

Xuanyi Chen

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RESEARCH PROFILE

Aspiring plant scientist interested in the mechanisms by which plants sense and respond to environmental stresses, combining molecular genetics, cellular biology, and integrative multi-omics analyses.

EDUCATION

PhD in Genetics (Plant Molecular Genetics)

Sep 2021 – Dec 2025

Northwest A&F University, Yangling, China

Dissertation: Molecular mechanism of BR signaling pathway of regulating uptake and utilization of sulfur in *Arabidopsis thaliana*

Advisor: Professor Cun Wang

BSc in Biotechnology (Honors Diploma)

Sep 2017 – Jun 2021

Northwest A&F University, Yangling, China

RESEARCH EXPERIENCE

Postdoctoral Researcher

Jul 2026 – current

PI: Professor Myriam Charpentier

- Understanding the calcium signalling networks regulate and enhance root legume endosymbiosis.

Graduate Research Fellow

Jun 2021 – Dec 2025

Advisor: Professor Cun Wang

- Investigating molecular mechanisms underlying plant sulfur-deficiency responses, focusing on brassinosteroid and calcium signaling pathways.
- Integrated molecular genetics, biochemistry, cell biology, and multi-omics approaches.

Undergraduate Research Assistant – Epigenome Editing

Jun 2020 – Jun 2021

Advisor: Professor Israel Ausin

- Designed zinc finger–tagged SWR1 chromatin remodeling complex subunits to profile protein–DNA interactions.

Undergraduate Research Assistant – Virome Analysis

Sep 2018 – Jun 2020

Advisor: Professor Weimin Chen

- Characterized the rhizosphere virome of *Robinia pseudoacacia* L. and isolated bacteriophage strains.

Undergraduate Research Assistant – Bioinformatics Training

Sep 2017 – Jun 2018

Advisor: Professor Ruolin Yang

- Performed TCGA data mining and received foundational training in bioinformatics.

GRANT

Participant, National Natural Science Foundation of China (NSFC) 2021-2025

Principal Investigator: Professor Cun Wang

Total funding: 2,000,000 CNY (~290,000 USD)

Project Leader, Undergraduate Training Program for Innovation 2019-2021

Supervised by: Professor Weimin Chen

Total funding: 3,500 CNY (~500 USD)

PUBLICATIONS

Chen X., Yu Z., Guo W., Zhou Y., Wang C.#, Wang T.# (2025)

Brassinosteroid signaling promotes sulfate uptake under sulfur deficiency in *Arabidopsis*.

New Phytologist 248: 250–264.

Fang Y.*, Ju C.*, Javed L.*, Cao C., Deng Y., Gao Y., **Chen X.**, Sun L., Zhao Y., Wang C.# (2025)

Plasma membrane-associated calcium signaling modulates zinc homeostasis in *Arabidopsis*.

Science Bulletin 70: 1478-1490.

Jia M., **Chen X.**, Shi X., Fang Y., Gu Y.# (2023)

Nuclear transport receptor KA120 regulates molecular condensation of MAC3 to coordinate plant immune activation.

Cell Host & Microbe 31: 1685–1699.e7.

Wang T., **Chen X.**, Ju C.#, Wang C.# (2023)

Calcium signaling in plant mineral nutrition: From uptake to transport.

Plant Communications 4: 100678. (Highly cited review; Top 0.1% Hot paper in May 2025)

Chen X., Li S.#, Chen W., Meng Q. (2021)

Characters of light-sheet fluorescence microscope and its application.

Shengwujishu Jinzhan 11: 126–147. (Review in Chinese)

AWARDS & HONORS

National Scholarship for Doctoral Students 2025

First-Class Scholarship 2023

Second-Class Scholarship 2021, 2022, 2024

Advanced Undergraduate of Technological Innovation 2021

PROFESSIONAL SERVICE

Assistant Student Editor**Jul 2023 – Dec 2025***Stress Biology*

- Managed the journal's X (Twitter) and Bluesky social media platforms
- Assisted with the journal's participation in three academic conferences
- Processed and responded to email inquiries from Chinese authors

TECHNICAL SKILLS

Cell Biology: Confocal microscopy, BiFC assays.

Molecular Biology: qPCR, mutagenesis, ³²P labeling of protein phosphorylation analysis, Western blot, ChIP, EMSA, IP, reporter assays, CRISPR-based gene editing.

Plant Biology: Arabidopsis and wheat transformation, Arabidopsis hybridization, element content analysis.

Bioinformatics: R (proficient), Python (basic), RNA-seq, ChIP-seq, proteomics, alternative splicing, AlphaFold analysis.