

## Postdoctoral Fellowship in Developmental Biology

### Analysis of the regulatory landscapes associated with Nodal and BMP2/4 signalling by Assays for Transposase Accessible Chromatin using sequencing (ATAC-Seq)

A two-year postdoctoral position supported by the French Foundation for Medical Research (FRM) is available starting September 1st 2018 to work in the group Gene regulatory networks, axis specification and morphogenesis of the sea urchin embryo at the Institute of Biology Valrose.

The area of research will concern the analysis of transcriptional regulation downstream of Nodal and BMP2/4 signalling in the sea urchin embryo (see Lapraz F, Haillot E, and Lepage, T – 2015 - A deuterostome origin of the Spemann organiser suggested by Nodal and ADMPs functions in Echinoderms; [Nature communications](#) and Haillot E, Molina MD, Lapraz F, and Lepage, T (2015) The Maternal Maverick/GDF15-like TGF- $\beta$  Ligand Panda Directs Dorsal-Ventral Axis Formation by Restricting Nodal Expression in the Sea Urchin Embryo. - 2015 - [PLoS Biology](#)).

Our laboratory has recently performed large-scale analyses of chromatin accessibility in wild type embryos and following over-activation of the Nodal and BMP2/4 pathways by ATAC-seq. In addition, we have recently obtained high-quality developmental transcriptomes and a high-quality genome assembly for the Mediterranean sea urchin *Paracentrotus lividus*.

The postdoctoral project will aim at integrating the results of these “omics” screens in the analysis of the dorsal ventral gene regulatory network. In particular, the project will focus on the identification of the transcription factors regulating nodal expression identified by ATAC-seq. It will also aim at identifying the cis-regulatory regions of the Nodal and BMP2/4 target genes and explore the regulatory landscapes associated with Nodal and BMP signaling.

Candidates should have obtained recently a PhD degree. Both national and international candidates are encouraged to apply. Interested candidates should send a Curriculum Vitae, a summary of research interests and goals and contact information for two or three referees to:

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[Research team webpage](#)

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