

<b>ENAC-SIE, Master Project, Autumn</b>	Start: Sep 2018
30 ECTS credits	End: Jan 2019

**Title**                      **Analysis of water-contacts survey data for the modelling schistosomiasis transmission dynamics**

**Supervisors**            Javier Perez-Saez, Prof. Andrea Rinaldo

**Objective**                To extract predictable patterns from sociological data regarding water contacts in the perspective of integrating them in a large-scale spatially explicit schistosomiasis modelling framework.

**Abstract**                Schistosomiasis is an endemic waterborne disease of public health importance in most of sub-Saharan Africa, and particularly in Burkina Faso. An obligate intermediate host, a freshwater snail, determines its transmission cycle and infection occurs through parasite skin penetration during prolonged water contacts. Disease prevalence is therefore conditioned by the duration, frequency and seasonality of human-water contacts, thus importance of human-water contact patterns in understanding the transmission cycle. This is particularly true in rural areas of Burkina Faso where the disease is the most present and where the population's livelihood is intimately linked activities that bring them into contact with water. In this perspective the integration of information regarding water contact patterns at a national scale as a proxy for exposure and contamination rates represents a crucial step forward in building large-scale spatially explicit modelling tools for supporting schistosomiasis control and elimination programs.

**Task description**

- Statistical analysis of survey data
- Processing and analysis of observational data
- Integration of extracted information into a mathematical model of disease transmission

Required  
skills

- Skills in R/Matlab/Python

Location

EPFL, Lausanne (CH)

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