Project information

Keywords
PFAS
Project title
Innovative Training Network on PER and polyfluorinated alkyl substances towards the Future Of Research - The Norwegian Arctic link (PERFORCE-North)
Year
2019
Project leader
Dorte herzke
Geographical localization of the research project in decimal degrees (max 5 per project, ex. 70,662°N and 23,707°E)
Tromsø: 69°39′07″N 018°57′12″E
Participants

- Project leader(s)/institutions: Dorte Herzke (NILU)
- Project participants/institutions: Torkjel Sandanger (UiT); Trude Borch (APN)

Flagship
Hazardous Substances
Funding Source

EU ITN PERFOCE3

Summary of Results

Both PhD candidates and one master student are inplace and have started their projects in September 2021. Also the considerable additional tasks taken over by D. Herzke (;Educational Board member, WP leadership and Equality Champion) and T. Sandanger (Administration of Tromsø samples, Development of a dedicated course) have been strated up. PERFORCE_North contributes to both NILU, APN and UiT developing to be European leading actors well connected with excellent European research groups on the field of human exposure and effects by PFAS and the interaction with regulators and the general public as a clear added value for the flagship, aiding the efforts to disentangle the path from new knowledge to policies and contributing to policy implementation. PERFORCE-NORTH will build on this objective and open the focus on the arctic human populations and their PFAS exposure as well as using the FRAM Centre as a platform for outreach and stakeholder involvement.

The PhDs have started to determine PFASs and the amount of oxidisable and hydrolysable PFAA-precursors in blood from men and women from Arctic Norway (Tromsø) with up to five repeated blood samples from 1986 until 2016. These samples are from a diabetes nested case control study with two samples prior to the time of diagnosis. The other PhD will assess the effects of PFAS exposure on gene expression and on selected metabolites with a focus on lipid profiles in blood from women in the Norwegian Women and Cancer Study, Tromsø. The PhDs and masterstudent will be responsible for generating PFAS data together with technical staff at NILU in samples with already available mRNA and metabolite data in the fall of 2020/ winter 2021.

Master and PhD-students involved in the project

PhD Lara Cioni/ UiT

PhD Ana Miranda/ UiT

Masterstudent Wendy van Dreunen/ UiT

For the Management

With this proposal, two themes of the flagship hazardous compounds sub-topics are covered by our objectives (Theme 1, Human health & society and Theme 4. Risk governance). The added value made possible by funding this project includes (1) Arctic-specific data on PFAS EXPOSURE, (2) establishing state-of-the art analytical methodology, (3) placing the FRAM Centre among leading research centers in Europe on the topic of PFAS exposure and risk assessment of PFAS an (4) providing us with novel insight into European policies and how to influence them (Stockholm Convention, OSPAR, AMAP, OECD) and national environmental authorities. The project is in accordance with the objectives of the Fram Centre flagship "*Hazardous substances – effects on ecosystem and health*". With an extensive focus on communication with government agencies and providing scientific input to policy making, the project answers to one of the main issues highlighted in the recent Fram Centre evaluation.

Published Results/Planned Publications

Planned papers:

Paper 1: TOPA method for human plasma to assess the contribution of oxidisable Precursors the the exposure to legacy PFAS

èPaper 2: CHANGES IN HUMAN EXPOSURE TO PFAA PRECURSOR COMPOUNDS RELATIVE TO KNOWN PFAS FROM 1986-2016 AND OUR ABILITY TO MODEL THESE CHANGES

èPaper 3: THE EFFECTS diet and lipid composition on exposure to SELECTED PFAA PRECURSOR COMPOUNDS/ lipidclasses and dietary predictors

Budget in accordance to results

yes

Could results from the project be subject for any commercial utilization

No