Department of Environmental Health
ENVIRONMENTAL HEALTH News
School of Public Health and Community Medicine ■ University of Washington ■ Spring–Summer 2002

BASIC RESEARCH & SUPERFUND

Since the discovery of a chemical dump under a school in Love Canal, New York, in the 1970s, the federal government has spent hundreds of millions of dollars cleaning up hazardous waste sites across the United States under a program commonly referred to as "Superfund." Through the National Institute of Environmental Health Sciences, the government has also supported research to learn more about the health effects from hazardous exposures and to develop new methods to clean up these sites. The Department of Environmental Health is a leader in Superfund research.

INSIDE

background image, poplar leaves: Lee Newman, University of South Carolina and Savannah River Ecology Laboratory

Scientists at the University of Washington's Superfund Basic Research Program are refining methods that use trees and bacteria to clean up toxic waste, and studying how exposure to chemicals that commonly occur at Superfund waste sites, such as mercury and trichloroethylene, may affect humans and wildlife.

The UW Superfund program is one of 19 federally funded Superfund basic research grants to universities, funded by the National Institute of Environmental Health Sciences.

"One of our major goals for the UW Superfund program is to develop sensitive methods for detecting early indicators of damage to human and ecological health that can occur from exposures to toxic chemicals found at hazardous waste sites," says Harvey Checkoway, UW Superfund director and professor of Epidemiology and Environmental Health. "In addition, we are developing new engineering approaches for reducing these exposures."

UW Superfund research has three primary goals:

- Find and develop biomarkers, or biological markers, to assess exposure to toxicants and susceptibility to disease.
- Assess harm to health in humans and wildlife from exposure to toxicants found at Superfund sites.
- Develop new technology to remediate, or clean up, contaminated sites.

BIOMARKERS

Biomarkers can be abnormal levels of a chemical, such as an enzyme, that cells produce in large amounts after exposure to a toxic substance. One team of UW Superfund researchers is studying biomarkers produced after exposure to volatile solvents such as xylene and toluene (Project 6; see page 3).

"Our goal is to learn how much of the solvent is absorbed into the body through the lungs, and how quickly it is processed and eliminated," says DEH Professor Michael

University of Washington students Allan Gross and Marietta Sharp measure contaminants transpired by poplar trees on the Kitsap Peninsula. The Keyport Project uses plants to stop solvents from moving from a Navy landfill to protected wetlands.

Morgan. "More specifically we're interested in differences between individuals. We've found that we can expose two people to identical conditions and find large differences in how each person takes in and eliminates the solvent." An interview with Morgan about Project 6 research is online at *http://depts.washington.edu/ceeh/Outreach/pdf/ehv11.pdf*.

Another group of UW Superfund scientists is studying biomarkers from mercury metabolism. Scientists have long known that exposure to large amounts of mercury can cause severe neurological problems such as tremor, memory loss, and excitability. However, little is known about the effects of long-term exposure to low levels of mercury vapor, such as those generated at a Superfund site. The UW Superfund team is studying workers who are routinely exposed to low levels of mercury vapor–dentists and dental assistants who work with the mercury compounds used in amalgam or "silver" fillings (See *Environmental Health News* Winter 1999).

The UW Superfund team has refined the use of porphyrins, chemicals excreted in urine, as biomarkers for mercury exposure. They've also found variations in biomarkers that may signal genetic differences in the ways people metabolize mercury. This research could eventually lead to tests that would determine if some people were especially susceptible to exposure to mercury vapor, information that could affect their decisions about whether to live near a Superfund site or work on site cleanup.

Other biomarkers UW Superfund researchers are studying include variations in glutathione (Project 1), an antioxidant that cells produce to defend themselves against damage from toxicants, and paraoxonase (Project 3), an enzyme that metabolizes organophosphate pesticides and other toxic chemicals.

EFFECTS ON HUMANS & WILDLIFE

One UW Superfund research team is examining how people's exposure to toxicants and genetic susceptibility to these toxicants may affect their odds of contracting Parkinson's disease (Project 5).

Two other projects examine the effects of toxicants on wildlife. One measures levels of heavy metals in small mammals and birds living near Superfund sites (Project 7). In one part of the study, the team tracked warblers to see where they found food for their nestlings. The researchers found that the amount of DDT and mercury in tissues from the chicks showed a close relationship to the amounts of these contaminants in the areas where their parents foraged.

Other researchers are studying English sole, a bottom-dwelling fish that live in the sediments where contaminants collect in harbors and bays (Project 8). The team has found that contaminant loads in the sole reflect changes in pollutant levels in their environment.

