15th nanobiofluids seminar

2025 June 27th, 14:00-15:00

Conference Room (Room 134), 1st Floor, Bldg. No.1

https://www.infront.kyoto-u.ac.jp/en/access/

Zoom registration link

Blood flow-dependent force parameters instruct endocardial cell identity for the heart morphogenesis

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Abstract

Developing cardiovascular systems use mechanical forces, such as fluid shear force, pressure, and contractile forces, to shape tissue form and function. We recently identified that mechano-responsive signals happen in both spatial and temporal manner during the cardiac lumen formation in zebrafish. However, the mechanism by which the cells appropriately regulate mechanical signals in response to the continuous forces is still unclear. In our lab, we aim to elucidate how the structured cardiac lumen is organized for functional blood circulation, focusing on the "forces generated from blood flow" and "biological signals" during the lumen formation. In this seminar, I will present a technique that directly manipulates physical forces and the biological signal outputs by quantitative approaches in zebrafish embryos.

Biography

Hajime obtained Ph.D. (biostudies) from Kyoto University in 2009. From 2009 to 2012, he was an assistant professor at Kyoto Prefectural University of Medicine. He then moved to the National Cerebral and Cardiovascular Center (NCVC) Research Institute (as a staff scientist in 2012-2017 and 2020-2021, followed by as a laboratory chief in 2022-2023). During 2017-2020, he studied in the lab of Julien VERMOT at the Institut de Génétique et de Biologie Moléculaire et Cellulaire (IGBMC), Strasbourg, France. Since 2023 July, he started to organize his laboratory as an independent associate professor.

Host: Hirofumi Shintaku, shintaku@infront.kyoto-u.ac.jp