



UMR 5240 Microbiologie, Adaptation et Pathogénie

Villeurbanne, 20th December 2020

A Professor of Biology position will be open for recruitment during the INSA-Lyon 2021 campaign; the courses will be carried out at the Biosciences department, and offer very attractive working conditions. The skills required are listed below

Research Field : Microbiology, Systems Biology, Bacterial chromosome engineering, Gene/metabolic networks, Gene regulation, Bioinformatics

Teaching duties :

Teaching will take place at the BioSciences Department of INSA Lyon, and will be centered on the study of microorganisms in an integrative framework. This involves considering microorganisms as cells, populations as well as communities, and in the context of their interactions' mechanisms with other organisms (man, animals, plants), or their diverse environmental functions. The microbiology training programme is integrated in the cursus of 3rd, 4th and 5th year students of both specialties within the Department: Bioinformatics and Modelling (BIM) and Biochemistry and Biotechnology (BB). The candidate must be strongly trained in microbiology, molecular genetics, bioinformatics, in order to insert in a broad range of teaching duties at the Department (including doctoral training). Teaching skills in English will be highly appreciated.

The hired Professor will get strongly involved in the activities of the Department, with the future possibility to undertake the responsibility of the Microbiology and Genetic engineering teaching platform. This involvement includes a strong support to the Direction of the Department, especially through projects for *educational evolution*, *skill-assessment evaluation*, and *international relations* of the Biosciences program.

Teaching department: BioSciences (INSA Lyon); URL Dept. : <https://biosciences.insa-lyon.fr/en/>

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The BioSciences Department of INSA-Lyon trains top-level pluridisciplinary engineers, international-open project managers, targeted for health, agri-food, and environmental industries. It offers two training courses: Bioinformatics and Modelling (BIM) and Biochemistry and Biotechnology (BB).

Research profile : *Microbiology and Systems Biology*

The hired Professor will first rely on the team "Chromatin Structure and Regulation of Bacterial Pathogenesis (CRP)", located inside the Pasteur building of INSA Lyon, in order to develop a research programme complementary to the present studies of this team. The objective of CRP is to propose an integrative vision of the regulation of gene expression in plant-pathogen interaction. Depending on the evolution of human resources and available space in the Pasteur building, the hired Professor may then create his/her own team or become team leader of CRP.

The hired Professor will develop an innovative project with a systems biology approach, aiming at:

- either studying the close interplay between the bacterial chromosome structure and the control of genetic expression, possibly including genome engineering or editing aspects.
- or rebuild metabolic and virulence regulation networks, in order to analyze the interplay between metabolism and virulence, and ultimately, develop a modelling of the infection dynamics of the pathogen, that integrates inter- and intra-organisms signaling processes during plant/pathogen interaction.
- any structuring project dedicated to strengthen the systems biology of plant pathogenic bacteria will be considered, even if not fulfilling the two previous items.

The candidate must have team management skills, as well as skills required for a systems biology project, in particular in genetic regulation, metabolic networks or functional genomics domains.

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