

## Li Li, Ph.D., Professor

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### PROFESSIONAL PREPARATION

Princeton University	Environmental Engr. + Water Resources	Ph.D.	2005
Nanjing University (PRC)	Environmental Chemistry	M.S.	1999
Nanjing University (PRC)	Environmental Chemistry	B.S.	1996

### APPOINTMENTS

4/2022 –	Barry and Shirley Isett Professor, Dept. Civil & Environ. Engr., PSU
8/2018 – 6/2019	Visiting professor (on sabbatical at the ECHO lab), École polytechnique fédérale de Lausanne (EPFL), Switzerland
8/2016–	Full (7/2020 - ), Associate (7/2016 – 6/2020) Professor, Civil & Environ. Engr., PSU
7/2015-8/2016	Associate Professor, Energy and Mineral Engineering, Penn State University
9/2009-5/2015	Assistant Professor, Energy and Mineral Engineering, Penn State University
9/2007-9/2009	Research Scientist, Lawrence Berkeley National Laboratory (LBNL), Earth Sciences Division (ESD)
9/2005-8/2007	Geological Postdoctoral Fellow, LBNL, ESD

### RESEARCH INTERESTS

My group works at the interface of environmental engineering, hydrology, and biogeochemistry. In particular, we ask questions on how catchment structure regulates its functioning, and how Earth surface processes (in particular biogeochemical reactions and fluxes of C, N, and other elements) under changing climate and human perturbation conditions.

### RECENT HONORS AND AWARDS

- Penn State Engineering Alumni Society (PSEAS) outstanding research award, Penn State Univ., 2019
- Commission for Woman Achieving Woman Award (faculty category), Penn State Univ., 2017
- Invited participant, US Frontiers of Engineering, National Academy of Engineering, 2015
- Wilson award for excellence in teaching, EMS, Penn State University, 2015
- Wilson initiation award, EMS, Penn State University, 2010
- Awards to advisees (> 20 since 2009)

### SELECTED SYNERGETIC ACTIVITIES

#### (i) *Editorial*

Associate editor, Global Biogeochemical Cycles, 2022 -  
Associate editor, Hydrological Processes, 2021 –  
Associate editor, Water Resources Research, 2017 – 2022  
Associate editor, Frontiers in Water, Water Quality, 2019 – 2021

#### (ii) *Conference and workshop organizer*

- "Women Advancing River Research Seminar Series," co-host with Ellen Wohl (2021, 2022), Rebecca Barnes (2023), 2021 - present
- "Bring Science Home" symposium, w/ K. Singha, P. Sullivan, N. Gasparini, +N. West. 06/23-24/20.
- An NSF workshop with Julia Perdrial and Donna Rizzo, "Big data, model complexity and simplicity", Andover, New Hampshire, 06/21-23, 2019
- An NSF workshop with Kate Maher and Alexis Navarre-Sitchler. "Expanding the role of reactive transport modeling in earth surface processes." Washington, DC, 04/13 – 15, 2014.
- Conference sessions: AGU Fall meeting, 2011 (advances in bioremediation), 2015, 2016, 2017, 2018 (modeling CZ processes); Computational Methods in Water Resources (CMWR), 2016

**(iii) Professional reviews for journals and funding agencies**

- Proposal review panel: NSF low temperature geochemistry and geobiology, Hydrology, NSF environmental engineering, NSF Hydrological Sciences, DOE subsurface biogeochemistry research (SBR), German National Science Foundation
- Proposal ad-hoc review: DOE Office of Sciences (BES, SBR), NSF (Hydrological Sciences, Low-temperature geochemistry and geobiology, Marine Geosciences)

