COEH faculty and students at UC Berkeley, Davis, and San Francisco have joined forces to study respiratory health concerns that have surfaced at New United Motor Manufacturing, Inc., (NUMMI), a joint venture of General Motors and Toyota in Fremont.

The core activity for the NUMMI project this spring is a seminar at UC Berkeley being offered by COEH faculty members Katharine Hammond of Environmental Health Sciences and Robin Baker, director of COEH’s Labor Occupational Health Program (LOHP). Under their direction, graduate students in occupational health, industrial hygiene and other disciplines have been visiting the NUMMI truck and automobile manufacturing plant to evaluate respiratory symptoms, assess exposures, and determine if the symptoms are related to the exposures. They have developed a questionnaire that will be administered and evaluated over the summer.

The study, which is jointly supported by NUMMI management and by United Auto Workers Local Union 2244, offers NUMMI the problem-solving skills of faculty and researchers in disciplines as wide-ranging as epidemiology, occupational medicine and nursing, industrial hygiene, and health education. This research gives students on the three campuses a unique opportunity to gain the kind of interdisciplinary training and experience under faculty guidance that they will need to solve real world problems for their future employers.

“In keeping with our mission, we are using the strengths of the disciplines to do a needed service for the community,” said Hammond. “The problems we are addressing are complex and don’t lend themselves to simple approaches. Each discipline has unique knowledge to contribute. For example, the term respiratory symptoms is vague. Our nurses and doctors can help us frame questions that will elicit focused answers. Our industrial hygienists can look at processes in the plant to identify potential exposures and potentially hazardous materials. The epidemiologists will tell us what research methods will be most effective and how best to analyze our data. And our health educators will help us communicate with the workers so that we don’t burden them and so that they understand the limits of the study—

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NUMMI Study
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what we can and cannot know.”

Baker is leading the part of the research team that is dealing with outreach and communications. “It is very interesting working with the students to explore the culture gap between the university and an industrial workplace, and to explore strategies for bridging this gap,” she said.

The researchers will be looking at possible exposure to solvents, metal fumes, and machining fluids in NUMMI’s paint and body shops. They will study the assembly area of the plant as a control.

COEH Acting Director John Balmes, M.D., a pulmonary specialist at UC San Francisco, is heading the respiratory health study with Hammond. Other investigators include Ellen Gold, who specializes in cancer epidemiology and reproductive health at UC Davis, Marion Gillen of occupational health nursing at UC San Francisco, and industrial hygienist Patty Quinlan of UC San Francisco.

Indoor Air Quality Expert Joins COEH

Culminating many years of collaboration with COEH faculty members on environmental research projects, indoor air quality expert William Nazaroff of UC Berkeley’s Department of Civil and Environmental Engineering has joined COEH.

Nazaroff, a Berkeley faculty member since 1988, holds the title of Roy W. Carlson Distinguished Professor in the College of Engineering. He studies the physical and chemical processes that govern air pollutant concentrations and fates, and develops the information needed to assess and control human health effects from air pollutant exposures.

His work with COEH includes research on controlling indoor aerosols, such as TB and environmental tobacco smoke. He also has a strong interest in the indoor-air behavior of gaseous pollutants, such as ozone, inorganic acids and bases, and semivolatile organic compounds.

Nazaroff accepted the invitation to join COEH after COEH program directors on the UC Berkeley, Davis and San Francisco campuses voted unanimously to ask him to affiliate. As a COEH faculty member, Nazaroff can direct interdisciplinary student research funded through COEH.
Ever since Siu Ying Wu came to California from Hong Kong, nine years ago, she has worked ten-hour days in the garment industry, hunched over a sewing machine, with no time for breaks. She and her co-workers commonly suffer from backaches and other musculoskeletal disorders that arise from their work.

“Sometimes the aching pain shoots through the joints in my hands and feet, making simple motions, like picking up a cup of water, difficult,” she said through an interpreter. But, until recently, all she could do was endure the pain.

