

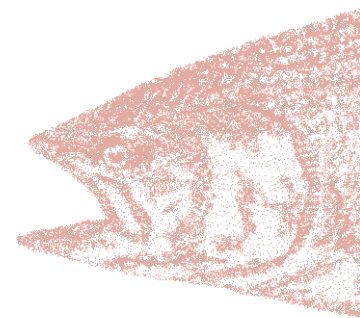


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OUR DEPARTMENT IS ABOUT... CLEAN WATER

THE FISH WE EAT

Revised fish consumption rate will help set new sediment management and water quality standards



Established in 1972, the Clean Water Act aims to protect human health and the environment by regulating and monitoring the quality of our nation's lakes, rivers, and coastal areas.

Photo: Claire DesJardins/photos.com

The amount of fish we eat in Washington has been the subject of debate, especially as the state's Department of Ecology (Ecology) moves forward with revisions to sediment management and water quality standards. There is a lot at stake, and a number of different groups have been involved in the process, including researchers in the Department of Environmental and Occupational Health Sciences.

Here in the Northwest, our marine and fresh waters provide a rich source of fish and shellfish, which contain nutrients important to a healthy diet. Yet, they may also contain toxic substances. Chemicals found in water and sediment, such as polychlorinated biphenyls (PCBs) or mercury, can build up to unsafe levels in fish tissue and pose risk to human health. Among other effects, chemical exposure may cause illnesses, such as cancer, cardiovascular disease, and neurological and behavioral disorders. The more contaminated fish consumed, the greater the risk.

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Effects of pollution on fish

Toxics that pollute waterways, such as Seattle's Duwamish River, come from a number of sources. Some chemicals, such as PCBs, are called "legacy pollutants" because they were banned long ago but persist in sediment and leech into water. Other chemicals come from industrial discharge and treated wastewater. Road runoff residue from car exhaust, chemicals used in roofing materials, and residential pesticides pool into nearby streams.

Tiny algae and plankton take up the contamination in polluted water; they are then eaten by other species, such as shellfish, crabs, and resident fish. In the case of the Duwamish, that list includes perch, flounder, English sole, and rockfish.

Complicated formulas assess how much of the environmental chemical in the fish comes from the sediment and how much comes from the water. "There are multiple drivers we must consider to determine the amount of contamination that

gets into fish. These can include chemical compound characteristics, such as fat solubility, and the source of contamination," explained Professor Elaine Faustman, a toxicologist in our department. Faustman serves on scientific advisory committees for Ecology and the US

Environmental Protection Agency (EPA). In 2010, she was on an international panel of experts who advised the Food and Agriculture Organization and the World Health Organization of the United Nations about the risks and the benefits of fish consumption.

Fish consumption rate

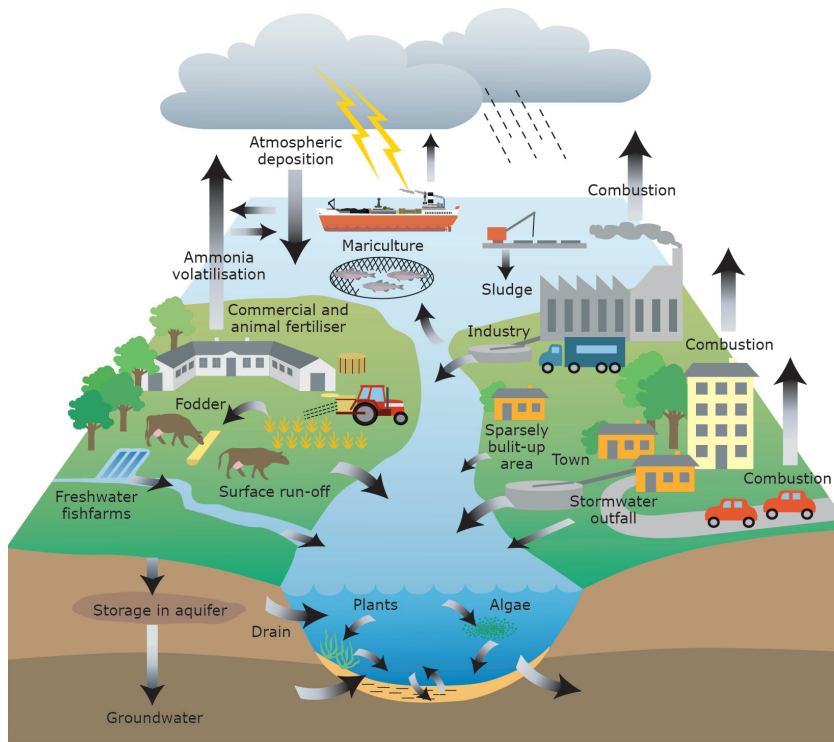
To ensure that our nation's lakes, rivers, and coastal areas are safe, under the federal Clean Water Act, state and