BIOREMEDIATION

Organisms that naturally clean up pollutants may provide one of the most cost-effective ways to remediate, or clean up, certain chemicals in Superfund sites. Fast-growing hybrid poplars originally bred for pulp and wood production have turned out to be efficient at cleaning some kinds of solvents out of groundwater (Project 9). For example, the trees metabolize TCE (trichloroethylene), which was widely used as an industrial solvent and in dry cleaning.

At a test site, a stand of hybrid poplars removed 98% of the TCE introduced into the site. As a result of this success, additional test plots have been established, and are being monitored by the UW and the University of South Carolina.

The UW Superfund research team is studying other trees, including willow, Leland cypress, sweet gum, tulip poplar and black locust, which could be used in the remediation of Superfund sites around the country.

Bacteria are also used to break down toxic substances (Project 10). UW Superfund researchers have isolated two species of bacteria: *Pseudonocardia chloroethenovorans*,

which is especially effective at metabolizing TCE and PCE (perchloroethane), a solvent that has been used in dry cleaning, and a species closely related to *Dehalospirillum multivorans*, which may prove to be extremely useful for bioremediation projects in cool climates. This newly discovered bacterium degrades TCE and PCE at temperatures as low as 2°C, far cooler than those required by most species of bacteria used in remediation.

–Kris Freeman

SUPERFUND PROJECTS

1. *Glutathione Biosynthesis as a Biomarker of Toxic Exposures*
   Terrance Kavanagh, PhD, UW DEH
2. *Porphyrin Synthesis Biomarkers of Mercury Toxicity*
   James S. Woods, PhD, UW DEH
3. *Paraoxonase (PON1): a Biomarker of Susceptibility to Environmentally Induced Diseases*
   Lucio G. Costa, PhD, UW DEH
5. *Environmental and Biochemical Risk Factors for Parkinson's Disease*
   Harvey Checkoway, PhD, UW Depts. of Environmental Health and Epidemiology
6. *Human Dosimetry for Assessment of Exposure to Volatile Compounds*
   Michael S. Morgan, ScD, UW DEH
7. *Wildlife/Biomarker Applications to Remediation Decision-Making*
   Michael Hooper, PhD, Dept. of Biology, The Institute of Environmental and Human Health, Texas Tech University
8. *Environmental Stress Indicators for Fish at Superfund Sites*
   Donald C. Malins, PhD, ScD, Pacific Northwest Research Institute, Seattle, WA
9. *Phytoremediation of Toxic Wastes*
   Milton Gordon, PhD, UW Dept. of Biochemistry
10. *Bioremediation of Chlorinated Solvent Compounds: In Situ Remediation Strategies and Pre-dictive Tools for Controlling Contaminated Plumes*
    John F. Ferguson, PhD, UW Dept. of Civil and Environmental Engineering

opposite page: Lee Newman, University of South Carolina and Savannah River Ecology Laboratory; inset: prothonotary warbler, Denis Kania, Fermi Lab

right: EPA Superfund program

SUPERFUND HISTORY

It all started with Love Canal. The Superfund trust fund was created in 1980 by the US Congress in response to the discovery of a chemical dump beneath residential neighborhoods in Love Canal, New York, four miles from Niagara Falls. Beginning in the 1920s, the City of Niagara Falls and the US Army had used the area as a landfill. During the 1940s and 1950s, the Hooker Chemical Company added more than 21,000 tons of chemical waste to the site. In 1953, the site was filled with dirt and sold to the Niagara Falls Board of Education for one dollar, along with a warning of the chemicals buried on the property.

Houses were eventually built nearby and an elementary school was built on the former dump site. Over time drums and toxic wastes became exposed and more than 400 chemicals were found in creeks, soil, sewers, basements, and the schoolyard. Studies showed increased health problems among people in the neighborhood. In 1978, President Carter declared the situation at Love Canal to be a federal emergency. Ultimately hundreds of millions of dollars were spent relocating families and cleaning up the site.

The official title of law that resulted from Love Canal and other hazardous waste sites is the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), better known as Superfund. It provides federal funds to help clean up hazardous waste sites and protect the public and the environment from releases of hazardous substances.

Administered by the Environmental Protection Agency, the fund comes primarily from taxes on the petroleum and chemical industries. It is intended to be used when those responsible for contamination cannot be found or are unable to pay for cleanup. Today, there are about 1200 sites on the National Priorities List scheduled for cleanup.

In 1986, the Superfund Amendment and Reauthorization Act (SARA) authorized the National Institute of Environmental Health Sciences (NIEHS) to conduct basic research into the potential health effects from exposure to hazardous substances. The Department of Environmental Health was among the first institutions awarded a grant to study toxic effects of waste chemicals under this law.

–Sharon Morris

Discovery of Love Canal and this Kentucky site, called "Valley of the Drums," helped motivate Congress to develop the Superfund law.

