Dan Li, Ph.D.

Assistant Professor, Department of Earth and Environment
Environmental Finance and Risk Management Program, Institute of Environment
Florida International University

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Education

2024 Ph.D. in Civil and Environmental Engineering
University of Michigan, Ann Arbor, MI
Dissertation: Causal Inference between Environmental Risks and Financial Performance in the Bond Market
Additional credential: Graduate Certificate in Computational Discovery and Engineering

2017 M.S. in Macromolecular Science and Engineering
University of Michigan, Ann Arbor, MI

2015 B.S. in Polymer Material Engineering
Sichuan University, Sichuan, China
2013 Exchange Study
National Taiwan University of Science and Technology

Academic and Research Appointments

Aug 2026–present Assistant Professor
Department of Earth and Environment, Florida International University
Environmental Finance and Risk Management Program, Institute of Environment

2024–Aug 2026 Postdoctoral Research Associate
University of North Carolina at Chapel Hill
Institute for Risk Management and Insurance Innovation; Advisor: Greg Characklis

2020–2024 Doctoral Research Assistant
Civil and Environmental Engineering, University of Michigan; Advisor: Peter Adriaens

2015–2017 Master's Research Assistant
Chemical Engineering, University of Michigan; Advisor: Timothy Scott

Industry Experience

Oct 2019–Jun 2020 Treasury Analyst, Goldman Sachs
May 2018–Sep 2019 Loan Credit Analyst, Mitsubishi UFJ Financial Group
Jun 2017–May 2018 ESG Research Analyst, MSCI, Inc.
2016 Research Intern, Procter & Gamble

Publications

* Student mentee; † Corresponding author.

Peer Reviewed Journal Articles

1. Petagna, C.*; **Li, D.**†; Gorelick, D.; Amestoy, T.; Lau, L.; Asefa, T.; Wang, H.; Svrdlin, S.; Reed, P.; Characklis, G. (2026). "Balancing Supply and Financial Risks in Water Utility Decision Making under Uncertainty." Journal of Water Resources Planning and Management. https://doi.org/10.1061/JWRMD5.WRENG-7164
2. **Li, D.** †; Adriaens, P. (2025). "Green Bond Issuance and Carbon Emissions: Can Causal Machine Learning Inform Forward-Looking Policy Decisions?" Environmental Science & Technology. https://doi.org/10.1021/acs.est.5c04966
3. **Li, D.**; Saigal, R.; Adriaens, P. (2024). "Impact of Flooding and Drought Risks on the Cost of Bond Financing for Water Utilities." Environmental Science & Technology. https://doi.org/10.1021/acs.est.4c01863
4. **Li, D.** †; Adriaens, P. (2024). "Impact of ESG Performance and Disclosure on Premiums in the Corporate Bond Market: Evidence from Propensity Score Matching." Journal of Sustainable Finance and Investment. https://doi.org/10.1080/20430795.2024.2426485
5. **Li, D.** †; Adriaens, P. (2023). "Deconstruction of ESG Impact on US Corporate Bond Pricing: An Assessment of Cost of Capital Benefits Across Industry Sectors." Journal of Management in Engineering. (Editor's choice). https://doi.org/10.1061/JMENEA.MEENG-5521
6. Chung, K., **Li, D.**, & Adriaens, P. (2023). "Technology-enabled financing of sustainable infrastructure: A case for blockchains and decentralized oracle networks." Technological Forecasting and Social Change. https://doi.org/10.1016/j.techfore.2022.122258
7. Huang, H.D., Liu, C.Y., **Li, D.**, et al. (2014). "Ultra-low gas permeability and efficient reinforcement of cellulose nanocomposite films by well-aligned graphene oxide nanosheets." Journal of Materials Chemistry A. https://doi.org/10.1039/C4TA03305A

