

Chuan Liao

Ashley School of Global Development and the Environment
Cornell University
250A Warren Hall, Ithaca, NY, USA

Phone: 607-255-3163
Email: cl824@cornell.edu
Website: chuanliao.info

EDUCATION

2012-2015 PhD, Natural Resources and Environment, Cornell University
2010-2012 MS, Natural Resources and Environment, Cornell University
2006-2010 BS, Natural Resources, Beijing Normal University

PROFESSIONAL APPOINTMENTS

2026- Associate Professor, Ashley School of Global Development and the Environment, Cornell University
2022- Graduate Field Faculty in Development Studies, Regional Science, and Natural Resources and the Environment, Cornell University
2022-2026 Assistant Professor, Department of Global Development, Cornell University
2022- Faculty Fellow, Atkinson Center for Sustainability, Cornell University
2022-2024 Coordinating Lead Author, Transformative Change Assessment, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
2021, 2022 Editor-in-Chief, *World Development*
2018-2022 Assistant Professor, School of Sustainability, Arizona State University
2015-2018 Postdoctoral Research Associate, School for Environment and Sustainability, University of Michigan – Ann Arbor

PUBLICATIONS

Journals (#postdoc mentee; * graduate mentee; ^ undergraduate mentee)

84. **Liao, C.**, Zhou, S.[#], Lu, D.^{*}, Shin, S.^{*}, Lee, Y.^{*}, Xu, S.[#], Tu, Y.[#], Mosdossy, K., Li L., Nelson, R., Lehmann, J. Global Nutrient Justice through a Circular Bionutrient Economy. *Nature Reviews Earth & Environment* (accepted in principle).
83. Zhou, S.[#], Lu, D.^{*}, Li, L., Mosdossy, K., Nelson, R., Lehmann, J. **Liao, C.** 2026. Realizing an equitable circular bionutrient economy in the United States. *Nature Sustainability*. doi.org/10.1038/s41893-026-01811-0
82. Fu, H., Chen, X., Jiang P., Fei, D., **Liao, C.** Exploring land consolidation solutions towards land use low-carbon transition: Evidence from Shenzhen, China. *Land Use Policy*. doi.org/10.1016/j.landusepol.2026.108172

81. Sun, X., Wang, C., Liu, Q., **Liao, C.**, Bogaert, J., Ren Y., Yang P. Landscape optimization trade-offs and security boundary identification under multiple scenarios: balancing food production and ecological protection for regional sustainability. *Landscape Ecology* (accepted).
80. **Liao, C.**, Shin, S^{*}, Rohrbaugh, K. ^{*}, Pradhan N., Ludwig, E., Xu, Z., Ruiz-Aravena, M., Zhou, S.[#], Agrawal, A. 2026. Global land rush concentrates potential zoonotic spillover risk in the tropics. *Communications Sustainability*. (2026) 1:92. doi.org/10.1038/s44458-026-00102-1
79. Lee, Y.^{*}, **Liao, C.** Consumers Really Aren't in a Position to Choose: Reliability, Affordability and Uneven Adoption across Energy Sources and Functions in Uganda. 2026. *Energy Research & Social Science*. doi.org/10.1016/j.erss.2026.104692
78. Rohrbaugh, K. ^{*}, **Liao, C.** Lacoste M., Longchamps L. 2026. Farmer-centric On-farm Experimentation as Everyday Transformative Change for Climate Adaptation: A Systematic Review. *Ecology & Society*. 31(2):11.
77. Tu Y.[#], Rafols R.[#], Xu Y., Butler N.^{*}, Ababneh L., Tao F., Ramanathan R., Houlton, B., **Liao, C.** 2026. Scaling Up Enhanced Rock Weathering for Equitable Climate Mitigation. *Communications Sustainability*. (2026) 1:32. doi.org/10.1038/s44458-026-00034-w
76. Jiang, R., Fu, H., Chen, X., Cai, M., Jiang P., Fei, D., **Liao, C.** 2026. Goal-oriented zoning for multifunctional land use: A multi-objective optimization approach to low-carbon transition in Shenzhen, China. *Sustainable Cities & Society*. 145 (2026) 107478.
75. Liu, Y., **Liao, C.**, Yu, L. 2026. Gendered Property Rights and Collective Action for Sustainable Livestock Systems: Evidence from Rangeland Reform in China. *npj Sustainable Agriculture*. (2026) 4:49. doi.org/10.1038/s44264-026-00160-x
74. Aker, J., Burney, J., Campion, A., Jack, K., **Liao, C.** 2026. How Many (Half) Moons? Measuring Technology Adoption from the Sky and on the Ground. *AEA Papers and Proceedings*, 116: 1–5. doi.org/10.1257/pandp.20261091
73. Zhou, S.[#], Chi, G., **Liao, C.** 2026. Spatial Perspective on Environmental Migration: Empirical Insights from a Spatiotemporal Approach in the United States, 1970–2010. *Demographic Research*. 54(27), 835-876.
72. Zhou, S.[#], **Liao, C.**, Wei, Z., Chi, G. Heat and Air Pollution Shape Divergent Mortality Patterns across Rural and Urban United States. 2026. *npj Environmental Social Sciences*. 1, 4 (2026). doi.org/10.1038/s44432-025-00005-x
71. Jiang, Q., Xu, Z., Bhattarai N., Lin, Y., Xiao, H., Ren, J., Pahlow, M., Jiang, Z., Liu, Y., Wu, X., Ye, G., Zhang, H., Li, J., Zhu, P., Liang, S., Cui, Y., **Liao, C.**, Dong, L., Liu, J. 2026. Promoting Sustainable Development Worldwide in the Metacoupled Anthropocene. *Nature Communications*. doi.org/10.1038/s41467-026-68653-4
70. Lee, Y.^{*}, **Liao, C.** 2026. Determinants of Solar Energy Access in Urban and Rural Areas of Ethiopia: Implications for Equitable Climate Transitions. *npj Climate Action*. doi.org/10.1038/s44168-025-00328-0
69. Nelson, R., Njagi, J., Culotta I., Newell, E., Zhou, S.[#], Mosdossy K., Alaba, E., **Liao, C.**,

- Lehmann, J., Midega, C. 2026. Synergistic Pathways to a Circular Bionutrient Economy. *Global Food Security*. <https://doi.org/10.1016/j.gfs.2025.100898>
68. **Liao, C.**, Kao-Kniffin, J., Reid, M., Zhang, W., Tshabalala, P., Andrus, E., Butler-Jones, Z., LaPoint, J., Zhou, S.[#], Rafols, R.[#], Shin, S.^{*}, Ichihara, M., Pereira, A.^{*}, Butler, N.^{*}, Tu, Y.[#], McCouch, S. 2025. Rice Farming for Climate Change Adaptation in the Northeastern US. *Proceedings of the National Academy of Sciences*, doi.org/10.1073/pnas.2402181122
 67. Sun, Y., Wu, L., Fu, H., Zhang, Y., Zhou, S.[#], Lee, Y.^{*}, **Liao, C.** 2025. Urban Land Use Efficiency Enhancement Through Regional Economic Cooperation Network in Urban Agglomeration: Evidence from Yangtze River Delta, China. *International Regional Science Review*, doi.org/10.1177/01600176251404393
 66. Shin, S.^{*}, Nam, Y.[^], Wolf, S., Park, M., Okello, O., Mabaya, E., **Liao, C.** 2025. Adding Values to Voluntary Carbon Market through Small-Scale Agroforestry. *Climate and Development*, doi.org/10.1080/17565529.2025.2574074
 65. **Liao, C.**, Agrawal, A. 2025. Divergent outcomes of large-scale land transactions in Ethiopia: A quantitative comparative analysis. *Ecological Economics*, 230, 108531.
 64. Wu, S., **Liao, C.**, Yu, L. 2025. The Potential of Collective Action in Promoting Sustainable Rangeland Management: Evidence from Pastoral China. *Ecology & Society*, 30(3):39.
 63. Lambertucci, S., Frantzeskaki, N., Villasante, S., Wickson F., Zinngrebe Y., Reyes-García, V., Bennett E., O'Brien K., Calderón-Contreras R., **Liao, C.**, Garibaldi L., Shannon L., Singh P., Smith, P., Leventon J., Ley D., Ricketts, T., Hayman, D., Gosnell, H., McElwee P., Biggs, R., Carr E., Agrawal, A. 2025. Challenges for transforming academia towards a 'science for and with society' paradigm. *Nature Sustainability*, doi.org/10.1038/s41893-025-01612-x
 62. Li, Y., Lu, D., Yu, X., **Liao C.** 2025. Exploring characteristics of emerging nature education practices in China: Content analysis of lesson plans. *Integrative Conservation*, doi.org/10.1002/inc3.70040.
 61. Wu P., Liu M., Zheng, M., **Liao C.**, Hua X., Fei D., Bai Y., Zhou Y., Zhou Y., Huang, Q. 2025. Relocation for improved ecosystem service and human wellbeing? Evidence from Fuping, Hebei, China. *Journal of Geographical Sciences*, 35 (7): 1556-1574.
 60. Tu, Y.[#], Chen, B., **Liao, C.**, Wu, S., An J., Lin, C., Gong, P., Chen, B., Hong, W., Xu, B. 2025. Global inequality in infrastructure access and the associated disparity in health outcomes. *Nature Human Behaviour*, doi.org/10.1038/s41562-025-02208-3
 59. Yuan Y., Santamouris, M., Xu, D., Geng X., Li, C., Cheng, W., Su L., Xiong, P., Fan Z., Wang X., **Liao, C.** 2025. Surface Urban Heat Island Effects Intensify More Rapidly in Lower Income Countries. *npj Urban Sustainability*, doi.org/10.1038/s42949-025-00198-9
 58. **Liao, C.** 2024. Beyond Linear Pathways: An Interconnected Framework for Understanding the Climate-Migration Nexus. *International Migration*, 62 (6) 284-288.
 57. Lee, Y.^{*}, **Liao, C.** 2024. Upholding Household Agency in Climate Mitigation and Socio-Technical Energy Transition in Ethiopia. *Energy Policy*, 188 (2024) 114067.
 56. Shin, S.^{*}, Ichihara, M., Sokourenko, K., **Liao, C.** 2024. Everyday Climate Adaptations Enhance Smallholder Agriculture and Food Security in Sub-Saharan Africa. *Ecology &*

