



Bridges

MARCH 2008

HERTZ-PICCIOTTO DRAWS NATIONAL CHILDREN'S STUDY TO UC DAVIS

The National Children's Study (NCS) recently chose the University of California, Davis, (UC Davis) as one of 22 national sites to recruit 1,000 women who are pregnant or about to become pregnant and to study their children's development from infancy through childhood and adolescence. The final birth cohort of 100,000 children will form the largest U.S. study to date of children's health. **Dr. Irva Hertz-Picciotto** will lead the new Center at Davis, which will bring nearly \$32 million to UC Davis for health research over the next seven years.

Hertz-Picciotto's award includes two NCS research sites in Northern California—Sacramento County and San Mateo County. Her team plans to compete for a third site in Humboldt County. Hertz-Picciotto says the new cohort will be a "national treasure" for the study of early exposures and their effects on childhood health including obesity, diabetes, asthma, injuries, autism, other neuro-developmental disorders, and mental health. "These conditions are of high concern because of the lifetime costs

and morbidity, and in some cases early mortality. Several of these disorders are increasing. Childhood obesity and Type 2 diabetes in children were almost unheard of 30 to 40 years ago. Autism and asthma are on the rise. We don't yet know all of the causes or all of the solutions. That is our goal."

Hertz-Picciotto credits her colleagues at UC Davis with a stellar application for the new sites. Dr. Richard Sweet, who heads a Center for Women's Health and will serve as Co-Principal Investigator, and Dr. Richard Pan, a pediatrician with strong ties to the community, are two among an impressive roster of health researchers who played an important role in the application. Other assets were the team's collaboration with UC Davis's Clinical and Translational Science Center led by Dr. Lars Berglund—one of 12 across the country funded by the National Institutes of Health to translate basic science into clinical practice—and the involvement of UC Davis's Center for Children's Environmental Health with its expertise in cutting-edge autism research.

continued on page 3

NEW INSIGHT INTO HEART DISEASE AND OCCUPATIONAL EXPOSURE

Physical aerobic strain on the job is bad for your heart. New findings published by **Dr. Niklas Krause** of the University of California, San Francisco, and a group of international collaborators indicate the processes that lead to atherosclerosis—a major underlying cause of heart disease and death—are linked to physical activity at work.

The study involved 612 Finnish men aged 42 to 60 years at baseline. The participants were followed for 11 years with repeated measurements of energy expenditure at work and ultrasound measurements of the carotid arteries' intima media thickness (IMT), as a marker of atherosclerotic progression. Carotid IMT is a measure of the thickening, and therefore narrowing, of the main arteries that bring blood to the brain. Relative aerobic strain was measured as energy expenditure at work relative to the aerobic capacity of each participant.

Atherosclerosis progressed much faster in all men with high energy expenditure at work; furthermore, men with pre-existing cardiovascular disease were especially vulnerable. Krause and colleagues reported that for men who worked at

continued on page 4

GREEN CHEMISTRY IN CALIFORNIA

Story on page 11, download the entire report at <http://coeh.berkeley.edu>



FEATURES

- 2 Letter from the Director
- 4 NIEHS Awards STEER Grant
- 5 Airline Cabin Crew Exposures
- 6 Cananea Miners
- 8 Profile: Oisaeng Hong
- 9 Profile: Kristin Amlie
- 10 Worksafe Conference
- 10 Whorton Prize Announced
- 11 Green Chemistry Report
- 11 COEH Symposium April 18th

California's Opportunity to Reconsider Chemicals Policy



John Balmes

The problem of exposure to toxic chemicals in our everyday environment has been highlighted recently by high-profile media stories about lead and phthalates in toys made in China. This is a longstanding problem that has especially impacted low-wage workers and the low-income communities of color which are often near ports, railroad yards, distribution warehouses, power plants, refineries, and manufacturing facilities.

Efforts by the European Union (E.U.) to change the paradigm of chemicals policy have spurred governmental leaders in California to consider new changes to reduce exposures to toxic chemicals. Rather than wait for post-market reports of adverse health effects and governmental agency testing before taking action to control a toxic chemical, the E.U.'s Registration, Evaluation, and Authorization of Chemicals (REACH) program requires industry to do pre-market product testing for potential toxicity. Companies must register chemicals in a central database to give users in the supply chain the safety information they need. The E.U. is the world's largest economic bloc, so REACH is creating global changes in industrial practice. The initiation of REACH provides California with a historic opportunity to assume leadership in developing green technological solutions and the possibility to improve state regulation of toxic chemicals.

In 2004, State Senator Byron Sher requested that the UC California Policy Research Center (CPRC) provide the legislature with technical assistance in the area of chemicals policy in response to the challenge of REACH for the California economy. California companies exporting products to the E.U. must abide by REACH requirements. The CPRC established an advisory committee that included multiple members of COEH. **Michael Wilson**, COEH research scientist, was the principal author of a report to the legislature that highlighted several gaps in California chemicals policy: the data gap (chemical producers do not provide information about production volume, uses, or toxicity); the safety gap (governmental agencies have insufficient tools to identify, prioritize, and mitigate chemical hazards); and the technology gap (companies have inadequate incentives to develop less toxic alternatives). The release of this report added to the mounting public attention to the need to reduce toxic chemicals in our environment.

