Guopeng Liang, Ph.D.

Department of Ecology and Evolutionary Biology, Yale University, New Haven, CT, USA

Guopeng.Liang@yale.edu | https://guopengliang.wixsite.com/ecosystem-ecology

EDUCATION

Ph.D. in *Biology* 2022

Utah State University, Logan, UT.
Advisors: Bonnie Waring and John Stark
Dissertation: Global change effects on carbon cycling in terrestrial ecosystems

M.S. in *Soil Science* 2016

Chinese Academy of Agricultural Sciences, Beijing, China.
Thesis: Effects of fertilization and tillage on soil respiration and biochemical properties in croplands

B.S. in *Agricultural Resources and Environment*/*Laws* 2013

Shandong Agricultural University, Tai'an, China

PROFESSIONAL EXPERIENCE

Brown Postdoctoral Fellow, Yale University 2024 – present

Advisor: Michelle Wong
Research: Roles of soil fertility in tree mortality and productivity

Institute for Global Change Biology Postdoctoral Exchange Fellow, University of Michigan 2024 – present

Synthesis Skills for Early Career Researchers Fellow, National Center for Ecological Analysis and Synthesis 2024 – present

Environmental Leadership and Mentoring Certificate Program Fellow, Yale School of the Environment 2024 – present

The American Geophysical Union College of Fellows Mentoring Network Fellow 2024 – present

Postdoctoral Associate, University of Minnesota 2022 – 2024

Advisor: Peter Reich
Research: Effects of climate change and biodiversity on soil carbon cycling in forests

RESEARCH INTERESTS

Global Change Ecology, Ecosystem Carbon Cycling, Plant Ecology, Soil Biogeochemistry, Plant-Soil-Microbe Interactions, Agricultural Management, Food Security, Environmental Sustainability

RESEARCH EXPERIENCE

I study the effects of climate change (e.g. warming, drought, nitrogen deposition, and elevated CO_2), agricultural management (e.g. inorganic and organic fertilization and tillage), and biodiversity on soil

carbon cycling and plant productivity by using multiple approaches (e.g. field study, incubation experiment, meta-analysis, DNA sequencing, isotope technique, and modeling). My research goal is to identify natural-based solutions to climate mitigation, soil health, and food security.

PEER-REVIEWED PUBLICATIONS (available at Google Scholar and ResearchGate)

(Google Scholar: H index = 24, 2200+ citations; * denotes corresponding author)

Sole author:

1. **Liang, G*** (2025) Tree diversity increases soil carbon accumulation. ***Nature Reviews Biodiversity***.
2. **Liang, G*** (2025) Global pattern of warming effects on microbial respiration is explained by soil microbial biomass carbon and nitrogen. ***CATENA***.
3. **Liang, G*** (2022) Nitrogen fertilization mitigates global food insecurity by increasing cereal yield and its stability. ***Global Food Security***.

First and/or corresponding author:

4. **Liang, G***., Sun, P., Waring, B., Fu, Z., Reich, P* (2025) Alleviating nitrogen and phosphorus limitation does not amplify potassium-induced increase in terrestrial biomass. ***Global Change Biology***.
5. **Liang, G***., Stefanski, A., Eddy, W., Bermudez, R., Montgomery, R., Hobbie, S., Rich, R., Reich, P* (2024) Soil respiration response to decade-long warming modulated by soil moisture in a boreal forest. ***Nature Geoscience***.
   Featured in The Michigan Daily, "New U-M research suggests carbon dioxide emissions from forest soil increasing as the climate warms", October 2024;
   Featured in The Science Daily, "A leaky sink: Carbon emissions from forest soil will likely grow with rising temperatures", September 2024;
   Reported by Earth.com, "Warming soils release more carbon than plants can replace", August 2024.
6. **Liang, G**., Stark, J., Waring, B (2023) Mineral reactivity determines root effects on soil organic carbon. ***Nature Communications***.
7. **Liang, G**., Reed, S., Stark, J., Waring, B (2023) Unraveling mechanisms underlying effects of wetting-drying cycles on soil respiration in a dryland. ***Biogeochemistry***.
8. **Liang, G***., Sun, P., Waring, B (2022) Nitrogen agronomic efficiency under nitrogen fertilization does not change over time in the long term: Evidence from 477 global studies. ***Soil and Tillage Research***.
9. Liu, X., Tan, S., Song, X., Wu, X., Zhao, G., Li, S., **Liang, G*** (2022) Response of soil organic carbon content to crop rotation and its controls: A global synthesis. ***Agriculture, Ecosystems & Environment***.
10. **Liang, G**., Wu, X., Cai, A., Dai, H., Zhou, L., Cai, D., Houssou, A., Gao, L., Wang, B., Li, S., Song, X., Wu, H (2021) Correlations among soil biochemical parameters, crop yield, and soil respiration vary with growth stage and soil depth under fertilization. ***Agronomy Journal***.
11. **Liang, G***., Luo, Y., Zhou, Z., Waring, B (2021) Nitrogen effects on plant productivity change at decadal time-scales. ***Global Ecology and Biogeography***.

