

THE UNIVERSITY



OF HONG KONG

DEPARTMENT OF MECHANICAL ENGINEERING

POSTGRADUATE STUDENT TRANSFER SEMINAR

FACE-TO-FACE & ONLINE

Title: Collective migration of cells regulated by confinement and physical characteristics of their microenvironment

Speaker: Miss ZHANG Yuanjun
(M.Phil. student in the Mechanical Engineering Dept.)

Date: 8 March 2021 (Monday)

Time: 2:30 p.m.

Venue: Room 7-35, Seminar Room, Haking Wong Building, HKU

Link to join the zoom meeting:

<https://hku.zoom.us/j/98794330604?pwd=TTNJVjFrS1haTkdUWm5sRkNrcGxSZz09>

Meeting ID: 987 9433 0604

Password: 698441

Abstract:

During embryogenesis, wound healing and cancer development, cells have the amazing ability to move in a coordinated manner over a time-span of hours and a distance much larger than their individual size. Interestingly, recent evidence has shown that, besides biochemical factors, the collective migration of cells is also tightly regulated by physical cues from the microenvironment, including topography/confinement of the surface and viscoelasticity of the extracellular matrix. However, the underlying mechanism remains unclear. In this talk, we describe a systematic study to address this outstanding issue by using microfabrication, single cell manipulation and genetic modification. Specifically, a micro-electroporation device was first fabricated allowing us to achieve fast cell staining and subsequent real-time monitoring of cells during their migration. After that, substrates with distinct viscoelastic properties were manufactured and characterized. Adhesion patterns and spatial confinements will also be introduced to these substrates from which the role of different physical cues on the collective migration of both epithelial and neural crest cells can be systematically examined. Finally, possible mechanotransduction signaling pathways involved will be explored and discussed.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. Y. Lin at 3917 7955.