Tribal water quality standards must adequately protect public health and welfare.

The state standards—which the EPA must approve—are based in part on a fish consumption rate. The rate ideally protects people who eat fish and shellfish and determines how clean waters must be. Waters polluted by environmental toxics and exceeding a certain threshold must be cleaned up and discharges curtailed.

"If you assume people eat very little fish, you can have a lot more contamination in fish tissue to be safe," said

Robert Duff (MS, Toxicology, 1993), who manages the Environmental Assessment Program at Ecology. "But if people eat a lot of fish," he continued, "then you have to drop the level [of contamination] that is acceptable in fish tissue. That's why the fish consumption rate is so



Pollution comes from a variety of sources: legacy pollutants that persist in the sediment, industrial discharge, treated and untreated wastewater, and fertilizers. We are also culpable: chemicals in lawn pesticides and car exhaust accumulate in storm runoff that flows into nearby streams and rivers.

Illustration: Ærtebjerg et al. National Environmental Research Institute, Denmark



In Washington state, the fish consumption rate of 6.5 grams per day is used to set water quality standards, and a rate of 54 grams per day is used to set sediment and water cleanup standards. The Department of Ecology is updating the fish consumption rate to more accurately reflect our diverse population, especially those who eat more fish, such as Tribes, Asian and Pacific Islander communities, and subsistence fishers. *Photo: Heather Trim, People for Puget Sound*

important. In the state of Washington, we know we have high fish consumers.”

The current guideline used by Washington state for the fish consumption rate was set by the EPA in the 1980s, based on a nationwide survey that asked fish and non-fish consumers about the amount of fish they ate the preceding day. The results of the survey led to a default fish consumption rate of 6.5 grams per day, a bite-sized morsel equivalent to a cherry tomato. In 2003, the EPA nearly tripled that recommendation, citing the original rate as unrealistic.

Some states have already increased their fish consumption rate. Oregon’s new rate of 175 grams per day was approved by the EPA in October 2011. Following Oregon’s lead, on January 15, 2013, Ecology released the final form of a technical document that compiled fish consumption data on Washington residents and included related research and information. Ecology will use this document to inform risk management decisions associated with setting new sediment management and water quality standards.

During summer 2010, Anna Schmidt (MS, Occupational & Environmental Exposure Sciences, 2011) interned at Ecology under toxicologist Craig McCormack and worked on the first draft of the document.

Vulnerable populations

Schmidt compiled and helped evaluate the fish consumption studies that were relevant to Washington state, including those on Tribal groups, Asian and Pacific Islanders, and the US population.

The experience—noting how little information was available on certain groups—prompted her to focus her master’s thesis research on fish consumption and environmental concerns in low-income and food-insecure populations that often fish in local waterways to supplement their diet. Working with Associate Professor William Daniell, Schmidt found that fish consumption behaviors of these groups were comparable to other high fish consuming populations, such as Native Americans and Asian and Pacific Islanders.

Among the studies Schmidt analyzed for Ecology was one conducted by UW Center for Ecogenetics and Environmental Health researchers in collaboration with the Refugee Federation Service Center. This study described the fish and shellfish consumption rates for Asian and Pacific Islander populations, species and seafood parts commonly eaten, and cooking methods used. The researchers found that this population had a median consumption rate of 89 grams a day, and for those frequent fish consumers who ate more than the other 90 percent, the rate was 236 grams a day, or fish at one meal or more each day. (The 90th to 95th percentile is the range that regulatory agencies use to set standards deemed protective of human health.)

