The Microbial Ecology Laboratory, UFR Bioscience, at the University Claude Bernard Lyon 1, France invites applications for a

PhD position in Microbial nanoecotoxicology

for a highly motivated and talented student who is interested in environmental risk of anthropogenic nanoparticles on microorganisms' interactions.

Within the framework of the 'One Health' concept, the emergence of multidrug resistance has become a pressing global environmental security issue, exacerbated by environmental factors and anthropogenic pollution that promote the emergence and dissemination of resistant bacteria. Plastic pollution represents one of the most pressing environmental challenges of our time, with increasing evidence pointing to their accumulation in various environmental compartments. This research aims to explore how nanoscale plastics (NPs) influence the emergence and dynamics of antibiotic resistance in the context of bacteria-protist interactions, with a focus on the intrinsic properties of NPs, their transformation, and their effects at different levels of biological organization, both within bacteria and their host, under realistic environmental conditions. To achieve this, we propose to rely on two protist models: amoebae and microalgae, under varying freshwater setting. To achieve this, the study will investigate causally linked physiological and biochemical endpoints across multiple levels of biological organization, employ multi-omics approaches and use machine learning.

This project is a multidisciplinary endeavour that spans physico-chemistry, microbial ecotoxicology, ecology, and molecular biology. The student will have an exceptional opportunity to learn, develop, and apply a wide range of cutting-edge experimental techniques coupled physico-chemical characterisation of nanoparticles, biophysical approaches and multi-omics analyses.

Requirements: Candidates should hold a master's degree in environmental microbiology, biochemistry, environmental science, or a related field. The candidate should have a strong interest in the aquatic microorganisms. Previous experiences in cellular biology and molecular techniques or nanotoxicology is an asset. Experimental work with microalgae, or other aquatic microorganisms handling will definitely be a plus. Excellent knowledge of spoken and written English is essential.

The successful candidates will prepare a doctorate thesis in the field of environmental sciences, publish scientific articles related to the research project and participate in the teaching of the lab training. This person has the opportunity to supervise master students for the program of master's in environmental microbiology. The salary will be commensurate with the Université Claude Bernard Lyon 1 salary policy.

The position is expected to start on 1st of December 2025 or as soon as possible thereafter. The duration is 3 years.

Application: Please send **in a single PDF file** via email to Professor Wei LIU **(**wei.liu@univ-lyon1.fr), associate professor Thibaut Meyer (thibault.meyer@univ-lyon1.fr)

- CV, and academic transcripts
- cover letter detailing your research interests and experience
- copy of master's thesis
- contact details for 2-3 referees

Deadline: September 30th, 2025, or until the position is filled

For further information about the Microbial Ecology Laboratory, UFR Bioscience at University of Claude Bernard Lyon 1, visit our website https://www.ecologiemicrobiennelyon.fr/eng