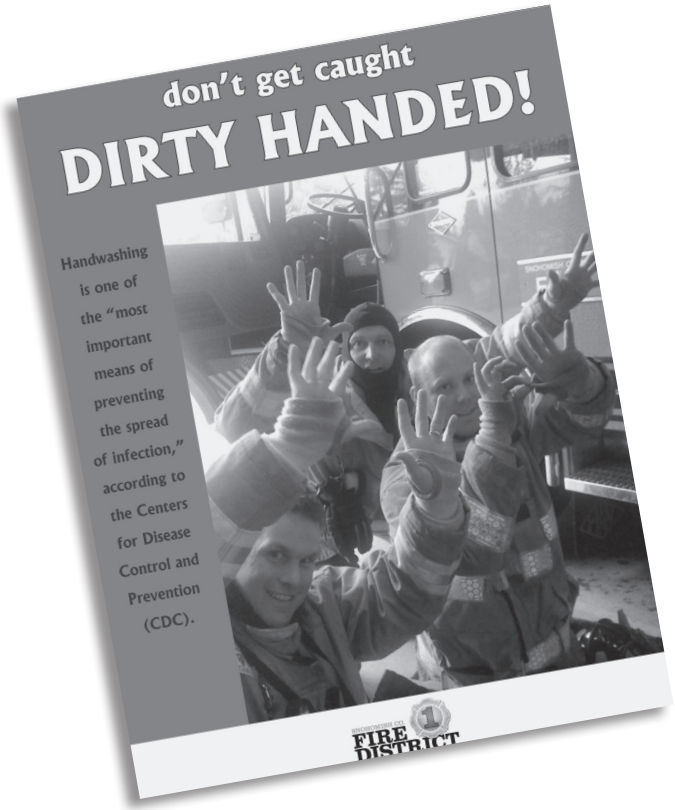
Fetter called labs all over the country, and he found help at the UW, where he connected with Professor Marilyn Roberts, an environmental microbiologist in our department. Their collaboration led to the first-ever environmental health study on methicillin-resistant *Staphylococcus aureus* (MRSA) in Northwest fire stations and on fire personnel to determine the extent of contamination. The study's findings led to a number of protocol changes to improve decontamination of environmental surfaces inside the fire stations and trucks.

In the last 10 years, the number of hospital- and community-acquired MRSA infections—those often contracted in schools, public gyms, and workplaces—has risen. MRSA can be transmitted from surfaces to people and from person to person. The increase in incidence has led to concern for first responders, including police, firefighters, and emergency medical personnel. Because fire personnel interact with both hospital and community populations, they have the potential to be exposed to MRSA as part of their daily duties.

"Firefighters and paramedics are at the crossroads between the public and hospital environments," said Roberts. "Their job includes administering first-response care to patients, many of whom are more likely to be MRSA carriers or have MRSA infections than the general population. This may put fire personnel at increased risk for MRSA infections."

Roberts found MRSA in four percent of more than 1,000 samples collected from surfaces inside medic and fire trucks and two fire stations, including the garage, firefighter outer protective gear, and living quarters. Both hospital- and community-acquired MRSA organisms were found.

Fetter and colleagues knew that MRSA was being studied in hospital settings, but didn't know how MRSA affected them. Except for one study in Arizona, no one else had looked at MRSA in fire stations and at firefighter exposure. "We now recognize it as a problem," said Fetter, referring to the firefighter community.



Results of the study became part of an educational campaign, which included posted signs reminding personnel to wash their hands to prevent infection.

Photo: Courtesy of Snohomish Co. Fire District 1

Roberts' research team found more than 20 percent of the fire personnel who volunteered to be tested had MRSA in their nose. The study did not determine how long the MRSA had been there. The potential risk of a carrier developing an infection from having MRSA in the nose is not clear, but many people are colonized with MRSA prior to infection. By genetically characterizing the different organisms collected, Roberts found that most of the MRSA strains carried by the fire personnel were related to the MRSA strains found in the stations and trucks, suggesting transmission between personnel and environmental surfaces is occurring.

Roberts and her team determined which locations in the stations and trucks were most likely to be contaminated. And to better prevent bacteria from contaminating surfaces, protocol changes were proposed, such as lengthening how long disinfectants are left on surfaces before being wiped off; changing sanitizers and hand-towel dispensers to the touchless variety; and purchasing new station furniture made of easy-to-clean plastic or wood rather than furniture covered in fabric.

