Nearly two years have passed since COEH’s Occupational and Environmental Health Nursing (OEHN) program and Occupational and Environmental Medicine (OEM) program at UC San Francisco joined forces with Asian Immigrant Women Advocates (AIWA), a community organization in Oakland, to improve health care for Asian immigrants working in the garment industry. Since then, faculty and students in these programs have treated hundreds of workers, most suffering from work-related back, neck, or shoulder injuries, at a free clinic in Oakland’s Chinatown.

Now, with a $200,000 grant from the California Wellness Foundation, OEHN and OEM are opening a new free clinic and are expanding their services to provide care for garment workers as well as low-wage workers in the hotel and restaurant trades, many of whom are Spanish-speaking immigrants. The clinic will offer treatment, education, and outreach activities to reduce and prevent work-related injuries, disabilities, and illnesses. Community partners in this effort include AIWA and Hotel Employees and Restaurant Employees (HERE), Local 2850.

The clinic staff, headed by Project Director Nanette Lashuay, assistant clinical professor in the School of Nursing, with COEH faculty members Robert Harrison and Leslie Israel of OEM and Barbara Burge of OEHN, will provide assessment, basic treatment, case management, referrals, follow-up care, and help with workers’ compensation claims.

In partnership with AIWA, HERE, and other community-based organizations, the clinic staff and students will offer “healthy worker” ergonomic and stretch exercise classes and educational materials about workplace hazards. Staff members will also conduct in-service training for clinicians who serve low-wage immigrant workers to inform them about taking occupational health histories and to increase their knowledge about common workplace hazards and control measures, toxicology and biologic monitoring, workers’ compensation, and related issues.

“We’re offering this training to clinicians to get occupational health problems a little higher on their radar screen,” Burgel said. “If you can’t identify the causative agent, you are potentially putting that injured worker back into a situation where they can continue to be exposed—and where others are exposed—to harmful conditions, so the public health opportunities are missed. It’s a tough problem for primary care providers, so we want to share some of the resources that are available.”

Another goal for the next two years is to conduct research to learn more about how best to reduce occupational illness and injuries among California’s garment workers.
Our January retreat underscored the need to build on our strengths while expanding our commitment in three areas that are becoming increasingly important for fulfilling our mission:

- Social and behavioral research and education
- Ergonomics research and education
- Policy, with a focus on providing the scientific underpinnings for planning resource allocations and interventions to improve occupational and environmental health

Among our strengths, we count first and foremost our outstanding faculty and students, who are dedicated to serving the public by creating new knowledge in occupational and environmental health. Our faculty members, although dispersed among three campuses, share a sense of community and welcome the opportunity to work together, drawing upon each other’s experience in a wide range of disciplines to solve multifaceted problems. We are fortunate to have a legislative mandate that protects our mission, and steady support from the University for our programs. Over the years, we have earned a reputation for high quality work that has served the state and the nation well. We have been very successful at attracting outside funding. Last year, for example, COEH faculty members directed programs involving $32 million in extramural funding.

Our challenge is to sustain current programs while advancing our agenda to meet new needs in occupational health. The workforce is aging. Older workers may be more susceptible to certain occupational injuries than younger workers. The workplace is changing (i.e., perhaps chemical toxicants are a somewhat less important occupational health problem in the growing service economy than in manufacturing). We must address the new shape of work in this new century.

As a first step, we must improve information exchange among ourselves. There was consensus at the retreat that we need to hold more frequent face-to-face meetings and to improve our Web-based communications. There was also consensus that we should continue to work for additional state funding for preventive occupational health and safety research and that COEH should have contingency funds to seed new programs as necessary. We will need to attract new COEH members—faculty, staff, and students with interest and expertise in our three target areas.

Our new journey will be exciting for us, but, more important, in the tradition of COEH, it will have an impact on the public health of California. The next step is for the COEH Executive Committee to formalize a strategic plan. I ask for your participation, suggestions, and support in the planning process.
INJURED GARMENT WORKERS
from cover

low-wage workers and to document the experience of immigrant workers with workers’ compensation.

With a $400,000 grant from the California Endowment, AIWA, UC San Francisco, and the California Department of Health Services are partnering in a two-year collaborative project to reduce injuries in the garment industry (see sidebar). A $25,000 grant from the Institute of Labor and Employment at UC Berkeley is permitting the researchers to expand this study to the garment industry in Los Angeles.

