Wanru Liu

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EDUCATION

Brown University   **Providence, RI**
PhD in Health Services Research   May 2028
Relevant Courses: The Economics of Social Policy, Applied Economics Analysis, Medicare: A Data Based Policy Examination

Harvard University   **Boston, MA**
Master of Science in Global Health and Population (80-credit)   May 2024
Relevant Courses: Health Econometrics, Economics in Healthcare, Applied Survival Analysis, Applied Regression Analysis, Intro to Programming, Intro to Data Science, Decision Analysis for Health and Medical Practices, Managing Health Care Costs, Healthcare Payment Systems

University of Michigan – Ann Arbor   **Ann Arbor, MI**
Bachelor of Science with Distinction and High Honors in Economics; Minor in Music   May 2022
Relevant Courses: Intermediate Micro & Macroeconomics Theory, Intermediate Statistics and Econometric, Advanced Mathematics, C Language Programming, Data Structures, Object-oriented Programming and Database Technologies

RESEARCH EXPERIENCES

Brown University, School of Public Health   Providence, RI
Switching Between Medicare Advantage and Fee-for-Service After Moving to Assisted Living   *Sept 2024 – Present*
(PI: Dr. Eric Jutkowitz, Dr. Kali Thomas)

- Analyzed Medicare plan switching patterns among beneficiaries moving to assisted living facilities, examining differences between those in dementia-licensed and non-dementia-licensed settings (ongoing)
- Conducted statistical modeling using Stata and Python to assess the impact of cognitive impairment (ADRD) on Medicare Advantage and Fee-for-Service transitions, incorporating demographic and healthcare utilization covariates
- Developed national datasets by merging Medicare Beneficiary Summary Files (MBSF) and Residential History Files (RHF) to identify trends in enrollment stability and switching behavior

Harvard University, Harvard T.H. Chan School of Public Health   Boston, MA
The Impact of the 2017 Health Payment System Reform in a Large Chinese City's Public Hospitals on
Medical Services: A Controlled Interrupted Time Series Study   *Aug 2023 – May 2024*
(Primary Supervisor: Dr. Margaret McConnell, Second Reader: Dr. Winnie Yip, Dr. Elisa Maffioli)

- Analyzed impact of 2017 health salary reform on service quality in public hospitals, focusing on efficiency metrics and patient safety in a pay-for-performance framework
- Utilized SAS for difference-in-differences estimations of DRG-based public hospital performance data from 2014 to 2022
- Provided insights for policy optimization and better practices for potential global healthcare salary system reforms

Harvard University, Harvard Kennedy School, Rajawali Foundation Institute for Asia   Boston, MA
China's Most Generous - Examining Trends in Contemporary Chinese Philanthropy   *June 2023 – May 2024*
(PI: Dr. Edward Cunningham)

- Examined COVID-19's impact on philanthropic giving in China from data on more than 17,000 donations made in China in 2020 and 2021
- Leveraged Python to collect and clean 2600 entries of donation data for the years 2020 to 2022, employed PivotTable and vlookup function to analyze Chinese health economics trends, and wrote report's health section
- Utilized Tableau, Apache Echarts, and Matplotlib to visualize the relationship between destination regions and types of recipients in COVID-related donations
- Led onboarding of new research assistants, tailored team assignments and ensured peers' data validity

Tsinghua University, Vanke School of Public Health, China Health Poverty Alleviation   Beijing, China
Effect of Team-based Intervention on the Control of Blood Pressure among Patients with Hypertension   *May 2023 - May 2024*
and Diabetes in a Primary Care Setting: A Systematic Review and Meta-analysis of Randomized
Controlled Trials (PI: Dr. Zhihui Li)

- Identified 79 hypertension-related articles after eligibility assessment from 8527 potential Chinese and English literature, and identified 39 diabetes-related articles from 5977 literature for quantitative synthesis in EndNote

- Extracted health outcomes indicators from 65 hypertension and diabetes-related articles
- Utilized RoB 2 to assess data quality and reliability of included randomized controlled trails

Beijing University of Chinese Medicine Beijing, China

Efficacy Evaluation and Mechanism of Ditan Qingnao Formula in the Treatment of *May 2023 - Aug 2023*
Negative Symptoms of Schizophrenia (PI: Dr. Wenjun Sun)

- Conducted a randomized controlled trial in 134 schizophrenia (SZ) patients in Beijing's two hospitals to study the efficacy of Traditional Chinese Medicine (TCM) in treating the negative symptoms of SZ
- Established a database using EpiData 3.1, inputting data from 134 medical records, and exported the data from the EpiData to SAS format to conduct frequency statistical analysis
- Utilized SAS to apply the Kolmogorov-Smirnov method to categorize variables, calculate statistical indicators, make uni & multivariate analysis, and employ Pearson's test to compare occurrence rates of adverse events for safety analysis

