



Summer Institute in Circumpolar Health Research– June 2011

Title: Contaminants and Human Health

Level: Master and PhD Students

Dates: 13.-14.6.2011

ECTS: 2 ECTS (participation with poster presentation), 1 ECTS (participation only)

Coordinators: Kirsi Latola (kirsi.latola@oulu.fi), Arja Rautio (arja.rautio@oulu.fi)

Course instructors: Jon Øyvind Odland, Kirsi Vähäkangas, James Berner, Arja Rautio

Course outline: This 1½ day full time course will give an introduction to most current contaminants and their sources, with a special focus in the Arctic regions. The assessment of contaminants and their effects on human health by focusing on cutting-edge research based knowledge from the Arctic regions and populations is covered on the course. The course will utilize large international research networks and projects, such as AMAP and ArcRisk, as case examples for students. The students will be given an overview of the different health assessment methods. In addition, the course will enlighten the evaluation of health effects caused by contaminants. Assessment of health status by using different methodology, such as questionnaires, interviews, laboratory analyses and physical examinations will be introduced to the participants.

Learning outcomes: After participation on the course, students will have an overview and knowledge about current contaminants, their sources and health effects on human and surrounding environment in the Arctic regions and populations. Further on, students will have the awareness of different assessment methods related to health effects of contaminants, and how the health effects are evaluated and validated on a population level.

Teaching methods: Lectures, discussions, workshop and poster presentations.

Course literature: AMAP Assessment 2009: Human health in the Arctic, www.amap.no

Kortenkamp, A. 2007. Ten Years of Mixing Cocktails: A Review of Combination Effects of Endocrine-Disrupting Chemicals. *Environmental Health Perspectives* 115: 98-105.

Hardman, R. 2006. A Toxicologic Review of Quantum Dots: Toxicity Depends on Physicochemical and Environmental Factors. *Environmental Health Perspectives* 114(2): 165-172.

Kortenkamp, A., Faust, M., Scholze, Martin., Backhaus, T. 2007. Low-Level Exposure to Multiple Chemicals: Reason for Human Health Concerns? *Environmental Health Perspectives* 115: 106-114.

Herbstman, J., Sjödin, A., Kurzon, M., Lederman, S., Jones, R., Rauh, V., Needham, L., Tang, D., Megan Niedzwiecki, M., Wang, R., Perera, F. 2010. Prenatal Exposure to PBDEs and Neurodevelopment. *Environmental Health Perspectives* 118(5): 712-719.

National Research Council of the National Academies. 2006. *Human Biomonitoring for Environmental Chemicals*

Course Programme

June 13th		Contaminants and Human Health - Day 1	
09.00-09.45	Introduction to toxicology of contaminants	Professor Kirsi Vähäkangas	
09.45-10.30	Human biomonitoring programs	Professor Jim Berner	
10.30-11.00	Coffee Break		
11.00-11.45	Human health effects of POPs and mercury	Professor Jim Berner	
11.45-12.30	Assessment of contaminants in humans	Professor Kirsi Vähäkangas	
12.30-13.30	Lunch		
13.30-14.15	Arc Risk project on contaminants, human health and climate change	Professor Arja Rautio	
14.15-15.30	Poster presentations Coffee Break	Course participants	
15.30-17.00	ABC transporters and heavy metals in BeWo human choriocarcinoma cells Persistent toxic substances in reindeer and moose Open	Maria Kummu, PhD student Anniina Suutari, PhD student TBC	
18.30-	Social programme		
June 14th		Contaminants and Human Health- Day 2	
9.00-10.30	Climate change, environmental contaminants and impact on human life and health in circumpolar areas	Professor Jon Oyvind Odland	
10.30-11.00	Coffee Break		
11.00-11.45	MISA study about environmental toxins, pregnancy and breast feeding	Solrunn Hansen, PhD student	
11.45-12.30	Workshop and Conclusions	Course instructors and participants	
12.30-13.30	Lunch		