In 2007, the Department of Toxic Substances Control (DTSC), under the leadership of Director Maureen Gorsen, took up the challenge of closing the gaps identified by the CPRC report and earned Governor Schwarzenegger's support to launch a Green Chemistry Initiative. To help the initiative gain momentum, DTSC asked COEH faculty at UCLA and UC Berkeley to produce a high-profile publication showing UC faculty's support of the state's effort to promote less toxic alternatives to hazardous chemicals in products and processes. **Michael Wilson** and **Meg Schwarzman** from UC Berkeley and **Timothy Malloy**, **Elinor Fanning**, and **Peter Sinsheimer** from UCLA were the authors of "Green Chemistry: Cornerstone to a Sustainable California" that was signed by 127 distinguished UC faculty from seven of the campuses (see page 11 for story and a link to download the complete report). When it was released in January 2008, Linda Adams, California's Secretary for Environmental Protection (Cal/EPA) praised the report, further indicating that UC is an important partner in the agency's efforts to develop a comprehensive policy for

managing toxic chemicals in products. She stated, "California has the opportunity to lead the nation in creating safer substitutes that today's global markets demand, creating new jobs and products that improve the state's economy."

Currently, Chinese toy manufacturers often make two versions of a toy: a phthalate-free version for the E.U. market and a slightly cheaper version for the U.S. market that contains phthalates. The U.S. cannot continue to hide its head in the sand about the dangers of toxic chemicals in products. We must push our governmental leaders at both the state and national levels to take action to remedy the woeful inadequacies of current chemicals and product safety policies. To this end, I am pleased to report that UC Berkeley Chancellor Birgeneau provided the Cornerstone report to E.U. Ambassador John Bruton and signed a memorandum of understanding to work together on green chemistry, energy efficiency, and climate change. COEH will continue to participate in the public dialogue about "greening" California's chemicals policy. 🌱

JOHN BALMES APPOINTED TO THE CALIFORNIA AIR RESOURCES BOARD

In December of 2007, COEH Director John Balmes was appointed to the California Air Resources Board (ARB).

The ARB is an 11 member group appointed by the governor and it is part of the California Environmental Protection Agency. Their mission is to promote and protect public health, welfare and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state.

Dr. Balmes was brought in as the Board's medical expert because of his experience in studying the effects of air pollutants and occupational agents on lung health.

Hertz-Picciotto Draws National Children's Study to UC Davis (contd.)

Certain that UC Davis researchers can influence the NCS research agenda, Hertz-Picciotto highlights environmental sampling, retention of study subjects, and early screening of autism (before 36 months) as key areas of focus. She says, "Richard Pan will develop a team of site coaches from the community who will work with the study team, not on data collection, but to stay in touch with mothers to keep the families engaged." The coach will address issues such as transportation and childcare to increase retention.

Hertz-Picciotto says her vision is to learn enough from the study to reduce the incidence of each high priority health condition by 10% to 20%. Even if the study results reduce each of them by one percent, she says the study will pay for itself because diabetes, autism, or obesity that starts early in life exerts a huge cost on society, the medical system, and those who suffer with the condition.

Novel Findings in Childhood Respiratory Illness

Hertz-Picciotto's recent article in the leading journal *Environmental Health Perspectives* underscores how her research and study methods connect to those of the National Children's Study.

The research team examined the link between the respiratory health of 1,133 children from birth to 4.5 years and their exposure to ambient air pollution in two Czech Republic districts, Teplice and Prachtatice. The former district, a coal mining town, was known for poor air quality. In contrast, Prachtatice had light industry and low levels of ambient air pollution. After adjusting for season, temperature, and other covariates, her results showed that during the first two years of life, exposures over a 30 day average period to ambient polycyclic aromatic hydrocarbon (PAH) and fine particles (PM_{2.5}) were associated with a 30% increase in the risk of bronchitis. In older children aged 2 to 4.5 years, the risk increased to 56% for PAH and 23% for PM_{2.5}.

This study may be the first to use long-term data on PAH exposures with daily measurements over all winter months. PAHs—found outdoors from diesel exhaust and coal plant

combustion and indoors from tobacco smoke and wood stoves—are more expensive to measure than PM_{2.5}. Hertz-Picciotto notes, "PAHs occur on particles but they also occur in a gaseous phase. We are hypothesizing that the effect may not be just local in the lung where the particles lodge and disrupt cell function, but PAHs are being absorbed into the bloodstream and may be having an impact more generally on the immune system and its ability to mount an appropriate response."

These results are notable because of the size of the cohort and the 95% retention rate. In the Czech Republic, with its open public health infrastructure, each child is registered with a pediatrician. The participation rate among pediatricians was 100%. Nurses and pediatricians extracted the study data from medical records—a more accurate data collection method than self-reported questionnaires.

The team collected data on lower respiratory illness, including bronchitis, bronchiolitis, and croup. A further category included these illnesses plus obstructive pulmonary disease, pneumonia, or asthma. While many studies have focused on asthma and hypersensitivity, Hertz-Picciotto says, "bronchitis is actually more common than asthma. And though it is something from which you recover more quickly, it is a source of much morbidity with a strong public health impact. It also means lost work days for parents."

Hertz-Picciotto met her Czech collaborators through the International Society for Environmental Epidemiology (ISEE) of which she is a founding member and served as President from 2000-2002. She also served as President of the Society for Epidemiologic Research and on the editorial boards of *Epidemiology*, *American Journal of Epidemiology*, and *Environmental Health Perspectives*. She received her Ph.D. in Epidemiology from the University of California, Berkeley, School of Public Health. 🌐

Hertz-Picciotto I, Baker RJ, Yap PS, Dostál M, Joad JP, Lipsett M, Greenfield T, Herr CE, Benes I, Shumway RH, Pinkerton KE, Srám R. Early childhood lower respiratory illness and air pollution. Environmental Health Perspectives. 2007; 115(10):1510-8.



