

## SCIENTIFIC PROGRAM

### SESSION LECTURE

No.25

Frontiers in Plant Science and Breeding

Room: Dong Yu Grand Ballroom 4

Co-Chairs:  
Jiayang Li



Weicai Yang



Giles Oldroyd



### Day 1 October 19th (Saturday) 14:00 – 17:30

Time	Speaker	Title
14:00-14:30	<b>Sanwen Huang</b> Chinese Academy of Tropical Agricultural Sciences, China	Hybrid potato, paradigm shift in breeding of clonally propagated crops
14:30-15:00	<b>Giles Oldroyd</b> University of Cambridge, United Kingdom	Achieving sustainable productivity in agriculture through beneficial microbial associations
15:00-15:30	<b>Jianmin Zhou</b> Yazhouwan National Laboratory, China	A novel plant defense metabolite disarms bacterial pathogens
15:30-16:00	<b>Tea Break</b>	
16:00-16:30	<b>Xiangdong Fu</b> Institute of Genetics and Developmental Biology, CAS, China	Targeted modulation of growth-metabolic coordination for a sustainable Green Revolution
16:30-17:00	<b>Jonathan F Wendel</b> Iowa State University, USA	Jeans, Genes, and Genomes, and the Mysteries of Polyploidy in Gossypium
17:00-17:30	<b>Weicai Yang</b> Yazhouwan National Laboratory, China	The male germ unit in Arabidopsis



### Jiayang Li

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Prof. Jiayang Li, Academician of Chinese Academy of Sciences and Director General of Yazhouwan National Laboratory. He is mainly working on molecular mechanisms of crop complex traits, with focuses on rice plant architecture and starch biosynthesis, rational design of rice superior varieties, and de novo domestication of wild allotetraploid rice. He has made immense progress in the molecular design of new elite rice varieties through rational design and developed series of elite rice varieties broadly planted in China.



### Giles Oldroyd

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Prof. Giles Oldroyd is a professor at the Department of Plant Sciences in the University of Cambridge, UK. In 2020 he was elected a Fellow of the Royal Society and a member of EMBO and in 2021 he was elected foreign member of the National Academy of Sciences, USA. Giles Oldroyd studies the mechanisms by which plants form beneficial interactions with micro organisms, both bacteria and fungi, that aid in the uptake of nutrients from the environment, including nitrogen. A long-term aim of this research is to reduce agricultural reliance on inorganic fertilisers and he currently heads an international programme funded by Bill & Melinda Gates Agricultural Innovations.



### Weicai Yang

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Prof. Weicai Yang, Academician of Chinese Academy of Sciences. He is chief scientist at Yazhouwan National Laboratory. His research mainly focuses on molecular mechanisms governing plant reproduction and symbiotic nitrogen fixation. He has made contributions in gametophyte development, male-female gametophyte interaction, early embryogenesis, and early nodule organogenesis.



### Jonathan F Wendel

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Prof. Jonathan F. Wendel, Member of United States National Academy of Sciences, He is a Distinguished Professor in the Department of Ecology, Evolution, and Organismal Biology at Iowa State University. His research focuses on mechanisms underlying the means by which flowering plant genomes and phenotypes diversify, with a special focus on the phenomenon of genome doubling, or polyploidy. Most of his ~340 publications focus on the cotton genus, in which two diploid and two polyploid species were independently domesticated thousands of years ago.



### Sanwen Huang

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Prof. Sanwen Huang, Academician of Chinese Academy of Sciences, President of Chinese Academy of Tropical Agricultural Sciences (CATAS). Huang's research generated the genomic platform for breeding of potato and vegetables. He revolutionized potato breeding by transforming the crop from a crop propagated by tubers into a crop propagated by seeds, which will provide a paradigm shift in the genetic improvement of clonally propagated crops. He developed the concept of "metabolome-guided breeding", which helps to breed for tomato and cucumber with better flavor.



### Venkatesan Sundaresan

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Prof. Venkatesan Sundaresan is a Professor of plant biology at the University of California-Davis, where he holds a joint appointment in the Departments of Plant Sciences and Molecular and Cellular Biology. He is an internationally recognized leader in the field of plant reproduction and development, with a focus on understanding the genetics and molecular biology of plant reproduction, functional genomics in model plants- Arabidopsis and rice, bioinformatics of small RNAs, microbiomes and metagenomics. His research has made significant contributions to the understanding of plant sexual reproduction.



### Jianmin Zhou

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Prof. Jianmin Zhou is Chief Scientist at the Yazhouwan National Laboratory, Sanya, China. He is a world renowned plant pathologist. He directs a research team focused on innate immunity and pathogenesis in crop plants. His team strives to understand how plant immune receptors activate defenses upon pathogen invasion and how plant defense metabolites stop pathogen progression. His team also aims to discover and deploy new disease resistance genes in crop plants.



### Xiangdong Fu

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Prof. Xiangdong Fu, Principle Investigator, Center for Molecular Agrobiolgy, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences. His main research interests include plant hormone gibberellin action in the coordinated regulation of plant growth, carbon fixation and nitrogen assimilation. By using the Arabidopsis and rice as model plants, identifying the key components that integrate and coordinate plant development, CO<sub>2</sub> fixation and nitrogen assimilation. In addition, QTL, GWAS and molecular biological approaches will be taken to systematically investigate the genetic basis of plant developmental adaptations to nitrogen availability, and identify new genes for improving grain yield and nitrogen-use efficiency in crops.