Society 29 (4).

55. Yuan, Y., Li, X., Wang, H., Geng, X., Gu, J., Fan, Z., Wang, X., **Liao, C.** 2024. Unraveling the Global Economic and Mortality Effects of Rising Urban Heat Island Intensity *Sustainable Cities and Society*, 116 (2024) 105902.
54. Shuai, C., **Liao, C.**, Qu, S., Chen, X., Zhao, B., Zou, J., Xu, M. 2024. Scaling of Development Indicators in Countries and Its Origin. *iScience* 27, 110497.
53. Zhang L., Huang Q., Qiu J., **Liao, C.**, Liu Z., He C., Chen P., Zhou Y., Bai Y., Bryan B. 2024. Conceptualizing and quantifying virtual flows of ecosystem services. *Ecosystem Services*, 69 (2024) 101651.
52. Fu, H., Cai, M., Jiang P., Fei D., **Liao, C.** 2024. Multi-objective optimization of spatial pattern towards low-carbon transition in the Yangtze River Economic Belt, China *Landscape Ecology*, 39,156 (2024).
51. Fu, H., Li, Y, Jiang, P., Zhou, S. [#], **Liao, C.** 2024. Transition Towards Sustainable Diets: Multi-Objective Optimization of Dietary Pattern in China. *Sustainable Production and Consumption*, 48 (2024) 14-28.
50. **Liao, C.**, Jung, S., Brown, D., Agrawal, A. 2024. Does Land Tenure Change Accelerate Deforestation? A Matching-Based Four-Country Comparison. *Ecological Economics*, 215 (2024) 108011.
49. **Liao, C.**, Agrawal, A. 2024. Towards a Science of ‘Land Grabbing’. *Land Use Policy*, 137 (2024) 107002.
48. **Liao, C.**, Liu, J., Agrawal, A. 2024. Sustainability Governance for Agrarian Transformation under Climate Change. *Sustainability Science*, doi.org/10.1007/s11625-023-01422-0
47. Sun, X., Liu, H., **Liao, C.**, Nong H., Yang, P. 2024. Understanding recreational ecosystem service supply-demand mismatch and social groups’ preferences: Implications for urban–rural planning. *Landscape and Urban Planning*, 241 (2024) 104903.
46. Soto, G., Wilcox S., Clark P., Fava F., Jensen N., Kahi N., **Liao C.**, Porter B., Sun Y., Barrett, C. 2024. Mapping Rangeland Health Indicators in East Africa from 2000 to 2020. *Earth System Science Data*, 16, 5375-5404, doi.org/10.5194/essd-16-5375-2024.
45. **Liao, C.**, Nolte, K., Brown, D., Lay, J., Agrawal, A. 2023. The Carbon Cost of Agricultural Production in the Global Land Rush. *Global Environmental Change*, 80 (2023) 102679.
44. Fu, H., Hong, N., **Liao, C.** 2023. Spatio-Temporal Patterns of Chinese Urban Recovery and System Resilience Under the Pandemic New Normal. *Cities*, 140 (2023) 104385.
43. Fang, G., Sun, X., **Liao, C.**, Xiao, Y., Yang P., Liu, Q. 2023. How Do Ecosystem Services Evolve Across Urban–Rural Transitional Landscapes of Beijing–Tianjin–Hebei Region in China: Patterns, Trade-Offs, And Drivers. *Landscape Ecology*, (2023) 38:1125–1145.
42. Wang, Z., Fu, H., Liu, H., **Liao, C.** 2023. Urban development sustainability, industrial structure adjustment, and land use efficiency in China. *Sustainable Cities and Society*, 89 (2023) 104338.
41. Wang, X. ^{*}, **Liao, C.**, Brandhorst, S. ^{*}, Clark, P. 2022. Sedentarization as an adaptation to

- socio-environmental changes? Everyday herding practices in pastoralist communities in Southern Ethiopia. *Ecology & Society* 27(3).
40. Fu, H., Zhao, S., **Liao, C.** 2022. Spatial Governance of Beijing-Tianjin-Hebei Urban Agglomeration Towards Low-Carbon Transition. *China Agricultural Economic Review* 14(4), 774–798.
 39. Ye, C., Chen, M., Chen, R., **Liao, C.** 2022. Rural–Urban Governance toward Sustainable Development Goals. *Journal of Geographical Sciences*, 232(7): 1405-1408.
 38. Agrawal, A., Brandhorst, S. *, Jain, M., **Liao, C.**, Pradhan, N., Solomon, D. 2022. From Environmental Governance to Governance for Sustainability. *One Earth*, 5(6): 615-621.
 37. Yin, D., Huang, Q., He, C., Hua, X., **Liao, C.**, Inostroza, L., Zhang, L., Bai, Y. 2022. The Varying Roles of Ecosystem Services in Poverty Alleviation among Rural Households in Urbanizing Watersheds. *Landscape Ecology*, 37: 1673–1692
 36. **Liao, C.**, Agrawal, A. 2022. Sustainable and Just Energy Transitions in the Global South. *World Development*, 152:105798.
 35. Fu, H., Wang, Y., Mao, L., Hong, N., Wang, Z., Zhao, S., **Liao, C.** 2022. The Spatial Pattern and Sustainability of Zhongyuan Urban-Rural System in Its Development Trajectory. *Journal of Geographical Sciences*, 232(7): 1261-1280.
 34. **Liao, C.**, Nolte, K, Sullivan, J. Brown, D., Lay, J., Althoff, C., Agrawal, A. 2021. Carbon Emissions from the Global Land Rush and Potential Mitigation. *Nature Food*, 2, 15-18.
 33. Fei, D., **Liao, C.**, Yang, H. 2021. Student Returnees from China’s COVID-19 Epicenter: Spatio-temporal Movement and Impact of Tracing. *Social Science & Medicine*, 287 (2021) 114371.
 32. Williams, T., Trush, S., Sullivan, J., **Liao, C.**, Chesterman, N., Agrawal, A., Guikema, S., Brown, D. 2021. Land-Use Changes Associated with Large-Scale Land Transactions in Ethiopia. *Ecology & Society*, 26(4):34.
 31. **Liao, C.**, Erbaugh, J., Kelly, A., Agrawal, A. 2021. Clean Energy Transitions and Human Well-Being Outcomes in Lower and Middle Income Countries: A Systematic Review. *Renewable & Sustainable Energy Reviews*, 145 (2021) 111063.
 30. Chen, C., Long, X., Li, Z., **Liao, C.**, Xie C., Che, S. 2021. Exploring the Determinants of Urban Green Space Utilization Based on Microblog Check-in Data in Shanghai, China. *Forests*, 2021, 12 1783.
 29. **Liao, C.**, Fei, D., Huang, Q., Jiang L., Shi, P. 2021. Targeted Poverty Alleviation through Photovoltaic-Based Intervention: Rhetoric and Reality in Qinghai, China. *World Development*, 137 (2021) 105117.
 28. Fu, H., Zhang, Y., **Liao, C.**, Mao, L., Wang, Z., Hong, N. 2020. Investigating PM_{2.5} Responses to Air Pollutants and Meteorological Factors at Multiple Temporal Scales. *Scientific Reports*, 10:15639
 27. **Liao, C.**, Agrawal, A., Clark, P., Levin, S., Rubenstein, D. 2020. Landscape Sustainability Science in the Drylands: Mobility, Rangeland and Livelihoods. *Landscape Ecology*, 35, 2433–2447.

