



HELPING THE HIDDEN WORKFORCE

One of the challenges of identifying and overcoming workplace hazards is that many workers—especially farmworkers and day laborers—escape surveillance. Our department is working with these groups and also—for the first time—with undergraduate students from underrepresented populations. There is also value in continuing to work with well-studied groups. We made some surprising findings among Chinese textile workers who are part of one of the largest occupational epidemiology cohort studies ever conducted. This issue of Environmental Health News explores these stories and other activities of our faculty, staff, and students.

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SAFE WORK FOR DAY LABORERS

You see them on a street corner in Belltown or the parking lot at a hardware store. Contingent workers—mostly young men—hire on for a day’s work. But where do they go once they hop in that truck?

According to Professor Noah Seixas, most day laborers work in construction, landscaping, moving, and cleaning jobs—all high-hazard occupations.

Because day laborers are largely from politically disenfranchised groups such as immigrants (both documented and undocumented), racial minorities, and the poor, they often slip through the safety net of workplace regulation and may be less likely to act against an employer who places them at high risk for injury and illness.

Seixas recently received a \$10,000 grant from the UW’s Harry Bridges Center for Labor

Studies to continue research on this hidden population’s occupational risks.

Earlier this year, Seixas’ team—which includes Senior Lecturer Janice Camp and graduate students Joyce Tseng and Hillary Blecker—conducted a survey among 180 day laborers at two worker centers and an informal pick-up location. Most of the workers reported exposures to heavy lifting and eye hazards. More than half feared serious bodily injury, and a surprising number had refused dangerous work.

The survey picked up 34 injuries that would be recordable by OSHA’s standard, leading to a recordable injury rate of about 30 per 100 if

—continued on page 2

Day laborers talk with a prospective employer



Mark Caggia



Mark Gaggia

Day laborers gather awaiting their assignments

DAY LABORERS *continued from page 1*

Any way you look at it, these people [day laborers] have a very high injury rate

they were full-time workers. Although this statistic is subject to a possible reporting bias, it is five-fold higher than construction injuries nationwide, Seixas said. Even if the survey data isn't fully comparable to federal or state statistics, he said, "any way you look at it, these people have a very high injury rate."

Based on the survey data, Seixas hopes to develop educational materials and training sessions for day laborers. His group is using participatory action research methods to develop working relations between the laborer communities and the university. His team plans to follow up with a series of focus groups that should help them understand the political, cultural, and economic context of these communities.

Because of their legal, economic, and political disenfranchisement, immigrant workers, especially day laborers, have limited access to the legal and social protections afforded other workers in the United States, Seixas said.

Part of the participatory focus is to train a cadre of leaders from the day labor community, who can help their fellow workers stay safe on the job. Seixas wants to help these workers network by forming a consortium with other academic centers that are working with immigrant and day labor populations to address health and safety issues at a national level.

FOR FURTHER READING

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- Yasui, LM. *Employment and labor protections for day laborers*. National Employment Law Project, New York, 2002.

FARMWORKER HOUSING

It's one of the newer apartment complexes in East Wenatchee, with neatly trimmed lawns, a children's playground, and air conditioners humming.

Heritage Glen apartments are on the cutting edge of agricultural housing. The 35-unit complex was built in 2002 for both year-round agricultural workers and their families, and for migrant workers. The way the units were designed, the neighborhood doesn't realize the apartment complex is farmworker housing, said Alicia McRae, executive director of the Housing Authority of Chelan County and the City of Wenatchee.

Demand has exceeded supply, she said. Eighty-five people were turned away in July, and another 128 beds of seasonal housing are under construction.

The housing complexes were part of a tour for ten journalists who attended an October workshop, "Children and agriculture: Telling the story," cosponsored by our Pacific Northwest Agricultural Safety and Health (PNASH) Center, the National Children's Center for Rural and Agricultural Health and Safety in Marshfield, Wisconsin, and the Washington State Department of Labor and Industries.

Donald Gargas, a pediatrician with the Yakima Valley Farm Workers Clinic, described the old style of farmworker housing as a "feast for adjectives" for journalists, with unlicensed sewage systems, no smoke alarms, bad wells, and a risk of children stumbling into unfenced drainage ditches. "We just couldn't keep asthmatic kids out of the hospital," he said.

