

Programs of *Plant Genomics in China XXIV*

August 19 - 22, 2025, Linzhi, Xizang

August 19, 2025

12:00 - 21:00 Arrival and Registration

18:00 - 20:00 Dinner

August 20, 2025

09:00 - 09:30 Opening Ceremony

Chair: Prof. Weicai Yang, Executive Chair of PGC Committee

Remarks from Prof. Qifa Zhang, Chair of PGC Committee

Remarks from President, Xizang Agricultural and Animal Husbandry University

09:30 - 10:30 Session I: Emerging Frontiers

09:30 - 10:00 **Plenary 1 Liang Hong** (Shanghai Jiao Tong University) General artificial intelligence for protein engineering based on pre-training (venus model)

10:00 - 10:30 **Plenary 2 Cao Xu** (Institute of Genetics and Developmental Biology, CAS) Rational design and robotic production of climate-smart crops

10:30 - 10:50 Tea Break

10:50 - 12:35 Session II: Multi- Omics (I)

10:50 - 11:20 **Plenary 3 Ralph Bock** (Max Planck Institute of Molecular Plant Physiology, Germany) Genetic engineering of chloroplast and mitochondrial genomes

11:20 - 12:20 Major Talk

11:20 - 11:40 **Yu Zhang** (CAS Center for Excellence in Molecular Plant Sciences, CAS) The structural basis of chloroplast transcription

11:40 - 12:00 **Yue Zhou** (Peking University) Functional analysis of boundary-associated proteins in plant 3D chromatin structure regulation

12:00 - 12:20 **Zhe Liang** (Biotechnology Research Institute, CAAS) Mass spectrometry-based proteomic landscape of rice reveals a posttranscriptional regulatory role of *N*⁶-methyladenosine

12:20 - 12:35 Student Talk

12:20 - 12:35 **Xiangyu Wang** (Biotechnology Research Institute, CAAS) A single-cell multi-omics atlas of rice

12:35 Lunch Break

15:00 - 17:05 Session III: Functional Genomics (I)

15:00 - 15:30 **Plenary 4 Zuhua He** (CAS Center for Excellence in Molecular Plant Sciences, CAS) Asymmetric selection of an NLR-TF immune network orchestrates rice subspecies-specific disease resistance and reproduction

15:30 - 16:50 Major Talk

15:30 - 15:50 **Keming Luo** (Southwest University) Molecular mechanisms of auxin and gibberellin synergistic regulation of wood development in poplar stems

15:50 - 16:10 **Xin Hou** (Wuhan University) Dynamic pH-dependent interactions of PSB27 regulate photosynthetic acclimation in rice

16:10 - 16:30 **Guanqun Wang** (The Chinese University of Hong Kong) New insight of RNA modifications in plant development regulation

16:30 - 16:50 **Xibo Feng** (Xizang Agricultural and Animal Husbandry University) Genetic variation analysis of colored Qingke in Tibet and related gene mapping research

16:50 - 17:05 Student Talk

16:50 - 17:05 **Pei Miao** (Institute of Genetics and Developmental Biology, CAS) The precision strike of a plant compound against bacterial virulence factor

17:05 - 17:20 Tea Break

17:20 - 18:50 Session IV: Epigenetics and Epigenomics

17:20 - 17:50 **Plenary 5 Yuehui He** (Peking University) A cold-signaling mechanism drives the formation of 'memory of prolonged cold' in plants

17:50 - 18:50 Major Talk

17:50 - 18:10 **Xiaofeng Fang** (Tsinghua University) Understanding plant abiotic stress perception and response via biomolecular condensation

18:10 - 18:30 **Xianwei Song** (Institute of Genetics and Developmental Biology, CAS)

DNA methylation variation drives the acquisition of cold-adaptive traits in rice

18:30 - 18:50 **Guifang Jia** (Peking University) The functional regulation of RNA methylation in plant transcription

18:50 Dinner

20:30 - 21:30 PGC Committee Meeting

August 21, 2025

09:00 - 12:45 Session V: Multi- Omics (II)

09:00 - 10:40 Major Talk

09:00 - 09:20 **Yang Bai** (Peking University) Function and mechanism of root microbiota in regulating rice growth and health

09:20 - 09:40 **Qingxin Song** (Nanjing Agricultural University) Transcriptome-wide association uncovers lncRNAs controlling seed weight in soybean

09:40 - 10:00 **Huilong Du** (Hebei University) Genomic insights into the domestication and improvement of hexaploid oats

10:00 - 10:20 **Hai Wang** (China Agricultural University) *Cis*-regulatory DNA sequence design by AI

10:20 - 10:40 **Xingtian Zhang** (Agricultural Genomics Institute at Shenzhen, CAAS) A new paradigm in polyploid genomics reveals the genome organization of sugarcane as a leading sugar crop

