

## Proposals for NORMAN Joint Programme of Activities 2022

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| <b>Title</b>   | <b>Intercomparison study on passive sampling and NTS for PFASs</b>  |
| <b>Type of activity</b>  | Intercomparison study   |
| <b>Leader</b>  | Sarit Kaserzon, The University of Queensland, QAEHS<br>Branislav Vrana, Recetox<br>Antonia.Praetorius/ Saer Samanipour/ Mohamad Sadia, University of Amsterdam  |
| <b>Topic / activities</b>                                      | <p><b>Background / Justification for the proposed activity:</b></p> <p>Per- and polyfluoroalkyl substances are a large group of compounds that have been used in countless industrial, commercial and manufacturing processes and products for decades. Use and waste disposal of PFASs has resulted in wide-spread environmental contamination. Due to the high stability and mobility PFASs have been detected in all environmental compartments, as well as in humans. Perfluoroalkyl acid (PFAA) precursors can degrade in the environment to form PFAAs, as well as numerous degradation intermediates. Due to the relatively uncontrolled synthetic routes and environmental degradation pathways, thousands of individual anionic, cationic and zwitterionic PFASs are believed to exist. The vast number and diverse properties of PFASs, and the geographical scale of contamination present enormous analytical and sampling challenges. Current sampling, analysis and identification methods are limited to handful of PFASs including sulfonates, sulfonamides, carboxylates, phosphinates and others. Therefore, NTS is emerging as an important tool for characterisation of these compounds and understand their fate in the environment, including degradation and transport processes. Passive sampling techniques are emerging as important tools for the monitoring and identification of PFAS in waters as they provide in situ concentration of samples and can in some cases increase sensitivity. The combination of passive sampling of PFAS and NTS is of high interest for characterising sources and fate of PFAS in the environment and from contaminated source zones. However, inter-laboratory comparisons of the use and interpretation of data with these tools is necessary to increase confidence in their use and application.</p> <p>This activity will aim to address and identify some of the limitations and opportunities with the passive sampling and broad scale NTS analysis of PFASs.</p> <p><b>Description of the proposed activity and expected outcomes for 2022:</b></p> <p>We propose to deploy one or two types of passive samplers at a highly contaminated site that includes a diverse range of PFAS sources.</p> <p>Samplers and sample extracts will be sent to various laboratories for extraction and analysis of samplers and/or extracts.</p> <p>The aim will be to in parallel examine (i) extraction techniques, (ii) analysis (i.e. chromatography methods) and (iii) processing methods for these compounds using set list of target and spiked PFAS as well as use of NTS reporting from each laboratory</p> <p>Expected outcomes: initialise the activity, distribute samples and collect data by the end of 2022. Data processing and evaluation expected in 2023.</p> <p><b>Added value / Link with other NORMAN activities and / or other projects</b></p> <p>Joint activity for passive sampling WG as well as WG-1 Prioritisation and potentially the 'interlaboratory comparison of (semi-)quantitative LC/HRMS non-targeted screening' WG.</p> |
| <b>Participants</b>  | Recetox, The University of Queensland, University of Amsterdam,<br>Any interested participants  |
| <b>Proposed in-kind contribution</b>                           | QAEHS: Costs associated with deployment and provision of all samplers and/or sample extracts for analysis, QAQC, data curation, consolidation and interpretation  |
| <b>Contribution needed from NORMAN Association<sup>1</sup></b> | Shipping costs would be nice to have.   |

<sup>1</sup> Please, provide here a transparent justification of the requested resources and of the in-kind contribution, thereby distinguishing between the costs associated with "person-months" for the organisation, the "travelling costs" for invited speakers and the costs for the logistics (e.g. meals, room rental etc.)