

## Dr. Miroslav Machala Visits EHSRC



Dr. Miroslav Machala from the Veterinary Research Institute in the Czech Republic visited The University of Iowa during the week of June 23rd, 2003. Dr. Machala is the Head of the Department of Chemistry & Toxicology in Brno. During his stay in Iowa, Dr. Machala visited with faculty, collaborated on several projects with Dr. Larry Robertson, and held a seminar entitled, "Modes of Action of the Environmental Pollutants, the

Polychlorinated Biphenyls (PCBs) in Liver and Mammary Cancer Cells." Dr. Machala's research involves the toxicological and ecotoxicological assessment of xenobiotics using specific biochemical and cellular *in vivo* and *in vitro* biomarkers of toxicity mechanisms; dioxin-like toxicity, oxidative stress, estrogenicity, modulations of cell kinetics, and mutagenicity. Dr. Machala's visit was co-sponsored by the EHSRC and the Center for International Rural & Environmental Health (CIREH).



Peter S. Thorne, Ph.D.  
Center Director

James A. Merchant, M.D., Dr.P.H.  
Associate Director

Gary Hunninghake, M.D.  
Associate Director

Jennifer A. Cook, B.A.  
Center Coordinator & Editor

Michal A. Hampton, B.A.  
Program Assistant

Environmental Health Sciences Research Center  
The University of Iowa  
100 Oakdale Campus, 126 IREH  
Iowa City, IA 52242-5000  
(319) 335-4756  
[www.ehsrc.org](http://www.ehsrc.org)

# EHSRC Update

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## Researchers Attend Public Meeting on Private Well Water Contamination in Buckeye, Iowa

On June 2, 2003, as part of the Private Well Study, researchers from the EHSRC, Center for Health Effects of Environmental Contamination (CHEEC), University Hygienic Laboratory (UHL), and the United States Geological Society (USGS) held a public meeting in the community of Buckeye, Iowa in order to discuss the issue of arsenic in the community's private drinking wells. Buckeye, which is home to 105 residents, does not have a municipal water supply, therefore, their water is not subject to any regulations. A survey of area wells was conducted in the summer and early fall of 2002; ten wells in Buckeye were tested and all showed elevated amounts of arsenic. Following this discovery, community leaders and researchers decided to hold a public meeting in order to provide information about well water contaminants and offer suggestions about what citizens can do to protect themselves from potential harmful effects of long-term exposure.

Researchers from the study analyzed over 100 contaminants, including 40 pesticides and insecticides and 10 metals from private wells in small incorporated towns without public water supplies, like Buckeye. Starting in 2006, the new federal standard for arsenic in public water supplies will be 10 parts per billion. The current standard is 50 parts per billion. All of the wells tested in Buckeye were above the 10 parts per billion standard, with some at or above the 50 parts per billion level. Doug Schnoebelen, a geologist with the USGS said that arsenic is a naturally-occurring trace element that is found in some rock formations of clay and shale. "It doesn't appear that it is a man-made contamination problem," said Schnoebelen, although he admitted that some insecticides many years ago contained arsenic and that low oxygen conditions can cause rock formations to leach out into ground water.



David Osterberg from the EHSRC emphasized that the residents of Buckeye did not have to stop drinking the water. "I'd be willing to take a drink of water from a well in Buckeye at any time," Osterberg said. "The problems result from long-term exposure to arsenic in drinking water over many years." EHSRC Director Peter Thorne then summarized the adverse health risks associated with chronic exposure to arsenic in drinking water. Researchers offered several options for exposure reduction including purchasing bottled water, hooking up to one of the rural water services, or digging a new well, which may or may not be economically feasible for the homeowner. "We are not endorsing any one particular method, just trying to make people aware of what's available," Osterberg said. Other University of Iowa researchers attending this meeting included CHEEC member David Riley, UHL scientists Michael Wichman and Lorelei Kurimski, as well as staff from the Iowa Department of Natural Resources and Iowa Department of Public Health. Two more public meetings are scheduled for August 11th and August 14th in the communities of Muscatine and Peosta.



More information about the Private Well Study can be found at;  
<http://www.cheec.uiowa.edu/well/index.htm>

## EHSRC Investigators Participate in International Workshop on Rural & Environmental Health



Dr. James Merchant (on screen) leads a discussion from Iowa about the Keokuk County Rural Health Study with conference participants at Trnava University in Slovakia

Using video-conferencing technology, University of Iowa researchers were able to give presentations from a classroom at Oakdale Campus to 43 conference participants at Trnava University nearly 5000 miles away. Several EHSRC Investigators participated in the Summer Institute directed by the Fogarty-sponsored Center for International Rural & Environmental Health (CIREH) that was held in Slovakia.

The Summer Institute on Rural & Environmental Health takes place for 2 weeks every year and brings together health professionals from throughout Eastern and Central Europe. Topics at this year's conference included risk assessment, waste management, environmental justice, ethics in epidemiologic research, pesticides, and rural health promotion. Home countries of participants included Denmark, Slovakia, Romania, Croatia, Hungary, Poland, and the United States.

