



DEPARTMENT OF ENVIRONMENTAL HEALTH

ENVIRONMENTAL HEALTH

NEWS

SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE ■ UNIVERSITY OF WASHINGTON ■ WINTER 2001

WORKING IN ASIA

Department of Environmental Health researchers are involved with occupational and environmental health projects throughout the world. This edition of Environmental Health News focuses on our work Asia.

Lee Monteith shares his impressions of occupational health in China, gathered from a People to People exchange program in October. His overview provides context for stories about the collaborations our International Scholars (Fogarty) program has developed in Southeast Asia and research on women textile workers in Shanghai. The latter may be the largest occupational health study of women ever conducted.

Also in this issue you will meet our newest faculty member and our four other assistant professors, and learn how our Continuing Education program is addressing an emerging safety issue in the wireless communication industry.

Impressions: OCCUPATIONAL HEALTH IN CHINA

The Chinese people and their government seem dedicated to improving the health of workers. That's one of the impressions that Lee Monteith took away from a 16-day tour of the People's Republic of China in early October under the People to People ambassador program.

The Spokane-based People to People program dates to the Eisenhower era and was designed to improve communication through educational, cultural, and professional exchanges between individuals. The American Conference of Governmental Industrial Hygienists (ACGIH) invited Monteith, a Department of Environmental Health industrial hygienist, to join a delegation of 23 other occupational health experts who met with colleagues in three Chinese cities, Beijing, Xi'an, and Shanghai, to exchange information about programs, research, and interests.

"Most of our Chinese counterparts were very competent, well trained, experienced

professionals and were open to exchanging information," Monteith said. "They were as interested in our experience with mutual occupational health problems as we were with theirs." The exchange groups included professors, doctors, managers, chemists, safety engineers, and industrial hygienists.

Occupational health was mentioned in ancient Chinese literature but has developed as a scientific discipline since the 1950s, according to a recent article sent by Zu-Wei Gu and colleagues at the Shanghai Municipal Center of Disease Prevention and Control. Since the 1980s, China's economy has developed rapidly, as has the field of occupational health. The first textbooks were printed in Chinese in 1961 and now nine journals are published. Industrial hygienic criteria were first issued in 1956, were revised in 1979, and were increased to 92 criteria in 1997.

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Courtesy of L. Monteith

Lee Monteith at a temple in old Shanghai

Monteith's delegation learned of a determined effort by China's Ministry of Labour to reduce death and disease. Between 1958 and 1978, 80% of the world's occupational deaths were in China, he said, including 10,000 mining deaths per year. Today, governmental bureaus and universities have programs for identification, control, and treatment of problems, and the death rate has noticeably decreased.

A major effort to prevent and treat pneumoconiosis and silicosis has greatly reduced cases. The treatment of pneumoconiosis includes both drugs and Chinese traditional medicine. Occupational toxicology, environmental monitoring, and biological monitoring capabilities have all improved greatly in the past two decades.

In his written analysis, Gu credited academic exchange through scientific conferences, joint research programs, and exchanges of visiting scholars as an important part of the overall effort.

At the Shanghai center, an agency similar to the US Centers for Disease Control and Prevention, the major emphasis has been on silica, asbestos, and benzene, with newer emphasis on the silicon conductor industry and video terminal eye stress. Ergonomics enforcement is difficult because of the large number of small cottage industries. The Center reaches the public through workshops, team leaders, posters for safety, and a new

health education institute. These efforts started in larger cities and are moving to smaller cities and rural areas.

Monteith's delegation toured a cotton textile mill in Xi'an and saw huge factory buildings that contained hundreds of spinning and weaving machines. The noise levels were much louder than allowed by US standards, yet the employees were not wearing hearing protection. The hosts said their research showed no evidence of hearing loss, that hearing protection was available, and that quieter machines were under development. Their employees have health checks every two years.

The delegation visited two institutes that provide degrees in occupational health and safety. These institutes emphasize safety training for section leaders, who will interact with the workers. Graduate safety courses at the Chinese University of Geosciences include accident forecasting, safety analysis, economic theory, assessment, and cultural theory development methods.

A professional occupational health organization, the Chinese Society for Science and Technology of Labor Protection, has grown to 2000 members and has a large conference every four years. Membership comes from all over China. Qualifications for certifying industrial hygiene professionals are being proposed by the Ministry of Personnel with the advice of the Society.