Another panelist, Leo Garcia, assistant professor of horticulture at Wenatchee Valley College, described himself as a former migrant farmworker who saw a variety of houses. "They weren't the Ritz, but they weren't the pits either," he said. "Most growers did the best they could."

Mike Gempler of the Washington Growers League and the Washington State Farmworker Housing Trust said, "Washington is doing more for farmworker housing than most states." The logistics are difficult, he said, as 1500 people might descend on the Wenatchee valley for 20 days during the cherry harvest.

The Farmworkers Housing trust, which he described as a "supercoalition" of labor, industry, and housing groups, is seeking to address the problem.

During the two-day workshop, the journalists also learned about children's risks from heavy equipment and pesticides, child labor laws, and the financial difficulties facing family farms. The Washington and Oregon journalists came from trade publications, radio stations, newspapers, and a television station.

The workshop is the third in a series held nationwide to help journalists understand the health and safety of children on the farm, said Barbara Lee, director of the National Farm Medicine Center and organizer of the event. "Childhood agricultural injury prevention strategies need to be widely communicated," she said. "The workshop developed a Northwest cadre of journalists who understand the problem."

Professor Richard Fenske, director of the PNASH center, said one goal is to give journalists a more comprehensive understanding of the complexities of a scientific study that may need to be simplified into a headline or a 30-second newscast. This is particularly important, he said, on "hot button" stories such as children's pesticide exposures.



Kathy Hall

Reporter Chris Lehman (right) of Northwest Public Radio interviews Alicia McRae, housing authority director (left), and Marty Stierlen, assistant director.

LIFE EXPERIENCE TURNED

This was the first summer that Araceli Vasquez wasn't working with her family in the beet fields of southern Idaho. Instead, she was in the Yakima Valley, conducting community-based research with an agricultural community.

Vasquez, a biology major at Lewis-Clark State College in Lewiston, Idaho, was one of five students who spent the summer doing field and laboratory research at our department.

UNDERGRADUATE RESEARCH PROGRAM

The transition from farmworker to researcher was made possible through a new undergraduate summer research program developed by Rory Murphy, manager of our graduate student services. Murphy views research internships as an effective way to interest students from minority or underrepresented groups in science. "A program like this offers them a chance to learn about research, particularly as it is practiced in our department, and about the education and training involved," she said.

She recruited through the Ronald E. McNair Program, administered by the UW Office of Minority Affairs; the Health Sciences Center's STAR (Stipends for Training Aspiring Researchers) Program, funded by the National Heart, Lung and Blood Institute; and Heritage College in Yakima.

"When I asked for faculty volunteers to work with the students, I got a lot of replies, offering very high-quality research experiences across a range of disciplines," Murphy said. Several graduate students volunteered to run weekly research discussion groups for the students. For information on next year's program, visit <http://depts.washington.edu/envblib/sumtrain.html>.

Vasquez, a senior, learned about the summer opportunity from her adviser. She plans to apply to medical school after she completes her undergraduate work, so she was looking for something that would give her experience related to science or medicine.

She looked at the web page describing the program and the various research slots available, and then she promptly applied. "I didn't even realize that I would be working with farmworkers," she said. "But that was a big plus for me."

Like the other students, she had a volunteer faculty mentor. Matthew Keifer, associate professor of environmental health and of medicine, directed her work with a Yakima Valley-based community health project. Jennifer Crowe, research coordinator, was her immediate supervisor.

COMMUNITY-BASED RESEARCH

Vasquez was doing interviews for a community health survey, one of several efforts underway as part of *El Proyecto Bienestar*, "The Well-Being Project," which teams researchers and students from the UW with Heritage College, Radio KDNA, and the Yakima Valley Farm Workers Clinic to identify and address occupational and environmental health issues among farming families in the area.



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HISTORY: LABOR CAMPS

In past decades and centuries, migrant farm laborers and contingent workers often stayed in camps that lacked proper shower and toilet facilities.

The hazards of such living conditions have been known since at least the 16th century. Daniel Sennert (1572–1637), a German medical professor at the University of Wittenberg, described an outbreak of typhus during the Austro-Hungarian expedition of Emperor Maximilian II.

He coined the word "camp fever," and attributed it to unwholesome food and impure water, with contributory causes such as lack of sleep, excessive toil, rain, heat, cold, sudden alarms, and "a thousand other hardships that can be known only to those who have experienced them."