Participating EHSRC members included Dr. James Merchant, who gave a presentation on the Keokuk County Rural Health Study,

Dr. Larry Robertson, who spoke about PCB Toxicity, David Osterberg, who spoke about Environmental Justice, and Dr. Keri Hornbuckle who spoke about Risk Assessment. CIREH Director Dr. Thomas Cook said the technology was a valuable resource to this year's conference. "In the past, several professors from the University of Iowa have traveled to Central and Eastern Europe to participate in the conference. But this year, the video-conferencing technology allowed for both a broader scope of expertise as well as more discussion and interaction." Also included in the program was a workshop on Geographic Information Systems and Public Health. Dr. Gerard Rushton spoke in Slovakia and was able to demonstrate GIS technology by connecting to his laboratory on the University of Iowa Campus. "The potential for distance learning with this technology is enormous," said Dr. Cook. "By connecting international collaborators and sharing expertise, health professionals can reach a higher level of understanding about environmental issues that are common to rural areas worldwide."



Dr. John Lowe speaks to conference participants about Worldwide Tobacco Control



Trnava University, Trnava, Slovakia

## Fuortes Receives Fulbright Scholarship

Laurence Fuortes, Professor of Occupational & Environmental Health, has been awarded a 2002-2003 Fulbright Scholar grant to teach and conduct research abroad. Fuortes will travel to South Africa from June to September 2003 to work with colleagues in the Industrial Hygiene and Occupational Health Nursing faculties of the Technikon University in Durban as well as faculty of the National Centre for Occupational Health in Johannesburg. Dr. Fuortes will be lecturing and collaborating on applied occupational and environmental toxicology and epidemiology issues.

## Field Given AARST Nexus Award

The American Association of Radon Scientists & Technologies (AARST) named R. William Field as the first ever recipient of the AARST's Nexus Award at its 12th International Radon Symposium. The award is presented by the association to the symposium presenter who's body of work advances the knowledge of health risks associated with radon and further promotes the health and safety of the public. Field was honored for his continued work in the evaluation of radon health risks in the United States and specifically for his 2001 research paper, "A Review of Residential Radon Case-Control Epidemiologic Studies Performed in the United States." The paper was published in the Fall 2001 issue of *Reviews on Environmental Health*.

## UI Interdisciplinary Team Awarded \$3 Million Federal Contract

An interdisciplinary team involving faculty from the EHSRC and the University of Iowa Colleges of Engineering, Medicine, Public Health and Liberal Arts and Sciences has signed a four-year, \$3 million contract with the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health (NIH) to help NHLBI-funded scientists at the University of Iowa better advance their work and train UI researchers. The contract will establish a Shared Microarray Facility by expanding upon the existing microarray hybridization core in the laboratory of EHSRC member Dr. Bento Soares, professor of Pediatrics and principal investigator. This grant will also build upon the resources of the College of Medicine's DNA Core Facility, directed by EHSRC member Dr. Kevin Knudtson.

## Recent Publications from EHSRC Investigators

Jain VV, Businga TR, Kitagaki K, George CL, O'Shaughnessy PT, Kline, JN. Mucosal Immunotherapy with CpG Oligodeoxynucleotides Reverses a Murine Model of Chronic Asthma Induced by Repeated Antigen Exposure. *American Journal of Physiology-Lung Cellular & Molecular Physiology*. 2003 Jul 11.

Alavanja MC, Samanic C, Dosemeci M, Lubin J, Tarone R, Lynch CF, Knott C, Thomas K, Hoppin JA, Barker J, Coble J, Sandler DP, Blair A. "Use of Agricultural Pesticides and Prostate Cancer Risk in the Agricultural Health Study Cohort." *American Journal of Epidemiology*. 157(9): 800-14, 2003 May 1.

Tampal N, Myers S, Robertson LW. "Binding of Polychlorinated Biphenyls/Metabolites to Hemoglobin." *Toxicology Letters*. 142(1-2):53-90, 2003 Apr 30.

Ward MH, Cantor KP, Riley D, Merkle S, Lynch CF. "Nitrate in Public Water Supplies and Risk of Bladder Cancer." *Epidemiology*. 14(2): 183-90, 2003 March.

Rentz JA, Chapman B, Alvarez PJ, Schnoor JL. "Stimulation of Hybrid Poplar Growth in Petroleum-Contaminated Soils through Oxygen Addition and Soil Nutrient Amendments." *International Journal of Phytoremediation*. 5(1): 57-72, 2003.

Calvert GM, Ricke FL, Boiano JM, Sheehy JW, Sanderson WT. "Occupational Silica Exposure and Risk of Various Diseases: An Analysis Using Death Certificates from 27 States of the United States." *Occupational & Environmental Medicine*. 60(2):122-9, 2003 Feb.

Thorne PS, Bartlett KH, Phipps J, Kulhankova K. "Evaluation of Five Extraction Protocols for Quantification of Endotoxin in Metalworking Fluid Aerosol." *The Annals of Occupational Hygiene*. 47(1):31-6, 2003 Jan.