

Zhouli Xie

Associate Professor, Huazhong Agricultural University, Wuhan, 430070, China

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WORK EXPERIENCE

Huazhong Agricultural University *Wuhan, China*

2023.11 - now

Associate Professor

- Research area: Nanoparticles effect on crops abiotic stress response through stress granule and liquid-liquid phase separation regulation; Nanoparticles development, application and detection

Peking University *Beijing, China*

2019.9 – 2023.10

Postdoc

- Supervisor: Professor Wei Wang
- Research area: Plants RNA binding proteins' liquid-liquid phase separation and stress granules regulation on cell translation inhibition

EDUCATION

Iowa State University *Ames, United States*

2013.8 – 2018.12

Ph.D. in Plant Biology

- Supervisor: Professor Yanhai Yin
- Dissertation Title: AP2/ERF and MYB Family Transcription Factors Regulate Brassinosteroid-Mediated Plant Growth and Stresses Responses in Arabidopsis

China Agricultural University *Beijing, China*

2010.9 – 2013.6

M.S of Agronomy in Plant Physiology

- Supervisor: Professor Zhaohu Li
- Thesis Title: Molecular and Physiological Mechanisms Study of a Plant Growth Regulator DPC in Soybean

Huazhong Agricultural University *Wuhan, China*

2006.9 – 2010.6

B.S of Agronomy in Plant Science and Technology

Supervisor: Professor Fazhan Qiu

- Thesis Title: Cytological Mechanism Study on the Formation of Haploid Inducted by Stock6 breeding line

GRANTS

PMO nanoparticles' regulation on rice high temperature resistance through stress granules 2024.1 – 2026.12

PI: Dr. Zhouli Xie

Independent science and technology innovation fund of Huazhong Agricultural University (510324032)

Nanoparticles' regulation on crops high temperature resistance 2024.1 – 2028.12

PI: Dr. Zhouli Xie

Hubei Hongshan laboratory high-level talents starting fee (105-11020122)

Salicylic Acid Binds and Promotes RBP47B Liquid-Liquid Phase Separation to Induce Stress Granule

Formation

2023.1 – 2025.12

PI: Dr. Zhouli Xie

National Natural Science Foundation of China (32200556)

Signaling Network for Brassinosteroid-Regulated Gene Expression in Arabidopsis

2013.1 – 2018.12

PI: Dr. Yanhai Yin

National Science Foundation of USA (1257631)

Role: Analyzed brassinosteroid-regulated gene expression under drought condition in Arabidopsis

Mechanisms of Plant Steroid Hormone Regulated Gene Expression in Arabidopsis

2012.1 – 2013.12

PI: Dr. Yanhai Yin

National Science Foundation of USA (1122166)

Role: Generated preliminary data, designed experimental approach for this funded

PUBLICATIONS

10. Xie Z. #, Zhao S. #, Tu Y., Liu E., Li Y., Wang X., Chen C., Zhai S., Qi J., Wu C., Wu H., Zhou M., Wang W. 2024.

Proteasome resides in and dismantles plant heat stress granules constitutively. **Mol Cell** 84(17):3320-3335. DOI:

10.1016/j.molcel.2024.07.033.

9. Wu C. #, Wang X. #, Li Y., Zhen W., Wang C., Wang X., Xie Z., Xu X., Guo S., Botella J.R., Zheng B., Wang

W., Song CP., Hu Z. 2024. Sequestration of DBR1 to stress granules promotes lariat intronic RNAs

accumulation for heat-stress tolerance. **Nat Commun** 15(1):7696. DOI:10.1038/s41467-024-52034-w.

8. Xie, Z.#, Zhao, S.#, Li, Y.#, Deng, Y., Li, H., Chen, C., Chen, X., Wang, X., Shi, Yabo., Shi, P., Tong, J., Li, Yue.,

Gutierrez-Beltran, E., Bozhkov, P., Qian. W., Zhou, Mian., Wang W. 2023. Phenolic acid-induced phase separation

and translation inhibition mediate plant interspecific competition. **Nat Plants** 9(9):1481-1499. DOI: 10.1038/s41477-

023-01499-6

7. Yu, C., Zhou, F., Wang, R., Ran, Z., Tan, W., Jiang, L., Cui, S., Xie, Z., Xiao, Y., Zhou, Y., and Duan, L. 2022. B2,

an abscisic acid mimic, improves salinity tolerance in winter wheat seedlings via improving activity of antioxidant

enzymes. **Front Plant Sci** 13. DOI: 10.3389/fpls.2022.916287

6. Xie, Z., Nolan, T., Jiang, H., Tang, B., Zhang, M., Li, Z., & Yin, Y. 2019. The AP2/ERF Transcription Factor TINY

modulates Brassinosteroid-regulated plant growth and drought response in Arabidopsis. **The Plant Cell** 31(8):1788-

1806. DOI: 10.1105/tpc.18.00918.

5. Xie, Z., Nolan, T.M., Jiang, H., and Yin, Y. 2019. AP2/ERF Transcription Factor Regulatory Networks in Hormone

and Abiotic Stress Responses in Arabidopsis. **Front Plant Sci** 10, 228. DOI: 10.3389/fpls.2019.00228

