



DEPARTMENT OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH SCIENCES

ENVIRONMENTAL HEALTH

News

SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE ■ UNIVERSITY OF WASHINGTON ■ SPRING-SUMMER 2004

CELEBRATING OUR STUDENTS

Spring is the season when we launch our graduates into the world. We have always been proud of their success in business, government, and academia. This issue of Environmental Health News celebrates the successes of our students, staff, and faculty during the 2003–2004 school year. We also welcome two new faculty members, Evan Gallagher and Gwey-am Shin.

INSIDE

CELEBRATING OUR STUDENTS	1
APPLYING WHAT THEY HAVE LEARNED	1
AWKWARD POSTURES	3
CONFERENCE PRESENTATIONS AND AWARDS	4
UW HEALTH SCIENCES OPEN HOUSE	5
STUDENT RESEARCH DAY	6
STUDENT POSTER SESSION	7
CONTINUING EDUCATION	8
DEGREES	9
PEOPLE & PLACES	10
NEW FACULTY	11
OUR BIENNIAL REPORT	12

APPLYING WHAT THEY HAVE LEARNED

In the real world, people go to work every day and sometimes they come home hurting. Our students work with employers to design job tasks to stop—or better yet, prevent—the hurt.

Five teams of graduate students spent spring quarter solving real-world problems for some of Washington's largest employers. The students gained valuable consulting experience, while the employers learned about safety and ergonomic solutions tailored for their workplaces.

The students in Environmental Health 559—a course in applied industrial hygiene, safety, and ergonomics—learned about budgeting, project reporting, and presenting their findings. Two of their instructors, Rick Gleason and Kate Stewart, spend part of their time working for private-sector consulting firms. A third, Janice Camp, directs our department's Field Research and Consultation Group. The fourth faculty member, Pete Johnson, worked as a consultant before starting at the UW.

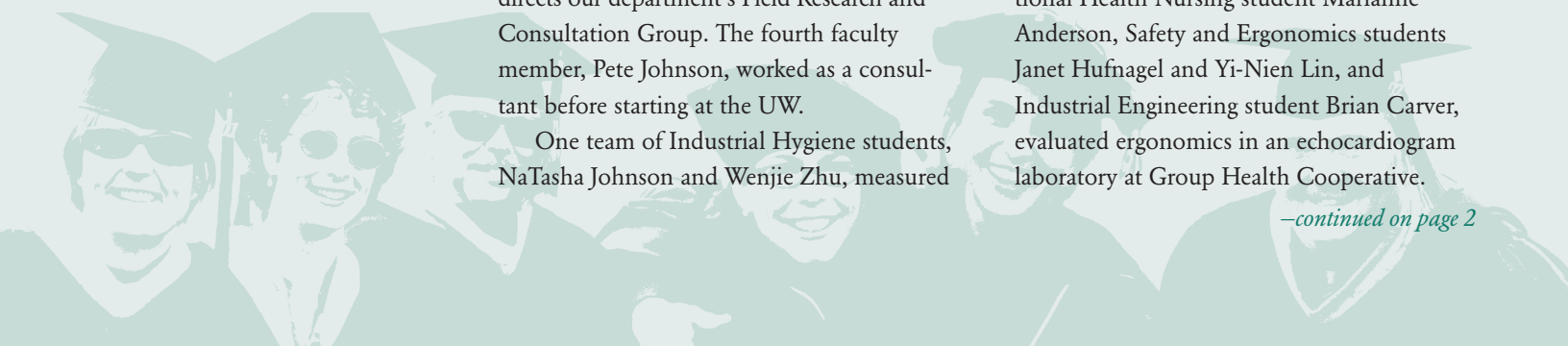
One team of Industrial Hygiene students, NaTasha Johnson and Wenjie Zhu, measured

welding fumes and sound exposures at Todd Pacific Shipyards. In addition, they performed a preliminary evaluation of energy conservation activities, identified major sources of energy consumption, and outlined a plan to further improve conservation activities.

Three teams went to Microsoft. Jake Civitts, Jennifer Ho, Catherine Serve, and Meggie Von Haartman, all Industrial Engineering students, evaluated a keyboard concept that included a detached numeric keypad. Colleen Daly and Jennifer Young produced an ergonomic awareness pamphlet for the Microsoft Human Resources Department. Kathryn Toepel and Fanny Nguyen did an indoor air quality assessment for Grubb & Ellis, the contractor in charge of Microsoft's buildings.

The fifth team, consisting of Occupational Health Nursing student Marianne Anderson, Safety and Ergonomics students Janet Hufnagel and Yi-Nien Lin, and Industrial Engineering student Brian Carver, evaluated ergonomics in an echocardiogram laboratory at Group Health Cooperative.