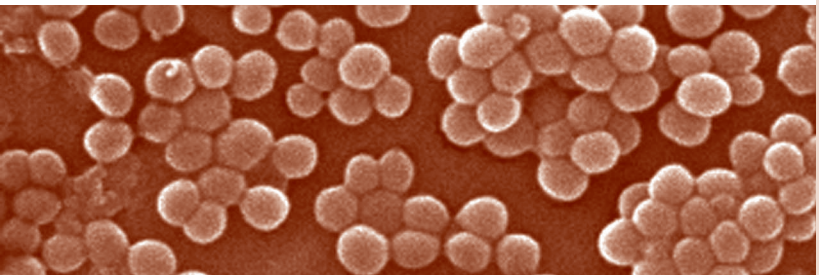
Fetter helped develop and distribute educational materials on best practices for disinfection, including signs reminding personnel to wash their hands, bandage wounds, and seek medical attention if a skin rash or red spot does not improve in a few days.

The UW study results have attracted attention in other regional fire departments because findings showed firefighters can be MRSA carriers. Roberts said she hopes to expand the study to determine if the results from the initial study are representative of the larger firefighter population within Washington state and throughout the United States.

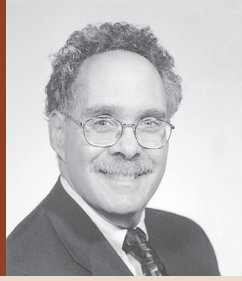
The project was supported by a Washington State Department of Labor & Industries' Safety & Health Investment Project (SHIP) grant and the Snohomish County Fire District 1.

For further reading

MRSA Exposure and Firefighters, *http://depts.washington.edu/envhlth/topic/firefighters.php* ■



GARY FRANKLIN:
CONTRIBUTING TO THE
dialogue



Washington Guidelines Aim to Prevent Morbidity and Mortality from Opioids

Over many years, the use of opiate medicines, such as oxycodone, for patients with chronic pain has been a source of controversy. The use of such medicine has traditionally been limited to cancer and AIDS patients or the terminally ill. In the 1990s, advocates argued that patients with chronic pain were not receiving the potential benefit from use of opioids as patients with cancer pain were thought to receive. Legislation and new regulations removed most of these restrictions and the average doses of these medications rose thereafter.

Recently, researchers reported a dramatic increase in accidental deaths in Washington state due to overuse of prescription opioids, according to Gary Franklin, medical director of the state's Department of Labor & Industries and research professor in our department. To prevent these deaths, in 2006, Franklin led a team of state agency medical directors and collaborating clinical pain experts who developed specific educational guidelines for all prescribing doctors in Washington.

In March 2010, state legislation supported the principles in the guidelines, including a web-based tool that helps a doctor calculate the level in morphine equivalent dose (MED) of all prescribed opioids.

Q: Why were these guidelines needed?

A: To prevent more deaths. Because the deaths are most likely related to higher doses, there are two dosing-related innovations. One is a yellow-flag level of 120 milligrams/day of morphine equivalent dose. If a patient reaches that level but is not showing improvement, the prescribing provider should seek consultation with a pain specialist. The other is the web-based calculator to help doctors determine the MED quickly.

—continued on page 7

THE UNIVERSITY'S ROLE IN PROTECTING occupational health

In October, a hair salon in Tacoma contacted the UW Field Research & Consultation Group (Field Group) about a hair-straightening product similar to Brazilian Blowout, which garnered national attention after samples from a Portland-area hair salon showed high levels of formaldehyde. The Field Group provides occupational safety and health consultations and works closely with the Environmental Health Laboratory (EH Lab) to determine workplace exposures in Washington state. An employee of the Tacoma salon was complaining of symptoms consistent with formaldehyde exposure, which include irritation of eyes, skin, nose, and upper respiratory tract, shortness of breath, and wheezing. Long-term exposure has been linked to cancer. Samples of the salon product were sent to the EH Lab for analysis, formaldehyde was found, and the salon was advised to stop using the product.

"We are grounded in Washington state issues and Washington state workplaces because of our history with the state and our whole orientation toward partnering with state agencies and state employers to prevent injuries and illnesses."

—Chair David Kalman

In Washington state, industries, small businesses, labor groups, and public agencies can turn to our department for help. This is because of a unique relationship between the Washington State Department of Labor & Industries (L&I), the Washington State Department of Health, and the UW that was established in 1963 under a unanimously approved legislative mandate. Our department accepted responsibilities to do testing, research, teaching, and service in occupational health, and was provided support from the state's Medical Aid and Accident Funds.