**(iv) Outreach, education, diversity, mentoring:**

- Co-PI on the NSF-funded Research Coordination Network "Building capacity to deepen the critical zone: expanding boundaries and exploring gradients through data-model synergy", to enhance the diversity of participants and ideas in the critical zone (CZ) community. This project will host and organize over 5 years a series of workshops, webinars, panels, and networking opportunities for early career earth and environmental scientists, in particular those from underrepresented groups. With K. Singha (CSM), P. Sullivan (Oregon State), N. West (Central Michigan), + N. Gasparini (Tulane U.)
- Opened the Li lab for research and education activities to groups of kindergarteners, girl scouts, primary and middle school students, and high school students from underrepresented groups. The high school student teams from my group won the third and first place, respectively, in 2012 and 2016, in the research presentation competitions in the PSU UBMS Summer Academy.
- Advisees (>53% woman and minorities): 5 postdocs, 13 Ph.D. (10 graduated), 5 M.Sc. (5 graduated), 12 undergraduate students (4 graduated with honors thesis).

**SELECTED RECENT PUBLICATIONS ([Google Scholar](#), citation > 4,000, h-index: 38)**

1. Stewart, B., J. Shanley, J. W. Kirchner, D. Norris, T. Adler, C. Bristol, A. A. Harpold, J. N. Perdrial, D. M. Rizzo, G. Sterle, K. L. Underwood, H. Wen, **Li Li**. 2021. Streams as mirrors: reading subsurface water chemistry from stream chemistry. [Water Resources Research](https://doi.org/10.1029/2021WR029931). doi.org/10.1029/2021WR029931
2. Li, L., B. Stewart, W. Zhi, K. Sadayappan, S. Ramesh, D. Kerins, G. Sterle, A. Harpold, J. Perdrial. 2022. Climate controls on River chemistry. [Earth's Future](https://doi.org/10.1029/2021EF002603). doi.org/10.1029/2021EF002603
3. Zhi, W., D. Feng, W.-P. Tsai, G. Sterle, A. Harpold, C. Shen, and L. Li. 2021. From hydrometeorology to river water quality: can a deep learning model predict dissolved oxygen at the continental scale? [Environmental Science & Technology](https://doi.org/10.1021/acs.est.0c06783), doi: 10.1021/acs.est.0c06783.
4. Li, L., P. L. Sullivan, P. Benettin, O. A. Cirpka, K. Bishop, S. L. Brantley, J. Knapp, I. van Meerveld, A. Rinaldo, J. Seibert, H. Wen, J. W. Kirchner. 2021. Toward catchment hydro-biogeochemical theories. [WIREs water](https://doi.org/10.1002/wat2.1495). doi.org/10.1002/wat2.1495
5. Zhi, W., K. H. Williams, R. W. H. Carroll, W. Brown, W. Dong, D. Kerins, and L. Li. 2020. Significant stream chemistry response to temperature variations in a high-elevation mountain watershed. [Communications Earth & Environment](https://doi.org/10.1038/s43247-020-00039-w). Doi.org/10.1038/s43247-020-00039-w
6. Zhi, W., L. Li. 2020. The shallow and deep hypothesis: subsurface distribution shapes distinct nitrate export patterns from different land uses. [Environmental Science & Technology](https://doi.org/10.1021/acs.est.0c01340). doi.org/10.1021/acs.est.0c01340.
7. Wen, H., J. Perdrial, S. Bernal, B.W. Abbott, R. Dupas, S.E. Godsey, A. Harpold, D. Rizzo, K. Underwood, T. Adler, & L. Li. 2020. Temperature controls production but hydrology regulates export of dissolved organic carbon at the catchment scale. [Hydrology and Earth System Sciences](#).
8. Benettin, Paolo, O. Fovet, L. Li. 2020. Nitrate removal and young stream water fractions at the catchment scale. [Hydrological Processes](https://doi.org/10.1002/hyp.13781). https://doi.org/10.1002/hyp.13781
9. Zhi, W., L. Li, W. Dong, W. Brown, J. Kaye, C. Steefel, and K. H. Williams. 2019. Distinct water chemistry shapes contrasting concentration discharge patterns. [Water Resources Research](#).
10. Li, L., K. Maher, A. Navarre-Sitchler, + 20 other authors. 2017. Expanding the Role of Reactive Transport Models in Earth Surface Processes. [Earth Science Reviews](#).