

Programs of *Plant Genomics in China XXI*

August 19 - 22, 2022, Nanning, Guangxi

August 19, 2022

10:30 - 21:00 Arrival and Registration

18:00 - 20:00 Dinner (Buffet)

Scientific Programs

August 20, 2022

08:30 - 09:00 Opening Ceremony

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

Remarks from Prof. Qifa Zhang, Chair of PGC Committee

Remarks from Prof Jiaxun Feng, Vice President, Guangxi University

09:00 - 10:00 Session I: Design of Future Agriculture

Chair: Yaoguang Liu (South China Agricultural University)

09:00 - 09:30 **Plenary 1 Hong Yu** (Institute of Genetics and Developmental Biology, CAS) Towards the future crop

09:30 - 10:00 **Plenary 2 Xun Xu** (BGI Research) Understand Biology through Spatiotemporal Omics

10:00 - 10:25 Tea Break

10:25 - 12:00 Session II: Genome Sequencing and New Technology

10:25 - 11:45 Major Talk

Chair: Zhikang Li (Institute of Crop Sciences, CAAS)

10:25 - 10:45 **Shihui Niu** (Beijing Forestry University) The chromosome-scale Chinese pine giga-genome provides novel insights into key features of conifer evolution

10:45 - 11:05 **Xiaoming Wu** (Oil Crops Research Institute, CAAS) Genomic selection and genetic architecture of agronomic traits during modern rapeseed breeding

- 11:05 - 11:25 **Jingjing Yue** (Fujian A&F University) SunUp and Sunset genomes revealed impact of particle bombardment mediated transformation and domestication history in papaya
- 11:25 - 11:45 **Rui Xia** (South China Agricultural University) The domestication history of lychee and its flowering regulation decoded by full genome sequencing
- 11:45 - 12:00 Student Talk**
- 11:45 - 12:00 **Tong Li** (Institute of Genetics and Developmental Biology, CAS) The chromosome-level genome assembly and genome editing provide a novel insight into evolution and improvement of sheepgrass

12:00 Lunch Break

14:00 - 16:05 Session III: Functional Genomics (I)

Chair: Xuewei Chen (Sichuan Agricultural University)

- 14:00 - 14:30 **Plenary 3 Zuhua He** (CAS Center for Excellence in Molecular Plant Sciences) Genetic evidence and biological significance of subspecies-specific domestication of disease resistance in rice
- 14:30 - 15:50 Major Talk**
- 14:30 - 14:50 **Xiangdong Fu** (Institute of Genetics and Developmental Biology, CAS) Modulating carbon-nitrogen metabolic coordination for a sustainable green revolution
- 14:50 - 15:10 **Fanjiang Kong** (Guangzhou University) Genetic and molecular basis underlying photoperiod flowering and adaptation in soybean
- 15:10 - 15:30 **Xuelu Wang** (Henan University) The mechanism of light regulating symbiotic nitrogen fixation in soybean
- 15:30 - 15:50 **Ertao Wang** (CAS Center for Excellence in Molecular Plant Sciences) Activation of symbiotic response and pattern recognition receptor-mediated immunity
- 15:50 - 16:05 Student Talk**
- 15:50 - 16:05 **Jian Hu** (Southwest University) AUXIN RESPONSE FACTOR7 integrates gibberellin and auxin signaling via interactions between DELLA and AUX/IAA proteins to regulate cambial activity in poplar

16:05 - 16:25 Tea Break

16:25 - 18:00 Session IV: Genome Diversity

16:25 - 17:45 Major Talk

Chair: Lijuan Qiu (Institute of Crop Sciences, CAAS)

16:25 - 16:45 **Bao Liu** (Northeast Normal University) Stable autotetraploid rice lines evolved from doubled F1 hybrids of *japonica-indica* subspecies

16:45 - 17:05 **Yuannian Jiao** (Institute of Botany, CAS) The *Aristolochia fimbriata* genome: insights into angiosperm evolution, floral development and chemical biosynthesis

17:05 - 17:25 **Aili Li** (Institute of Crop Sciences, CAAS) Synergistic selection of pleiotropic genomic sites for plant architecture and grain yield in wheat breeding history

17:25 - 17:45 **Zhenhui Wang** (Jilin Agricultural University) Reshuffling of the ancestral core-eudicot genome shaped chromatin topology and epigenetic modification in *Panax*

17:45 - 18:00 Student Talk

17:45 - 18:00 **Xiaoyu Guo** (Institute of Botany, CAS) Calreticulin OsCRT3 alters its conformation for enhancing binding with OsCIPK7 to sense cold in rice

18:00 Dinner (Buffet)

20:00 - 21:00 PGC Committee Meeting

August 21, 2022

08:30 - 12:00 Session V: Proteomics, Metabolomics and Bioinformatics

Chair: Zhengqiang Ma (Nanjing Agricultural University)

08:30 - 09:00 **Plenary 4 Haiyan Liu** (University of Science and Technology of China) Data-driven methods for *de novo* protein design

09:00 - 09:40 Major Talk

09:00 - 09:20 **Lingling Chen** (Guangxi University) Construction of rice T2T genomes and graph-based pan-genome