SUPERFUND & THE COMMUNITY

The UW Superfund Basic Research Program, in conjunction with the Center for Ecogenetics and Environmental Health, has an outreach component to increase public understanding of the scientific, social, and political issues associated with toxins in the environment. Among the projects:

IN THE SCHOOLS

Youth Network for Healthy Communities Videoconferences

A statewide videoconference network trains high school and middle school teachers and students to research environmental health issues in their communities. The students present their projects to university scientists on topics such as local Superfund sites, the health effects of wildfires, and *E. coli*. In the first two years of the program, 32 teachers and about 900 students from throughout Washington participated.

Online Chats

About 60 sixth-graders participated in online chats with Superfund researchers Lee Newman and Stuart Strand. They learned about bioremediation (using plants to break down toxicants in the environment) and other environmental health issues. Transcripts are posted at *http://depts. washington. edu/ceeh/Outreach/chat1.html.*

Tox-in-a-Box

DEH graduate students use the demonstrations and hands-on-activities in the Tox-in-a-Box™ kit to introduce elementary through high school students to environmental health and hazardous waste issues. In the past academic year, they made presentations to about 1500 students in 15 schools throughout Western Washington.

Project Greenskate

An Internet-based curriculum encourages students to investigate potential health concerns from the hypothetical development of a city park on a former industrial site. It is online at *http://depts. washington.edu/hereuw/greensk8/*.

Kris Freeman

Sixth-grader Hannah Spencer from Harbour Pointe Middle School in Mukilteo chats about Superfund research with scientist Lee Newman.

IN THE COMMUNITY

Environmental Justice Meeting

The Outreach team helped plan and staff a community reception for the 2001 annual meeting of the National Environmental Justice Advisory Council, an independent advisory body to the Environmental Protection Agency.

Seattle and King County EJ Needs Assessment

This environmental justice project identifies the environmental health needs of immigrant and refugee populations. Project partners include agencies (Seattle Public Utilities, Public Health-Seattle King County, and local hazardous waste utilities) and community groups (the Environmental Coalition of South Seattle, El Centro de la Raza, Horn of Africa, the Community Coalition for Environmental Justice, the International District Housing Alliance, and the American Lung Association of Washington).

Community-based Solutions for Environmental Health and Justice Conference

This two-day April 2002 conference focused on urban and rural environmental justice issues, and specific indigenous and ethnic community issues. Outreach staff facilitated a session titled "Building effective community/university partnerships."

WORKING WITH MEDIA

Course for Reporters

About 30 reporters attended the June 2001 course, "Ethical and Policy Implications of the Human Genome Project and Genetic Research on Human Sensitivity to Environmental Pollutants."

FOR MORE INFORMATION

http://depts.washington.edu/ceeh/Outreach/pdf/coep.pdf
phone: 206-616-7566
e-mail: *cacharya@u.washington.edu*

STUDENT RESEARCH DAY, MAY 23, 2002

In a seminar session, selected graduating master's students from each of the academic programs presented summaries of their thesis research. The remainder of the graduating master's students showed posters of their work in the lobby of the Health Sciences Building. Thesis abstracts are online at http://depts.washington.edu/envhlth/news/researchday02.html. Faculty preceptors are listed in parentheses.

CONTACT TRANSFER & PESTICIDES

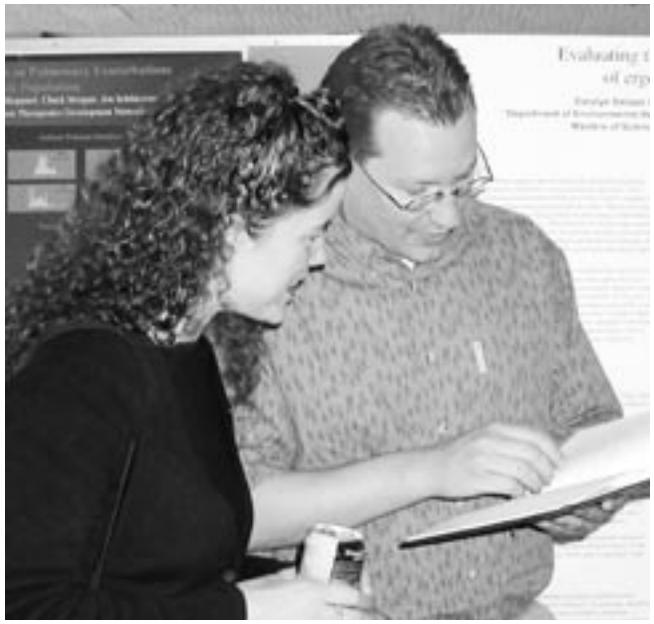
Rene Showlund, MS, Technology (Kissel), studied the transfer of pesticides from contaminated surfaces to skin. She used fluorescent tracers as surrogates for pesticides, and asked adult volunteers to touch surfaces loaded with tracers. Digital images of both their fingers and the surfaces were captured under ultraviolet illumination before and after the touching. Skin moisture and surface type influenced the transfer of residues to the fingertips. Her findings suggest that more attention should be given to these variables in future investigations, particularly in studies that focus on residential settings in agricultural communities.

