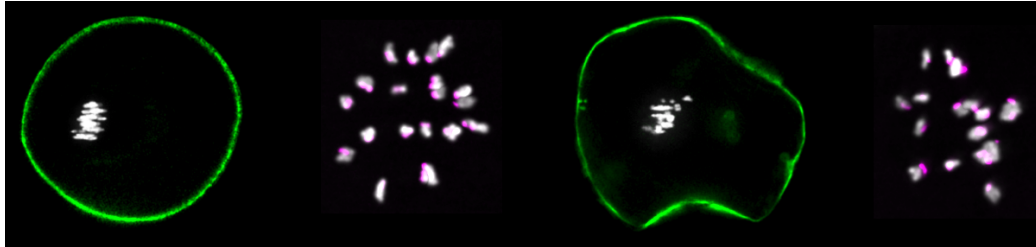


**Research engineer position in the Terret-Verlhac group at CIRB, Collège de France, in collaboration with the Campillo group at LAMBE (Evry & Paris-Saclay University).**

A 15 months research engineer position funded by a collaborative DIM Elicit grant is available in the Terret-Verlhac group at CIRB, Collège de France.

<https://www.college-de-france.fr/site/en-cirb/Terret-Verlhac.htm>

<https://www.lambe.univ-evry.fr/equipes/membres-permanents/membres-permanents/clement-campillo.html>



Meiosis produces gametes, essential for sexual reproduction. Meiosis in human females is error-prone, generating a high basal rate of aneuploid oocytes, having deleterious consequences for fertility and offspring development. Human and mouse oocytes developmental potential is accurately predicted by their mechanical properties. Their stiffness has to be tightly gated to develop into blastocysts. Strikingly, aberrant cortical tension is a rather frequent defect in a natural population of oocytes. Our consortium has solved how cortical tension is regulated in oocytes and zygotes, and showed that modifying their stiffness alters the geometry of division and produces aneuploidy (Chaigne NCB 2013; Chaigne Nat Commun 2015; Chaigne Nat Commun 2016; Bennabi Nat Commun 2020).

The next step is to sort oocytes depending on their cortical tension for Assisted Reproductive Technologies. For that, **we develop a minimally invasive microfluidic device to sort oocytes and embryos depending on their cortical tension**. We will set up this device in the mouse, but our long-term goal is to adapt it to human oocytes and one-cell zygotes for clinical use in the framework of an established medical collaboration.

The engineer to be recruited for the project will develop microfluidic cell-sorters, perform experiments on different types of oocytes (mouse from young and aged females, human) and develop image analysis procedures to measure their mechanics and correlate with their developmental potential. The aim of this contract is to establish proof of concept experiments with the objective of patenting/technology transfer.

We are looking for motivated candidates with a strong background in cell biology and/or biophysics with an interest for technological developments willing to join an interdisciplinary environment involving strong interactions between biologists and physicists. Earlier starting date is November 1st, 2020.

Candidates should send their application to Marie-Emilie Terret ([marie-emilie.terret@college-de-france.fr](mailto:marie-emilie.terret@college-de-france.fr)) and Clément Campillo ([clement.campillo@univ-evry.fr](mailto:clement.campillo@univ-evry.fr)).