

# Southern California Centers for Occupational and Environmental Health

## *Ergonomics Update Held at UCLA*

### *Diesel...*

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Based on data it had reviewed, the nine-member panel estimated that exposure to diesel pollution will cause 450 cases of lung cancer among every 1 million people exposed and that 14,850 Californians now living could eventually die of disease caused by diesel exhaust. Residents of the Los Angeles basin are breathing the worst diesel fumes in the state, about 60% more than the average level used to estimate the cancer risk.

According to Froines, this decision is the "most important" public health issue that the SRP has addressed in its 15 years of existence. An advisory group of local air quality officials, industry leaders and environmentalists will review current and expected regulations to help devise a control strategy to deal with this issue and reduce the health risks to Californians. Banning diesel engines or fuel is not an option which will be considered, but the working group will likely focus on tightening emission standards for future vehicles and removing older, smoking vehicles from the state's roads. The group, now being formed, will likely begin its work in Spring 1999.

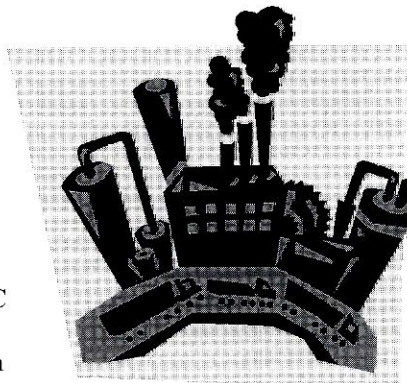
Attention to this issue now shifts to the national arena, as the U.S. Environmental Protection Agency is evaluating diesel exhaust and may declare it a carcinogen. In a March draft report, the EPA identified diesel as a probable human carcinogen, but a final determination is pending.

## ARB Declares Diesel Particulate a Toxic Air Contaminant

At its August meeting, the California Air Resources Board (ARB) declared in a unanimous vote that diesel soot is a Toxic Air Contaminant (TAC) because it poses a danger to public health from lung cancer and

other non-cancer respiratory effects. This decision was based on reports prepared by the ARB and the Office of Environmental Health hazard Assessment (OEHHA) and reviewed by the state's Scientific Review Panel (SRP). The decision ended nearly ten years of scientific analysis and debate on the health effects of diesel exhaust. The SRP, headed by toxicologist John Froines, director of the UCLA COEH, concluded last April that diesel exhaust should be identified as a TAC.

An important turning point in the debate came when industry and environmental groups agreed to the declaration of diesel particulate, and not diesel exhaust as a whole, as a toxic pollutant. The Board acknowledged the health effects likely derived from both vapors and particulate, but the vapors are already regulated. Particulates are microscopic pieces of soot that contain molecules of various toxic compounds adsorbed on the carbon core of the particle and can penetrate deep into the lungs. These particulates are believed to cause serious respiratory problems. By focusing on diesel particulate, the declaration will allow for more targeted control efforts and eliminates harmless exhaust components, such as water vapor, without lessening the



ARB's ability to control diesel emissions. According to ARB Chairman John Dunlap, "This closes the identification phase of the examination on the health effects of diesel emissions and allows the ARB to reinvigorate efforts to find additional ways to

protect public health.

Under Health and Safety Code section 39655, a TAC is an air pollutant "which may cause or contribute to an increase in mortality and serious illness, or which may pose a present or potential hazard to human health." Once a substance is classified as a TAC, the state can take steps to reduce people's exposure to it.

Diesel exhaust is a complex mixture that includes more than 40 substances listed as hazardous air pollutants by the U.S. Environmental Protection Agency and as TACs by the ARB. These substances include benzene, dioxins and formaldehyde, which have already been declared carcinogenic. Diesel emits particles at a rate that is 20 times greater than that from comparable gasoline engines; over 90 percent of these particles are small enough to be inhaled deep into the lungs.

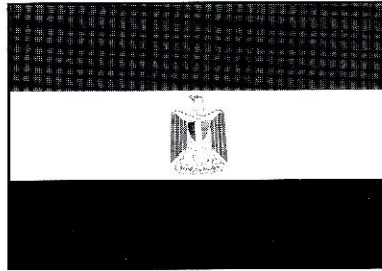
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## *Egyptian Physicians Visit UC Irvine COEH for Training*



**D**uring July 1998, the UC Irvine Center for Occupational and Environmental Health hosted a delegation of Obstetrician-Gynecology (Ob-Gyn) physicians from Egypt for a week-long innovative series of lectures and workplace site visits concentrating on women's occupational health issues. The Egyptian physicians visited the UCI College of Medicine for twelve weeks in the spring for a comprehensive training program to increase their clinical skills in providing state of the art health care for their patients. The overall training program was coordinated by Dr. Hoda Anton-Culver and colleagues of the Division of Epidemiology, UCI Department of Medicine.

Clinical faculty member Dr. Constantine Gean initiated the training by providing an overview of occupational health and the hazards associated with women in the workplace. Legal counselor and occupational and environmental health specialist Ralph Allan presented seminars on environmental health fundamentals and policy and legal/regulatory issues, while Mary Koebler, RN, COHN, introduced the physicians to relevant clinic procedures in occupational health evaluations. Dr. M. Joseph Fedoruk, Medical Director of the UCI occupational and environmental clinic presented a series of case studies relevant to women's health and reproductive toxicology. Dr. Mark Schenker, Professor and Chair, U.C. Davis Department of Epidemiology and Preventive Medicine, was an invited speaker who provided a lecture on reproductive health in occupational settings.

In addition, the Center organized a series of worksite visits to provide insight into policy and work procedures related to women workers. Visits to the UCI Air Pollution Health Effects Laboratory, Allergan, and Rockwell Semiconductor Systems were included in the program. Review of current high technology information research procedures rounded out the training session for the visiting clinicians. The training session was a successful component of a broader program on international collaboration and training being developed by the UCI College of Medicine.

### **Southern California Centers for Occupational and Environmental Health**

Located on the campuses of UCLA and UC Irvine, the Southern California COEHs conduct occupational and environmental training and research in the areas of industrial hygiene, medicine, nursing, toxicology, epidemiology, ergonomics, health education and policy.

This newsletter is published quarterly. Comments are welcome and may be directed to: (310) 206-6920 or e-mail: [coeh@ucla.edu](mailto:coeh@ucla.edu)

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