Postdoctoral position in cell biophysics and cancer
Institut Curie, Paris, France

Mechanical phenotyping of glioblastoma cells

A funded postdoctoral position starting early 2018 is available in the 'Physics of intracellular transport' group supervised by Jean-Baptiste Manneville within the 'Molecular mechanisms of intracellular transport' team headed by Bruno Goud at Institut Curie in Paris, to study the mechanical and migratory properties of tumour cells. The goal of the project is to use cell mechanics to characterize cancer cells.

The successful candidate will focus his/her research on glioblastomas, extremely aggressive and heterogeneous brain tumours originating from glial cells, in collaboration with Sandrine Etienne-Manneville (Institut Pasteur, Paris, France) and Atef Asnacios (Université Paris Diderot, Paris, France). He/she will quantify the mechanical properties of clinically annotated primary patient-derived glioblastoma cells. His/her first goal will be to measure the rheological properties of glioblastoma cells with three complementary techniques: intracellular microrheology combining optical tweezers and micropatterning, whole cell rheology with a microplate rheometer and atomic force microscopy. He/she will then measure the migratory properties, invasiveness and traction forces exerted by glioblastoma cells using in vitro assays based on 2D and 3D substrates of defined rigidity to mimic the tumour environment within the brain. A novel diagnostic and prognostic method will be developed by correlating the mechanical measurements and migratory properties with the clinical annotations.

Qualification:
We are looking for a highly motivated scientist with validated experience in cell biology or biophysics and in cellular imaging. Training in cell culture, biochemistry and molecular cell biology, as well as in optics and fluorescence microscopy is necessary. Experience or background in cancer cells and spheroids, micromanipulation (optical tweezers, AFM, micropipettes), micropatterning, traction force microscopy or migration assays would be ideal. Applications from candidates with a strong track-record of publications in peer-reviewed journals, a PhD in either biology or physics and 0-3 years of relevant postdoctoral experience will be considered. A high personal motivation to develop a challenging project is required. The working language is English. The position is funded by a two-year grant from the INSERM PlanCancer 2014-2019.

How to Apply:
Candidates should send a CV including a short summary of previous research and a publication list, a cover letter and at least two reference letters or contact details for two references to Jean-Baptiste.Manneville@curie.fr.