Data gathered on Tribes in Washington state also show significantly high fish consumption rates. Members of the Suquamish Tribe—who live along the Kitsap Peninsula and harvest nearly all of the fish they consume locally—report 489 grams a day (90th percentile), equivalent to two fish fillets a day.

The Confederated Tribes and Bands of the Yakama

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Nation live in central Washington along the Yakima and Columbia rivers. They were among the other Tribes (Nez Perce, Umatilla, and Warm Springs Tribes) surveyed in 1994. These Tribes reported consuming 176 grams (95th percentile), or about three fish fillets a week. The 1994 survey of these Columbia River Basin Tribes was used to set the default fish consumption rate in Oregon.

However, contemporary fish surveys—asking people what they eat—do not take into account what they cannot eat, said Jamie Donatuto, an environmental specialist who works for the Swinomish Indian Tribal Community in La Conner, Washington. Donatuto was among the organizers of the 2009 “Tribal Rights and Fish Consumption Workshop: Issues and Opportunities for the Pacific Northwest” hosted at the UW by Professor Faustman’s research team.

Donatuto has been involved with the Northwest Indian Fisheries Commission, a support service organization for 20 Tribes in western Washington that has been working with Ecology since 1994 to revise the fish consumption rates.

Data collected on rates and type of fish currently eaten by Native groups are significantly lower than historical rates of fish consumption because access to fish is limited, Donatuto explained. For example, dams along the Columbia River and improperly designed or maintained culverts can negatively impact salmon numbers. And if the water is contaminated, eating desirable levels of fish could put the consumer at risk for health problems.

Elaine Faustman spoke about Puget Sound seafood and pollutants in the water and sediment at the October 2012 Public Health Café sponsored by the Center for Ecogenetics and Environmental Health.

Photo: Jon Sharpe

Publicly posted comments to Ecology’s technical document by Tribes like the Swinomish and Suquamish point to treaties that reserve Tribal rights to safely access and harvest fish in designated waterways. These rights, said Donatuto, should be protected by policies and regulations that protect consumers and prevent degradation of water quality and fish habitat.

“The risk assessment process addresses the science and shows that, ‘Yes, people are eating more fish and this may pose health problems at certain contaminant levels,’” explained Professor Faustman. “Risk management is then a process that asks: ‘What do you do about it? Do you put signs up that say no one can eat the fish? Do you try to clean up the area?’ Sometimes these cleanup actions will take a long time to have an impact on the quality of the fish. That’s what we’re seeing in Puget Sound.”

Going forward

Robert Duff feels certain that the fish consumption rate will be raised. But he’s concerned how effective tighter standards over pollution discharge will be in cleaning up the water and making fish safer to eat.

“We’re having trouble meeting the standard now,” he said. “To just be happy with changing the math and lowering the standards is not really effective.”

Instead, he said the goal is to reduce toxics at their source, such as finding out what products contribute to the pollution.

Ecology will host a series of open forum discussions on the water quality standard revision in the next year: http://www.ecy.wa.gov/programs/wq/swqs/hhccpolicy_forum.html. ■

SUPERFUND RESEARCH PROGRAM

reaches 25-year milestone

Our department's Superfund Research Program (<http://depts.washington.edu/sfund/>), as it is known today, celebrates a quarter century of research on environmental chemicals and remediation practices for hazardous waste sites. In 1987, under the leadership of the late Professor Sheldon Murphy, the University of Washington-based program received funding from the National Institute of Environmental Health Sciences.

Our program, like the other university-based research programs, was created to address the scientific uncertainties facing the national Superfund program, administered by the US Environmental Protection Agency (EPA). Researchers from multiple disciplines investigate challenges associated with environmental contamination from Superfund and other hazardous waste sites. The research findings are used to inform decisions made by federal, state, and local agencies, and the centers disseminate results and offer educational programs through community-engagement opportunities.

The research in our program—currently directed by Professor Harvey Checkoway—focuses on biological markers (biomarkers) to predict who might be susceptible to or already affected by exposure to toxic substances that can damage the nervous system. During our program's long history, there have been a number of notable achievements.

in the late 80s and 90s

Professor Milton Gordon (UW Biochemistry) and Postdoctoral Researcher Lee Newman (UW Pathology, Biochemistry) developed a technique using plants to remediate soil and groundwater contaminated with organic and inorganic pollutants.