12. **Liang, G**., Cai, A., Wu, H., Wu, X., Houssou, A., Ren, C., Wang, Z., Gao, L., Wang, B., Li, S., Song, X., Cai, D (2019) Soil biochemical parameters in the rhizosphere contribute more to changes in soil respiration and its components than those in the bulk soil under nitrogen application in croplands. ***Plant and Soil***.
13. **Liang, G**., Wu, H., Houssou, A., Cai, D., Wu, X., Gao, L., Wang, B., Li, S (2018) Soil respiration, glomalin content, and enzymatic activity response to straw application in a wheat-maize rotation system. ***Journal of Soils and Sediments***.
14. **Liang, G**., Houssou, A., Wu, H., Wu, X., Cai, D., Gao, L., Li, J., Wang, B., Li, S (2016) Soil nitrogen content and enzyme activities in the rhizosphere and non-rhizosphere of summer maize under different nitrogen application rates. ***Chinese Journal of Applied Ecology***. (in Chinese with English abstract)
15. **Liang, G**., Houssou, A., Wu, H., Cai, D., Wu, X., Gao, L., Li, J., Wang, B., Li, S (2015) Seasonal patterns of soil respiration and related soil biochemical properties under nitrogen addition in winter wheat field. ***PLoS ONE***.

Co-author:

1. Wang, L., See, C., Wang, H., Cao, R., **Liang, G**., Zhang, A., Wang, Z., Wang, Q., Wang, Z., Liu, B., Yang, W (2025) Soil fauna trophic multifunctionality mediates the release of elements from decomposing typhoon-generated leaf litter. ***Functional Ecology***.
2. Wang, X., Li, H., Liang, G., Li, Z., Qi, P., Xue, J., Chen, J., Wu, J (2025) Phosphorus Fertilization Reduces Soil Microbial Necromass Carbon Content in Tillage Layer of Dry Farmland on Loess Plateau. ***Agriculture***.
3. Zhou T., **Liang, G**., Reich, P., Delgado-Baquerizo, M., Wang, C., Zhou, Z (2024) Promoting effect of plant diversity on soil microbial functionality is amplified over time. ***One Earth***.
4. Willard, S., **Liang, G**., Adkins, S., Foley, K., Murray, J., Waring, B (2024) Land use drives the distribution of free, physically protected, and chemically protected soil organic carbon storage at a global scale. ***Global Change Biology***.
5. Li, S., Wu, X., Song, X., Liu, X., Gao, H., **Liang, G**., Zhang, M., Zheng, F., Yang, P (2024) Long-term nitrogen fertilization enhances crop yield potential in no-tillage systems through enhancing soil fertility. ***Resources, Conservation & Recycling***.
6. Liu, P., Wang, D., Li, Y., Liu, J., Cui, Y., **Liang, G**., Wang, C., Wang, C., Moorhead, D., Chen, J (2024) Crop conversion from annual to perennials: an effective strategy to affect soil multifunctionality. ***Agronomy***.
7. Wilcox, K., Chen, A., Avolio, M., Butler, E., Collins, S., Fisher, R., Keenan, T., Kiang, N., Knapp, A., Koerner, S., Kueppers, L., **Liang, G**., Lieungh, E., Loik, M., Luo, Y., Poulter, B., Reich, P., Renwick, K., Smith, M., Walker, A., Weng, E., Komatsu, K (2023) Accounting for herbaceous communities in process-based models will advance our understanding of "grassy" ecosystems. ***Global Change Biology***.
8. Li, Y., Li, Y., Zhang, Q., **Liang, G**., Carmona, C., Kim, D., Yang, M., Yao, B., Xue, J., Xiang, Y., Shen, Y (2023) Enhancing soil carbon and nitrogen through grassland conversion from degraded croplands in China: Assessing magnitudes and identifying key drivers of phosphorus reduction. ***Soil and Tillage Research***.

