

**International Training Course on  
Environmental and Health Risk Assessment and Management of Toxic Chemicals  
1 – 19 December 2008**

---

**Course Description:**

This course, which is an integration of science and policy, covers the fundamental basis of the environmental impact assessment, the risk assessment and management process which starts from identification of hazard, assessment methods, the mode of action and human relevance framework, the inherent uncertainties in each step and the relationship between risk assessment and risk management, and the need for open, transparent and participatory acceptance procedures and credible communication methods. Emphasis will be placed on potential adverse health effects of human exposure to environmental hazards. The course also teaches the practical application of risk assessment methods to various problems. The application of environmental impact assessment procedures of identifying and assessing risk is also covered in the course.

**Course Coordinator:**

**Khunying Mathuros Ruchirawat (Ph.D.)**- Chulabhorn Research Institute, Bangkok, Thailand

**Course Lecturers:****1. Prof. Herman Autrup**

Department of Environmental and Occupational Medicine,  
University of Aarhus, Denmark

**2. Prof. Leonard Ritter**

Canadian Network of Toxicology Centres,  
Department of Environmental Biology, University of Guelph, Ontario, Canada

**3. Prof. Martin van den Berg**

Institute of Risk Assessment Sciences (IRAS) Veterinary Faculty,  
University of Utrecht, The Netherlands

**4. Prof. Kyoung-Woong Kim**

Department of Environmental Science and Engineering,  
Gwangju Institute of Science and Technology (GIST), Gwangju, South Korea

**5. Ms. Mary E. (Bette) Meek**

McLaughlin Centre for Population Health Risk Assessment  
University of Ottawa, Ottawa, Canada

**Date:** 1 -19 December 2008

**Place:** R606 General Building, Chulabhorn Research Institute

**Monday, 1 December 2008**

08.30 - 09.00 Registration

9.00 – 17.00 Review

**Tuesday, 2 December 2008**

9.00 – 17.00 Review

**Environmental Impact Assessment**

**Wednesday, 3 December 2008**

08.30 - 09.00 Registration

09.00 - 10.30 Contaminant Fate and Transport in Soil/Groundwater K.W. Kim

10.30 - 11.00 Coffee Break

11.00 - 12.30 Strategy for Soil/Groundwater Remediation K.W. Kim

12.30 - 13.30 Lunch

13.30 - 15.00 Environmental Impact Assessment of the As-enriched Aquifer K.W. Kim

**Thursday, 4 December 2008**

09.00 - 10.30 Environmental Impact Assessment in the Metal Mining Areas K.W. Kim

10.30 - 11.00 Coffee Break

11.00 - 12.30 Case Study of Risk Assessment K.W. Kim

12.30 - 13.30 Lunch

13.30 - 15.00 Health and Environmental Risk Assessment K.W. Kim

**Human Health and Ecological Risk Assessment and Risk Management**

**Monday, 8 December 2008**

09.00 – 10.00 The Risk Assessment Process H. Autrup

10.00 – 10.15 Coffee Break

10.15 – 11.15 Toxic Effects of Chemicals H. Autrup

11.15 – 12.15 Fate of Chemicals in the Body M. Ruchirawat

12.15 – 13.15 Lunch

13.15 – 14.15 Factors Influencing Toxicity M. Ruchirawat

14.15 – 16.00 Risk Assessment Exercise: Introduction All

**Tuesday, 9 December 2008**

09.00 – 10.15	Hazard Identification – Human Data I	H. Autrup
10.15 – 10.30	Coffee Break	
10.30 – 12.00	Hazard Identification – Human Data II	H. Autrup
12.00 – 13.00	Lunch	
13.00 – 15.00	Hazard Identification – Toxicity Testing I (animal, Qsar, alternatives)	L. Ritter
	Hazard Identification – Toxicity Testing II	L. Ritter
15.00 – 15.15	Coffee Break	
15.15 – 17.00	Ecological Risk Assessment – Hazard Identification and Testing	M. van den Berg