Focus on Washington state

The department's role in occupational health and safety goes back even further than this. When L&I was first developing as a regulatory agency and lacked its current capacity, UW faculty and staff, who would become the founding members of our department, would go to workplaces and investigate hazards, explains Chair David Kalman. The department's role has evolved since then, but remains "a strong complement to L&I," says Kalman. The department draws on a variety of expertise to investigate an occupational problem. It is not a regulatory agency; "we are focused on harnessing science to identify, characterize, and fix workplace hazards," says Kalman.

Attention to a problem might come from a variety of sources, such as noting a certain kind of illness presented by a patient in the Occupational & Environmental Medicine Clinic, explains Kalman. The Clinic, Field Group, and EH Lab comprise the department's service programs that receive support from the Medical Aid and Accident Funds. An investigation might reveal that an illness is related to a workplace exposure, and to carry out more extensive studies, departmental researchers apply for federal funding. The studies better characterize the hazards and materials involved or identify and test potential interventions. The results benefit the specific workplace or workers that prompted researchers to recognize the issue, explains Kalman, and also provide new information to the field and to all workplaces, workers, and employers that share the particular issue.

Determining the exposure

A Washington-state-based company that produces reinforced storage containers to ship nuclear material contacted the Field Group this past year. Employees line metal boxes with a special kind of foam that strengthens the integrity of the shipping containers in case of an accident. The company wanted to know if the foam, heated when the box was welded shut, might expose workers to harmful chemicals.

Field Group staff worked with EH Lab Director Russell Dills to help identify compounds they could monitor on site to determine exposure levels. Dills is adept at methods development, setting up an analytical lab procedure that replicates the occupational process to identify the contaminant of concern. Dills took a sample of the foam, put it in a combustion cylinder, and then heated it up inside a small furnace. Siphoning the air in the furnace through different instruments, Dills determined the predominant chemicals released from

In 2010, the Field Group responded to 55 workplace health and safety requests from 54 companies; the EH Lab conducted analyses on 6,068 samples in response to requests from 84 organizations, agencies, and businesses; and an average of 1,000 patients visited the Clinic. *Photos: ©2011 www.photos.com, Sarah Fish*

the heated foam included aniline, dioxane, propionaldehyde, acrolein, and acetone.

"If the foam were heated to similar temperatures as those used in the lab assay, the same compounds might be present," explains Gerry Croteau, a research industrial hygienist in the Field Group. According to the company, employees use airline respirators, which provide a very high level of protection, when this work is performed.

Smoother Solutions

Faculty such as Associate Professor Peter Johnson can help industry find solutions for occupational health problems that impact millions of workers. Long-haul drivers spend up to 11 hours a day and 60 hours a week driving. A new seat developed by Bose Corporation for long-haul trucks has the potential to significantly cut down on whole body vibration exposures. These exposures, Johnson reports, are thought to cause damage to the low back and spine over time and to contribute to the high injury rates in the transportation industry.

"Current engineering approaches to reduce truck drivers' exposure to whole body vibration rely on passive suspension systems for both the truck cab and the driver's seat," explains Johnson. These passive seat suspensions use compressed air or pressurized liquid to reduce the vibration the driver experiences. However, these technologies are limited, says Johnson; they are slow to react to abrupt road changes and sometimes amplify rather than reduce vibration exposures. These findings come from earlier work he did with King County Metro, who contacted the Field Group in 2004 because the company wanted to know the source of its drivers' reported back injuries. Johnson determined whole body vibration was the likely culprit, and in 2005, received funding through the department from the Medical Aid and Accident Fund to measure whole body vibration exposures in Metro drivers. Then, with federal funding, Johnson and PhD student Ryan Blood evaluated the ability of different seats to "absorb" vibration exposures. All seats performed similarly, but the researchers found the seat suspension setting had a significant effect on whole body vibration exposures.

Recently, active vibration canceling seats have been developed that use electromagnetic linear motors in the seat suspension to counteract the vibration. Based on preliminary testing, says Johnson, these seats reduce average vibration exposures by up to 50% compared to conventional air-suspension seats that are standard equipment in most large trucks. In a study conducted by Bose Corporation, 75% of the truck drivers who used the active vibration canceling seats reported a reduction in fatigue, soreness, and stiffness. Both the objective vibration exposure data and the subjective self-report health outcome data indicate that the new technology appears to work.

The UW research group, which includes Johnson, Blood, Postdoctoral Researcher Lotta Lewis, and Visiting Research Scientist Patrik Rynell, has teamed up with Harvard University to evaluate the new active vibration canceling seats.

—continued on next page

Associate Professor Peter Johnson records data from a truck fitted with an active vibration canceling seat.

