

Curriculum Vitae of Yong Zhou

Dr. Yong Zhou

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Current Position

Research Scientist (04/2023 - now): Center for Desert Agriculture (CDA), Biological and Environmental Science and Engineering (BESE), King Abdullah University of Science and Technology (KAUST)

- Supervisor: Professor Rod A. Wing
 - ◆ Main research project: Pan-genome studies and a digital genebank for cultivated rice
 - ◆ Research keywords: Genetics, Genomics, Bioinformatics, Evolution, Population genetics, Machine learning, Next Generation Sequencing (NGX), PacBio Long-read Sequencing
 - ◆ Main collaborations with scientists from the U.S., China, the UK, KSA, and the Philippines
 - ◆ Supervisor and Mentor of Ph.D. & Masters' students, and interns

Academic Background

Postdoctoral Research Fellow (04/2019 – 04/2023): Center for Desert Agriculture (CDA), Biological and Environmental Science and Engineering (BESE), King Abdullah University of Science and Technology (KAUST)

- Supervisor: Professor Rod A. Wing
 - ◆ Research keywords: Crop, Pan-genome, Variation, Genebank, Evolution, Population genetics

Postdoctoral Research Fellow (07/2017 ~ 04/2019): National Key Laboratory of Plant Molecular Genetics, Institute of Plant Physiology and Ecology, SIBS, CAS

- Supervisor: Professor Yongrui Wu (SIPPE, CAS)
- Supervisor: Professor Wenqin Wang (SJTU, Shanghai Jiao Tong University)
 - ◆ Research keywords: Maize, Transcriptomes, QTL, GWAS, Population genetics

Proposal and Grant Awarded

- **5000 Rice Genome Project.** 16M core hours equivalent to a grant of USD 208K, KAUST Supercomputing Laboratory (KSL), Production Project Proposal (PPP). 2021.09 - 2023.08.
- **Regulatory mechanism study of genetic factors regulating expression of a high methionine storage protein, 10-kDa δ-zein, in maize.** USD 10K, Supported by China Postdoctoral Science Foundation, 2017.08 - 2019.07.

Education

Ph.D., Plant Science (2013.09 – 2017.06)

- Triticeae Research Institute, Sichuan Agricultural University (SICAU)
- Supervisor: Prof. Jirui Wang

Master, Genetic and Breeding Science (2010.09 – 2013.06)

- Triticeae Research Institute, Sichuan Agricultural University (SICAU)
- Supervisor: Prof. Youliang Zheng

Bachelor, Plant Science (2006.09 – 2010.06)

- College of Agronomy, Sichuan Agricultural University (SICAU)

