

SCOPE AND PURPOSE:

The scope of this Workshop is to share the most recent information on the relationship between impacts of toxic metal ions, trace elements, natural dusts, and their impact on the environmental and public health issues. The scientific topics of the Workshop will include environmental toxicology, environmental pathology, geochemistry, geoenvironmental epidemiology, extent, patterns and consequences of exposures to toxic metal ions and dust in the general environment (with the stress on the water quality), biological risk assessment studies, modern trends in metal analysis and updates on the geology, toxicology and pathology of metal ion and dust exposures.

OBJECTIVES:

At the completion of this Workshop, the attendees will be able to:

- Know and gain information on the type of evidence available about geological sources and processes, environmental health, toxicology, and pathological manifestations of exposures of toxic metal species.
- Know and gain information about geochemical processes, natural and anthropogenic sources, speciation, modes of occurrence; to assess the impact of trace elements and toxic metal ion species on human and environmental health.
- Have an elementary understanding of environmental toxicology, epidemiology, medical geology as applied to the study of toxic metal species and trace elements.

WORKSHOP LEADERS / SPEAKERS:

Dr. José A. Centeno, U.S. Armed Forces Institute of Pathology

Dr Robert B. Finkelman, U.S. Geological Survey

Dr. Olle Selinus, Geological Survey of Sweden

ABOUT THE SPEAKERS:

Dr. José A. Centeno is a Senior Research Scientist and Chief of the Division of Biophysical Toxicology at the Department of Environmental and Infectious Disease Sciences, U.S. Armed Forces Institute of Pathology (AFIP) in Washington, D.C. Dr. Centeno received BS and MS in chemistry from the University of Puerto Rico at Mayagüez in 1979 and 1981, respectively; and a Ph.D. in Physical Chemistry from Michigan State University in 1987. He has presented over 170 invited seminars and lectures, and published over 85 manuscripts on various topics of environmental toxicology, biomedical and environmental health, and medical geology. He has served on the organizing and scientific committees of several international conferences, including as General Chairman of the 6th *International Symposium in Metal Ions in Biology and Medicine* (ISMIBM) (May 7-10, 2000), and co-chairman of the 7th and 8th ISMIBM (2002&2004). He has served on several international environmental and human health committees including the International Agency for Research on Cancer, the U.S. TOSCA-Interagency Testing Committee, the International Working Group on Medical Geology, the National Research Council Committee on Research Priorities for Earth Science and Public Health, and as officer of the IUGS Commission on Geosciences for Environmental Management (GEM). He serves on the Editorial Board of five scientific journals, as associate editor of the book on *Essentials in Medical Geology*, as founding member and co-chair of the International Medical Geology Association, and as Director of the International Registry on Medical Geology. Dr. Centeno holds adjunct faculty professorships at four universities, is the recipient of the 1999 Distinguish Alumni Award on Science from the University of Puerto Rico-Mayaguez, Guest Professorship Award from China University of Mining and Technology (2002), Distinguished Professor Award

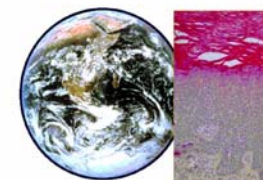
from Turabo University in Puerto Rico (2003), and William Evans Visiting Fellow from University of Otago, School of Medicine in Wellington, New Zealand (2004). Over the last decade, he has focused attention on environmental toxicology, medical geology, and health effects of trace elements, toxic trace metals and metalloids, and has conducted research and teaching activities on medical geology in over 35 countries.