4. Jiang, H., Tang, B., **Xie, Z.**, Nolan, T., Ye, H., Song, G.Y., Walley, J., and Yin, Y. **2019**. GSK3-like kinase BIN2 phosphorylates RD26 to potentiate drought signaling in Arabidopsis. **The Plant journal** : for cell and molecular biology 100, 923-937. DOI: 10.1111/tpj.14484
3. Guo, H., Nolan, T.M., Song, G., Liu, S., **Xie, Z.**, Chen, J., Schnable, P.S., Walley, J.W., and Yin, Y. **2018**. FERONIA Receptor Kinase Contributes to Plant Immunity by Suppressing Jasmonic Acid Signaling in Arabidopsis thaliana. **Curr Biol** 28, 3316-3324 e3316. DOI:10.1016/j.cub.2018.07.078
2. Ye, H., Liu, S., Tang, B., Chen, J., **Xie, Z.**, Nolan, T. M., Jiang, H., Guo, H., Lin, H. Y., Li, L., Wang, Y., Tong, H., Zhang, M., Chu, C., Li, Z., Aluru, M., Aluru, S., Schnable, P. S., & Yin, Y. **2017**. RD26 mediates crosstalk between drought and brassinosteroid signalling pathways. **Nat Commun**, 8:14573. DOI:10.1038/ncomms14573.
1. Wang, X., Chen, J., **Xie, Z.**, Liu, S., Nolan, T., Ye, H., Zhang, M., Guo, H., Schnable, P. S., Li, Z., & Yin, Y. **2014**. Histone lysine methyltransferase SDG8 is involved in brassinosteroid-regulated gene expression in Arabidopsis thaliana. **Mol Plant**, 7(8): DOI: 1303-1315. 10.1093/mp/ssu056

TEACHING EXPERIENCE (Iowa State University)

Teaching Assistant

Undergraduate Course: Principles of Molecular Cell Biology 314 (grader)

Spring 2018

- Found the reading assignments related to Chapter topics and set up questions
- Graded assignments and exams to assess students' performance
- Clarified students' misunderstandings during office hours

Co-Instructor

Undergraduate Course: Biology 313 Lab (teacher)

Fall 2017 and Fall 2018

- Lectured two sections students (24 students each section) on molecular biology lab course including gene cloning to final sequencing, protein extraction to western blotting analysis, and yeast tool usage
- Guided students through performing molecular experiments and designing experiments to test scientific hypothesis
- Coordinated undergraduate teaching assistants to better work during the lab
- Graded assignments and exams to assess students' performance

Mentor

Graduate Student Peer-to-Peer Mentoring Program

Fall 2015 - Fall 2017

Undergraduate Student Mentoring Program

Fall 2014 - Spring 2015

- Mentored first-year Ph.D. students and undergraduate students in academic training and professional development
- Guided them design and conduct experiments, and prepare research reports
- Facilitated discussions surrounding the project though effectively communicated with them

Talks

2023 China Society for Plant Biology Academic Conference. Wuhan, China

April. 25 - 28, 2023

- Title: RBP47B mediates non-canonical salicylic acid perception to trigger stress granules formation through liquid-liquid phase separation

2021 National Plant Biology Postdoc Workshop. Kaifeng, China

June. 26 - 28, 2021

- Title: Liquid-liquid phase separation drives RBP47B-mediated stress granule formation to enhance plant stresses adaptation

Poster Presentations

Plant Biology MidWest 2018. Ames, USA Mar. 3 - 4, 2018

- Title: The AP2/ERF transcription factor TINY modulates Brassinosteroid-regulated plant growth and drought response in Arabidopsis

Plant Biology 2015. Minnesota, USA July. 26-30, 2015

- Title: The stability regulation of Arabidopsis H3K36 methyltransferase SDG8 by GSK3-like kinase BIN2

Plant Protein Phosphorylation Workshop 2014. Columbia, USA May. 28 - 30, 2014

- Title: Arabidopsis H3K36 methyltransferase SDG8 functions through interaction with IWSI and the phosphorylated Carboxyl-terminal Domain of RNA Polymerase II to modulates Brassinosteroid gene expression

LEADERSHIP

Plant Biology Graduate Organization *Iowa State University*

President *Fall 2014 - Spring 2015*

Vice President *Fall 2013 - Spring 2014*

- Organized faculty and students seminar series for the Interdepartmental Plant Biology (IPB) program
- Invited an off-campus speaker to present their research for IPB program

HONORS & AWARDS

- National Natural Science Foundation of China 2023.01 - 2025.12
- Postdoctoral Fellowship of Peking-Tsinghua Center for Life Sciences 2022.04 - 2024.02
- International Postdoctoral Exchange Fellowship 2019.09 - 2021.09
- 2015 GDCB Graduate Student Travel Award *Fall 2015*
- 2014 GDCB Graduate Student Travel Award *Spring 2014*
- HZAU Merit Student and Outstanding League Cadres Scholarship *Fall 2009*
- Outstanding Volunteer for HZAU'S 110th Anniversary *May 2009*