

Umik Seminar invitation

The soil microbiome as sentinels for global change

Speaker **Dr. Beat Frey, Swiss Federal Research Institute WSL**
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When **October 27, 2020, 16.00 – 17.00**

Where **Online via Zoom, contact admin.umik@eawag.ch for access details**

Abstract Soils possess a variety of regulation, production and habitat functions. They not only determine important ecosystem services such as plant productivity and water balance, but also influence global processes such as the climate and carbon balance. Soil organisms are the foundation of the functioning of soils. In fact, soils harbor a vast repository of microbial diversity. This resource must be better understood, protected and used sustainably. The soil microbiome is considered as an excellent early warning system for ecosystem disruption and react to human activities by changing their diversity and community structure. Due to rapid changes in sequencing technology, we are now able to probe deeper into connections between soil microbial communities and ecosystem function.

In my talk, I will first pursue the question of how global change and land management shape the soil microbiome and associated ecosystem functions. I will present some results on the mechanical disturbance and mercury pollution in soils. Overall this research shows that the microbial diversity in soils is a poor predictor for ecosystem disruption. In the second part of my presentation, I will present current research of the permafrost microbiome in the face of climate change. In particular, the unexplored microbial diversity in arctic and alpine permafrost and their responses to climate warming will be highlighted.