9. Liu, X., Song, X., Li, S., **Liang, G**., Wu, X (2023) Understanding how conservation tillage promotes soil carbon accumulation: Insights into extracellular enzyme activities and carbon flows between aggregate fractions. ***Science of The Total Environment***.
10. Li, S., Jiao, L., Wu, X., Song, X., Liu, X., Gao, H., Han, Z., Lu, J., **Liang, G** (2023) Negative pressure irrigation as a potential technique for increasing vegetable yields and decreasing nitrous oxide emissions. ***Scientia Horticulturae***.
11. Li, S., Liu, X., Wu, X., Lu, J., Abdelrhman, A., **Liang, G** (2023) Factors governing soil hydrological function under long-term tillage practices: Insight into soil water repellency. ***Soil Science Society of America Journal***.
12. Ren, T., Tang, S., Han, T., Wang, B., Zhou, Z., **Liang, G**., Cai, A (2023) Positive rhizospheric effects on soil carbon are primarily controlled by abiotic rather than biotic factors across global agroecosystems. ***Geoderma***.
13. Gao, H., Xi, Y., Wu, X., Pei, X., **Liang, G**., Bai, J., Song, X., Zhang, M., Liu, X., Han, Z., Zhao, G., Li, S (2023) Partial substitution of manure reduces nitrous oxide emission with maintained yield in a winter wheat crop. ***Journal of Environmental Management***.
14. Lu, J., Li, S., Wu, X., **Liang, G**., Gao, C., Li, J., Jin, D., Wang, B., Zhang, M., Zheng, F., Degré, A (2023) The dominant microorganisms vary with aggregates sizes in promoting soil carbon accumulation under straw application. ***Archives of Agronomy and Soil Science***.
15. Yin, S., **Liang, G**., Wang, C., Zhou, Z (2022) Asynchronous seasonal patterns of soil microorganisms and plants across biomes: A global synthesis. ***Soil Biology and Biochemistry***.
16. Song, X., Liu, X., **Liang, G**., Li, S., Li, J., Zhang, M., Zheng, F., Ding, W., Wu, X., Wu, H (2022) Positive priming effect explained by microbial nitrogen mining and stoichiometric decomposition at different stages. ***Soil Biology and Biochemistry***.
17. Liu, X., Li, Q., Tan, S., Wu, X., Song, X., Gao, H., Han, Z., Jia, A., **Liang, G**., Li, S (2022) Evaluation of carbon mineralization and its temperature sensitivity in different soil aggregates and moisture regimes: A 21-year tillage experiment. ***Science of the Total Environment***.
18. Wen, J., Brahney, J., Lin, Y., Ma, Z., Sun, N., Zheng, J., Ji, H., Kang, H., Du, B., **Liang, G**., Umair, M., Liu, C (2022) The scaling of leaf nitrogen and phosphorus along a phosphorus availability gradient in a subtropical forest. ***Plant Ecology***.
19. Waring, B., Gee, A., **Liang, G**., Adkins, S (2022) A quantitative analysis of microbial community structure-function relationships in plant litter decay. ***iScience***.
20. Song, X., Li, J., Liu, X., **Liang, G**., Li, S., Zhang, M., Zheng, F., Wang, B., Wu, X., Wu, H (2022) Altered microbial resource limitation regulates soil organic carbon sequestration based on ecoenzyme stoichiometry under long-term tillage systems. ***Land Degradation and Development***.
21. Liu, X., Wu, X., **Liang, G**., Zheng, F., Zhang, M., Li, S (2021) A global meta-analysis of the impacts of no-tillage on soil aggregation and aggregate-associated organic carbon. ***Land Degradation and Development***.
22. Lu, J., Li, S., **Liang, G**., Wu, X., Zhang, Q., Gao, C., Li, J., Jin, D., Zheng, F., Zhang, M., Abdelrhman, A., Degré, A (2021) The contribution of microorganisms to soil organic carbon accumulation under fertilization varies among aggregate size classes. ***Agronomy***.

