

Proposals for NORMAN Joint Programme of Activities 2025

Title	Data Science for Monitoring of Emerging Environmental Substances
Type of activity	Establishing cross-working group
Leader	Anneli Krueve, Stockholm University, Sweden Jana Schor (UFZ) – proposed co-leader
Topic / activities	<p>Background / Justification for the proposed activity:</p> <p>NORMAN has been substantially contributing to collecting data on emerging substances. This includes organizing high resolution mass spectrometry data for known contaminants into MassBank, curating and publishing suspects lists, combining bioassay data to NORMAN SusDat, collecting and processing data for substance prioritisation activities, etc. At the same time new data science tools, often called <i>AI</i>, are changing the searching, application, and collection of new data.</p> <p>In October 2024 in Leipzig a NORMAN network AI workshop “Artificial Intelligence for environmental monitoring, assessment and prioritisation of chemicals and their mixtures” took place. Among specific AI tools, also future AI activities in NORMAN were discussed and one idea was to establish a working group focused on application and development of AI tools that can benefit NORMAN. Such tools are already developed by members of NORMAN network and the cross-working group would provide a platform for directly collecting, comparing, and combining these tools as well as developing the tools further collectively. As AI is impacting data handling, modelling, interpretations, it is relevant for all working groups in NORMAN and suggest formation of a cross-working group.</p> <p>Description of the proposed activity and expected outcomes for 2025 - 2026:</p> <ol style="list-style-type: none"> (1) Mapping the interest, experiences, on-going AI based research activities of NORMAN members as well as identifying the areas where NORMAN has most to contribute to the research scene but also at the science-policy interface. The mapping will be carried out in a form of a member survey. (2) A webinar summarizing the findings from the survey, mapping the most critical areas; (3) NORMAN summer school on using existing AI tools inside the network. (4) In conjunction with the summer school we suggest to carry out the second NORMAN workshop on “Artificial Intelligence for environmental monitoring, assessment and prioritisation of chemicals and their mixtures” with focus on the areas mapped based on the survey. <p>Added value / Link with other NORMAN activities and / or other projects</p> <p>Direct link to the activities on SusDat, MassBank, DSFP as the AI tools have a potential to allow even better use of the data deposited in these databases and may aid curation. The AI tools may also allow us to indicate gaps in chemical space coverage by the existing data and direct further activities acquiring new data in regard to effects (bioassay endpoints, effect directed analysis), analytical characterization (HRMS, chromatography, IMS), as well as sampling (biota, marine environment, indoor environment).</p>
Participants	Open to all NORMAN members.
Proposed in-kind contribution	Work time for data collection, curation, and evaluation.
Contribution needed from NORMAN Association¹	Responding to survey, participating in workshop/summer school, introduction of tools already developed/used by the NORMAN network. Financial support for the workshop is appreciated (5,000 EUR)

¹ 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.)