Photo: Ryan Blood

The department's nationally recognized academic training program offers students hands-on training in the field through collaborative research with faculty, classes that introduce students to local industries, and internship and practicum opportunities. In 2010, 25 BS, 18 MS, 5 PhD, and 11 MPH degrees were granted.

Photos: Jennifer Gill, www.wikipedia.org, Tim O'Leary

By partnering with a transportation company that has 12,000 truck drivers in the United States and applying for a federal grant, the UW/Harvard team hopes to conduct a large randomized controlled trial to determine whether this seat suspension system is a viable intervention for reducing whole body vibration exposures and improving the low back health of drivers.

"We're excited about what our research may reveal. Such technology could yield positive effects in other professional drivers," says Johnson, who intends to test this intervention on bus drivers in the future.

Training the next generation

Because our faculty and staff are involved in occupational health projects, they are able to bring experience and understanding of occupational health problems to the classroom and take students out into the field. Field Group Director and Senior Lecturer Janice Camp and Professor Noah Seixas, who directs the Northwest Center for Occupational Health & Safety co-teach "Recognition of Health and Safety Problems in Industry," a course in which students visit a variety of Northwest industries to develop skills in occupational health and safety hazard recognition.

Our academic programs are designed to give students the knowledge and skills they need to be successful in their careers. Faculty research and department service activities translate into hands-on training opportunities for students in the field and lab. In addition, the Exposure Sciences master's degree program and the undergraduate degree program encourage students to spend one quarter focusing on a practical training experience, such as an internship.

The result is a nationally recognized academic training program for future occupational health practitioners that addresses the risks of environmental and occupational health hazards. The department has the only accredited graduate program and one of only two accredited undergraduate programs in Washington, Idaho, Oregon, Alaska, and Montana.

Serving underserved industries

Dry cleaning uses a chemical solvent, such as perchloroethylene (perc), to clean clothes. However effective it is as a drycleaning fluid, perc may pose serious health hazards to workers who routinely breathe the solvent vapor or get it on their skin. Older machines may leak perc into the air, and the used solvent mixed with debris called "muck" is regularly raked out by hand from the machine.

Most of the approximately 375 dry cleaners in King County are owner-operated "mom and pop" shops with no employees other than themselves, and the majority are owned by Korean immigrants with limited English skills.

To better understand the needs of the local dry cleaning industry, Exposure Sciences master's student Chantrelle Johanson worked with Affiliate Associate Professor Stephen Whittaker, an Environmental Health researcher with the King County Department of Public Health who leads this program through the Local Hazardous Waste Management Program in King County (LHWMP). Johanson helped develop a mail survey to identify specific details about the industry, target shops most in need of assistance, and generate policies that would improve dry cleaning health and safety.

Of the 375 dry cleaners targeted, Johanson received surveys back from 64%, a success she says came from taking the time to understand the industry and Korean community dynamics. But more importantly, says Johanson, "This is an industry hungry for technical assistance, hoping that people can help them." She plans to have results from the survey tallied at the end of January.

In the next phase of her research project, Johanson and Field Group Research Industrial Hygienist Marty Cohen will use video exposure monitoring as a training tool to show dry cleaners their potential levels of exposure to dry cleaning solvents when muck is cleaned out of the machine, and how control measures can reduce exposures.

Training workers to better protect themselves

Cohen has developed and used this video exposure monitoring system with several industries as both an evaluation and training tool. A worker wears a real-time air monitor that measures contaminants such as dust or solvents. At the same time, the worker is videotaped. The worker's exposure is translated into a bar chart that moves up and down over time as the worker's exposure changes. The moving bar chart is superimposed on the video, and this composite video shows the exposure changing as the worker does his or her job. The researchers study the video to determine what activities contribute to exposure and how different procedures affect exposures. The researchers can also use it to evaluate and demonstrate the effectiveness of exposure controls.

Recently, Cohen was contacted by Laurie Foster, a health and environmental investigator at the LHWMP, to help evaluate a local exhaust ventilation system being proposed for nail salons. Foster coordinates the Healthy Nail Salon Project, which has worked with 100 of the nearly 400 Vietnamese nail salons in King County to reduce chemical exposures and encourage safer work practices.

Nail salon technicians make a living giving manicures and pedicures, which means routinely handling solvents, glues, polishes, and other nail care products that contain potentially hazardous ingredients. Most of the information listed on product labels and in material safety data sheets are in English, making it difficult for Vietnamese nail technicians to access the health and safety information they need.

Some nail salons may not have a ventilation system or the system is inadequate, Foster explains. To put in a new ventilation system could cost as much as $20,000. Freestanding ventilation devices, which cost around $900, are a much less expensive option.