Irva Hertz-Picciotto

Niklas Krause Offers New Insight into Heart Disease and Occupational Exposure (contd.)

maximum levels of relative aerobic strain, IMT increased by 90% in subjects who had ischemic heart disease (IHD) compared to a 46% increase in those without IHD. The increase was only 29% among healthy men working at minimum levels of aerobic strain.

Thirty percent of the men studied were exposed to excessive relative aerobic strain based on current recommendations of work physiologists, but in certain sectors the percentage was even higher. Krause said he was “surprised to see that for such a large proportion of the aging work force, the job demands don’t really change, although their cardio-respiratory fitness goes down each year by 1% or 2%. They should actually have less demanding work when they get older, but that doesn’t seem to be the case. Energy expenditure of those who are still working was on average only 130 kilocalories less than when they were 11 years younger.”

The study participants exercised on average 120 hours per year, or 20 minutes of leisure time physical activity a day. Krause notes that, “although this population clearly has the benefits of relatively high levels of leisure time physical activity, this was not enough to overcome the detrimental effects of aerobic strain at work.”

Krause emphasized the biologic plausibility of these findings. “Whenever your heart rate increases, the flow characteristics in the arteries change, and they change in a way that is not beneficial for the arteries. The arterial system is very well suited for an occasional increase in the heart rate for a high bout of work, but if the heart rate is on average higher than resting heart rate, then the arteries are exposed to less optimal blood flow for longer periods of time than if you have a lower heart rate. In addition, physically demanding work may increase blood pressure, another known risk factor for arteriosclerosis.”

The strength of this study is its longitudinal design with precise markers of pre-clinical atherosclerosis, and the ability to control for “virtually all known cardiovascular risk factors,” according to Krause.



Above: Workers engaged in long-term aerobic activity on the job were found to be at increased risk for developing atherosclerosis.

The evidence on the progression of this underlying cause of heart disease could have important ramifications for worker safety and population health.

In their paper Krause and his colleagues recommend that, “Regulatory statutes dealing with work time and rest schedules need to assure that workers are protected from excessive aerobic strain even if individual monitoring is not available. Such prevention measures are especially needed for older workers with age- or disease-related reduced cardiorespiratory fitness, existing IHD, or known atherosclerosis.” 🙄

The paper titled, “Occupational Physical Activity, Energy Expenditure, and 11-year Progression of Carotid Atherosclerosis” will appear in the upcoming issue of the respected Scandinavian Journal of Work Environment and Health. The online-first version can be downloaded directly from the journal’s website together with an editorial by Dr. Kukkonen-Harjula entitled: “Physical activity and cardiovascular health – work and leisure differ” and a companion article by Dr. Virkkunen et al. showing that high physical workload leads to elevated blood pressure.

NIEHS ANNOUNCES STEER GRANT AWARD TO UC BERKELEY

The National Institute of Environmental Health Sciences awarded COEH at UC Berkeley a five-year grant, “Short Term Educational Experiences for Research (STEER) in the Environmental Health Sciences for Undergraduates and High School Students.”

The grant gives students the opportunity to take part in faculty-led research projects addressing human health issues. The long-term goal of the grant is to increase the number of students pursuing graduate degrees and careers in the field of environmental health.

Through a 10-week summer internship, students will learn the basic principles of environmental health sciences through mentoring and weekly seminars, conduct a research science project under the direction of a faculty member, and present their findings to their peers.

UCB will recruit up to eight talented students each year to participate. The program will primarily enroll undergraduate public health majors at UCB for the summer of 2008 and expand to local area high schools and colleges in subsequent years. Students can look for application notices online at coeh.berkeley.edu.

Harrison Shares Clinical Expertise on Airline Cabin Crew Exposures

Frequent fliers often complain about the air quality in flight cabins, but for workers exposed on a regular basis, the air can possibly hurt their health. Engine oil or hydraulic fluid may contaminate the air (“bleed-air contaminants”) supplied to the plane’s cabin during flight, most often during take-off and landing, due to mechanical failure or faulty engine design. Workers who inhale the contaminated air risk adverse health effects and may require treatment for their symptoms.

Dr. Robert Harrison, University of California, San Francisco (UCSF) and his collaborators recently published a guide for health care providers to assist with the diagnosis and treatment of cabin crew exposed to air contaminants aboard their aircraft. The multi-disciplinary team who authored the document called, “Management of Exposure to Aircraft Bleed-Air Contaminants Among Airline Workers,” included members from the Association of Flight Attendants (AFA-CWA), Harvard School of Public Health, and the University of Massachusetts Lowell.

Harrison, a Clinical Professor of Medicine, has practiced at the UCSF Occupational and Environmental Medicine Clinic for almost twenty-five years. He says, “I have treated up to 40 flight attendants and airline cabin crew over the last 15 years who were referred to me by their health care provider, union, or co-worker because of health problems resulting from cabin air exposure.” The new document estimates there are 950 exposure incidents per year for U.S. fleets, or two to three incidents per day.

Passengers may be at risk, according to Harrison, but these guidelines only pertain to airline workers. The team did not have enough information to make passenger recommendations.

During a bleed-air contamination event, crewmembers often report a visible haze and a foul chemical odor—experiencing symptoms within minutes or hours of their exposure. Most frequently they suffer acute respiratory and central nervous system symptoms such as burning eyes, wheeze and cough, shortness of breath,



Above: Engine oil or hydraulic fluid can leak into the cabin during take-off and landing, putting airline cabin crew at risk

nausea, loss of balance, anxiety, and memory loss. “Crew members who have asthma are probably more likely to have respiratory symptoms,” says Harrison. Aircraft mechanical records may confirm the sources of reported exposure.