—continued on page 2

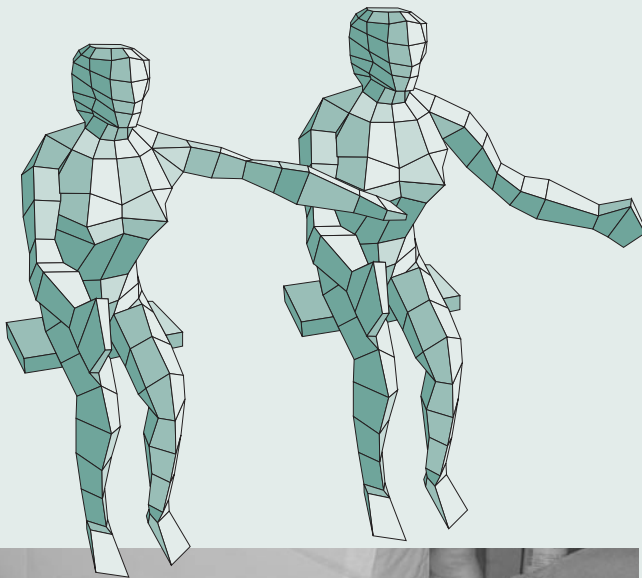


—continued from page 1

REDUCING THE REACH

Echo technicians (sonographers) create images of a beating heart by placing an ultrasound transducer firmly to a patient's chest. In one hour they might obtain more than 40 images, which are projected onto a computer screen and manipulated by the technician using a specialized keyboard. The students measured the force and postural requirements of Group Health's sonographers while they simulated a typical exam.

The students' literature survey found that more than 80% of cardiac sonographers work with upper extremity, shoulder, neck, and back pain. Group Health sonographers told the students that they begin the day pain-free, but finish with high levels of pain and fatigue.



Courtesy of Janet Hafnagel

A computer model predicted that only 67% of the female population would have the shoulder strength to perform the most awkward posture found in cardiac sonography. If the scanning device were modified, and the shoulder angle reduced from 90° (top left) to 40° (top right), 96 % of the female population could perform the task.

Measurements made with a pinch meter, grip dynamometer, and a push pull strain gauge found that sonographers used nearly their maximal strength with awkward hand and wrist postures, a combination likely to cause injury.

The project also involved proposing a design for Group Health's new cardiolab, which is scheduled to be built in the next few years. The students' design recommendations involved moving the patient's bed from a wall to the center of the room so the sonographer could scan from both sides of the patient. The students also suggested several ways to decrease the sonographer's workload, such as moving the display screen closer to the patient (to improve vision and reduce twisting and reach), putting a neoprene sleeve over the hand-held device (to make the transducer easier to grip), and using a support for the sonographer's wrist and upper arm (to reduce the load on the shoulder during the exam).

Eventually, they foresee more user-friendly equipment. These could include a wireless scanning transducer and moving commonly used keyboard controls to the scanning transducer itself, to reduce back-and-forth use of transducer and keyboard.

The students presented their results in a written report and PowerPoint presentation to Group Health managers in early June, much as a consulting firm might do at the end of a study.

Some of their suggestions, such as scheduling fewer patients per shift, may not be possible in a fast-paced hospital setting, while others, such as having sonotechnicians observe one another performing exams to learn different scanning techniques, may be more feasible.

"I think one student summarized the class experience very well," Johnson said. He asked the student what was the most valuable portion of the class and she stated, "The experience of applying the tools learned in class and getting to use them in actual workplaces and on actual workers was invaluable." The student mentioned that "you cannot always create these experiences in a class."

Group Health's managers were impressed with the professionalism and thoroughness of the students' research and presentation, said Neimeh Shalash of Group Health Consultative Specialty Department. "We plan to take their valuable recommendations into serious consideration," she said.

RETHINKING THE KEYBOARD

The computer keyboard and mouse are not design-friendly to right-handed workers. Back in the early days of the computer, a numeric keypad was added to the right side of the keyboard to simulate a 10-key adding machine. That made sense in the years before the mouse was invented, but today it causes the more than 95% of the population that is right-handed to reach to the side for the mouse. This causes uncomfortable shoulder, arm, and wrist angles.

A group of student consultants evaluated a keyboard with a removable numeric keypad for Microsoft's Hardware Design Group. They compared the new design, its separate number pad, and a standard keyboard, with a traditional built-in number pad, in a controlled study of a dozen computer users. They measured performance and postural differences in the wrist and shoulder.

They found the new keypad more comfortable, especially for prolonged use. However, test subjects said they wanted to keep the traditional keyboard design. Performance was not significantly different for either of the keyboard designs.

Hugh McLoone, a departmental alumnus and an ergonomist with Microsoft's Hardware Design Group, said, "The students learned that optimizing a product design based on ergonomics principles does not always lead to a design that's preferred by users. Many considerations must be taken into account for a product to be financially, ergonomically, and technically successful." However, he called the consulting team's report and presentation an "exemplary project" that gives students a foundation to be valuable contributors to organizations like Microsoft.

Faculty member Kate Stewart said, "This was an important and well-done project. The group was able to provide Microsoft with valuable information on which to base their decision on the future of this trial design."

LEARNING BY DOING

This was the first time the course was listed as both an Environmental Health and Industrial Engineering course, which Johnson said increased the diversity and learning experience.