FOR FURTHER READING

Ramazzini, B. *Diseases of Workers: De Morbis Artificum*. New York Academy of Medicine, History of Medicine Series, No. 23. Hafner Publishing Co., New York, 1964.

INTO RESEARCH

The project is funded by the National Institute for Occupational Safety and Health. It's part of a growing trend at the UW to establish community-based participatory research projects, which are guided in part by community needs and usually have community advisory groups.

"I didn't realize that you could do research work that is based in a community," Vasquez said. She also became more aware of the health concerns that agricultural workers and their kids face, one focus of the work in the Yakima Valley.

Vasquez had already formed a desire to become a doctor, but her experience in the summer program widened her view of the possibilities. Now she is thinking about adding public health training to her medical studies. "I think I would like to be like Dr. Keifer," she said, "and work on projects that could really help communities and individual people, too."

OVERCOMING BARRIERS

Amina Negash is another student who brought her life experiences into research. Negash, a UW biochemistry major, worked with Professor Jane Koenig on air pollution research.

Her family moved from Ethiopia four years ago. "It has been both jarring and exhilarating to adapt to a new environment," she said. She decided to enroll in regular classes instead of English as a Second Language programs at Ballard High School, determined to overcome barriers by working hard, reading a lot, and doing her assignments faithfully.

She became fascinated with biochemistry in high school because it integrates her love of chemistry with her desire to learn more about the biological process. She is interested in genomics and environmental and occupational health. She wants to understand how environmental factors contribute to different health problems.

At Seattle Central Community College, she had a 3.6 GPA in a calculus-based physics sequence. She also served as a tutor in math and chemistry. Since she transferred to the biochemistry program at UW, she has been part of a micro-gravity experiment that will be tested at the Johnson Space Center.

OTHER STUDENT PARTICIPANTS

In addition to the students in this story, these undergraduates took part in the program this summer:

Christopher Diangco, with Professor John Kissel, working on human exposure to environmental contaminants.

Dustin Palm, with Professor Michael Yost, working on measuring exposure to chemicals and other environmental agents, including noise and heat.

Brandt Pein, a UW chemistry major, with Assistant Professor John Scott Meschke, working as an environmental microbiologist.

—*Claire Dietz of Health Science News & Community Relations contributed to this story*

l to r: Brandt Pein, Amina Negash, Araceli Vasquez, Christopher Diangco, Dustin Palm



SURPRISING FINDINGS FROM A WELL-

In one of the largest occupational epidemiology cohort studies ever conducted, a research team led by Professor Harvey Checkoway found that a certain type of bacterial toxin might protect textile workers from lung and other cancers.

The team, including Checkoway, Professor Noah Seixas, Senior Lecturer Janice Camp, former graduate student George Astrakianakis, and colleagues from the Fred Hutchinson Cancer Research Center and the Shanghai Textile Industry Bureau, investigated associations between workplace exposures and cancer risks among 267,400 women textile workers in Shanghai, China. Checkoway received a grant from the National Cancer Institute to conduct the study.

The study was conducted in two phases. The first compared cancer rates in the textile worker cohort with prevailing rates in Shanghai women from 1989 through 1998. The second, more in-depth, analysis compared workplace exposure to dusts, chemicals, and physical agents experienced by women who developed cancer with those of other women textile workers who did not develop cancer. A detailed job-exposure matrix was developed

specifically for the Shanghai textile industry to enable dose-response analyses.

Overall, the cohort's cancer incidence did not seem unusually high when comparisons were made with Shanghai city rates. In fact, reduced risks were observed for a number of cancers, including lung, esophagus, stomach, rectum, cervix, ovary, and urinary bladder. The lower-than-expected risks for lung and bladder cancers may be attributed to a lower proportion of current or former smokers in the cohort (3%) compared with the general population of Shanghai women (7%).

More interestingly, the lung cancer result may have been strongly influenced by cotton dust and endotoxin exposures, which may have a protective effect on lung and several other cancers. Endotoxins are a particular type of toxin bound to gram negative bacterial cells that are released when the cells are disrupted. These bacteria, which turn pink in a laboratory technique called a gram stain, contain an outer membrane outside the cell wall. Cotton processing is the predominant source of endotoxin in this industry.

