

DEPARTMENT OF ENVIRONMENTAL HEALTH

ENVIRONMENTAL HEALTH

NEWS

SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE ■ UNIVERSITY OF WASHINGTON ■ SPRING-SUMMER 2000

THE TEACHING MISSION

Teaching is the heart of the Department of Environmental Health's academic mission. Even when we compete for grants and conduct other research activities, the teaching benefits are a strong motivation. University faculty and staff have always embraced the concept of lifelong learning that is now being adopted as a career necessity by much of our society, and we understand that learning and teaching are closely intertwined.

Dave Kalman has been named permanent chair of the Department of Environmental Health. See page 2.

It is characteristic of our department that teaching occurs in a broader and more diverse mix of activities and contexts than is the case for many academic programs. In addition to the traditional campus-based instruction, we provide teaching in outreach modes to workers, professionals, international visitors, Web-linked students, and the general public. We employ field-based courses and experiential learning for our undergraduate and graduate students, in combination with classroom instruction and research mentorship.

In this issue of *Environmental Health News*, you will read about how we reach middle school students, working professionals, community groups, graduate and undergraduate students, and even senior citizens. I hope you will avail yourself of our opportunities for lifelong learning.

*-Dave Kalman, Chair
Department of Environmental Health*



Cathy Schwartz

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TUNE-UP, NOT AN OVERHAUL

Dave Kalman settles into permanent post

Dr. David A. Kalman was named as chair of the Department of Environmental Health on May 8. Dr. Kalman is an organic chemist who has been on the department's faculty since 1978. He became interim chair in the fall of 1998, replacing Dr. Gerald van Belle, who resigned as chair to return to his research interests. Dean Patricia Wahl appointed Dr. Kalman to the permanent post following a nationwide search.



UW Photography

Dave Kalman

Dave Kalman doesn't envision sweeping changes in the department he has led for a year and a half as interim chair. Instead, he sees an opportunity to make an excellent department even better.

"In a mature and successful department, first priority of the chair should be to protect and enhance our strengths, and help provide critical resources for growth," he said. "He or she should assist the faculty in what they need to do, largely by removing obstacles if possible."

He described faculty initiative and productivity as "the engine that drives the department." His goal is to tune up, rather than overhaul, that engine.

IN THE SHORT TERM

In the next two or three years, he wants to emphasize:

- **External relations.** He envisions stronger connections between the department, the School of Public Health and Community Medicine, and "communities of interest" in the state.
- **Internal development.** "I will ask the program directors to form working groups to advise on faculty recognition, rewards, and responsibilities."
- **Space needs.** "No chair can single-handedly resolve this issue, but we have support from the dean and I expect to see significant improvements in the next five years."
- **Nontraditional students and academic alliances.** Environmental Health should coordinate with other departments, such as Engineering, Public Affairs, and biomedical sciences. People outside the university should be able to access our programs more easily.
- **Fiscal health.** "Fiscally, we are in good shape. We have almost an embarrassment of success with grants and contracts through the efforts of individual investigators, programs and centers. The big challenge is to be selective and choose what we want to build on."

IN THE MEDIUM TERM

Dr. Kalman expects growth to continue, but in more focused directions. A major expansion or added programs would require space resources that don't seem likely in the next five years. "We may redirect our efforts into new aspects of curriculum and teaching. This will be dictated by circumstances and departmental decisions, rather than coming from my own direction."

He would like the department to become "much more of a player in a variety of public health issues" and has begun efforts to raise the department's profile. Nationally, he wants to enhance the department's stature and respect in the scientific community. "We will continue to improve, from somewhere in the top five environmental health departments in the country to the top two, or maybe number one. There is no reason we shouldn't be number one."

IN THE LONG TERM

Dr. Kalman sees rewards—and challenges—ahead.

One challenge is the personal growth of faculty and staff, especially those who have reached the most senior ranks or titles. Senior faculty and staff need "career rewards—a reason to stay, a feeling that they are indispensable partners."

Dr. Kalman thinks the department is in a good position to compete for the "very best" new faculty and staff members. "We need to think strategically in bringing in faculty at the beginning of their careers." He recognizes the UW's shortcomings in competing strictly on a salary basis. "Faculty coming here have to have reasons beyond salary." He sees the chair as crucial in creating other opportunities, such as career development and other intangibles. ■

DISTANCE LEARNING

Teaching enters a new dimension

Instructor Larry Garcia was talking about the various ways to measure pressure, for example in millibars, when a student interrupted him with a quip: “We want to know how you measure peer pressure.” Garcia picked up with a quick retort: “in bars.” The class laughed and one student exclaimed: “We’re going to get along just fine.”

