

## Seminar in Microbiology

Monday, December 19, 2016

Salle de séminaire E07.3347.a, CMU

**11:30 – 12:30**

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### **The disease triangle operating in lakes: host, parasite and a changing environment**

The laboratory of microbial ecology focuses on biodiversity of microbial life in lakes, with a strong emphasis on phytoplankton, i.e. microscopic sized algae and cyanobacteria. Phytoplankton is at the base of the lacustrine foodweb and thus supports other life forms in lake ecosystems. Freshwater ecosystems have an extraordinarily high biodiversity, but are also under great pressure due to human activities (intensive agriculture, climate change, industrial pollution, etc.). Lakes integrate environmental stressors in their catchment and act as sentinels of change. Biodiversity of lake communities provides resilience to ecosystem regime shifts. To better protect biodiversity in lakes, we must truly understand the mechanisms that control biodiversity. In our group we study biodiversity at 4 different levels:

1. the *evolutionary origin* of biodiversity - how do new species appear?
2. the *population* level – in particular how do parasitism and temporally and spatially variable lake environments contribute to genetic diversity?
3. the *community* level - how are populations assembled to establish communities?
4. the *ecosystem* level – the role of plankton biodiversity in the provision of lake ecosystem service and what happens when biodiversity brakes down, in particular the consequences of harmful blooms of cyanobacteria?