Manuscripts Under Review

1. **Li, D.**; Gupta, R.; Zeff, H.; Characklis, G. "Managing Drought Related Financial Risks with Water Futures." Nature Communications. (Under Review) https://www.researchsquare.com/article/rs-8275145/v1
2. **Li, D.**; Zeff, H.; Characklis, G. "Increasing Financial Resiliency of Irrigation Districts through Risk Transfer via Parametric Insurance." Water Resources Research. (Under Review)

Conference Papers and Reports

1. **Li, D.**, & Adriaens, P. (2023). "What Drives ESG Premia in the US Corporate Bond Market?" International Risk Management Conference.
2. **Li, D.**, & Adriaens, P. (2022). "ESG Rating Impacts Corporate Bond Yield Spreads: Empirical Evidence from Statistical Inference and High Dimension Machine Learning Matching." International Risk Management Conference.
3. **Li, D.**, & Adriaens, P. (2021). "Green Bond 'Greenium' Fuels Sustainable Investment in the Great Lakes St. Lawrence Region." Great Lakes St. Lawrence Governors and Premiers.

Conference Presentations

1. **Li, D.**; Zeff, H.; Characklis, G. April 2026. “Managing Drought-Related Financial Risks for Agricultural Producers with Futures Contracts”. California Water and Environmental Modeling Forum, Folsom, CA.
2. **Li, D.**; Elliott, C.; Xu, W.; Zeff, H.; Characklis, G. Jan 2026. “Deep Learning Model for Near-Real-Time Wildfire Spread Prediction.” 106th American Meteorological Society Annual Meeting, Houston, TX.
3. **Li, D.**; Zeff, H.; Characklis, G. May 2025. “Managing Drought-Related Financial Risks with Water Index Futures.” Association of Environmental Engineering & Science Professors (AEESP) 2025 Conference, Durham, NC.
4. **Li, D.**; Zeff, H.; Characklis, G. May 2025. “Development and Application of a Daily Timestep Water Supply Model for Managing Water Supply-Related Financial Risks”. California Water and Environmental Modeling Forum, Folsom, CA.
5. **Li, D.**, Zeff, H., & Characklis, G. January 2025. "Managing Drought-related Financial Risk with Water Index Futures". 105th American Meteorological Society Annual Meeting, New Orleans, LA. https://ui.adsabs.harvard.edu/abs/2025AMS...10556281L/abstract
6. **Li, D.**, & Adriaens, P. October 2024. "Toward Carbon Mitigation with Municipal Green Bonds". Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, Seattle, WA.
7. **Li, D.**, Saigal, R., & Adriaens, P. October 2023. "Have Climate Risks been Factored into Municipal Bond Yields?" Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, Phoenix, AZ.
8. Adriaens, P. & **Li, D.** July 2023. "What Drives ESG Premia in the US Corporate Bond Market?" International Risk Management Conference, Florence, Italy.
9. **Li, D.**, & Adriaens, P. July 2022. "ESG Rating Impacts Corporate Bond Yield Spreads: Empirical Evidence from Statistical Inference and High-Dimensional ML Matching." International Risk Management Conference, Bari, Italy.
10. **Li, D.**, & Adriaens, P. October 2021. "Exploring the Pricing Convenience of the Disclosure of ESG Metrics in the Corporate Bond Market." International Risk Management Conference, Bari, Italy.

Conference Posters

* Student mentee.

1. **Li, D.**; Zeff, H.; Characklis, G. Dec 2025, “Can Financial Instruments Help Manage Drought-Related Risks?” American Geophysical Union, New Orleans, LA.
2. Agarwal, D.* & **Li, D.** Oct 2025, Ensuring Resilience in Forest Carbon Offsets: Insurance Against Unintentional Reversals, UNC Research Symposium, Chapel Hill, NC
3. Elliott, C.* & **Li, D.** Oct 2025, “Neural Network Model for High-Resolution Wildfire Prediction”, UNC Research Symposium, Chapel Hill, NC.
4. Xu, W.* & **Li, D.** Oct 2025, “Integrating Digital Elevation Models and Geomorphic Classification for Predicting Financial Vulnerability to Wildfires in California”, UNC Research Symposium, Chapel Hill, NC.
5. Dickinson, A.* & **Li, D.** Oct 2025, “Tampa Bay Covenant Failure Rates by Hydrological Conditions”, UNC Research Symposium, Chapel Hill, NC.