The guide recommends that workers with symptoms visit a health care provider within two weeks of exposure. Harrison says, “For most airline cabin crew, symptoms resolve without any permanent health effects. Employees can return to work without restrictions.” Occasionally, symptoms persist. Harrison emphasized the importance of prompt recognition, documentation, and treatment of the exposure. Affected cabin crew may want to bring the medical treatment guidelines when visiting their health care providers to make them aware of the potential health problems that can occur.

Harrison mainly sees flight attendants based out of the San Francisco airport, yet he also treats patients previously evaluated by occupational health care providers around the country, particularly at other NIOSH-funded Education and Research Centers, or at clinics affiliated with the Association of Occupational and Environmental Clinics (AOEC). Frequently, the primary care provider is the first to treat the patient. “The availability and access

to occupational health specialists around the country is limited,” says Harrison. “We needed to have a set of medical guidelines that could be useful, not only to occupational health specialists, but to primary care and family medicine providers as well.”

Harrison and his colleagues plan to disseminate the guidelines to a wide audience. They have posted the document on their research project website and on listserves used by occupational health providers and members of the AOEC clinic network organization. They are looking at ways to ensure that primary care providers and family physician are aware of the guidelines as well. Cabin crew will also have links to the guidelines, most likely through the AFA-CWA.

The Federal Aviation Administration Office of Aerospace Medicine provided funding for the project. It is part of a collaborative project between the Occupational Health Research Consortium in Aviation and the Airliner Cabin Environment Research Center of Excellence. 

Harrison, R., Murawski, J., McNeely, E., Guerriero, J, Milton, D. (2007). Management of Exposure to Aircraft Bleed-Air Contaminants Among Airline Workers, A Guide for Health Care Providers. www.ohrca.org/Medical Protocol final 10-3-07.pdf

Garrett Brown Heads Team Helping Miners in Mexico

Garrett Brown represents a force for change—a leader committed to the global improvement of occupational and environmental health—and the founder and coordinator of the Maquiladora Health and Safety Support Network (MHSSN). Brown, a compliance officer in the Oakland District Office of the California Division of Occupational Safety and Health (Cal/OSHA) says, “with no budget and no office,” the volunteer network investigates workplace hazards in the 3,000 “maquiladora,” or foreign-owned assembly plants, along the U.S.-Mexico border. He recently mobilized eight experts from the MHSSN to travel to Cananea, Mexico. The team documented, and later made public, the occupational and environmental health hazards facing the 1,200 employees on strike from their jobs with the multi-national employer, Grupo Mexico.

The request for the help of the MHSSN came in September 2007 from Local 65 of the Mexican Miners union through the United Steel Workers (USW) union. Brown broadcast a call to action to the 400 members of the MHSSN, initially sponsored by the Occupational Health and Safety Section of the American Public Health Association in 1993. He received a response from 60 volunteers, as Garrett said, “willing to drop everything and go to Mexico in two weeks time to be a part of the team.”

The final eight person, multi-disciplinary, multi-national group of investigators included COEH members **Heather Barr**, a graduate student in the Occupational and Environmental Health Nursing Program at University of California at San Francisco, and Berkeley School of Public Health graduate **Ingrid Zubieta**, a native of Columbia who now works for the Labor Occupational Safety and Health Program at University of California, Los Angeles.

Along with Brown, Barr, and Zubieta, the team included medical experts Dr. Robert Cohen, a pulmonary specialist at Cook County Hospital and the University of Illinois-Chicago; Moises Ortega, a senior pulmonary technician from Cook County Hospital; Dr. Marian Fierro, an occupational health physician from Mexico conducting



Top left: The volunteer group pictured with members of the mining union (Barr, front center; Brown, back center, right.) Lower left: Pulmonary technologist, Moises Ortega, performs a lung function test on one of the miners.

research at the University of Arizona in Tucson; and Dr. Octovio Castro, an occupational health physician from Hermosillo, Mexico. The industrial hygiene team led by Brown included Enrique Medina, a citizen of both the U.S. and Mexico, who is a Certified Industrial Hygienist working in San Diego, California.

Local 675 of the USW union based in Carson, California, financed \$3,500 to cover

the travel, car, and hotel expenses for the October investigation. All eight professionals donated their time.

The conditions in the mine and ore processing plants shocked Brown, who has conducted more than 500 factory inspections in his 14 years as a Cal/OSHA compliance officer and has also inspected plants in Indonesia, China, and Central America. “It’s almost as if the company was deliberately

driving this facility into the ground. It is the worst I have seen for a trans-national corporation with the kind of resources that Grupo Mexico has," he notes, "and many of the health and safety violations were deliberate in nature."

The dust ventilation system in the mine's processing plants had not functioned for two years when the company laid off some of the housekeeping and maintenance staff. When the company tried to bring in non-union contractor workers to keep the plant clean, Brown reports, "The union stopped them at the gate. That is when Grupo Mexico—which owns and operates mines in the U.S., Mexico, and Peru—decided to dismantle the dust collectors. They took them apart and laid them on the ground next to the plant. It became a test of wills as to who was going to be able to last longer."

Fed up with two years of choking on dust (now two to three feet high drifts through the plants), along with other serious risks in and around the work site, the miners went on strike in July 2007. "The mine, just thirty miles south of the U.S./Mexico border with Arizona, is the largest open pit copper mine

"Practicing my Spanish skills while screening the copper miners for the lung function test, I learned first-hand of the harsh realities of working in this copper mine, bringing to light the stoicism of the miners trying to provide for their families as well as the frustrating and dangerous working conditions surrounding the miners. I can think of no better way to be introduced to the occupational health issues."

