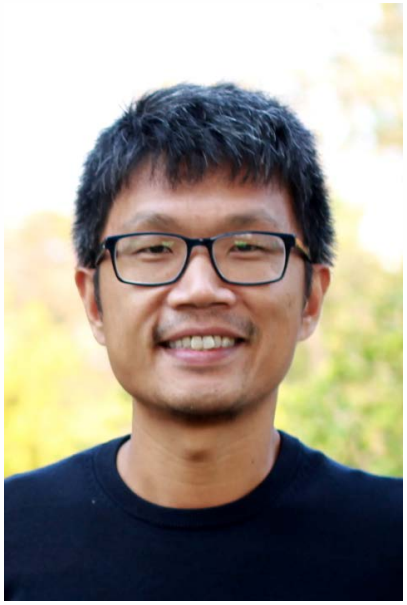
BIOLOGIAL SCIENCES SEMINAR SERIES

Wednesday, November 2, 2022 12pm-1pm
Lily 1-117



Hosted By:
Qing Deng

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Department of Biological Sciences

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"Regulation of Cell Division by A Force-sensing Ion Channel"

Polycystins are a family of conserved ion channels. Mutations of the human polycystin genes lead to one of the most common genetic disorders, Autosomal Dominant Polycystic Kidney Disease. However, the cellular function of polycystins remains unclear. *In this talk, I will discuss our surprising discovery that the yeast polycystin Pkd2 plays an essential role in cytokinesis, the last stage of cell division.* In fission yeast, Pkd2 is recruited to the equatorial division plane during cytokinesis. Once there, it promotes calcium spikes during the separation of two daughter cells. The in vitro re-constituted Pkd2 is calcium permeable when stimulated by the membrane stretching force, suggesting that this yeast polycystin is a mechanosensitive calcium channel. In addition to the calcium signaling, the interaction between Pkd2 and the yeast Hippo-like pathway promotes the cell integrity during cytokinesis. Lastly, I will discuss our ongoing work on the cytokinetic calcium transients that we recently discovered.

EA/EOU