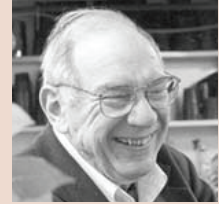


Photo: UW Superfund Research Program

beginning in the 90s

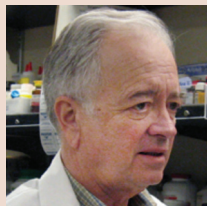


Photo: UW Superfund Research Program

Research Professor Clement Furlong (UW Genome Sciences, Medicine) investigated how individuals may vary in their metabolism of organophosphate pesticides by pinpointing an assay based on "PON1 status." His studies influenced EPA's decision to restrict the use of chlorpyrifos and diazinon.

from the late 90s to 2003

Associate Professor Michael Hooper (Texas Tech University) and colleagues developed biomarkers to determine and assess the effects of chemical exposures on certain birds and mammals. Their work provided an important tool for the US Fish & Wildlife Service in assessing the success of remediation strategies for hazardous waste sites.



Photo: US Geological Survey

from 2004 to today

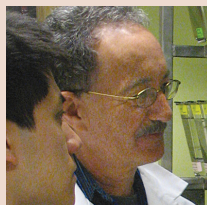


Photo: Washington Sea Grant

Professor Evan Gallagher (UW Environmental and Occupational Health Sciences) investigates how chemicals interfere with salmon olfaction—a biological system critical to salmon survival. His findings have helped inform water quality guidelines in Washington state. ■

TRAINING ADDRESSES HAZARDOUS CLEANUP ON TRIBAL LAND

The Northwest's Tribal lands stretch from the shores of the Pacific to the arid lands east of the Cascades and to the Alaskan tundra. Accidental spills from land and sea vessels carrying cargo hazardous to people and to the environment are an ongoing threat.

THREAT is also an acronym for the Tribal Hazardous Response Emergency Activation Team, a new collaborative project among our Continuing Education Programs, the Tribal Solid Waste Advisory Network, and Tribes in the Pacific Northwest. The program aims to create trained teams who can quickly and safely respond to potentially dangerous spills and accidents on Tribal land in order to minimize damage to the health of people and the environment.

In remote areas of Alaska, such as on Kodiak Island where the Old Harbor Tribe live, aid may take days or weeks to arrive. The Tribe is piloting a local team-training program with its environmental director, village public safety officer, and two local youth interested in pursuing careers in environmental health.

Elsewhere, the cadre of Tribal workers may come from fire departments, police agencies, child welfare departments, housing authorities, and solid waste departments. Although a broad range of people may receive the training, not every emergency would require the same team to respond, said Michael Willis, who coordinates the program.

The training also positions Tribes as the decision-makers; they control whether and when outside agencies need to respond, said Willis. The US Environmental Protection Agency is looking at the THREAT project as a national model, he said. ■

Participants from Alaska in a 40-hour HAZWOPER suit-up and decon exercise that took place in -1°F. *Photo: Chuck Mitchell*



Photo: Michael Willis

METH LABS

Tribal emergency responders handle hazardous waste spills, but they may not recognize a new threat: clandestine methamphetamine labs.

Some Tribal lands have become a haven for small-time meth cooks, who select a remote reservation, produce methamphetamine, and leave behind a hazardous waste site, said Kami Snowden, executive director of the non-profit Tribal Solid Waste Advisory Network.

The network partnered with our department's Continuing Education Programs and the Washington State Patrol to obtain a federal grant for an unprecedented type of training to integrate meth lab cleanup as part of a standard hazardous materials (HAZMAT) course, such as one that emergency responders take.

"This training is all about worker safety," Snowden said. The goal is to raise awareness of the problem and train Tribal workers to recognize meth labs, so they can alert proper authorities for detective work and disposal.

Snowden explained: at the beginning of the course, the instructor asks the participants—who come from Tribal police, fire, public works, healthcare, and housing agencies in Washington, Oregon, Idaho, and Alaska—how many believe they've seen a meth lab during the normal course of their duties. Few hands are raised.