26. Khatami, R., Southworth, J., Muir, C., Caughlin, T., Ayana, A., Brown, D., **Liao, C.**, Agrawal, A. 2020. Operational Large-Area Land Cover Mapping: An Ethiopia Case Study. *Remote Sensing*, 2020, 12(6), 954.
25. **Liao, C.**, Jung, S., Agrawal, A., Brown, D. 2020. Spatial Patterns of Large-Scale Land Transactions and Their Potential Socio-Environmental Outcomes in Cambodia, Ethiopia, Liberia, and Peru. *Land Degradation and Development*, 31 (10), 1241-1251.
24. **Liao, C.**, Qiu, J., Chen, B., Chen, D., Fu, B., Georgescu, M., He, C., Jenerette, D., Li, X., Li, X., Li, X., Qiuying, B., Shi, P., Wu, J. 2020. Advancing Landscape Sustainability Science: Theoretical Foundation and Synergies with Innovations in Methodology, Design, and Application. *Landscape Ecology*, 35, 1–9.
23. Fei, D., **Liao, C.** 2019. China's Eastern Industrial Zone in Ethiopia: Unpacking the Enclave. *Third World Quarterly*, 41 (4), 623-644.
22. **Liao, C.**, Fei, D. 2019. Poverty Reduction through Photovoltaic-Based Development Intervention in China: Potentials and Constraints. *World Development*, 122: 1-10.
21. Hajjar, R., Ayana, A., Rutt, R., Hinde, O., **Liao, C.**, Keene, S., Bandiaky-Badji, S., Agrawal, A. 2019. Capital, Labor, and Gender: The Consequences of Large-Scale Land Transactions on Household Labor Allocation. *Journal of Peasant Studies*, 47 (3), 566-588.
20. Jung, S., **Liao, C.**, Agrawal, A., Brown, D. 2019. Evidence on Wealth-Improving Effects of Forest Concessions in Liberia. *Journal of the Association of Environmental and Resource Economists*, 6(5): 961-1000.
19. **Liao, C.**, Clark, P., DeGloria, S. 2018. Bush Encroachment Dynamics and Rangeland Management Implications in the Horn of Africa. *Ecology and Evolution*, 8(23): 11694-11703.
18. Agrawal, A. Hajjar, R., **Liao, C.**, Rasmussen, L., Watkins, C. 2018. Editorial Overview: Forest Governance Interventions for Sustainability through Information, Incentives, and Institutions. *Current Opinions in Environmental Sustainability*, 32: A1-A7.
17. **Liao, C.**, Brown, D., Fei, D., Long, X., Chen, D., Che, S. 2018. Big Data-Enabled Social Sensing in Spatial Analysis: Potentials and Pitfalls. *Transactions in GIS*, 22(6): 1351-1371.
16. **Liao, C.**, Brown D. 2018. Assessments of Synergistic Outcomes from Sustainable Intensification of Agriculture Need to Include Smallholder Livelihoods with Food Production and Ecosystem Services. *Current Opinions in Environmental Sustainability*, 32: 53-59.
15. **Liao, C.** Clark, P., Shibia, M., DeGloria, S. 2018. Spatio-Temporal Dynamics of Cattle Behaviors and Resource Selection Patterns in the Open Grazing System of East Africa. *International Journal of Geographical Information Science*, 32(7): 1523-1540.
14. **Liao, C.** 2018. Quantifying Multi-Scale Pastoral Mobility: Developing A Metrics System and Using GPS-Tracking Data for Evaluation. *Journal of Arid Environments*, 153: 88-97.
13. **Liao, C.**, Clark, P. 2018. Rangeland Vegetation Diversity and Transition Pathways under Indigenous Pastoralist Management Regimes in Southern Ethiopia. *Agriculture, Ecosystems & Environment*, 215: 105-113.

12. **Liao, C.** 2018. Modeling Herding Decision-Making in the Extensive Grazing System in Southern Ethiopia. *Annals of the American Association of Geographers*, 108 (1): 260-276.
11. Fei, D., Samatar, A., **Liao, C.** 2018. Chinese-African Encounters in High-Tech Sectors: Comparative Investigation of Chinese Workplace Regimes in Ethiopia. *Development Policy Review*, 36 (S1): O455-O475.
10. **Liao, C.**, Clark, P., DeGloria, S., Barrett, C. 2017. Complexity in the Spatial Utilization of Rangelands: Pastoral Mobility in Borana, Ethiopia. *Applied Geography*, 86: 208-219.
9. **Liao, C.**, Fei, D. 2017. Pastoralist Adaptation Practices under Non-Governmental Development Interventions in Southern Ethiopia. *The Rangeland Journal*, 39 (2): 189-200.
8. **Liao, C.** Fei, D. 2017. Sedentarization as Constrained Adaptation: Evidence from Pastoral Regions in Far Northwestern China. *Human Ecology*, 45 (1): 23-35.
7. **Liao, C.**, Ruelle, M., Kassam, K-A. 2016. Indigenous Ecological Knowledge as the Basis for Adaptation to Rangeland Vegetation Regime Shifts: Evidence from Pastoralist Communities in the Horn of Africa. *Journal of Environmental Management*, 182 (2016): 70-79.
6. **Liao, C.**, Jung, S., Brown, D., Agrawal, A. 2016. Insufficient Research on Land Grabbing. *Science*, 353 (6295): 131.
5. **Liao, C.**, Fei, D. 2016. Resilience of What to What: Evidence from Pastoral Contexts in East Africa and Central Asia. *Resilience: International Policies, Practices and Discourses*, 4 (1): 14-29.
4. **Liao, C.**, Barrett, C., Kassam, K.-A. 2015. Does Diversification Improve Livelihoods? Pastoral Households in Xinjiang, China. *Development and Change*, 46 (6): 1302-1330.
3. **Liao, C.**, Sullivan, P., Barrett, C., Kassam, K.-A. 2014. Socioenvironmental Threats to Pastoral Livelihoods: Risk Perceptions in the Altay and Tianshan Mountains of Xinjiang, China. *Risk Analysis*, 34 (4): 640-655.
2. **Liao, C.**, Morreale, S., Kassam, K.-A., Sullivan, P., Fei, D. 2014. Following the Green: Coupled pastoral migration and vegetation dynamics in the Altay and Tianshan Mountains of Xinjiang, China. *Applied Geography*, 46: 61-70.
1. Wang, M., **Liao, C.**, Yang, S., Zhao, W., Liu, M., Shi, P. 2012. Are People Willing to Buy Natural Disaster Insurance in China? Risk Awareness, Insurance Acceptance, and Willingness to Pay. *Risk Analysis*, 32 (10): 1717-1740.

Book Chapters

- Kassam, K-A., **Liao, C.**, Dong S. 2016. Sociocultural and Ecological Systems of Pastoralism in Inner Asia: Cases from Xinjiang and Inner Mongolia in China and the Pamirs of Badakhshan, Afghanistan. In Dong, S., Kassam, K-A., Tourrand, J., Boone, R. (Ed) *Building Resilience of Human-Natural Systems of Pastoralism in the Developing World*. Springer.
- **Liao, C.**, Fei, D. 2016. The Operationalization of Resilience in Pastoral Regions in East Africa and Central Asia. In Chandler, D., Coaffee J. (Ed) *Routledge Handbook of International Resilience*. Taylor & Francis Group.

Reports

- IPBES (2024). Summary for Policymakers of the Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. O'Brien, K., Garibaldi, L., Agrawal, A., Bennett, E., Biggs, O., Calderón Contreras, R., Carr, E., Frantzeskaki, N., Gosnell, H., Gurung, J., Lambertucci, S., Leventon, J., **Liao, C.**, Reyes García, V., Shannon, L., Villasante, S., Wickson, F., Zinngrebe, Y., and Perianin, L. (eds.). IPBES secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.11382230>
- Jung, S., **Liao, C.**, Agrawal, A., Brown, D. 2019. Evidence on Wealth-Improving Effects of Forest Concessions in Liberia. AIDDATA Working Paper 76.
- Daupan, M., Erbaugh, J.T, Jung, S., Kinzer, A., **Liao, C.**, Sullivan, J., Watkins, C. Agrawal, A. 2018. Livelihood and Well-Being Survey Tool User Manual for Enumerators. Forest and Livelihoods: Assessment, Research, and Evaluation (FLARE).
- Hajjar, R., Rutt, R., Mulu, E., Ayana, A., **Liao, C.**, Agrawal, A. 2017. Gendered impacts of large-scale land acquisitions in Western Ethiopia. Rights and Resources Initiative
- **Liao, C.**, Clark, P., DeGloria, D., Mude, A., Barrett, C. 2016. Pastoral mobility and policy recommendations for livestock herding in the Borana pastoral system in southern Ethiopia. Consultative Group on International Agricultural Research (CGIAR) Research Program on Dryland Systems.
- **Liao, C.** 2014. Pastoral Migration Atlas. Maps returned to participant households in Borana, Ethiopia.
- **Liao, C.** 2014. Coupled Socio-Ecological System under Woody Plant Encroachment: Rangeland Utilization and Conservation in Borana, Ethiopia. Toward Sustainability Foundation Final Report.
- **Liao, C.** 2013. Rural Resilience Assessment in Borana, Ethiopia. ACSF-Oxfam Rural Resilience Collaboration and Fellowship Final Report.
- **Liao, C.** 2012. Toward Sustainable Pastures: Nomadic Migration, Livelihood Diversification, and Risk Perception in the Altay and Tianshan Mountains. Toward Sustainability Foundation Final Report.

