"Immunity and Cancer" Unit directed by Sebastian Amigorena
(in collaboration with the Laboratory of Biochemistry (LBC) at the ESPCI)

The open position is in line with recent developments and an effort to strengthen the interface between immunology, single-cell technologies and bioinformatics. The postdoctoral fellow will be co-supervised by S. Amigorena, director of the "Immunity and Cancer" Unit at the Institut Curie, and Prof. A Griffiths, director of the Laboratory of Biochemistry (LBC) at the ESPCI

The candidate will be offered a CDD contract of 2 years starting as soon as possible (this position is supported by DIM ELICIT "Empowering LIfe sCiences with Innovative Technologies" funding)

Description:

Cancer is the second leading cause of death globally, and is responsible for an estimated 9.6 million deaths in 2018. Despite the improved patient survival achieved with the advent of immunotherapies, about 60-70% of patients don't respond to treatment or relapse later on. This underscores the need for understanding the evasion/resistance immune mechanisms within the tumor microenvironment (including myeloid cells and T lymphocytes) that hinder an effective anti-tumor immunity.

We are developing a prototype droplet-based microfluidics system for single-cell transcriptomic, epigenetic and phenotypic analysis as well as paired TCR α-β chain sequencing of immune cells. This powerful droplet-based microfluidics system will provide unprecedented information on single-cell heterogeneity of tumor-infiltrating immune cells and the complexity of their interactions with other cells within the tumor, thereby paving the way for cancer biomarker and therapeutic target discovery.

The candidate will apply bioinformatics analysis on transcriptomic (scRNA-Seq), epigenetic (scChIP-Seq) and phenotypic (Ab-Seq) data to improve our understanding of the evasion/resistance immune mechanisms within the tumor microenvironment.

In close collaboration with wet lab postdocs and students, the candidate will help design experiments and will be in charge of integrating and interpreting comprehensive next generation sequencing datasets:

- Single-cell NSG data (including ChIP-Seq and RNA-Seq)

- Pathways and Enrichment analyses (Networks, Functional, Transcription Factor Binding Sites…).

He/she will benefit from strong interactions within the bioinformatics team in the "Immunity and Cancer" unit headed by Sebastian Amigorena (15 people) and in the LBC/ESPCI headed by Andrew Griffiths (25 people)

Profile:

The candidate should be an expert in bioinformatics/computational biology or in a relevant biological field with quantitative/computational experience, and a strong interest in immunology. He should ideally have skills in statistics. We expect strong curiosity and motivation to work with and for others.

A PhD in bioinformatics/computational biology or in a relevant biological field with quantitative/computational experience is required.

How to apply:

Application must be sent to Silvia Lopez-Lastra (silvia.lopez-lastra@curie.fr) and Stéphanie Toetsch (stephanie.toetsch@espci.fr) and include a CV, research experience and interests, and the names and e-mail addresses of three referees