

GDCB SEMINAR

4:10 p.m. • Friday, Sept. 17, 2021 • 1414 Molecular Biology Building

'Homeostatic regulation of aging, stress and metabolism'

Abstract: Aging is an interesting and fascinating phenomenon of biology. "How do animals age?" and "why does each individual age differently?" are great scientific puzzles that attract many scientists to study biology of aging. Aging is considered as a process whereby progressive decline of tissue homeostasis reduces system function and elevates risk of death. Dysregulation of homeostatic response pathways, which reduces animal's ability to repair damaged cells and tissues, is one of the major causes of aging. In my laboratory, we use genetically tractable model organism *Drosophila melanogaster*, the fruit fly, to address two fundamental questions in aging field: 1). Why is cellular homeostasis dysregulated during aging? 2). How can we delay/reverse aging by preserving cellular homeostasis? To answer these questions, we have been investigating the contributions of two types of signaling pathways in the regulation of cellular homeostasis and aging: hormonal signaling (for inter-tissue communication) and organelle signaling (for inter-organelle communication). In this talk, I will present our recent work on the role of inter-organ and inter-organelle communication in the regulation of cellular and tissue homeostasis, including the novel roles of peroxisome in liver-heart communication and peroxisome-mitochondria cross-talk during animal aging.



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