That exchange wouldn’t be unusual, except that Garcia was at the University of Washington in Seattle and his students were 220 miles away at the Hanford Materials Management and Emergency Response (HAMMER) training and education center, located near the Hanford nuclear reservation in Richland, Washington.

Garcia’s hazardous materials course, Occupational Safety and Health Administration (OSHA) 201A, is one of the Continuing Education program’s first ventures into distance learning. He has 25 students—13 in Seattle and 12 at Richland.

The campus classroom is actually a television studio located in the Health Sciences Building. Garcia and the Seattle students are able to interact with the class in Richland via two-way video-conferencing. His lecture—and the commentary of the students both in Seattle and Richland—are transmitted simultaneously between the two classrooms, using television cameras, microphones, and a special graphics camera that displays Garcia’s illustrations and lecture materials. This allows each class to see and hear the other, and interact the same way they would in a traditional classroom setting.

The new program allows Hanford workers to obtain OSHA certification without having to make six trips to Seattle, said Scott MacKay, OSHA education center director. Instead, the courses are taught every other Friday and Saturday for 19 weeks in response to a request by Hanford employers.

Jon Juette, occupational safety and health manager at the HAMMER facility, said, “We’ve been able to reach folks here who may not have been able to attend the training otherwise.”

The University of Washington’s OSHA



Hanford students participate via interactive television

Education Center is the first in the country to offer OSHA certification by long distance, MacKay said.

Tom Seeley of EXITECH Columbia Corporation, which conducts training at the Hanford site, said he would not have been able to complete the certificate through Continuing Education’s traditional courses. His company sent six trainers. “We are able to get the certificate in a short time,” he said. “We will be trained and out there protecting people—which is the goal of OSHA.”



Larry Garcia lectures to a classroom and to a television camera

Kathy Hall

MORGAN RELISHES CHALLENGES OF TEACHING

Winner of school's outstanding teacher award

Teaching is a passion and a priority for Michael Morgan, winner of this year's outstanding teaching award from the School of Public Health and Community Medicine.

Dr. Morgan is a professor in the Industrial Hygiene and Safety program and director of the Department of Environmental Health's undergraduate program and the Northwest Center for Occupational Health and Safety, an Education and Research Center funded by the National Institute for Occupational Safety and Health (NIOSH).

Since earning his advanced degree in chemical engineering from the Massachusetts Institute of Technology and receiving postdoctoral training in respiratory physiology from the Harvard School of Public Health, Dr. Morgan has spent 26 years teaching and conducting research on the human response to inhalation of air contaminants.

Over the years, he has developed some principles about teaching students of all ages and backgrounds. Three of his rules are:

- You have to know your subject really well—or know the areas where you don't. Students will figure it out quickly.
- Be organized—really well organized. If you know where you are going each day of the quarter, students can follow you.
- For each class, have one or two things that you want the students to see or learn that day and reinforce them during the class.

Environmental Health faculty have to be particularly well prepared, he said, because the field is changing so rapidly. "You can get in trouble if you try to recycle last year's notes."

Morgan enjoys the give-and-take of a Socratic, or participatory-style class, although it takes a tremendous amount of preparation time. One class he teaches in that style is in the School of Medicine—a respiratory physiology course for second-year medical students.

That teaching method is more difficult in DEH because of the subject matter and number of students, he said, though this year he is using a group discussion format in a special topics class on exposure assessment.

Dialogue is important to Dr. Morgan. If a class is reluctant to talk, he might employ a Socratic-type irony, or might say something outrageous "to see if they call me on it." Sometimes he makes categorical statements or steps out of character—maybe feigning a Boston accent—to get their attention.

His style of teaching involves repeating key points and pausing. "If I wait long enough, the students will ask questions. Sometimes it takes awhile for them to formulate questions in their minds."

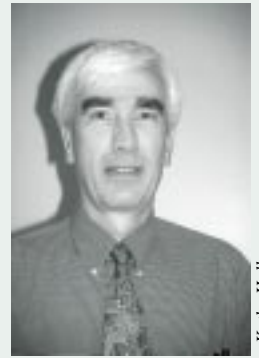
He thinks the most challenging courses to teach are Environmental Health 311 and 511—the service courses for non-majors. "You have to read constantly to stay current," he said, because the nurses, dentists, and other professionals often know more than the teacher about their fields. "I ask them to let me know if I have information that's out of date. I appreciate if they don't let me go out on a limb."

He has taught a condensed version of ENVH 511 at the retirement community where his parents live. He finds himself pausing more and repeating himself more because the students have been away from education for awhile, but he finds them motivated to learn.