Among Monteith's lasting impressions of China:

- the thousands of people strolling peacefully in Tiananmen Square with vendors selling kites and souvenirs
- the immensity of the Great Wall, which is like a long castle that goes on as far as the eye can see in both directions over mountains and valleys
- the thousands of excavated, life sized terra-cotta warriors at Xi'an
- the beauty of the Summer Palace contrasted to the huge, solid, walled Forbidden City
- the determination of the people and the government to push forward, especially to improve the health of their workers.

FOR FURTHER READING

Occupational Health in China: Achievements and Challenges, Zu-Wei Gu, Zhua-Bao Liu, Hong Qi and Yi-Lan Wang, (2000), at <http://www.acgih.org>.

Between 1958
and 1978,
80% of the
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occupational
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Workers in the rock quarries and coal mines of Vietnam and Thailand breathe in tiny dust particles that can cause disabling disease or premature death. Yet often it isn't known whether their exposures exceed national standards or which workers are most at risk.

The University of Washington's International Scholars in Occupational and Environmental Health

program is helping occupational health professionals in those countries monitor and abate such hazards.

The program is funded by the National Institute for Occupational Safety and Health (NIOSH) and by two programs within the National Institutes of Health: the Fogarty International Center and the National Institute of Environmental Health Sciences (NIEHS).

Vietnam and Thailand's mining and quarrying industries are associated with increased rates of lung problems such as pneumoconiosis and silicosis. Although Asian countries have adopted occupational health and safety standards, they may lack the technology to conduct workplace evaluations, said Dr. Matthew Keifer, director of the UW program.

The International Scholars program (also called the Fogarty program) is designed to provide training and research support for health professionals working on high-priority problems in four partner countries: Vietnam, Thailand, Nicaragua, and Costa Rica.

The program provides four levels of support:

- Short courses "in country," are conducted by DEH faculty. So far, more than 200 practitioners have been trained in Vietnam and about 30 in Thailand.
- Short stays in US, bring international scholars to campus for anywhere from a week to three months for respite from their work.
- An intermediate-stay option, grants nonmatriculated



Matt Keifer

Coal miners in Vietnam

student status for two to six months. Prospective graduate students have an opportunity to prepare for studies at UW.

- A long-stay option allows students to matriculate in a graduate program and focus on skills that will address the needs of the partner country.

"We are giving the countries the information they need to make the workplace safer," Keifer said. In Vietnam, the International Scholars program works with the National Institute for Occupational and Environmental Health, an investigatory agency, so the training has a direct impact on policy. The relationship with Burapha University in Thailand improves the research and training in that country.

The program benefits both UW and the partner countries. UW researchers gain interesting opportunities for research and collaboration. The countries benefit by improving their capabilities to identify risk factors, control exposures, and conduct research. Workers are the ultimate beneficiaries. On a more global scale, Keifer said, the program is helping improve occupational health and safety enforcement in nations that have become world trading partners. "It is good to create jobs, but it's not good if it comes at the expense of the health of workers. ... I hope we can prevent some of exploitation and strengthen the ability of these countries to monitor their workplaces and make them safer." ■■■

Shanghai: STUDY FOCUSES ON WOMEN TEXTILE WORKERS

*Shanghai—city of mystery, city of commerce,
city of a quarter-million women textile workers*

Shanghai's textile workers are part of what may be the largest-ever occupational health study of women, in which Department of Environmental Health researchers are investigating cancer risks and occupational exposures to fibers and chemicals.

Principal investigator Harvey Checkoway, Janice Camp, and Noah Seixas are working with epidemiologist David Thomas of the Fred Hutchinson Cancer Research Center and Dr. Gao Dao Li of the Shanghai Textile Industry Bureau. Thomas has collected extensive data on the women since the late 1980s to study the effectiveness of breast self-exam in reducing breast cancer risk.

Shanghai has been called the New York of China and is the center of one of its most populous urban areas. It was among the first Chinese ports to be opened to Western trade and it long dominated the nation's commerce. Many of Shanghai's textile mills date back to the early part of the 20th century, Camp said, although some ventilation and other modifications have improved working conditions since then.

The University of Washington study will track cancer incidence rates from 1989 to 1999 among a cohort of about 267,000 women. Those who have had cancer will be matched with others who haven't in a case-control study. Investigators will study specific associations between lung cancer and cotton dust; bladder cancer and aromatic amine dyes; nasal and throat cancer and formaldehyde; sinus and nasal cancer and cotton dust; colon cancer and synthetic fibers; and breast cancer and dyes. A team of 30 retired Chinese textile industry nurses who instructed women in the original breast self-exam study are collecting work history information.