University of Michigan, LSA Department of Economics, Honors Program Ann Arbor, MI

Influence of Self-Perceived Personality Traits on Female College Students' Potential *Jan 2021- Apr 2022*
Employability (Mentors: Dr. Kathryn Dominguez, Dr. Basit Zafar, Dr. Ana Reynoso)

- Utilized 263 items of survey data from the US and China to identify two key personality traits and two economic indicators for female college students, significantly enhancing their employability and contributing to the reduction of gender inequality in the labor market
- Employed R, SAS, and Stata to run ordinary least squares regression and seemingly unrelated regression model to dissect disparities by nationality and gender, preceded by reliability and validity tests

COURSE PROJECTS

Brown University, School of Public Health Providence, RI

Impact of the Merit-Based Incentive Payment System on Quality of Care and Payment *Sept 2024 – Jan 2025*
Adjustment: A Systematic Review

- Conducted a systematic literature review to evaluate the impact of the Merit-Based Incentive Payment System (MIPS) on quality of care and payment adjustments across various medical specialties
- Searched 963 articles and analyzed data from 16 peer-reviewed studies, assessing clinician performance scores, patient outcomes, financial incentives, and administrative burden using NIH quality assessment tools
- Synthesized findings to identify disparities in MIPS incentives and show unintended consequences such as clinician burnout, inequitable payment adjustments, and the program's impact on healthcare access

MIT Sloan Healthcare-Lab, Boston Children's Hospital, Urology Department Boston, MA

Optimizing Patient Scheduling after Expansion for BCH Urology Department *Aug 2023 – May 2024*
(Project Manager: Julie Campbell, Jonathan Modest, Dr. Carlos Estrada)

- Developed a simulation model using Python to predict new and returning patient visits for two service lines, optimizing resource allocation and appointment scheduling; accommodating frequent changes in provider availability and patient volume
- Analyzed EHR data to determine provider capacities and patient demand stratified by diagnosis, ensuring optimal medical staff utilization and balanced surgical supply and demand by queueing simulation techniques

Harvard University, Harvard T.H. Chan School of Public Health Boston, MA

Evaluation of the Impact of Minnesota's Integrated Health Partnerships on Medicaid *November 2023 – Feb 2024*
Accountable Care Organizations Cost Reduction: A Qualitative and Quantitative Analysis

- Conducted an evaluation of Minnesota's Integrated Health Partnerships (IHP) within Medicaid ACOs, utilizing both qualitative and quantitative methods to measure the program's efficacy in reducing total health care costs without cost-shifting among stakeholders

Capitation in Mental Health Payment System *Spring 2023*

- Developed product logic framework for mental health accountable care organizations to enhance the quality of mental healthcare and reduce associated costs, and devised calculation methods for premium determination to reduce patients' costs and increase insurers' subsidy

Effective Risk Factors to Predict Diabetes and People's Physical and Mental Illness with Analysis *Fall 2022*
under Poisson and Negative Binomial Model

- Implemented data analysis using R and constructed boxplots and heatmaps to isolate potential outliers and ascertain risk factors inextricably linked to diabetes diagnosis
- Investigated confounders and effect modifiers through a streamlined logistic regression approach and established age as an independent risk factor for diabetes diagnosis

TEACHING EXPERIENCE

Harvard University, T.H. Chan School of Public Health   Boston, MA
RDS 280 Decision Analysis for Health and Medical Practices, Teaching Assistant   *Spring 2024*
LightCourse, 2020 & 2021 & 2022 Summer Program, Teaching Assistant   Cleveland, Ohio (Remote)
Statistics, Linear Algebra Teaching Assistant, Trine University   *Summer 2022*
Money and Banking, Calculus II Teaching Assistant, San Francisco State University   *Summer 2021*
Intermediate Macroeconomics Teaching Assistant, Eastern Michigan University   *Summer 2020*

WORK EXPERIENCE

KPMG, Consulting   Beijing, China
Financial Risk Management Consultant Internship   *May 2021 - Aug 2021*
Essence Securities Co., Ltd., Macroeconomics Research Center   Beijing, China
Macroeconomics Analyst Internship   *May 2020 - Aug 2020*

SCHOLARSHIP AND HONORS

Scholarship: Harvard Chan Central Grant (Amount: $20,310), Harvard University   Feb 2022, Mar 2023
              Harvard T.H. Chan Summer Internship Award (Amount: $4,400), Harvard University   May 2023
Honors: James B. Angell Scholar, University of Michigan   March 2022
              University Honors, University of Michigan   Dec 2019, Dec 2020, Apr 2021, Dec 2021, Mar 2022

SKILLS

Computer Skills: Advanced – R, Python, STATA, SAS, SPSS; Intermediate – C, C++, Java
Languages: English (proficient), Chinese Mandarin (native speaker)