Publications

1. **Yong Zhou[#]**, Nagarajan Kathiresan[#], Zhichao Yu[#], Luis F. Rivera[#] (#Co-first authors), Manjula Thimma, Keerthana Manickam, Dmytro Chebotarov, Ramil Mauleon, Kapeel Chougule, Sharon Wei, Tingting Gao, Carl D. Green, Andrea Zuccolo, Doreen Ware, Jianwei Zhang, Kenneth L. McNally, Rod A. Wing^{*}. HPC-based genome variant calling workflow (HPC-GVCW)[J]. **bioRxiv**, 2023: 2023.06. 25.546420.
2. **Yong Zhou[#]**, Zhichao Yu[#], Dmytro Chebotarov[#], Kapeel Chougule[#] (#Co-first authors), Zhenyuan Lu, Luis F. Rivera, Nagarajan Kathiresan, Noor Al-Bader, Nahed Mohammed, Aseel Alsantely, Saule Mussurova, João Santos, Manjula Thimma, Maxim Troukhan, Alice Fornasiero, Carl D. Green, Dario Copetti, Dave Kudrna, Victor Llaca, Mathias Lorieux, Andrea Zuccolo^{*}, Doreen Ware^{*}, Kenneth McNally^{*}, Jianwei Zhang^{*}, & Rod A. Wing^{*}. Pan-genome inversion index reveals evolutionary insights into the subpopulation structure of Asian rice[J]. **Nature Communications**, 2023, 14(1): 1567. (**5-year Impact Factor 17.763**).
3. Zhichao Yu[#], Yongming Chen[#], **Yong Zhou[#]**, Yulu Zhang, Mengyuan Li, Yidan Ouyang, Dmytro Chebotarov, Ramil Mauleon, Hu Zhao, Weibo Xie, Kenneth L McNally, Rod A Wing^{*}, Weilong Guo^{*}, Jianwei Zhang^{*}. Rice Gene Index (RGI): a comprehensive pan-genome database for comparative and functional genomics of Asian rice[J]. **bioRxiv**, 2023: 2023.02. 14.528456 (accepted by **Molecular Plant**, **5-year Impact Factor 19.5**).
4. Jia-Ming Song, Wen-Zhao Xie, Shuo Wang, Yi-Xiong Guo, Dal-Hoe Koo, Dave Kudrna, Chenbo Gong, Yicheng Huang, Jia-Wu Feng, Wenhui Zhang, **Yong Zhou**, Andrea Zuccolo, Evan Long, Seunghee Lee, Jayson Talag, Run Zhou, Xi-Tong Zhu, Daojun Yuan, Joshua Udall, Weibo Xie, Rod A Wing, Qifa Zhang, Jesse Poland, Jianwei Zhang^{*}, Ling-Ling Chen^{*}. Two gap-free reference genomes and a global view of the centromere architecture in rice[J]. **Molecular plant**, 2021, 14(10): 1757-1767. (**5-year Impact Factor 19.5**)
5. Zhixuan Zhao, Shuai Li, Chen Ji, **Yong Zhou**, Changsheng Li, Wenqin Wang^{*}. Genetic Variation of the Serine Acetyltransferase Gene Family for Sulfur Assimilation in Maize[J]. **Genes**, 2021, 12(3): 437.

