



Zhenglin Zhang

Postdoctoral Scholar, Earth System Science

Bio

BIO

Zhang is a climate-smart agronomist whose work contributes to increasing crop productivity with reduced environmental impact. During his PhD at UC Davis, Zhang focused on the impact that year-long fallows had on carbon-nitrogen cycling in California rice. Using robust field research, Zhang's results contributed to the development of sustainable nitrogen fertilizer guidelines and complete year-round greenhouse gas inventories for regional emissions estimations. In addition to empirical work, Zhang has also conducted multiple systematic reviews. The most notable was the development of a new framework for carbon balance accounting in rice systems, integrating key components such as greenhouse gas emissions and soil carbon change. Currently, Zhang is exploring scalable technical options to suppress methane emissions and reduce carbon footprint through alternating soil chemical conditions and atmospheric carbon capture. Together with that, he is also exploring the use of laser-based technologies for field-scale level methane flux measurements. "Feeding the world" was the promise he made at the start of his scientific journey – and one that he hopes to keep by testing bold ideas with great rigour.

PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of California Davis (2025)
- Bachelor of Science, University of California Davis (2021)

STANFORD ADVISORS

- Scott Fendorf, Postdoctoral Faculty Sponsor

LINKS

- [linkedin.com/in/zhang-zhenglin-plant-soil](https://www.linkedin.com/in/zhang-zhenglin-plant-soil): [linkedin.com/in/zhang-zhenglin-plant-soil](https://www.linkedin.com/in/zhang-zhenglin-plant-soil)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Climate change mitigation and sustainable nutrient management in agroecosystems

Publications

PUBLICATIONS

- **Agronomic performance and nitrogen management of continuous rice systems following a year-long fallow** *AGRONOMY JOURNAL*
Zhang, Z., Olk, D. C., Espino, L. A., Roel-Rezk, V., Linquist, B. A.
2025; 117 (5)

- **Physiological action of bioherbicides in weed control: a systematic review** *FRONTIERS IN AGRONOMY*
Zhang, Z., Becerra-Alvarez, A., Al-Khatib, K.
2025; 7
- **Greenhouse gas emissions altered by the introduction of a year-long fallow to continuous rice systems.** *Journal of environmental quality*
Zhang, Z., Fenster, T. L., Linnquist, B. A.
2025
- **Introduction of a Fallow Year to Continuous Rice Systems Enhances Crop Soil Nitrogen Uptake** *EUROPEAN JOURNAL OF SOIL SCIENCE*
Zhang, Z., Olk, D. C., Linnquist, B. A.
2025; 76 (1)