

BDR SEMINAR (Kobe & online hybrid)

Mechanobiology Seminar Series presents

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Friday, May 30, 2025

11:00-12:00

8F Hall, Integrated Innovation Building (IIB) / Broadcast online via Zoom

*This seminar is open only for BDR members.

Please contact the seminar host for participation.

How do cells and tissues sense their size to scale their dynamics during development?

Summary

How biological systems adjust their properties according to size has fascinated biologists for decades. However, we still lack a comprehensive understanding of how size is sensed in biological systems to regulate both the final cell number in a tissue and the morphogenetic flows necessary for organ formation. In this seminar, I will present novel findings on how cells and tissues measure their size during epithelial development. First, I will discuss how epithelial cells sense their apical size, enabling tissues to buffer variations in cell number and robustly control final tissue cell numbers. I will then explore how the interplay between gene expression patterns and tissue mechanics allows tissues to sense their overall size, thereby adapting the speed of morphogenetic flows and precisely positioning cells. Collectively, these findings provide new insights into the intricate relationship between tissue size and dynamics, shedding light on the mechanisms essential for the formation of functional organs during development.



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