

C R O E T

Center for
Research on
Occupational and
Environmental
Toxicology

NEWSLETTER



Photo by Fred Berman - see page 6 for description.

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CROET Sponsors June Safety Symposium

CROET will be sponsoring a symposium titled **Safety and Health for the Limited-English Speaking Workforce: Challenges & Successes** on Friday, June 9, 2006 at the Ambridge Event Center in Portland, Oregon. This symposium will provide useful strategies, tips and informational resources to assist employers to more effectively provide a safe workplace for workforces that include non-English and limited-English speakers. The Symposium is particularly suited for business owners, health and safety managers, human resource personnel, health and safety consultants and safety committee members.

It is estimated that in 2000, over 50 thousand workers of limited or non-English speaking ability were employed in Oregon. Forty three percent of these men and women worked in potentially hazardous industries, including construction, manufacturing, natural resources and mining operations. While proper communication with and training of this segment of Oregon's workforce are essential to the maintenance of a safe workplace, effective training of non-English or limited-English speaking workers is a complex issue that involves not just the translation of information, but also an



awareness of and sensitivity to cultural dynamics. The goal of this symposium is to provide attendees with information about the language and cultural differences, to share stories of successful programs, and to provide employers with available resources to better address workplace safety and health in workplaces where not all employees speak English fluently.

This Symposium wouldn't be possible without the dedication of the planning committee, which provides representation from various industries and brings real world experience into the planning. The planning committee members include: Jack Davis, Frank Schmidt & Son Co.; Chuck Easterly and Christy Witzke, SAIF Corporation; Byron Johnson and Sula Rozenfeld, Gunderson Inc.; Jeff Graham, CLP, Oregon Landscape Contractors Association Safety Committee Chair; Mary Lewis, Oregon Employment Dept; Gary Stonewall, R&H Construction; Tomas Schwabe, OR-OSHA; and Joan Rothlein, CROET. CROET's Occupational Safety and Health Specialist, Dede Montgomery organized the conference. Dede will open the symposium with some general remarks regarding Oregon's non-English speaking workforce and how this symposium will address the critical issues that are involved.

Following Dede's remarks, Thomas Schwabe, Training Specialist for Oregon OSHA, will discuss *Culture and Safety*. Thomas will emphasize how culture affects on-the-job communication and safety. Salvador Zamudio, owner of Applied Growth Transitions, will continue this theme with his talk, *Training and Communication: Challenges and Strategies*. Mr. Zamudio has a wealth of experience in the nursery, agriculture and Green Industry in safety and management. He was formerly with Monrovia Nursery in Dayton, OR.

Symposium participants will then hear brief presentations of success stories from a variety of

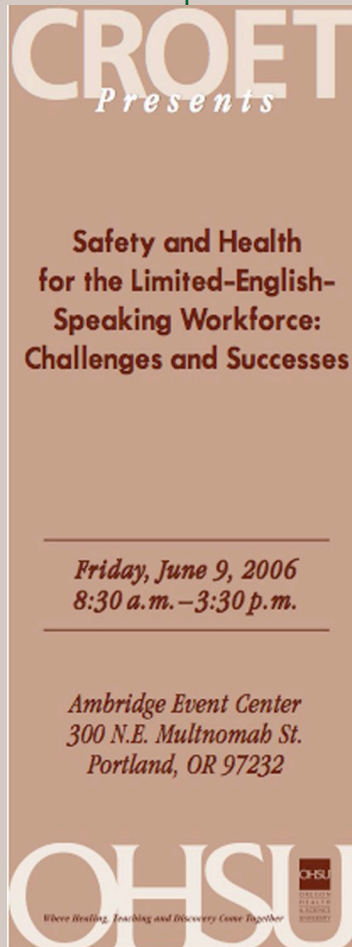
business leaders, including: Scott Eave, Vice President of Human Resources, Gunderson Inc.; Gary Stonewall, Corporate Safety Director, R&H Construction; and Vickie Kibler, Owner of Wendy's Restaurants in Oregon and Arizona. This success story theme will be expanded upon later in the afternoon in a variety of industry-specific breakout sessions, where facilitators will lead participants in discussions with registrants from these and other industries. The breakout sessions will focus on construction & landscaping, agriculture & nurseries, hospitality, and manufacturing.

Christy Witzke, State Agency Operations Supervisor for SAIF Corporation, will introduce resources that are available to employers who are trying to improve their communication, training and safety programs for non-English speaking workers. These resources will be available to attendees in the form of publications and electronic materials. Kent Anger, Associate Director and Senior Scientist at CROET will then present information on determining training effectiveness in the workplace when presenting information to non-English and limited-English speaking workers.

