



Regulated protein-nucleic acid compartment formation in the signaling of fundamental biological processes

Labmuse Epigenmed PhD training network

3 PhD positions available in Montpellier France

The cellular milieu is an extremely crowded system with multiple protein complexes, nucleic acid polymers (DNA or RNA), lipids and metabolites. Yet, numerous specific and intricate biochemical reactions successfully occur at the same time, to supporting essential cellular functions. One way to prevent those many species to interfere with a given biochemical reaction is to isolate such reaction/pathway into a specific compartment, while excluding potential interferences. A proposed mode to isolate pathways from potential interferences is the formation of membrane-less compartments, in which reactants are attracted and protected from surrounding molecules.

The goal of this PhD network is to understand how distinct protein/nucleic acid bodies form on the chromatin and in the cytoplasm, and how body formation relates to biological function. We propose 3 PhD projects focusing on the following topics:

Membraneless compartment formation and telomere regulation (J. Dejardin)

Nucleic acid immunity and membraneless compartment formation (N. Laguette)

Multiscale modeling of protein/nucleic acid condensates (A. Barducci)

The network of training labs will provide common training in biochemistry, quantitative biology and biomolecular modelling. We encourage brilliant, highly motivated candidates with mastery of molecular biology, biochemistry, biophysics and/or computational physics/chemistry, fluent in English and willing to join a highly interdisciplinary project to apply.

Send full application, including CV, a letter of interest, as well as two reference letters to either:

Jerome Dejardin (jerome.dejardin@igh.cnrs.fr)

Nadine Laguette (nadine.laguette@igh.cnrs.fr)

Alessandro Barducci (alessandro.barducci@cbs.cnrs.fr)

Candidates will have to apply to the competitive Labmuse Epigenmed call at the following address:

<https://questionnaire.umontpellier.fr/index.php/774212?lang=en>

More details about the projects and Labmuse:

<https://filesender.renater.fr/?s=download&token=9dc97060-c53a-4a54-b73a-b6be13b85690>