MONITORING EQUIPMENT

Gregory Frick, MS, Industrial Hygiene & Safety (Morgan), examined the effects of various mixture components on the performance of passive diffusion monitors. Passive monitors fill a valuable role in industrial hygiene sampling. Although operation of the monitors in mixed chemical environments had been previously reviewed, the effect of each additional chemical on monitor accuracy had not been evaluated. Frick's study found monitor performance to be influenced by an interaction between mixture composition and monitor sampling rate. Surprisingly, some chemical combinations actually enhance monitor performance. This information can help industrial hygienists select passive monitors based on mixture composition and device sampling rate.

CARBON MONOXIDE DEATHS

Dr. Paul Darby, MPH, Occupational and Environmental Medicine (Keifer), looked at carbon monoxide mortality in the United States from 1982 through 1998. Carbon monoxide, an odorless and colorless product of incomplete combustion, kills more people per year in the US than any other toxic substance. An earlier study (1979–1988) found that, other than those killed in fires, an average of 4,000 people a year died of carbon monoxide poisoning, of which 65% were suicides and 30% were unintentional. Most were caused by exhaust from stationary motor vehicles. In addition to comparing recent data with the earlier study, Darby conducted a cost-benefit analysis for installing carbon monoxide sensor engine-cut-off technology in motor vehicles. He also compared the 1999 mortality data, coded using the International Classification of Diseases (ICD)-10, with the previous data, coded using the ICD-9.

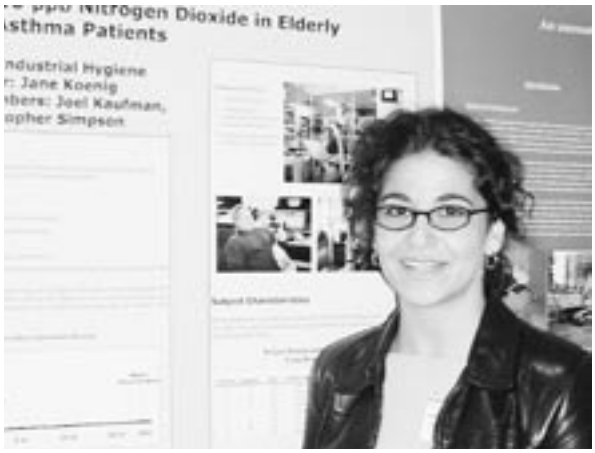


Kathy Hall

Carolyn Salazar and her preceptor, Peter Johnson, look up information from her poster.

NITRIC OXIDE & KIDNEYS

Stephen Cherne, MS, Toxicology (Woods), looked at events involved in the expression of nitric oxide synthase (NOS) in rat kidney cells. Nitric oxide is a free radical whose overproduction can damage renal cells. Cherne's basic science research is aimed at understanding the mechanism of this type of kidney damage. Using a fluorescent nuclease assay, he demonstrated that bacterial endotoxin (LPS) plus a type of interferon increase the potential for damage. He discovered other essential elements of the disease mechanism. These findings may help design strategies to prevent certain types of kidney disease.



Kathy Hall

Katia Harb studies the effects of air pollution on elderly asthma patients

STUDENT POSTER SESSION

Industrial Hygiene & Safety

Katia Harb (Koenig). Cardiopulmonary effects of 0.3 ppm nitrogen dioxide in elderly chronic obstructive pulmonary disease and asthma patients

Nicole Irby (Seixas). An assessment of noise frequency spectra associated with selected construction tasks

John Olson (Seixas). Nonoccupational noise exposure and contribution to overall noise dose in apprentice construction workers

Daniel Ratican (Morgan). The distribution of methyl chloroform between sorbent surfaces of a dual layer passive organic vapor monitor

Carolyn Salazar (Johnson). Evaluating the inter-rater reliability of ergonomic assessors

Occupational Medicine, MPH

Stacey Newsom (Kaufman). The effect of air pollution on pulmonary health in the cystic fibrosis population

Toxicology

Kate Bradley (Eaton). Effects of phytochemicals on aflatoxin B1-mediated genotoxicity in HepG2 cells

Jenna Fisher (Burbacher). Behavioral effects of early postnatal chlorpyrifos exposure in mice