Group Health's Shalash said the variety of disciplines added to the value of the project for the client. "We would be very interested in working with this class again," she said.

Stewart said, "This is such a great opportunity for students to be challenged and rewarded by working in the real world. They are able to problem solve typical consulting challenges and experience the 'good feeling' of helping provide a safe and more efficient work place."



AWKWARD POSTURES

Bernardino Ramazzini, the father of occupational medicine, was concerned about workers who sustain awkward postures. In his *Diseases of Workers (de Morbis Artificum)* of 1713, he described workers who "all day long stand or sit, stoop, or are bent double." They were subject to "certain morbid affections ... from some particular posture of the limbs or unnatural movements of the body called for while they work."

He recommended exercise and postural changes because the body needs to move. As an analogy, he offered, "If we gaze intently at one object or keep hearing the same noise, if the same dishes are always served at dinner-parties, if we keep smelling the same odors, we feel annoyed; so agreeable to nature is alternation and change."

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.



CONFERENCE PRESENTATIONS & AWARDS

SOCIETY OF TOXICOLOGY

43rd Annual Meeting, March 2004, Baltimore

Three of our graduate students won honors at the Society of Toxicology's 43rd annual meeting. **Nicole DeFrank** was recognized for an outstanding abstract in the Risk Assessment Specialty Section. **Julia Gohlke** won two awards: the 2004 International Dixon Travel Award (\$2000 to go to an international toxicology meeting in Finland in July) and the Biological Modeling Specialty Section's best student poster award. **Yingying Guo** won two awards: a graduate travel award to attend the meeting, and an honorable mention in the Carl C. Smith mechanisms graduate student award of the Mechanisms Specialty Section.

OUR PRESENTATIONS

Departmental researchers (in green bold-face)

Bekris L, Shephard C, Farin F, Graham J, Mcnoney B, Kavanagh T, Lernmark A. Glutathione-s-transferase polymorphisms and associations with T1DM

Botta D, Shi S, White C, Chatterton-Kirchmeier S, Vliet P, Kavanagh T. Inducible glutamate-cysteine ligase transgenic mice exhibit protection against acetaminophen induced liver injury

Cole T, Pettan-Brewer C, Richter R, Shih D, Tward A, Lulis A, Costa L, Furlong C. Paraoxonase abundance and Q192R genotype are important determinants of organophosphate toxicity during development

DeFrank N, Griffith W, Gohlke J, Faustman E. Computational model for radiation-induced cell death at low doses in the developing neocortex

Eaton D, Marcus C, Dixon D, O'Fallon L. Novel approaches to engaging toxicologists in K-12 science education and outreach

Eaton D, Kerkvliet N, Marcus C, Safe S, Trush M. Toxicologists in the classroom: Successful models for K-12 outreach

Echeverria D, Woods J, Heyer N, Bittner A, Farin F. Brain-derived neurotrophic factor (BDNF) polymorphism associations with behavioral measures of memory in mercury (Hg)-exposed humans

Faustman E, Drew C. Translating children's environmental health risk research for communities

Faustman E. Challenges and opportunities in utilizing systems biology approaches for informing developmental toxicology

Gilbert S, Kelman B, Bero L, Brent R, Goodman J. Does funding source influence research integrity?

Gohlke J, Griffith W, Faustman E. Contribution of experimental and inter- and intraspecies variability in a computational model for ethanol-induced perturbations of neocortical development

Griffith W, Curl C, Faustman E, Li C, Fenske R. Large within-child variability for OP pesticide urinary biomarkers limits our ability to identify high exposure farm worker children

Gross-Steinmeyer K, Bradley K, Stapleton P, Liu F, Tracy J, Bammler T, Beyer R, Strom S, Eaton D. Effects of six dietary phytochemicals on aflatoxin B1-mediated genotoxicity and gene expression in human hepatocytes and HEPG2 cells

Guizzetti M, Thompson B, Kim Y, VanDeMark K, Costa L. Effect of ethanol on carbachol-stimulated phospholipase D signaling in astroglial cells

Guo Y, Zarbl H, Breeden L, Preston B, Eaton D. Characterization of DNA repair mechanisms following aflatoxin B1 treatment in yeast expressing; Human cytochrome P450 1A2

Heyer N, Echeverria D, Woods J, Bittner A, Farin F. Brain derived neurotrophic factor (BDNF) polymorphism associated with increased symptom reporting among dental personnel

Judd N, Griffith W, Faustman E. Factors affecting exposure and risk to domoic acid via shellfish consumption for high risk populations

LaVire H, Srinouanprachanh S, Hooper M, McMurry S, Cobb G, Kavanagh T. Metallothionein and glutamyl-cysteine ligase gene expression in metal-exposed deer mice

Leaman S, Vliet P, Luchtel D, Rosenfeld M, Kavanagh T. Effects of particulate matter on glutamate cysteine ligase in raw cells

McConnachie L, Hudson F, Ware C, Fernandez C, Vliet P, White C, Kavanagh T. Generation and characterization of a glutamate-cysteine ligase modifier subunit null mouse

