

**ICOPHAI 2017 Pre-Congress Workshop – Doha, Qatar**  
**November 6, 2017**

**Title:** *Exposure and Toxicological Characteristics of Environmental Chemical Toxicants: An Expanded One Health Paradigm*

**Instructors:** Michael S. Bisesi, PhD, REHS, CIH  
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**Duration:** 4.5 hours (including 30 minute break)

**Content:** The workshop will focus on modes and characterization of direct and indirect exposures to chemical toxicants present in various environmental settings. Examples of major categories and types of toxic organic and inorganic compounds will include solvents, metals and pesticides. Topics will address the general qualitative fate of these toxicants (i.e. absorption, distribution, biotransformation, elimination) in biological systems (i.e. human, animal, plant) and environmental matrices (i.e. air, water, soil, food). In addition, content will include related consequences of exposure, including bioaccumulation and biomagnification of toxic chemicals, general adverse impacts, and relation to risk of disease. The concluding sessions of the workshop will focus on characterizing environmental contamination and exposure with emphasis on air sampling. The workshop will include short case scenarios to help contextually frame and apply the information.

**Learning Objectives:** Upon completion of the workshop participants will be better prepared to:

1. list major pathways for exposure to and modes and routes of entry of chemical toxicants;
2. describe the qualitative fate of examples of chemical toxicants in biological systems and environmental matrices;
3. summarize some consequences of direct and indirect exposure to chemical toxicants; and,
4. describe some approaches to conducting air sampling to determine inhalational exposures to chemical toxicants.

**Topics and Timeline:**

Topic	Approximate Time (minutes)	Presenter
An Environmental Health Science Model	10 minutes	Dr. Michael Bisesi
Major Categories of Environmental Chemical Contaminants/Toxicants	30 minutes	
Sources, Modes and Routes of Environmental Exposures	15 minutes	
Fate of Environmental Chemical Contaminants/Toxicants	60 minutes	
Categories of Adverse Impacts	15 minutes	
BREAK	30 minutes	
Characterization of Environmental Contamination and Exposure	20 minutes	Dr. Michael Bisesi
Air Sampling for Particulates	30 minutes	Dr. Jeff Obbard Dr. Balint Alföldy
Air Sampling for VOCs	30 minutes	
Air Sampling for Bacteria and Fungi	30 minutes	
<b>TOTAL TIME</b>	<b>270 minutes (4.5hr)</b>	