

Fiona S. Liu

Dept of Civil & Environmental Engineering

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Education

2022 - Present **PhD, The Pennsylvania State University**, Civil and Environmental Engineering,
Committee: Li Li (co-chair), Jason Kaye (co-chair), Jay Regan, Antonia Hadjimichael

2018 - 2022 **BS, University of Connecticut**, Dual Degrees
Ecology and Evolutionary Biology, Natural Resources and the Environment
University Scholar, McNair Scholar

Publications

PEER-REVIEWED JOURNAL ARTICLES

Briggs, M. A., Jackson, K. E., **Liu, F.**, Moore, E. M., Bisson, A., & Helton, A. M., 2021, Exploring local riverbank sediment controls on the occurrence of preferential groundwater discharge points. *Water*, 14(1), 11.

Kerins, D., Knapp, A. S., **Liu, F. S.**, Smykalov, V.D., Berzonsky, M.P., Vierbicher, A., Sadayappan, K., Stewart, B., Andrews, E.M., Sullivan, P.L., Barnard, H.R., Seibert, J., McPhillips, L.E., Singha, K., Li, L., 2025, Controls from above and below: snow, soil, and steepness drive diverging trends of subsurface water and streamflow dynamics. *Hydrological Processes*

Bisson, A.M., **Liu, F.**, Moore, E.M., Briggs, M.A., & Helton, A.M., 2025, Preferential groundwater discharges along stream corridors are disregarded sources of greenhouse gases. *Journal of Geophysical Research: Biogeosciences*

IN-REVIEW JOURNAL ARTICLES

Liu, F. S., Kerins, D., Ramesh S., Sullivan, P.L., Billings, S.A., Hirmas, D.R., Ajami, H., Flores, A., Segura, C., Li, L. (In Review) What happens below? Contrasting subsurface water and dissolved carbon dynamics beneath young and old forests.

IN PREPARATION JOURNAL ARTICLES

Liu, F. S., Husic, A., Li, L. Chasing storms across landscapes: Event-based insights into stream water quality along a rural-urban gradient.

OTHER PUBLICATIONS

Moore, E.M., Haynes, A.B., Jackson, K.E., Bisson, A.M., Barclay, J.R., **Liu, F.**, Briggs, M.A., and Helton, A.M., 2023, Biogeochemical and source characteristics of preferential groundwater discharge in the Farmington River watershed (Connecticut and Massachusetts, 2017 - 2021): U.S. Geological Survey data release, <https://doi.org/10.5066/P941XKST>.

Conference and Presentations

March 2025. *Beneath the Green: Contrasting dynamics of hydrological and dissolved carbon in relatively young and old forests*, Critical Zone Early Career Workshop

February 2025. *Invisible pulses: subsurface processes shaping water quality under land use and climate extremes*, Department of Ecosystem Science and Management, Kaye Lab Research Talk, The Pennsylvania State University

October 2024. *Impacts of land use and climate change on river water quality*, Department of Geosciences, Hadjimichael Lab Research Talk, The Pennsylvania State University

November 2023. *Comparing dissolved carbon processes in young vs old growth forests: a shallow and deep subsurface perspective*, Civil and Environmental Engineering Department Seminar, The Pennsylvania State University

Liu, F., Zarnaghsh, A., Husic, A., Li, L., Chasing Storms: Event-based insights into stream water quality along a rural-urban gradient, *Gordon Research Conference on Catchment Science*, Andover NH, June 2025 (poster)

Liu, F., Kerins, D., Ramesh, S., Sullivan, P.L., Billings, S.A., Hirmas, D.R., Flores, A., Ajami, H., Segura, C., Li, L., Beneath the Green: Contrasting dynamics of hydrological and dissolved carbon in relatively young and old forests, *Gordon Research Seminar on Catchment Science*, Andover NH, June 2025 (poster)

Liu, F., Ajami, H., Billings, S.A., Flores, A., Hirmas, D.R., Nippert, J., Singha, K., Sullivan, P.L., Li, L., Higher dissolved carbon production and export in old versus regenerating young growth forests, *American Geophysical Union (AGU)*, Washington D.C., December 2024 (poster)

Liu, F., Sullivan, P.L., Barnard, H.R., Li, L., Changing hydrology and flow paths in a forested watershed in the warming cascade mountains, *Gordon Research Conference on Catchment Science*, Andover NH, June 2023 (poster)

Liu, F., Bisson, A., Moore, E. M., Briggs M. A., Helton, A. M., The role of groundwater delivery in stream bank nitrous oxide emissions, *Joint Aquatic Sciences Meeting*, Grand Rapids, MI, May 2022 (poster)

Teaching Experience

2024 **Energy Use, Climate Change, and Our Engineered Infrastructure (CE 497)**, The Pennsylvania State University, Teaching Assistance, Instructor: William Burgos

2023 **Energy Use, Climate Change, and Our Engineered Infrastructure (CE 497)**, The Pennsylvania State University, Teaching Assistance, Instructor: Li Li

Mentorship

2022 **Event Programmer**, University of Connecticut, Asian American Cultural Center, Advisor: merz lim

2021 **Mentor Program Coordinator**, University of Connecticut, Asian American Cultural Center, Advisor: Angela Rola, Rachel Wada

Service

LEADERSHIP

2025-2026 **Penn State Association of Water Students (PAWS)**, President

2024 – 2025 **Penn State Water Council**, Student Representative

2024 – 2025 **Penn State Association of Water Students (PAWS)**, Treasurer, Water Conference Planning Committee

AWARDS

2025 Outstanding Event Planning Award Penn State Association of Water Students (PAWS)

Experiences and Skills

2018 - 2022 Undergraduate Research and Field Assistant, University of Connecticut, Department of Natural Resources and the Environment, Advisor: Ashley Helton

Skills: R, Python, ArcGIS Pro, Microsoft Office

Languages: Mandarin (native), English (native)