Heather Barr

in Mexico and the source of about 50% of Mexico's copper," reports Brown.

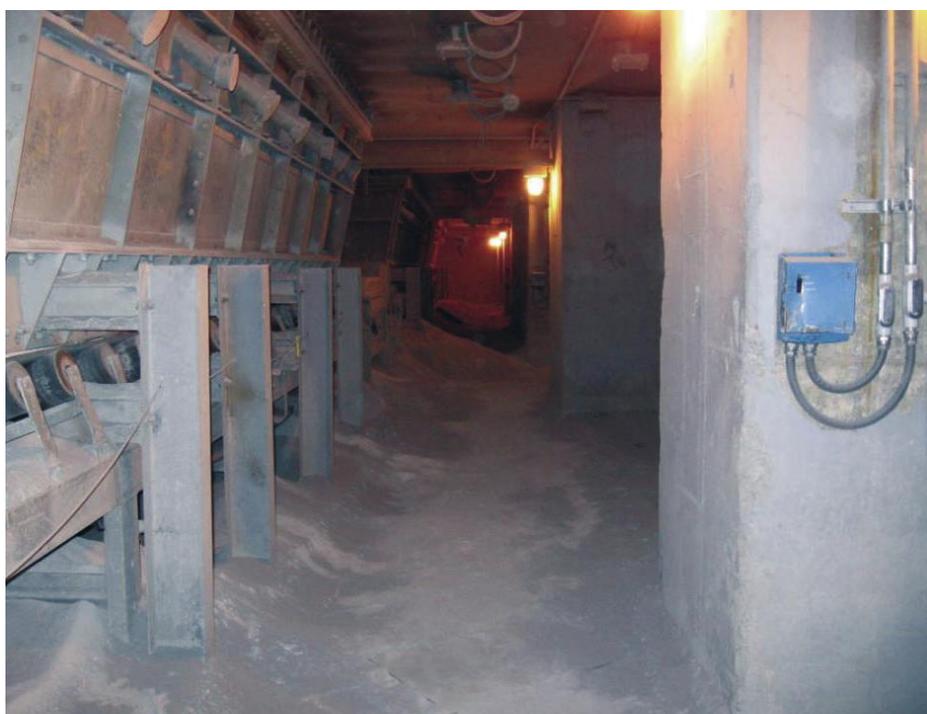
Over the course of a weekend in October, the team conducted interviews with seventy striking miners, tested their lung function, and provided physician consultations to discuss test results. During the walk-around inspection of one of the ore processing plants, Brown found "unbelievable levels of acid mist exposures that were literally eating up the structural beams of the building." A bulk sample of the accumulated dust taken in October and sent to a U.S., AIHA-accredited laboratory found the dust was 23% crystalline silica, a human carcinogen, and 50% of the particles were in the respirable range below ten microns in diameter.

The MHSSN team issued their preliminary report on November 12, 2007, and met with high-ranking officials from the Mexican Labor Department in Mexico City. The team's final report was issued on January 17, 2008, and Brown presented the findings to a national forum of the Mexican Miners union in Cananea on February 2, 2008. Brown says that, "we are considering filing a complaint under the labor side-agreement of the North American Free Trade Agreement in early 2008 sponsored by the miners, our network, the USW union, and other community-based organizations in the U.S. and Mexico."

Brown reports the miners have been on strike for six months now, "with just a small strike stipend from the union." Brown credits the miners as his inspiration. "These are not helpless victims – these are people fighting for their rights. They are incredibly dedicated, determined, courageous people. So my part is to do the little bit that I can to help. They are the ones leading the charge."



For more information about the miners in Cananea or the MHSSN, please visit the website mhssn.igc.org. Brown also wrote an article about the Cananea project, see: Brown, G. *International OHS Through the Looking Glass of the Global Economy*. Occupational Hazards. 2008. http://www.occupationalhazards.com/zone/334/OHIndustrial_Hygiene/Article/78362/International_OHS_Through_the_Looking_Glass_of_the_Global_Economy.aspx



Lower right: Piles of dust can be found throughout the mining and processing facilities. Photo by Garret Brown

Oisaeng Hong Named New Director of OEHN Program

A leading academic within the workplace safety and health community, **Oisaeng Hong** has joined the faculty at the University of California, San Francisco (UCSF) School of Nursing as the Director of the Occupational and Environmental Health Nursing program (OEHN). Previously she was the Director of the Occupational Health Nursing program at the University of Michigan, School of Nursing.

As Director of the UCSF OEHN program, Hong manages curriculum development, training, and interdisciplinary activities. The OEHN program is one of the largest nursing programs of the NIOSH funded Education and Research Centers— offering degrees at the Master’s and PhD levels.

Hong’s research focuses on the health and safety of workers, particularly among underserved immigrant and migrant worker populations. She says it is important for her to reach out to these groups for her new research in California as well as for service to the community. Her specialty is noise exposure and hearing loss among workers—the second most reported occupational disease and injury in the United States. Hong develops and implements theory-based health promoting behavioral interventions that incorporate multimedia computer technology.

Hong says, “One of the reasons I was very interested in coming to California was for my research. I wanted to reach out to migrant farm worker populations and the University of California, Davis, (UC Davis) has a Center for Agriculture Safety and Health. Before I moved here, I worked with the Principal Investigator (Dr. Mary Haan) of the Sacramento Area Latino Study on Aging (SALSA) to investigate hearing loss problems in older American-Mexicans. The SALSA is a NIH funded ongoing cohort study of over 1700 Mexican elderly and conducted by researchers at the University of Michigan and UC Davis. Hong plans to build on her relationship with UC Davis researchers in the future.