The women have worked with cotton, wool, silk, synthetic fibers, dyes, finishing agents, mothproofing, and other fiber coatings including some that had been banned in the United States. "The whole field of health and safety is being extended to developing countries, including China," Camp said. "This is a trend we will be seeing in the future."



Courtesy of H. Checkoway

A cotton-thread spinning operation

The study is ground-breaking, Camp said, because it involves a stable population whose jobs have been documented at least since 1984, it involves exposures to known or supposed carcinogens, and it involves women, who are rarely studied in an occupational setting. Additionally, Checkoway noted, this study will provide important new information about occupational risk factors for breast cancer, which to date have not been studied adequately in any country.

A pilot study of work history data collection started last summer and the full study was launched in January. The study runs through 2004. Funding comes from the US National Cancer Institute.

FOR FURTHER READING

Dr. Thomas' study on breast cancer, <http://depts.washington.edu/sphcm/wph97/shanghai.html>

History: DYING FROM DYEING

Women—and men—have been spinning and weaving cloth for centuries, often falling ill and dying from their occupation. In his *Diseases of Workers (de Morbis Artificum)* of 1713, Bernardino Ramazzini, the father of occupational medicine, spoke of “a foul and poisonous dust [that] flies out from these materials, enters the mouth, then the throat and lungs, makes the workmen cough incessantly, and by degrees brings on asthmatic troubles.”

Ramazzini appreciated the role of spinners and weavers: “To protect our bodies from injury by the air, Mother Nature has furnished us with many materials such as wool, flax, hemp, and cotton; to which we may add silk, though we could certainly do without that, since it was invented not so much to cover our bodies as to adorn women, and men too.”

Then he added, “those employed in their manufacture have to encounter grave hardships.” The worst off, he said, were those who card the rolls of filaments left over from silk making to manufacture an inexpensive thread that townspeople used. “I know a whole family in Modena that had made a good deal of money at this business, but they all died miserably worn down by consumption,” he wrote.

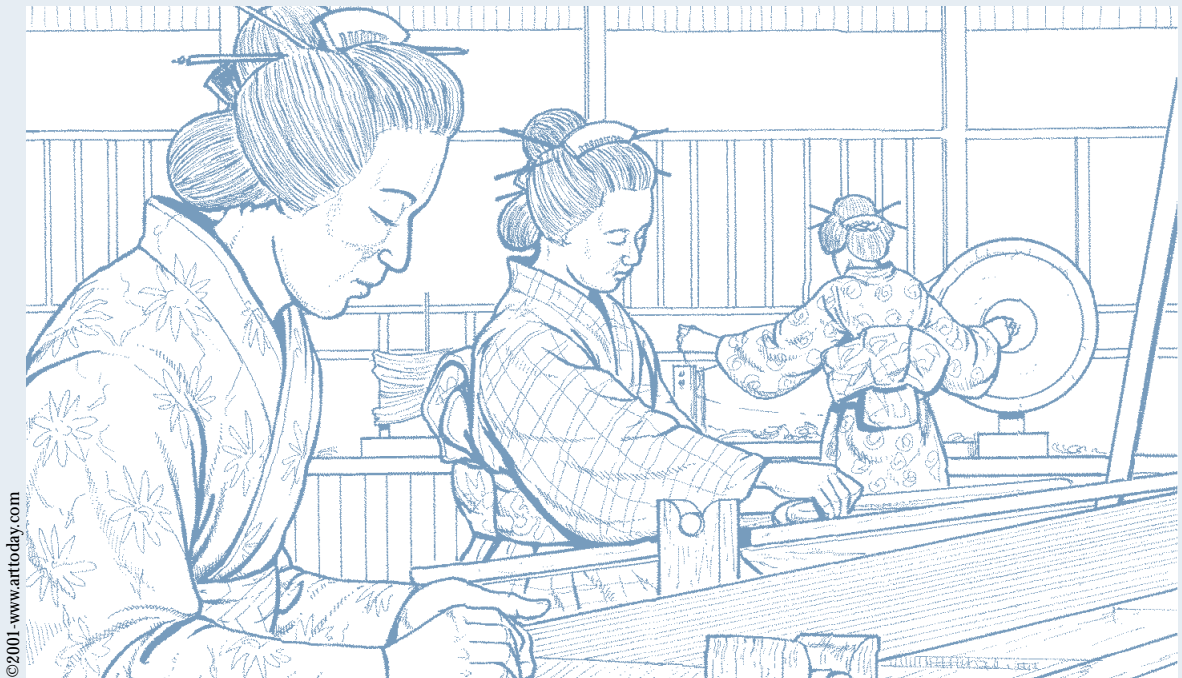
Weavers, too, suffered, “for the whole body is tasked, both hands, arms, feet, and back, so that every part of the body at once shares in the work.” Ramazzini cited professor

