

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 Prof Zhonghua Cao, Vice President, Xizang Agricultural and Animal Husbandry University

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

Chair: Weicai Yang

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)

Chair: Jia-Wei Wang

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)

Chair: Xiansheng Zhang

- 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 **Ronghui Pan** (Zhejiang University) Deciphering phenylalanine-derived salicylic acid biosynthesis in plants
- 15:50 - 16:10 **Jian Ye** (Institute of Microbiology, CAS) Targeted MYC2 stabilization confers citrus Huanglongbing resistance
- 16:10 - 16:30 **Hailong Guo** (China Agricultural University) Extending functionality of Solanaceae NLRs into rice confers resistance to bacterial leaf streak
- 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

Chair: Peng Qin

- 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)

Chair: Yingyin Yao

09:00 - 09:30 **Plenary 6 Yang Bai** (Peking University) Function and mechanism of root microbiotain in regulating rice growth and health

09:30 - 10:30 Major Talk

09:30 - 09:50 **Qingxin Song** (Nanjing Agricultural University) Transcriptome-wide association uncovers lncRNAs controlling seed weight in soybean

09:50 - 10:10 **Huilong Du** (Hebei University) Genomic insights into the domestication and improvement of hexaploid oats

10:10 - 10:30 **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

10:30 - 10:45 Student Talk

10:30 - 10:45 **Dongling Guo** (CAS Center for Excellence in Molecular Plant Sciences, CAS) A comprehensive pangenome reference unlocks genetic diversity in wild and domesticated rice

10:45 - 11:05 Tea Break

Chair: Lingling Chen

11:05 - 12:45 Major Talk

- 11:05 - 11:25 **Yao Zhou** (Institute of Botany, CAS) Overcoming breeding constraints in polyploid oat from evolutionary insights
- 11:25 - 11:45 **Xueying Guan** (Zhejiang University) GhLPF1 associated network is involved with cotton lint percentage regulation revealed by the integrative analysis of spatial transcriptome
- 11:45 - 12:05 **Pengcheng Wang** (Southern University of Science and Technology) A comprehensive phosphorylation network of chloroplasts in Arabidopsis
- 12:05 - 12:25 **Xueyong Yang** (Institute of Vegetables and Flowers, CAAS) The developmental and genetic basis of yield-related traits in cucurbits and crop design
- 12:25 - 12:45 **Yiting Shi** (China Agricultural University) A natural variant of COOL1 gene enhances cold tolerance for high-latitude adaptation in maize

12:45 Lunch Break

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

Chair: Hongzhi Kong

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 **Zhaobin Dong** (China Agricultural University) Regulatory network controlling developmental boundaries and meristem fates contributed to maize domestication
- 16:00 - 16:20 **Yanhui Yu** (Huazhong Agricultural University) A Zea genus-specific micropeptide with conserved function across species
- 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 - 17:15 Tea Break

17:15 - 19:00 Poster Session

19:00 Dinner

August 22, 2025

09:00 - 12:45 Session VII: Functional Genomics (II)

Chair: Yidan Ouyang

09:00 - 09:30 **Plenary 7 Fanjiang Kong** (Guangzhou University) Photoperiod response and flowering in soybean

09:30 - 10:30 Major Talk

09:30 - 09:50 **Keming Luo** (Southwest University) Molecular mechanisms of auxin and gibberellin synergistic regulation of wood development in poplar stems

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

Chair: Jie Luo

11:05 - 11:45 Major Talk

11:05 - 11:25 **Yibo Li** (Huazhong Agricultural University) *QT12* confers field thermotolerance for grain quality and yield in rice

11:25 - 11:45 **Xin Hou** (Wuhan University) Dynamic pH-dependent interactions of PSB27 regulate photosynthetic acclimation in rice

11:45 - 12:05 **Bin Hu** (South China Agricultural University) A new abscisic acid

receptor integrates compound environmental cues for plants

12:05 - 12:25 **Letian Chen** (South China Agricultural University) The mitochondrial CMS protein WA352 is degraded by ubiquitin proteasome system in rice

12:25 - 12:45 **Guanqun Wang** (The Chinese University of Hong Kong) New insight of RNA modifications in plant development regulation

12:45 Lunch Break

Chair: Liyu Chen

15:00 - 16:30 Session VIII: Genome Breeding

15:00 - 15:30 **Plenary 8 Xiaohui Yuan** (Wuhan University of Technology) AI agent for agricultural image phenotypic analysis

15:30 - 16:30 Major Talk

15:30 - 15:50 **Yongfeng Zhou** (Agricultural Genomics Institute at Shenzhen, CAAS) Grapevine breeding by AI-based genome design

15:50 - 16:10 **Hai Wang** (China Agricultural University) *Cis*-regulatory DNA sequence design by AI

16:10 - 16:30 **Hang He** (Peking University) Precision breeding models based on multi-omics and single-cell approaches

16:30 Closing Ceremony

Chair: Prof Ciren Yangjin, Dean, College of Plant Science, Xizang Agricultural and Animal Husbandry University

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 may be subjected to changes.