With students of all ages, he tries to appeal to their interests. For the senior citizens, that might be health issues concerning cruise ships or airplanes, hereditary diseases, or chronic illnesses that have an environmental component.

For undergraduates and graduate students, he reads the *Daily* and goes to student association meetings and forums. He finds UW students to be interested in genetically modified food, emerging infectious diseases such as drug-resistant tuberculosis and West Nile encephalitis, and ergonomic issues such as musculoskeletal diseases.

He measures success by student response. "I hear them say, 'now I understand' or 'you raised an issue I hadn't thought about.' I see that they're getting it. That's enough for me."



Mike Morgan

Kathy Hall

Dr. Morgan's achievement marked the second time in three years that a DEH faculty member has won the schoolwide award. Terry Kavanagh was honored in 1998.

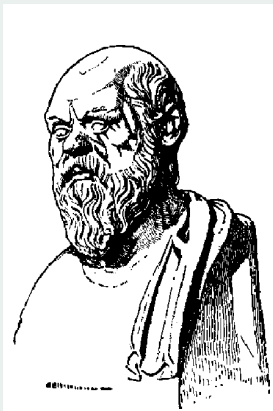
Dr. Morgan was nominated as "an all-around teacher who does everything well." The award noted that he receives high ratings from students in his graduate and undergraduate courses, service courses, and continuing education courses. Students describe him as the ideal mentor who sets high standards, understands the material, and is willing to work with them. He has chaired 48 Master of Science thesis committees.

SOCRATES

Socrates (469-399 BC), was an ancient Greek philosopher and teacher. Through the writings of his pupil, Plato, and of Plato's pupil, Aristotle, Socrates profoundly affected the course of Western thought.

A stonecutter by profession, Socrates wandered about the Athens marketplace (the agora) questioning his fellow citizens. Professing to know nothing, he would draw on the reasoning ability of his fellow citizens—or reveal their ignorance.

The Socratic style of teaching uses dialogue and discussion to expose logic, meaning, and truth. The teacher acts as a guide and the emphasis is not on mastering a body of knowledge, but on developing students' abilities to learn how to learn.



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TOWN MEETING

Communities prepare to educate the researchers

In late September, community members will turn into teachers, educating researchers about what needs to be done to make Washington's communities into healthy environments.

"Voices for Healthy Environments, Healthy Communities" is one of a series of town meetings sponsored by the National Institute of Environmental Health Sciences (NIEHS) and the first to be held in the Pacific Northwest.

The event, September 29 and 30 at Mt. Zion Baptist Church in Seattle, will include visual displays, presentations by community groups, an open microphone, and workshops. Workshop topics may include pesticide and other toxic exposures, childhood asthma, air pollution, and water quality.

The town meeting will provide a platform for community members to affect the direction of future environmental health sciences research. Community groups will have the opportunity to report their concerns to legislators, regulators, and scientists, including Dr. Kenneth Olden, director of the NIEHS. Participants can also develop collaborations with other community groups with similar goals.

As a result of a NIEHS town meeting in Cincinnati, scientists and community members formed a collaboration that received nearly \$900,000 in funding from the US Department of Housing and Urban Development for a two-year study of abatement on lead exposures.

The UW DEH and the UW NIEHS Center for Ecogenetics and Environmental Health are the primary sponsors of the Seattle town meeting. Community groups involved in planning include El Centro de la Raza, People of Color Aids Action Network (POCAAN), the Brown Collective, Coalition for the Community Environmental Justice (CCEJ), Seattle Young People's Project (SYPP), Minority Executive Director's Coalition, Kim Gordon Cancer Walk, Makah and Shoalwater Indian Tribes, Seattle Indian Health Board, the Refugee Women's Alliance, and Sea Mar Community Health Centers.

For more information call (206) 616-2643 or see the town meeting Web site at <http://depts.washington.edu/townmeet/>.



NIEHS files

Kenneth Olden

CAREER DAY

Linking students with their future professions

The Department of Environmental Health held its fourth annual career day on May 12, linking soon-to-be graduates with professionals from the public and private sectors. Graduate students planned the first career day four years ago as an opportunity to talk to professionals in practice and get their career advice, said Chair Dave Kalman. The event also gives professionals a chance to meet the students and pass along useful information that they may not get from faculty because “we aren’t in your world,” he said.

This year, 31 students, 15 faculty members, and 32 invited guests participated.

Rory Murphy, the department’s manager of student services, sees three benefits to career day:

- It offers environmental health community leaders an opportunity to speak on prospects and trends for employment in the industry and what they look for in graduates.
- It offers graduates a chance to meet people who can give them information on job opportunities in their specialized fields.
- It offers everybody who comes (guests, students, and faculty) a chance to meet and network with people who work in public health.

