

Zhou, Xi

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EDUCATION

China Agricultural University, Beijing, P. R. China

09/2022-present Master student majoring in Plant Nutrition

09/2018-07/2022 Undergraduate student majoring in Resources and Environmental Sciences

09/2018-07/2022 Undergraduate student minoring in Data Science and Big Data Technology

PAPERS AND PUBLICATIONS

Zhou X, Li X, Bei QC, Wu XJ, Xu GH, Xiao K-Q, Duan GL, Cui ZL, Liesack W, Peng JJ* (in prep), Salt stress reduces methane production by modulating soil microbiome activities in the anaerobic methanogenic food web.

Peng JJ[#], **Zhou X[#] (co-first author)**, Rensing C, Liesack W, Zhu Y-G* (2024) Soil microbial ecology through the lens of metatranscriptomics, *Soil Ecology Letters*.

Wu XJ, Bei SK, **Zhou X**, Luo Y, He ZB, Song CX, Yuan HM, Pivato B, Liesack W, Peng JJ* (2023) Metagenomic insights into genetic factors driving bacterial niche differentiation between bulk and rhizosphere soils, *Science of The Total Environment*.

Zhou X, Peng JJ, Virological insights into the soil microbiome and arable land capacity enhancement. Workshop on the Microbiome of soil-crop systems and Productivity Improvement, College of Resources and Environmental Sciences, China Agricultural University, Beijing, P. R. China. November 11, 2023. (Oral presentation)

Zhou X, Liesack W, Peng JJ, Metatranscriptomics resolves the detrimental impact of salt stress on the paddy soil methanogens into population-specific responses, The 11th Geomicrobiology Symposium, Chinese Society for Microbiology, Tianjin, P. R. China. June 9-11, 2023. (Poster, Best Poster Award)

Zhou X, Peng JJ, Soil Metatranscriptomics: Opportunities and Challenges, *Sino-European Microbial Omics Workshop for Young Scientist*, online. July 27, 2023. (Oral presentation)

RESEARCH

09/2022-present **Research on temperature-mediated host-virus interaction of rice fields by meta-omics**

Conceptualization, Investigation, Methodology, Software, Writing

- Built in-house multi-omics pipelines for virus-host identification and annotation.
- Studied the effects of temperature on the structure of soil methanogens and their viruses, and the carbon-processing food web.

Advisor: Jingjing Peng (jingjing.peng@cau.edu.cn)

10/2019-07/2024 **Beijing College Research Project on salt-affected paddy microbiome by metatranscriptomics**

Investigation, Methodology, Software, Writing

- Utilized double-RNA approach to explore the impacts of increasing salinities on the metabolic status of paddy soil bacterial and archaeal communities.

Advisor: Jingjing Peng (jingjing.peng@cau.edu.cn)

SKILLS

Language capacity

- Chinese Mother tongue
- Cantonese Mother tongue
- English Excellent (IELTS 7.0, L7.5, R7.0, W6.5, S7.0)
- Korean Basic communication

Laboratory skills

- DNA and RNA extraction and purification, cDNA synthesis
- qPCR
- Metatranscriptomics library construction
- Viral particle enrichment (mass extraction/ultracentrifugation)
- Gel electrophoresis, QUBIT, Agilent 2100 bioanalyzer

Programming and bioinformatics

- Data analysis and visualization: Python, R, MATLAB; Photoshop and Illustrator
- Data development: SQL, Linux systems, Bash, Hadoop, Hive, Spark
- AI and computer visual: PyTorch, Keras, Paddle; ANN, CNN, RNN
- Bioinformatics: Qiime2, Dada2, MEGAHIT, SPADes, phyloseq, Prokka, InterProScan, NCBI BLAST, DIAMOND, MEGAN, Kraken2, SortMeRNA, Trinity, Virsorter2, VIBRANT, DeepVirFinder, CheckV, DRAM

AWARDS

10/2023	Merit student award, CAU
10/2023	The 1 st prize scholarship for Master's Degree, CAU
06/2023	Best Poster Award of the 11th Geomicrobiology Symposium, Chinese Society for Microbiology
09/2021	The 1 st prize of the 7 th Beijing College Students Biology Knowledge Competition, Beijing Municipal Education Commission
03/2021	Successful Participant in Interdisciplinary Contest in Modeling, The Consortium for Mathematics and Its Applications (COMAP) online program, US

ACTIVITIES & TRAININGS

07/2023-present	President, CAU graduate student union
09/2022-02/2023	Cornell - CAU Joint Course "Agriculture, Food, and the Environment", Credit granted, A-level
02-04/2022	Volunteer in the 2022 Beijing Winter Olympic and Paralympic Games
03/2021-09/2021	Cornell Institute of Digital Agricultural Hackathon, Cornell University, US, Certificate granted
08/2019	Student Exchange Program in UC Davis, US, Certificate granted
07-08/2021	Research Assistant, School of Agriculture Economics and Rural Development, Renmin University of China

REFEREES

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