Ottavio Ferrari of Milan. Ferrari wrote of the lumbago of weavers “caused by the violent motion and great force necessary for weaving coarse cloth and hempen stuff; when pregnant women do this work they often miscarry.”

For these fatigued weavers, Ramazzini recommended rubbing the arms, thighs, and legs with oil of sweet almonds and bathing the hands, arms, and legs in aromatic wine. For those who card silk, he prescribed a milk diet and broths made from the juices of mallow, violets, and endive. His best advice was to “let them try to make a living at some other trade; for pecuniary gain is worthless if it entails the loss of what is best worth having, health.”

Ramazzini made no mention of fabric dyes, which were derived from natural substances in his day. In 1895 German researchers first linked bladder cancer to the synthetic aromatic amine dyes that had been introduced in the 1870s.

In the 1950s, China began manufacture of benzidene, an aromatic amine. According to the World Health Organization, new OSHA rules prompted US manufacturers to stop making the synthetic dyes in the 1970s. Production shifted to developing countries and, in the 1990s, the first reports of bladder cancers due to aromatic amines were published in China. ■■■



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A SSISTANT PROFESSORS

Ergonomics: New tools to track computer injuries

Not long after the computer mouse was introduced in the mid-1980s, Peter Johnson started hearing complaints about hand and wrist symptoms. At the time, Johnson was a facilities engineer at a Hewlett-Packard plant in California, doubling as its health and safety officer.

“Lots of people had what appeared to be keyboard and mouse-related disorders, and virtually nothing was being done in this field,” he recalls. His response was to go back to school and study ergonomics. In 1998, he earned both a PhD in bioengineering and a master’s degree in environmental health sciences at the University of California–Berkeley.

Johnson was recently hired as the Department of Environmental Health’s newest faculty member, starting March 1 as assistant professor in the Industrial Hygiene and Safety program. He still researches keyboard and mouse injuries, but with new tools. His bioengineering background has led him to develop sensitive instruments that measure force exposures during computer work and the muscle fatigue that results.

For the past year, he has been a visiting scientist at Harvard University, developing and validating an exposure assessment system to measure multiple physical risk factors during computer work. He is also working as a visiting scientist on a large-scale study at Sweden’s Göteborg University, measuring and characterizing office workers’ exposure to upper extremity hazards.

This is an exciting time to be involved with ergonomics, Johnson said, because both state and national ergonomics rules were enacted last year and are being implemented. “There is growing interest in ergonomics with the new standards,” he said. “On the research side of things we need to develop tools to accurately characterize exposures so that we can understand the mechanisms of musculoskeletal disorders and then use this information to implement solutions at the worksite.”

Some ergonomists study musculoskeletal injuries from heavy lifting. Johnson seeks out disorders from tiny but repeated motions. “It’s hard to believe that keyboarding or mouse work can cause problems—mouse users grip the mouse with typically less than one percent of their strength—but computer-related problems can

become an expensive cost to workers and employers.” According to a recent US Bureau of Labor statistics report, repetitive motion such as grasping tools, scanning groceries, and typing, resulted in the longest absences from work among the leading events and exposures—a median of 15 days.

Johnson studies the human limits of keyboarding (people who work more than four hours a day seem to be at greater risk for developing problems), and is looking for solutions, such as redistributing work and break cycles. He has developed measurement instruments, such as a special computer mouse that measures force, and software that can analyze the voluminous data generated from instruments used in exposure assessment studies. Now that the equipment has been developed he intends to adapt systems for other types of work prevalent in the Pacific Northwest such as agriculture, manufacturing, construction, and forestry.