09:20 - 09:40 **Yao Zhou** (Agricultural Genome Institute at Shenzhen, CAAS) Graph pangenome captures missing heritability and empowers tomato breeding

09:40 - 09:55 Student Talk

09:40 - 09:55 **Lu Chen** (Huazhong Agricultural University/ Institute of Genetics and Developmental Biology, CAS) Genome sequencing reveals evidence of adaptive variation in the genus *Zea*

09:55 - 10:15 Tea Break

10:15 - 10:45 **Plenary 5 Ge Gao** (Peking University) Delineate regulatory map *in silico*
Chair: Xiansheng Zhang (Shandong Agricultural University)

10:45 - 11:45 Major Talk

10:45 - 11:05 **Pengcheng Wang** (CAS Center for Excellence in Molecular Plant Sciences) Cell type-specific proteomics uncovers a guard cell-specific RAF15-SnRK2.6/OST1 kinase cascade

11:05 - 11:25 **Yun Chen** (Zhejiang University) Harnessing microbiota functions to combat *Fusarium* diseases in wheats

11:25 - 11:45 **Zhe Yan** (Institute of Crop Science, CAAS) Integrated single-nucleus and spatial transcriptomics reveals cell type specific regulatory modules during soybean nodule development

11:45 - 12:00 Student Talk

11:45 - 12:00 **Delin Li** (Institute of Crop Science, CAAS) TWAS results are complementary to and less affected by linkage disequilibrium than GWAS

12:00 Lunch Break

14:00 - 16:05 Session VI: Transgenic Technology and Genomics-based Breeding

Chair: Guangcun He (Wuhan University)

14:00 - 14:30 **Plenary 6 Jiankang Zhu** (Southern University of Science and Technology) The future of gene edited crops in China

14:30 - 15:50 Major Talk

14:30 - 14:50 **Xiaojie Wang** (Northwest A&F University) Inactivation of a wheat protein kinase gene confers broad-spectrum resistance to rust fungi

14:50 - 15:10 **Xiaohong Yang** (China Agricultural University) Convergent selection of a WD40 protein that enhances grain yield in maize and rice

15:10 - 15:30 **Qinlong Zhu** (South China Agricultural University) Development and applications of new tools for plant synthetic biology and genetic engineering

15:30 - 15:50 **Ke Wang** (Institute of Crop Science, CAAS) The gene *TaWOX5* overcomes genotype dependency in wheat genetic transformation

15:50 - 16:05 Student Talk

15:50 - 16:05 **Haichao Jiang** (Huazhong Agricultural University) The Fujian cytoplasmic male sterility and the fertility restorer gene *OsRf19* provide a promising breeding system for hybrid rice

16:05 Tea Break and Poster Session

18:00 Dinner (Buffet)

August 22, 2022

08:30 - 11:50 Session VII: Functional Genomics (II)

Chair: Jianxiang Liu (Zhejiang University)

08:30 - 09:00 **Plenary 7 Jianbing Yan** (Huazhong Agricultural University) The genetics and molecular basis of haploid induction in maize

09:00 - 10:00 Major Talk

09:00 - 09:20 **Cao Xu** (Institute of Genetics and Developmental Biology, CAS) Robust control of shoot apical stem cell activity in Solanaceous crops

09:20 - 09:40 **Peng Qin** (Sichuan Agricultural University) From the molecular mechanism to natural allele regulating rice grain setting and filling under high temperature

09:40 - 10:00 **Yidan Ouyang** (Huazhong Agricultural University) Developing a promising breeding system for future hybrid rice

10:00 - 10:20 Tea Break

Chair: Dongyun Hao (Jilin Academy of Agricultural Sciences)

10:20 - 10:50 **Plenary 8 Hongwei Guo** (Southern University of Science and Technology) Small RNA with big effects: the unique roles of 22-nt siRNAs in plants

10:50 - 11:50 Major Talk

10:50 - 11:10 **Jun Wu** (Nanjing Agricultural University) The genetic determination of stone cells in pear fruit

11:10 - 11:30 **Qiaohong Duan** (Shandong Agricultural University) Selective fertilization and the breeding of Chinese cabbage

11:30 - 11:50 **Mingqiu Dai** (Huazhong Agricultural University) Dissecting the genetic architecture of maize drought resistance

12:00 Lunch Break

14:00 - 15:50 Session VIII: Epigenetics and Epigenomics

Chair: Jia Li (Lanzhou University/Guangzhou University)

14:00 - 14:30 **Plenary 9 Yijun Qi** (Tsinghua University) Genome-wide identification of RNA-chromatin interactions reveals coding-independent function of mRNAs in transcriptional regulation

14:30 - 15:50 Major Talk

14:30 - 14:50 **Yuehui He** (Peking University) A molecular pathway for resetting of cold memory during Arabidopsis seed development

14:50 - 15:10 **Haifeng Wang** (Guangxi University) Epigenetic and genetic mechanism for expression bias of homologous alleles in polyploid sugarcane

15:10 - 15:30 **Guifang Jia** (Peking University) Epitranscriptome engineering boosts crop productivity

15:30 Closing Ceremony

Chair: Prof Zuojun Fan, Vice President, Guangxi 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 XXII

18:00 Dinner (Buffet)

Programs may be subjected to changes