



# Microbial Specialized Metabolism

Focusing on using multi-omic datasets to gain functional insights into microbial biotransformations.



## Research Areas

- Microbes, enzymes and pathways involved in pollutant biotransformations e.g., pesticides, pharmaceuticals, and food contact materials including a broad range of per- and polyfluorinated [alkyl – alkenyl – aryl] substances (PFAS);
- Environmental biochemistry and enzyme activity assays;
- Mining metagenomic and metatranscriptomic datasets to identify and test the causality of mechanisms driving biotransformations in complex microbiomes.

## Regions

Global, but with a main focus on Switzerland.

## Partners

Canada; the Netherlands; Norway; Switzerland; USA.

## Contact

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## Contribution to the WFSC

The Microbial Specialized Metabolism group focuses on meta'omics-guided discovery of natural enzymes and pathways involved in biotransformations of agrochemicals, food contact materials, and food additives. We are interested in characterizing biomolecules for environmental and agricultural biotechnology and bioremediation applications. At a more fundamental level, we study the ecological roles of specialized enzymes and metabolites in microbial communities in terrestrial and aquatic systems. A key aim is to identify biomarkers for biotransformations, for example, with the potential to modify the efficacy and toxicity of plant protection products in the food supply chain. This has broader implications for the development of “benign-by-design” chemicals and precision agri-diagnostics.



Dr. Serina Robinson

