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

SEMINAR

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Hosted by Dr Chae Eunyoung

AP-MS and organ growth in plants: from cells to tissues

By **Geert De Jaeger**

Professor, VIB-UGent Center for Plant Systems Biology, Belgium

At the very basis of cellular structure and function lie networks of short- and long-term molecular interactions. My research team develops interactomic tools for plants and runs a state of the art AP-MS platform for protein complex isolation. Through its high specificity and explanatory power, our platform steadily became a central –omics tool in our research department. Complexes got isolated for hundreds of proteins involved in cell growth and proliferation control leading towards protein discovery, functional analysis of protein complexes, and the mapping of protein networks involved in plant organ growth. We started in cell cultures, but steadily moved towards Arabidopsis seedlings, to finally end up into crop plants. Their bigger organs make them particularly suitable for the study of the complex regulation of organ growth in a developmental context. We obtained proof of concept for the study of protein complex dynamics during leaf growth and demonstrate its use for organ growth engineering.

Geert De Jaeger *is professor at Ghent University where he teaches Molecular Genetics and Gene Technology of plants. Besides he is Group leader/Vice-director at the VIB-UGent Center for Plant Systems Biology where he leads a research group entitled Functional Interactomics.*

He obtained his PhD in Biotechnology in 1997 from Ghent University during which he explored technology for targeted gene knock out in plants. During a postdoc at the VIB he developed transgenic tools that strongly boosted recombinant protein production in seeds. This resulted in a group leader position at the VIB-UGent Center for Plant Systems Biology in 2002. De Jaeger's technology driven research team obtained high visibility in the plant research field with their state of the art AP-MS platform that maps protein interaction networks in plants. His main research interest is the molecular regulation of plant growth at both the cellular and organ level in arabidopsis and corn to discover new strategies for the engineering of crop yield with the aim to contribute towards a more sustainable agriculture.

Artwork by Ann Nee, DBS, NUS