Doug Briggs, director of safety, health and environmental affairs for Boeing Commercial Airplanes Group, encouraged students to think globally as they approach environmental health careers. When he began working as an industrial hygienist in the 1970s, steel mills and foundries were the focus. Those industries are “no longer in the landscape of America,” he said, but new worldwide issues have emerged.

Steve Gilbert, affiliate faculty member and president of BioSupport, said the biotechnology industry in

Seattle is maturing and focusing on getting products to market. “This is a great time to be in biology in the Seattle area—we and other biotech firms have lots of job openings,” he told the students.

Ngozi Oleru, chief of environmental health services for Public Health–Seattle and King County, has worked for the EPA and state health departments, but said the real basis for policy making begins locally. “If you do this work, you will feel you are contributing to the preservation of the health and the environment in a global sense,” she said.

“We need someone with technical expertise and the people skills to stand up in front of a audience of citizens.”

For more information on career day and its participants, visit the Web site at http://depts.washington.edu/envhlth/info/career_day.html.

right: *Dr. Ngozi Oleru*
below: *Doug Briggs (center)*
was one of the professionals
talking to faculty and students at
career day



Kathy Hall

TEACHERS GAIN A HEALTH FOCUS HERE@UW

Textbook chemistry could seem boring, but what if the assignment were to go home, turn on the tap, and take a water sample?

What if, back in the classroom, you dropped a tablet into the water and turned it bright blue?

What if your next assignment were to write a letter to your parents, telling them that your house might have high levels of copper in the water? This type of hands-on instruction is encouraged in a teachers' education course called Environmental Health for Educators, part of the department's Health and Environmental Resources for Educators (HERE@UW) program.

Pam Wells Peters, a middle school teacher from Juneau, Alaska, traveled to Seattle for two days in May to finish her yearlong course for continuing education credits.

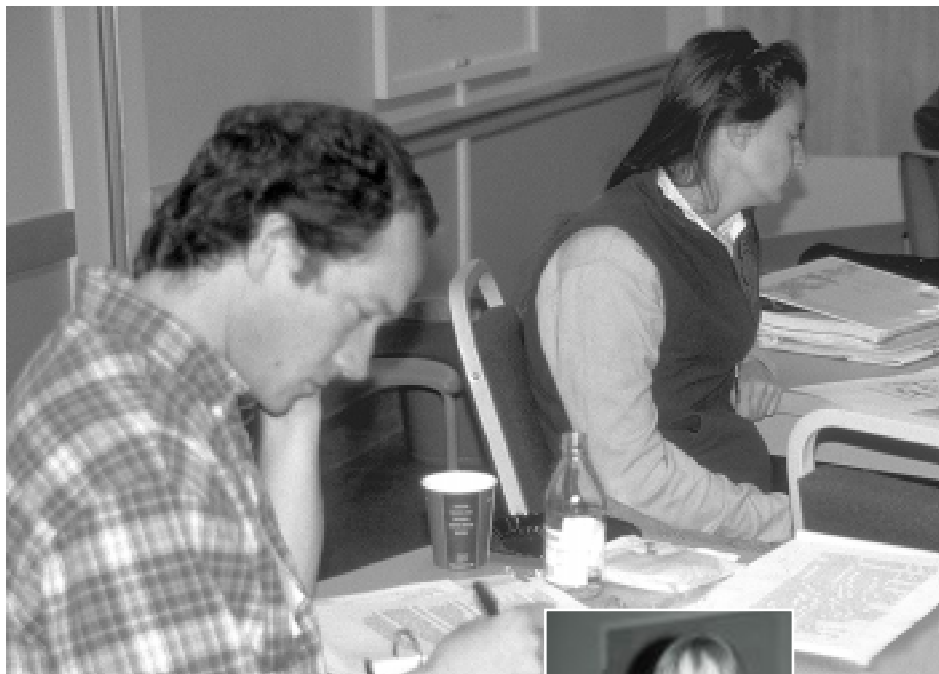
Her goal with chemistry is to "make it real" for kids. In addition to testing drinking water, her classes monitor the water quality of a nearby stream and consider the health of their entire watershed.

HERE@UW, an outreach component of the Center for Ecogenetics and Environmental Health, provides teachers with tools to integrate environmental health concepts into the curriculum and to share these concepts with fellow educators.

"This course is always inspiring for us here at the Center, said Jon Sharpe, program manager. "The participants' enthusiasm, creativity, and professional initiative are what make these courses so successful."

HERE@UW's Environmental Health for Educators program is offered to Pacific Northwest middle and high school educators of all subjects. The course is free and is held annually in two parts—August and the following May.