UW Health Sciences Photography



Peter Johnson

FOR FURTHER READING

Washington state ergonomics rule, <http://www.lni.wa.gov/wisha/ergo/>
Federal ergonomics rule, <http://www.osha-slc.gov/ergonomics-standard/index.html>
Danish studies, <http://www.ami.dk:80/research/mousegroup/projects.htm>
Office Ergonomics Research Committee, <http://www.oerc.org/oerc.htm>
Swedish National Institute for Work Life, http://www.niwl.se/fou/default_en.asp
Hand Arm Vibration Database, <http://umetech.niwl.se/Vibration/HAVHome.html>
Manufacturing/Production Ergonomics, <http://www.ts.mah.se/prodergo/forskn/english.htm>
European OSHA Homepage, <http://agency.osha.eu.int/>
Peter Johnson’s research is summarized on his web page, http://depts.washington.edu/envhlth/about/facultypage/john_page.html



Johnson seeks out disorders from tiny but repeated motions

The next generation

Peter Johnson is starting his academic career as an assistant professor, the first rung on the professorial ladder. Department Chair Dave Kalman calls assistant professors “the next generation of leaders in environmental health.” Almost all of the Department of Environmental Health’s faculty started at that rank, he said. “Our somewhat top-heavy faculty makeup now is a testament to our past success at bringing in young academics and helping them succeed, while maintaining their interest and loyalty.”

In addition to Johnson, the department’s four other assistant professors are putting their mark on the literature in their fields.

SALLY LIU

Sally Liu graduated from Harvard University’s School of Public Health in 1994, with a PhD in environmental health and concentrations in exposure assessment, air pollution, and statistical analysis. She said, “Growing up in polluted Taiwan, I have special interest in studying air pollution problems. That’s why I chose this field.”

Liu’s largest project (funded by the US Environmental Protection Agency) investigates personal exposure to particulate matter among high-risk populations, including those with chronic obstructive pulmonary disease and cardiovascular diseases. She and her team are examining the relationship between personal exposure and measurements taken at a central monitoring station. They will use recently developed biomarker techniques to track the outdoor contributions to personal exposures.

At the EPA-funded Northwest Research Center for Particulate Air Pollution and Health (PM Center), Liu is co-director of the exposure core and principal investigator of the exposure assessment study project.

She finds the field of air pollution challenging, yet rewarding. It is challenging because of the “many uncertainties in the assessment of air pollution exposure and health effects,” yet rewarding because “the contribution I could make to the US and world public health could be enormous,” Liu said.

LIANNE SHEPPARD

Lianne Sheppard also works with the PM Center. She has a BS degree in psychology and a MS in biostatistics, both from The Johns Hopkins University. Her PhD in biostatistics is from the University of Washington, where she won the Outstanding Student Award from the School of Public Health in 1991. She is a research assistant professor with a joint appointment in Biostatistics and is affiliated with the Fred Hutchinson Cancer Research Center.

Sheppard became interested in public health after working for an international reproductive health program. She decided on biostatistics because data analysis and interpretation would enable her to work on a variety of public health problems. “I’ve always had an interest in the environment, so I was delighted to be invited to join the Department of Environmental Health. It was a great match to have the opportunity to apply my skills to environmental health,” she said.

She is working with Noah Seixas to study hearing loss in construction workers. She also heads the PM Center’s statistics and data core. She is a co-author on several studies on the health effects of air pollution. One, in the December issue of *Environmental Health Perspectives*, suggests an association between ambient carbon monoxide and asthma symptoms. This finding poses an intriguing puzzle—carbon monoxide may be acting as a proxy for some other harmful pollutant that wasn’t included in the models, or there may be an actual effect of CO that hasn’t yet been recognized.

Whatever the explanation, Sheppard finds air pollutants intriguing because of the widespread public health impact of even small exposures. “Everyone is exposed,” she said.

ZHENGUI XIA

Zhengui Xia, an assistant professor in the toxicology program, is on the faculty of two interdisciplinary graduate programs, Neurobiology and Molecular and Cell Biology. Her bachelor’s and master’s



UW Health Sciences Photography

Sally Liu

Lianne Sheppard

Zhengui Xia

Mansour Samadpour

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degrees are in biochemistry from Wuhan University in China. She earned her PhD in pharmacology at the University of Washington and did postdoctoral training at UW in pharmacology and Harvard Medical School in neurobiology.

Her research is on the mechanisms for regulating apoptosis, a form of programmed cell death. Abnormal apoptosis has been implicated in diseases such as cancer, autoimmune disorders, Alzheimer's disease, and stroke. "We want to identify mechanisms that cause neurons to die, so we can block or reduce neuron cell death," she said. "We would like to maintain normal populations of neurons because, in adults, if neurons die, you don't get more—you don't get smarter."