AMERICAN INDUSTRIAL HYGIENE

Conference & Exposition, June, San Diego

Presentations by DEH researchers (in bold-face) included:

Croteau, G. Filtration and air cleaning issues in industrial hygiene (arranger)

Croteau G, Flanagan M, Seixas N, Camp J. The effect of LEV controls on dust exposures during surface grinding at construction sites

Ertell K, Takaro T, Stover B, Newman L, Barker E. Development of a screening test for zirconium sensitivity

Flanagan M, Seixas N, Camp J, Morgan M, Majar M. Silica dust exposures during selected construction activities

Gleason, R. Third party liability in occupational safety and health

Monteith, L. Environmental health and safety for K-12: Introducing the next generation to our profession (monitor)

Monteith, L. Air sampling instrument performance (monitor)

Neitzel, R. Prevalent noise exposures in construction and methods of evaluation

Neitzel R, Yost M, Zoh K, Somers S. Vibration and noise exposure and health effects in logging operations

Seixas, N. Task-based exposure assessment for noise in construction (construction noise round table)

Swan, S. Hearing conservation application for the PDA

Kathy Hall

Daniel Ratican describes his research to faculty member Janice Camp at Student Research Day.

SOCIETY OF TOXICOLOGY

41st Annual Meeting, March, Nashville

Presentations by DEH-affiliated researchers (in bold-face) were:

Abel EA, Bammler TK, Kelly EJ, **Slone DH, Eaton DL.** Inactivation of several human glutathione S-transferase isoforms bymetabolites of estradiol

Auerbach SA, **Liu F, Omiecinski CJ.** Alterations in histone acetylation are associated with phenobarbital induction of the rat CYP2B2 gene

Bekris LM, Jabbour AJ, Dabrowski MJ, Takaro TK, Kavanagh TJ, Faustman EM. Glutamate cysteine ligase levels in human peripheral blood lymphocyte subtypes

Cole TB, **Li WF,** Richter RJ, Furlong CE, **Costa LG.** Inhibition of para-oxonase (PON1) by heavy metals

Dieguez-Acuna FJ, Simmonds PL, Ellis ME, Kushleika JV, Woods JS. Mercuric ion (HG2+) increases the sensitivity of kidney cells to apoptosis by inhibiting nuclear factor-B (NF-B) activation

Echeverria D, Heyer N, Bittner AC, **Woods JS,** Rohlman D, Anger K. Behavioral effects of exposure to Hg^{o} from dental amalgam

Gohlke JM, Bartell SM, Wong EY, Lewandowski TA, Griffith WC, Faustman EM. Mechanism based approaches to evaluate the impacts of life stage specific exposures during neuro development

Griffith WC, Faustman EM, Curl CL, Fenske RA. Statistical methods for analyzing community intervention studies: Approaches for evaluating samples below detection limits

Gross-Steinmeyer K, Stapleton PL, Tracy JH, Bammler TK, Strom SC, **Eaton DL.** Influence of matrigel-overlay on constitutive and inducible expression of 9 genes encoding drug metabolizing enzymes in primary human hepatocytes

Guo Y, Jing L, Xie H, **Kelly EJ, Gross-Steinmeyer K, Bammler TK,** Zarbl H, **Eaton DL.** Alterations in global gene expression induced by aflatoxin B1 in yeast expressing human cytochrome P450 1A2

Hassett C, Gaedigk A, **Omiecinski CJ.** Alternative 5 splicing of human microsomal epoxide hydrolase: Genetic location and characterization of variant exons

Hudson FN, Bea F, **Kavanagh TJ.** Regulation of the mouse glutamate cysteine ligase modifier subunit gene *via* the ARE and NRF/AP1 binding sites

Judd NL, Griffith WC, Faustman EM. Evaluation of TEQ exposure from fish consumption relative to average population total exposure: Implications for PCB, PCDF, and PCDD risk management

Shi S, Botta D, White CC, Dabrowski MJ, Srinouanprachanh SL, Farin FM, Pierce RH, Ware CB, Ladiges WC, Fausto N, Tsai SY, O'Malley BW, **Kavanagh TJ.** Inducible expression of glutamate-cysteine ligase affects carbon tetrachloride-induced liver injury in transgenic mice

Tice RR, Auletta A, Daston G, **Faustman E,** Stokes WS. Results of an interagency coordinating committee on the validation of alternative methods (ICCVAM) expert panel: Evaluation of the validation status of the frog embryo teratogenicity assay-xenopus (FETAX) for identifying developmental toxicants

Wong EY, Farrow S, **Ponce RA, Faustman EM.** Examination of health toxicity data with application to benefit-cost analysis of environmental health policy

UW photography

Dave Eaton

As he neared completion of his year as President of the Society of Toxicology, Dr. **David Eaton** had a busy annual meeting. In addition to presiding over numerous talks and activities, he participated in a workshop on the future role of the Society in professional toxicology education. He outlined his perspectives on how genomics and biotechnology will require changes in the way the next generation of toxicologists are trained. The session was organized by Dr. Bernard Schwetz, who at the time was acting commissioner of the Food and Drug Administration.

The social highlight of the meeting for UW participants was a special reception in the Presidential Suite of the Opryland Hotel for UW toxicology students, faculty, and alumni. More than 60 attendees enjoyed a dessert bar and celebration of UW toxicology, past and present. Many of the DEH faculty and students also participated in the Pacific Northwest Regional Chapter meeting and social hour, organized in part by DEH affiliate faculty member Steve Gilbert, president of the regional chapter for 2001–02.

Jon Sharpe, Dianne Botta, and **Chetana Acharya** of the Community Outreach and Education Program staffed the K–12 (elementary and secondary schools) educational materials booth, and had good response from scientists as well as graduate students. They shared their experiences and tools at the K–12 education subcommittee meeting and assisted during teacher workshops.

CONTINUING EDUCATION

To confirm this schedule or find more information about these courses, call 206-543-1069 or 206-685-3089, or visit the Continuing Education Web home page at http://depts.washington.edu/ehce. Courses are in Seattle unless noted.

OSHA TRAINING INSTITUTE EDUCATION CENTER

July 8–11	OSHA 501: Trainer Course for General Industry (*Portland*)
July 15–17	OSHA 226: Permit-Required Confined Space Entry
July 23–25	OSHA 225: Principles of Ergonomics (*Portland*)
July 30–Aug 2	OSHA 311: Fall Arrest Systems (*Anchorage*)
Aug 5–8	OSHA 600: Collateral Duty for Other Federal Agencies
Aug 12–14	OSHA 222A: Respiratory Protection
Aug 13	OSHA 845: OSHA Recordkeeping Rule (*Spokane*)
Aug 15	OSHA 845: OSHA Recordkeeping Rule (*Portland*)
Aug 16	OSHA 845: OSHA Recordkeeping Rule
Aug 19–22	OSHA 510: OSHA Standards for Construction (*Portland*)
Aug 23	OSHA 845: OSHA Recordkeeping Rule (*Boise*)
Aug 26–29	OSHA 521: OSHA Guide to Industrial Hygiene
Sep 9–11	OSHA 503: General Industry Outreach Trainer Update
Sep 17–20	OSHA 201A: Hazardous Materials
Sep 20–27	OSHA 501: OSHA University at Sea: Cruise to Alaska (*Departs from Vancouver*)*
Sep 23–25	OSHA 502: Construction Industry Trainer Update
Sep 30–Oct 3	OSHA 204A: Machinery & Machine Guarding Standards (*Portland*)
Oct 7–10	OSHA 510: OSHA Standards for Construction
Oct 15–18	OSHA 600: Collateral Duty for Other Federal Agencies (*Boise*)
Oct 22–24	OSHA 225: Principles of Ergonomics
Nov 4–7	OSHA 301: Excavation, Trenching & Soil Mechanics (*Portland*)
Nov 13–15	OSHA 226: Permit-Required Confined Space Entry
Nov 18–21	OSHA 521: OSHA Guide to Industrial Hygiene (*Portland*)
Nov 18–21	OSHA 510: OSHA Standards for Construction (*Spokane*)
Dec 2–5	OSHA 309A: Electrical Standards
Dec 3–5	OSHA 225: Principles of Ergonomics (*Anchorage*)
Dec 10–12	OSHA 222A: Respiratory Protection (*Portland*)
Dec 10–13	OSHA 500: Trainer Course for Construction Industry
Dec 17	OSHA 845: OSHA Recordkeeping Rule (*Spokane*)
Dec 19	OSHA 845: OSHA Recordkeeping Rule (*Portland*)
Dec 20	OSHA 845: OSHA Recordkeeping Rule

* This 501 course is being taught aboard the Celebrity Cruise Line ship *Infinity*, sailing the Inside Passage

DEGREES

The Department of Environmental Health awarded six Bachelor of Science, 14 Master of Science, one Master of Public Health, and three Doctor of Philosophy degrees this year.