6. Jing Lang[#], Yuxin Fu[#], **Yong Zhou[#]** ([#]Co-first authors), Mengping Cheng, Min Deng, Maolian Li, Tingting Zhu, Jian Yang, Xiaojiang Guo, Lixuan Gui, Linchuan Li, Zhongxu Chen, Yingjin Yi, Lianquan Zhang, Ming Hao, Lin Huang, Chao Tan, Guoyue Chen, Qiantao Jiang, Pengfei Qi, Zhien Pu, Jian Ma, Zehou Liu, Yujiao Liu, Ming-Cheng Luo, Yuming Wei, Youliang Zheng, Yongrui Wu, Dengcai Liu, JiRui Wang^{*}. Myb10-D confers PHS-3D resistance to pre-harvest sprouting by regulating NCED in ABA biosynthesis pathway of wheat[J]. *New Phytologist*, 2021, 230(5): 1940-1952. (5-year Impact 10.151)
7. **Yong Zhou[#]**, Dmytro Chebotarov[#] ([#]Co-first authors), Dave Kudrna, Victor Llaca, Seunghee Lee, Shanmugam Rajasekar, Nahed Mohammed, Noor Al-Bader, Chandler Sobel-Sorenson, Praveena Parakkal, Lady Johanna Arbelaez, Natalia Franco, Nickolai Alexandrov, N. Ruaraidh Sackville Hamilton, Hei Leung, Ramil Mauleon, Mathias Lorieux, Andrea Zuccolo, Kenneth McNally, Jianwei Zhang & Rod A. Wing. A platinum standard pan-genome resource that represents the population structure of Asian rice[J]. *Scientific data*, 2020, 7(1): 1-11. (5-year Impact 11.211)
8. Changsheng Li, Xiaoli Xiang, Yongcai Huang, **Yong Zhou**, Dong An, Jiaqiang Dong, Chenxi Zhao, Hongjun Liu, Yubin Li, Qiong Wang, Chunguang Du, Joachim Messing, Brian A Larkins, Yongrui Wu^{*}, Wenqin Wang^{*}. Long-read sequencing reveals genomic structural variations that underlie creation of quality protein maize[J]. *Nature communications*, 2020, 11(1): 17.
9. Dong An[#], **Yong Zhou** ([#]Co-first authors), Changsheng Li, Qiao Xiao, Tao Wang, Yating Zhang, Yongrui Wu, Yubin Li, Daiyin Chao, Joachim Messing^{*} and Wenqin Wang^{*}. Plant evolution and environmental adaptation unveiled by long-read whole-genome sequencing of *Spirodela*. *Proceedings of the National Academy of Sciences*, 2019, 116(38), 18893-18899. (5-year Impact 13.450)
10. Ningning Yuan, Jiechen Wang, **Yong Zhou**, Dong An, Qiao Xiao, Wenqin Wang and Yongrui Wu^{*}. EMB-7L is required for embryogenesis and plant development in maize involved in RNA splicing of multiple chloroplast genes. *Plant Science*, 2019, 287, 110203. (Impact 4.729)
11. **Yong Zhou**, Zhixuan Zhao, Zhiyong Zhang, Miaomiao Fu, Yongrui Wu^{*} and Wenqin Wang^{*}. Isoform sequencing provides insight into natural genetic diversity in maize[J]. *Plant biotechnology journal*, 2018. (5-year Impact 9.803)
12. **Yong Zhou[#]**, Zhongxu Chen[#] ([#]Co-first authors), Mengping Cheng, Jian Chen, Tingting Zhu, Rui Wang, Yaxi Liu, Pengfei Qi, Guoyue Chen, Qiantao Jiang, Yuming Wei, Ming-Cheng Luo, Eviatar Nevo, Robin G. Allaby, Dengcai Liu, Jirui Wang, Jan Dvorák and Youliang Zheng^{*}. Uncovering the dispersion history, adaptive evolution and selection of wheat in China. *Plant Biotechnology Journal*, 2018. (5-year Impact 9.803)
13. **Yong Zhou**, Hao Tang, Meng-Ping Cheng, Kwame O. Dankwa, Zhong-Xu Chen, Zhan-Yi Li, Shang Gao, Ya-Xi Liu, Qian-Tao Jiang, Xiu-Jin Lan, Zhi-En Pu, Yu-Ming Wei, You-Liang Zheng, Lee T. Hickey and Ji-Rui Wang^{*}. Genome-Wide Association Study for Pre-harvest Sprouting Resistance in a Large Germplasm Collection of Chinese Wheat Landraces. *Frontiers in Plant Science*, 2018. (5-year Impact 6.627)
14. Dong An, Changsheng Li, **Yong Zhou**, Yongrui Wu, Wenqin Wang^{*}. Genomes and transcriptomes of duckweeds[J]. *Frontiers in chemistry*, 2018, 6: 230.

15. Jiechen Wang, Chen Ji, Qi Li, **Yong Zhou** and Yongrui Wu*. Genome-wide analysis of the plant-specific PLATZ proteins in maize and identification of their general role in interaction with RNA polymerase III complex. *BMC Plant Biology*, 2018.
16. Yujiao Liu, Yaxi Liu, **Yong Zhou**, Charlene Wight, Zhien Pu, Pengfei Qi, Qiantao Jiang, Mei Deng, Zaoxia Wang, Yuming Wei, Wenguang Cao, Dengcai Liu, Youliang Zheng, Chunji Liu, Judith Frégeau-Reid and Jirui Wang*. Conferring resistance to pre-harvest sprouting in durum wheat by a QTL identified in *Triticum spelta*. *Euphytica*, 2016.
17. Ze-Hou Liu, **Yong Zhou**, Jia Li, Yu-Jiao Liu, Ya-Xi Liu*. Molecular Characterization of the Amy1 gene in hexaploid wheat. *Journal of Plant Sciences*, 2012.