Based on prior studies, the researchers had expected to find an inverse dose-response curve for cumulative exposure to endotoxin and lung cancer, but they were surprised by the strength of the association in this study. The apparently protective effect of endotoxin was most prominent for exposures that occurred early in women's working careers. Even more surprising were unanticipated results showing similar patterns of reduced risks associated with endotoxin for cancers of the esophagus, stomach, pancreas, liver, breast, and ovary.

Checkoway's team built its research on the findings of previous epidemiologic research that linked cotton dust with lung cancer, formaldehyde with cancers of the nasal passages (nasopharyngeal cancer), colon cancer with synthetic fibers, breast cancer with exposures to electromagnetic fields (EMF) and solvents, and lung cancer with silica exposure.

The UW team did not observe any strong or consistent associations for nasopharyngeal, colon,

The textile industry employs millions of workers worldwide, many of whom are exposed to potential carcinogens



Harvey Checkoway

Shanghai worker cleans a spinning machine

STUDIED GROUP

rectal, bladder, brain, or thyroid cancers. Silica, although not a widespread exposure in the textile industry, was related to an increased lung cancer risk. Silica has been established as a lung carcinogen from research in many other industrial settings. Checkoway has a separate NIOSH-funded grant to examine breast cancer risk in the same cohort in relation to working on night or rotating shifts. Camp and Professor Michael Yost are co-investigators.

Checkoway believes that this investigation was the largest, most comprehensive epidemiologic study of textile industry exposures and cancer ever conducted. In addition to the large size of the cohort, other notable strengths of the study were the use of data about cancer incidence, rather than mortality, and the reconstruction of historical exposures to specific agents that enabled dose-response analyses.

Shanghai provides an excellent setting for occupational epidemiologic research, he said, because the Shanghai Anti-epidemic Bureau (currently, the Shanghai Municipal Center for Disease Control) has conducted detailed factory inspections since the 1950s, identifying exposures to textile dusts (cotton, wool, synthetic fibers, silk), solvents, bleaching agents, acids, bases, caustics, formaldehyde, dyes, inks, resins, coatings, metals, lubricants, silica, pesticides, and electromagnetic fields.

Epidemiology Professor David Thomas had previously studied this cohort of workers for a randomized intervention trial of the efficacy of breast-self exam. The trial defined the cohort and provided the collaborative research infrastructure in Shanghai for this occupational cancer study.

There is precedent in the literature for an apparently protective effect of endotoxin against lung cancer. In the 1970s, findings from occupational cohort studies demonstrated reduced risks for lung cancer among cotton textile workers in the United States and Great Britain.

These results were regarded as somewhat surprising when first observed, but the previous studies lacked the type of quantitative exposure assessment



Noah Seixas tests exposures

available in Shanghai. The underlying biological explanation for a protective effect of endotoxin against cancer might result from complex interactions between the innate and acquired immune systems. More experimental research is needed to clarify mechanisms.

FOR FURTHER READING

Astrakianakis G, Seixas NS, Camp JE, Christiani DC, Feng Z, Thomas DB, Checkoway H. Modeling, estimation and validation of cotton dust and endotoxin exposures in Chinese textile operations. *Ann Occup Hyg* 2006 Aug;50(6):573-582.

Astrakianakis G, Seixas NS, Ray R, Camp JE, Gao DL, Feng Z, Wernli K, Fitzgibbons ED, Thomas DB, Checkoway H. Reduced risk of lung cancer among female textile workers exposed to endotoxin. *J Natl Cancer Inst*, submitted.

Li W, Ray RM, Gao DL, Fitzgibbons ED, Seixas NS, Camp JE, Wernli KJ, Astrakianakis G, Feng Z, Thomas DB, Checkoway H. Occupational risk factors for nasopharyngeal and sinonasal cancers among female textile workers in Shanghai, China. *Occup Environ Med* 2006;63:39-44.

Wernli KJ, Astrakianakis G, Camp JE, Ray RM, Chang CK, Li GD, Thomas DB, Checkoway H, Seixas NS. Development of a job exposure matrix (JEM) for the textile industry in Shanghai, China. *J Occup Environ Hyg* 2006 Oct;3(10):521-529.

Wernli KJ, Ray RM, Gao DL, Thomas DB, Checkoway H. Cancer among women textile workers in Shanghai, China—overall incidence patterns, 1989-1998. *Am J Ind Med* 2003;44:595-599.



