

Biomonitoring of complex freshwater ecosystems using eDNA sensors

The Water Framework Directive (WFD) requires all European member states to assess the ecological status of their water bodies. While each state has made significant efforts to achieve this assessment according to the WFD, some prevalent, but specific water bodies remain to be effectively monitored. This includes extremely dynamic (eg. intermittent rivers) or hard to reach systems (eg. groundwaters). While environmental DNA (eDNA) offers a unique opportunity to monitor these ecosystems, its use is still limited by methodological roadblocks.

The aim of this thesis project is to test the potential of passive eDNA sensors to monitor the unique biological communities of these ecosystems. The thesis will benefit from the specificities and experience of four academic laboratories (LEHNA/CNRS-Univ. Lyon1, DYNAM/IRSTEA, ICBMS/CNRS-Univ Lyon1 and CARTELL/INRA) and will be financed by Eurofins Hydrobiologie France. The main objectives of this project are to (i) test the sensors in the lab and in natural settings, (ii) develop new metabarcoding methods, (iii) perform the bioinformatic analyses and their valorisation. We are looking for candidates with competence in molecular biology and bioinformatics, some experience in hydrobiology is a plus. The PhD project is expected to start in autumn 2018, for 3 years.

To apply please contact :

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