Cohen used video exposure monitoring to evaluate one freestanding ventilation system in terms of its impact on a technician's exposure to solvents while doing a customer's nails.

The video will be used in Healthy Nail Salon Project workshops to show nail technicians when their exposure to solvents and dust is especially high and how a ventilation system can reduce their exposure.

For further reading

Reducing worker exposure to perchloroethylene (perc) in dry cleaning. Occupational Safety and Health Administration. *http://www.osha.gov/dsg/guidance/perc.html*

Video Exposure Monitoring, *http://depts.washington.edu/frcg/HexChecVideo.htm* ■

GARY FRANKLIN: CONTRIBUTING TO THE dialogue

—continued from page 3

Q: How have doctors accepted the guidelines?

A: The guidelines were initially introduced as an educational pilot in April 2007. We surveyed doctors in 2009, and 86% thought the 120 MED threshold was just right or even too high. We also learned about additional tools doctors need when prescribing opioids, and we updated the guidelines in June 2010, accordingly.

Q: How will you know if the guidelines save lives?

A: We have a grant from the US Centers for Disease Control and Prevention to study and assess the impact of the guidelines. If our hypothesis is correct (higher dosing causes morbidity and mortality), we will see a decrease in deaths as the average dose decreases across the state. We are already seeing the dosing curve bend down substantially among injured workers.

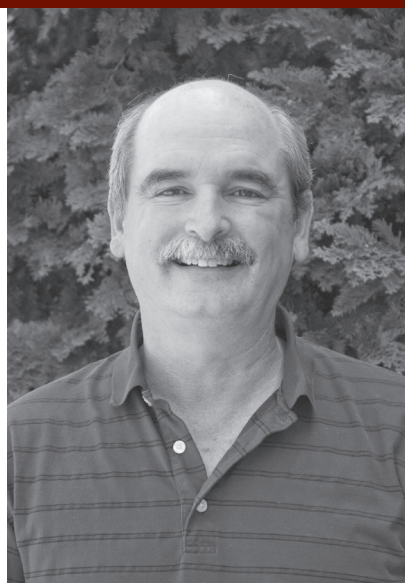
Q: What is the next step?

A: It is clear from the educational forums I have led among primary care providers that effective alternatives to the treatment of chronic pain will be important in primary care settings. I want to find a way to encourage more effective pain care options that are alternatives to using opioids, such as graded exercise, cognitive behavioral therapy, and activity coaching. There is hardly any capacity in the community for these types of services at this time. We need to work on that as a community. ■

UNIVERSITY OF WASHINGTON NANOTOXICOLOGY CENTER

safe by design

The National Institute of Environmental Health Sciences (NIEHS) recently awarded $5.8 million to fund the UW Nanotoxicology Center.



Professor Terrance Kavanagh is director of the new UW Nanotoxicology Center.

Photo: Sarah Fish

Nanomaterials can be found in many commercial products, including sporting goods, stain-resistant clothing, and electronics. Coupled with advances offered by nanomaterials in terms of making products stronger and more effective, are cautions raised about the unknown health consequences that may come from exposure to nanomaterials in off-the-shelf products, on the job, or in the environment.

"The novel size and size-dependent physical and chemical properties that make nanomaterials useful also make their interactions with biological systems difficult to anticipate and critically important to explore," reports NIEHS, whose recent funding initiative is part of a large-scale cross-agency effort to support nanotechnology-related environmental, health, and safety research. Because the nanotechnology field is relatively new, with different applications still in development, governmental agencies want to preemptively identify health and safety concerns.

The Nanotoxicology Center will develop standardized techniques, analytical tools, and mathematical models to assess and predict the toxicity and environmental impact of nanomaterials.

"We can use this information and the power of molecular engineering and biotechnology to build environmental health and safety into the nanoproducts of tomorrow," explains Professor Terrance Kavanagh, center director. "They will have improved safety because they'll be safe by design."

Kavanagh and center researchers will assess the toxicity of semiconductor quantum dots (Qdots), fluorescent nanoparticles that show great promise for medical imaging and optoelectronics (for example, LEDs and solar panels). However, Qdots have raised concerns because they commonly contain heavy metals, such as cadmium or mercury. If Qdots were to break down and release those metals, this could increase their toxicity to humans. Also, the kind of surface coating on Qdots can influence their interactions with cells. "For instance, we know that nanoparticles with positive charges tend to be more toxic and more inflammatory than those with neutral charges," explains Kavanagh.

