

Langlang Li
Stanford University
Postdoctoral scholar
Department of Earth System Science
Green Earth Science, Room 203
Stanford, CA, USA, 94305
<https://profiles.stanford.edu/langlang-li>

EDUCATION

2026: **Ph.D.**, Earth and Planetary Science, *University of California, Berkeley, CA, USA*
Dissertation: *Mechanisms and dynamics linking deep root nutrient acquisition, bedrock weathering, and river solute export in a mountainous watershed*
Dissertation Co-chairs: Prof. Benjamin Gilbert, Prof. Jillian Banfield

2020: **M.S.**, Environmental Science, *Peking University, China*
Advisor: Prof. Dongqiang Zhu

2017: **B. E.**, Environmental Engineering, *Hunan Agricultural University, China*

EXPERIENCE

09/2026 – Present: Postdoctoral scholar, *Stanford University, USA*
Advisor: Prof. Kate Maher

08/2021 – 08/2026: Research affiliate, *Lawrence Berkeley National Laboratory, USA*
Advisor: Prof. Benjamin Gilbert

07/2020 – 01/2021: Research associate, *Peking University, China*
Advisor: Prof. Dongqiang Zhu

SELECTED PUBLICATIONS

(Authors underlined are corresponding authors, ORCID: 0000-0001-8153-241X)

Li, L., Molins, S., Christensen, J., Dong, W., Beutler, C., Williams, K., Maher, K., Gilbert, B., 2026. Hydrological control of dynamic river export from silicate versus carbonate weathering in sedimentary bedrock. (In prep)

Li, L., Munoz, N., Velickovic, D., Trejo, J., Bone, S., Dong, W., Bill, M., Zhang, Y., Sorensen, P., Qi, Y., Karaoz, U., Christensen, J., Moreno, A., Velickovic, M., Beutler, C., Bouskill, N., Williams, K., Brodie, E., Gilbert, B., 2026. Bedrock phosphorus acquisition and uplift by sagebrush via a synergistic deep root exudation strategy. (In revision, *Science Advances*)

Li, L., Christensen, J.N., Bill, M., Dong, W., Wu, Y., Beutler, C., Sprenger, M., Gulick, B.W., Bone, S.E., Faybishenko, B. and Sanders, J., Gilbert, B., 2026. Depth of nutrient uptake by deep-rooted plants is regulated by water availability. *Proceedings of the National Academy of Sciences*, 123(13), p.e2528407123.

Li, L., Wang, X., Fu, H., Qu, X., Chen, J., Tao, S., & **Zhu, D.** (2020). Dissolved black carbon facilitates photoreduction of Hg (II) to Hg (0) and reduces mercury uptake by lettuce (*Lactuca sativa L.*). *Environmental Science & Technology*, 54(18), 11137-11145.

OTHER PUBLICATIONS

Qi, Y., Borglin, S., **Li, L.**, Dong, W., Bill, M., Hao, Z., Pallud, C. and Gilbert, B., 2025. Methanogenesis and Acetogenesis in Hydrogenotrophy with Carbonate Minerals: Dependence on Mineral Surface Area, Biofilm Growth, and Microbial Community. *Environmental Science & Technology*, 59(33), pp.17485-17495.

Luo, S., **Li, L.**, Chen, A., Zeng, Q., Xia, H., & Gu, J. D. (2017). Biosorption of diethyl phthalate ester by living and nonliving Burkholderia cepacia and the role of its cell surface components. *Chemosphere*, 178, 187-196.

Carrero S. et al., (**Li, L.**, 1 of many authors). The mechanism of the sedimentary bedrock selenium pump. (In prep)

CONFERENCE POSTER/TALK

Li, L., Christensen, J., Bill, M., Munoz, N., Karaoz, U., Bouskill, N., Williams, K., Gilbert B., 2026. Dynamics and pathways of deep root nutrient acquisition traversing the soil – saprolite interface. *In Goldschmidt 2026 Conference*.

