Chunxi Guo

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EDUCATION

Stony Brook University Sep 2024 - Present

Second-year PhD Student, Population Health and Clinical Outcomes, Renaissance School of Medicine | Stony Brook, NY

- Coursework: Statistical Computing, Cost-Benefit Analysis, Longitudinal Analysis.
- Research focus: applied health economics, health disparities, healthcare access, and analyzing cost-related barriers using real-world data.
- Funding: Fully funded Ph.D. scholarship, Stony Brook University

New York University Sep 2022 - May 2024

M.S. in Biostatistics | New York, NY

- Coursework: Statistical Inference, Causal Inference, Advanced Agent-Based Modeling, Messy Data, and Machine Learning.
- Award: $16,500 scholarship from the NYU School of Global Public Health.

China Agricultural University Sep 2018 - Jun 2022

B.S. in Agronomy, Horticulture | Beijing, China

- Coursework: Linear Algebra, Probability Theory and Mathematical Statistics, Advanced Mathematics.
- Award: 2019 and 2020 University Scholarships for Academic Performance; Elite Placement in Beijing College Student Biology Knowledge Competition.

RESEARCH OUTPUT

Peer-Reviewed Journal Articles

*Kausar, K., **Guo, C**., Gopalan, S., Gnofam, M., Haberman, S., & Rizzo, J. A. (2025). Systemic hospital effects driving racial disparities in non-elective cesarean delivery: Evidence from the New York metropolitan area. Journal of Racial and Ethnic Health Disparities.*

Manuscripts Under Review

***Guo, C**., et al. Discrimination towards Hispanic adults: Evidence from U.S. national survey data. Manuscript under review at Journal of Ethnic and Cultural Studies.*

***Guo, C.**, et al. More than just a cavity: The economic toll of inequitable dental care access. Manuscript under review at Health Services Research.*

Conference Papers and Presentations

***Guo, C.** Declining access and utilization of prescribed medicines: Evidence from the U.S. national survey data. Poster accepted for presentation at the American Society of Health Economists Annual Conference, Minneapolis, MN, June 9, 2026.*

*Kausar, K., Javed, K., **Guo, C.**, Marcelin, M., Gopalan, S., Tarkovsky, R., Reesman, V., & Marshall, J. (2025). Improving advance care planning documentation in a large tertiary care urban hospital: A quality improvement initiative. Conference paper presented at the 2025 Annual Research Meeting.*

ADVISOR AND RESEARCH INTERESTS

PhD Advisor/Primary dissertation supervisor: John A. Rizzo (Google Scholar: https://scholar.google.com/citations?user=jKmSZ4cAAAAJ&hl=en)
Research interests: Aging; Medical Expenditure; Econometrics; Cardiovascular Diseases (CVD); Risk measurement.

COMPLETED PHD COURSES

Fall 2024

HPA 527 Health Economics and Policy
AMS 520 Machine Learning in Quantitative Finance
HPD 605 Introduction to Doctoral Studies
HPD 685 Research in Population Health

Spring 2025

AMS 597 Statistical Computing
AMS 603 Risk Measures for Finance & Data Analysis
HPD 675 Cost-Benefit Analysis
HPD 685 Research in Population Health

Fall 2025

AMS 511 Foundations of Quantitative Finance
HPD 686 Mentored Research Project in Population Health and Clinical Outcomes Research
HPD 687 Advanced Research Seminar
HPH 534 Applied GIS Remote Sensing

Spring 2026

HPA 507 Health System Performance
HPD 673 Longitudinal Data Analysis
HPD 687 Advanced Research Seminar
HPD 692 Practicum in Teaching I
HPD 692 Grant Writing

SKILLS, METHODS, AND RESEARCH DOMAINS

Programming and Data: R, Python, SQL, SAS, Stata; data cleaning; reproducible statistical analysis.
Data Experience: Medical Expenditure Panel Survey; complex survey data; health care utilization and expenditures.
Research Key Words: health economics; applied econometrics; causal inference; cost-benefit analysis; Oaxaca/Fairlie decomposition.

RESEARCH AND PROFESSIONAL EXPERIENCE

Stony Brook University Sep 2024 - Present

Second-year PhD Student, Research Assistant and Teaching Assistant, Renaissance School of Medicine | Stony Brook, NY

- Research Assistant:
  - Conduct applied health economics research on health care utilization, medical expenditure, cost-related barriers, and disparities using Medical Expenditure Panel Survey data.
  - Develop analysis plans, clean complex survey datasets, estimate survey-weighted regression models in R, and interpret findings for manuscripts and conference submissions.
  - Apply decomposition methods to examine sociodemographic disparities in mental health and cost-related outcomes.
  - Draft manuscript sections, tables, and figures for academic audiences in health economics and population health.
- Teaching Assistant:
  - HPH 507 Biostatistics I (2024 Fall), HPH 508 Biostatistics II (2025 Spring), HPA 527 Health Economics and Policy (2026 Spring).

Handshake Mar 2025 - Apr 2025

Healthcare AI Model Validation Fellow | Remote

- Evaluated healthcare-related LLM outputs for reasoning quality, factual accuracy, and clarity; provided structured evidence-based feedback.
- Participated in improving an advanced AI model's understanding of statistics and health domains.