In August, participants learn about environmental health issues. In May, they come back and share lesson plans they have developed and used in their classrooms



above: Teachers become students for two days;
right: Pam Wells Peters finds copper in a water sample



Kathy Hall

and in-service courses they have held for their colleagues. They earn three continuing education credits.

"It is rare to find a continuing education class that helps me with the content of my courses," said Connie Barkley, a teacher at Whiteaker Middle School in Keizer, Oregon. "Most workshops teach us to be good managers, but they don't help with what we teach." She has developed a curriculum that combines mathematics with forest resource management.

Community health professionals and university faculty teach HERE@UW. It is designed to enhance teaching skills, establish links between teachers and environmental health professionals, and help participants increase their students' awareness of the relationship between human health and the environment.

For more information, contact Jon Sharpe at (206) 616-2643 or jsharpe@u.washington.edu, or visit the Web site at <http://depts.washington.edu/hereuw>.



Four out of five winners in the prestigious Stockhausen annual scholarship competition were Industrial Hygiene graduate students in the Department of Environmental Health. Each won a \$2,000 scholarship:

- **Robert Leo** in Dr. Bill Daniell's lab
- **Carolyn Whitaker** in Dr. Noah Seixas' lab
- **Doug Johns** in Dr. Mike Morgan's lab
- **Stephanie Carter** in Dr. Seixas' lab.

Dr. **Noah Seixas**, associate professor in Industrial Hygiene, and **Marcy Harrington**, program coordinator for the Pacific Northwest Agriculture Safety and Health Center (PNASH), received the department's 1999-2000 faculty and staff outreach awards. Each received \$1,000 for travel or equipment. The department's Outreach Committee presented the awards at the staff appreciation brunch. Harrington was recognized for her work with the Forestry Safety Workshop and other PNASH activities. Dr. Seixas was recognized for steering his research, most notably in the construction industry, in a direction that provides maximum benefit to the department's mission to work with employers and workers in the state.

Drs. **Matthew Keifer** and **Alex Lu** and PhD student **Karen Snyder** (Department of Anthropology) presented at the annual *Farmworker Health Conference* in Portland, Oregon, in May.

Rick Neitzel presented a poster on occupational vibration and noise exposure in the forestry industry at the *Forest Products Safety Conference*, in Coeur d'Alene, Idaho, in March.

Dr. **Dave Eaton** participated in an April conference in Phoenix entitled *Legal Liabilities at the Frontier of Predictive Genetic Testing*, sponsored by the Arizona State University Center for the Study of Law, Science, and Technology. Also in April, he participated at the annual External Scientific

Advisory Board for the UC-Davis Institute of Toxicology and Environmental Health, an NIEHS Center. In May, he participated in the *International Conference on Arctic Development, Pollution and Biomarkers of Human Health* in Anchorage, Alaska, sponsored by NIEHS.

Several investigators from the Pacific Northwest Agricultural Safety and Health Center attended the national *Agricultural Safety and Health in a New Century* meeting held in Cooperstown, NY, at the end of April. Presentations of center-funded research were:

- Pesticide exposure of children in agricultural communities: Exposure pathways and biologically based dose estimates (poster) and hazard priority ranking in farming, fishing, and forestry (presentation)—**Richard Fenske**
- The Pacific Northwest Agricultural Safety and Health Center (poster)—**Adrienne Hidy**
- The impact of maritime injury compensation systems on safety and health in commercial fishing (presentation)—**Sharon Morris**
- Animal handling and safety: Developing a reliable evaluation tool (poster) and musculoskeletal risks in the fruit packing industry (presentation)—**Janice Camp**
- Occupational vibration and noise exposure in the forestry industry (presentation)—**Rick Neitzel**
- Health and safety hazards for apple warehouse workers: Perceived and documented risks (poster)—**Nancy Simcox**.

By Pham, medical student working under the supervision of Dr. **Matthew Keifer**, presented the results of a study investigating injury awareness of Washington State worker compensation options among farm workers in the Yakima Valley at the *Western Medical Student Research Forum* in Carmel, California, in February. Mr. Pham received an excellence in research



left to right: *Noah Seixas, Janice Camp, Marcy Harrington, Richard Fenske*



CONTINUING EDUCATION

award at the meeting for this study.

Kathy Hall, the department's senior editor, received an international award of excellence for *Environmental Health News* at the 47th annual conference of the *Society for Technical Communication* in Orlando, Florida, in May.

The following students, research staff, and faculty members were honored at the School of Public Health and Community Medicine Awards Ceremony in February:

- **Leonard DiToro**, named the department's outstanding undergraduate, is a senior majoring in Environmental Health. He works in the Environmental Health microbiology lab and is treasurer of the UW Chapter of the Student Environmental Health Association.
- **Ed Doran**, the department's outstanding graduate student, came to the PhD program in 1997 to study pesticide exposure and risk assessment.
- **Collin White**, winner of the department's staff service award, is a research scientist in the Toxicology program, coordinates one of the facility cores in the Center for Ecogenetics and Environmental Health, and serves as building manager for the Roosevelt building.
- **Janice Camp**, winner of the school's faculty community service award, is a lecturer in the department and directs its Field Research and Consultation Group.
- **Michael Morgan** won the school's faculty outstanding teaching award (see article, page 4).



Dave Eaton

To confirm this schedule or find more information about these courses, call (206) 543-1069, or visit the Continuing Education Web home page at <http://depts.washington.edu/envhlth/conted.html>. Courses are in Seattle unless noted.

NW CENTER—OCCUPATIONAL HEALTH & SAFETY

- July 24–28** Hazardous Substance Summer Institute
- July 24–25** Safety & Health Issues in Confined Spaces
- July 26** Annual Hazardous Waste Refresher
- July 27** Hazardous Materials Transportation
- July 28** Overview of Process Safety Management
- Sept 19–21** Managing Hazardous Materials Incidents: Improving Interagency Response (*Port Angeles*)
- Oct 3** Machine Guarding and Metal Working Fluids at the *Governor's Safety & Health Conference (Spokane)*
- Oct 4–5**
- Oct 18** Ergonomics from an International Perspective at the *Northwest Occupational Health Conference (Bellingham)*
- Oct 19–20**
- Nov 2** Farm Health and Safety (*Yakima*)
- Dec 7** Industrial Ventilation (*Richland*)

OSHA TRAINING INSTITUTE EDUCATION CENTER

- July 10–12 & July 16–18** OSHA 226: Permit-Required Confined Space Entry
- July 18–21** OSHA 501: Trainer Course in OSHA Standards for General Industry
- Aug 7–10** OSHA 600: Collateral Duty Course for Other Federal Agencies (*Portland*)
- Aug 14–16** OSHA 222A: Respiratory Protection
- Aug 21–24** OSHA 501: Trainer Course in OSHA Standards for General Industry (*Portland*)
- Sept 11–13** OSHA 503: Update for General Industry Outreach Trainers
- Sept 25–27** OSHA 502: Update for Construction Industry Outreach Trainers
- Oct 9–12** OSHA 510: Standards for the Construction Industry
- Oct 23–26** OSHA 521: OSHA Guide to Industrial Hygiene
- Nov 6–9** OSHA 500: Trainer Course in OSHA Standards for the Construction Industry (*Portland*)
- Nov 13–16** OSHA 501: Trainer Course in OSHA Standards for General Industry
- Dec 4–6** OSHA 225: Principles of Ergonomics



SOCIETY OF TOXICOLOGY MEETING

At the Society of Toxicology annual meeting in Philadelphia, Dr. Curtis Omiecinski presented a major lecture March 22. His Burroughs Wellcome Scholar lecture was entitled "Gene induction by phenobarbital and cell signaling in the hepatocyte."

Dr. Jan Oberdoerster, a postdoctoral fellow in Dr. Lucio Costa's laboratory, won the award for best poster from the Neurotoxicology Specialty Section.



Curt Omiecinski

UW Photography

Abel EL, **Bammler TK, Eaton DL**. The role of glutathione S-transferases in the metabolism of methyl parathion *in vitro*.

Botta D, **White CC, Krejsa CM, Kavanagh TJ**. Enhanced glutathione biosynthesis retards apoptosis in spite of caspase-3 activation in HEPA-1 cells overexpressing glutamate-cysteine ligase.

Diaz-Lopez D, White CC, Krejsa CM, Keener CL, Farin FM, Kavanagh TJ. Tissue specific changes in glutathione and the expression of the catalytic and regulatory subunit of glutamate-cysteine ligase in mice exposed to methylmercury: a time-course study.

Ellis ME, Corral J, Kushleika J, Dieguez-Acuna F, Woods JS. Opposing actions of P38- AND P44/P42-MAP kinase inhibitors on lps-induced NF-kB-mediated gene expression in normal rat kidney epithelial (NRK52E) cells.

Garry MR, **Kavanagh TJ, Faustman EM**. Phosphatidylcholine hydroperoxide decreases mitochondrial membrane potential and oxidizes cardiolipin.

Hitosis YG, Quigley SD, Kushleika J, Farin FM, Woods JS, Checkoway H. Genetic polymorphisms of superoxide dismutase (SOD1, SOD2) and Parkinson's disease

Judd NL, **Kalman DA, Sechena R, Toy KA**. Estimates of human exposure to PCBs and associated health risks from dietary seafood exposure.

Kavanagh TJ. The effects of overexpression of glutamate-cysteine ligase on cell survival, cell growth and apoptosis.

Keener CL, Quigley SD, Diaz-Lopez D, Farin FM, Kavanagh T. Quantitation of mouse GLCL-R and GLCL-C mRNA and other glutathione-related enzymes using fluorogenic 5' nuclease assays.

Krejsa CM, Franklin CC, Pierce RH, White CC, Fausto N, Kavanagh TJ. Glutamate cysteine ligase catalytic subunit is cleaved during apoptotic cell death.

Lewandowski TA, Ponce RA, Hong S, Bartell SM, Faustman EM. Biologically based dose-response model for methyl mercury developmental toxicity incorporating novel *in vivo* cell cycling data.

Lorenzana RM, Nakano C, Truong S, **Sechena R, Liao S, Polissar NL, Fenske R**. Asian and Pacific Island seafood consumption study in King County, Washington.

Luderer U, **Diaz D, Kavanagh TJ, Faustman EM**. Localization of glutamate cysteine ligase (GLCL) subunit MRNAs within the rat ovary.

Lu S, Kavanagh T, Faustman EM. Methylmercury's effects on mitochondrial DNA in developing rodent midbrain.

Mendoza MA, Ponce RA, Ou YC, Faustman EM. Involvement of P21WAF1/CIP1 in methylmercury-induced cell cycle inhibition.

Oberdoerster J, **Wei M, Costa LG**. The effect of phenylalanine and its metabolites on astrocyte proliferation: A potential mechanism for phenylketonuria?

Omiecinski C. Gene induction by phenobarbital and cell signaling in the hepatocyte.

Poot M., Pierce RH, **Kavanagh TJ, Fausto N**. Ratiometric analysis of nonyl acridine orange (NAO) fluorescence is a sensitive index of oxidative loss of mitochondrial cardiolipin.

Quigley SD, Srinouanprachanh SL, Sidhu JS, Lui F, Krovat BC, Farin FM, Omiecinski CJ. Real-time fluorogenic 5' nuclease based assays for the quantitation of rat cytochrome P450 mRNA.

Schneider EM, Ponce RA, Faustman EM. Cell-cycling effects from *in vitro* exposure to sodium arsenite on developing rat midbrain cells.

Shao J, **Keener CL, Lurton J, Farin FM, Raghu G, Kavanagh TJ**. Genetic polymorphisms in two glutathione associated genes and susceptibility to idiopathic pulmonary fibrosis.

Sharpe JF. Health and environmental resources at the University of Washington (HERE@UW).

Shi S, Botta D, White CC, Kavanagh TJ. Effect of increasing GSH synthesis on resistance of HEPA-1 cells to DNA breaks caused by H₂O₂.

Srinouanprachanh SL, **Farin FM, Keener CL, Simmonds PL, Woods JS**. The association between genetic polymorphisms of coproporphyrinogen oxidase (CPOX) and an atypical porphyrinogenic response to mercury.

Stapleton PL, **Farin FM, Abbott DE, Hitosis YG, Keener CL, Quigley SD, Omiecinski CJ**. Development of fluorescent 5'-nuclease assays for the allelic discrimination of single nucleotide polymorphisms (SNPS) in biotransformation enzyme genes.

White CC, Viernes HA, Krejsa CM, Neil D, Kavanagh TJ. Fluorescence-based assay for glutamate-cysteine ligase activity in microtiter plates. ■■■■



GRADUATE DEGREES

FALL 1999

- Golan Kedan, MS.** Comparison of estimated aggregate exposure to organophosphorous pesticides with biomonitoring for urinary diakylphosphate metabolites among children. (*Richard Fenske*)
- Denise Koch, MS.** Longitudinal biological monitoring study of organophosphate pesticide exposure among children living in an agricultural community. (*Richard Fenske*)
- Michael Rosato, MS.** Multiparameter analysis of surface receptor expression and cell cycle progression in peripheral blood lymphocytes. (*Elaine Faustman*)

SPRING 2000

- Julie Christine Adams, MS.** A physiologically based toxicokinetic model of xylene inhalation exposure in Caucasian men and a correlation study of individual kinetic and anthropometric parameters. (*David Kalman*)
- Michelle Bell, MS.** A pilot study to evaluate the methodology of collecting and analyzing vectors and disease agents of Lyme disease and human ehrlichoses. (*Check Teser*)
- David Bonauto, MPH.** A telephone survey of work and injuries in teenage agricultural workers in an Eastern Washington community. (*Drew Brodtkin*)
- Gerry Croteau, MS.** The effect of local exhaust ventilation control on dust exposures during masonry activities. (*Noah Seixas*)
- Barbara Faville, MS.** Validation of five checklists used to assess risk factors associated with musculoskeletal disorders of the upper extremities. (*Mike Morgan*)
- Douglas O. Johns, MS.** The effect of varying concentrations of chemical mixtures containing toluene and methyl isobutyl ketone on the accuracy of collection in passive and active samplers. (*Mike Morgan*)
- Nancy Judd, MS.** Estimates of human exposure to PCBs and associated health risks from dietary seafood consumption. (*David Kalman*)
- Karen Marienau, MPH.** Evaluation of the feasibility of a retrospective study design to investigate the risk of spontaneous abortion and exposure to nitrates in drinking water: a pilot study. (*Harvey Checkoway*)
- Matthew McQueen, MS.** The role of oxidative stress in nuclear factor- κ B activation in arterial endothelial and kidney epithelial cell lines. (*James Woods*)
- Claire A. Olsovsky, MS.** An electromagnetic field exposure assessment of airline ground crew workers: a comparison of metrics. (*Mike Yost*)
- Keone Pang, MS.** Field evaluation of multiple beam sampling strategy for OP-FTIR spectrometer monitoring. (*Mike Yost*)
- Emily Schneider, MS.** Effects of sodium arsenite on the cell cycle of primary rate midbrain neuroepithelial cells. (*Elaine Faustman*)
- Diane Yoder, MS.** Agricultural injuries among adult Hispanic farm workers. (*Matt Keifer*)

Faculty preceptors in parentheses

AMERICAN INDUSTRIAL HYGIENE

Dr. Steve Guffey was awarded the American Industrial Hygiene Association Engineering Committee's best paper award. His papers placed first and second. This was the third time he has won in seven years.



UW Photography

Graduate student Lynn Wilder won the best poster award in the biological monitoring session for her poster, "Analysis of factors influencing urinary metabolite concentrations." (co-authors: M. Morgan, D. Kalman, R. Dills)

Steve Guffey

Breysee P. Strange and unusual industrial and environmental health investigations

Carter S. Increasing industrial hygiene effectiveness during petrochemical turnarounds (*co-instructor*)

Carter S, Seixas N, Thomas K, Morgan M, Kaufman J. Evaluation of creatinine adjustment for urinary fluoride monitoring in an epidemiologic study

Monteith L. Tomorrow's cutting edge technology for gas and vapor detection in industrial hygiene (*roundtable monitor*). Apparatus for the determination of the temperature effects on diffusion samplers (*poster*). Gas and Vapor Detection Systems Committee professional development course on the selection and operation of portable direct-reading instruments (*co-instructor*)

Morgan M. History and documentation of the ACGIH TLVs® for chromates and the mechanism for adoption and future revision (*presentation*). Biological monitoring for the detection and quantification of chemical exposures and Application of biological monitoring in the workplace (*co-instructor*)

Neitzel R, Yost M. Occupational vibration and noise exposures in forestry workers

Seixas N. Forum on emerging issues in industrial/occupational hygiene: an overview of the field—occupational epidemiology

Wang R, Seixas N, Yost M, Kujawa S, Sheppard L. Development of physiologically based noise exposure metrics for highly variable exposure environments

Wang R, Seixas N, Yost M, Kujawa S, Sheppard L. Analysis of factors influencing urinary metabolite concentrations, including adjustment for urinary flow rate, and creatinine or dissolved solids (*poster*).

HIGHLIGHTS

The Center for Ecogenetics and Environmental Health (CEEH) has received five more years of funding to study interactions among genetics, human health, and the environment. The CEEH 2000-2005 renewal grant from the National Institute of Environmental Health Sciences (NIEHS) totals a little over \$7 million.

For more information <http://depts.washington.edu/ceeh>.

The department's NIEHS-funded Superfund basic research program has been awarded a five-year competing renewal. The program project, "Effect Related Biomarkers of Toxic Exposures," was extended from 2000 to 2005.

The project's theme is that biomarkers measured in accessible tissues can predict toxicant exposures, early indicators of damage, or unusual susceptibility to toxic agents that commonly occur at hazardous waste sites.

For more information <http://depts.washington.edu/sfund/superfund.html>.

The University of Washington/EPA Northwest Research Center for Particulate Air Pollution and Health has launched a new newsletter: *Smoke, Dust and Haze*. To obtain a copy, phone (206) 616-6570, e-mail sundance@u.washington.edu or read it on-line at <http://depts.washington.edu/pmcenter/pmnewsletter.html>.

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