From an environmental health standpoint, she is interested in the interaction of genes and chemical toxins such as ethanol and sodium arsenite.

MANSOUR SAMADPOUR

Mansour Samadpour's interests are environmental and food microbiology. Recent projects have taken him to urban streams, swimming beaches, irrigation systems, rivers, lakes, shellfish beds, wastewater treatment plants and collection systems, storm drains, and public water supply systems.

Samadpour's second area of research and service activity is in rapid detection of outbreaks of infectious diseases, and identification of the sources of these outbreaks. His work in this area includes detection of several *E. coli O157:H7*, *Salmonella*, and *Shigella* outbreaks.

He started researching intestinal pathogens in 1977 as a college junior recently arrived from Iran. His research into causes of traveler's diarrhea interested him so much that he abandoned plans for medical school and majored in microbiology instead, earning bachelor's and master's degrees from the University of Washington. His PhD, also from UW, is in food science and technology.

TOWERING HAZARDS

When people think about the safety of wireless telephones, they rarely consider one of the most immediate and deadly hazards—that of workers falling from transmission towers or being electrocuted. The National Institute for Occupational Safety and Health (NIOSH) and its continuing education center at the Department of Environmental Health are alarmed about injury rates, and are teaching tower workers to be safe two to ten stories above the ground.

A wireless telephone network divides a city into a grid of hexagonal cells, each about ten miles square. Each cell has a base station that consists of a tower and a small building containing transmission equipment. Washington state now has more than 1,400 transmission towers, according to Federal Communication Commission figures. Nationally, between 20,000 and 50,000 new towers are constructed each year, according to NIOSH.

The rapid growth of the wireless industry has spawned a forest of transmission towers, some built by inexperienced workers who may be unaware of the risks and unfamiliar with safety requirements.

The department's Continuing Education program has organized 16 onsite training sessions throughout the country for a major wireless service company and its contractors. The one-day classes cover electrical safety, fall protection, and federal and state health and safety regulations.

Instructor Rick Gleason finds that many of his students help build towers, and the rest are technicians who service the base transmission stations. They, too face hazards of going onto roofs and towers in all types of weather.

Some of Gleason's students have seen someone fall, although the fall may have been broken by a safety belt or by the preferred safety

People rarely consider one of the most immediate and deadly hazards—that of workers falling from transmission towers or being electrocuted

harness. He encourages workers to change an old industry habit of climbing without fall protection and “tying off” only when reaching the top of the tower to work. He also wants workers to tie their tools securely; a falling wrench presents a hazard to those working below.

In the eight-hour safety course, Gleason emphasizes that it is possible to incorporate safety into the design and construction phases of the job. He encourages contractors to make fall-protection equipment available and require its use, to train their workers, and to ensure the job site remains safe for all the contractors and subcontractors involved.

Gleason said steel erectors (including tower erectors and iron workers) have the fourth-highest fatality rate of any workers, after commercial fishers, loggers, and bush pilots.

NIOSH data show that workers who construct and maintain telecommunication towers sustain a substantially higher fatality rate than the average for all industries. An estimated 95 workers died from falls and other injuries related to tower construction and maintenance from 1992 to 1997, NIOSH found. Estimates of risk for fatal injuries among telecommunications tower workers range from 49 to 468 injury-related deaths per 100,000 employees, compared with about 5 deaths per 100,000 in all US industries. These estimates vary because of difficulty in categorizing telecommunication tower workers.

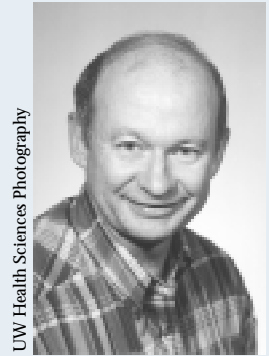
Because the towers are so high, the industry prefers to use a mechanical hoist, rather than having their workers climb. In early 1999, the federal Occupational Safety and Health Administration (OSHA) issued a compliance directive, establishing inspection policies for the hoist lines, and establishing training and maintenance procedures. There have been serious accidents since then, and further actions, such as an emergency federal standard, are under discussion.

NIOSH has studied eight fatal accidents, including one in North Carolina last year that claimed the lives of a contractor, his 16-year-old stepson, and a 19-year-old employee. The three were riding a hoist line up the side of a tower when the line slipped, plunging them 1,200 feet while a horrified wife and mother tried unsuccessfully to stop the slipping cable.