Summer 2001
Christine Bellas, MS
Mark Burry, MS
Dolores Diaz, PhD

Autumn 2001
Lynn Bekris, MS
Prajakta Ghatpande, MS
F. Noel Hudson, PhD
Robert Leo, MS
Sarah Weppner, MS

Winter 2002
Chunmei Fu, MS
Susan Leaman, MS
Jennie Nguyen, BS
Phuong Nguyen, BS
Rene Showlund, MS
Hossein Siahpush, MS
Jeffrey Stewart, MS

Spring 2002
Stacy M. Andrewjeski, BS
Ngoc-Thao Dang, BS
Jordan Firestone, MPH
Gregory Frick, MS
A. Nicole Irby, MS
Daniel Ratican, MS
Aneel Sandhu, BS
Maria I. Tchong, BS
Chang-Fu Wu, PhD

Joel Levin

Noel Hudson and Dolo Diaz celebrate at June 2002 commencement ceremonies.

NW CENTER FOR OCCUPATIONAL HEALTH & SAFETY

July 15–18	Hazardous Substance Summer Institute
July 15–16	Process Safety Management
July 17	Annual Hazardous Waste Refresher
July 18	Hazardous Materials Transportation
July 31–Aug 1	10th Conference on Occupational Hazards to Health Care Workers: Research and Prevention
Aug 26–30	Comprehensive Industrial Hygiene Review
Sept 9–13	Bioterrorism and Emergency Public Health Preparedness
Oct 10	Puget Sound Occupational and Environmental Medicine Grand Rounds
Oct 16	Non-Ionizing Radiation
Oct 29	Chemical Safety: At Work and at Home
Nov 14	Puget Sound Occupational and Environmental Medicine Grand Rounds
Dec 12	Puget Sound Occupational and Environmental Medicine Grand Rounds

William Daniell received the School of Public Health & Community Medicine's outstanding teaching award, along with Stephen Bezruchka of Health Services. Dr. Daniell is an associate professor in Occupational and Environmental Medicine. He teaches Occupational and Environmental Epidemiology, and this year coordinated ENVH 511, the introductory course for graduate students from other departments in the School.

Chang-Fu Wu was DEH's outstanding student this year. A recent PhD graduate, he worked with **Dr. Mike Yost,** who calls him a pioneer in the developing field of open-path optical sensing of air contaminants. He remains with the Department as a postdoctoral fellow with the EPA Northwest Research Center for Particulate Air Pollution and Health.

Richard Ramsden received the department's staff appreciation award for 2002. As a research scientist for the past 15 years, he has developed a reputation in the Toxicology program as a "gene jockey" who is sought out by various laboratories for his creative suggestions for experimental design. Other nominees were **Mark Fenn, Jennifer Grant, Chris Hassett, Rosie Schaffer, Chris Slaughter,** and **Ruth Woods.**

Becky Rooney, our fiscal supervisor, was this year's departmental nominee for the university's Distinguished Staff Award. She was cited for her positive attitude and job knowledge, for encouraging innovative and independent thinking, and "always, always, always thanking her employees for a job well done."

The annual faculty outreach award went to **Tim Takaro,** physician in the Occupational & Environmental Medicine program, for his work with the Former Hanford Worker Medical Monitoring Program. Co-workers say he "truly has the needs of exposed former workers at heart ... he shows a level of concern and thoughtfulness above and beyond the demands of an academic career." His work on beryllium exposure was covered by the *Tri-Cities Herald* on April 24.

The individual staff outreach award went to **Nancy Judd,** research scientist for the Institute for Risk Analysis and Risk Communication, for her community work related to seafood consumption and environmental monitoring. She has fostered relationships with Asian Pacific Islanders, Southeast Asian natives, and tribal groups who rely on the Puget Sound fishery for their food.

The department's first-ever team outreach award went to **Mary Ellen Flanagan** and **Gerry Croteau** of the Field Research and Consultation Group for their work with silica dust exposures, especially in the construction industry. They were recognized for involving workers and businesses, making their research responsive and understandable to their community partners, and assuring that research findings get back to the affected communities.

Doug Johns won the 2002–2003 Liberty Mutual Endowed Scholarship from the American Industrial Hygiene Foundation. He was one of only nine students nationally who received the $3,000 award this year.

Dave Eaton participated in the National Institutes of Health Center for Scientific Review Digestive Sciences' boundary review panel to establish NIH study sections that review all grants related to the gastrointestinal tract, liver, and pancreas. He also led seminars at New York University's Institute for Environmental and Occupational Medicine, Columbia University School of Public Health, and the University of New Mexico College of Pharmacy. He delivered introductory remarks honoring Curtis D. Klaassen's award as Distinguished Professor at the University of Kansas Medical Center.