RESEARCH GRANTS

- Atkinson Center for Sustainability, Cornell University (2026-2028). *Climate-Smart Shea: Carbon Insetting, Biochar Innovation, and Climate Finance for Uganda's Nilotica Belt*. **My role: co-PI**; PI: Ed Mabaya (Cornell), co-PIs: Ralph Christy, Fridah Mubichi-Kut, Johannes Lehmann (Cornell). **\$150,000**.
- National Science Foundation (2025-2027). *SCC-CIVIC-FA Track A: Resilient Rice Farming through Community Innovation in New York State (RRI-NYS)*. **My role: PI**; Co-PIs: Jenny Kao-Kniffin, Matthew Reid (Cornell). **\$700,000**.
- Global Cornell (2026). *Practicing Sustainability Transition through Circular and Green*

- Innovations in Agrifood Systems of New York State and the Yangtze River Delta. My role: PI (Cornell). \$5,000.*
- Cornell Polson Institute (2025-2026). *Typologies of African Urban Growth: Linking Morphology, Sustainability, and Inclusive Futures. My role: PI; co-PI: Stephan Schmidt (Cornell). \$5,000.*
 - Environmental Defense Fund (2025-2027). *Sorghum for sustainability? Enabling water savings from crop switching in Kansas. My role: Lead co-PI. Other lead co-PIs: Alison Eagle, Leah Beaulac (EDF); Co-PIs: Gopal Penny, Marika Jaeger, Simone Schenkel (EDF). \$200,000.*
 - Cornell Polson Institute (2025-2026). *Building a stakeholder network on circular bionutrient economy in East Africa. My role: co-PI. PI: Johannes Lehmann; Co-PI: Rebecca Nelson, Lori Leonard (Cornell). \$10,000.*
 - Cornell Institute of Digital Agriculture (2025-2026). *Reducing Methan and Arsenic in NY Rice Paddies. My role: co-PI. PI: Matthew Reid; Co-PI: Jenny Kao-Kniffin (Cornell). \$10,000.*
 - Consultative Group on International Agricultural Research, Standing Panel on Impact Assessment (2025-2027). *SPIA Country Study in Nepal. My role: co-PI; PI: Arun Agrawal (Notre Dame), co-PIs: Meha Jain (Michigan), Birendra Karna (Forest Action). \$261,000.*
 - Cornell Polson Institute (2024-2025). *Assessing Socio-Environmental Dynamics of Renewed Land Rush for Biofuel in Brazil. My role: PI. Co-PI: Wendy Wolford (Cornell). \$10,000.*
 - Atkinson Center for Sustainability, Cornell University (2024-2025). *Assessing Socio-Environmental Impacts of Renewed Land Rush for Biofuel in Brazil. My role: PI. \$10,000.*
 - National Science Foundation (2024-2026). *SCC-CIVIC-PG Track A: Community-driven Innovations in Rice for Climate Adaptation in New York State (CIRCA-NYS). My role: PI; Co-PIs: Jenny Kao-Kniffin, Matthew Reid (Cornell). \$75,000.*
 - National Science Foundation (2024-2027). *IRES: Student-Scout Partnership for Exploring Sustainable Transitions in the Kenyan Drylands. My role: PI; Co-PIs: Daniel Rubenstein (Princeton), Arun Agrawal (Michigan). \$450,000.*
 - Cornell Center for Health Equity, Cornell University (2024-2025). *Warming Planet, Unequal Burden: Chronic Kidney Disease Prevalence and Disparities among Elders in the United States. My role: PI. \$3,000.*
 - Polson Institute for Global Development, Cornell University (2024-2025). *Energy and Society Research Working Group. My role: PI. Co-PIs: Stephan Schmidt, Yujin Lee, Seongmin Shin, Camillo Stubenbug, Hassan Yakubu, Shuai Zhou (Cornell). \$3,000.*
 - Cornell Center for Social Sciences (2024). *Organic Rice Farming for Climate Change Adaptation. My role: PI. \$35,000.*
 - Towards Sustainability Foundation (2024). *Agricultural Floodplain Rice Farming as Adaptation to Climate Change in NYS: An RCT Approach. My role: PI. Co-PI: Radine Rafols, Shuai Zhou (Cornell). \$11,000.*

- Cornell CALS Moonshot Seed Grant (2024). *Agricultural Floodplain Rice Farming for Just Technological Futures: An Environmental Justice Perspective*. **My role: PI**. Co-PI: Jenny Kao-Kniffin, Susan McCouch, Wendong Zhang, Precious Tshabalala (Cornell). **\$50,000**.
- Global Cornell Joint Seed Grant (2024-2025). *Advancing UCL-Cornell collaboration on environmental health equity under globalization*. **My role: PI**; Co-PI: Zhifu Mi (UCL). **\$10,000**.
- United States Department of Agriculture, National Institute of Food and Agriculture. *Agricultural Floodplain Rice Farming as Adaptation to Climate Change in New York State*. **My role: PI**. **\$150,000**.
- Global Cornell (2023-2024). *Migration for Equitable Resource Access on East African Drylands*. **My role: PI**. Co-PI: Christopher Barrett, Ying Sun (Cornell). **\$50,000**.
- United States Department of Agriculture, National Institute of Food and Agriculture (2023-2027). *Circular Soil for City Spaces: Advancing the circular bionutrient economy to support urban and peri-urban gardeners*. **My role: co-PI**. PI: Rebecca Nelson (Cornell), Co-PI: Johannes Lehmann, Erika Palmer (Cornell). **\$874,440**.
- Polson Institute for Global Development, Cornell University. *Circular Bionutrient Economy for AgriFood System Transition: Comparison between New York State and Lake Victoria Basin of Kenya*. **My role: PI**. Co-PI: Rebecca Nelson (Cornell). **\$5,000**.
- Cornell Center for Social Sciences (2022-2023). *The Sustainability Justice of Socio-Environmental System Transitions in the Drylands*. **My role: PI**. **\$6,000**.
- Einhorn Center for Community Engagement, Cornell University (2022). *Circular Economy at Cornell Curriculum Grant*. **My role: Co-PI**; PI: Rebecca Nelson, Co-PI Lori Leonard, Mario Herrero, Johannes Lehmann, Erika Palmer, Christopher Barrett, Max Zhang, Mitchell Glass, Felix Heisel, Marta Wisniewska (Cornell). **\$10,000**.
- Atkinson Center for Sustainability, Cornell University (2022-2023). *Assessing the global potential of circular bionutrient economy in peri-urban areas for food system sustainability*. **My role: PI**; co-PI: Rebecca Nelson (Cornell). **\$25,000**.
- Global Drylands Center, Arizona State University (2022). *The Sustainability of Socio-Environmental System Transitions in the Kenyan Drylands*. **My role: PI**. Co-PI: Jianguo Wu (ASU). **\$5000**.
- City of Phoenix (2021-2022). *Phoenix Backyard Garden Program Evaluation*. **My role: PI**. **\$47,106**.
- Knowledge Enterprise, Arizona State University (2021-2022). *Can Urban Agriculture Promote Food System Justice and Resilience in a Desert City*. **My role: PI**. **\$15,000**.
- Institute of Social Science Research, Arizona State University (2020-2021). *Assessing the Emerging Geographies of South-South Cooperation in Sustainable Energy and Its Socio-Environmental Impacts*. **My role: Co-PI**; PI: Ding Fei (ASU). **\$2,250**.
- Swette Center for Sustainable Food Systems, Arizona State University (2019-2020). *Impacts of Large-Scale Land Acquisitions on Food Systems in Bolivia*. **My role: PI**. Co-PI: Hallie Eakin (ASU). **\$5,000**.