The conference will wrap up with a panel discussion, where the audience can inquire further about specific topics discussed during the day's presentations. This symposium will provide critical information to assist

employers in providing more effective safety and health information and programs that benefit both limited-English speaking workers as well as their employers. Employer resources will also be accessible at www.croetweb.com following the Symposium.

For more information about this symposium and how to register, please visit <http://www.ohsu.edu/croet/outreach/symposia/nonenglish.html> or call Valerie Scott at 503-494-2514.



OHSU Students Organize Annual International Health Conference

Recently, the 4th Annual Western Regional International Health Conference was hosted at Oregon Health & Science University (OHSU). The conference was organized by the Global Health Alliance (GHA), a student-run group at OHSU. The conference attracted more than 850 attendees from twenty-one different states in the United States as well as attendees from nine different countries. More than 120 different speakers presented lectures and workshops in fifty-eight different sessions.

The Center for Research on Occupational and Environmental Toxicology (CROET) co-sponsored the conference financially, and a number of faculty and staff at CROET were key in contributing to the development of the conference content. In particular, Peter Spencer, PhD, Director of CROET, donated his time in meeting with the conference planning committee as well as presenting in the Environmental Health track on the subject “Benefits and Hazards of Medicinal Plants”. Valerie Palmer, who heads the Toxicogenomics Research Laboratory in CROET and is the President and Founder of the Third World Medical Research Foundation, also assisted the conference committee in developing content. She presented some of her work at the conference in a talk in the Environmental Health track entitled “Environmental Extremes: Research and Education on Neglected Disorders: Resistant Crops and Food-



Peter Spencer



Valerie Palmer



Desire Tshala-Katumbay

related Crippling Disease.” Desire Tshala-Katumbay, MD, PhD, Assistant Professor of Neurology and CROET scientist was also helpful in organizing and developing the content for the conference.

Besides the presentations and workshops, the conference also included a poster session. Over thirty abstracts were submitted from six different countries, and of those selected for presentation, one was chosen to receive an award from the Third World Medical Research Foundation for excellence in research. The prize went to Susan Wong and colleagues from the University of Pittsburgh School of Medicine and George Washington University’s Human Hookworm Vaccine Initiative for her poster presentation entitled ‘Developing a Human Hookworm Vaccine.’

The GHA has been advancing the cause of global health at OHSU for a number of years. One of the strongest supporters of the GHA in its efforts has been the faculty and staff at CROET. Recently, Peter Kohler, MD, President of OHSU, agreed to the formation of a steering committee to examine and explore the possibilities for developing a more permanent structure for global health at OHSU. The past and

continuing contributions of CROET and OHSU will help greatly in developing programs in education, research and clinical work in the field of global health.

Global Health Links: Research Capacity Building, Training and Teaching Opportunities in the Developing World

Dr. D. Tshala-Katumbay, CROET scientist and Assistant Professor of Neurology, School of Medicine, OHSU, has been invited to teach this year at several International Brain research Organization (IBRO) Neuroscience Schools in Africa. These Schools are devoted to young neuroscientists involved in clinical and/or basic neuroscience-focused research. One of the major goals is to offer these researchers a unique opportunity to develop collaborations and to receive input from experts from abroad. The experts are recruited to provide advanced training to about 30 Masters and/or Doctorate students from a variety of African countries.

Dr. D. Tshala-Katumbay will lecture on the topic of Research Design and Methodologies in the Developing World for the 2006 neuroscience schools. At the University of Stellenbosch and the University of Cape Town, South Africa, Dr. Tshala-Katumbay will present his topic under the general theme of “Neural Systems: From Channels to Circuits”. He will also present his lecture at the University of Kinshasa, DR Congo, which is hosting lectures under the theme “Brain and Infectious Disorders.” During the latter school, Dr. D. Tshala-Katumbay and Jean Claude Mwanza M.D., Ph.D. (Environment Protection Agency) will lead a workshop on the Molecular Epidemiology of Neurotoxic Diseases.

Although some IBRO faculty members are recruited from the African countries that host the schools, most of the 2006 faculty came from the international community, which includes Belgium, Canada, France, Argentina, England, and the United States. The Portland-based Third World Medical Research Foundation (TWMRF), together with other Research Institutions, will co-sponsor the 2006 workshop. It is hoped that in the future, OHSU faculty with interests in Global Health, Applied Neuroscience, and Translational Research may also be included in this training endeavor.