Then participants are shown mock lab scenes so they can identify the signs of meth production. The course emphasizes dangers such as volatility and flammability. By the end of the training, the same question from the instructor evokes a different response: almost every hand goes up.



Kit Galvin, Vanessa Galaviz, and Martha Perla participated in a SACNAS panel presentation. *Photo: Kathy Hall*

SACNAS ANNUAL CONFERENCE

Panel describes collaborations with communities at risk

In October, more than 3,500 people attended the annual meeting of the Society for Advancement of Chicanos & Native Americans in Science (SACNAS) in Seattle. One of the largest gatherings of minority scientists in the country, the conference featured sessions on topics that ranged from astronomy to zoology.

Our department's researchers presented on "Communities at risk: Linking science with communities to address environmental and occupational health concerns." They gave examples of how researchers can investigate community-based problems, work collaboratively with the people in the community, and recommend ways to improve the health of populations studied.

Professor Richard Fenske gave a history of the environmental justice movement. Environmental justice is a term used to describe how low-income and minority populations are disproportionately affected by environmental and occupational hazards. It has been considered a field of study by the Institute of Medicine since 1999.

Farmworkers in Washington's agricultural Yakima Valley tell researchers and policy makers: "Don't plan about us without us," said Martha Perla, a research scientist in the

Samantha Serrano talks with a SACNAS field trip participant, one of 300 students who visited the UW on the first day of the conference. *Photo: Sarah Fish*



Pacific Northwest Agricultural Safety & Health Center (PNASH), who was also on the panel. Perla was involved with El Proyecto Bienestar (The Well-Being Project), a community-based research project that aims to respond to the needs of farmworkers and their families and help improve their working conditions.

Kit Galvin, a senior research industrial hygienist in PNASH, described the collaborative development of a workbook written in Spanish and English on practical and farm-tested solutions to agricultural safety challenges. The project's success came from recognizing that pesticide handlers and farm managers are the "experts" on pesticide safety issues and incorporating their suggestions and ideas into the workbook.

Professor Noah Seixas and master's student Samantha Serrano talked about a training program that developed from an ongoing partnership with a community center to address the job hazards faced by day laborers. The laborers' injury rate is higher than the rates of workers in high-hazard jobs such as mining and construction. The peer-led participatory training in Spanish focuses on issues that Seixas' research found critical to workers' improved safety: hazard recognition, protective equipment, and workers' rights.

Vanessa Galaviz, a PhD candidate, described her research that looks at the effects of air quality on pedestrians crossing the US-Mexico border at San Ysidro, south of San Diego. She hopes her research can influence the design of the crossing, where an expansion would place the pedestrian lane right next to a line of buses and expose people walking across the border to high levels of diesel exhaust.

Rory Murphy, graduate program manager, organized the department's presence at the meeting. Working with SACNAS leadership, the UW community, and the School of Public Health, she also led the effort to bring 300 registrants to campus to meet and engage with faculty, students, and advisors. ■

CEEH ANNUAL RETREAT

The Annual Retreat for the UW Center for Ecogenetics & Environmental Health (CEEH) was held on October 26 in Seattle. It brought together a network of investigators working in toxicology, molecular biology, genetics, and environmental epidemiology to share research and information about services available to CEEH members.

Morning sessions featured presentations on emerging issues, such as the need for more research on the “exposome.” The exposome looks at an individual’s exposures from a multidimensional and longitudinal perspective, from conception onwards. It represents a scientific departure from a focus on the genetic playing cards we are dealt at birth that influence our propensity for certain diseases. The exposome includes an individual’s environmental exposures, such as from diet or lifestyle, and internal biological and biochemical processes.

Measuring health impacts in a person’s exposome, however, is complicated. Martyn Smith, professor in the

School of Public Health at the University of California, Berkeley, compared capturing information in a person’s exposome to film; “each day a single frame—30,000 frames per life.” In order to measure factors that influence the exposome, we need a “snapshot at critical periods, such as at conception, at birth, in early life,” he said.