10:40 - 10:55 Student Talk

10:40 - 10:55 **Dongling Guo** (CAS Center for Excellence in Molecular Plant Sciences, CAS) A comprehensive pangenome reference unlocks genetic diversity in wild and domesticated rice

10:55 - 11:10 Tea Break

11:10 - 12:45 Major Talk

11:10 - 11:30 **Yao Zhou** (Institute of Botany, CAS) Overcoming breeding constraints in polyploid oat from evolutionary insights

11:30 - 11:50 **Xueying Guan** (Zhejiang University) GhLPF1 associated network is

involved with cotton lint percentage regulation revealed by the integrative analysis of spatial transcriptome

11:50 - 12:10 **Pengcheng Wang** (Southern University of Science and Technology) A comprehensive phosphorylation network of chloroplasts in Arabidopsis

12:10 - 12:30 **Xueyong Yang** (Institute of Vegetables and Flowers, CAAS) The developmental and genetic basis of yield-related traits in cucurbits and crop design

12:30 - 12:45 **Zhi Li** (Laso Biotech) Accelerating molecular breeding industrialization via China's own microarray

12:45 Lunch Break

15:00 - 16:55 Session VI: Genome Diversity

15:00 - 16:40 Major Talk

15:00 - 15:20 **Minjie Li** (Lanzhou University) Genetic basis of camouflage in an alpine plant and its long-term co-evolution with an insect herbivore

15:20 - 15:40 **Tingshuang Yi** (Kunming Institute of Botany, CAS) Phylogenomic study revealed stepwise evolution of the root nodule symbiosis

15:40 - 16:00 **Yongfeng Zhou** (Agricultural Genomics Institute at Shenzhen, CAAS) Grapevine breeding by AI-based genome design

16:00 - 16:20 **Hang He** (Peking University) Precision breeding models based on multi-omics and single-cell approaches

16:20 - 16:40 **Yalong Guo** (Institute of Botany, CAS) Incorporating genetic load leads to more robust predictions of plant responses to climate change

16:40 - 16:55 Student Talk

16:40 - 16:55 **Huiru Liu** (Yazhouwan National Laboratory) Structural reconfiguration of centromeric chromatin activates a cryptic environmental hub in a soybean landrace

16:55 - 17:10 Tea Break

17:10 - 19:00 Poster Session

19:00 Dinner

August 22, 2025

09:00 - 12:30 Session VII: Functional Genomics (II)

09:00 - 09:30 **Plenary 6 Chengcai Chu** (South China Agricultural University) Unraveling nitrogen use efficiency in rice: from molecular mechanisms to systems integration

09:30 - 10:30 Major Talk

09:30 - 09:50 **Jian Ye** (Institute of Microbiology, CAS) TBA

09:50 - 10:10 **Jianxiang Liu** (Zhejiang University) Improving rice thermotolerance by gene-editing a negative regulator *NAT1* to increase wax accumulation under heat stress conditions

10:10 - 10:30 **Youshun Lin** (Shanghai Jiao Tong University) Molecular mechanisms regulating alkali-thermal tolerance and yield in rice

10:30 - 10:45 Student talk

10:30 - 10:45 **Junzhu Wang** (Tsinghua University) Remodelling autoactive NLRs for broad-spectrum immunity in plants

10:45 - 11:05 Tea Break

11:05 - 11:25 **Plenary 7 Shuhua Yang** (China Agricultural University) Molecular and genetic basis of cold tolerance for high-latitudinal adaptation in maize

11:25 - 12:40 Major Talk

11:25 - 11:45 **Yibo Li** (Huazhong Agricultural University) *QT12* confers field thermotolerance for grain quality and yield in rice

11:45 - 12:05 **Hailong Guo** (China Agricultural University) Extending functionality of Solanaceae NLRs into rice confers resistance to bacterial leaf streak

12:05 - 12:35 **Letian Chen** (South China Agricultural University) The mitochondrial CMS protein WA352 is degraded by ubiquitin proteasome system in rice

12:35 Lunch Break

15:00 - 16:20 Session VIII: Genome Breeding

15:00 - 15:30 **Plenary 8 Jianbing Yan** (Huazhong Agricultural University) A *Zea* genus-specific micropeptide with conserved function across species

15:30 - 16:00 **Plenary 9 Xiaohui Yuan** (Wuhan University of Technology) AI agent for agricultural image phenotypic analysis

16:00 - 16:20 Major Talk

16:00 - 16:20 **Chaowu Dong** (China Agricultural University) Regulatory network controlling developmental boundaries and meristem fates contributed to maize domestication

16:20 Closing Ceremony

Presentation of the awards for the best posters and the best student talks.

Closing Remarks: Prof. Weicai Yang, Executive Chair of PGC Committee.

Messages from the local organizers of PGC XXV.

18:00 Dinner

Programs are updated on July 23, 2025 and may be subjected to changes.