

# Lance Gui

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EDUCATION

**University of Arizona**, Tucson, Arizona USA  
Ph.D. in Economics, 2020-2026 (expected)  
M.A. in Economics, 2021

**Pepperdine University**, Malibu, California USA  
B.S. in Mathematics and B.A. in Economics, Magna Cum Laude, 2020

FIELDS

Empirical Industrial Organization, Health Economics

REFERENCES

Professor Mo Xiao  
[mxiao@arizona.edu](mailto:mxiao@arizona.edu)

Professor Matthijs Wildenbeest  
[wildenbeest@arizona.edu](mailto:wildenbeest@arizona.edu)

Professor Hidehiko Ichimura  
[ichimura@arizona.edu](mailto:ichimura@arizona.edu)

WORKING PAPERS

**The Last Mile to First Treatment:  
Search for Opioid Use Disorder Medication**  
*Job Market Paper*

Draft Available Upon Request

Despite growing policy support for buprenorphine, the leading medication for opioid use disorder, treatment uptake remains low. Administrative insurance data from Washington State show that only half of first-time patients fill their buprenorphine prescriptions, well below rates for other chronic conditions. I find that uptake is hindered by limited availability and patients’ inability to verify it beforehand. To quantify their impact, I develop a structural model of sequential search in which patients do not know which pharmacies carry buprenorphine. Using purchase data alone, the model recovers search behavior by assuming patients always search their default (most frequently used) pharmacy. I find that most patients abandon treatment when their default pharmacy lacks buprenorphine, and fewer than 40% of patients search more than once. Counterfactual analysis shows that granting providers access to real-time pharmacy inventory—enabling them to inform patients at the point of care—would increase buprenorphine uptake by approximately 45%.

**Closing the Opioid Use Disorder Treatment Gap:  
Expanding Nurse Practitioners’ Prescriptive Authority**

*SSRN link*

The Comprehensive Addiction and Recovery Act (CARA) of 2016 enabled Nurse Practitioners (NPs) to prescribe buprenorphine, a safe treatment for opioid withdrawal. Leveraging pre-existing state-level NP prescribing authority and comparing pre- and post-CARA periods, I find that allowing NPs to prescribe buprenorphine independently expands the pool of active buprenorphine prescribers, increases buprenorphine dispensation, and reduces opioid-related mortality by over 20%, without replacing specialized treatment. Gains were concentrated in underserved counties, with limited effects elsewhere. Finally, there is suggestive evidence of increased diversion into the secondary market.

**Anatomy of Opioid Diversion: Examining Supply-Side Curtailment**

*SSRN link*

With Mo Xiao, Chuan Qin

Rogue pharmacies worsen the opioid epidemic by diverting opioids to non-medical users. Using pharmacy-level opioid shipment and hospital diagnosis data, we examine the spatial redistribution of opioid shipments after targeted shutdowns by the Drug Enforcement Administration. The structural model reveals that over half of pharmacy-distributed opioids were diverted to non-medical use. Aggressive pharmacy crackdowns may drive non-medical users who lose previous access to the black market.

### Anatomy of a Scandal: #Batterygate and Consumer Choice

I link over 35,000 individuals' Twitter behaviors to their offline phone purchases to examine the heterogeneous consumer response to Batterygate, where Apple slowed down iPhone processors without acknowledgment in 2017. Using a novel trend-extrapolated Differences-in-Differences technique, I find that Batterygate only negatively impacts potential consumers, not the current user base, highlighting the importance of consumer heterogeneity in determining customer responses to negative media sentiment.

PRESENTATIONS	Association for Public Policy Analysis & Management (APPAM) <i>Scheduled</i>	2025
	International Industrial Organization Conference (IIOC)	2024
	SUFE-Jinan Empirical IO Conference	
	Chinese Economist Society (CES) Annual Conference	2023
	The European Association for Research in Industrial Economics (EARIE) Annual Conference	
	EARIE Inaugural Summer School	
TEACHING	Chinese Economist Society (CES) Annual Conference	2022
	University of Arizona, <i>Sole Instructor</i>	
	ECON300 Microeconomics Analysis For Business Decisions Online	
	University of Arizona, <i>Teaching Assistant</i>	
	ECON460 Industrial Organization	ECON462 Firms, Markets, and Competition
	ECON551 (MBA) Business Strategy	ECON407 Economics of Strategy
FELLOWSHIP AND AWARDS	ECON508 (Ph.D.) Applied Economic Analysis	
	Moshe Dror Research Excellence Award	2025
	Edward E. Zajac Prize for the Best Third-Year Paper (Honorable Mention)	2023
	Steve Manos Prize for the Best Second-Year Paper (Honorable Mention)	2022
	University of Arizona Graduate Fellowship	2020
RESEARCH GRANTS	Lundgren Retail Collaborative Grant (\$2000) with Professor Mo Xiao	2024
	Center for Management Innovations in Healthcare (CMIH) Research Grant (\$5000) with Professor Mo Xiao	
	CMIH Data Grant (\$2000) with Professor Mo Xiao	
	Eller Small Grant (\$3000) with Professor Mo Xiao	2023
RESEARCH ASSISTANT	Research Assistant to Mo Xiao, University of Arizona	2023 - 2024
	Research Assistant to Eric Hamilton, Pepperdine University	2016 - 2020
ACADEMIC SERVICE	Referee for International Journal of Industrial Organization (ad-hoc)	
OTHER PUBLICATIONS	Lee, S.B., <b>Gui, X.</b> , Manquen, M. and Hamilton, E.R., 2019, October. "Use of Training, Validation, and Test Sets for Developing Automated Classifiers in Quantitative Ethnography." In International Conference on Quantitative Ethnography (pp. 117-127).	
	Lee, S., <b>Gui, X.</b> , and Hamilton, E. 2020. "Application of AutoML in the Automated Coding of Educational Discourse Data." In Gresalfi, M. and Horn, I. S. (Eds.), The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 5 (pp. 2597-2600).	
NON-HUMAN LANGUAGE SKILLS	R, Julia, Python, MATLAB, C++ ( <i>in order of usage</i> )	