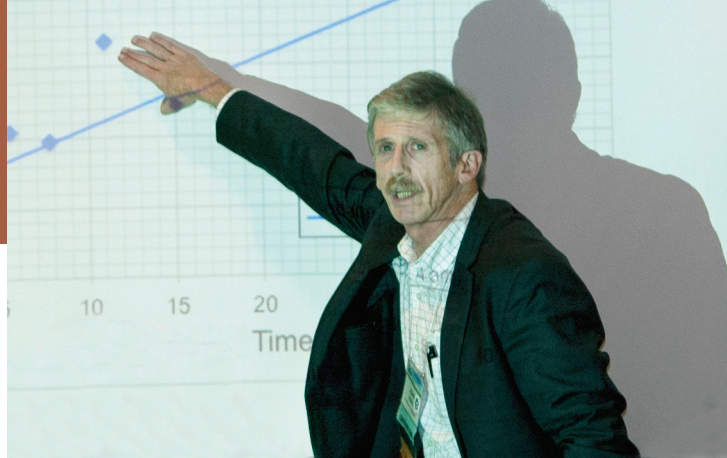
John Groopman, a professor in the Johns Hopkins Bloomberg School of Public Health, argued that we are moving toward technologies that integrate population and individualized prevention strategies to improve health, such as providing behavior-driven information in the way that Fitbit does. Fitbit is a computer-integrated device that sends feedback to its wearer on his or her physical activity, sleep, and diet to better inform health decisions.

The retreat also included presentations by department researchers on studies that look at variables in an individual’s exposome. Associate Professor Catherine Karr presented on environmental factors that aggravate the asthma of rural children. Adjunct Assistant Professor Sheela Sathyanarayana gave an overview of a gene-environment study investigating the role that genetic variability and exposure to endocrine disruptors like BPA and phthalates have on male reproductive outcomes. Doctoral student Ling Cui and Professor Michael Yost talked about a pilot study of workers exposed to calcium carbonate nanoparticles in a manufacturing facility in China and correlating exposure estimates to health outcomes. ■

John Groopman, a professor at Johns Hopkins University, talks with Professor and CEEH Director David Eaton at the CEEH Annual Retreat.

Photo: Elizabeth Sharpe





ISES CONFERENCE IN SEATTLE

While Hurricane Sandy unleashed havoc along the eastern seaboard, the International Society of Exposure Science (ISES) annual meeting began on October 28 in Seattle.

The meeting, which spanned five jam-packed days, had presentations that covered the gamut of environmental and occupational exposures and addressed both chemical and biological agents. Central to the conference theme was the important role that exposure science plays in the support and formation of environmental and occupational health policy.

Although a few presenters and would-be attendees were affected by the thousands of cancelled flights, nearly 500 others came from as far away as India and New Zealand. They represented five continents and included 44 “Huskies:” alumni, faculty, students, and staff from our department.

Professor John Kissel, who co-chaired the conference with Brian Curwin (National Institute for Occupational Safety and Health), also organized and participated in a symposium on dermal exposure. In his own presentation, Kissel discussed the “wash-in effect,” a hypothesis that dermal absorption of chemicals may increase after skin washing or decontamination. Kissel argued that in the absence of better evidence, promotion of this concept may cause harm if workers or the public avoid washing as a result.

PhD candidate Vanessa Galaviz (Environmental and Occupational Hygiene) presented on a study investigating environmental exposure disparities between pedestrian “border commuters” who reside in Tijuana, Mexico, and regularly cross the US-Mexico border at San Ysidro for work or school in San Diego and those residents of San Diego who do not cross the border. Her study investigated diesel exhaust (DE) exposure by measuring personal and ambient air samples for 1-nitropyrene (1NP), a marker of DE, and urinary metabolites of 1NP. Galaviz’s results indicate border commuters are exposed to significantly more DE than non-border commuters. Factors

Professor John Kissel critically evaluated studies showing a “wash-in effect,” arguing that the methods are flawed and that their findings may send a confusing message to the public.

Photo: Elizabeth Sharpe

for increased exposure included the amount of time an individual spent at the border crossing, the ambient air concentration of DE, and the season.