23. Xu, H., Cai, A., Wu, D., **Liang, G**., Xiao, J., Xu, M., Colinet, G., Zhang, W (2021) Effects of biochar application on crop productivity, soil carbon sequestration, and global warming potential controlled by biochar C: N ratio and soil pH: A global meta-analysis. ***Soil and Tillage Research***.
24. Li, S., Tan, D., Wu, X., Degré, A., Long, H., Zhang, S., Lu, J., Gao, L., Zheng, F., Liu, X., **Liang, G** (2021) Negative pressure irrigation increases vegetable water productivity and nitrogen use efficiency by improving soil water and NO_3^--N distributions. ***Agricultural Water Management***.
25. Li, S., Lu, J., **Liang, G**., Wu, X., Zhang, M., Plougonven, E., Wang, Y., Gao, L., Abdelrhman, A., Song, X., Liu, X., Degré, A (2021) Factors governing soil water repellency under tillage management: The role of pore structure and hydrophobic substances. ***Land Degradation and Development***.
26. Cai, A., **Liang, G**., Yang, W., Zhu, J., Han, T., Zhang, W., Xu, M (2021) Patterns and driving factors of litter decomposition across Chinese terrestrial ecosystems. ***Journal of Cleaner Production***.
27. Li, Y., Li, Z., Cui S., **Liang, G**., Zhang, Q (2021) Microbial-derived carbon components are critical for enhancing soil organic carbon in no-tillage croplands: A global perspective. ***Soil and Tillage Research***.
28. Li, S., Wu, X., **Liang, G**., Gao, L., Wang, B., Lu, J., Abdelrhman, A., Song, X., Zhang, M., Zheng, F., Degré, A (2020) Is least limiting water range a useful indicator of the impact of tillage management on maize yield? ***Soil and Tillage Research***.
29. Wilcox, K., Komatsu, K., Avolio, M., LeMoine, N., **C2E consortium** (2020) Improving collaborations between empiricists and modelers to advance grassland community dynamics in ecosystem models. ***New Phytologist***.
30. Cai, A., Chang, N., Zhang, W., **Liang, G**., Zhang, X., Hou, E., Jiang, L., Chen, X., Xu, M., Luo, Y (2020) The spatial patterns of litter turnover time in Chinese terrestrial ecosystems. ***European Journal of Soil Science***.
31. Gao, L., Wang, B., Li, S., Han, Y., Zhang, X., Gong, D., Ma, M., **Liang, G**., Wu, H., Wu, X., Cai, D., Degré, A (2019) Effects of different long-term tillage systems on the composition of organic matter by 13C CP/TOSS NMR in physical fractions in the Loess Plateau of China. ***Soil and Tillage Research***.
32. Wang, J., Yang, Q., Qiao, Y., Zhai, D., Jiang, L., **Liang, G**., Sun, X., Wei, N., Wang, X., Xia, J (2019) Relative contributions of biotic and abiotic factors to the spatial variation of litter stock in a mature subtropical forest. ***Journal of Plant Ecology***.
33. Cai, A., Xu, M., Wang, B., Zhang, W., **Liang, G**., Hou, E., Luo, Y (2019) Manure acts as a better fertilizer for increasing crop yields than synthetic fertilizer does by improving soil fertility. ***Soil and Tillage Research***.
34. Wang, B., Yu, W., Wu, X., Gao, L., Li, J., Li, S., Song, X., Liu, C., Li, Q., **Liang, G**., Cai, D., Zhang, J (2019) Effect of straw addition on the formation of aggregates and accumulation of organic carbon in dryland soil. ***Scientia Agricultura Sinica***. (in Chinese with English abstract)
35. Qiao, Y., Wang, J., **Liang, G**., Du, Z., Zhou, J., Zhu, C., Huang, K., Zhou, X., Luo, Y., Yan, L., Xia, J (2019) Global variation of soil microbial carbon-use efficiency in relation to growth temperature and substrate supply. ***Scientific Reports***.