- Institute of Social Science Research, Arizona State University (2018-2019). *Sustainability of Subsistence Pastoralism in the African and Asian Drylands: The Mobility- Land-Livelihood Nexus*. **My role: PI. \$7,950.**
- Graham Sustainability Institute, University of Michigan (2016-2018). *Complex Rural and Urban Sustainability Issues: Using Big Data for Impact Assessment*. **My role: PI. \$15,000**
- Michigan Institute for Data Science (2016-2018). *Unlocking the Potential of Big Data from Mobile Phones to Assess Urban Green Space Utilization*. **My role: Co-PI; PI: Daniel Brown (Michigan), Shengquan Che (Shanghai Jiao Tong U), Co-PI: Natalie Colabianchi (Michigan), Dan Chen (Shanghai Jiao Tong U). \$199,735.**
- Rights and Resources Institute (2016). *The Impacts of Large-Scale Land Acquisitions on Local Women's Land and Forest Tenure Rights: Case Studies from Western Ethiopia*. **My role: Co-PI; PI: Arun Agrawal, Co-PI: Reem Hajjar (Michigan), Alemayehu Ayana (Ethiopian Environment and Forest Research Institute). \$68,632.**
- National Science Foundation (2016-2020). *Recent Land Transactions in Ethiopia: Impacts on Agriculture, Ecosystem Services, and Food-Energy Security*. **My role: Senior personnel; PI: Arun Agrawal; Co-PI: Daniel Brown (Michigan), Jane Southworth (Florida). \$1,599,951.**

CONFERENCES (* indicates presenter)

- Zhou, S. *, **Liao, C.**, Hanks, R., Roland, H.. 2026. “Rising Temperature Drive Higher Prevalence of Chronic Kidney Disease in the United States, 2009–2021.” 2026 Annual Meeting of the Population Association of America, May 6-9, 2026, St. Louis, MO.
- Tu, Y. *, **Liao, C.** “Crop Switching as a Key Strategy for Climate Change Adaptation: Insights from Floodplain Rice Farming in the United States”. American Geophysical Union Annual Conference, New Orleans, LA, December, 2025.
- He., K., Wagner, F., Kiesewetter, G., **Liao, C.**, Lin, J., Liu, L., Wood, R., Dai, F., Mi, Z. “The Role of Trade and Atmospheric Transport in Shaping Global PM2.5 Emission Related Health Burdens”. American Geophysical Union Annual Conference, New Orleans, LA, December, 2025.
- Liao, C.** * Coordinating Lead Author, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services Eleventh Plenary, Windhoek, Namibia, December, 2024.
- Tu, Y. *, **Liao, C.** “Agricultural Floodplain Rice Farming as Adaptation to Climate Change in NYS”. Agriculture, Food & Environmental Systems In-service, Cornell Cooperative Extension, November, 2024.
- Tu, Y. *, Kao-Kniffin, J., Reid, M., **Liao, C.** “Assessing the Suitability of Agricultural Floodplain Rice Farming as Adaptation to Climate Change in the United States”. American Geophysical Union Annual Conference, Washington, DC, December, 2024.
- Rafols, R., Tu, Y., Xu, Y., Butler, N., Ababneh, L., Tao, F., Ramanathan, V., Houlton, S., **Liao, C.** * Scaling up of Enhanced Rock Weathering for Climate Change Mitigation. National

- Sustainability Society Annual Meeting, Seattle, WA, September 2024.
- Zhou, S. *, **Liao, C.**, Wei, Z., Chi, G. “Environmental Impacts on Cause-specific Mortality in the United States, 2000 – 2019.” 2024 Annual Meeting of the Rural Sociological Society, Madison, WI, July 2024.
- Zhou, S. *, **Liao, C.**, Ludwig-Borycz, E., Shin, S., Lee Y., Wei, Z., Turner, J., Chen, Y., Araia, R., Cheung, F., Agrawal A. “A Comprehensive Synthesis and Future Prospects of Environmental Health Literature, 2010 – 2023.” 2024 Annual Meeting of the Rural Sociological Society, Madison, WI, July 2024.
- Zhou, S. *, Wei, Z., Chi, G., **Liao, C.** “Beyond Pathogens: Unravelling Mortality through an Environmental Lens in the United States, 2000-2019”, Annual Meeting of Population Association of America, Columbus, OH, April 2024.
- Liao, C.** * Coordinating Lead Author, Meeting of Summary for Policymakers of the Transformative Change Assessment, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Santa Barbara, CA, April, 2024.
- Liao, C.** * Coordinating Lead Author, Third Author Meeting of the Transformative Change Assessment, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Montpellier, France, February, 2024.
- Lee, Y. *, **Liao, C.** “Upholding Household Agency in Climate Mitigation and Socio-Technical Energy Transition in Ethiopia”. Western Regional Science Association 2024 Annual Meeting, Monterey, CA, February, 2024.
- Liao, C.** * Coordinating Lead Author, Second Author Meeting of the Transformative Change Assessment, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Turrialba, Costa Rica, May, 2023.
- Liao, C.** * “Risk of Zoonotic Disease Outbreaks from the Global Land Rush”. Tata-Cornell Institute 10th Anniversary Conference, Ithaca, NY, May, 2023.
- Fei, D. *, **Liao, C.** “Chinese Overseas Economic and Trade Cooperation Zones in Africa: Development Trajectories and Urbanizing Impacts”. Development Studies Association 2022 Annual Conference, University College London, online, July, 2022.
- Fu, H. *, Hong, N., **Liao, C.** “Spatio-Temporal Patterns of Chinese Urban System Resilience in the Context of the Pandemic”. The Third Sustainability and Development Conference, University of Michigan, online, January, 2022.
- Liao, C.** * “Energy and Environmental Management Research in World Development”. Annual Forum on Energy and Environmental Management, online, October, 2021.
- Liao, C.** * “Post-Pandemic Development: Sustainability Justice and Global Governance”. College of International Development and Global Agriculture Annual Conference, China Agricultural University, online, October, 2021.
- Yin, D. *, Huang Q., He, C., Hua, X., **Liao, C.** The Varying Roles of Ecosystem Services in Poverty Alleviation among Rural Households in Urbanizing Watersheds. AGU Fall Meeting 2020, online, December, 2020.
- Liao, C.** * “Herding Decision Making in the Commons of Southern Ethiopia”. IASC 2020 Web Conference on African Commons, online, July, 2020.

- Liao, C. ***, Fei, D., Huang, Q., Wu, J., Shi, P. “Impact of solar energy-based development intervention program on poverty reduction: Evidence from a pilot study in Qinghai, China”. Sustainability and Development Conference, Ann Arbor, MI, October, 2019.
- Liao, C. *** “Landscape Sustainability Science for Achieving Sustainable Development Goals in the Global Drylands”. Landscape Sustainability Science Forum (Plenary Talk), Xining, Qinghai, China, July, 2019.
- Liao, C. *** “A Network Approach for Understanding the Global Land Rush”. Annual Meeting of Association of American Geographers, Washington, DC, April, 2019.
- Muir, C. *, Khatami, R., Southworth, J., **Liao, C.**, Ayana, A. “Agricultural Intensification and Large-Scale Land Acquisition in Ethiopia”. Annual Meeting of Association of American Geographers, Washington, DC, April, 2019.
- Khatami, R. *, Southworth, J., Muir, C., Caughlin, T., Ayana, A., Brown, D., **Liao, C.**, Agrawal, A. “Operational Large-Area Land-Cover Mapping: An Ethiopia Case Study”. Annual Meeting of Association of American Geographers, Washington, DC, April, 2019.
- Smith A. *, Southworth, J., Agrawal, A., Brown, D., **Liao, C.**, Ayana, A. “Large-Scale Land Acquisitions in Ethiopia: Implications for Ecosystem Services”. Annual Meeting of Association of American Geographers, Washington, DC, April, 2019.
- Agrawal, A. *, Brown, D., **Liao, C.**, Lund, J. “Agricultural Development, Structural Change, and Large-Scale Land Transactions”. Annual Meeting of Association of American Geographers, Washington, DC, April, 2019.
- Liao, C. *** “Poverty Reduction through Solar Energy-Based Intervention in China: Potentials and Constraints.” Sustainability and Development Conference, Ann Arbor, MI, November, 2018.
- Liao, C. ***, Brown, D., Long, X., Chen, D., Che, S. “Applying Big Data from Social Media to Assess Urban Green Space Utilization Patterns in Shanghai, China.” The 2017 Global City Forum, Shanghai, China, October, 2017.
- Liao, C. ***, Brown, D., Fei, D., Long, X., Chen, D., Che, S. “Data Biases Undermine Geospatial Inference Based on Location-Based Crowdsourced Data.” The 2017 Michigan Institute for Data Science Symposium, Ann Arbor, MI, October, 2017.
- Liao, C. ***, Nolte, K., Lay, J., Brown, D., Agrawal, A. “Anticipating Carbon Emission and Its Mitigation from the Global Land Rush.” Third Annual Meeting of Forests & Livelihoods: Assessment, Research, and Engagement, Stockholm, Sweden, September, 2017.
- Ingalls, M. *, **Liao, C.**, Barney, K. “Geopolitical Dimensions of Land Systems Governance in the Mekong: Implications of Political and Economic Securitization.” International Conference on Research for Development, Bern, Switzerland, September, 2017.
- Liao, C. ***, Nolte, K., Agrawal, A. “Virtual Land Flow and Potential Carbon Emission in the Global Land Rush” Association for Law, Property & Society 8th Annual Meeting, Ann Arbor, MI, May, 2017.
- Fei, D. *, **Liao, C.** “Chinese Dispatched Labour Migration to Africa.” Annual Meeting of Population Association of America, Chicago, IL, April 2017.

