

MSc project:

## **Ecosystem function across Spatio-temporal change with environmental DNA**

### **Background:**

The recent rapid development of molecular tools for biodiversity monitoring has meant eDNA samples are now collected on a global scale to monitor and record species in all ecosystems. However, much of this effort has focused on species presence/absence, whereas research into ecological processes by examining functional indicator groups remains largely unexplored. Next-Generation Sequencing allows much greater information to be gained on microbial communities and holds a potential resource for information on ecosystem function.

### **Aim:**

The overall aim of the project is to investigate microbial communities in a riverine network at spatio-temporal scales using eDNA, to determine potential anthropogenic pressures which may affect biological and functional diversity. You will have the opportunity to work on a large Next-Generation Sequencing eDNA dataset and validate your findings with traditional cotton strip assay techniques (an organic decomposition assay). Using this data, you will explore the integral role bacteria play as a functional bio-indicator for ecosystem health assessment in river systems

### **Requirements:**

Interest in biodiversity assessment and ecosystem functioning in river systems, molecular tools. Starting date: any time.

### **We are looking for:**

A motivated person with a high level of self-organization, who wants to learn about spatio-temporal dynamics in aquatic environments, who can deal with large datasets and ideally brings along some experience in R. You will mainly be working at Eawag in a research group with diverse interests and expertise. If you want to know more about us, visit our website: [altermattlab.ch](http://altermattlab.ch)

If you are interested in the project, please contact:

Dr. Rosetta Blackman (day-to-day supervisor of the project) or Prof. Dr. Florian Altermatt.