

PhD and PostDoc positions in molecular modeling of cellular condensates at the CBS Montpellier (France)

A 3-year PhD fellowship and a 2-year postdoctoral position are available in our [team](#) at the CBS Montpellier (France) starting from autumn 2022. The positions are funded by the French National research Agency (ANR) within the *BioTop* (PhD) and *Prospero* (PostDoc) projects.

Both these collaborative projects aim at combining a variety of experimental techniques in biophysics and molecular/cellular biology with theoretical modelling for characterizing the functional, structural and mechanical properties of cellular condensates. Biomolecular condensates arising from the phase separation of proteins and/or nucleic acids are presently recognized to play a key role in organizing cellular environment and they are attracting a huge and ever-increasing attention in disparate fields ranging from soft-matter physics to physiology.

The goal of [BioTop](#) project is understanding the structural and functional properties of condensates involved in the DNA replication stress response in collaboration with the groups of A. Constantinou (IGH Montpellier) and P.E. Milhiet (CBS Montpellier).

[Prospero](#) project aims at investigating the role of the phase separation of prion-like domains in plant environmental response and it relies on a French-German consortium involving C. Zubieta (IRIG, Grenoble), L. Costa (CBS, Montpellier), P. Wigge (IGZ, Berlin), and Y. Stahl (U. Düsseldorf)

The PostDoc and the PhD student in our team will develop and apply multi-scale modeling strategies encompassing atomistic and coarse grained molecular simulations and rate models for translating the results of our experimental partners into a quantitative, comprehensive picture and for exploring the general thermodynamic principles underlying the assembly and regulation of cellular condensates.

WORKING ENVIRONMENT: The CBS Montpellier (INSERM U1054, CNRS 5048) is a research center at the forefront of biophysics and structural biology. CBS research staff and infrastructure cover a wide variety of techniques including X-ray crystallography, cryoEM, advanced fluorescence and super-resolution microscopies, single-molecule manipulation, molecular and cell biology, and high-performance computing. Montpellier is a major scientific hub for life sciences and its science drive, the beauty of the region, its high quality of life make it an ideal destination for scientists from all over the world.

REQUIREMENTS: We are looking for motivated and ambitious candidates with a strong background in physical sciences (e.g. physics, chemistry, or engineering) and a keen interest for studying biological systems. Solid programming/scripting skills and excellent teamwork attitude are required. Substantial previous experience with (bio)molecular simulations, supported by publication record, is expected for candidates interested in the postdoctoral position.

HOW TO APPLY: Please submit your application, including: *i*) a cover letter (explaining background and motivation), *ii*) a CV with a publication list (if applicable) *iii*) contact details of 2 referees and *iv*) all relevant diplomas, including grades, to alessandro.barducci@cbs.cnrs.fr. Applications will be reviewed on a rolling basis starting from July 6th until the positions are filled