For more information on IBRO activities, visit: <http://www.ibro.org>

CROET Trains Thai Researchers in Microscopy and Toxicogenomics Methods

CROET played host in February and March to two visiting scientists from the Chulaborn Research Institute (CRI) in Bangkok, Thailand. The researchers, Dr. Daam Settachan and Dr. Mayuree Fuangthong, were invited here to undergo training in advanced microscopy techniques and



Mayuree Fuangthong and Daam Settachan

toxicogenomics methods. These techniques are important to the furtherance of research being conducted at CRI, which is a collaborating partner with CROET on a variety of research projects.

Valerie Palmer, Research Associate in the Department of Neurology and Coordinator of CROET's Toxicogenomics Laboratory, and her two assistants, Courtney Runyan and Alex Cranson, conducted training in Toxicogenomics. The training covered various techniques, including tissue preparation, RNA extraction, fluorescent probe labeling, and various microarray techniques, as well as data management.

Microscopy training was conducted through CROET's Core Microscopy Facility under the supervision of Dr. Robert Kayton. Training covered tissue harvesting, dissection, fixation and tissue staining techniques, as well as light and electron microscopy methods.

Health Risks from Occupational Vibration

It is estimated that 8 to 10 million workers in the USA are regularly exposed to vibration in their jobs. While this may sound trivial, daily exposure to excessive vibration is not harmless, because over an extended period of time, vibration can cause serious and irreversible injury and debility.

Occupational vibration exposure has been categorized into two types, Whole Body Vibration (WBV) and Hand-Arm Vibration (HAV), each of which is associated with its own distinct adverse health syndrome (WBVS and HAVS). WBVS can be an occupational hazard for truckers, bus drivers, farmers and other heavy equipment operators who are exposed to intense low frequency vibration and jarring, whereas people operating a variety of hand tools, which produce high frequency vibration, may be at risk for developing HAVS. While the health effects of each type of vibration exposure are distinct, some workers are exposed to a combination of WBV and HAV and consequently are at risk for a mix of adverse health outcomes. Examples of occupations at risk for mixed effects include pneumatic jackhammer operators and motorcycle police officers.

Health effects of HAV

Hand-Arm Vibration Syndrome (HAVS) is a progressive disease involving both the vascular and nervous systems of the hands and fingers. It is initially characterized by tingling or numbness in the fingers, but as vibration exposure continues, blanching or whitening of a single fingertip is noted, usually in the presence of cold temperatures. The attack of “white finger” marks the onset of what is called the finger blanching process. These attacks are initially sporadic and last only a few minutes; however, under continuing vibration exposure, and especially in cold conditions, the attacks increase in frequency, intensity and

duration, involve multiple fingers, and are often accompanied by pain. In the later stages of HAVS, the attacks occur in all seasons and at all times, both on and off the job. Cold often triggers HAVS attacks, but other factors that cause constriction of blood vessels, such as the use of nicotine products, also play a role. In extreme cases, loss of blood supply to the fingers results in gangrene, which may require finger amputation.

It is generally recognized that HAVS is an irreversible condition. Its prevalence in American workers who are vibration-exposed may be as high as fifty percent. Afflicted workers are advised to stop all vibration exposure and to seek medical help if HAVS signs and symptoms occur. Medical therapy will not cure HAVS, but may reduce its symptoms. In addition to stopping HAV exposure, treatment may include the use of blood pressure medications to minimize the adverse effects of HAVS attacks.



Health effects of WBV

Whole Body Vibration Syndrome (WBVS) is very different from HAVS and usually develops after prolonged (years) and repeated exposure to WBV. Vibrations are of a lower frequency and usually enter the whole body via the spine, as may occur while operating a heavy vehicle. Chronic effects of WBV involve injury to the lower spine with attendant severe lumbar back pain. There can be slippage and degeneration of the intervertebral discs with severe debility. WBVS is often aggravated by other factors, such as abnormal postures, poor vehicle seating and heavy lifting during cargo handling.

WBV presents an additional hazard inasmuch as severe jostling and so-called ‘resonant’ vibration may cause operators to lose control of their vehicles.

