Post-doc positions: Cytoplasm Mechanics and Embryo Development

Area: Cell Biology; Physics of the Cell; Developmental Biology
Starting date: Fall 2025

Job description: Our lab has several opened positions for motivated post-docs to work on cytoplasm mechanics in the context of early embryo development. Our team is generally interested in understanding basic physical and biological mechanisms regulating cellular spatial organization, division positioning and multicellular development. The project will make use of *in vivo* force measurements, quantitative microscopy, modelling and *in vitro* reconstitutions, and aim to address how cytoplasm fluid mechanics is regulated during development and how in turn it may impact cellular and multicellular morphogenesis. You can find more information on our current research on the lab web page: http://www.minclab.fr/

For this large 5-year project funded by the "*Impulscience*" program from the Bettencourt Fondation, we seek several motivated candidates willing to work in a multi-disciplinary environment. Experience in cell physics, quantitative imaging, numerical simulations, cell and/or developmental biology is preferred, but any good application will be considered. If you are interested, please send a CV to Nicolas Minc: nicolas.minc@ijm.fr

Key References:

1. Xie J, Najafi J, Nommick A, Lederer L, Sallé J, Dmitrieff S, Lacroix B, Dumont J and Minc N (2025) "Cell Shape Modulates Mitotic Spindle Positioning Forces via Intracellular Hydrodynamics", ***Curr Biol***, (In Press)

2. Najafi J, Dmitrieff S and Minc N (2023) "Size- and position-dependent cytoplasm viscoelasticity through hydrodynamic interactions with the cell surface", ***PNAS***, 120 (9) e2216839120.

3. Xie J, Najafi J, Le Borgne R, Verbavatz J-M, Durieu C, Sallé J, and Minc N (2022) "Contribution of cytoplasm viscoelastic properties to mitotic spindle positioning", ***PNAS***, 119 (8) e2115593119.

4. Tanimoto H, Sallé J, Dodin L and Minc N (2018) "Physical forces determining the persistency and centring precision of microtubule asters" ***Nature Physics***, 114, 848–854.

5. Pierre A, Sallé J, Wühr M, Minc N., (2016) "Generic Theoretical Models to Predict Division Patterns of Cleaving Embryos." ***Developmental Cell***. 39(6):667-682.