Ren X, Sullivan R, Kim A, Zarbl H. Gene expression profiling of mammary tissue following NMU treated sensitive Fisher 344 and resistant Copenhagen rat strains in different time points

Shi S, Botta D, White C, Vliet P, Chatterton-Kirchmeier S, Kavanagh T. Protective effects of enhanced glutathione synthesis on TNF α -induced hepatotoxicity in glutamate-cysteine ligase transgenic mice

Sidhu J, Hong S, Yu X, Kim E, Erickson A, Robinson J, Kim S, Vredevoogd M, Faustman E. Defining p53-dependent and independent mechanisms of cadmium-induced cytotoxicity, stress signaling, apoptosis and ubiquitin proteasome pathway processing

Wong E, Gohlke J, Griffith W, Farrow S, Faustman E. Children's health benefits from reductions in criteria air pollution concentrations

Woods J, Echeverria D, Heyer N, Bittner A, Farin F. Coproporphyrinogen oxidase (CPOX) polymorphism alters the effect of mercury (Hg) on porphyrin excretion in humans

Yu X, Sidhu J, Hong S, Faustman E. Cadmium-induced apoptosis, activation of MAPK signaling pathways and accumulation of ubiquitinated-protein-conjugates in primary rat neonatal Sertoli-gonocyte co-cultures

Zarbl H, Jing L, Mikheev A, Xie H, Gao, Ren X, Lew J, Zhang X. Mapping rat mammary cancer susceptibility loci that control N-methyl-N-nitrosourea-induced mammary carcinogenesis in Fischer 344 rat

AMERICAN THORACIC SOCIETY

100th International Conference, May 2004, Orlando

Jansen K, Koenig JQ, Larson TV, Fields C, Mar TF, Stewart J, Lennington D, Lippmann M. Exhaled nitric oxide in subjects with respiratory disease is associated with levels of PM_{2.5} and black carbon in Seattle

Koenig JQ, Peden DB. Air pollution health effects in children

Mar TF, Jansen K, Larson TV, Kaufman J, Sullivan J, Shepherd K, Liu LJS, Koenig JQ. Exhaled nitric oxide in children with asthma and short term PM exposure in an airshed impacted by woodsmoke

Smith LM, Baker C, Luchtel DL. Response of an ApoE^{-/-} mouse model to Seattle PM

Sullivan J, Trenga C, Hubbard R, Shepherd K, Liu S, Koenig JQ, Kaufman J. Effect of fine particulate matter on plasma cytokine measures of inflammation in an elderly population with pre-existing cardiac disease

AMERICAN INDUSTRIAL HYGIENE CONFERENCE & EXPOSITION

May 2004, Atlanta

Bejan A, Morgan M, Monteith L, van Belle G. Passive monitors performance under fluctuating solvent concentration and multiple solvent presence

Netzel R, Seixas N, Daniell W. Non-occupational noise in construction workers

Flanagan M, Seixas N, Camp J, Becker P, Takacs B. Silica exposures in construction: A compilation data set

UW HEALTH SCIENCES OPEN HOUSE

Ten graduate students and 11 staff and faculty members participated in the health sciences open house in April. The annual event teaches students and the general public about science.



Courtesy of Fiona Sands

Graduate students Fiona Sands (shown, left) and Heidi Curtiss had a display about using spirometry as a research tool in air pollution research.



Chetana Acharya

Research scientist Dianne Botta helps visitors map their daily hazards. The peg board was labeled with potential toxic exposures, such as garden chemicals and traffic fumes. The hazard web grew over the two-day event as visitors mapped their exposures.

STUDENT RESEARCH DAY, MAY 20, 2004

In a seminar session, one second-year master student from each of the academic programs was selected to present an oral summary of his or her thesis research. The remainder of the graduating master's students presented posters of their work. Thesis abstracts are online at <http://depts.washington.edu/envhlth/news/researchday04.html>. Faculty preceptors are listed in parentheses.

SCHOOL BUS EXHAUST

Michael Compher, MS, Environmental Health (Sally Liu)

Diesel exhaust and its components—which have widely acknowledged adverse health effects—can affect children who ride school buses. Compher assessed the exposures of nine asthmatic and nonasthmatic children who rode a variety of diesel buses, including two equipped with an oxidative catalyst to reduce their emissions. He measured children's exposures to fine and ultrafine particles, elemental and organic carbon, sulfur dioxide, nitrogen dioxide, and carbon monoxide. He also gathered data on indicators of acute respiratory inflammation and oxidative stress. His pilot study could become the basis of a multiyear study to document the change in children's exposure as older buses are retired or retrofitted.

SEEKING THE IDEAL GLOVE

NaTasha Johnson, MS, Industrial Hygiene and Safety (Michael Morgan)

Many commercially available gloves are designed to protect workers from skin exposure to chemicals, but none are ideal. Glove selection is based on the principle of “like dissolves like” and is relatively straightforward for individual solvents. However, when solvents are mixed, glove selection becomes more difficult. Johnson measured breakthrough times and permeation rates for various mixtures of toluene and methyl ethyl ketone (MEK). She concluded that nitrile gloves should not be used with either toluene or MEK, or any mixture of these solvents, but that butyl rubber is a better choice for use with mixtures of MEK and toluene, especially when the mixture is predominately composed of MEK.