Center researchers will use custom-designed Qdots, modified with respect to their core composition, surface charge, size, and method of manufacture. They will examine the relationships between the different physical/chemical properties and other quantitative measures of toxicity. For example, Qdots will be tested *in vitro* on cultured human and mouse cells to examine their ability to evoke an inflammatory response. They will also be tested using genetically defined mouse strains to better understand how Qdots are absorbed, distributed, and eliminated, and how they cause toxicity in the body. Using systems genetics technology, researchers will look for gene expression changes to further define which genes are responsible for susceptibility or resistance to Qdots. These data will be used to develop a risk framework that can be made accessible to researchers, product developers, and agencies.

"Once we determine which aspects are most highly associated with toxicity and the pathways involved, we'll be able to recommend modifications that will make them safer," explains Kavanagh.

Other lead researchers in the center include Professors David Eaton, Elaine Faustman, and Michael Yost from our department; Assistant Professor Xiaohu Gao from Bioengineering; Professor Francois Baneyx from Chemical Engineering; and Professor William Parks from Medicine. ■

Photos: 2011 www.photos.com

CONTINUING EDUCATION

what every painter should know

In December, the Northwest Center for Occupational Health & Safety (NW Center) offered an all-day course on painting health and safety, "A Base Coat of Painting Hazards: What Every Painter Should Know" at the Finishing Trades Institute of Western Washington in Seattle. The nearly 50 participants represented a mix of industrial, academic, and government agencies, as did the speakers. The presentations covered health and safety information as well as new research that can help reduce painter injury and illness.

Courses like these help people do their work safely, explains Annie Bruck, assistant director of the Continuing Education programs offered through the NW Center. Our programs aim to provide the most up-to-date health and safety research and information that can be translated into everyday practice.

She credits Jay Herzmark as "the driving force" behind the paint course. Herzmark is an industrial hygienist who has worked in the Environmental Health & Safety Department (EH&S) for 20 years. EH&S provides health and safety support across the UW campuses. Herzmark teaches a class to UW painters. Painting can be a dangerous trade, Herzmark says. Exposures to chemicals in paint can pose neurological, dermal, and respiratory health risks. Painters must understand what's in the paint, how to protect themselves and others exposed to paint vapors, and how to dispose of hazardous materials safely.

At the NW Center-sponsored course, Paul Campbell, director of Technical Services at Rudd Company, Inc., presented on chemicals in paint. Rudd manufactures paints and coatings, which contain resins, pigments, additives, and solvents. Material safety data sheets identify chemicals that may expose employees to health hazards. Personal protection and administrative and engineering controls are important. Herzmark demonstrated how to properly ventilate a space with fans, simulating a room full of paint vapors using a fog machine. "Blowing air into the room," he explains, works better than sucking air out of it.

Health and safety topics covered in the course applied to industrial painters and also to workers in the collision repair industry, who can be exposed to chemicals called isocyanates while painting vehicles. Isocyanates are recognized as a primary cause of work-related asthma. These chemicals are used in hardeners of two-part paint systems and are present in high concentrations in the final "clear" coat. Painters wear personal protective equipment, such as gloves, to prevent skin exposure. Determining whether all gloves are equally protective against exposure to isocyanates was the subject of Diana Ceballos' dissertation (PhD, Environmental and Occupational Hygiene, 2009). Ceballos, who is now an industrial hygienist for the National Institute for Occupational Safety and Health, was a member of the paint program's planning committee. She developed a novel device, called a "permeation panel," for field-testing protective clothing. The panel simulates actual spray painting operations and can test several glove materials at once.

Test results can provide valuable recommendations for glove type, thickness, and frequency of use to help prevent skin exposure and work-related asthma. Ceballos worked closely with Carolyn Whitaker (MS, Industrial Hygiene & Safety, 2001), an industrial hygienist in the Safety & Health Assessment & Research for Prevention (SHARP) program at the Washington State Department of Labor & Industries. At the course, Whitaker presented on their collaborative work and offered best practices to painters using paint with isocyanates. She warned against thin latex gloves and said thick nitrile gloves may provide better protection.

Feedback from participants, says Bruck, showed their knowledge of painting health and safety health hazards was enhanced by the course and that participants intend to apply what they learned from the presentations on the job.

Save the date: June 7-8, 2011

Health Care Ergonomics Conference, Tacoma, WA

http://osha.washington.edu ■

people & places

left to right: Cynthia Curl, Lianne Sheppard, Christina Tolley, Peter Johnson, Nicole Van Abel

Photos: Berni Johnston, Lawrie Robertson, Susan Inman, Sarah Fish, Chrissie Chang

Department faculty, staff, students, and alumni are highlighted.