Li, L., Munoz, N., Velickovic, D., Bone, S., Dong, W., Bill, M., Sorensen, P., Christensen, J., Beutler C., Bouskill, N., Williams, K., Brodie, E., Banfield J., Gilbert, B., 2025. Sagebrush root metabolites reveal the strategy of phosphorus and iron uptake by shallow and deep roots. *In 2025 AGU Fall Meeting Abstracts*.

Bill, M., Sprenger, M., Carroll, R., **Li, L.**, Gilbert, B., Brodie, E., Williams, K., 2025. Oxygen and Hydrogen Isotopes and Water Concentrations in Soil and Xylem to Constrain the Water Cycle in a Montane Ecosystem (East River, Colorado). *In 2025 AGU Fall Meeting Abstracts*.

Carrero, S., Arora, B., Beutler, C., Bone, S.E., Borglin, S., Brown, W., Christensen, J.N., Dong, W., Henderson, A.N., **Li, L.** and Newman, A.W., 2024, August. The Mechanism of the Sedimentary Bedrock Selenium Pump. *In 2024 Goldschmidt Conference*.

Gulick, B., **Li, L.**, Hao, Z., Dong, W., Razumtcev, A. and Gilbert, B., 2023, December. Unraveling the Secrets of Sagebrush: A Geochemical Analysis of Plant Tissues and Water Distribution in Soils Near the East River in Colorado. *In AGU Fall Meeting Abstracts*.

Qi, Y., Borglin, S.E., **Li, L.**, Dong, W., Bill, M. and Gilbert, B., 2023, December. Carbonate Mineral Dissolution Controls the Rates of Hydrogenotrophic Methanogenesis and Acetogenesis by Microbial Communities. *In AGU Fall Meeting Abstracts*.

Hao, Z., Worsham, M., Ruchte, B., **Li, L.**, Gulick, B., Bhattacharjee, A., Bone, S., Razumtcev, A., Gilbert, B., Kueppers, L.M. and Sprenger, M., 2023, December. Toward Understanding Physiological Responses of Plants to Microclimate Changes in a Watershed with Molecular and Elemental Dendrochemistry. *In AGU Fall Meeting Abstracts*.

Bill, M., Sorensen, P., Bouskill, N., Chadwick, D., Newcomer, M.E., Naughton, H., DiGuseppe, A., Gilbert, B., **Li, L.**, Stolze, L. and Wu, Y., 2023, December. Carbon and Nitrogen Reassignment from Plant to Soil in a Montane Ecosystem (East River, Colorado). *In AGU Fall Meeting Abstracts*.

Li, L., Christensen, J.N., Hao, Z. and Gilbert, B., 2023, July. Radiogenic strontium isotope ratios tracing nutrient from fractured shale to sagebrush. *In Goldschmidt 2023 Conference*.

Qi, Y., Borglin, S., **Li, L.**, Dong, W., Schichnes, D., Lisabeth, H., Bill, M. and Gilbert, B., 2023, July. Mineral dissolution controls the rate of methanogenesis by hydrogenotrophic microbial communities utilizing carbonates. *In Goldschmidt 2023 Conference*.

PROFESSIONAL ACTIVITY

Reviewer for *Environmental Science & Technology*; *Journal of Geophysical Research – Biogeoscience*; *Vadose Zone Journal*

PRIMARY COURSE TEACHING

2022 Spring: Lead teaching assistant, Earth and Planetary Science 331, *Geochemistry*; *University of California, Berkeley*

2025 Fall: Graduate student instructor, Earth and Planetary Science 80, *Environmental Earth Science*; *University of California, Berkeley*

PROPOSAL AWARDS

Gilbert, B., **Li, L.**, Brodie, E., 2022. Rhizosphere promoted rock weathering and nutrient cycling in deep shale fractures. (*EMSL Exploratory Research*)

Li, L., Hao, Z., Gilbert, B., 2023. Phosphorus speciation and availability in soil and fractured weathering shale. (*SSRL rapid access*)

Li, L., Bone, S., Qi, Y., Dong, W., Gilbert B., 2024. The role and identity of root metabolites on fractured shale weathering in the sagebrush rhizosphere. (*SSRL Standard*)