Dr. Robert B. Finkelman, a Emeritus Scientist at the U.S. Geological Survey (USGS) in Reston, VA, and Professor at University of Texas at Dallas, is widely known for his work on coal chemistry and as a leader of the emerging field of Medical Geology. He has degrees in geology (The City College of New York, 1965), geochemistry (The George Washington University, 1970), and chemistry (The University of Maryland, 1980). Dr. Finkelman has a diverse professional background having worked at the USGS for 32 years, 7 years for Exxon, and has experience as a consultant and as a college instructor. Most of Dr. Finkelman's professional career has been devoted to understanding the properties of coal and how these properties affect coal's technological performance, economic byproduct potential, and environmental and health impacts. For the past 10 years he has devoted his efforts to developing the field of Medical Geology. Dr. Finkelman is the author of 500 publications and has been invited to speak in more than 30 countries. He is an officer in several professional societies, associate editor of two scientific journals, and holds adjunct professorships at five universities. Dr. Finkelman was Chairman of the Geological Society of America's Coal Geology Division, 1990; Chair of the International Association for Cosmochemistry and Geochemistry, Working Group on Geochemistry and Disease, 1998 to present; founding member and co-chair of the International Medical Geology Association; recipient of the Nininger Meteorite Award, 1969; recipient of the Gordon H. Wood Jr. Memorial Award from the AAPG Eastern Section, 1999; a Fellow of the Geological Society of America since 1988; and the 2004 recipient of the Cady Award from the GSA's Coal Geology Division. Dr. Finkelman is currently the President of the Society for Organic Petrology and was a recipient of a 2004 U. S. State Department Embassy Science Fellowship in South Africa.

Dr. Olle Selinus is a Ph.D. geologist working with the Geological Survey of Sweden (SGU). During the 1960s and 1970s he worked in mineral exploration with a mining company and at the GSS. Since the beginning of the 1980s. Dr. Selinus research work has been focused on environmental geochemistry and geostatistical methods, including research on medical geology. He has served as the organizer of several international conferences in this field and has published over 40 manuscripts. Dr. Selinus is currently the Head of the Geochemical Division at SGU in charge of research and development. He serves as Editor-in-Chief for the book on "Essentials of Medical Geology", as officer of COGEOENVIRONMENT and as chairman of its international Initiative on Medical Geology, co-chairman of the International Medical Geology Association, and co-chairman of the IGCP project #454 Medical Geology.

WHO SHOULD ATTEND? The Workshop is intended for geologists, geochemists, ecologists, chemists, biologists, occupational and environmental scientists, medical professionals, toxicologists, epidemiologists, environmental pathologists, bio-statisticians and any other health, environmental and geo-sciences professional with interest on Medical Geology issues, particular interest on the effect of toxic metal ion species on environmental and human health. An important aim of the Course is to provide the opportunity for forming contacts and networks between professionals working in different areas of environmental and human health.

The participants will receive Certificates of Attendance.



Environmental and health effects of toxic elements, metal ions, and minerals

2007 INTERNATIONAL WORKSHOP MEDICAL GEOLOGY METALS, HEALTH AND THE ENVIRONMENT June 11-13, 2007 Universidad Autónoma de San Luis de Potosí, San Luis Potosí, S.L.P., México Registration Fees: USD \$ 350.00

Jointly Sponsored by:

U.S. Armed Forces Institute of Pathology (AFIP)
U.S. Geological Survey (USGS)
Geological Survey of Sweden (SGU)
Servicio Geológico Mexicano (SGM)
Universidad Autónoma de San Luis de Potosí (UASLP)
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Consejo Potosino de Ciencia y Tecnología (COPOCYT)
International Union of Geological Sciences (IUGS)
International Medical Geology Association (IMGA)
United Nations Educational, Scientific, and Cultural Organization (UNESCO)



More about medical geology you can find at the homepage:
<http://www.medicalgeology.org>

SCIENTIFIC PROGRAM

Day 1: Monday, June 11, 2007

- 8:00-8:30 REGISTRATION
- 8:30-9:00 WELCOMING REMARKS –
UNIVERSIDAD AUTONOMA DE SAN LUIS POTOSI
SERVICIO DEOLOGICO MEXICANO
- 9:00-9:30 Objectives and Short Description of the Course
Dr. Marco Gustavo Monroy Fernández, México
Dr. Jose A. Centeno, USAFIP
Dr. Robert B. Finkelman, Univ. Of Texas-Dallas
- 9:30-10:15 Medical Geology: An emerging discipline in
environmental and human health.
Dr. Olle Selinus, SGU