NIOSH has issued a set of recommendations based on a study of eight fatal accidents and has been working with the National Association of Tower Erectors (NATE) to develop safety standards.

Longer-term workplace hazards concern Michael Yost, Associate Professor in the industrial hygiene program in the Department of Environmental Health. In the past decade, he has studied the occupational health effects of nonionizing radiation, including 60-Hz magnetic fields from electric power systems, and radio frequency (RF) sources such as microwave transmission, and broadcast towers. These use different frequencies from wireless telephones.

Yost has developed a matrix for job exposures to power-frequency magnetic fields that is being applied in population studies of brain cancers, Alzheimer’s disease, and other neurological diseases. He also has been part of a team studying electric utility workers to see if magnetic fields suppress melatonin, which is involved in sleep rhythms and immune function, and could help in understanding human responses to magnetic field exposures.



Rick Gleason

FOR FURTHER READING

Brain, Marshall and Tyson, Jeff. How Cell Phones Work, <http://www.howstuffworks.com/cell-phone.htm> contains

animated diagrams of cells and pictures of towers

Continuing Education onsite training courses, <http://depts.washington.edu/envhlth/conted/ce/onsite.html>

National Association of Tower Erectors, <http://www.natehome.com>

NIOSH Update, April 27, 2000. Fatal Falls of Contractor, Teen Workers Highlight Safety Concerns In Telecommunication Tower Work, <http://www.cdc.gov/niosh/celtowwk.html>

OSHA Directive CPL 2-1.29–Interim Inspection Procedures During Communication Tower Construction Activities, http://www.osha-slc.gov/OshDoc/Directive_data/CPL_2-1_29.html



To confirm this schedule or find more information about these courses, call (206) 543-1069 or (206) 685-3089, or visit the Continuing Education Web home page at <http://depts.washington.edu/envhlth/conted.html>. Courses are in Seattle unless noted.

OSHA COURSES ONLINE

Promising “any time, anywhere,” access, the Department of Environmental Health’s continuing education department has started offering courses online.

The Online Institute, launched Feb. 1, initially offers training in six areas:

- hazardous materials/dangerous goods
- occupational safety and health
- transportation safety
- environmental compliance
- emergency response and management
- human resources.

New courses will be added regularly, including courses authorized by the Occupational Safety and Health Administration (OSHA), said Continuing Education Director Scott MacKay.

Visit <http://www.regionxoti.org> for more information and a tour of the site’s features.

Since 1995, the continuing education program has offered standards-based OSHA training in a traditional classroom setting, he said. “With the addition of our innovative Web-based courses, clients will now have access to training that meets their scheduling needs.”

In addition to our Online Institute, the OSHA Training Institute continues to offer classes throughout a four-state area and provide customized on-site training for both the private sector and federal agencies.

NW CENTER FOR OCCUPATIONAL HEALTH & SAFETY

- March 2 An Aging Workforce: Issues for this Century
- March 15-16 Laboratory Safety and Health
- April 6 Occupational and Environmental Medicine: New Developments for Primary Care Clinicians
- April 13 Benefit-Cost Analysis of Policies in Environmental, Public and Occupational Health
- May 1 Ergonomics in the Workplace: Application to Work-Related Musculoskeletal and Nerve Disorders
- May 16 Assessment of Exposures to Fine Atmosphere Particulate: Challenges and Progress
- June 1 Environmental Health for Reporters
- June 11-15 Sampling and Evaluating Airborne Asbestos Dust—NIOSH 582

OSHA TRAINING INSTITUTE EDUCATION CENTER

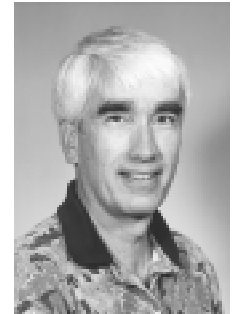
Not for OSHA rules only! All classes offer training that meets WISHA, OR-OSHA, and Alaska state standards.