Chair **David Kalman** returned in June from a year-long sabbatical, which included teaching, research, and collaborative activities in several countries. In India, he taught about arsenic in a workshop sponsored by the University of California, Berkeley Fogarty International Center. He traveled to Bangladesh, where he is part of an ongoing study of arsenic, which contaminates drinking water. At the request of officials in the School of Public Health at the University of Namibia, he went to Windhoek to talk about adding environmental health training to the MPH program they are developing.

Professor **Noah Seixas** was also on a sabbatical, during which he led the site visit for the Northwest Center for Occupational Safety & Health's competing renewal, which was refunded for another five years. He submitted grant applications on ventilation controls for shipyard welders and a manganese biomarker study, which both received federal funding. He was invited to speak at the University of Texas at Houston, the University of California, Berkeley, and the International Occupational Hygiene Association meeting in Rome, Italy.

Professor **David Eaton** was appointed the University of Washington Interim Vice Provost for Research.

Jude Van Buren (BS 1984) and **Marina Guizzetti** were appointed affiliate associate professors, and **Bruce Millies** (MS, Industrial Hygiene and Safety, 1986) was appointed affiliate assistant professor. **Jonathan Hofmann** (MPH, Environmental and Occupational Health, 2004) was appointed affiliate instructor.

Professor **Lianne Sheppard** gave the UW School of Public Health's Fall Quarter Distinguished Faculty Lecture: "Health effects of environmental exposures: When do we see them and why do we miss them?" Podcast at: *http://sph.washington.edu/podcasts/podcast.asp?content_ID=1076*

Professor **Elaine Faustman** was elected the Secretary General of the International Union for Toxicology.

Lecturer **Richard Gleason** gave a presentation on confined space hazards at the Washington Department of Labor & Industries Governor's Safety and Health Conference in Spokane, in September. In November, he made a presentation on the "Global harmonization system for workplace labeling under OSHA" at the Puget Sound Safety Summit.

Affiliate Professor **Barbara Silverstein** and Clinical Instructor **Kate Stewart** received funding from the International Ergonomics Association to study how to ergonomically redesign coffee bags used for harvesting in Nicaragua to reduce back injury.

The UW Tech Transfer patented a technique developed by Professor **Michael Yost** and Research Scientist **Robert Crampton** that simultaneously determines the temperature and concentration of common atmospheric gases using single-beam open-path Fourier transform infrared spectroscopy. In November, Yost presented on ambient air monitoring with remote sensing techniques at the UW Superfund Research Program-sponsored Agency Seminar Series at the Environmental Protection Agency's (EPA) office in Seattle.

Associate Professor **Peter Johnson** was chosen Ergonomics Professional of the Year by the Puget Sound Human Factors and Ergonomics Society. He spent the fall at the Centre for Musculoskeletal Research in Sweden, collaborating on research related to muscle fatigue and whole body vibration.

At the International Society of Exposure Science (ISES) and Society for Environmental Epidemiology Joint Conference in Seoul, South Korea, in August, Professor **John Kissel** presented on dermal exposure to semi-volatile organic compounds found in the indoor environment. **Alexander Domesle** (MS, Environmental Health, 2010) presented his research on chemical distribution and uptake at low skin loads. PhD student **Jenna Armstrong** (Environmental and Occupational Hygiene) presented on sampling methods for airborne pesticides and their breakdown products. She was also elected as the new student councilor of the ISES.

In October, Professor **Marilyn Roberts,** Graduate Program Manager **Rory Murphy,** and PhD student **Vanessa Galaviz** (Environmental and Occupational Hygiene) participated in the "Conversations with Scientists" discussion at the Society for the Advancement of Chicanos and Native Americans (SACNAS) annual meeting in Anaheim, California. Research Scientist **Richard Neitzel** (PhD, Environmental and Occupational Hygiene, 2009) gave a talk on the risk of hearing loss from noise at the Karolinska Institutet in Stockholm, Sweden.

The EPA awarded PhD student **Cynthia Curl** (MS, Environmental Health Technology, 2000) a three-year STAR fellowship to support her doctoral work, investigating the relationship between dietary exposure to pesticides and cognitive health. **Erin Semmens** (MPH, Environmental and Occupational Health, 2007), now a PhD student in Epidemiology, also received a STAR fellowship.

PhD student **Nicole Van Abel** (Environmental & Occupational Hygiene) received a three-year fellowship from the Seattle Chapter of the Achievement Awards for College Scientists (ARCS) Foundation.