10:15-10:30 Tea and/or Coffee Break

A. Environmental Health : Sources of Exposure and Health Effects of Trace Elements, Toxic Metal Ions, Metalloids,

- 10.30-11.15 Metals, Metalloids and Metal Compounds in
Environmental Health and Human Diseases
José A. Centeno, AFIP
- 11.15-12:00 Natural and Anthropogenic Sources, Transport and Fate
of Toxic Metal Ions in the Environment
Robert B. Finkelman, UTD
- 12:00-12:30 Environmental Health in a Mining Area Polluted with Pb
and As from Natural and Anthropogenic Sources in
Mexico
M.C. Sandra Gamiño, CEASSA-UASLP
- 12:30-14:00 LUNCH

B. Environmental Toxicology, Geochemical Studies and Health Effects.

- 14:00-14:45 An Overview of Health Impacts of Coal and Coal Use
Robert B. Finkelman, UTD
- 14:45- 15:45 Arsenic Poisoning: Natural History, Toxicology and
Health Effects
Jose A. Centeno, USAFIP
- 15:45-16:15 Tea and/or Coffee Break
- 16:15-16:45 The health impacts of trace elements released by
residential coal combustion – A case study of arseniasis
and fluorosis
Robert B. Finkelman, UTD
- 16:45-17:30 Health Risk From Long-Term Hg Exposure – A Medical
Geology Research Case
Jose A. Centeno, AFIP
- 17:30-18:00 Discussion and Summary-
Jose A. Centeno – USAFIP

Day 2: Tuesday, June 12, 2007

C. Analytical Toxicology: Trace Element Speciation, Microscopy, Detection, and Quantification Methods

- 8:30-8:45 Welcome and review
Dr. Jose A. Centeno
- 8:45-9:30 Trace Element Speciation in Human Health and
Analytical methods for the study of biological samples.
José A. Centeno, AFIP, Washington, DC
- 9:30-10:15 Analytical methods for the study of trace elements and
toxic metal ions in geological and environmental
samples.
Robert B. Finkelman, Univ. of Texas-Dallas
- 10:15-10:30 Tea and/or Coffee Break
- 10:30-11:30 Development and Use of International Geological
Databases on Medical Geology
Olle Selinus, SGU, Sweden
- 11:30-12:00 TBA
- 12:00-13:00 Lunch

D. Special Topics on Medical Geology and Human Health Research

- 13:00-1345 The health impacts of mineral dust
Robert B. Finkelman, UTD
- 13:45-1430 Environmental Toxicology and Exposure to Dust – The
Role of Metals and Metal Compounds
Jose A. Centeno, AFIP
- 14:30-15:00 Application of Medical Geology to vector borne diseases
and other issues
Robert B. Finkelman, UTD
- 15:00-15:30 Tea and/or Coffee Break
- 15:30-16:15 Recent Studies on the Roles of Cd, Zn, and Se and
Health Effects - *Jose A. Centeno, AFIP*
- 16:15-17:00 Health benefits of rocks and minerals
Robert B. Finkelman, UTD
- 17:00-18:00 Panel Discussion: All Speakers –
Topics: i. Regional Issues on Medical Geology and
Human Health
ii. Current Research Opportunities on
Toxicology, Medical Geology and Human
Health
Moderator: Dr. Marco Gustavo Monroy – México
- 18:00-18:30 Distribution of Certificates of Attendance

REGISTRATION FORM

Please complete and return to:

Dr. Marcos G. Monroy Fernandez

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Surname

First Name

Title/Position

Organization

Mailing Address

Postal Code

Country

Telephone

Fax

E-mail

I intend to:

1. Attend the Workshop

2. Give the Oral Presentation

4. Participate in Field Trip:

Field Trip: This one-day trip will be held on June 13, 2007. The aim of this trip is to serve as a field-working activity. The group will be visiting the Villa de La Paz-Matehuala, S.L.P. (Mexico), to study a mining area with elevated concentrations of arsenic and heavy metals from natural and anthropogenic sources.



MEDICAL GEOLOGY

METALS, HEALTH AND THE ENVIRONMENT

La Universidad Autónoma de San Luis Potosí a través del
Centro de Estudios, Asesoría y Servicios en Sistemas Ambientales
tiene el agrado de organizar y convocar al:

“ 2007 International Workshop Medical Geology. Metals, Health and the Environment ”

JUNIO 11. 12 . 13 DE 2007

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