“As a person who came from a country where OEHN is not fully developed, I am also devoted to the development of education and research programs in other countries, particularly working with nursing professionals and faculty to develop OEHN graduate degree programs. I am most involved with nurses in Brazil, Japan, Korea, Mexico, South Africa, and Thailand.” One of Hong’s major goals is to develop an international OEHN network to bring students to UCSF from those countries, help them complete their dissertations so that they can become OEHN leaders in their own countries, and to assist nursing faculty in developing graduate level curricula for OEHN.

Hong cites one of her new challenges as Director is the recruitment of quality students into the field. “Other occupational health nursing programs face the same issue. At UCSF, we are being innovative in recruiting students into two tracks, the nurse practitioner track and the specialist track. We are using all kinds of methods to recruit students.” In addition to open houses, campus visits, and advertising, she has enlisted the help of active occupational health nurses (OHNs) in industry and in clinics to recruit nurses to the program. The strategy has produced results. Enrollment is on the rise with more students applying this year than last. Hong suggests that streamlining the specialist program from two to an intensive one-year program will attract more OHNs wanting a Master’s degree.

Hong earned her MS and BS in Nursing at Yon Sei University in Seoul, Korea, and her PhD in Nursing with special focus on OEHN at the University of Illinois at Chicago. She also completed a 2-year postdoctoral fellowship at the University of Michigan. She is currently the principal investigator of several research projects including a computer-based hearing protection intervention for firefighters and risk factors of hearing loss in older Mexican-Americans. 🙄



Oisaeng Hong

HONG’S VISION FOR THE OEHN PROGRAM:

Build environmental health capacity within the program.

Address the global burden of occupational and environmental diseases and injuries by playing a pivotal role in international occupational and environmental health activities, especially in countries where OEHN programs do not exist or are in the early stages of development.

Improve health and safety for low-wage underserved immigrant workers in the State of California. As President-elect of the Asian American and Pacific Islander Nurses Association, Hong will be establishing collaborative partnerships with various Asian immigrant communities and business organizations.

Initiate postdoctoral research training in the UCSF OEHN program and actively participate in multidisciplinary and multi-campus research activities.

Ergonomics Career a Custom Fit for Kristin Amlie

As the Senior Ergonomics Specialist at the University of California, San Francisco (UCSF)/Berkeley Ergonomics Program, **Kristin Amlie** consults with organizations and individuals to design and implement ergonomic intervention and training programs. Her goal is to “improve the fit between people and their environment.” Previously she was the ergonomics specialist at the UCSF Medical Center where she managed the program delivered to 6,000 employees.

She describes her new role in the Ergonomics Program as consultative. “I work with a broad range of clients and help them with either their corporate program or on a single project.” At the corporate level, she designs ergonomic programs to satisfy pending California Division of Occupational Safety and Health (Cal/OSHA) ergonomic regulations; integrates medical management protocols for employees with cumulative trauma disorders; and evaluates floor plans, furniture, equipment, and hand tools. At the individual level, she modifies computers and workstations, designs tools to reduce strain and fatigue, and trains employees in ergonomic concepts and appropriate work/break patterns.

Most frequently, she encounters musculoskeletal disorders, cumulative trauma injuries, and aging employees. “Aging seems to be a good way to get people to understand the effect of cumulative trauma in workspace disorders. It is an avenue to get people to understand how their bodies work.”

Born in Norway, her mother is a designer and her father a physician, which ignited her interest in the fusion of design and health. She immigrated to the U.S. with her family and later earned a B.A. in English from the University of California, Los Angeles. Amlie decided to return to her homeland to study physical therapy at Oslo College. Amlie says her training in physical therapy “affects the way that I work. It gives me a solid understanding of how the body functions, how injury mechanisms work, and how to prevent injuries.” Because of her background, she describes her ergonomics approach as ho-

listic. “In Norway, design is an integral part of people’s lives.”

Currently, Amlie is implementing an online ergonomics assessment program for employees at the University of California, Merced, to identify people in categories of high-risk. She will ensure “employees are able to use the recommendations in a way that is effective and reduces their risk.” She is also consulting with San Francisco’s Department of Emergency Management (911), where she is creating an ergonomic workstation for employees who use up to ten monitors at a time.

Another client, the Lawrence Berkeley National Laboratory, uses her expertise to improve the physical and spatial challenges facing lab specialists and scientists. She and her coworker, Senior Development Engineer **Alan Barr**, are customizing a mobile forearm support platform for use at anti-vibration microscope tables used in the lab.

Amlie is also consulting with the City and County of San Francisco to create ergonomics training programs for roofers, carpenters, electricians, and gardeners; and to design better methods of collecting fares from meters and buses. In another project she is looking at ways to lift sanitation covers—currently a one-person lift of approximately 250 pounds. A mechanical lift-assist would reduce lifting requirements.

“I love what I do.” Amlie says, “It is rewarding for me to help employers understand how they can often make simple changes to an environment to really improve employee health, productivity, and satisfaction.” Long-term, she aspires to develop ergonomic processes using what she calls, “lifespan ergonomics.” Rather than creating a building that is fixed, she wants to design flexible options for adapting to changes in technology. “I think there is room for trying to predict the future needs of people and their environment.” 🌀

For more information about the ergonomics consulting services offered by UCSF/Berkeley, visit their website at <http://www.me.berkeley.edu/ergo>.



Kristin Amlie

Worksafe Conference Focuses on Occupational Safety and Health Policy Agenda in California

A diverse community from 75 organizations gathered at a Worksafe occupational safety and health conference in December 2007 titled, “Learning from the Past—Building for the Future.” Volunteer Attorney at Worksafe, **Fran Schreiber**, and her colleagues timed the conference “to address policy issues that are on the table right now because of the changing political climate at the federal and state level.”