A plenary talk by UW School of Public Health Dean Howard Frumkin, a professor in our department, closed the sessions but opened up a “new frontier in environmental health” by illustrating some of the emerging roles for exposure scientists that fall outside the traditional exposure assessment paradigm. “We think about an animal’s habitat and what makes it thrive, but seldom do we think about our habitats,” Frumkin said. We don’t think about the impact that the quality of our homes or neighborhoods has on the quality of our health. Or that contact with nature can influence the rate at which someone heals in a hospital or the healthy number on the bathroom scale. The field of exposure science, he said, will crisscross with psychology, architecture, and phenology, among others. “We all have to have the courage to paddle upstream,” he said.

In addition to Professor Kissel, others in the department helped in the ISES conference planning: Professor Richard Fenske, Associate Professor Scott Meschke, Jenna Armstrong (PhD, Environmental and Occupational Hygiene, 2012), and alumni Ryan Allen (PhD, Environmental and Occupational Hygiene, 2004) and Chang-fu Wu (PhD, Industrial Hygiene and Safety, 2002), who now hold faculty positions at Simon Fraser University and National Taiwan University, respectively. ■

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

Undergraduate **Jena Roe's** ten-week summer internship with Child Family Health International took her to Durban and Cape Town, South Africa, where she worked in several hospitals and clinics in each city. Undergraduate **Mohamed Abdillahi** participated in a four-week exploration seminar, Public Health England—Dark Empire: Race, Health & Society in Britain, based at the University of Greenwich in Eltham.

The 11 undergraduates from the National Institute of Environmental Health Sciences (NIEHS)-funded Environmental Health Research Experience Program participated in the UW Undergraduate Research Symposium on August 15. Two of the students also shared their summer research at the SACNAS conference in Seattle in October. Lilian Turcois (Texas Southern University) presented on results of a monitoring study in Yakima Valley, part of an epidemiological study examining potential triggers of children's asthma. Andrea d'Aquino (Western Washington University) presented on an experiment to analyze the stability of ozone filter samples over time.

Amber Lenhart (MPH student, Environmental and Occupational Health) received a \$1,500 grant from the Northwest Public Health Training Center for a collaborative project with Tribal Healthy Homes Northwest and the Tulalip Tribe to better understand the current beliefs and behaviors of Tribal members around in-home wood smoke exposure.

In September, Chair and Professor **David Kalman** went to Namibia, where he worked with School of Public Health officials from the University of Namibia on incorporating environmental health training into their MPH program.

On September 17, the **Pacific Northwest Agricultural Safety and Health Center** held a symposium in Seattle and reviewed key research projects.

The **Northwest Center for Occupational Health & Safety** offered an introduction to process safety management (PSM) on September 25 in Spokane, Washington, as part of the Washington State Governor's Conference. Industries



Biomedical poster session winner Chase Williams (center in photo). *Photo: Steven R. McCaw, Image Associates*

with a strong PSM program in place for highly hazardous and explosive chemicals save lives, protect property, and reduce accidents, injuries, and business losses.

Our department has been working to assess and improve emergency preparedness. Administrator **Adrienne Hidy** and Program Assistant **Patrick Lennon** helped Ashley Henry, a graduate student in Epidemiology, with a summer research project that used our research laboratories as a case study to assess vulnerabilities and identify solutions for better research continuity in the event of a severe earthquake. Students, staff, and faculty also participated in the Great ShakeOut, a nationwide earthquake safety event in October.

Professor **Gerald Cangelosi** accepted a new faculty appointment in the department, effective October 1. He has worked extensively on infectious diseases, most notably in the areas of molecular diagnostics, environmental pathogens, and epidemiology.

Professor **Thomas Burbacher** was appointed to the US Environmental Protection Agency's (EPA) Science Advisory Board, and Professor **Michael Yost** was reappointed to serve on the EPA's Exposure and Human Health Committee.

Martin Cohen, who has been interim director for the Field Research and Consultation Group, was hired as director and appointed senior lecturer. **Butch de Castro** received an appointment as adjunct associate professor and **Michael Dodd** as adjunct assistant professor.

In October, PhD student **Chase Williams** (Toxicology) received second place for his biomedical poster at the NIEHS Superfund Research Program Annual Meeting in Raleigh, North Carolina.

