



CytoMorphoLab, <http://www.cytomorpholab.com>
Cell & Plant Physiology Laboratory
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PHYSICS OF
CYTOSKELETON
& MORPHOGENESIS
LAURENT BLANCHOIN, MANUEL THÉRY

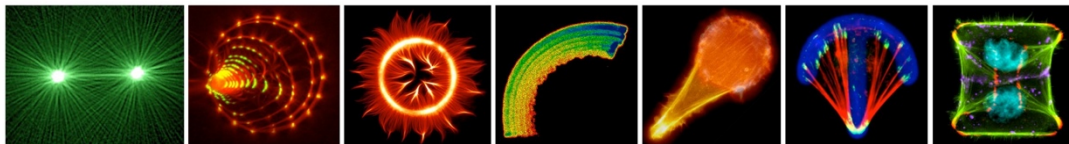
CYTOSKELETON & MORPHOGENESIS



PhD position at the biophysics/Engineering interface.

The CytoMorphoLab (<http://www.cytomorpholab.com>) is looking for talented and motivated students interested in using a combination of biochemical, biophysical approaches with nano/microfabrications to understand basic principles involved in cytoskeleton organization. The work will be performed at the Biosciences and Biotechnology Institute of Grenoble under the supervision of Laurent Blanchoin and Manuel Théry.

Our team studies the physical rules regulating cell architecture and internal organization. To that end, we developed surface micro-fabrication techniques in order to impose spatial boundary conditions to cytoskeleton self-organization. These geometrical and mechanical processes are investigated in cells (JCB 2010, PNAS 2012, Nature Cell Biology 2016) and in vitro with reconstituted systems made of purified proteins (Nature Materials 2010, Science 2012, Nature Materials 2013, Nature Materials 2015; Nature Communications, 2017).



Steady state actin dynamic drives the ability of cells to change shape and adapt to their environment. The goal of this project is to establish the basic principles controlling actin dynamic in a micro-engineered cell size compartment. To achieve this goal, we will reconstitute actin assembly using a system made of a minimum set of purified proteins (see Reymann et al., Science 2012) into a no flow chamber of different sizes and geometries (see Cambier et al., Lab on Chip 2015).

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