Symposium

- **2023 Jun. 16th** (Online): Chinese Genomics Meet-up online (CGM)
 - **Invited Presentation:** A Pan-genome study of Asian rice (*Oryza Sativa*)
- **2022 Oct 4-7th** (In-person): 19th International Symposium on Rice Functional Genomics (ISRGF2022), Le Meridien Beach Resort Hotel, Phuket, Thailand
 - **Workshop** (workshop leader): High-performance computing (HPC) - Accelerated Workflow and Software Tools for Plant Genomes: Data processing from Raw data to Variants
 - **Presentation:** Pan-genome analysis of 3K rice genome project (*Oryza sativa*)
- **2022 Nov 28-30th** (Online): 7th Genomics and Crop Genetic Improvement Symposium, Wuhan China
 - **Presentation:** A Pan-genome Study of Asian Rice (*Oryza sativa*)
- **2021 Nov 3-5th** (In-person): 18th International Symposium on Rice Functional Genomics (ISRGF2021), in Barcelona, Spain
 - **Presentation:** Pan-Genome Study Reveals Evolutionary Insights into The Subpopulation Structure of Asian Rice (*Oryza sativa*)
- **2016 Sep. 19-20th** (In-person): 13th International Symposium on Pre-Harvest Sprouting in Cereals, in Perth, Western Australia.
 - **Presentation 1:** Genome-wide association analysis for pre-harvest sprouting resistance in a large germplasm collection of Chinese wheat landrace.
 - **Presentation 2:** Conferring resistance to pre-harvest sprouting in durum wheat by a QTL identified in *Triticum spelta*.
- **2015 Nov. 18-21th** (In-person): 2015 The 7th National Wheat Breeding and Genetics Conference. in Zhengzhou, Henan.
 - **Poster:** Genomics-based population genetics and selection for Pre-harvest Sprouting of Chinese wheat landraces.
- **2015 Aug. 17-19th** (In-person): The 6th Meeting of Genomics and Molecular Breeding of Wheat. in Yangling, Shaanxi.
 - **Poster:** Candidate locus association analysis of Pre-harvest Sprouting tolerance in Wheat.

Teaching experiences

- **2023 Apr. 17-19th:** The 1st Practice Data Bionano WorkShop (KAUST), Building 9, students' hall, KAUST, Thuwal
 - Workshop Teaching Assistant (TA)
- **2022 Oct 4-7th:** 19th International Symposium on Rice Functional Genomics (ISRGF2022), Le Meridien Beach Resort Hotel, Phuket, Thailand
 - **Workshop** (lead of the workshop): High-performance computing (HPC) - Accelerated Workflow and Software Tools for Plant Genomes: Data processing from Raw data to Variants

Other Activities

- **2023 May. 30th:** CDA Breaking the Boundaries
 - **Jury members**
- **2023 Mar. 6th:** Plant science family night
 - **Event** (group leader): The Puzzle of Plants & Life-DNA

Courses & Certificates

1. **Writing an effective scientific research article workshop & Writing Club** (hybrid, 2022-05 to Now)
2. **Become a Mentor Training Workshop** (in-person, 2023-05)
3. **Advanced Presentation Skills Workshop** (online, 2023-05)
4. **Step-by-step Guide to Write a Winning Research Grant Proposal Workshop** (online, 2023-05)
5. **Workshop on Molecular Evolution for 2022** (in-person, certificate 2022-05)
6. **NCGR 2022 Virtual Bioinformatics Workshop on Pangenomics** (online, certificate 2022-03)
7. **Get that Paper Written and Published WEBINAR** (online, 2022-01)
8. **Interviewing for an Academic Position course** (online, 2022-03)
9. **Nature Research Academies Webinar** (online, certificate 2022-05)
10. **KAUST Mentoring Program** (in-person, 2021-11)
11. **Higher Education Teaching Certificate** (online, Harvard BOK Higher Education Teaching Certificate 2021-10)
12. **Making the most of your postdoc - KAUST Summer** (online, system giraffepad, Imperial College London, 2021-08)
13. **Speak English Professionally: In Person, Online & On the Phone** (online, coursera, Georgia Institute of Technology, Course certificate, 2021-07)
14. **Designing Your Career** (online, edX, Fullbridge, Stanford Online, 2021-06)
15. **Self-Assessment – Developing Your Strengths** (online, edX, Fullbridge, Professional Certificate, 2021-05)
16. **Introduction to Genomic Technologies** (online, coursera, JOHNS HOPKINS, Course certificate, 2020-09)

References

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