

REYMANN
Lab

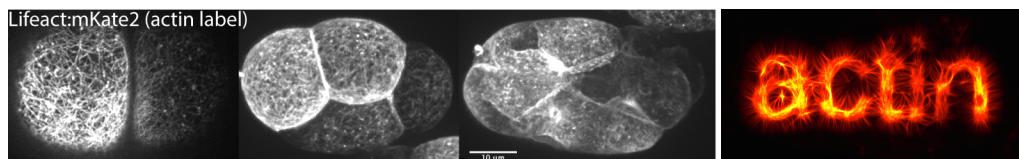
**2 Positions to fill in the Reymann Lab.
PhD or Postdoctoral level.**

Actin dynamics and cell fate acquisition in *C. elegans*.

Location:

Institut de Génétique et de Biologie Moléculaire, IGBMC, located south of **Strasbourg**, is an internationally renowned and multidisciplinary research institution. Department: **Development and Stem Cells**.

Anne-Cécile Reymann, head of the 'Actin dynamics and biomechanics of the early embryo' team (<http://igbmc.fr/Reymann/>) is seeking a PhD or postdoc with a strong interest in interdisciplinary research to carry out projects on actin dynamics in the early *C. elegans* embryo.



Cell state dictates some characteristic cytoskeletal architectures and its reciprocal also holds true. Actin architectures, while driving cell morphology, mechanics or gene expression profile, feedbacks into cell state. The team aims at revealing, how the nucleation of actin architectures is temporally and spatially controlled in the different founder cells of *C. elegans* early embryo and how it affects their fate. Molecular dynamics of fluorescently labelled actin binding proteins as well as cytoskeletal architectures and cell behavior are imaged using spinning disk microscopy and quantified in the wild type condition or under perturbation (mutants, RNAi..).

Project 1:

CRISPR targeted mutagenesis of *C. elegans* actin: novel insights into the understanding of human non-muscle actinopathies.

Human mutations in the cytoplasmic actin genes ACTB and ACTG1 (beta- and gamma-cytoskeletal actin isoforms) cause a broad spectrum of rare disorders named Non-Muscle Actinopathies (NMAs). The objective of this thesis project, is first to reproduce these specific human single point substitutions in the model organism *C. elegans* using CRISPR/Cas9 mediated genome engineering, second to use these mutants to assess in a simple model system, the developmental defects as well as the perturbation of actin organization and actin dynamics induced by these specific actin variants.

Project 2:

Be part of the larger project of characterizing single cell actin cytoskeleton identities throughout the early lineage of *C. elegans*, an interdisciplinary project combining top down and bottom up approaches such as via micropatterning and cell extracts, relying on quantitative experiments in single cells of *C. elegans* early embryo.

Profile

We are seeking a highly motivated scientist with prior experience in cell biology and/or biophysics/biochemistry. Experience in quantitative fluorescence microscopy, image analysis or micropatterning is a plus. Otherwise, on-the-job training will be provided. The candidate should be very creative and ready to work in an interdisciplinary team. As English is the language of communication for science, proficiency in English is required.

To apply, please contact Anne-Cécile REYMANN directly: reymanna@igbmc.fr

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