36. Wang, B., Gao, L., Yu, W., Wei, X., Li, J., Li, S., Song, X., **Liang, G**., Cai, D., Wu, X (2019) Distribution of soil aggregates and organic carbon in deep soil under long-term conservation tillage with residual retention in dryland. ***Journal of Arid Land***.
37. Gao, L., Wang, B., Li, S., Wu, H., Wu, X., **Liang, G**., Gong, D., Zhang, X., Cai, D., Degré, A (2019) Soil wet aggregate distribution and pore size distribution under different tillage systems after 16 years in the Loess Plateau of China. ***Catena***.
38. Cai, A., **Liang, G**., Zhang, X., Zhang, W., Li, L., Rui, Y., Xu, M., Luo, Y (2018) Long-term straw decomposition in agro-ecosystems described by a unified three-exponentiation equation with thermal time. ***Science of the Total Environment***.
39. Song, X., Wu, H., Wu, X., Li, Q., Wang, B., Li, S., **Liang, G**., Li, J., Liu, C., Zhang, M (2018) Long-term conservation tillage improves surface soil carbon and nitrogen content and rhizosphere soil enzyme activities. ***Journal of Plant Nutrition and Fertilizer***. (in Chinese with English abstract)
40. Li, S., Wu, X., Long, H., Zhang, S., Wang, X., **Liang, G**., Gao, L., Li, J., Wang, B., Hao, X., Li, J., Zhang, S (2017) Water and nitrogen use efficiencies of cucumber under negatively pressurized fertigation. ***Journal of Plant Nutrition and Fertilizer***. (in Chinese with English abstract)
41. Gao, L., Becker, E., **Liang, G**., Houssou, A., Wu, H., Wu, X., Cai, D., Degré, A (2017) Effect of different tillage systems on aggregate structure and inner distribution of organic carbon. ***Geoderma***.
42. Li, S., Wu, X., Dang J., Pei, X., Gao, L., Li, J., Wang, B., **Liang, G**., Long, H (2017) Effects of negative pressure irrigation on yield, quality and water and nitrogen use efficiency of cucumber. ***Soil and Fertilizer Sciences in China***. (in Chinese with English abstract)
43. Houssou, A., **Liang, G**., Gao, L., Li, J., Wu, X., Wu, H., Wang, X., Cai, D (2016) Effect of conservation tillage on soil respiration rate and water content under wheat/maize system in North China Plain. ***Journal of Soil Science and Environmental Management***.
44. Houssou, A., **Liang, G**., Gao, L., Wu, X., Wu, H., Wang, X., Cai, D (2015) Effect of Conservation Tillage on Soil Respiration, Organic Carbon, Moisture and Yield of Wheat/Maize System on North China Plain. ***International Journal of Science and Research***.
45. Li, J., Wu, H., Wu, X., Cai, D., Wang, B., **Liang, G**., Yao, Y., Lv, J (2015) Effects of 15-year conservation tillage on soil and aggregate organic carbon sequestration in the Loess Hilly Region of China. ***Scientia Agricultura Sinica***. (in Chinese with English abstract)
46. Wang, B., Wu, X., Yu, W., Yang, Y., Wang, X., Li, J., **Liang, G**., Cai, D (2015) Different carbon and nitrogen managements on soil respiration of spring maize farmland. ***Soil and Fertilizer Sciences in China***. (in Chinese with English abstract)
47. Dou, Q., Wang, J., Yin, B., **Liang, G**., Cui, X (2015) Alleviating effects of exogenous EBR on tomato seedlings during copper stress. ***Plant Physiology Journal***. (in Chinese with English abstract)
48. Wang, B., Cai, D., Wu, X., Li, J., **Liang, G**., Yu, W., Wang, X., Yang, Y., Wang, X (2015) Effects of long-term conservation tillage on soil organic carbon, corn yield and water utilization. ***Journal of Plant Nutrition and Fertilizer***. (in Chinese with English abstract)