- Brown, D. *, Agrawal, A., **Liao, C.**, Jung, S., Sullivan, J. “Large-Scale Land Transactions as Drivers of Land-Cover Change in Sub-Saharan Africa.” 2017 Land Use and Land Cover Change Spring Science Team Meeting, Rockville, MD, April, 2017.
- Liao, C. ***, Ayana, A., Brown, D., Agrawal, A. “Can Large-Scale Land Transactions Lead to Social-Economic-Ecological Synergy” Annual Meeting of Association of American Geographers, Boston, MA, April, 2017.
- Liao, C. ***, Agrawal, A., Brown, D., Jung, S. “Large-Scale Land Transactions as Drivers of Land-Cover Change in Ethiopia” Annual Meeting of Association of American Geographers, Boston, MA, April, 2017.
- Liao, C. ***, Ayana, A., Brown, D., Agrawal, A. “Can Large-Scale Land Transactions Lead to Social-Economic-Ecological Synergy?” Forests & Livelihoods: Assessment, Research, and Engagement Second Annual Meeting, Edinburgh, UK, December, 2016.
- Liao, C. ***, Jung, S., Agrawal, A., Brown, D. 2016. “Do Large-Scale Land Transactions Accelerate Deforestation? A Matching-Based Four-Country Comparison.” Third GLP Open Science Meeting, Beijing, China, October, 2016.
- Liao, C. ***, Brown, D., Jung, S., Agrawal, A. 2016. “Large-Scale Land Transactions as Drivers of Land-Cover Change in Sub-Saharan Africa.” 2016 Land Use and Land Cover Change Spring Science Team Meeting, North Bethesda, MD, April, 2016.

INVITED LECTURES AND PRESENTATIONS

- Liao, C.** “SCC-CIVIC-FA Track A: Resilient Rice Farming through Community Innovation in New York State (RRI-NYS)”. NSF CIVIC Innovation Challenge cohort meeting, Washington, DC, October, 2025.
- Liao, C.** “Climate-adaptive rice farming in flood-prone croplands contributes to economic benefits and environmental sustainability”. IFPRI-Cornell Workshop. Ithaca, NY, October, 2025.
- Liao, C.** “Global Land Rush and Sustainability Implications”. School for Environment and Sustainability, University of Michigan, Ann Arbor, MI, November, 2024.
- Liao, C.** “Sustainable and Just Energy Transitions in the Global South”. School of Public Policy, Nazarbayev University, Astana, Kazakhstan (online), November, 2024.
- Liao, C.** “Community-driven Innovations in Rice for Climate Adaptation in New York State (CIRCA-NYS)”. NSF CIVIC Innovation Challenge cohort meeting, Washington, DC, October, 2024.
- Liao, C.** “Data Science of Human-Environment Systems for Sustainable Development”. Department of Natural Resources and the Environment seminar, Cornell University, January, 2024.
- Liao, C.** Moderator, World Development Report 2023: Migration, Global Cornell, Ithaca, NY, November, 2023.
- Liao, C.** “Spatial Data Science for Sustainable Development”. National Land Governance Seminar Series, Renmin University of China, April, 2023.

- Liao, C.** Panelist, Alumni Career Panel on Diversity Paths in Sustainability, Cornell China Center, online, April, 2023.
- Liao, C.** “Spatial Science of Human-Environment Systems for Sustainable Development”, Department of Geography and Environment Studies Program, University of Oregon, Eugene, Oregon, April, 2023.
- Liao, C.** “Enhancing Circularity for Nutrient Justice in Agrifood System Transition”. Global Development Perspectives Seminar Series, Cornell University, March, 2023.
- Liao, C.** “Publishing in *World Development*”, School of Future Innovations in Society, Arizona State University, March, 2023.
- Liao, C.** Panelist, Dialogues with Stakeholders on the Review of the Transformative Change Assessment, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, online, March, 2023.
- Liao, C.** “Data Science of Human-Environment Systems for Sustainable Development”. Soil and Crop Science seminar, Cornell University, October, 2022.
- Liao, C.** “Spatial Data Science of the Commons for Sustainable and Just Development”. 2022 China Commons Workshop, Tsinghua University, online, September, 2022.
- Liao, C.** “SustJust 2030”, 2030 Cornell Climate Impact Roundtable, Cornell University, Ithaca, NY, September, 2022.
- Liao, C.** “The Sustainability Justice of Human-Environment System Transitions in the Drylands”, School of Public Administration Distinguished Lecture Series, Guangxi University, online, July, 2022.
- Liao, C.** “Sustainable and Just Energy Transition in the Global South”, Institute of New Structural Economics Lecture Series, Peking University, online, June, 2022.
- Liao, C.** “Sustainable and Just Energy Transition in Developing Countries”, School of Economics and Management, Southeast University, online, April, 2022.
- Liao, C.** “Spatial Science of Human-Environment Systems for Sustainable Development”, School of Public Administration, Chongqing University, online, April, 2022.
- Liao, C.** Chair of Session “Socio-Economic Sustainability” in The Hiroshima International Conference on Peace and Sustainability, Hiroshima University, online, March, 2022.
- Liao, C.** “Spatial Data Science of the Commons for Sustainable and Just Development”, Ostrom Workshop, Indiana University, Bloomington, Indiana, February, 2022.
- Liao, C.** “Data Science of Socio-Ecological Systems for Equitable and Inclusive Development”, Dean’s Inclusive Excellence Seminar Series, College of Agriculture and Life Sciences, Cornell University, online, February, 2022.
- Liao, C.** “Spatial Science of Socio-Ecological Systems for Sustainable Development”, Department of Geography and Sustainable Development, University of Miami, online, February, 2022.
- Liao, C.** Panelist on the Journal Editor Roundtable, The Third Sustainability and Development Conference, University of Michigan, online, January, 2022.
- Liao, C.** “Environmental Justice for Global Development”, Jackson School of International

- Studies, University of Washington-Seattle, online, January, 2022.
- Liao, C.** “Sustainability in China’s Frontiers and Beyond”, Princeton Institute for International and Regional Studies, Princeton University, online, January, 2022.
- Liao, C.** Chair of Special Conversation on “Towards Quality Sustainability: From China to the Globe”, The Third Sustainability and Development Conference, University of Michigan, online, January, 2022.
- Liao, C.** “Spatial Science of Human-Environment Systems for Sustainable Development”. School of Environment 20th Anniversary Keynote Speech, Renmin University of China, online, December, 2021.
- Liao, C.** Panelist on the UK-China Workshop on Energy and Climate Change Economics, University College London, online, December, 2021.
- Liao, C.** “Sustainable and Just Energy Transitions in the Global South”. School of Applied Economics, Renmin University of China, online, November, 2021.
- Liao, C.** “Sustainable and Just Energy Transitions in the Global South”. China Energy Policy Research Institute, Xiamen University, online, November, 2021.
- Liao, C.** “Spatial Science of Human-Environment Systems for Sustainable Development”. Nanjing Agricultural University, online, October, 2021.
- Liao, C.** “Spatial Science of Socio-Environment Systems for Sustainable Development”. Renmin University of China, online, May, 2021.
- Liao, C.** “Spatial Science of Socio-Environment Systems for Sustainable Development”. Beijing Normal University, online, May, 2021.
- Liao, C.** “Spatial Science of Socio-Environment Systems for Sustainable Development”. East China Normal University, online, April, 2021.
- Liao, C.** “Spatial Science of Socio-Environment Systems for Sustainable Development”. GeoInsider Seminar, online, March, 2021.
- Liao, C.** “Justice, Equity, Diversity, and Inclusion in Sustainability and Development”. Sustainability Research Seminar: Justice, Equity, Diversity, and Inclusion in School of Sustainability, Arizona State University, online, February, 2021.
- Liao, C.** “Spatial Science of Human-Environment Systems for Sustainable Development”. University College London, online, February, 2021.
- Liao, C.** “Spatial Science of Human-Environment Systems for Sustainable Development”. Colloquium in School of Geographical Sciences and Urban Planning, Arizona State University, online, October, 2020.
- Liao, C.** “Spatial Science of Human-Environment Systems for Sustainable Development”. Public Administration Forum, Huazhong Agriculture University, online, July, 2020.
- Liao, C.** “Impacts of Large-Scale Land Acquisitions on Food Systems in Bolivia”. Food for Thought Series, Arizona State University, Tempe, AZ, October, 2019.
- Liao, C.** “Spatial Science of Coupled Natural-Human Systems for Sustainable Development in the Drylands”. Yanbian University, Yanbian, Jilin, China, August, 2019.