New York University March 2024 - May 2024

Research Assistant, Xu Quantitative Lab, School of Global Public Health | New York

- Researching nicotine usage behavior. Exploring the Population Assessment of Tobacco and Health Study (PATH) dataset, writing a proposal and analysis plan about the association of tobacco-marijuana co-use and inflammation factor levels.

New Jersey Institute of Technology Oct 2023 - May 2024

Research Assistant, Antai Wang Lab, Mathematical Sciences | New Jersey

- Analyzed clinical data on patients' opioid equivalents after different types of operations using ANCOVA, ANOVA, and multivariable linear regression in R.
- Identified factors significantly associated with opioid equivalents and prepared research reports translating statistical findings for clinical collaborators.

Nippon Telegraph and Telephone Jun 2023 - Sep 2023

Intern, Investment Department | Hybrid

- Used R and Python to evaluate the contribution of recommendation and advertising channels using attribution models based on Stochastic Markov chains and Shapley values.
- Summarized channel-attribution papers, validated real-world consumer behavioral data, and prepared reports to support decision-making.

Sanofi Mar 2022 - Jul 2022

Intern, CHC Medical Department | Beijing, China

- Researched dietary supplements and wrote nine authored internal summaries on biochemical mechanisms, safe and effective dosages, and clinical trial findings. Maintained the medical department research database by updating core findings from 20–35 of the latest publications per month.
- Participated in the investigation of a consumer complaint and validated medicine information with the latest research results in published papers.
- Drafted a new medical package insert for a supplement under supervision.

China Agricultural University Jan 2020 - Apr 2021

Project Leader, STLP6 Protein Project, College of Horticulture | Beijing, China

- Designed PCR primers, transformed competent Escherichia coli and yeast cells, performed PCR, and analyzed experimental results.
- Found that *STLP6* protein did not exhibit self-transcriptional activation activity, contrary to the Sol Genomics Network's prediction, the most prominent and widely used clade-oriented database for the nightshade family (Solanaceae).

Explanation of Research Interests

I am a second-year PhD student in the Renaissance School of Medicine at Stony Brook University. My research interests focus on aging and health economics, particularly how cardiovascular disease (CVD) onset affects older adults' medical expenditure, care utilization, quality of life, and cognitive outcomes. I am especially interested in understanding how community- and family-based factors shape care needs and financial burden after CVD onset, using applied econometric and statistical approaches.

CVD is the leading cause of death among the elderly population in the US and contributes most to the medical expenditure among the US population as the most expensive disease.[1,2] CVD not only increases morbidity and limit mortality, but also raises the risk of Alzheimer's disease and related dementias, accelerates cognitive decline, and reduces quality of life.[3–5] Preventing CVD and improving care after CVD onset are therefore important for improving older adults' quality of life and reducing CVD-related costs.[6]

Preventive medicine and primary care evaluation are important for daily chronic disease management for CVD patients. CMS's latest payment models, like the AHEAD (Achieving Healthcare Efficiency through Accountable Design) model[7] are promoting global budget programs that focus on value-based care and health outcome and quality-based payment instead of fee-for-service or volume-based payment. It aims to make accessible and quality daily health care, instead of investing in intense hospital-based healthcare services for acute disease onset, become the core of the new payment system.

How to better utilize the limited resources and facilitate preventive medicine care and CVD event onset management at the community and family level is the core of my research interest. Evaluating and identifying the gap in community healthcare services, family caregivers, and improving the quality of care after CVD onset among elder populations using a statistical approach is what I want to research.

Working on projects in the academic world and the industry makes me instinctively think of one topic from multiple angles: company, consumer, researcher, and decision maker. To facilitate my research in healthcare services and cost benefit analysis, as well as expand research methodology, I took courses from health data analysis, financial data analysis, to health economics and policy analysis. The cross-disciplinary experience and training enabled me to explore one topic from multiple perspectives and apply different research methods that suit different datasets; the multicultural study and working experience have embedded me with communication skills across different settings.

I am especially interested in the NBER Mentoring Program on Aging and Health Economics Research because my research interests sit at the intersection of aging, health care spending, care utilization, and household and community responses to chronic disease. At this stage of my PhD training, I would benefit greatly from mentorship on how to sharpen these interests into feasible and policy-relevant economics research questions, identify appropriate data sources, and strengthen the empirical strategies needed to study older adults' health care use and financial burden after cardiovascular disease onset.

I would also value the opportunity to learn from scholars deeply engaged in aging and health economics, receive external feedback on my developing dissertation agenda, and better understand how leading researchers frame questions, interpret evidence, and connect empirical findings to broader policy debates. Such guidance would be especially meaningful as I build academic connections, explore potential collaborations, and grow into an independent researcher whose work can contribute to healthier and secure lives for older adults and their families.

References

1. Ahmad FB, Cisewski JA, Xu J, Anderson RN. Provisional Mortality Data — United States, 2022. *Morb Mortal Wkly Rep*. 2023;72(18):488-492. doi:10.15585/mmwr.mm7218a3

2. Yazdanyar A, Newman AB. The Burden of Cardiovascular Disease in the Elderly: Morbidity, Mortality, and Costs. *Clin Geriatr Med*. 2009;25(4):563-vii. doi:10.1016/j.cger.2009.07.007

3. Jia R, Wang Q, Huang H, Yang Y, Chung YF, Liang T. Cardiovascular disease risk models and dementia or cognitive decline: a systematic review. *Front Aging Neurosci*. 2023;15. doi:10.3389/fnagi.2023.1257367

4. Brain J, Greene L, