Zhan (Susan) Shi

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Education

University of Pennsylvania, the Wharton School Aug. 2023 - Present
Ph.D. in Health Care Management and Economics
Selected PhD coursework:
Microeconomic Theory, Econometrics, Information Economics, Social Insurance, Advanced Causal Inference
Models and Methods in Health Services Research, Organizational Behavior and Theory in Health Care, Health Econometrics, The Economics of Health Care and Policy, The Industrial Organization of Health Care

Duke University Jul. 2023 - Present
Visiting Scholar

Duke University Aug. 2021 – May. 2023
M.S. in Economics and Computation

The Chinese University of Hong Kong, Shenzhen Sep. 2017 – May. 2021
B.B.A. in Economics (with Honors: First Class), minor in Statistics

Research Interest

Health Economics, Health Policy, Information Frictions, Industrial Organization, Applied Microeconomics

Projects

Self-Referral Through Strategic Persuasion:
Vertical Integration in Skilled Nursing Facilities | Working Project

- I study how vertical integration between hospitals and skilled nursing facilities (SNFs) affects patient discharge decisions through strategic information transmission. I develop a discrete choice framework with Bayesian persuasion in which discharge teams strategically distort patients' beliefs in response to financial incentives. The project is intended to use Medicare claims and SNF-level data to quantify referral distortions, distinguish extensive and intensive margins of SNF choice, and evaluate welfare implications under alternative information and incentive designs.

How Knowledge Gaps Distort Selection in the Health Insurance Market
with Complex Contracts | Working Project

- I examine how heterogeneous knowledge about Health Savings Accounts (HSAs) affects insurance plan choice, saving behavior, and medical utilization. I develop a structural model that incorporates perceived returns on HSA savings as a function of individuals' knowledge gaps, extending standard models of selection and moral hazard in health insurance. The project aims to assess whether knowledge heterogeneity can explain underutilization of HSAs and deviations from optimal coverage and utilization decisions.

Reluctance to Vaccinate:
The Economic Approach with Cognitive Dissonance | Graduate Capstone

- I apply the economic model of cognitive dissonance to analyze people's behavior and beliefs concerning vaccination. I show that cognitive dissonance can reduce the effectiveness of policies that lower vaccination costs, and can weaken the impact of compensation and punishment policies. The paper also gives one perspective on why the "anti-vaccine movement" can gather a great amount of strong, faithful support.

Few-Shot Learning on Time Series Data
with Task Affinity | Computer Science Project; work with Ziyan Chen, Weixin He, and Celia Lyu

- This project examines the performance of fisher task affinity and transfer learning on both simulated time series data and the real-world weather data source under multiple time series deep learning architectures. We found that the fisher task affinity efficiently recovers the intuitive distance between time series datasets, and is stable under RNN and LSTM. Few-shot transfer learning on limited available data is also successfully implemented.

Research Experience

Research Assistant | Prof. Alexander Olssen and Prof. Atul Gupta Feb. 2024 – Present
University of Pennsylvania

- Compiled institutional background related to pharmacy benefit manager spread pricing prohibition policies and legislation
- Analyzed the National Medicaid dataset, used the "National Average Drug Acquisition Cost" and "State Drug Utilization Data" to estimate the spread price, and examined the price effect of the shock of spread pricing prohibition

Research Assistant | Prof. Kate Bundorf Sep. 2022 – Sep 2025
Duke University

- Explored literature on the excess mortality calculation, mortality rate prediction model based on medical conditions and demographical features, and racial disparity analysis
- Analyzed the North Carolina Medicaid Claim dataset, provided descriptive statistics and illustrative figures, trained the 12-month mortality prediction model
- Examined the COVID prevalence and overall mortality among certain population groups in North Carolina

Research Assistant | Prof. Peter Arcidiacono May. 2022 – May 2023
Duke University

- Applied web scripting to collect data from homicide reports in Wall Street Journal, provided descriptive statistics of race mentioned in the articles, analyzed the impact of authorship on the race mentioning
- Conducted text analyses like sentiment analysis and geographical analysis of articles using the TSM Studio

Teaching

Undergraduate Student Teaching Fellow The Chinese University of Hong Kong, Shenzhen

- *ECO 2121 Basic Statistics* by Prof. Liyu Dou, 2020/2021 Spring
- *ECO 3160 Game Theory and Business Strategy* by Prof. Yangbo Song, 2020 Fall

Teaching Assistant Duke University

- *ECON 605 Advanced Microeconomic Analysis* by Prof. Charlie Becker, 2022 Spring

Teaching Assistant University of Pennsylvania

- *HPR 6070 Health Services and Policy Research Methods II* by Prof. Atheen Venkataramani and Prof. Aditi Vasan, 2025 Spring
- *HCMG 1010 Health Care Systems* by Prof. Diane Alexander, 2025 Fall

Honors

The Chinese University of Hong Kong, Shenzhen

- Bowen Scholarship: 2017-2020 for 4 consecutive years
- Dean's List: 2018-2021 for 4 consecutive years
- Undergraduate Research Award: 2019, 2020

Skills

Programming and Statistic Software: Python, R, Matlab, Stata, Eviews, SQL
Presentation: Latex, Markdown, Microsoft Office
Language: English (proficient), Chinese (native)

Explanation of Interest

Susan Shi

My current research interests center on information frictions and incentive design in health care markets. Broadly, I am interested in settings where patients and families must make consequential decisions with incomplete information, complex choice environments, and potentially misaligned incentives among the other parties in the play. These issues arise across a broad range of institutional settings in health economics, from post-acute care placement to insurance plan choice. My interest in information frictions has led me to projects that are conceptually connected from my perspective but institutionally quite different.

I am currently working on two primary projects. The first one studies vertical integration between hospitals and skilled nursing facilities (SNFs). What interests me most is not only whether integration changes referral patterns, but why: does integration improve coordination and continuity of care, or does it also change the information patients receive at discharge in ways that steer them toward affiliated facilities? I am also interested in whether publicly available quality signals, such as CMS star ratings, partially mitigate this information friction. If patients and families can use these signals to evaluate referrals independently, such public information may limit the influence of financially motivated discharge recommendations. All these matter for welfare and policy, but they are difficult to identify empirically. I am therefore working on how to discipline a model of strategic information transmission and how to translate that mechanism into testable implications for SNF choice.

The second project examines information gaps in complex health insurance contracts. In the context of Health Savings Accounts (HSAs), I study how heterogeneous understanding of contract features may shape insurance plan choice, saving, and utilization. On the surface, this project and the SNF project belong to different institutional settings in health economics. Conceptually, however, they both stem from my interest in information frictions: in the SNF project, information may be strategically mediated by providers, while in the HSA project, the friction comes from contract complexity and heterogeneous knowledge.

I am now in the dissertation phase of my PhD, and this workshop comes at a particularly valuable moment. The challenge I now face is not a lack of ideas, but prioritization and framing of my project: deciding which projects have the strongest potential as my job market paper, whether my "information friction" story linking my projects is strong enough to define a research agenda, and how to explain that connection to health economists without making the agenda seem too diffuse. Much of my research training so far has come from courses and research assistantships, where I gained experience with institutional detail and empirical implementation. But now, beyond more suggestions on executing empirical tasks, which would also be really helpful, I am seeking to get more advice on how to choose, shape, and defend my own research questions and how to turn those into a coherent research agenda.

The NBER Mentoring Program would be extremely helpful to me in several ways. At the agenda level, I would value guidance on how to evaluate the potential of my current projects, decide which questions should receive priority, and frame them as part of a coherent research agenda. I would especially benefit from feedback on how to present my interest in front of different audiences.

At the project level, the most useful guidance would be on how to move from a compelling mechanism to a credible empirical paper. I have spent substantial time thinking through the model and the information environment in the SNF project, but I am still working on different empirical identification strategies. Since I currently only have publicly available data, advice on what data sources, institutional variation, and empirical strategies would be applicable and best match the question would be especially valuable. Last but not least, I look forward to the connections and conversations with all mentors and peers that this program would make possible. Meeting with people working in the same field is always exciting.