Jiehong Lou, Ph.D.

SUMMARY Areas of expertise include climate finance and carbon finance, energy economics, environmental policy, energy policy, sustainable development, travel behavior, equity, and transportation justice. Research focuses on mobilization of private finance in financing climate action, corporate motivations for carbon project investment, evaluation of co-benefits from climate finance projects, measurement of different types of risks in climate finance and investment needs, behavior change interventions on energy consumption, and how transportation accessibility impose disparate impacts on different economic and minority groups.

EDUCATION

University of Maryland, School of Public Policy — College Park, MD
Ph.D. — Aug 2020

University of Maryland, Philip Merrill College of Journalism — College Park, MD
Graduate Certificate in Multimedia Journalism — Dec 2015

University of Maryland, Department of Economics — College Park, MD
Master in Applied Economics — Dec 2013

University of Maryland, School of Public Policy — College Park, MD
Master of Public Policy — May 2009

Tongji University, School of Economics and Management — Shanghai, China
Bachelor of Law, Major in Public Administration — Jun 2006

University of California, Berkeley — San Francisco, CA
Exchange Program — Jun 2004- Sep 2004

PUBLICATIONS

Lou, J., Hultman, N., Patwardhan, A., Qui, Y., (incoming) "Integrating sustainability into climate finance by quantifying the co-benefits and market impact of carbon projects", Communications Earth & Environment. https://doi.org /10.1038/s43247-022-00468-9

Ku, A., Qiu, Y., **Lou, J.,** Nock, D., and Xing, B., (2022) "Changes in Hourly Electricity Consumption under COVID Mandates: A Glance to Future Hourly Residential Power Consumption Pattern with Remote Work in Arizona." Applied Energy. https://doi.org/10.1016/j.apenergy.2022.118539.

Lou, J., Qiu, Y., Ku, A., Nock, D., Xing, B., (2021). "Inequitable and Heterogeneous Impacts on Electricity Consumption from COVID-19 Mitigation Measures." IScience, 24, no. 11, 103231. https://doi.org/10.1016/j.isci.2021.103231

Cui, R.Y., Hultman, N., Cui, D., McJeon, H., Yu, S., Edwards, M., Sen, A., Song, K., Bowman, C., Clarke, L., Kang, J., **Lou, J.,** Yang, F., Yuan, J., Zhang, W., and Zhu, M., (2021). "A plant-by-plant strategy for high-ambition coal power phaseout in China." *Nature Communications*, **12**: 1468.

Lou, J., Shen, X., and Niemeier, D., (2020). "Are stay-at-home orders more difficult to follow for low-income groups? " *Journal of Transport Geography*, 89.

Hultman, N., Clarke, L., Frisch, C., Kennedy, K., McJeon, H., Cyrs, T., Hansel, P., Bodnar, P., Manion, M., Edwards, M., Cui, R., Bowman, C., Lund, J., Westphal, M., Clapper, A., Jaeger, J., Sen, A., **Lou, J.,** Saha, D., Jaglom, W., Calhoun, K., Igusky, K., deWeese, J., Hammoud, K., Altimirano, J., Dennis, M., Henderson, C., Zwicker, G., O'Neil, J., (2020). "Fusing Subnational with National Climate Action Is Central to Decarbonization: The Case of the United States." *Nature Communications,* 11: 5255.

Hultman, N.; **Lou, J.**, Hutton, S., (2020). "A review of community co-benefits of the Clean Development." *Environmental Research Letter*s.

Energy Foundation China, (2020). "Synthesis Report 2020 on China's Carbon Neutrality: China's New Growth Pathway: from the 14th Five Year Plan to Carbon Neutrality. " Energy Foundation China, Beijing, China. Available online at: https://www. efchina.org/Reports-en/report-lceg-20201210-en

Cooley, H., Gleick, P., **Lou, J.**, Mintzer, I., Ha, M., Abraham, S., Arney H., (2020). "Financing Water Supply and Sanitation in a Changing Climate." Pacific Institute and Water.org, CA. Available online at https://pacinst.org/publication/financing-water-in-a-changing-climate/

Frech, J., **Lou, J.**, Sha, Y., and Song, J., (2020). "Public-Private Partnership & Clean Energy Finance: The Green Bank Model (English Version). Center for Global Sustainability." Available online at: https://spp.umd.edu/research-impact/publications/public-private-partnership-clean-energy-finance-green-bank-model

Lou, J, Sha, Y, and Song, J., (2020). "Public-Private Partnership & Clean Energy Finance: The Green Bank Model (Chinese Version). Center for Global Sustainability." Available online at: https://spp.umd.edu/research-impact/publications/public-private-partnership-clean-energy-finance-green-bank-model

Hultman, N.; Clarke, L.; and **Lou, J**. (2019). "Analytical Capacity for Long-Term Strategies." Case Study. Washington, DC: World Resources Institute. Available online at
https://www.wri.org/publication/analytical-capacity-long-term-strategies

Hultman, N., Kennedy, S., Bowman, C., Sen, A., Krawczyk, W., **Lou, J.**, Frech, J., Sanchez, F., Prada, A., (2018). "Fulfilling America's Pledge: How States, Cities, and Business Are Leading the United States to a Low-Carbon Future." Published by the America's Pledge Initiative on Climate Change and Bloomberg Philanthropies, with the University of Maryland Center for Global Sustainability, Rocky Mountain Institute, and World Resources Institute, New York. 150 pp. Available online at: www.americaspledge.com.

Liang, J., **Lou, J.**, and Siegel, J., (2021) "Public awareness on nuclear energy development in China: Evidence from online discussions on Zhihu. " *SSRN Journal.* (Co-first author)

WORKING PAPERS

Lou, J., Borjigin., S., Tang, C., Saadat, Y., Niemeier, D., (2021). "Managing COVID-19 Transmission in Meatpacking Plants Using Agent-based Model." (Under Review)

Lou, J., Karner, A., Rowangould, D., Niemeier, D., "Accessibility of the voting process:

Does the one drop box per county for mail-in ballots in Ohio suppressed voter participation"

Lou, J., Hultman, N., Mintzer, I., "Valuing Co-benefits in Private Climate Finance: How are Corporate Motivations for Voluntary Carbon Offset Investments Reflected in How They Value Project Co-benefits?"

WORK IN PROGRESS

Lou, J., Mintzer, I., Heavner, J., "A Systematic Review of Risks Affecting the Financial Success of Sustainable Infrastructure Projects, and Risks Mitigation Measures."

Lou, J., Shen, X., Cui, R.Y., "The Effect of Coal Plant Phase-out on Employment: Implications for the U.S. and China's Just Energy Transition."

Lou, J., and Shen, X., " A New Threat to China's Carbon Neutrality: An Analysis of Abandoning Solar Water Heaters (SWH) in Residential Sector.

Lou, J., Borjigin., S., Ugwu, N., Niemeier, D., "Analyzing EV with Agent-based Modeling (ABM): Understanding Relations of Vehicle Emission and Climate Change."

Lou, J., Borjigin., S., Ugwu, N., Eluru, N., Bhowmik, T., Niemeier, D., "Estimating basic and future Electric vehicle (EV) fleet: by using the multiple discrete-continuous extreme value (MDCEV) model." (Working with the University of Central Florida team)

Lou, J., Karner, A., Rowangould, D., Niemeier, D., Project: "Accessibility of different voting types and locations." (Democracy Fund. Working with teams from University of Texas at Austin, and University of Vermont)

Lou, J., and Palm, M., Project: "Data-Driven Regionalization for the American Community Survey to improve the travel behavior analysis." (Work with the Worcester State University in Massachusetts team)

Lou, J., Yu, S., Adofoli, V., "Scaling up Renewable Investment in China: An Application of the Integrated Assessment Model (GCAM)."

Cui, R.Y., … **Lou, J**., …, "Quantifying Benefits and Impacts of a Shared Low-Carbon Transition for the 'Belt and Road Initiative' Countries."

GRANT AND FELLOWSHIP

Team member: Democracy Fund   2021

Co-PI, the John D. and Catherine T. MacArthur Foundation, Chinese Attitudes Toward Nuclear Power: Learning from Social Media ($5000)   2018

MIT Discrete Doctoral Scholarship ($2500)   2018

MANUSCRIPT REVIEW SERVICE

Nature Communications, Energy Climate Change, Climate Policy, Transportation Research Record, Mitigation and Adaptation Strategies for Global Change, Annals of the American Association of Geographers

RELATED EXPERIENCE

Center for Global Sustainability, University of Maryland   **DC, MD, NY**

Assistant Research Professor   April 2022 – present

A James Clark School of Engineering, UMD   **College Park, MD**
Maryland Transportation Institute,   Sep 2020-present
School of Public Policy, UMD, Center for Global Sustainability
Post-doc Fellow/ Faculty Assistant
Advisors: Deb Niemeier and Nathan Hultman
- Project lead for multiple research projects across the areas, such as
    o Quantitative analysis of the impacts of coal power plants and mines on local employment in China and on a global scale.
    o Low-carbon pathway for transportation sector.
    o Energy poverty, and COVID-19's impacts on electricity market.
    o COVID-19's impacts on vulnerable groups, transport accessibility and justice.
    o Evaluating financial instruments for urban infrastructure of local government.
    o Understand and reshape the risk-return profile of high-priority sustainable infrastructure projects.
    o Financing the low-carbon transition in China.
    o Low-carbon transitions for the Belt and Road Initiative (BRI) regions.
- Writing proposals for research grants