In addition, with a $180,000 grant from the California Commission on Health and Safety and Workers’ Compensation (CCHSWC), the researchers, directed by Harrison, will identify barriers and assess strategies for providing effective treatment and prevention services to low-wage workers.

“Most of these workers speak little or no English and either don’t know or are afraid to exercise their health and safety rights or to seek help within the workers’ compensation system,” Burgel said. “There is the perception that this population is underserved. We want to gather better data. How are they getting injured? Do they know their rights? We suspect they don’t.”

For more information, contact Burgel: barbara.burgel@nursing.ucsf.edu (415/476-4953) or Israel: lisrael@itsa.ucsf.edu (415/885-7580).

### Study Questions Airplane Air Quality

Is the air quality in commercial aircraft cabins good enough to protect public health? A committee of the National Academy of Sciences’ National Research Council is concerned.

In a recent report, the committee called upon the Federal Aviation Administration (FAA) to investigate rigorously whether regulations governing the air quality in commercial aircraft cabins are adequate.

Saying that lack of data makes it difficult to determine whether cabin air quality adversely affects the health of passengers and crewmembers, the committee said the FAA should monitor flights for compliance with air-quality regulations and document health effects or complaints.

Commercial airplane passengers and crews breathe a mixture of outside and recirculated air, similar to the air in many homes and offices. But the cabin environment is unique, due to the proximity of the passengers, the need for cabin pressurization, low humidity, and the potential for exposure to common chemical and biological contaminants, all in an enclosed structure.

The committee questioned whether ozone levels in aircraft cabins may...
cause respiratory problems, whether cabin air pressure (now required to match air pressure that occurs naturally at 8,000 feet) is sufficient for passengers with pulmonary or cardiac disease, and whether environmental control systems protect passengers well enough from contaminants such as engine oil.

Contrary to the popular notion that aircraft ventilation systems spread disease, the committee concluded that the high density of people in airplane cabins, rather than aircraft ventilation systems, helps spread infectious agents during flights.

COEH faculty member William Nazaroff, professor of environmental engineering in the Department of Civil and Environmental Engineering at UC Berkeley, was one of 13 committee members who issued the report, which is available at http://www.nap.edu/catalog/10238.html.

The rising costs and increasing incidence of work-related chronic obstructive pulmonary disease (COPD) and asthma warrant preventive intervention, a COEH faculty member and his co-authors have found. COPD includes bronchitis and emphysema.

In a study published in *Chest*, Paul Leigh, professor of health economics in the Department of Epidemiology and Preventive Medicine, School of Medicine, UC Davis, and a team of physicians and epidemiologists reported that the nation spent $6.6 billion on obstructive lung diseases, including COPD and asthma, in 1996.

“These costs are significant, especially since the lion’s share is borne by diseased workers and their families, by all workers through lower wages, and by taxpayers,” said Leigh. “Given the increasing prevalence of COPD and asthma as well as inflation, we estimated that the costs would be roughly $8.5 billion in 2001. Clearly this is a significant price tag that deserves attention.”

Reviewing data from national surveys, and assuming that 15 percent of asthma and COPD cases are due to exposure in the workplace, the study team found costs of $5 billion for COPD and $1.6 billion for asthma. For COPD, 56 percent were direct costs such as medical expenses and 44 percent were indirect costs such as lost wages. For asthma, 74 percent were direct costs and 26 percent were indirect costs.

In 1996, the researchers estimated, 15,032 people died from occupational COPD and 805 people died from occupational asthma, assuming a 15 percent population attributable risk (PAR).

Obstructive lung diseases are the fourth-leading cause of death in the United States. From 1980 to 1994, the obstructive lung disease death rate in women nearly doubled, due, in part, to increased smoking and the rapid increase of women in the workforce.

“COPD and asthma incidence may be reduced or prevented by cutting down on dust and particulate matter in the workplace air,” said Leigh. “One way to reduce the pollution might be to tax the industries that generate poor air and use those funds to pay Medicare directly. That approach provides an incentive for industry to reduce pollutants while lessening the financial burden on Medicare and, thus, the taxing public.”

Occupational asthma is caused by a host of chemical and biologic exposures, such as detergent and latex enzymes. COPD has been found in many dusty trades, including mining and farming.

Leigh’s co-authors, all physicians, were Kathleen Kreiss, of the National Institute for Occupational Safety & Health and Patrick Romano and COEH faculty member Marc Schenker of UC Davis.
What’s in a Smell?