- Liao, C.** “Spatial Science of Coupled Natural-Human Systems for Sustainable Development in the Drylands”. Beijing Normal University, Beijing, China, July, 2019.
- Liao, C.** “Landscape Sustainability Science for Achieving Sustainable Development Goals in the Global Drylands”. Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences, Changchun, Jilin, China, June, 2019.
- Liao, C.** 2019. “Spatial Science of Human-Environment Systems for Sustainable Development.” Department of Geography, University of Washington, Seattle, WA, February, 2019.
- Liao, C.** 2018. “Spatial Science of Coupled Natural-Human Systems for Sustainable Development.” Spatial Analysis Research Center, Arizona State University, Tempe, AZ, November, 2018.
- Liao, C.** 2018. “Modeling Herding Decision Making in the Extensive Grazing System in Southern Ethiopia.” Center for Behavior, Institutions and the Environment, Arizona State University, Tempe, AZ, October, 2018.
- Liao, C.** 2018. “Poverty Reduction through Solar Energy-Based Intervention in China: Potentials and Constraints.” Eradicating Poverty through Energy Innovation Workshop, Arizona State University, Tempe, AZ, February, 2018.
- Liao, C.** 2017. “Research Tools to Study Forest and Livelihoods.” School of Agricultural Economics and Rural Development. Renmin University of China, Beijing, China, October, 2017.
- Liao, C.** 2017. “Diversity of Large-Scale Land Acquisitions and Their Divergent Outcomes in Ethiopia.” German Institute of Global and Area Studies Socioeconomic Seminar Series, Hamburg, Germany, September, 2017.
- Liao, C.** 2016. “Livelihood Diversification, Herd Migration and Risk Perception on the Western Edge of Mongolian Plateau.” Symposium on Research synthesis & innovation on the Mongolian Plateau, Ann Arbor, MI, May, 2016.
- Liao, C., Brown, D., Jung, S., Agrawal, A.** 2016. “Spatial Patterns of Large-Scale Land Transactions: Number, Size, Context and Outcome in Cambodia, Ethiopia, Liberia and Peru.” Symposium on Large-Scale Land Transactions in sub-Sahara Africa, South Asia and Southeast Asia, Ann Arbor, MI, April, 2016.
- Liao, C.** 2016. “A Coupled Systems Approach to Understanding Human Dimensions of Global Environmental Change.” Department of GeoSciences, University of Missouri – Kansas City, Kansas City, MO, March, 2016.

TEACHING EXPERIENCE AND APPOINTMENTS

At Cornell

- Instructor, GDEV 4045/5045 *Data, AI, and Development* (Spring 2026)
- Instructor, GDEV 3170/5170 *Land Systems and Sustainability* (Spring 2025, Fall 2025)
- Instructor, GDEV 4295/5295 *Data Science Workshop with R* (Spring 2025, Fall 2025)

- Instructor, GDEV 2065 *Environment and Development* (Fall 2023)
- Instructor, GDEV 3295 *Introduction to Data Science for Global Development with R* (Fall 2023)
- Instructor, GDEV 4920/5920 *Introduction to Data Science with R* (Spring 2023)
- Guest Lecturer, GDEV 4940/6940 *Special Topics in Global Development* (11/2022)

At ASU

- Instructor, SOS 327 *Sustainable Food and Farms* (Fall, 2021; Spring 2021; Fall 2020; Spring 2020; Fall 2019; Fall 2018)
- Instructor, SOS 494/598 *Introduction to Quantitative Research in R* (Spring 2022; Fall 2020; Fall 2019; Fall 2018)
- Instructor, SOS 790 *Reading and Conference* (Fall 2020)
- Instructure, SOS 492 *Honors Directed Study* (Fall 2020)
- Guest Lecturer, GIS 270 *Statistics for Geography and Planning* (02/2020)
- Guest Lecturer, SOS 520 *Research Design and Methods for Sustainability* (09/2019; 10/2021)

At Other Institutions

- Invited Lecturer, *Sustainability and Development Conference Lecture*, U Michigan (10/2019)
- Invited Instructor, *Data Visualization in R Workshop*, Beijing Normal U, Beijing, China (07/2019)
- Guest Lecturer, NRE 563 *International Environmental Policy*, U Michigan (02/2017)

ADVISEE MENTORING

At Cornell

Postdocs

- Shuai Xu, Global Development (2026-)
- Ying Tu, Global Development (2024-2026; placement: Postdoc at the University of Connecticut)
- Shuai Zhou, Global Development (2023-2025; placement: Assistant Professor at the University of South Alabama)
- Radine Rafols, Global Development (2023-2024; placement: Economist at the World Bank)

PhD Students

- Seongmin Shin, Development Studies (PhD committee chair, 2023-)
- Hazel Lee, Regional Science (PhD committee chair, 2023-)

- Natalia Butler, Natural Resources and the Environment (MS/PhD committee chair, 2024-)
- Danning Lu, Development Studies (PhD committee chair, 2025-)
- Hassan Yakubu, City and Regional Planning (PhD committee member, 2024-)
- Katie Rohrbaugh, Soil and Crop Sciences (MS/PhD committee member, 2024-)
- Autumn Pereira, Horticulture (PhD committee member, 2026-)
- Xinghan Chen, City and Regional Planning (PhD committee member, 2026-)

Master Students

- Nor Anisa, Global Development (MPS thesis advisor, 2025-)
- Bharath Chandran C, Global Development (MPS thesis advisor, 2025-)
- Mercy Abutsa, Global Development (MPS thesis advisor, 2023-2024)

Pre-doctoral Fellow

- Shubam Sighn, Collaboration for International Development Economics Research (Advisor, 2025-)

Undergraduate Students

- Noor Sawhney: BA, Global Development (faculty advisor, 2022-)
- Saryn Kwon: BA, Global Development (faculty advisor, 2024-)
- Elina Han: BA, Global Development (faculty advisor, 2025-)
- Kamal Harris: BA, Global Development (faculty advisor, 2025-)
- Daniel Herreros: BA, Global Development (faculty advisor, 2025-)
- Colin Manfredo: BA, Global Development (faculty advisor, 2025-)
- Ruby Goodman: BA, Global Development (faculty advisor, 2025-)
- Lotta Grannis Pflaum: BA, Global Development (faculty advisor, 2025-)
- Logan Bonn: BA, Global Development (faculty advisor, 2022-2025)
- Ezra Winston: BA, Global Development (faculty advisor, 2022-2025)
- Peter Albrecht: BA, Global Development (faculty advisor, 2023-2025)
- Leo Li: BA, Global Development (faculty advisor, 2024-2025)
- Albert Knoepffler: BA, Global Development (faculty advisor, 2024-2025)
- Chris Ciulla: BA, Global Development (faculty advisor, 2024-2025)
- Natsumi Suzuki: BA, Global Development (faculty advisor, 2023-2024)
- Xinyu Ren: BA, Global Development (faculty advisor, 2022-2024)
- Carina Wang: BA, Global Development (faculty advisor, 2023-2024)
- Noah Duguma: BS, Environment and Sustainability (faculty advisor, 2023-)

- Ellie Butkovich: BS, Environment and Sustainability (faculty advisor, 2024-)
- Serena Chiang: BS, Environment and Sustainability (faculty advisor, 2023-)

Visiting Scholars

- Jingchun Nie, Visiting Associate Professor, Shaanxi Normal University (2023-2024)

Visiting Students

- Xiaoyu Shang, Visiting PhD student, Hong Kong Polytechnic University (2026-)
- Han Huang, Visiting PhD student, Zhejiang University (2025-)
- Yuan Liu, Visiting PhD student, Zhejiang University (2024-2025)
- Zhaoya Wang, Visiting PhD student, Nanjing Agricultural University (2024-2025)
- Shuang Wu, Visiting PhD student, Zhejiang University (2023-2024)
- Yuan Yuan: Visiting PhD student, Fudan University (2022-2023)
- Yihua Chen: Visiting PhD student, East China Normal University (2022-2023)

At ASU

Graduate Students

- Xin Wang: PhD, School of Sustainability (committee member, 2020-)
- Sidney Brandhorst: MS, School of Sustainability (chair, 2020-2022)
- Leah Kunkel: MS, School of Sustainability (graduate research assistant, 2020)
- Phillip Moore: MS, School of Sustainability (graduate research assistant, 2019)