Vanessa Galaviz (PhD candidate, Occupational and Environmental Hygiene) has been volunteering with the American Lung Association's Master Home Environmentalist program since 2007. Galaviz conducts home assessments

with the goal of finding inexpensive and manageable ways to reduce exposures to indoor pollutants.

School of Public Health Dean and Professor **Howard Frumkin** spoke at TEDxRainier on November 10 in Seattle on connections among urban sprawl, smart and sustainable growth, and public health.

On November 28, the **Northwest Center for Occupational Health and Safety** sponsored a course in Seattle to highlight global harmonization principles and best practices. The Global Harmonization System of Classification and Labeling of Chemicals is a system proposed by the United Nations to standardize the labeling of chemicals around the world. It is expected to take effect in the US in 2015, with worker training to be completed by December 1, 2013. More courses will be offered March 28 and 29.

The 2012 CEEH Public Engagement Award went to **Julie Richman Fox**, postdoctoral research scientist, and the CEEH Innovations in Research Award was given to **Chad Weldy** (PhD, Toxicology, 2012).

In November, our **Collaborative Center for Healthy Work and Environment** (CCHWE) co-sponsored the International Scientific Conference on Occupational and Environmental Health in Hanoi, Vietnam, with the Vietnam National Institute of Occupational and Environmental Health. Associate Professor **William Daniell** (who directs CCHWE), Associate Professor **Catherine Karr**, Research Industrial Hygienist **Gerry Croteau**, and Affiliate Professor **Barbara Silverstein** participated in the conference.

Karr also co-authored a technical report and an accompanying policy statement on pesticide exposure in children, which were issued by the American Academy of Pediatrics.

Professor **Noah Seixas** is chief editor for the *Annals of Occupational Hygiene*, effective January 2013.

Professors **Michael Yost** and **David Kalman** will co-direct the Northwest Center for Occupational Health & Safety.

Professor **Richard Fenske** is president of the International Society of Exposure Science, effective January 2013.

Effective January 16, **Joel Sacks** is the new director of the Washington State Department of Labor & Industries. He will also be a member of our department's External Advisory Committee.

Nicole Van Abel (PhD student, Environmental and Occupational Hygiene) will be working with researchers at the National Water Institute in the Netherlands for five months.

DEOHS Administrator **Adrienne Hidy** is helping Asa Mercer Middle School on Beacon Hill address pedestrian and bicycle safety around the school. She wrote and received grants totaling \$100,000 from the national SAFE KIDS organization, FedEx, and the Seattle Department of Transportation Safe Routes to School program.

Alumni News

In July, **Douglas Johns** (MS, Industrial Hygiene, 2000; PhD, Environmental and Occupational Hygiene, 2005) joined the Centers for Disease Control & Prevention/ National Institute for Occupational Safety and Health as the deputy director in the Division of Respiratory Disease Studies in Morgantown, West Virginia.

Ulrike Luderer (MPH, Occupational Medicine, 1998) was appointed in November to the Developmental and Reproductive Toxicant Identification Committee in California.

To submit updates to Alumni News, please email ehgrad@uw.edu.

left to right: **Gerald Cangelosi**,
Julie Richman Fox, **Martin Cohen**.

*Photos: Courtesy of Gerald Cangelosi,
Elizabeth Sharpe, Mary Levin*





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COMINGS & goings

In September, **Victoria Breckwich Vásquez** became director of outreach and education in the Pacific Northwest Agricultural Safety and Health Center.

In October, Research Scientists **Annie Lakey Becker** and **Kris Weigel** transferred from Seattle BioMed to our department. They work in Professor Gerald Cangelosi's laboratory.

Gennaro Giordano, research scientist in Professor Lucio Costa's laboratory, left the department on October 31.

In addition to administrative duties in the Chair's office, **Patrick Lennon** assumed the role of program budget coordinator for the Exposure Science program.

In October, **Nancy Simcox** left her position in the Field Research and Consultation Group to become the outreach manager for the Continuing Education Programs.

At the end of December, Research Scientist **Jianbo Yu** retired from her position in the Environmental Health Laboratory, where she had worked for more than 15 years. ■

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