“We do not have health insurance in our sewing factory,” she explained. “We never claim workers’ compensation, because we do not think that we can prove our pain is work related. Besides, we are afraid that we will be blacklisted, if we claim workers’ compensation....”

For Siu Ying Wu and other Bay Area garment workers, hope—and help—arrived in mid-April, when Oakland-based Asian Immigrant Women Advocates (AIWA) joined with an occupational and environmental health care team from UC San Francisco to open a new clinic in Oakland’s Chinatown. AIWA is a non-profit community group founded in 1983 to improve the living and working conditions of low-income Asian immigrant women.

Supported by a two-year, $100,000 grant from the California Wellness Foundation, the Asian Immigrant Women Workers’ Clinic offers basic treatment for work-related problems, physical therapy, and ergonomic classes for garment workers on the second and fourth Wednesday evenings of the month.

Under the direction of three COEH faculty members at UC San Francisco—Robert Harrison and Leslie Israel of the Division of Occupational and Environmental Medicine and Barbara Burgel of the Occupational and Environmental Health Nursing Program—the clinic staff is not only treating garment workers but also documenting their health problems and access to care.

There are more than 20,000 garment workers in the San Francisco Bay Area, most of whom are Asian immigrant women. Studies have shown that garment workers are at high risk for musculoskeletal injury, but relatively few efforts have been made to intervene, to bring clinical services to them, or to detail their health problems.

“When AIWA Health Projects Coordinator Nan Lashuay and Executive Director Young Shin approached me to partner with them, I jumped at the opportunity to bring the University’s mission together with a respected organization that has extensive roots in the Asian immigrant community,” Harrison said. “The Occupational Health Clinic at UC San Francisco has been operating for over 20 years. We see relatively few garment workers for a variety of reasons—fear of reporting injuries or illness, lack of insurance, lack of understanding that working conditions can be related to symptoms, and cultural barriers. By working with AIWA in the community, we have a unique opportunity to build a level of trust so that we can begin to understand and address the needs of this underserved group.”

In early April, AIWA hosted an evening celebration to dedicate the new Oakland Clinic with a traditional dance.
Better Detection and Tracking Can Help Protect Troops From Hazardous Agents

To protect military personnel during operations in areas that have been contaminated by harmful agents — and for proper medical treatment — military leaders must anticipate potential exposures and monitor actual exposure.

This is the advice offered by COEH faculty member Thomas McKone, staff scientist at the Lawrence Berkeley National Laboratory and adjunct professor of environmental health sciences at UC Berkeley, in a recent report to the U.S. Department of Defense (DOD) on “Detecting, Characterizing, and Documenting Exposures.”

McKone’s study is the fourth and final report in the series, Strategies to Protect the Health of Deployed U.S. Forces, from the National Academies’ Institute of Medicine and National Research Council. The series addresses the technical aspects of identifying and assessing hazards, detecting harmful agents, reducing risk of exposure, and improving surveillance activities and record keeping.

McKone’s report is designed to assist the DOD in coping with exposure questions that arise before, during, and after troop deployments. It assesses the methods and policies used to detect and track exposures to potentially harmful agents.

The study addresses detecting harmful agents in the environment, tracking troop locations, and combining information on agent concentration and troop location. McKone recommends that the DOD develop detectors with sensitivities that can signal low-level as well as high-level exposures. To reduce the number of false responses, DOD should use at least two different technologies for detecting an agent.

To track the locations of soldiers and their proximity to identified or suspected releases of warfare agents, DOD should develop miniature receivers that soldiers can wear to pinpoint their location through a network of satellites, the report says. DOD should also review its efforts to catalog and rank the risk of harm from toxic industrial chemicals, and should use this information to set priorities for determining which chemical concentrations should be monitored during future deployments, McKone says.

The Defense Department asked the National Academies for advice on a long-term strategy to protect the health of military personnel in unfamiliar environments, drawing on lessons learned from the Gulf War. A synthesis study will use these reports to craft a unified, long-term strategy, with a final report expected by the end of 2000.

Moving That Mouse

How did we ever work without a computer mouse? More to the point, how should we be working with these electronic click-and-drag gadgets that have become integral to our daily lives at home and on the job?

