28th nanobiofluids seminar

2026 Oct 26th, 13:00-14:00

ASHBi Conference Room, B1F, Faculty of Medicine Bldg. B

Access – ASHBi

Zoom registration

https://kyoto-u-edu.zoom.us/j/81419789078?pwd=dz3bpMHSSEQ2xmiEKkP9kMSpIX0bri.1

Meeting ID: 814 1978 9078

Passcode: 910909

Using organoids and microfluidics to study antagonistic and synergetic cell-cell interactions: cancer-immune interactions and mechanobiology

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Abstract

I will show two microfluidic approaches to study cell-cell interactions. In the first approach we use parallel anchored droplets to submit patient-derived cancer organoids to killing by cytotoxic T cells. By tracking the cell movements it is possible to identify the distinct role of each T cell population and their respective impact on the killing dynamics. In the second part I will turn to mechanobiology, by introducing a deformable microfluidic device that is suitable for manipulating spheroids and organoids. I will show how biophysical and rheological parameters of 3D micro-tissues can be obtained using mechanical forcing and image analysis.

Biography

Head of Pasteur-Polytechnique joint group on Physical Microfluidics & Bio-engineering (2017-present)
Professor at Ecole Polytechnique (2002-present)
Post-doc at Ecole Normale Supérieure, Laboratoire de Physique Statistique (2002)
PhD at University of Texas at Austin (2001)
B.Sc. at MIT (1994)

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