More than a dozen staff members from the COEH Labor Occupational Health Program (LOHP) and the UCLA Labor Occupational Safety and Health Program (LOSH) served as speakers or facilitators at the conference. Several members of each group were integral to pre-conference planning and helped to make the event a success. Keynote presenters included **Pam Tau Lee** from LOHP and **Linda Delp** from LOSH.

A theme emerged over the two-day event: make Worksafe more visible. “The public knows little about the issues, and may not care unless we begin to reach out and educate them as to why it is important,” summarizes Schreiber. “Worksafe can play an important role in effecting change by raising public awareness of occupational health through the media; educating workers, advocacy groups, and the legislature; broadening the movement to support health and safety; and by encouraging families of victims to be part of that process.”

In January, Worksafe’s Board of Directors reviewed a “Work Plan” generated post-conference. A survey will be going out to conference attendees, and to the broader health and safety activist community involved with Workspace, to incorporate their priorities into the final draft. At the same time, Worksafe is moving forward on many issues raised at the conference.

According to Schreiber, “Toxic substances are a priority for our organization as well as other groups looking at government action.”

Worksafe—a non-profit organization that promotes occupational safety and health through education, training, legal assistance, and advocacy—encourages people to get involved. According to Schreiber, “Everyone who does this kind of work needs to see themselves as an activist and contributor.” For information about Worksafe, or to request updates on occupational safety and health topics of interest, visit their website at <http://www.worksafe.org>.

LOHP and LOSH staff who participated in planning or facilitation of the Worksafe conference: Dinorah Barton Antonio, Diane Bush, Jerilynn Campos, Elaine El-Askari, Pam Tau Lee, Laura Stock, Juliann Sum, Suzanne Ternan and Valeria Velazquez (LOHP), and Jessica Barcellona, Deogracia Cornelio, Linda Delp and Jessica Martinez (LOSH).

Whorton Student Prize for Scientific Writing

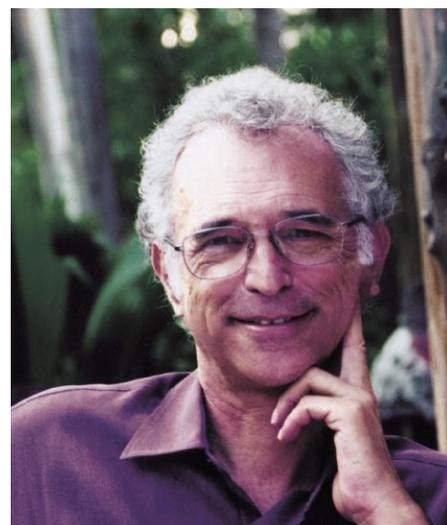
The program directors of COEH are pleased to announce the Whorton Student Prize for Scientific Writing. The new award honors the legacy of the late **Dr. Donald Whorton**, a key figure in the field of occupational and environmental health who died of Lou Gehrig’s disease in January 2008.

COEH will grant the prize to a COEH student who is the first author on a peer-reviewed journal article that is judged to be the best on a subject of importance to occupational and environmental health. All students enrolled in COEH-affiliated programs are eligible for the competition.

Whorton was an elected member of the National Academy of Science’s Institute of Medicine, and a Fellow of the American College of Epidemiology and the American College of Occupational and Environmental Medicine. He was the founding director of UC Berkeley’s Labor Occupational Health

Program, which subsequently became part of COEH. Whorton’s ground-breaking work establishing the link between male sterility and exposure to the pesticide dibromochloropropane (DBCP) led the Environmental Protection Agency to ban the substance. As a result of the DBCP episode, COEH was created by legislative mandate to provide California with leadership and expertise to prevent such tragedies. Dr. Whorton later served as chair of COEH’s Statewide Advisory Committee.

Initial funding for the award has been pledged. Donations are invited to maintain award funding in future years. Please make your contribution payable to UC Regents with a notation that it is for the Whorton Prize.



Donald Whorton

UC policy report says chemical exposures cost state estimated \$2.6 billion

Serious gaps in existing laws regulating the production and use of hazardous chemicals fail to protect public health and the environment, according to a new report released in January by researchers at the University of California, Berkeley, and University of California, Los Angeles (UCLA). As a result of this oversight, chemical and pollution-related diseases among children and workers in California cost the state's insurers, businesses, and families an estimated \$2.6 billion in direct and indirect costs.

In 2004, more than 200,000 California workers were diagnosed with deadly, chronic diseases—such as cancer or emphysema—attributable to chemical exposures in the workplace, according to the report. Another 4,400 died as a result of those diseases. The new findings, based upon well-established methodology for analyzing economic impact, indicate that those diseases resulted in \$1.4 billion in both direct medical costs and indirect costs that include lost wages and benefits. An additional \$1.2 billion in direct and indirect costs is attributed to 240,000 cases of preventable childhood diseases in California related to environmental exposure to chemical substances, the authors contend.