A study of mouse usage by COEH faculty member David Rempel, director of the Ergonomics Program at UC San Francisco, and his colleagues has shown that carpal tunnel pressure increases significantly when people use a mouse, especially when they drag objects with the mouse. Their report published in Ergonomics, 1999, Vol. 42, No. 10, suggests that using a mouse for a long time exposes some people to carpal tunnel pressure levels that may lead to repetitive strain injury to the wrist and hand.

The researchers suggest that mouse users avoid extending the wrist, minimize dragging while holding the mouse button down, and take a break periodically from using the mouse by doing other tasks.
Pediatric Environmental Health Specialty Unit Opens

The Division of Occupational and Environmental Medicine at UC San Francisco, in collaboration with the Southern California COEH at UC Irvine, has received a one-year, $125,000 grant to establish a Pediatric Environmental Health Specialty Unit (PEHSU) with a focus on childhood asthma.

PEHSU will consult with health professionals, government agencies, and the California Poison Control System; conduct outreach activities to educate providers and others about environmental health issues that affect children; and provide clinical and diagnostic services.

The program is one of six that have been funded nationally by the Agency for Toxic Substances Disease Registry (ATSDR) and the Environmental Protection Agency (EPA) through a cooperative agreement with the Association of Occupational and Environmental Clinics (AOEC). The purpose is to foster collaborative relationships among academic programs in occupational and environmental medicine, pediatric departments, and state poison control centers.

UC San Francisco will partner with the California Poison Control System. The northern and southern California sites will be responsible for EPA Region IX (California, Nevada, Arizona, and Hawaii). The programs will provide resources for pediatricians, other health care providers, government agencies, and communities to reduce environmental health threats to children, improve access to experts in pediatric environmental medicine, and strengthen public health prevention capacity.

John Balmes, acting director of COEH, is heading the northern California PEHSU which will focus on environmental factors affecting childhood asthma. Project Coordinator Denise Souza can be reached at 415/206-4320 or via e-mail at dsouza@sfghoem.ucsf.edu.

Steinmaus Joins UC San Francisco Faculty

Craig Steinmaus, a physician and scholar who studies how the body reacts to environmental pollutants, has joined the Division of Occupational and Environmental Medicine at UC San Francisco as an assistant adjunct professor.

Steinmaus will devote most of his time for the next two years to research he has been conducting at Berkeley with COEH faculty member Allan Smith on the cancer risks of arsenic in drinking water. He will also work part-time treating injured workers and supervising medical residents at the San Francisco General Hospital’s Occupational Health Service.

Steinmaus received a B.S. in Environmental Toxicology from UC Davis in 1984 and his M.D. at UC Davis in 1989. He completed an internship in Internal Medicine at the Long Beach Veterans Administration Hospital in 1990. In the course of his residency in Occupational and Environmental Medicine at UC San Francisco, Steinmaus earned an M.P.H. at Berkeley, and later worked for Smith as project director of a case-control study of bladder cancer risk from arsenic in drinking water. He completed his residency last year.

His other research interests include farm worker illness following pesticide exposure, the effects of diet on bladder cancer risk, the relationship of beryllium to lung cancer, and the role of exercise in preventing acute mountain sickness.

Dean Baker, director of the Southern California COEH at UC Irvine, is heading the PEHSU, in southern California, which will focus on neurodevelopmental hazards, such as lead and pesticides.

PEHSU is currently developing a website and will be offering a two-day course examining issues in reproductive and childhood environmental health at COEH’s Summer Institute starting on July 31 in Berkeley.
Symposium Speakers: We Should, Can Reduce Diesel Emissions

As the state and national debate about regulating diesel exhaust continues to rage, two speakers at the first annual COEH Spring Symposium on “Particulate Pollution: Research and Policy Issues” said diesel emissions can and should be reduced.

The potential health risks of exposure to diesel exhaust are very high—higher than the health risks of many carcinogens that are already regulated in California, said COEH faculty member Allan Smith, professor of epidemiology at UC Berkeley.