CONFERENCE PRESENTATIONS

Departmental researchers are in bold-faced type

International Society for Environmental Epidemiology/International Society of Exposure Analysis, September, Paris

Sheppard L. Air pollution concentration sampling design in MESA Air

Shirai JH, Spalt EW, Kissel JC. *In vitro* dermal absorption of DEET from soil

Simpson C. Measurement of 1-nitropyrene metabolites in human urine: A potential marker for exposure to diesel exhaust

Smith JA, Kissel JC, Shirai JH. Estimation of children's exposure via poorly characterized pathways using CTEPP data

Smith JA, Kissel JC, Shirai JH. Markov Chain Monte Carlo estimation of permeability coefficients from *in vivo* human exposure to aqueous chloroform

Northwest Occupational Health Conference October 25–27, Wenatchee

The Continuing Education program organized a professional development course, "Occupational Health Practitioners and a Global Flu Pandemic." Session organizers were Senior Lecturer **Janice Camp** and alumnus **John Holland**. Students **Loren Kaehn**, **Diana Cellabos**, and **Oleg Antonchuck** received scholarships.

Croteau C. Engineering controls for reducing wood dust exposures from manual sanding

Dills R. Analysis of bulk materials in occupational medicine exposure assessment

Gleason R. The overwarning of America: Safety labels—the good, the bad, and the obvious

Lang P. Predicting permeation rate: A comparison of predicted and measured permeation of two solvents through two protective glove materials

Runnion V. The new hexavalent chromium standard and what it means for hot work on stainless steel

Seixas N. Health and safety experience among Seattle-area day laborers

American Public Health Association November 4–8, Boston

Joyce Tseng, a Master's in Public Health student, was awarded a scholarship by the APHA Environment Section.

Crowe J, Garcia R, Leber E, Ybarra V, Benavides M, James Birge J, Carlson M, **Hom E**, Postma J, Ricking J, Salazar M, **Sanchez YA**, Sotelo G, Wells S, **Keifer M**. Struggles and successes in *El Proyecto Bienestar*, a community-based participatory research project for environmental and occupational health

Daniell WE, Patrick G, Williams C, **Turnberg W**. Statewide hospital preparedness for an outbreak of highly communicable disease

Daniell WE, Stebbins JG, Lofgren DJ. Road construction industry compliance with hearing conservation regulations in Washington state

Hofmann J, **Keifer M**. A computer-based survey instrument for exposure assessment among agricultural pesticide handlers

Linker, D. Teen workers: Real jobs, real risks (APHA Film Festival)

Postma J, Leber E, Ybarra V, Garcia R, **Keifer M**, Salazar M, **Crowe J**, Sotelo G, Birge J, Ricking J, **Hom E**, Carlson M, **Sanchez YA**, Benavides M, Yanez M. Evaluating power and participation in community based participatory research: Evaluation results from *El Proyecto Bienestar*

Sears JM, Wickizer TM, **Franklin GM**, Berkowitz B. State legislation expanding the role of nurse practitioners in a workers' compensation system: Effects on disability and costs

Silverstein M. Does the OSHA paradigm work for the 21st century?

Turnberg W, Daniell WE, Duchin J. Respiratory infection control practices and surveillance knowledge among health-care workers in primary and emergency care settings

Acoustical Society of America Nov. 30, Honolulu

Neitzel R. Variability of field-based hearing protection device attenuation measurements



CONTINUING EDUCATION & EVENTS

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

NORTHWEST CENTER FOR OCCUPATIONAL HEALTH & SAFETY

- Jan 22, 23, 25, 26, 27 Annual hazardous waste refreshers
- Jan 24, 29 Annual hazardous waste refreshers (*Olympia*)
- Feb 1 Puget Sound Occupational and Environmental Medicine (OEM) Grand Rounds: Medical clues and serendipity: Lessons in "solving" outbreaks
- Feb 28 Third party liability in worksite safety and health: Preventing general contractors, subs, and owners from accident litigation
- Mar 22 Puget Sound OEM Grand Rounds: Medical monitoring and treatment program for FDNY firefighters
- Mar 30 Occupational allergy

A high school student tries on a fall-protection harness during the personal protective equipment (PPE) fashion show that was part of the School to Work program at September's Governor's Industrial Safety and Health Conference in Spokane. The department also put on a professional development course, "Managing stress in first responders."