We are programmed to recoil from nasty odors. Skunks give us pause. We instantly toss moldy cottage cheese. But to what extent need we worry about something smelly in the environment?

In a recent paper in Chemical Senses on health complaints associated with environmental odors, COEH faculty member Dennis Shusterman argues that environmental odors “may play either a central or ‘bystander’ role” in causing “acute air pollution-related symptoms” and that health care providers must consider both the toxicology of the agent causing the odor and the odor itself in treating patients.

Shusterman, clinical professor of medicine in the Division of Occupational and Environmental Medicine at UC San Francisco, studies how the upper airway (nasal passages, nasal pharynx, larynx) responds to air pollutants.

Early in his career, as a resident in family practice, he began questioning whether odors could have real health effects when he treated an electronics worker who had breathed in too much phosphine gas after a semiconductor processing machine malfunctioned. Once she returned to work, anytime she smelled the garlic-like odor of the gas, even though the concentration of the gas was below toxic levels, she reported feeling short of breath, dizzy, and tingly in her hands and around her mouth. Treated with asthma medication, she didn’t improve, and eventually left her job to become a counter person at a dry-cleaning establishment. Her symptoms disappeared.

Since then, Shusterman has studied dozens of other cases in which people reported illnesses that could not be traced to hazardous sources at toxic levels but rather to the odors associated with these sources. The lesson he has taken from these cases is that odors can indeed affect health. For example, odors cause worry and stress, which can manifest themselves in the form of headaches and nausea.

Physicians should determine whether symptoms associated with nasty smells are toxic in origin or sensory-triggered, by identifying the chemicals involved, taking into account their toxicity, and attempting to estimate the level of the patient’s exposure, Shusterman says. Some compounds can be irritants at levels that people can’t smell. Some can have potent, obnoxious smells but are weak irritants. Others are in-between. “It may be necessary to find non-toxicological explanations for odor-related symptoms,” he concludes.

One of the challenges in Shusterman’s latest research, which focuses on upper airway irritation, is to separate odors and irritants. “We tend to bundle our sensations of odor and irritation together, even though they are conveyed by separate cranial nerves,” he says. In his Upper Airway Biological Laboratory, Shusterman is currently studying variations in sensitivity to upper airway irritants and the mechanisms underlying people’s response. To date, he has found that women perceive irritants at a lower level than men and that people with allergies are more sensitive to irritants than are those who don’t have allergies.

McKone Honored

COEH faculty member Thomas McKone, adjunct professor of Environmental Health Sciences at UC Berkeley’s School of Public Health and senior staff scientist at the Lawrence Berkeley National Laboratory, has been elected a Fellow of the Society for Risk Analysis. McKone was honored “for the major national and international contributions he has made to the discipline of risk analysis.”

Call for Student Proposals

Fifth Annual COEH Student Project Award

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Applications due: April 12

Talk to your advisor and see flyers and website for details: http://coeh.berkeley.edu
On September 11, physician Pedro Luis (Pete) Estacio, staff scientist at the Lawrence Livermore National Laboratory (LLNL), was in New York attending a conference with many leaders of the anti-terrorism community of New York City. Following the attacks on the World Trade Center, Estacio went first to the ad hoc command center and then joined a search and rescue team that was using special radar equipment developed at LLNL to hunt for survivors. Tragically, there were none.

“I was struck by the extent of the devastation and the realization that the people who did that would have done more if they could,” Estacio recalls. “They would have used the most destructive means they could to harm as many people as possible without a second thought. It was sobering to realize that there are people who would deliberately cause such harm to innocent people.”

As part of the chemical and biological national security program at LLNL, Estacio helps to develop detection methods and response capacity for bio-terrorism. Since the attacks of September and the early days of the anthrax crisis, Estacio has worked practically non-stop responding to national crises. A member of the California Disaster Medical Action Team (DMAT), he has gone to New York, Washington, and Florida to help monitor potential anthrax exposure risks and to help state laboratories develop new detection methods, improve sampling efficiency, and validate assays.

“I became profoundly interested in this area several years ago when I was asked to consult,” he said. “The more I learned, the more worried I became about the safety and welfare of my children and my neighbors, and the more I wanted to be involved in addressing the problems.”