Center for Global Sustainability, University of Maryland   **DC, MD, NY**
Closing the Investment Gap Initiative on Sustainable Infrastructure
Team Lead and Project Advisor   Jan 2019 – present
- Conducting research on the application of blended finance to accelerate private sector investments into sustainable infrastructure in developing countries.
- Developing innovative financing models that improve sustainable infrastructure investments in the Pacific and Caribbean Small Island Developing States (SIDS).
- Leading Africa country teams (Egypt, Ethiopia and Kenya) to work on their portfolios of sustainable infrastructure projects with high national priorities and elevating these projects to investment-grade status.
- Leading Asian country teams (Bangladesh and Vietnam) to work on their portfolios of sustainable infrastructure projects, and explore innovative financing tools to attract international investors, such as refinancing balance sheet of large infrastructure development company in Bangladesh, and credit enhancement in Vietnam.
- Team member with other developing countries, such as Colombia and Chile.

Center for Global Sustainability, University of Maryland   **College Park, MD**
Analysis for Climate Ambition Program; China Program; Finance Program
Research Assistant   Aug 2017 – Aug 2019
- Modeled policies for U.S. climate action as part of America's Pledge.
- Conducted research and served as co-author for reports covering the following areas: green finance, investment risks mitigations, decarbonization, long-term mitigation strategy, energy transitions, and more.
- Supporting creating a center-wide program of climate finance and investment initiatives.

Climate Change: **DC, MD and CA**
Water Supply and Sanitation (WSS) Financing Project   Apr 2019 – Dec 2019
Team Lead, collaborated with the Pacific Institute and Water.org
- Led project on "Green Financing and Microfinance Opportunities" from the UMD side. Mainly conducted research on financing WSS infrastructure in a more effective and efficient manner.
- Produced a report on "Financing Water Supply and Sanitation in a Changing Climate" with collaborators.

World Bank Group   **Washington, DC**
Independent Evaluation Group   Sep 2017 – Feb 2018
Consultant
- Researched and wrote two reports, based on structured literature reviews on additionality in carbon finance and local community co-benefits from carbon finance.
- Contributed to the primary goal of the evaluation team on assessing the results of carbon finance projects.

Bloomberg Philanthropies   **New York, NY**
Global Cities Program   Sep 2016 – Dec 2018
Special Consultant to the Founder of Global Cities, Inc.
- Wrote policy memos for the founder and the senior executives.
- Developed strategic plans for organization's development goals in Asia.
- Designed marketing strategies suited for the China division including identifying and reaching out to potential partners and establishing long-term cooperation.
- Established more than 15 partners in 6 months through outreach.

World Resources Institute, Water Program   **MD and DC**
Class Project   Jun and Jul 2017
- Conducted research on water scarcity of palm oil plantations in Indonesia and Malaysia.
- Analyzed the water stress for the oil palm plantations at the global level as well as specifically Indonesia and Malaysia in GIS by using data from Aqueduct Global Maps and EarthStat.
- Created a Country Level Water Stress Map for Palm Oil Plantations.
- Wrote a report to the Department of Geographical Sciences, UMD.

Field Study: Sustainable Development in Indonesia   **Indonesia**
Study Abroad (Led by Prof. Thomas Hilde)   Dec 2016 – Jan 2017
- Learned about sustainable development practices and outcomes in Indonesia via interviews and site visits in Bali, Sulawesi, Sumatra, and Java, with a focus on interconnections between Indonesia's environmental challenges and development issues and strategies.
- Conducted research in the following areas: mitigation options in land use sector and energy sectors for Indonesia; the potential of biodiesel from palm oil

plantations; the effectiveness of performance-based aid in developing countries; comparative case studies of Brazil and Indonesia.

University of Maryland, School of Public Policy   **College Park, MD**
China Program, Executive Programs   Sep 2009 – Aug 2016
Program lead
- Oversaw progress of all program management initiatives and achieved more than $1million annual income over three years.
- Spearheaded the launch of 20 successful leadership programs with Chinese National Development and Reform Commission, Peking University China, and National University of Singapore.
- Pioneered the execution of the Chinese Executive Master Program back to 2008 with Jiangsu provincial government and Shanghai municipal government, which generated more than 150 graduates in 3 years.

SKILLS   **Languages:**   Chinese (Native), English (Fluent), Japanese (Basic)
              Computer: Proficient in Python, R, STATA, SPSS, GIS, QGIS, GCAM (integrated assessment model), NetLogo (Agent based model), NVivo, Mplus, Adobe Photoshop, Adobe Audition, Adobe Premiere, Dreamweaver, Komodo.