

# BDR SEMINAR (Kobe/online hybrid)

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**Tuesday, May 24, 2022**

9:30-10:30

1F Auditorium, DB Building C, Kobe / Broadcast online via Zoom

Zoom meeting URL will be announced on the event day by e-mail.

※This seminar is open only to BDR members.

## Dynamic relationship between morphogenesis and cell differentiation in development

### Summary

Each organ acquires its characteristic "form" and "function" during development through appropriate morphogenesis and cell differentiation. Although these physical and biochemical processes proceed simultaneously, it remains largely unknown how these two phenomena crosstalk and achieve the precise harmony necessary for the physiological function of organs. We found that epithelial cells can adjust gene expression and own fate depending on physical information (changes in tissue shape), leading to the idea that not only controlling morphogenesis through gene expression, but feedback regulation from morphogenesis to cell differentiation also plays an essential role in coordinating the two phenomena. To further understand the relationship in development, it is necessary to capture both dynamics quantitatively. In this seminar, I will introduce our recent efforts to reveal the spatial-temporal dynamics of gene expression and cell differentiation in *Drosophila* embryogenesis from a bird's eye view by single-cell RNA-seq analysis.



RIKEN Center for Biosystems Dynamics Research (BDR)

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