**Wednesday, 10 December 2008**

09.00 – 10.15	Exposure Assessment – Environment and Monitoring	H. Autrup
10.15 – 10.30	Coffee Break	
10.30 – 12.00	Human Exposure Assessment – Modeling	H. Autrup
12.00 – 13.00	Lunch	
13.00 – 14.30	Exposure Assessment – Ecotoxicology	M. van den Berg
14.30 – 14.45	Coffee Break	
14.45 – 16.15	Human Exposure Assessment – Food Residues/Water/Occupational	L. Ritter
16.15 – 17.00	Risk Assessment Exercise: Case Studies (Suggest: DDT, benzene)	All

**Thursday, 11 December 2008**

09.00 – 10.15	Ecological Risk Assessment – Dose-Response Relationship	M. van den Berg
10.15 – 10.30	Coffee Break	
10.30 – 12.00	Ecological Risk Assessment – Characterization	M. van den Berg
12.00 – 13.00	Lunch	
13.00 – 14.30	Dose-Response Assessment Thresholded	L. Ritter
14.30 – 14.45	Coffee Break	
14.45 – 16.15	Dose-Response Non-Thresholded	L. Ritter
16.15 – 17.00	Risk Assessment Exercise: Case Studies	All

**Friday, 12 December 2008**

09.00 – 12.00	Workshop on Ecological Risk Assessment	M. van den Berg
12.00 – 13.00	Lunch	
13.00 – 17.00	Mode of Action / Human Relevance Framework I; Background and Introduction of Case Study	M. Meek

**Monday, 15 December 2008**

09.00 – 12.00	Mode of Action / Human Relevance Framework II; Class Exercise	M. Meek / L. Ritter
12.00 – 13.00	Lunch	
13.00 – 14.00	Priority Setting; Threshold of Toxicological Concern	M. Meek
14.00 – 15.00	Case Studies: Dietary Risk Assessment	L. Ritter
15.00 – 15.15	Coffee Break	
15.15 – 17.00	Student Presentation on Case Studies: Mode of Action	M. Meek / All

**Tuesday, 16 December 2008**

09.00 – 10.00	Receptor Mediated Toxicity - Environment and Human	M. van den Berg
10.00 – 10.15	Coffee Break	
10.15 – 11.15	Sensitive Population	H. Autrup
11.15 – 12.15	Case Studies: Cancer Risk Assessment	L. Ritter
12.15 – 13.15	Lunch	
13.15 – 14.30	Case Studies: Integrated Risk Assessment (organotin)	H. Autrup
14.30 – 15.30	Guideline Derivation/Standard Setting I	L. Ritter
15.30 – 15.45	Coffee Break	
15.45 – 17.00	Risk Assessment Exercise: Case Studies	All

**Wednesday, 17 December 2008**

09.00 – 10.00	Guideline Derivation/Standard Setting II	L. Ritter
10.00 – 10.15	Coffee Break	
10.15 – 11.15	Air Pollution: Standard Setting	H. Autrup
11.15 – 12.00	REACH	H. Autrup
12.00 – 13.00	Lunch	
13.00 – 14.00	International Trends and Initiatives	M. Meek
14.00 – 17.00	Problem Formulation/Exercise	M. Meek

**Thursday, 18 December 2008**

09.00 – 10.00	Risk Characterization	L. Ritter
10.00 – 10.15	Coffee Break	
10.15 – 11.15	Risk Management	L. Ritter
11.15 – 12.15	Risk Reduction	L. Ritter
12.15 – 13.15	Lunch	
13.15 – 17.00	Risk Assessment Exercise/Case Studies (Finalize Case Study/Report Preparation)	All

**Friday, 19 December 2008**

09.00 – 10.00	Risk Perception	L. Ritter
10.00 – 10.15	Coffee Break	
10.15 – 11.15	Risk Communication	L. Ritter
11.15 – 12.15	Summary of RA Process	L. Ritter
12.15 – 13.15	Lunch	
13.15 – 17.00	Student Presentation and Discussion on Outcomes of Case Studies	All

**Examination will be announced later**