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Funded postdoctoral position RNP phase transitions and the control of RNA expression

A funded postdoctoral position is available in the Hubstenberger team at the Institute of Biology Valrose, Nice-France. Our team was founded in 2017 as part of the main fundamental research body in France, the CNRS (National Center for Scientific Research).

During development, the gene expression network must be coordinated, adapted to a changing environment, and marked by cell lineage and past history.

Our primary goal is to understand how RNP phase transitions integrate developmental and environmental cues to control RNA fate.

Background. We and others have previously shown how ribonucleoproteins (RNPs) can exist under different states: soluble, liquid droplets, hydrogels, or solid pathological aggregates. Within cells, RNPs undergo phase transitions between these states in response to environmental and developmental cues. More recently we developed a method to purify endogenous RNP granules. This method has allowed us to uncover new conceptual frameworks for studying the multi-scale structure of RNP co-assemblies and their function in RNA fate coordination (Currently under review in *Cell*).

Approach. We utilize single molecule imaging, transcriptomics, system biology analysis, and synthetic biology to manipulate RNPs within the cell. We are focused on developing a broad range of approaches to dissect and integrate how RNP phase transitions coordinate the fate of thousands of RNAs. Models in the laboratory include *C elegans* and cell lines in culture.

Required expertise and skills. Experience with transcriptomics and/or quantitative image analysis would be useful, however diverse projects can be developed.

Keywords. RNP phase transitions, RNP granules, transcriptomics, live imaging, RNA fate

Relevant publications:

- 1- [Hubstenberger, A.](#), Noble, S.L., Cameron, C., and Evans, T.C. (2013). Translation Repressors, an RNA Helicase, and Developmental Cues Control RNP Phase Transitions during Early Development. *Dev Cell* 27, 161-173.
- 2- [Hubstenberger, A.*](#), Cameron, C., Noble, S.L., Keenan S., and Evans, T.C (2015). Modifiers of solid RNP granules control normal RNP dynamics and mRNA activity in early development. *J Cell Biol* 211(3), 703–16.

For more information, please send a CV and statement of research interests to: Arnaud Hubstenberger at Arnaud.HUBSTENBERGER@unice.fr