

Doctoral position at the Côte d'Azur & Sorbonne University

Studying the molecular control and the mechanics of sea urchin gastrulation: a model for epithelial folding

Epithelial folding is a key process in the life of all animals. During embryogenesis, this process takes place notably during gastrulation. In the laboratory, we use the sea urchin embryo to study the mechanisms, mechanics and molecular control of epithelial folding. Sea urchin gastrulae combine a number of outstanding features making this model system a unique opportunity to study folding: (i) external development and tissue simplicity enabling both experimentation and modeling approaches; (ii) cell transparency allowing *in toto* light sheet imaging; (iii) known key signaling factors and available methods for functional analyses; and (iv) mechanically accessible tissues permitting direct measurements of tissue mechanical properties. Given these features, the sea urchin gastrula is thus a perfect playground for both biologists and biophysicists. The aim is to provide new insights on the fundamental process of epithelial folding both at the mechanical and molecular levels.

The proposed project is a collaborative work between two laboratories (Rauzi M. at iBV in Nice and Croce J. at the LBDV at the marine station in Villefranche-sur-Mer) that gather people from different backgrounds (biology, informatics, physics, and engineering) to generate an interdisciplinary and synergistic group in an international environment.

Seeking a talented and very motivated candidate.

Deadline: April 27th, 2020. Starting date: October 2020.

Send as soon as possible a CV, a motivation letter, master scores/ranking and reference letters to: matteo.rauzi@univ-cotedazur.fr and jeni.croce@obs-vlfr.fr

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