Controlling Occupational Vibration

Occupational standards for vibration exposure exist in both the U.S. and European Union. Thus, vibration intensity and frequency can and should be measured and assessed for compliance with the established standard. Hand-arm vibration is best controlled by the use of vibration dampened (anti-vibration) tools. These are not the same as so-called ergonomically designed tools, which allow tool use with the hand and wrist in a neutral position, thereby preventing carpal tunnel syndrome. Ideally, tools should be both ergonomic and vibration dampened. HAVS can be further prevented by the use of specially designed full-finger protected anti-vibration gloves. These gloves, which must be properly fitted, are designed to keep the hands and fingers warm and dry and prevent cuts and lacerations. Good work practices will also help prevent HAVS. These include letting the tool do the work by gripping lightly, allowing time for frequent breaks (about 10 minutes per hour of tool use), not smoking, and keeping the hands and fingers warm by using gloves and avoiding cold temperatures and direct contact with cold tool exhaust.

Control of Whole-Body Vibration involves the use of air-ride seats, which dampen vertical up and down vibration. Some seats are also designed to reduce side-to-side and front-back vibration as well. Other measures to control WBV may include keeping tires properly inflated and maintaining vehicle suspensions in proper working order.

For more information about occupational vibration, visit:

Center for Research on Occupational and Environmental Toxicology: www.CROETweb.com and type "vibration" into the search engine

Alaska Department of Labor and Workforce Development: www.labor.state.ak.us/lss/pads/hand-arm.htm

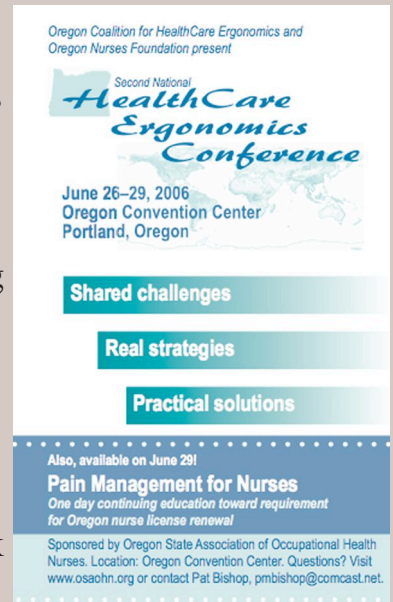
Canadian Centre for Occupational Health and Safety: www.ccohs.ca/oshanswers/phys_agents/vibration/

Health Care Ergonomics Conference Coming to Portland in June

The Oregon Coalition for Health Care Ergonomics and the Oregon Nurses Foundation will present the Second National Health Care Ergonomics Conference at the Oregon Convention Center in Portland on June 26-29, 2006.

The goal of this conference is to provide shared challenges, real strategies and practical solutions in health care ergonomics. Also available on June 29 is a one-day continuing education course on "Pain Management for Nurses."

Conference keynote speakers include Dr. Audrey Nelson, Director of Patient Safety, Center of Inquiry at the James A. Haley VA Hospital in Tampa, Florida, who will speak on "Safe Patient Handling Myths and Facts", and Dr. Bill Marras, Director of the Biodynamics Laboratory at The Ohio State University, who will speak about "Low Back Disorder Risk During Patient Handling." CROET is a sponsor of this conference.



Details about the conference and registration information can be accessed at:

http://www.osha-slc.org/conferences/OSHA_conference/Health_ergo.html

Cover Photo

We know...it's not Oregon, but the colors are so beautiful we couldn't resist. Havasu Falls, located on the Havasupai Indian reservation within Arizona's Grand Canyon, is the setting for this issue's cover photo.

Center for **R**esearch on **O**ccupational and **E**nvironmental **T**oxicology

CROET, the Center for Research on Occupational and Environmental Toxicology at Oregon Health & Science University, conducts research, provides consultations and offers information on hazardous chemicals and their health effects. CROET's 100+ scientists and research staff explore a range of questions relating to health and the prevention of injury and disease in the workforce of Oregon and beyond. CROET's Toxicology Information Center is open to the public and is staffed to answer Oregonians' questions about hazardous substances in the workplace and elsewhere. CROET's Web site also provides answers to questions about industries found in Oregon through links on a series of pages devoted to industry-specific topics.

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OUTREACH

CROET will exhibit at the following conferences.

Oregon Workers' Compensation Educational Conference

Portland Marriott Downtown • Portland, Oregon

May 15-16, 2006

HealthCare Ergonomics Conference

Oregon Convention Center • Portland, Oregon

June 26-29, 2006

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Oregon Health & Science University includes the Schools of Dentistry, Medicine, Nursing and Science and Engineering; OHSU Hospital; numerous primary care and specialty clinics; multiple research institutes and several outreach and public service units. OHSU is an equal opportunity, affirmative action institution.

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