

## SCIENTIFIC PROGRAM

### SESSION LECTURE

No.14

**Plant Immunity and Crop Improvement  
Room: Phoenix Room 2**

**Co-Chairs:  
Zuhua He**



**Jane Parker**



**Day 2 October 20th (Sunday) 14:00 – 17:30**

Time	Speaker	Title
14:00-14:30	<b>Jonathan D G Jones</b> The Sainsbury Laboratory, UK	Investigating and exploiting plant immune receptor mechanisms for crop disease control
14:30-15:00	<b>Zuhua He</b> CAS Center for Excellence in Molecular Plant Sciences / Institute of Plant Physiology and Ecology, CHN	Broad-spectrum disease resistance in rice: mechanisms and breeding application
15:00-15:30	<b>Jane Parker</b> Max-Planck Institute for Plant Breeding Research, GER	TIR-domain enzyme activities at the heart of plant immunity
15:30-16:00	<b>Tea Break</b>	
16:00-16:30	<b>Ji-Jie Chai</b> Westlake University, CHN	Signaling of plant NLR immune receptors: from resistosomes to second messengers
16:30-17:00	<b>Ertao Wang</b> CAS Center for Excellence in Molecular Plant Sciences / Institute of Plant Physiology and Ecology, CHN	Discriminating symbiosis and immunity signals in plants
17:00-17:30	<b>Cara Haney</b> University of Pittsburgh, USA	Plant immune regulation of the rhizosphere microbiome



### Zuhua He

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CAS member and Professor of CAS Center for Excellence in Molecular Plant Sciences / Institute of Plant Physiology and Ecology

His research interests include functional genomics, mechanisms and application of plant disease resistance in particular broad-spectrum disease resistance in rice, cross-talks between defense and development (yield).



### Jane Parker

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Professor at The Max-Planck Institute for Plant Breeding Research and University of Cologne, Germany. FRS, NAS, Leopoldina and EMBO member.

Parker studies the genetic and molecular regulation of plant innate immunity. She is interested in mechanisms of pathogen recognition by host receptors and how receptor activation is transduced in cells and tissues for effective disease resistance. Parker has advanced fundamental knowledge of plant immunity signalling and defence homeostasis. Together with colleagues in China, she contributed to the discovery of nucleotide-based 2nd messengers and determining their modes of action in promoting immune responses in seed plants.



### Ji-Jie Chai

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Professor at Westlake University He explores on structural and functional studies of plant receptor-like kinases (RLKs) and NOD-like receptors (NLRs) involved in plants innate immunity. He is currently focusing on dissection of the signaling process that causes cellular immunity or programmed death after initiation of calcium signaling by plant NLR activation, and the identification of small molecules regulating plant immune signaling to improve crops in disease-resistance and production.



### Jonathan D G Jones (JJ)

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JJ studies how immune receptors enable plants to resist disease and develops strategies to exploit this knowledge to reduce crop losses to disease. He is a strong advocate of moving immune receptors between plant species using GM methods to enable durable disease resistance, and to address other crop performance challenges. He is EMBO member, Fellow of Royal Society and International Member of US NAS. Jones co-founded [www.norfolkplantsciences.com](http://www.norfolkplantsciences.com) in 2007 to bring flavonoid-enriched tomatoes to market; these GM purple tomatoes have received USDA and FDA approval and are being commercialized in the US by <https://www.norfolkhealthyproduce.com/>.



### Ertao Wang

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Professor at the Center for Excellence in Molecular Plant Sciences, Shanghai Institute of Plant Physiology and Ecology, Chinese Academy of Sciences.

He explores interactions between plants and beneficial microorganisms, including bacteria and fungi. These microorganisms assist the host plants in nutrient uptake from the environment, with a particular focus on nitrogen and phosphorus. His research contributes to establishing a framework for the nutritional exchange and regulation in arbuscular mycorrhizal symbiosis. He has identified receptors for the plant mycorrhizal factor. Currently, his group is developing microbiome-integrated strategies aimed at enhancing plant nutrient use efficiency and controlling soil-borne microbial diseases.



### Cara Haney

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Associate Professor of Biological Sciences, University of Pittsburgh.

Dr. Haney's research focuses on understanding how organisms recruit and maintain beneficial associates with their microbiomes. Her lab uses plant interactions with beneficial bacteria as a genetically tractable model to dissect host-microbiome interactions. Her research focuses both on elucidating basic mechanisms in host-microbiome interactions and on finding sustainable solutions for agronomically important challenges.