Darren Linker

PACIFIC NORTHWEST OSHA EDUCATION CENTER

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

- Jan 8-11 OSHA 510: Standards for the construction industry
- Jan 9-11 OSHA 2264: Permit-required confined space entry (*Portland*)
- Jan 16-18 OSHA 2225: Respiratory protection (*Boise*)
- Jan 16-18 OSHA 3010: Excavation, trenching, and soil mechanics (*Portland*)
- Jan 22-25 OSHA 6000: Collateral duty for other federal agencies (*Richland*)
- Jan 23-25 OSHA 3095: Electrical standards
- Jan 29-Feb 1 OSHA 501: Trainer course in standards for general industry
- Jan 29-Feb 1 OSHA 6000: Collateral duty for other federal agencies (*Portland*)
- Feb 6-8 OSHA 2225: Respiratory protection
- Feb 12-15 OSHA 5600: Disaster site worker train-the-trainer
- Feb 13-15 OSHA 2045: Machinery and machine guarding standards (*Portland*)
- Feb 13-15 OSHA 2225: Respiratory protection (*Anchorage*)
- Feb 20-22 OSHA 2250: Principles of ergonomics
- Feb 20-22 OSHA 3110: Arrest systems (*Portland*)
- Feb 26-Mar 1 OSHA 500: Trainer course in standards for the construction industry
- Mar 5-7 OSHA 502: Update for construction industry outreach trainers
- Mar 5-8 OSHA 510: OSHA standards for the construction industry (*Portland*)
- Mar 7-9 OSHA 503: Update for general industry outreach trainers
- Mar 13-15 Supervisory safety and health duties
- Mar 19-22 OSHA 521: Guide to industrial hygiene
- Mar 26-29 OSHA 511: Standards for general industry (*Portland*)



Ryan Allen, a 2004 PhD graduate and Joel Kaufman's senior fellow, has been hired as an assistant professor at Simon Fraser University in British Columbia.

James Blessman, a 1989 graduate of the Occupational and Environmental Medicine Program, has been appointed to the National Advisory Committee on Occupational Safety & Health for the Occupational Safety and Health Administration (OSHA). He teaches at Wayne State University and serves as the medical director for Detroit city employees.

Professor **Harvey Checkoway** received a visiting scientist fellowship from the International Agency for Research on Cancer in Lyon, France, to spend a sabbatical June through December. In June, he gave an invited keynote speech at the International Commission on Occupational Health Congress in Milan, "Balancing future resources for epidemiologic research on old and newly emerging occupational hazards."

Bill Daniell has replaced Matt Keifer as Graduate Program Director. **Keifer** has replaced Daniell as leader of the Environmental and Occupational Health MPH program.

Paul Darby, a 2003 graduate of the Occupational and Environmental Medicine Program, has been named medical director of the Tacoma Port Clinic. He serves as a board member of the Northwest Association of Occupational and Environmental Medicine.

In July, Professor **Dave Eaton** led several Congressional and White House briefings in Washington, DC, including a press conference, to present the results of a National Academy of Sciences/National Research Council report titled: "Health risks from dioxin and related compounds: Evaluation of the EPA reassessment." This was a long-awaited external evaluation of the EPA's 14-year risk assessment project. A worldwide committee of 18 scientists developed the Academy report and Eaton chaired the committee. Eaton also gave a presentation on Glutathione S-transferases in a short course on recent developments in drug metabolism and disposition at the American Association of Pharmaceutical Sciences in San Antonio, Texas, in the autumn.

Professor **Rich Fenske** serves on the Environmental Protection Agency's Human Studies Review Board, established earlier this year to provide advice and recommendations to EPA on issues related to the scientific and ethical review of

human subjects research. Fenske and his former postdoctoral fellow, **Chensheng (Alex) Lu**, continue to get widespread coverage on research findings of pesticide metabolites in children. A flurry of media coverage followed publication of a paper in the February 2006 issue of *Environmental Health Perspectives*, "OP pesticides in children's bodies: The effects of a conventional versus organic diet." Dr. Lu is now at the Rollins School of Public Health at Emory University in Atlanta.

Research Professor **Gary Franklin** and colleagues presented a paper on state legislation expanding the role of nurse practitioners in a workers' compensation system at the Workers' Compensation Research Group in November in Boston.

