EDUCATION

Massachusetts Institute of Technology, Cambridge, USA, September 2018 – anticipated June 2023 Doctor of Philosophy, Civil and Environmental Engineering

Stanford University, Stanford, USA, September 2015 – January 2018 Master of Science, Civil and Environmental Engineering

Shanghai Jiao Tong University, Shanghai, China, September 2011 – July 2015 Bachelor of Science in Engineering, Environmental Science and Engineering

AWARDS AND SCHOLARSHIPS

- CEE Cross-Disciplinary Seed Funds (with funding to support my 2nd year at MIT), September 2019
- Louis Berger Fellowship (with funding to support my 1st year at MIT), September 2018
- Chun-Tsung Scholar, Hui-Chun Chin and Tsung-Dao Lee Chinese Undergraduate Research Endowment, November 2015
- Group's Best Program (top 7%), Shanghai Undergraduate Innovation Program, December 2014

SELECTED PUBLICATIONS

- Li, Y., Thelemaque, N. A., Siegel, H. G., Clark, C. J., Ryan, E. C., Brenneis, R. J., ... & Plata, D. L. (2021). Groundwater Methane in Northeastern Pennsylvania Attributable to Thermogenic Sources and Hydrogeomorphologic Migration Pathways. *Environmental science & technology*, *55*(24), 16413-16422.
- Clark, C. J., Xiong, B., Soriano, M. A., Gutchess, K., Siegel, H. G., Ryan, E. C., Johnson, N. P., Cassell, K., Elliott, E. G., Li, Y., ... & Deziel, N. C. (2022). Assessing Unconventional Oil and Gas Exposure in the Appalachian Basin: Comparison of Exposure Surrogates and Residential Drinking Water Measurements. *Environmental science & technology*, *56* (2), 1091–1103.
- Soriano, M. A., Siegel, H. G., Johnson, N. P., Gutchess, K. M., Xiong, B., Li, Y., ... & Saiers, J. E. (2021). Assessment of groundwater well vulnerability to contamination through physics-informed machine learning. *Environmental Research Letters*, 16(8), 084013.
- Masnadi, M. S., El-Houjeiri, H. M., Schunack, D., **Li, Y.,** Englander, J. G., Badahdah, A., ... & Gordon, D. (2018). Global carbon intensity of crude oil production. *Science*, 361(6405), 851-853.
- Masnadi, M. S., El-Houjeiri, H. M., Schunack, D., Li, Y., Roberts, S. O., ... & Wang, M. (2018). Well-torefinery emissions and net-energy analysis of China's crude-oil supply. *Nature Energy*, 3(3), 220.
- Bai, J., **Li**, **Y**., Wang, R., Huang, K., Zeng, Q., Li, J., & Zhou, B. (2015). A novel 3D ZnO/Cu 2 O nanowire photocathode material with highly efficient photoelectrocatalytic performance. *Journal of Materials Chemistry A*, 3(45), 22996-23002.

PRESENTATION

• Li, Y., Thelemaque, N.A., ..., Plata, D.L. "Geochemical indicators in northeastern Pennsylvania groundwater are consistent with natural methane sources". ACS Spring 2021 (virtual). April 14, 2021. Talk

RESEARCH PROJECTS

Application of Machine Learning in Methane Emission Mitigation

May 2021 - present, MIT, Advisor: Prof. Desiree Plata, Prof. Timothy Swager, Prof. Amy Mueller

- a) to predict oil and gas well integrity failures which could lead to fugitive methane emission; b) to
 perform signal deconvolution of a novel chemiresistive methane sensor to retrieve concentrations of
 methane and interfering gases
- Lead a project team of three MIT undergraduate students and one high school student

Impact of Shale Gas Drilling and Coal Mining on Groundwater Methane

September 2018 - present, MIT, Advisor: Prof. Desiree Plata

- To study a potential methane emission pathway through the groundwater system by measuring and characterizing methane dissolved in groundwater collected from the Northern Appalachia where intense shale gas extraction and coal mining happen.
- Skills involved: geochemistry, analytical chemistry (e.g., gas chromatography), statistical analysis

Crude Oil Global Upstream Carbon Intensity Project

January 2017 – January 2018, Stanford University, Advisor: Prof. Adam Brandt

- To assess the well-to-refinery life-cycle GHG emission intensity of over 8,000 oilfields in 91 countries, leveraging the OPGEE (Oil Production Greenhouse Gas Emissions Estimator) model.
- Our results were published in Nature Energy (featured on cover) and Science

Visible Light Photocatalytic Fuel Cell for Wastewater Treatment and Electricity Generation

April 2013 – July 2015, SJTU, Advisor: Prof. Baoxue Zhou and Dr. Jing Bai

- To design and fabricate nanomaterials used in photocatalytic fuel cell for wastewater organic compound degradation and electricity generation. Characterization methods included SEM, TEM, XRD, XPS, etc.
- Successfully applied for total funding of 20,000 CNY (around 3,000 USD) from Shanghai Undergraduate Innovation Program and Chun-Tsung Endowment

INTERNSHIP EXPERIENCES

Valor Water Analytics, Inc. (now part of Xylem), San Francisco, USA, March 2018 – August 2018

- Helping water utilities identify "under-registered" meters through data science approach
- Built robust pipeline for automatic data transformation, cleaning, and visualization
- Built a dashboard interface showing the daily performance of the company

Shanghai Environmental Monitoring Center, Shanghai, China, August 2013–September 2013

• Performed wastewater and gas sampling in various industrial and commercial regions of Shanghai

EXTRACURRICULAR ACTIVITIES

Panel Director, MIT Energy Conference, 2021-2022

Recruiting panelists for the panel "Global Climate Action Strategy to 1.5 °C"

Vice President, Association of Chinese Students and Scholars at Stanford, 2016-2017

- Organized Chinese Culture Gatherings for the Duanwu and Lantern Festival, with over 100 participants for each; successfully applied for the Billie Achilles Fund (\$1,750 total) to support the events
- Organized airport pickup for more than 60 incoming students
- Ran a Lunar New Year-themed Puzzle Hunt at five hidden spots on Stanford Campus
- Captain, Debate Team of the School of Environmental Science and Engineering at SJTU, 2012-2013
- Led the team to win the top prize in the Four-School Practice Game
- Qualified for the quarter-finals of the Freshmen Cup and Union Cup Debate Competition at SJTU