Undergraduate Students

- Julia Aumann: BA, W.P. Carey School of Business (honor thesis advisor, 2021-2022)
- Cade Koch: BA, School of Sustainability (honor thesis advisor, 2022)
- Megan Ewy: BA, School of Sustainability (honors contract advisor, 2018)
- Samantha Hollinshead: BA, School of Sustainability (honor thesis advisor, 2020)

Dissertation/Thesis Committee

- Yousuf Mahid: MS, School of Geographical Sciences and Urban Planning (graduate committee member, 2018-2020)

Visiting Scholar

- Haiyue Fu: Visiting professor, Nanjing Agricultural University (2019-2021)

PROFESSIONAL SERVICE

Editorial

Editor-in-Chief, *World Development* (2021, 2022)

Editorial Board, *Chinese Geographical Science* (2021-)

International Advisory Board, *Journal of Peasant Studies* (2022-)

Editorial Advisory Board, *World Development Sustainability* (2021-)

Guest editor, *Proceedings of the National Academy of Sciences* (2025)

Guest Co-Editor, Special Issue “Everyday Adaptations to Climate Change”, *Ecology & Society* (in progress)

Guest Editor, Special Issue “Sustainable and Just Energy Transition in the Global South”, *World Development* (2020)

Guest Co-editor, Special Issue “Forest Governance Interventions for Sustainability: Information, Incentives, and Institutions”, *Current Opinions in Environmental Sustainability* (2018)

Journal Manuscript Review

Annals of the American Association of Geographers (2016); *Applied Energy* (2020); *Applied Geography* (2023); *Biodiversity and Conservation* (2020); *China Agricultural Economic Review* (2023x3); *Communications Earth & Environment* (2026x3); *Communications Sustainability* (2025); *Community Development* (2018x2, 2019); *Climate and Development* (2025x2); *Earth's Future* (2019, 2025); *Ecological Applications* (2019); *Ecological Economics* (2022); *Ecological Processes* (2018); *Ecology and Evolution* (2017x2); *Ecology and Society* (2024); *Ecosphere* (2017); *Environment, Development and Sustainability* (2017, 2018x2); *Environmental Management* (2017); *Environmental Science & Policy* (2020); *Environmental Science & Technology* (2026); *GeoHealth* (2022); *Global Change Biology* (2020); *Global Ecology and Conservation* (2020); *Global Environmental Change* (2024, 2025x2); *Human Ecology* (2016x6, 2017x2, 2018x2, 2020); *Humanities & Social Sciences Communications* (2020); *International Journal of Disaster Risk Science* (2017); *iScience* (2024); *International Journal of Geographical Information Science* (2018); *Journal of Arid Environments* (2019x2, 2020); *Journal of Cleaner Production* (2019, 2020, 2023); *Journal of Contemporary African Studies* (2019); *Journal of Development Studies* (2022); *Journal of Environmental Management* (2019); *Journal of Environmental Studies and Sciences* (2015); *Journal of Mountain Science* (2016); *Journal of Peasant Studies* (2022x2); *Journal of Poverty* (2018); *Journal of Rural Studies* (2020); *Land Degradation and Development* (2019); *Land Use Policy* (2018, 2021x2, 2023x2, 2024x2, 2025, 2026); *Landscape Ecology* (2020x3); *Livestock Science* (2016); *Natural Hazards* (2019); *Nature* (2026); *Nature Cities* (2025x2, 2026); *Nature Climate Change* (2021); *Nature Communications* (2023x3); *Nature Food* (2021, 2022x2, 2024x3); *Nature Sustainability* (2019x2, 2021x2); *npj Sustainable Agriculture* (2026); *One Earth* (2023, 2024); *Papers in Regional Science* (2020); *PLoS One* (2020x3); *Population and Environment* (2024); *Proceedings of the National Academy of Sciences* (2020, 2022, 2024); *Renewable & Sustainable Energy Reviews* (2023); *SAGE Open* (2020); *Scientific Data* (2025); *Sustainability* (2018x2, 2020); *Sustainable Cities and Society*

(2025); *The Rangeland Journal* (2019); *Water* (2018); *World Development* (2015, 2016, 2017, 2018, 2019x3, 2020); *World Development Perspectives* (2021)

Grant Proposal Review

Science Philanthropy Alliance (2026x2)

Atkinson Center for Sustainability, Cornell University (2026)

Towards Sustainability Foundation, Cornell University (2025)

National Academy of Science (2025)

National Science Foundation, Directorate for Social, Behavioral and Economic Sciences (2024)

National Science Foundation, Directorate for Technology, Innovation and Partnerships (2023x2)

Atkinson, Cornell (2023, 2024)

Research Innovation Fund, Cornell Center for Digital Agriculture, Cornell (2023)

National Science Foundation, Directorate for Social, Behavioral and Economic Sciences (2022)

National Science Foundation, Directorate for Technology, Innovation and Partnerships (2022)

National Science Foundation, Science and Technology Studies Program (2021)

National Science Foundation, Division of Environmental Biology (2020)

Institute of Social Science Seed Grant, ASU (2020)

Science & Technology Facilities Council, UK (2018)

National Geographic Society Committee for Research and Exploration Grant (2015)

Dissertation/Thesis Review

Temur Gugushvili: PhD, Tbilisi State University, Georgia (external PhD dissertation examiner, 2024)

Madeleine Johnson: PhD, Deakin University, Australia (external PhD dissertation examiner, 2022)

Sponsored Project Review

National Science Foundation Reverse Site Visit for a Convergence Accelerator Track J Phase 2 Team, Directorate for Technology, Innovation and Partnerships (2024)

Leadership

Program leader, “*World Development* Junior Reviewer Program”, 2021-2022.

Workshop co-organizer, “The Everyday in Everyday Adaptations”, Online, June, 2021.

Board of directors, Forests & Livelihoods: Assessment, Research, and Engagement (FLARE) Corporation, 2019-

Conference session organizer, “Large-Scale Land Acquisitions and Effect on Agricultural Production, Ecosystem Services, and Smallholder Livelihoods”, Annual Meeting of Association

of American Geographers, Washington, DC, April, 2019.

Member, Board of University of Michigan Postdoctoral Association, 2016-2018.

Conference session organizer, “Systematic Assessment of Land Transaction Outcomes”, Third Annual Meeting of Forests & Livelihoods: Assessment, Research, and Engagement, Stockholm, Sweden, September, 2017.

Conference session co-organizer, “Dynamics of Coupled Natural and Human Systems Panels: Models, Feedback, Analyses, and Outcomes”, Annual Meeting of Association of American Geographers, Boston, MA, April, 2017.

Roundtable discussion session organizer, “The Impact of Large-Scale Land Transactions on Smallholder Livelihoods and Agroecological Systems”, Third GLP Open Science Meeting, Beijing, China, October, 2016.

Symposium co-organizer, “Large-Scale Land Transactions in Sub-Saharan Africa, South Asia and Southeast Asia”, University of Michigan, Ann Arbor, MI, April, 2016.

University Committee Service

At Cornell

University Level

Faculty Fellow, Mary Donlon Hall (2022-)

Faculty Affiliate, Environment and Sustainability Major (2023-)

Faculty Advisor, Sustainable Smithsonian Team, Cornell University Sustainable Design (2023-)

College/Department Level

Member, School Director search committee, Ashley School of Global Development and the Environment (2025-)

Member, Moonshot Faculty Hire Initiative, College of Agriculture and Life Sciences (2023-2024)

Member, Development Economics faculty search committee, Department of Global Development, Cornell (2022-2023)

At ASU

University Level

Member, Graduate College Completion Fellowship Review committee, Graduate College, ASU (2021)

Member, Interdisciplinary Enrichment Fellowship Review Committee, Graduate College, ASU (2021)

Member, Judging Committee for Institute of Social Science Research’s Graduate Student Poster Contest, ASU (2019)

School Level

Member, Sustainable Food Systems faculty search committee, School of Sustainability, ASU (2021-2022)

Member, Sustainability Education faculty search committee, School of Sustainability, ASU (2020-2021)

Member, Sustainable Food Systems Program Committee, School of Sustainability, ASU (2019-2022)

Undergraduate Quantitative Skills Curriculum Committee, School of Sustainability, ASU (2019)

Graduate Committee, School of Sustainability, ASU (2018-2019)

POPULAR PRESS CONTRIBUTIONS AND QUOTATIONS

Environmental News Network; Thomson Reuters; SciDev.net; New Scientist; earth.com; Canadian Broadcasting Corporation (CBC)

ACADEMIC AFFILIATIONS

American Association of Geographers

American Association for the Advancement of Science

International Association for the Study of the Commons

National Sustainability Society

Sigma Xi, The Scientific Research Society

HONORS, AWARDS AND FELLOWSHIPS

- Cornell NIH Grant Development Program Workshop Award (2024), Cornell
- Cornell Institute for Social Sciences Faculty Fellowship (2023-2024), Cornell

LANGUAGES

Chinese (native); English (fluent); Afaan Oromo (basic)