

16th nanobiofluids seminar

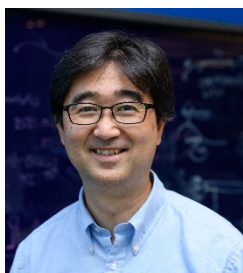
2025 July 22nd, 15:00-16:00

CiRA 講堂

<https://www.cira.kyoto-u.ac.jp/j/about/access.html>

[Zoom registration link](#)

Microfluidic Tools for Cell Physiology



Shuichi Takayama, Ph.D.
Professor, GRA Scholar, Price Gilbert Jr Chair
Coulter Department of Biomedical Engineering
Georgia Tech & Emory

Abstract

Convergence of micro/nanotechnology with advances in cell physiology enables new strategies to probe and manipulate cells. I begin by introducing a basic microfluidic principle of laminar flows and demonstrate its utility in sperm sorting, and cell signaling studies. Use of microfluidic in vitro fertilization & embryo culture will also be presented. Next, liquid–liquid phase separation driven applications for microscale clot bioprinting, fibrinolysis, and wound healing will be discussed. I conclude with lung microphysiological systems to study lung injury, inflammation, and viral infections.

Biography

Shu's research interests started with bioorganic synthesis at the University of Tokyo and Scripps Research Institute. Subsequently he pursued postdoctoral studies in bioengineered microsystems at Harvard University as a Leukemia and Lymphoma Society Fellow. He spent 17 years at the University of Michigan, then moved to the Wallace H. Coulter Department of Biomedical Engineering at the Georgia Institute of Technology and Emory School of Medicine in the summer of 2017. He is an associate editor of Integrative Biology and recipient of the Pioneers of Miniaturization Prize.

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

Takuya Yamamoto, takuya@cira.kyoto-u.ac.jp