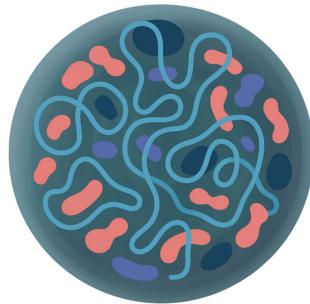




# Postdoctoral Position in Multiscale Simulations of RNA-Driven Condensates

## CBS Montpellier (France)



A **two-year postdoctoral position** is available in the *Multiscale Biomolecular Modeling* team at the **Centre de Biologie Structurale (CBS)** in Montpellier, starting in **early 2026** (flexible). This position offers a unique opportunity to explore how RNA molecules shape cellular organization through **phase separation**, combining **physics-based modeling** with close collaboration across disciplines.

**Project overview:** The postdoctoral researcher will **develop and apply advanced multiscale simulation strategies**, at both **atomistic and coarse-grained resolutions**, to investigate the molecular mechanisms of **RNA-driven condensate formation and organization in cells**. The goal is to elucidate the **sequence–structure–function** relationships that govern RNA-mediated phase separation and to explore how these principles can be harnessed to design **programmable intracellular compartments** for **synthetic biology** applications. This research is conducted within the framework of the **ANR SYNORG** project (*Transcriptionally Engineered Addressable RNA Solvent droplets as generalized synthetic organelles*). The project will involve close interaction with experimental and computational partners, including **Ariel Lindner** (*Université Paris Cité*) and **Sarah Berkemer** (*LIX, École Polytechnique*).

**Working environment:** The CBS (INSERM U1054, CNRS 5048, Université de Montpellier) is a leading centre for **biophysics and structural biology**, hosting state-of-the-art facilities for cryo-EM, advanced fluorescence and super-resolution microscopy, molecular and cell biology, and high-performance computing. Montpellier offers a vibrant international scientific community, an exceptional research environment, and a high quality of life in southern France.

**Candidate profile:** We are looking for a **motivated and focused researcher** with a **strong background in molecular modeling and its theoretical foundations**. The ideal candidate should have a genuine interest in developing and applying simulation methods to address complex biological questions. Essential qualifications are: *i*) Proven experience in **molecular simulations** (atomistic and/or coarse-grained), *ii*) Good **programming/scripting skills** (Python, C/C++ or similar), *iii*) **Solid understanding** of the physical principles underlying molecular simulations (e.g., statistical mechanics, thermodynamics), and *iv*) **Motivation, curiosity, and a collaborative mindset**. Experience with **modeling of RNA or biomolecular condensates** and/or **method development** in molecular simulations will be considered an asset. The postdoctoral researcher will be encouraged to develop independent ideas and collaborations within and beyond the SYNORG consortium.

**Application:** Please send **a single PDF** to [alessandro.barducci@cbs.cnrs.fr](mailto:alessandro.barducci@cbs.cnrs.fr) containing:

1. A **cover letter** describing your background, research interests, and motivation
2. A **CV** including a list of publications
3. **Contact details of two referees**

Applications will be reviewed on a rolling basis until the position is filled.