TOXICITY OF SEATTLE AIR

Lisa Smith, MS, Toxicology (Daniel Luchtel)

Seattle's particulate air pollution has an unusual composition because of wood smoke, but little has been known about its health effects. Smith examined the effects of Seattle particulate matter on the apolipoprotein E knockout mouse, bred as a model of cardiovascular disease. She found a significant decrease in heart rate variability, a predictor of mortality in people with cardiovascular disease, and found a dose- and



Jennifer Young describes her research on hearing loss among construction workers

time-based response. Microarray technology suggested several pathways to cardiopulmonary disease. She concluded that Seattle's particulate matter can affect the autonomic nervous system through inflammation, as shown in a mouse model of cardiovascular disease.

DEATHS AMONG BANANA WORKERS

Jonathan Hofmann, MPH, Environmental and Occupational Health (Matthew Keifer)

A pesticide once widely used on banana plantations, 1,2-dibromo-3-chloropropane (DBCP), has been found to cause sterility in men and has been implicated in cancer. Hofmann analyzed a previously studied cohort that was expanded and updated to include over 40,000 workers employed on Costa Rican banana plantations in the 1970s. Work records were linked with the Costa Rican Mortality Registry to see how many people had died and what caused their death. Hofmann found a higher-than-expected rate of injury deaths (accidents, suicide, and homicide). Although they weren't statistically significant, he also found higher-than-expected rates of testicular cancer, penile cancer, and Hodgkin's disease in men, and cervical cancer and lung cancer in women.

GENETICS & ASBESTOS DISEASE

Austin Sumner, MPH, Occupational and Environmental Medicine (*Timothy Takaro*)

Workers who have been exposed to asbestos differ in whether they develop asbestos-related disease. A family of enzymes called glutathione S-transferases (GST) may make a difference in susceptibility. Sumner studied 220 cases from an ongoing cancer study for whom he could obtain genetic, lung function, and chest X-ray data. About half had the GSTM1 gene. After adjusting for age, smoking, years of asbestos exposure, and years in high-risk trade, he was unable to demonstrate a statistical association between the GSTM1 gene and pulmonary changes resulting from asbestos exposure.

STUDENT POSTER SESSION

Industrial Hygiene and Safety, MS

Fanny Nguyen (*Michael Yost*) Silica exposure assessment of refractory brick workers in Vietnam

Jennifer Young (*Noah Seixas*) Hearing protection device use and attenuation among construction workers

Wenjie Zhu (*Yost*) Application of GPS/GIS in Chinese farmers for assessment of pesticide exposure from crop residues

Occupational and Environmental Medicine, MPH

Alden Weg (*William Daniell*) The impact of Army branch assignment on early medical disability in a cohort of Reserve Officer Training Corps (ROTC) cadets

Environmental and Occupational Health, MPH

Ann Bradley (*Elaine Faustman*) Impact and policy implications of genetic information in the regulatory framework for organophosphate pesticides

Lisa Younglove (*Richard Fenske*) Exposure to organophosphate pesticides in Nicaraguan applicators and their families

Toxicology, MS

Eva Dale (*Jane Koenig*) Effect of PM_{2.5} on exhaled nitric oxide: An intervention field study

Joshua Robinson (*Faustman*) Examination of metal-induced cell cycle alterations and apoptosis in C57BL/6J and SWV mouse embryonic fibroblasts

Environmental Health, MS

Heather Bost (*Scott Meschke*) A comparison of West Nile virus vector mosquito populations in sites with and without storm water drainage ponds

Anayi Norman (*John Kissel*) Effect of PBPK model form on interpretation of *in vivo* human aqueous dermal exposure trials

Marley Shoaf (*Kissel*) Dermal sediment loads following child play and adult clam digging in tide flats

Kathryn Toepel (*Fenske*) Determination of the dietary contribution to pesticide exposure in suburban children

Ryan Allen, a PhD student in Industrial Hygiene, and Yi-Nien Lin, an MS student in Safety and Ergonomics, look over graduate posters at the student poster session.



Matt Keifer



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.