- March 9, 10, 16 225 Principles of Ergonomics*
- March 12-14 503 Update for General Industry Outreach Trainers
- March 17, 23, 24 226 Permit-Required Confined-Space Entry*
- March 19-22 204A Machinery and Machine Guarding Standards (*Portland*)
- March 26-28 502 Update for Construction Industry Outreach Trainers
- March 28-30 510 Standards for the Construction Industry*
- March 30, 31 and April 6, 7 201A Hazardous Material*
- April 13, 14, 20, 21 510 OSHA Standards for the Construction Industry (*Anchorage*)
- April 24-27 500 Trainer Course in OSHA Standards for the Construction Industry (*Anchorage*)
- April 27, 28 and May 4, 5 521 OSHA Guide to Industrial Hygiene*
- May 7-10 311 Fall Arrest Systems (*Richland*)
- May 11, 12, 18, 19 501 Trainer Course in OSHA Standards for the General Industry*
- May 21-24 301 Excavation, Trenching, and Soil Mechanics (*Richland*)
- June 4-7 309A Electrical Standards (*Portland*)

*various locations: call for information



UW Health Sciences Photography



left to right:

Lucio Costa

Chuck Treser

Matthew Keifer

John Kissel

Michael Morgan

Sally Liu organized and chaired a session on particulate matter exposure and health at the Pacific Northwest International Section of Air and Waste Management Association conference in Victoria. She presented at the session with **Tim Larson**, **Chris Simpson**, and **Carol Trenga**.

Lucio Costa gave a series of lectures on neurotoxicology at the University of Lisbon, Portugal in late October 2000.

Chuck Treser was appointed to a two-year term on the American Public Health Association Education Board this fall; and was elected to another three-year term on the APHA Governing Council representing the section on the environment. As president of the Association of Environmental Health Academic Programs (AEHAP), Treser submitted a proposal for a cooperative agreement between AEHAP and the CDC National Center for Environmental Health. The cooperative agreement was approved for five years with a \$106,000 budget award for the first year.

Editor **Kathy Hall** and graphic designer **Cathy Schwartz** won an Excellence Award from the Puget Sound Chapter of the Society for Technical Communication for the department's 1997-1999 biennial report. They also won a Merit Award for the brochure, *What Is Environmental Health?* Editor **Kris Freeman** of the Center for Ecogenetics and

Environmental Health won a Merit Award for a magazine article, "Psychic Networks: Training Computers to Predict Algal Blooms," which appeared in *Environmental Health Perspectives* 108(10):A464-A467.

Matthew Keifer presented *International Scholars in Occupational and Environmental Health Program at the University of Washington* at the American Public Health Association conference in Boston Nov 11. He also taught an occupational epidemiology course in San Jose, Costa Rica in early December, sponsored by the Regional Institute on Environmental Toxicology National University.

Marcy Harrington of the Pacific Northwest Agricultural Safety and Health Center presented a poster at the American Foresters Centennial in Washington, D.C. in November.

John Kissel was co-organizer and co-chair of a session on Pesticide Exposure-Dermal Pathway Issues at the Society for Risk Analysis annual meeting in Arlington, VA, in early December. He also presented a paper with **Rene Showlund** and **Jeff Shirai**.

Michael Morgan serves on the National Research Council Committee on Air Quality in Passenger Cabins of Commercial Aircraft, which met in Washington, DC in early January.

OCCUPATIONAL MEDICINE

for primary care clinicians

A day-long continuing medical education course, *Occupational and Environmental Medicine: New Developments for Primary Care Clinicians*, will be held April 6 at the Center for Urban Horticulture near the UW campus.

Exposures to environmental and workplace hazards are of increasing concern to clinicians in primary care and specialty settings, said course director Joel Kaufman. New scientific findings and government rules and regulations require up-to-date knowledge. Course topics will include occupational skin disorders, including contact dermatitis and latex allergy; occupational asthma; pesticide exposures; fungi in indoor environments; "best practices" for managing occupational back pain; and how to use impairment ratings.

The University of Washington School of Medicine will apply up to 6.75 hours in category 1 towards the AMA Physician's Recognition Award. Professional credit will be also available for nurses and industrial hygienists.

For information, visit http://depts.washington.edu/envhlth/conted/ce/course_descriptions/occm01.html or phone (206) 543-1069.



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University of Washington
Department of Environmental Health
Box 354695
Seattle, Washington 98195-4695

ADDRESS SERVICE REQUESTED

THE FINE PRINT

ASSISTANT
CHAIR
FOR OUTREACH
Sharon L. Morris

SENIOR WRITER
& EDITOR
Kathy Hall

DESIGNER &
ILLUSTRATOR
Cathy Schwartz

EDITORIAL
ASSISTANT
Kipling West

DEPARTMENT
CHAIR
David A. Kalman

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