Conference Posters Continued

6. **Li, D.**, & Adriaens, P. March 2023. "Impact of Sustainability on Corporate Cost of Debt Financing: Evidence from Interpretable Machine Learning." The 2023 Michigan Institute for Computational Discovery and Engineering Symposium, Ann Arbor, MI.
7. **Li, D.**, & Adriaens, P. January 2023. "Impact of ESG Performance and Disclosure on Premiums in the Corporate Bond Market: Evidence from Propensity Score Matching and Machine Learning." The 2023 American Finance Association Annual Conference, New Orleans, LA.
8. **Li, D.**, & Adriaens, P. June 2022. "Impact of ESG Performance and Disclosure on Premiums in the Corporate Bond Market: Evidence from Propensity Score Matching." Association of Environmental Engineering and Science Professors Conference, St. Louis, MO.

Teaching Experience

Fall 2025 Instructor

ENVR 753 Programming for Environmental Applications, University of North Carolina

• Responsible for course design, lecture delivery, and grading.

• Course topics: systems modeling, time series regression, machine learning, and decision-support tools.

Spring 2024 Guest Lecturer

CEE 880 Graduate Research Topic

Fall 2023 Graduate Teaching Assistant

CEE 504 Engineering Economic and Finance, University of Michigan

Spring 2022 Graduate Teaching Assistant

CEE 501 Infrastructure Project Finance, University of Michigan

Grants and Funding

Current Funding

Current Florida Public Hurricane Loss Model (FPHLM)

Funding agency: Florida Office of Insurance Regulation (FOIR)

Institution: Florida International University

Funded Proposal Contributions

2024 National Science Foundation

Program: Civil Infrastructure Research for Climate Change Mitigation and Adaptation

Nimble, Adaptive, and Reusable Structures: Systems, Mechanics, and Financing

Role: Major contributor. Status: Funded.

PIs: Peter Adriaens, Evgueni T. Filipov, Jason McCormick, Sherif El-Tawil

Academic Honors and Recognition

Editor's Choice Paper, Journal of Management in Engineering | 2024

Rackham Travel Grant, University of Michigan | 2021/2022/2024

Rackham International Students Fellowship, University of Michigan | 2023

3rd Place Poster Winner, 2021 Engineering Research Symposium, University of Michigan | 2021

Michigan Materials Innovation Award, Procter and Gamble Co | 2016

Rackham Research Grant, University of Michigan | 2016

ZKLT Society Fellowship, Sichuan University | 2015

Keju/AIE Society Fellowship, Sichuan University | 2014

2nd Prize in Chinese College Students Innovation Design Competition of Advanced Materials | 2014

Academic and Professional Service

2022–2023 Student Officer and Mentor

DEI Committee, University of Michigan

2020–2022 Professional Development Officer

Graduate Student Advisory Council, University of Michigan

Journal Peer Review

Journal of Management in Engineering

Journal of Water Resources Planning and Management

Managerial Finance

Environmental Science & Technology

Professional Affiliations

American Society of Civil Engineers (ASCE)

American Geophysical Union (AGU)

American Meteorological Society (AMS)

Institute for Operations Research and the Management Sciences (INFORMS)

Association of Environmental Engineering and Science Professors (AEESP)

Additional Professional Qualifications

Passed Level I of the CFA Program.

Computational Skills

Programming: Python, Cython, MATLAB, R, Stata

Software and platforms: ArcGIS, Google Earth Engine, GitHub