AARHUS UNIVERSITY

EXTERNAL SEMINAR

DEPARTMENT OF ENVIRONMENTAL SCIENCE

Frederiksborgvej 399, 4000 Roskilde

13 June 2019, 11:00 – 12:00

Venue: C2.05 at Risø Campus in Roskilde, AU

Title: Global metabolomic profiling of human pregnancy exposure using high resolution mass spectrometry

Speaker: Dawei Geng is a visiting scientist at the West Coast Metabolomics Center, University of California, Davis, CA, USA with Professor Oliver Fiehn and Dr. Tobias Kind. He had two years postdoc at MTM Research Centre (MTM), Örebro University, Sweden from 2016 to 2018 after obtained his PhD degree in chemistry at Örebro University in September 2016. His research interests are focused on identifying biomarkers using metabolomics/lipidomics/exposomics tools in human cohort studies and animal models. His research interests also involve with analysis of endogenous and exogenous metabolites, including drug and natural products, using machine learning for compound identification, as well as the development of novel comprehensive untargeted methodologies in complex biological (mainly human) samples using advanced mass spectrometric tools.

Abstract: Environmental factors (including lifestyle, occupation, medication, dietary habits and environmental exposure, etc.) explain approximately 90% of chronic disease burden. However, in contrast to human genome, the environmental factors are yet poorly characterized. Environmental exposure to toxic contaminants has been shown to associate with a range of adverse effects. For example, exposure to widely used environmental chemicals, per- and polyfluoroalkyl substances (PFAS) has been associated with increased cholesterol and insulin levels, impaired glucose tolerance, type 2 diabetes, increased weight and fatty liver disorders. The aim of this study is to evaluate the environmental exposure during fetal development in a well characterized mother-child cohort and identify the association of the exposure profiles with the development of autoimmunity in early childhood. We analyzed serum samples of the mothers, collected during the pregnancy for PFASs and other organic persistent pollutants with both UHPLC-MS/MS and GC-MS/MS methods. Additionally, metabolic profiles were analyzed in both from the mothers and the children using UHPLC- and GC-QTOFMS methods, covering both lipids and polar metabolites.

Host: Martin Hansen, Senior Researcher, Section of Environmental Chemistry and Toxicology, Department of Environmental Science, Aarhus University

External Guests interested in attending the presentation should e-mail Department Secretary Christel Ege-Johansen, cej@envs.au.dk