At the Society of Risk Analysis meeting in Salt Lake City, Utah, in December, **Jessica Kocian** (MPH, Environmental and Occupational Health, 2010) presented on estimating risk of MRSA colonization among swine workers. MPH student **Stephanie Chan** (Environmental and Occupational Health) presented on the risk of stillbirth associated with eating cheese contaminated with *Listeria*, and MS student **Emily Levin** (Environmental Health) presented on estimating risk of MRSA colonization to children playing on marine beaches.

Undergraduate student **Christina Tolley** received the 2010 Jack Hatlen Scholarship. She is pursuing a double degree in Environmental Health and Spanish.

Undergraduate student **Wint Wai** went to Ethiopia as part of the UW Multidisciplinary International Research Training Program. She tested whether physical measurements, such as body-mass index, waist circumference, and waist-to-height ratio can predict risk factors for cardiovascular disease among East African adults.

Eleven undergraduates from a national pool of applicants were selected for the 2010 Environmental Health Research Experience Program, a nine-week summer experience for students interested in environmental health science research. Each student pairs with a faculty mentor. UW undergraduates included: **Kendra Broadwater**, **Devin Groman**, and **Roger Rangel.** Undergraduates from other universities included: **Natasha Bonilla,** University of Puerto Rico; **Aaron Etherington,** Heritage University; **Jeffrey Jacquez,** Indiana University; **Rebekah Klint,** University of California, San Diego; **Alyssa Levitz,** Olin College of Engineering; **Jamie Minick,** Boise State University; **Erika Parker,** University of Georgia; and **Amy Stiffarm,** Salish Kootenai College. Three of the students presented their summer research at national conferences. At SACNAS, Klint presented on her research with Professor Eaton, which examined whether genetic differences in certain detoxification enzymes affect how a natural antioxidant in broccoli is metabolized in the body. Stiffarm and Bonilla, who both worked with Professor Roberts, presented on their research related to methicillin-resistant *Staphylococcus aureus* (MRSA) at the Annual Biomedical Research Conference for Minority Students in November in Charlotte, North Carolina. Stiffarm received an award for her presentation. ■

Announcements

Our department released its 2011 calendar. To view the photos and stories online, visit *http://depts.washington.edu/envhlth/ourstories.php*. To request a copy of the calendar, e-mail *esharpe@u.washington.edu* or call 206-685-6737.

A lecture to commemorate the 100th anniversary of the Triangle Shirtwaist Factory Fire will be held March 31, 4–6 pm, in the UW South Campus Center. *http://nwcohs.blogspot.com*

SCHOOL OF PUBLIC HEALTH
UNIVERSITY of WASHINGTON

Department of Environmental and Occupational Health Sciences
Box 357234
Seattle, Washington 98195-7234

RETURN SERVICE REQUESTED

BUDGET BAR CODE 10-5804

Nonprofit
U.S. Postage
PAID
Permit No. 62
Seattle, WA

COMINGS and goings

The new dean of the UW School of Public Health, **Howard Frumkin,** also accepted an appointment as professor in the department. Previously, he served as special assistant to the director for climate change and health at the US Centers for Disease Control and Prevention (CDC). Frumkin, who is an internist, environmental and occupational medicine specialist, and epidemiologist, had been at the CDC since 2005.

Professor **Matthew Keifer** assumed a new position as the Dean Emanuel Endowed Chair in Agricultural Medicine at the National Farm Medicine Center, which is part of the Marshfield Clinic Research Foundation in Marshfield, Wisconsin.

Research Scientist **Marina Guizzetti** accepted a tenure-track associate professor position in the Department of Psychiatry at the University of Illinois at Chicago and an appointment at the Jesse Brown VA Medical Center.

Azure Skye, administrator for the Center for Ecogenetics and Environmental Health, retired at the end of November. She had been with the department since 1986.

Marike Svoboda replaced **Maribeth Moore** as the Northwest Center's Continuing Education Coordinator. Moore had been with the department since 2004. ■

THE FINE print

COMMUNICATION DIRECTOR
Elizabeth Sharpe

CONTRIBUTING EDITORS
Janice Camp
Adrienne Hidy
Cathy Schwartz

CONTRIBUTING WRITERS
Mary Guiden
Sally James

GRAPHIC DESIGNER
Cathy Schwartz

PHOTOGRAPHER
Sarah Fish

PROOFREADER
Karen West

WEB DESIGNER
Ly Pham

DEPARTMENT CHAIR
David 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
Box 357234
Seattle, WA 98195-7234
Phone: 206-685-6737
E-mail: *esharpe@u.washington.edu*

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

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

ISSN number 1548-1875

Printed by Johnson-Cox Company on 100% post-consumer waste recycled paper with vegetable-based inks.

PLEASE ADD UNION BUG