49. Zhang, M., **Liang, G**., Jiang, C., Cui, X (2014) Exogenous nitric oxide involved in the accumulation and subcellular distribution of Fe, Zn, and Mn in tomato seedlings under copper stress. ***Journal of Plant Nutrition and Fertilizer***. (in Chinese with English abstract)
50. Yin, B., **Liang, G**., Jia, W., Cui, X (2014) Exogenous EBR mediated the plant growth and absorption and accumulation of Cu, Fe, and Zn in tomato seedlings under Cu stress. ***Chinese Journal of Eco-Agriculture***. (in Chinese with English abstract)

TEACHING EXPERIENCE

- Teaching Assistant, Biology lab. Utah State University, Fall 2019.
- Teaching Assistant, Microbiology lab. Utah State University, Spring 2019.
- Teaching Assistant, Agricultural Water Resources and Utilization, Chinese Academy of Agricultural Sciences, Spring 2014.
- Teaching Assistant, Modern Soil Tillage, Chinese Academy of Agricultural Sciences, Fall 2013.

MENTORING EXPERIENCE

- Yundi Bai (2020 - 2021), master's student at Imperial College London.
- Karen Foley (2020), a graduate technician at Utah State University.
- Camilla Moses (2020 - 2021), an undergraduate technician at Utah State University.
- Jalynn Jones (2019 - 2021), an undergraduate technician at Utah State University.
- Preston Christensen (2018 - 2019), an undergraduate technician at Utah State University.

ACADEMIC SERVICE

- **Associate editor** for ***Global Ecology and Biogeography*** (2025-present) and ***Soil Use and Management*** (2023-present)
- **Subject-matter Editor** for ***Ecological Monographs*** (2025-present)
- **Editorial board member** for ***Communications Earth and Environment*** (2025-present)
- **Section editor** for ***Plant and Soil*** (2025-present)
- **Journal Club Panelist** for ***Proceedings of the National Academy of Sciences of the United States of America*** (2025-present)
- **Editorial board** for ***Applied Soil Ecology*** (2025-present)
- **Guest editor** for ***Agronomy***, ***Water***, and ***Land*** (2021, 2022, 2024)
- **Organizer** for the oral session entitled "Microbial mechanisms of soil carbon cycling response to environmental change" during the Ecological Society of America annual meeting (2025)
- **Reviewer** for USDA NIFA grants (2024)
- **Journal peer review** (> 120 reviews, verified by **Web of Science**): Agricultural Water Management, Agricultural and Forest Meteorology, Agronomy, Applied Soil Ecology, Archives of Agronomy and Soil Science, Biogeoscience, CATENA, Ecology, Environmental Microbiology, Environmental Research, Field Crops Research, Geoderma, Global Change Biology, Global Ecology and Biogeography, Heliyon, Journal of Agronomy and Crop Science, Journal of Environmental Management, Journal of Cleaner Production, Land Degradation & Development, Plant & Soil, PLOS ONE, PNAS, Soil Biology & Biochemistry, Soil & Tillage Research
- **Member** of Belonging committee of **Yale Postdoctoral Association** (2025-present)

- **Co-chair** for **the Social and Cultural sub-committee of the Asian Network at Yale University** (2024-present)
- **Member** of the **AGU Biogeosciences Section Fall Meeting Planning Committee** (2024-present)
- Committee **member** of the Natural Sciences subgroup of the SPHERE Community of Practice of the **National Postdoctoral Association** (2024-present)
- Committee **member** of the Career Development of the **Association of Chinese Students and Scholars at Yale** (2024-present)
- **Postdoc representative** for **the Association of Chinese Soil and Plant Scientists in North America** (2023-present)
- **Judge** for the Murray F. Buell Award (the best oral presentation) at the ESA meeting in 2024
- **Grants and Award Chair** for the **Postdoc Board** of the College of Food, Agricultural, and Natural Resource Sciences at the University of Minnesota (2023-2024)
- **Abstract reviewer** for the 2024 Research Symposium sponsored by the College of Food, Agricultural, and Natural Resource Sciences at the University of Minnesota
- **Reviewer** for the Outstanding Student Presentation Awards at the AGU meeting in 2023
- **Proposal reviewer** for the 2019 Biology Graduate Student Association (BGSA) award sponsored by the Department of Biology at Utah State University
- **Member** of both the Ecology Center Seminar Committee in 2019 and the Biology Department Seminar Committee in 2021 at Utah State University to invite and host seminar speakers

GRANTS

- Soil carbon dynamics under global change. Funded by Cedar Creek Long-term Ecological Research Site, 2024, Co-PI, $20,000.
- Synthesis Skills for Early Career Researchers Course. Funded by the LTER Network and National Center for Ecological Analysis and Synthesis, 2024, Participant, $2,000.
- Modeled carbon cycle responses to altered precipitation and interannual variation in desert grasslands. Funded by Sevilleta Long-term Ecological Research Site, 2018, PI, $4,000.
- The impacts of manure on vegetable growth. Funded by Tai'an Environmental Protection Agency, China, 2011, PI, $1,000.

