FACULTY OF SCIENCE
THE UNIVERSITY OF HONG KONG
香港大學理學院
School of Biological Sciences
生物科學學院

Distinguished Lecture by Mok Hing Yiu Distinguished Visiting Professor:

Coding and Decoding of Calcium Signals in Plant Growth and Defense

Professor Sheng LUAN
Chancellor's Professor at the Department of Plant and Microbial Biology at UC Berkeley
Mok Hing Yiu Distinguished Visiting Professor at HKU

About the speaker

Professor Sheng Luan received his PhD from the Department of Cell and Developmental Biology and postdoctoral training in the Department of Chemistry at Harvard. He took a faculty position in the department of Plant and Microbial Biology at UC Berkeley as an assistant professor in 1994 and is now an endowed chair professor (Chancellor's Professor). His work is focused on calcium signalling mechanisms in plants and has received several notable honours, including AAAS Fellow, ASPB Fellow, Humboldt Research Award, and Charles Albert Shull Award (ASPB). He was a Web of Science "Highly Cited Researcher" from 2014 to 2024. For community service, he was the associate chair and chair of his department from 2018-2024 and was the founding Editor-in-Chief of Molecular Plant, a leading journal in plant sciences.

Abstract

Specificity in cell signaling is paramount to plant responses to specific environmental changes. Although calcium is a ubiquitous messenger in plant responses to numerous signals, the mechanism of signal-response specificity remains unclear. Studies in the past four decades in both animal and plant cell models have established the "calcium signature" concept that depicts a distinct calcium change in response to each specific signal. How a calcium signature is encoded by calcium transporters and channels working together and decoded by calcium sensors and their targets, represent exciting but challenging questions in the field. The Luan lab has been working on both encoding and decoding mechanisms for the past 25 years. They have made several breakthroughs on calcium encoding mechanisms, including the identification of calcium channels responsible for calcium spiking in pollen tube growth, pollen tube reception, and immune responses. They also pioneered studies on the "decoding" process by identifying the Ca-CBL-CIPK signaling network that regulates nutrient sensing and homeostasis in plants. Professor Luan will summarise these research findings to provide a conceptual framework for calcium signalling mechanisms in plants.

May 29, 2025 (Thursday)
4:00 pm – 5:00 pm (HKT)

Room 6N11, Kadoorie Biological Sciences Building, Main Campus, The University of Hong Kong

Registration:
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