OSHA TRAINING INSTITUTE EDUCATION CENTER

- | | | | |
|------------------|--|----------------------|--|
| Jul 19–20 | Supervisory Safety & Health Duties (<i>Boise</i>) | Sep 1–3 | OSHA 2250: Principles of Ergonomics (<i>Portland</i>) |
| Jul 21–23 | OSHA 2225: Respiratory Protection | Sep 7–10 | OSHA 501: Trainer Course for General Industry |
| Jul 26–29 | OSHA 3110: Fall Arrest Systems (<i>Portland</i>) | Sep 13–16 | OSHA 521: OSHA Guide to Industrial Hygiene |
| Aug 3–6 | OSHA 500: Trainer Course for Construction Industry | Sep 20–22 | OSHA 502: Construction Trainer Update |
| Aug 11 | OSHA 10-Hour Construction | Sep 21–24 | OSHA 2015: Hazardous Materials (<i>Portland</i>) |
| Aug 16–18 | OSHA 2250: Principles of Ergonomics | Sep 22–24 | OSHA 503: General Industry Trainer Update |
| Aug 23–26 | OSHA 500: Trainer Course for Construction Industry (<i>Portland</i>) | Oct 4–7 | OSHA 511: General Industry Standards (<i>Portland</i>) |
| Aug 24–26 | OSHA 2225: Respiratory Protection (<i>Anchorage</i>) | Oct 9, 16, 23 | OSHA 2225: Respiratory Protection (<i>Portland</i>) |
| | | Oct 11–14 | OSHA 511: General Industry Standards |
| | | Oct 18–21 | OSHA 6000: Collateral Duty Course for Other Federal Agencies |
| | | Oct 19–22 | OSHA 510: OSHA Standards for Construction (<i>Portland</i>) |
| | | Oct 25–27 | OSHA 2264: Permit-Required Confined Space Entry |
| | | Nov 1–4 | OSHA 2045: Machinery & Machine Guarding |
| | | Nov 2–4 | OSHA 503: General Industry Trainer Update (<i>Portland</i>) |
| | | Nov 15–18 | OSHA 501: Trainer Course for General Industry (<i>Portland</i>) |
| | | Nov 15–18 | OSHA 510: OSHA Standards for Construction |
| | | Nov 16–19 | OSHA 2045: Machinery & Machine Guarding (<i>Anchorage</i>) |
| | | Nov 29–Dec 2 | OSHA 6000: Collateral Duty for Other Federal Agencies (<i>Boise</i>) |
| | | Nov 30–Dec 3 | OSHA 500: Trainer Course for Construction Industry |
| | | Dec 6–9 | OSHA 3010: Excavation, Trenching, and Soil Mechanics |
| | | Dec 7–10 | OSHA 3110: Fall Arrest Systems (<i>Portland</i>) |



Courtesy of Rick Gleason

Rick Gleason (center) and Javier Vieta (right) prepare for a construction site safety and health tour in San José, Costa Rica. Fifteen students attended the course, sponsored by our International Scholars in Occupational and Environmental Health (Fogarty) program. Vieta, from the Costa Rica Construction Ministry of Labor, has spent time in Seattle taking our department's continuing education courses.



2003-2004 DEGREES

NW CENTER FOR OCCUPATIONAL HEALTH & SAFETY

- Sep 12-14** Cultivating a Sustainable Agriculture Workplace (*Troutdale, OR*)
- Sep 16** Mold: Defining the Standard of Care
- Sep 21-23** Hazardous Materials Incidents: Improving Interagency Response
- Sep 28** Effective Return-to-Work Programs (*new offering*)
- Oct 11** Emerging Issues in Toxicology
- Oct 14** Puget Sound Occupational and Environmental Medicine Grand Rounds
- Nov 18** Puget Sound Occupational and Environmental Medicine Grand Rounds
- Dec 1** A Small Dose of Toxicology: How Chemicals Affect Your Health
- Dec 2** A Larger Dose of Toxicology: How Chemicals Affect Your Health

CULTIVATING A SUSTAINABLE AGRICULTURAL WORKPLACE

Conference to be held September 12-14 in Troutdale, Oregon

This regional conference is sponsored by the Pacific Northwest Agricultural Safety and Health Center (PNASH) at the University of Washington and the Western Center for Agricultural Health and Safety at the University of California, Davis.

Topics include workplace practices and challenges, organic vs. conventional farming, worker safety and health, and international standards and certification. In addition, conferees will establish a research and outreach agenda for integrating safety and health into the sustainable agriculture workplace.

Participants are eligible for continuing education credits through professional associations for physicians, industrial hygienists, nurses, sanitarians, and safety professionals.

Details and other conference information are available at: <http://depts.washington.edu/pnash/conf04/index.html>

The Department of Environmental and Occupational Health Sciences awarded 10 Bachelor of Science degrees, 18 Master of Science degrees, five Master of Public Health degrees, and five Doctor of Philosophy degrees this year.

Summer 2003

- Erika Abel, PhD
- Iyad Kheirbek, MS
- Sakorn Marley, BS
- Leah Mickelson, MS
- Marilyn Nayan, MPH
- Kathleen Newhouse, MS
- Jing Shao, PhD
- Lindsay Smith, MS
- Craig Tin, MS
- Christopher Wilkerson, MS
- Laurie Young, BS

Autumn 2003

- Katherine Himes, MS
- Hélène LaVire, MS

Winter 2004

- Christine Clark, BS
- Jonathan Freed, BS

Spring 2004

- Heather Bost, MS
- Ann Bradley, MPH
- Michael Compher, MS
- Eva Dale, MS
- Kai Elgethun, PhD
- Yingying Guo, PhD
- Jenafer Halpin, BS
- Jonathan Hofmann, MPH
- NaTasha Johnson, MS
- Lucas Jordan, BS
- Nicky Josephs, MS
- Peter Lang, BS
- Thao Le, BS
- Fanny Nguyen, MS
- Anayi Norman, MS
- Rena Saito, BS
- Kelly Schumacher, MS
- Marley Shoaf, MS
- Helen Smith, PhD
- Jesse Smith, BS
- Lisa Smith, MS
- Austin Sumner, MPH
- Alden Weg, MPH



