NUS National University of Singapore | Department of Biological Sciences Faculty of Science

SEMINAR

Thurs, 22 Feb 2024 | 10 am | DBS Conference Room 1

Hosted by Assoc Prof Lau On Sun

Polar expeditions across kingdoms

By **Dolf Weijers**

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Cells in multicellular organisms are generally organized along the organisms' axes to ensure coordinated cell division orientation, shape and differentiation. Central to this process is the establishment of cellular polarity, through local cortical accumulation of polarity proteins. While in animals and fungi, cell polarity mechanisms are relatively well-understood, it is largely unknown how cells are polarized in the plant kingdom. By studying the early plant embryo, our team identified a family of novel SOSEKI polarity proteins, deeply conserved among plants, and sharing functional domains with animal Wnt/polarity proteins. Characterization of these proteins revealed that regulated protein oligomerization and polymerization is a key principle that organizes cell polarity across kingdoms. In this seminar, I will focus on what we can learn about general organizing principles in cell polarity from comparative, structural, proteomic and functional analysis of this novel family of polarity proteins. I will address mechanisms underlying regulated polymerization, polar membrane targeting, and the control of polarity and development by mechanical signals.

About the Speaker

Dolf Weijers is professor and chair of biochemistry at Wageningen University. He trained in Biochemistry and received his PhD in Developmental Genetics and Leiden University (NL, 2002). He spent 4 years as post-doc in Tübingen (Germany), and established a research group at Wageningen University in 2006. He leads a team that focuses on the biochemical principles underlying multicellular plant development. His international team is funded by various agencies, including ERC and HFSP. He is member of the Royal Netherlands Academy of Sciences and EMBO, and acts as editor for several journals, including the Plant Cell. More details:

https://www.cell.com/current-biology/fulltext/S0960-9822(23)01519-1