

# SEMINAR

Tues, 20 June 2023 | 2 pm | DBS Conference Room 1

Hosted by Asst. Prof Lau On Sun

## Regulation of nutrient homeostasis by a calcium signaling network



**By Sheng Luan**

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### About the Speaker

*Dr Sheng Luan graduated with a PhD from Harvard University in the department of Cell and Developmental Biology (1991), followed by a postdoc training in the department of Chemistry and Chemical Biology, Harvard (1994). He was appointed as Assistant Professor in the department of Plant and Microbial Biology at UC Berkeley (1994-2000), Associate Professor (2000-2004), and Professor (2004-present). He is also the Chancellor's Chair Professor (2022-present), department chair (2021-present). Some honors include Alexander von Humboldt Research Award (2008), Charles Albert Shull Award (ASPB, 2008), AAAS Fellow (2012), ASPB Fellow Award (2020), and Web of Science/Clarivate Highly Cited Researcher (2014-2023).*

Plants are growing in a nutrient-poor environment in nature. Agricultural production is heavily relying on the application of chemical fertilizers, imposing a serious economic and environmental problem worldwide. One solution would be to breed crops that can tolerate low-nutrient soils to reduce the reliance on fertilizers. Work in Luan laboratory identified a CBL-CIPK signaling pathway that regulates the activity of a voltage-gated potassium channel involved in K-uptake in plant roots and another CBL-CIPK pathway for vacuolar K remobilization. Manipulation of CBL-CIPK network can potentially enhance the growth of plants under low-K soils, supporting sustainable agriculture and environment. The CBL-CIPK network has become a major signaling mechanism for the regulation of mineral nutrition by targeting transporters in various subcellular locations.