Sean Mikell

Bachelor degree recipients (top to bottom): Thao Le, Jenafer Halpin, and Lucas Jordan



Shannon Kirkpatrick of the graduate program office won the department's distinguished staff award this year. The other nominees were **Phillip Buff, Stephanie Timm, Azure Skye, Melinda Fujiwara, Maureen Cornell Endres, Marc Beaudreau, and Rory Murphy.**

Murphy, of the graduate program office, was the departmental nominee for the UW distinguished staff award. **Raja Atallah**, senior research scientist in the Environmental Health Laboratory, was the departmental nominee for the UW outstanding public service award. **Jon Hofmann** was named as the outstanding graduate student and **Christine Clark** as the outstanding undergraduate.

This year's departmental outreach awards went to **Rick Neitzel**, research scientist and investigator on studies examining noise exposure and hearing loss among construction workers and apprentices, and **Chetana Acharya**, manager of the Community Outreach and Education Program in the Center for Ecogenetics and Environmental Health.

Associate Professor **Matthew Keifer** was named the outstanding mentor this year in the School of Public Health and Community Medicine.

Isaac Mohar and **Kathryn VanDeMark** both won five-year predoctoral fellowships on the Environmental Pathology/Toxicology Training Grant.

Heather Bost won a student paper award at the 68th annual National Environmental Health Association educational conference in Anchorage, Alaska, in May.

Graduate student **Janet Hufnagel** had a paper accepted for the September meeting of the Human Factors and Ergonomics Society annual meeting. The paper is entitled "Comparison of child and adult anthropometry: Considerations for input device design."

Graduate students **Elizabeth Gribble, Nicole DeFrank, and Josh Robinson** were awarded the young investigator travel award (\$500) for May's Teratology Society meeting in Vancouver, BC.

Undergraduate student **Raveena Pillay** received the Cind M. Treser Memorial Scholarship (\$1,000) from the Washington State Environmental Health Association and **Jennifer Crowe** won the Treser graduate student scholarship.

Undergraduate **Brianna Sheppard** received a scholarship from the Washington Association of Sewer and Water Districts, and **Meagan Yoshimoto** received two scholarships: "Unity House Scholar" from Unity House, Hawaii, and a Greater Seattle Japanese Community Scholarship.

The undergraduate program has been reaccredited by the National

Environmental Health Science and Protection Accreditation Council. Recognition goes to **Dave Kalman, Namura Nkeze, and Chuck Treser** for their extraordinary efforts with the April site visit.

Professor **Michael Yost** recently received an award from the Department of Homeland Security to examine micro-machine arrays for aerosol concentration. He also was nominated for the distinguished graduate mentor award.

Parveen Bhatti has been awarded a predoctoral fellowship with the National Cancer Institute in Rockville, MD, to work with the radiation technologist cohort. He will be studying genetic susceptibility to breast cancer.

Lori Winnemuller and **Steve Russell**, research ergonomists with the Field Research and Consultation Group, are presenting at the Healthcare Ergonomics Conference in Portland, Oregon, in late July.

Richard Fenske, Matthew Kiefer, Michael Yost, Marcy Harrington, and Pete Johnson presented their work in a one-day showcase to NIOSH center directors and regional stakeholders in May at the Western Agricultural Centers Showcase, UC Davis, in California.

The Pacific Northwest Agricultural Safety and Health Center co-hosted a day of sessions on the NIOSH Agricultural Centers' Tractor Safety Initiative in June at the National Symposium on Agricultural Health and Safety, Keystone, Colorado. Information specialist **Eric Swenson** organized the session, and **Marcy Harrington, Richard Fenske, Jon Hofmann, and Alex Lu** made presentations. Also, **Lu** recently received a Star Grant.

Professor **Harvey Checkoway** was



Sean Mikkell



Sarah Fischer



Devon DeLapp

left to right: Christine Clark, Shannon Kirkpatrick, Devon DeLapp

invited to present a distinguished lecture on occupational and environmental cancer at the National Cancer Institute, Division of Cancer Epidemiology and Genetics, Rockville, MD, in March. His topic was “Testing straightforward and not so straightforward hypotheses in occupational cancer epidemiology.”

In April, Senior Lecturer **Chuck Treser** attended meetings of the American Public Health Association’s education board and joint policy committee. He and undergraduate students **Dacia Carver, Wendy McDonald, Neha Nariya, Raveena Pillay, Meagan Yoshimoto, and Yvonne Yuen** attended the Washington State Environmental Health Association’s annual educational conference in Bellingham in April.

Associate Professor **John Kissel** is a member of the National Academy of Sciences/National Research Council committee on Superfund site assessment and remediation in the Coeur d’Alene river basin. The committee met in Idaho in April and June, and has another meeting in September. A final meeting in Washington, DC, is tentatively scheduled for November. The final report is due in March 2005.