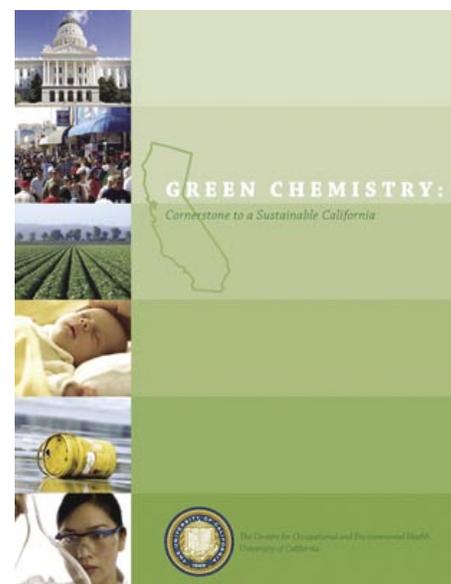
"Green Chemistry: Cornerstone to a Sustainable California" has been endorsed by 127 faculty members from seven UC cam-

pus, Lawrence Berkeley National Laboratory, and Lawrence Livermore National Laboratory. The California Environmental Protection Agency commissioned the UC Berkeley and UCLA Centers for Occupational and Environmental Health (COEH) to prepare the report.

The report was authored by **Michael Wilson** and **Megan Schwarzman**, both COEH research scientists at UC Berkeley's School of Public Health; **Timothy Malloy**, professor at the UCLA School of Law; **Elinor Fanning**, COEH assistant director of research at UCLA; and **Peter Sinsheimer**, a COEH affiliate and director of the Pollution Prevention Education & Research Center at Occidental College.

With global chemical production predicted to increase 330 percent by 2050, health problems related to environmental contamination are likely to grow unless comprehensive steps are taken now, say the authors. Green chemistry—the use of renewable and safer raw materials, manufacturing processes and products—offers a sustainable solution, according to the report.

"Research conducted in the past decade has provided ample evidence of significant health impacts from exposure to toxic chemicals," said **John Froines**, COEH director at UCLA and professor of environmental health sciences. New policies that



prevent hazards rather than cleaning up problems after the fact will foster innovation and help green chemistry emerge as a central part of our economy."

The report calls on California to implement a comprehensive approach to the management of chemicals and products. 🌱

A PDF is available for download at:
<http://coeh.berkeley.edu/greenchemistry/briefing>

Excerpted from UC Press Release by Sarah Yang,
Media Relations, 17 January 2008

IMMIGRANT WORKERS: A POPULATION AT HIGH RISK FOR OCCUPATIONAL INJURY AND ILLNESS

APRIL 18, 2008, 8 - 4:30pm
ELIHU HARRIS STATE OFFICE
BUILDING AUDITORIUM
1515 CLAY ST, OAKLAND, CA

The 2008 COEH Symposium will examine current research on occupational health hazards disproportionately affecting immigrant workers, exploring health care access and policy initiatives affecting diverse populations with a focus on understanding and developing intervention strategies to reduce occupational illnesses and injuries among this growing community.

Presentations and panel discussions by:

Robin Baker	Steven McCurdy
John Balmes	Meredith Minkler
Rajiv Bhatia	Rachel Morello-Frosch
Xochitl Castaneda	David Rempel
Helen Chen	Marc Schenker
Rupali Das	Rossana Segovia-Bain
Sylvia Guendelman	Glenn Shor
Robert Harrison	Don Villarejo
Niklas Krause	

Find more information at coeh.berkeley.edu and register now at www.coehce.org



Protecting workers and communities from occupational and environmental health hazards through teaching, research, and service

COEH CENTER FOR OCCUPATIONAL & ENVIRONMENTAL HEALTH
University of California at Berkeley, San Francisco, and Davis

Director: John R. Balmes
Deputy Director: Marion Gillen
Program Directors:
Public Health, UCB: Robert C. Spear
Occupational and Environmental Health Nursing, UCSF: Oisaeng Hong
Occupational and Environmental Medicine, UCSF: John R. Balmes
Public Health Sciences, UC Davis: Marc B. Schenker
Biological and Agricultural Engineering, UC Davis: Fadi Fathallah
International Occupational and Environmental Health: Kirk R. Smith
Ergonomics: David Rempel
COEH Community Services/LOHP: Robin Baker
Continuing Education: Barbara Plog

Bridges is published quarterly

Editorial Board:

John Balmes
Marion Gillen
Suzanne Llewellyn
Robert Spear

Managing Editor: Marion Gillen

Design: John Minardi

Writers: Maureen Jerrett & Marion Gillen

Contact:

Phone: (510) 643-4421
Fax: (510) 642-5815
minardi@berkeley.edu
<http://coeh.berkeley.edu>

The Northern California Center for Occupational and Environmental Health (COEH), a multidisciplinary program of the University of California at Berkeley, Davis, and San Francisco, promotes health and safety in workplaces and communities by:

- Educating health professionals in epidemiology, ergonomics, industrial hygiene, medicine, nursing, toxicology, and related fields to be leaders in occupational and environmental health.
- Developing new knowledge through an interdisciplinary research agenda focused on preventing illness and injury.
- Responding to the needs of people affected by hazards in their workplaces or communities, with special attention to vulnerable populations.

Through these activities COEH supports federal, state, and local agencies, health and safety professionals, industry, labor, and community-based organizations in their efforts to prevent occupational and environmental disease and injury.

COEH is an Education and Research Center (ERC) of the National Institute for Occupational Safety and Health (NIOSH).

♻️ Printed on paper that is 100% recycled, 50% post-consumer waste, and processed chlorine free, using soy-based inks.

University of California
CENTER FOR OCCUPATIONAL
& ENVIRONMENTAL HEALTH
School of Public Health
Berkeley, CA 94720-7360

Nonprofit
Organization
U.S. Postage PAID
University of
California

ADDRESS SERVICE REQUESTED

COEH SPRING SYMPOSIUM, APRIL 4th, 2008

IMMIGRANT WORKERS: A POPULATION AT HIGH RISK FOR OCCUPATIONAL INJURY AND ILLNESS

Information at coeh.berkeley.edu, register now at www.coehce.org