Lecturer **Rick Gleason** spoke at the Road and Street Maintenance Hazards Supervisor Conference in Spokane in October, at the Western Regional Universities Consortium and the American Society of Safety Engineers Conference in Seattle in June, and the Washington Governor's Health and Safety Conference in Spokane in September.

Michael Grey, a 1989 graduate of the Occupational and Environmental Medicine Program, is acting division chief for Occupational-Environmental Medicine at the University of Connecticut Medical Center and principal investigator for the University's NIOSH-supported residency training grant.

The Continuing Education program has hired **Steve Hecker** as senior lecturer and director of occupational safety and health education and outreach, and **Mike Willis** as manager of the Pacific Northwest OSHA Center. Hecker, a 1981 graduate of our program, comes from the University of Oregon, where he was associate professor in the Labor Education & Research Center. Willis comes from UW Educational Outreach, where he was acting director of marketing.

Assistant Professor **Pete Johnson's** ergonomics lab worked with Microsoft to develop a better mouse. The Natural Wireless Laser Mouse 6000 is designed to reduce the occurrence and severity of repetitive strain injuries while increasing productivity and comfort. Johnson's lab previously helped Microsoft develop an ergonomic keyboard that is now the top-selling wired keyboard.

Research scientist **Rick Neitzel** was selected to attend the American Industrial Hygiene Association's second-ever Future Leaders Institute Oct. 19-22 in Chicago. The event

was designed to help the 46 select young industrial hygienists develop leadership skills.

The **Pacific Northwest Agricultural Safety and Health** (PNASH) center has received a new five-year, \$6.8 million award from the National Institute for Occupational Safety and Health (NIOSH) to continue its work to prevent occupational disease and injury among agricultural operators, workers, and their families in the Northwest. The theme of the center is promoting safe and sustainable agricultural workplaces and communities. The new NIOSH award includes seven new projects and an annual pilot project program that funds small grants.

Maggie Trabeau, a 2006 graduate of the Industrial Hygiene master's program, has begun work as an industrial hygienist for The Boeing Co.

Research Associate Professor **Lianne Sheppard** was elected as a fellow of the American Statistical Association in August.

Assistant Professor **Chris Simpson** was awarded an R21 grant from NIEHS titled: "Evaluation of urinary 1-nitropyrene metabolites as a biomarker of exposure to diesel exhaust." He also was invited to lecture at the Center for Environmental Health Sciences and the Department of Chemistry, University of Montana at Missoula, on "Biological monitoring of woodsmoke exposure."

Professor **Sverre Vedal's** HEI grant was recently funded. This is a four-year grant with particulate matter and epidemiology components.

DIESEL BUS STUDY

Research Associate Professor Sally Liu's research team has pinpointed crankcase emissions as the source of most pollution on school buses. A significant practical outcome of the UW study is to lower levels of particulate matter (PM) inside school buses and to protect children who ride the buses.

The Puget Sound Clean Air Agency has incorporated the UW research findings into its transportation policies, and International Truck and Engine Corp., a cosponsor of the study, plans to implement technology in its 2007 model school buses that will achieve near-zero PM emissions from both the crankcase and tailpipe. The National Institute of Environmental Health Sciences is the primary sponsor of the study.

Two Seattle television stations, KING 5 and KOMO TV, aired news stories about the studies on Aug. 22.

The Liu lab hosted an open house for study subjects and their parents in August.



Kathy Hall



Sally Liu

top:
Research Coordinator Erin Corwine conducts a pulmonary function test at the open house

right:
Tailpipe monitoring of a Taboma School District bus

COHE EVALUATION

The Occupational Epidemiology and Health Outcomes Program continues to work on a more detailed analysis of the first two Center of Occupational Health and Education (COHE) sites' disability prevention and cost savings. A report will be issued in December.

As described in the autumn 2005 issue of *Environmental Health News*, the centers are designed to improve the system that delivers medical services to injured workers, and involve the entire medical community in occupational health best practices. The pilot centers are in Renton and eastern Washington.

Plans for the report were presented to business and labor representatives at the Workers Compensation Advisory Committee's Subcommittee for Healthcare on Oct. 18. Earlier, evaluation team members met in Yakima for a day of joint meetings with the staff of both COHEs.

FOR FURTHER READING

<http://www.lni.wa.gov/ClaimsIns/Providers/Research/OHS/default.asp>

THE FINE PRINT

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