Professor **Lucio Costa** gave an invited presentation at an international conference on paraoxonases in Ann Arbor, Michigan, in April.

Devon DeLapp, our department’s Web designer, received a design distinction award (student category) from *I.D. Magazine*’s design review. He was one of nine students worldwide to be honored. Now that he has finished his degree, DeLapp will move to Los Angeles to begin his career in graphic design and filmmaking.

NEW FACULTY

The department added two new faculty members this year. **Evan Gallagher** is an associate professor and holds the Sheldon D. Murphy Chair in Toxicology and Environmental Health. **Gwy-am Shin** is an assistant professor in Environmental Health, specializing in microbiology.

Gallagher comes from the University of Florida in Gainesville, where he was an associate professor of toxicology in the College of Veterinary Medicine, Department of Physiological Sciences. He was a postdoctoral fellow in our department from 1991–1996. He earned his Master of Environmental Management and PhD in Toxicology at Duke University.

His areas of interest are molecular environmental toxicology and environmental health. He studies the role of genetics and biochemistry in fish species’ susceptibility to environmental chemicals, and also the role of human exposures to environmental chemicals during pregnancy in the development of childhood leukemias.

Shin comes from the University of North Carolina at Chapel Hill, where he was a research assistant professor. He earned his PhD in Environmental Microbiology at UNC, and his bachelor’s and master’s degrees in Microbiology at Seoul National University in Korea.

His major research interests are the removal and inactivation of waterborne microorganisms by water and wastewater treatment processes, and development of molecular biological methods for treatment.

FOR FURTHER READING

- Henson KA and Gallagher EP. 2004. Glutathione S-transferase expression in pollution-associated hepatic lesions of brown bullheads (*Ameiurus nebulosus*) from the Cuyahoga river, Cleveland, Ohio. *Toxicol Sciences* 80:26-33.
- Doi A, Pham R, Hughes E, Barber DS, and Gallagher E. 2004. Molecular cloning and characterization of a glutathione S-transferase in largemouth bass liver that is involved in the detoxification of 4-hydroxynonenal. *Biochem Pharmacol* 67:2129-2139.
- Gardner JL, Doi AM, Pham RT, Huisden CM, and Gallagher EP. 2003. Ontogenic differences in the detoxification of 4-hydroxynonenal are associated with *in vitro* injury to human hematopoietic progenitor cells. *Toxicol Appl Pharmacol* 191:95-106.
- Shin GA, Sobsey MD (2003). Reduction of Norwalk virus, poliovirus 1, and bacteriophage MS2 by ozone disinfection of water. *Appl Environ Microbiol* 69(7):3975-3978.
- Shin GA, Linden KG, Arrowood MJ, Sobsey MD (2001). Low-pressure UV inactivation and DNA repair potential of *Cryptosporidium parvum* oocysts. *Appl Environ Microbiol* 67(7): 3029-3032.

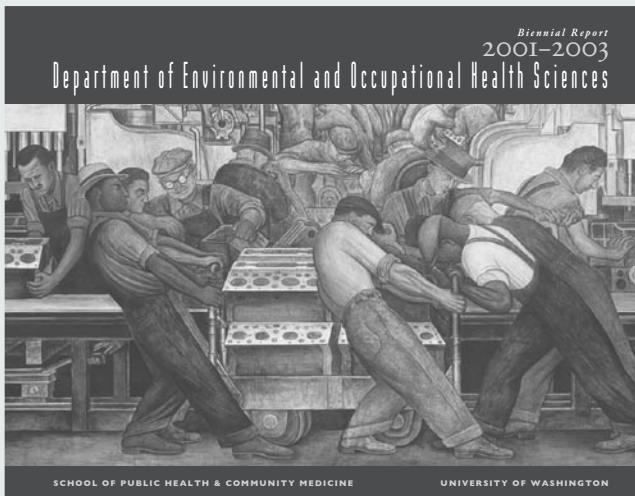
left to right:
Evan Gallagher
and
Gwy-am Shin



OUR BIENNIAL REPORT

The department's 2001–2003 biennial report is now available in print and online. The report details our activities and publications for the past two years. The cover depicts workers in a close-up of a mural by Diego Rivera. The report includes five alumni profiles and five feature stories: the future of our profession, a pesticide exposure study, safety in the glassblowing arts, smoke exposures in Thailand, and communication of noise study findings. To order a copy, use the address at the right. The report is also online in HTML and PDF formats at <http://depts.washington.edu/envbltb>.

Cover image ©2001 Detroit Institute of Arts



THE FINE PRINT

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 354695, 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 Web at <http://depts.washington.edu/envbltb>

Reprint permission is granted providing that copyright notice as given below is included. We would appreciate receiving a copy of your reprinted material.

© 2004 Department of Environmental and Occupational Health Sciences, University of Washington.

ISSN number 1548-1875



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



University of Washington
School of Public Health
and Community Medicine

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

10-5804