AWARDS

- **Biogeosciences Leaders of Tomorrow, 2025**

Sponsored by the American Geophysical Union and Journal of Geophysical Research-Biogeosciences

- **Brown Postdoctoral Fellow, 2024**

Sponsored by Yale University

- **IGCB Postdoctoral Exchange Fellow, 2024**

Sponsored by the Institute for Global Change Biology at the University of Michigan

- **Synthesis Skills for Early Career Researchers Fellow, 2024**

Sponsored by the National Center for Ecological Analysis and Synthesis

- **Stanford/Elsevier's Top 2% Scientist (Field: Agriculture, Fisheries & Forestry), 2024**

Sponsored by Sandford University and Elsevier

- **Sino-Eco Young Investigator Paper Award ($150), 2024**

Sponsored by the Sino-Ecologists Association Overseas

- **The Biogeosciences Section's Gene E. Likens Award ($250), 2024**

Sponsored by the Biogeosciences Section of the Ecological Society of America

- **Travel Award for the 2024 Geosciences Congressional Visits Day ($900), 2024**

Sponsored by the American Geophysical Union

- **Yale Postdoctoral Scholars Travel Fund Award ($2,000), 2024**

Sponsored by Postdoctoral Affairs at Yale University

- **ESA2024 Registration Grant ($530), 2024**

Sponsored by the Ecological Society of American

- **U.S. Carbon Program Leadership Award ($2,000), 2023**

Sponsored by NASA, NOAA, USDA, and USFS

- **Joseph E. Greaves Endowed Scholarship ($3,000), 2021**

Sponsored by Utah State University

- **Travel Award for attending the SSSA meeting ($500), 2020**

Sponsored by Utah State University

- **IPNI Scholarship ($2,000), 2016**

Sponsored by the International Plant Nutrition Institute (IPNI)

- **Monsanto Scholarship ($1,000), 2016**

Sponsored by Monsanto Company

- **Best Oral Presentation, 2016**

Sponsored by Symposium for Chinese Young Soil Scientists

- **Academic Scholarship, 2013-2014**

Sponsored by the Chinese Academy of Agricultural Sciences

- **Outstanding Student in Social Work, 2011-2012**

Sponsored by Shandong Agricultural University

- **Academic Scholarship, 2011-2012**

Sponsored by Shandong Agricultural University

- **Second prize in the Environmental Design Contest, 2011**

Sponsored by the Shandong Society of Environmental Sciences

ORAL PRESENTATIONS

- **Liang, G**. How to protect Earth? ***Yale University-Calvin Hill Day Care Center***, New Haven, CT, 2025.
- **Liang, G**. Effects of environmental change and agricultural management on terrestrial carbon cycling. ***University of Louisiana***, Lafayette, LA, 2024.
- **Liang, G**. Global pattern of warming effects on microbial respiration is explained by soil microbial biomass carbon and nitrogen. ***ESA meeting***, Long Beach, CA, 2024.
- **Liang, G**., Stefanski, A., Eddy, W., Bermudez, R., Montgomery, R., Hobbie, S., Rich, R., Reich, P. Soil moisture regulates the response of soil respiration to long-term warming in a southern boreal forest. ***ESA meeting***, Portland, OR, 2023.

- **Liang, G**., Reed, S., Stark, J., Waring, B. Effects of multiple global change factors on soil respiration in a dryland ecosystem. ***ASA, CSSA, SSSA International Annual Meeting***, Salt Lake City, UT, 2021.
- **Liang, G**., Luo, Y., Zhou, Z., Waring, B. Nitrogen effects on plant productivity change at decadal time scales. ***ESA meeting***, Long Beach, CA, 2021.