Estacio brings a unique combination of education and experience to protecting the nation’s health and welfare. With a doctorate in chemistry from UC San Diego, an M.D. degree from Albert Einstein College of Medicine in New York, a master’s degree in public health from UC Berkeley, and years of clinical practice in COEH’s Occupational and Environmental Medicine Program at UC San Francisco, he considers combating biological, chemical, and nuclear terrorism to be “a natural offshoot” of problems he has had to address over the years.

People who want to do harm can use materials that are commonly found in the work setting, like chlorine gas, he said, noting that occupational and environmental medicine deals with chemical, biological, and radiation exposure as well as with epidemiology, which is critical to surveillance.

Two other graduates of COEH’s Occupational and Environmental Medicine Program play key roles at LLNL in fighting bio-terrorism and responding to national disasters: Medical Director James Seward and clinical physician Steven Burastero, who oversees the medical needs of the crisis teams.

Lack of Preparedness

Estacio believes the biggest threat to our nation is our lack of preparedness. “The infrastructure is not well tuned enough,” he said, adding that we should consider chemical, biological, and radiological detection to be just as important—and as normal in everyday life—as fire alarms. “There will be false alarms,” he said, calling the occasional false alarm the price we pay for safety. “If that’s intolerable, then we’ll never be ready,” he said. “Ongoing surveillance and response planning is critical to protect ourselves, our loved ones, and our community.”

Another challenge is improving coordination among government agencies. “It will be next year before we really see if the people who have been put in charge to coordinate all of these 40 to 50 agencies really have any effect. I think they won’t, unless they have some kind of financial clout,” he said.
Public Health Pay-off

Estacio sees his role as helping to bring a strong scientific foundation to the nation’s ability to combat biological threats. He is optimistic that the work being done all over the country to respond to bio-terrorism will “significantly advance public health, not just our response to bio-agent threats but also to natural occurrences like outbreaks of infectious disease.”

He hopes to work with COEH faculty members to “do more solid science” in addressing vital questions such as how to make personal protective equipment more safe for biological exposures. “You don’t have to work with nasty bugs to prove the principles and advance public health in this important area,” he said.

Conference Explores Health Impact of Computer Use

The Ergonomics Program at UC Berkeley and UC San Francisco recently gathered 20 researchers from around the world for a three-day conference to explore new research on health and productivity issues associated with computer use.

The Marconi Research Conference, the fifth such meeting directed by the Ergonomics Program with corporate support, focused on recent studies of office design, vision, musculoskeletal disorders, and computer technologies.

According to COEH faculty member David Rempel, director of the Ergonomics Program, the researchers presented data on an increase of musculoskeletal problems associated with computer work among college students and new data on musculoskeletal disorders from two large prospective studies of computer users.

“It’s time now to switch to intervention studies among computer workers to determine what interventions are most effective in reducing risk factors,” Rempel said. “We also need to identify effective methods of influencing the behavior of computer users.”

Summit to Explore Breast Cancer and the Environment

More than 100 researchers, public health professionals, breast cancer activists, breast cancer survivors, and representatives of community-based organizations will gather at an “international summit” to explore research needs for understanding the impact of environmental exposures on breast cancer, May 22-25, at the Chaminade Conference Center in Santa Cruz.

The conference, funded by the Centers for Disease Control and Prevention (CDC), will seek to identify gaps in our current knowledge about environmental exposures that may increase the risk of breast cancer, explore how researchers can address those gaps, and outline the top priorities for such research, according to COEH faculty member Patricia Buffler, who is heading up the effort to organize the conference.

Buffler, an eminent cancer and environmental epidemiologist, is professor and dean emerita of UC Berkeley’s School of Public Health. She is planning the conference with a scientific advisory committee and a steering committee of researchers and community leaders.

Conference participants will contribute to a draft report that will be circulated for comment. Buffler will submit a final report to the CDC in October. She anticipates that the CDC will use the report as a basis for informing federally funded research on breast cancer and the environment and that the report will help private funding groups to set their agendas as well.

Continuing Education

For a list of COEH Continuing Education courses, visit the CE website at http://socrates.berkeley.edu/~coehce.

Additional seminar series include:

• Grand Rounds: Current Topics in Occupational and Environmental Medicine. For information on seminars in Sacramento, call 916/752-3317; for seminars in San Francisco, Santa Clara, and Berkeley, call 415/206-8950
• Agriculture Seminar Series. For information, visit http://agcenter.ucdavis.edu/agcenter/announceseminar_series.htm
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