The University of Johannesburg will be hosting the 1st International Symposium on “Medical Geology in Africa” (ISMGAf) from the 24th to the 26th of March 2014. This event is sponsored by the University of Johannesburg (UJ), The Geological Society of South Africa (GSSA), The International Union of Geological Science (IUGS) and the International Medical Geology Association (IMGA).

**About Medical Geology**

Historically, the two disciplines namely the “geological sciences” and the “medical sciences” were regarded as completely independent fields of scientific disciplines. However, recent advances in science and technology have proven that the geology of an area can have a direct impact on the regional input of elements and nanoparticles of minerals into soil, air and water. In turn these inputs, depending on composition and concentrations, may result in beneficial or harmful health effects in humans, animals and/or plants. Therefore, by understanding the geological history of our country and the African continent in general, we will contribute towards a better and deeper insight into our understanding and mitigation of a range of natural hazards that affect our society.
Why an ISMGAf?

Although there is a growing interest in Medical Geology in the world, it is in Africa that application of research results would be most relevant. However, it is also in Africa that this field is least developed. Considering the possible significance of the health problems related to naturally occurring geological materials and geological processes in African countries in general, we believe that this meeting would help to bring together experts from various fields of science including geoscientists, toxicologists, epidemiologists, medical experts, public health scientists, biotechnologists, biochemists…etc. in order to discuss the possible sources as well as the fate and impacts of natural and environmental risk factors on the development of human and animal diseases.

Our overarching goal of ISMGAf is to provide a platform for the development of research and training of students in medical geology and to seek solutions to these geological and natural issues.

We believe that these discussions will lead to a better characterization and understanding of naturally-occurring trace elements and toxic compounds in groundwater, soil and rocks and will help to explain patterns of diseases such as various cancers, cardiovascular diseases and osteoporosis…etc.

Where in South Africa?

At the Department of Geology, University of Johannesburg, Auckland Park Kingsway Campus, Johannesburg, South Africa.

What is the program of the meeting?

The provisional general program of this meeting will consist of a 2 days short course followed by a 1 day discussion meeting (oral and posters presentations) on research in the field of Medical Geology in Africa and elsewhere.

Scope of the Short Course

The scope of this Short Course on Medical Geology is to share the most recent information on the relationship between the impact of toxic metals, trace elements, natural dust, on environmental quality and public health. Scientific topics will include areas in environmental toxicology, environmental pathology, epidemiology, geochemistry, as well as the extent, patterns and consequences of exposures to toxic metal ions and deficiency of trace elements in the natural environment. Emphasis will be placed on describing the geochemistry, toxicology and health effects of natural geogenic dust (particulate matter), risk assessment studies, and modern analytical trends of particular application to medical geology.

The Short Course is intended for geologists, geochemists, ecologists, chemists, biologists, occupational and environmental scientists, medical professionals, toxicologists, epidemiologists, environmental pathologists, biostatisticians and any other health, environmental and geosciences professional with interest on Medical Geology issues with particular interest on the effect of toxic metal ion species on environmental and human health. An important aim of the course is to provide an opportunity to form contacts and networks between professionals working in different areas of geology, environmental and human health worldwide.
Provisional topics of the 2 day short course

- Environmental Health, Toxicology, and Geochemical Aspects of Medical Geology
- Mineralogy, Chemistry, Toxicology and Health Effects of Mineral Dust
- Registry/Database Information and Analytical Aspects of Medical Geology
- Emerging and Future Research Issues of Medical Geology

Speakers

Dr. Jose A. Centeno is a toxicologist from the Joint Pathology Center, USA (Past-Chairman, IMGA) and Dr. Saverio Fiore, Senior Researcher at Institute of Methodologies of Environmental Analysis (IMAA) of CNR and Head of the Research Group Micro and Biominerals for Health and Environment, Italy.

Short biography of the speakers

Jose A. Centeno, PhD, FRSC, is a graduate from Michigan State University and a research scientist at the Joint Pathology Center, USA, with over 20 years of experience in the fields of environmental toxicology and medical geology. Dr. Centeno is a founding member and Past-Chairman of the International Medical Geology Association (IMGA). He is currently serving as the US Officer to the IUGS-Commission on Geosciences for Environmental Management (GEM) and has served as Senior Adviser, UNESCO-IUGS-International Year of Planet Earth (2007-2009). Dr. Centeno currently hold adjunct faculty positions at several national and international academic centers and universities including Turabo University in Puerto Rico (as Distinguished Professor, Environmental and Health), Jackson State University in Jackson, Mississippi, Metropolitan University in Puerto Rico, and the Faculty of Chemistry-University of the Republic of Uruguay. Dr. Centeno is author and/or coauthor of several publications (including manuscripts, book chapters, reports, monographs and research abstracts), co-editor of the book “Essentials of Medical Geology – Impacts of the Natural Environment on Public Health” (2005, 2013) and “Medical Geology – A Regional Synthesis” (2010), serves on the editorial board of several scientific journal, and has served as the organized of national and international conferences, including as the founding member of the International Medical Geology Conference series (MEDGEO). He has been involved in numerous academic, government and professional activities including serving as a member of the Working Group for the International Agency for Research on Cancer (IARC, Vol. 74), US National Institutes of Health (NIH) grant proposal Study Sections, USAID grant proposal Review Panel, USEPA TOSCA Interagency Testing Committee, US National Research Council Committee on Earth Sciences and Public Health, and National Academies – Board on International
Scientific Organizations (BISO). He is the recipient of several national and international awards, and has been invited to speak in more than 50 countries.

Saverio Fiore graduated in Geological Sciences, summa cum laude, at the University of Bari, Italy, in 1981 and earned PhD title in Earth Sciences in 1987. Dr. Fiore got the Researcher position (1989) at Institute for Clay Research, Italian National Research Council (CNR), in Potenza, Italy. Currently he is Senior Researcher at Institute of Methodologies of Environmental Analysis (IMAA) of CNR and Head of the Research Group Micro and Biominerals for Health and Environment. He has been the principal investigator of several national and international projects concerning the genesis and the synthesis of clay minerals, the mapping and the monitoring of naturally occurring asbestos and environmental geochemistry.

Currently, he is focusing on environmental and applied mineralogy and is principal investigator of the following research projects:

- Bioclay: mineralogical, geochemical and biological characterization of clays in Basilicata;
- Environmental remediation of areas characterized by the presence of rocks containing asbestos in Basilicata (Italy);
- Nanominerals in airborne dust in Basilicata (Italy);
- Synthesis of zeolites using fly ash and clay minerals.

Saverio Fiore was a member of the scientific board of many national and international conferences: He was the chair of the 14th International Clay Conference and the 4th International Conference of Medical Geology, held in Italy in 2009 and 2011 respectively. He was President of the Italian Association for the Study of Clays (AISA) and Councillor of the International Association for the Study of Clays (AIPEA). Since July 2013 he is President of AIPEA.

### Registration fees?

**Early Registration** (deadline 10/02/2014).

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<th>Full Package (Short Course + Meeting)</th>
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**Late Registration** (from 11/02 to 10/03/2014)

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The fees indicated above include Value Added Tax (VAT). Registration fees for the event include: abstract volume/and or short course material, one evening function, tea/coffee and light lunch (3 days).

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For further information on the event, please contact **Prof Hassina Mouri**

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University of Johannesburg

South Africa

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www.uj.ac.za/geology