



Invitation

**May 8, 2024 (Wednesday)**

**15:00 - 16:00**

**Speaker: Dr. Sawako Yamashiro**

Associate Professor

Laboratory of Single-Molecule Cell Biology

Graduate School of Biostudies

Kyoto University

**Title: Visualizing flow force transmission  
by live-cell single-molecule imaging**

Biological flows, such as cytoplasmic flow and blood flow, influence important biological processes from cell function to tissue development. However, flow force transmission mechanisms between the inside and outside of cells are not fully understood. Single-Molecule Speckle (SiMS) microscopy is a powerful technique to elucidate force transmission mechanisms by directly monitoring the molecular motion associated with flow. In this talk, Dr. Yamashiro will introduce her study that reveals a critical role of dynamic Talin unfolding in force transmission between the flowing actin network and the substrate (Yamashiro et al., Nat Commun, 2023). The SiMS approach allowed Dr. Yamashiro and her colleagues to reveal all kinetic parameters of stochastic, transient Talin linkage in live cells. She will also introduce her recent study on the effects of shear stress on membrane proteins in live cells. Her findings provide new insights into force transmission mechanisms of biological flows.

**Venue: OIST Center Bldg. C209**

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