



BME PARIS
BioMedical Engineering
MASTER'S PROGRAM

The promise of single-cell analysis

Open Your Mind Seminar

Friday, Nov 15 2019
1 pm – 2.30 pm

Arts et Métiers
155 Boulevard de l'Hôpital
75013 Paris
BEZIER amphitheater

High throughput single cells phenotyping for immune response monitoring

There have been recently major advances in the development of single cell analysis tools, mainly based on RNA sequencing. These methods are particularly interesting for studying cellular heterogeneity in tissues and cell populations, such as in a cancerous tumor or immune cells, or to understand the function of an individual cell in the context of its microenvironment.

However, functional characterization at the single cell level is still technically challenging. In this seminar, I will present a simple microfluidic system, in which cells are compartmentalized in hundreds of thousands of droplets and analyzed using a fluorescence relocation-based immunoassay. This allows us to perform many classical bioassays, but at the single cell level.

I will discuss several applications of this technology, from the characterization of the immune response in mice following Tetanus Toxoid immunization, as a powerful tool for immune monitoring of patients, or to screen for new therapeutic antibodies.

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