At the request of the state, Smith has analyzed the research on the relationship between occupational exposure to diesel exhaust and lung cancer. Compared to the carcinogens regulated by California Proposition 65, which could be responsible for one additional cancer death per 1000 people exposed, diesel exhaust could be responsible for an additional two lung cancer deaths per 1000 persons exposed, Smith told symposium participants.

Air pollution expert Robert Sawyer, professor in the graduate school at UC Berkeley, said diesels are “really dirty,” but offer good fuel economy and other advantages that make them “worth cleaning up.” The technology to do so is available now, he said.

The April symposium welcomed 120 participants from industry, government, non-profits, and academia.

Garment Workers Clinic

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clinic, complete with traditional lion and sword dances that evoked power, inner strength, prosperity, and health.

Addressing the gathering, Mee Ling Tung, director of environmental health services for the Alameda County Public Health Department, said, “Affordable occupational health services for workers are limited, and traditional programs don’t always work well, especially for immigrant workers. New approaches are needed, and the (AIWA) Clinic is at the vanguard of this effort.”

Even before Harrison and his colleagues became involved, Pam Tau Lee of COEH’s Labor Occupational Health Program at UC Berkeley had worked with AIWA to train nearly 75 garment workers as peer health promoters in the workplace. In the course of their outreach and teaching efforts, the promoters identified health and safety conditions on their jobs, ergonomic problems, and workers’ unmet health needs as a high priority. These concerns led Lashuay and Shin to seek support for a clinic.

COEH alumnae in industrial hygiene, nursing, and related fields of public health have helped AIWA establish the clinic, have served as liaison to UC San Francisco’s nursing faculty, and continue to provide their skills.

“The garment industry is highly competitive,” Harrison said. “Employers work on thin margins and generally claim that the cost of providing better conditions is an obstacle. Yet there are technologies available now that would reduce risks. Since our primary goal is prevention, we hope eventually to work through AIWA to reach employers who are open to our recommendations. But for now, our first step is to give workers access to trained occupational health professionals, to document the kinds of health problems we are seeing, and to identify barriers to workers coming forward for treatment. If, after two years of operation, we have demonstrated that the clinic fills an important

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June 2000

Marking the second year of a statewide campaign to improve health and safety for youth on the job, COEH’s Labor Occupational Health Program (LOHP) at UC Berkeley celebrated “Safe Jobs for Youth Month” in May with a poster contest for high school students throughout California.

LOHP staff selected the winning poster, by Antwane Cooper of Atwater, with participation from high school students and youth groups in Berkeley and Oakland. The poster is being distributed to high schools throughout the state. A limited number are available at no cost while the supply lasts.

LOHP coordinates the California Study Group on Young Worker Health and Safety, made up of state agencies and organizations representing educators, parents, employers, labor, job trainers, public health, health and safety, law enforcement, and others who play a role in educating or protecting teenagers on the job. The group is developing a public awareness campaign to alert parents, educators, and employers about the need to give extra attention to protecting young people in the workplace.

“Teens don’t have the same life or work experience that adults have, and they are less likely to speak up about problems or to ask for help when they need it,” said Safe Jobs for Youth Coordinator Diane Bush. “We’ve found that many employers, parents and teens don’t know about the child labor laws prohibiting teens from doing hazardous work and limiting their hours on the job. The more people who are aware of these laws, the more likely it is that teens will get the information they need.”

Studies suggest that teen job injury rates are higher than those of adults, despite the fact that teens are prohibited from working in the most hazardous occupations. According to the National Institute for Occupational Safety and Health, an estimated 200,000 teens are injured on the job every year, and 70,000 are injured seriously enough to go to the emergency room. Seventy teens die from their injuries each year.

To reach parents and educators, LOHP has launched a new web site at http://www.youngworkers.org and has developed a teaching packet with short activities and resources for teachers to use. The California Department of Education is distributing the packet and the winning poster to the state’s 1300 high schools.

Winning Teen Safety Poster Sent to State High Schools

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