Richard Fenske traveled to Utrecht, the Netherlands in March, to serve on the PhD committee of Derk Brouwer, whose dissertation was, "Assessment of occupational exposure to pesticides in Dutch bulb culture and glasshouse horticulture." Fenske is a member of the Institute of Medicine's Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides. The committee will meet during 2002-2003, and will produce a report that updates scientific knowledge regarding personnel exposed to the herbicide Agent Orange. Fenske has an editorial in the May 2002 issue

Kathy Hall

Staff appreciation day, Team Outreach Award to Mary Ellen Flanagan and Gerry Croteau for their outreach work on silica exposure prevention. Ruth Woods (left), chair of the Outreach Committee, presents the award.

of *Environmental Health Perspectives*. "Incorporating Health and Ecological Costs in Agricultural Production" is a call for researchers to "expand our own perspective to include the economic consequences of the policies we promote."

Kris Freeman moderated two sessions at the Society for Technical Communication's annual conference in Nashville in May.

Rick Gleason was the featured speaker at the annual Seattle Vicinity Construction Safety Council banquet in late May. Approximately 80 construction safety and health representatives from throughout Puget Sound attended.

Rolf Hahne spent a week in Costa Rica for the Fogarty Center, lecturing and consulting on measurement, exposure assessment, nonengineering controls, analytical chemistry, and laboratory accreditation. In May, he traveled to Suitland, Maryland, as a technical advisor to the Smithsonian National Museum of the American Indian, Cultural Resources Center. He is helping the Smithsonian test a procedure his laboratory devised for identifying semi-volatile pesticides in Native American artifacts.

Matthew Keifer, Scott MacKay, and **Julie Schmitz** traveled to Burapha University, Thailand, to discuss continuing education needs, and to Vietnam for the 20th anniversary of the National Institute for Occupational and Environmental Health. Keifer gave the closing talk to the founding meeting of the Vietnam Association for Occupational Health in Hanoi.

Jane Koenig and **Lianne Sheppard** participated as discussants in a National Research Council workshop on Health Effects of Particulate Matter, held in Seattle in April.

Chuck Treser attended the first annual Environmental Health Capacity Building Meeting in Atlanta in April as principal investigator of the Essential Services Grant through the American Schools of Public Health. In May, he chaired the program planning committee for the International Environmental Health Faculty Forum in San Diego, as part of the seventh World Environmental Health Congress.

Mike Yost spent spring quarter in Norway as part of an exchange program between the UW and the University of Bergen. He presented lectures for occupational hygiene students on topics such as noise and vibration exposures and health effects, sampling strategy and exposure survey methods, real-time gas analysis with FTIR and other instruments; and development of a physiologic sampler.

Rich Fenske

Rick Gleason

Rolf Hahne

Richard Ramsden

Health Sciences Photo. & Kathy Hall

Lianne Sheppard

CURT OMIECINSKI
leaves for Penn State

Curt Omiecinski has accepted a position at Penn State University and will be leaving in June, after nearly 20 years of research, teaching, and service at the UW. He is taking an endowed chair position, the Hallowell Chair and Professorship of Veterinary Sciences. This appointment is a joint position between the Penn State Environmental Consortium and the institution's College of Agricultural Sciences. Curt will have graduate appointments in the campus Molecular Toxicology and Pathobiology programs.

He was the featured speaker at this year's departmental graduation celebration. In his remarks, Curt reflected on his experiences as one of the first Toxicology faculty members.

Curt initially completed the UW PhD program in Pharmacology, then after a postdoctoral fellowship at the University of Vermont, he was "thrilled" to have the opportunity to arrive back at the UW in 1983, with an Assistant Professor position in DEH (adjunct with Pharmacology).

Terry Kavanagh has taken over Curt's responsibilities as director of the Toxicology program and deputy director of the Center for Ecogenetics and Environmental Health.

Research Scientist Chris Hassett, PhD student Scott Auerbach, and postdoctoral fellow Matthew Stoner will accompany Omiecinski to Penn State. Tao Wang and Richard Ramsden have recently accepted other jobs in the area, and Fei Liu will be transferring to David Eaton's lab.

AG & HEALTH CARE CONFERENCES

The Pacific Northwest Agricultural Safety and Health Center and the University of California, Davis' Western Center for Agricultural Health and Safety are cosponsoring a conference in Coeur d'Alene, Idaho September 16–18, entitled Health and Safety in Western Agriculture: Cultivating Collaborations. This conference will highlight common safety and health issues that are experienced along the West Coast and is designed to foster the development of collaborative projects between individuals and organizations committed to agricultural injury and illness prevention. Registration deadline is July 26. Details are at the conference Web site, *http://depts.washington.edu/pnash/westreg/confhome.html*.

The tenth Conference on Occupational Hazards to Health Care Workers: Research and Prevention will be held in Seattle July 31 to August 1. Speakers from the United States and Canada will discuss the latest research and best methods to prevent illness and injury among health care workers. Details are at *http://depts.washington.edu/ehce/NWcenter/course/may_8.html* or by calling 206-543-1069.

Both conferences are funded in part by a Centers for Disease Control and Prevention conference grant.

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