

Assessing environmental impacts of chemicals

My research is to **understand and assess the impact of chemicals on ecosystems and humans**. I am particularly interested in **developing simple models** based on overarching principles and mechanisms to facilitate model application to other chemicals and cases and to identify solutions for a more sustainable society. My research topics cover several perspectives of environmental impact pathway (Figure 1), including chemical **fate & exposure** (how chemicals are distributed in the environment), **kinetics & accumulation** (how chemicals are taken up and accumulate in organisms) and **effects** of problematic chemicals. I also move towards **safety & sustainability assessment of chemicals**.



Figure 1 Environmental impact pathway of chemicals.

Possible internship topics include:

- **Accumulation of ionic organic chemicals** (e.g. PFAS, pharmaceuticals) in fish and food web
- Accumulation of **microplastics in humans**
- Quantitative **in vitro to in vivo extrapolation** to reduce animal testing
- Estimating **toxicity** of chemicals based on the mode of action
- Developing methods to assess **the safety & sustainability of chemicals (by design)**
- ...

Level: Bachelor or Master

Start: Anytime

Project form: literature review and data analysis

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If you are interested in a topic mentioned above or chemical risk assessment in general, please do not hesitate to contact me!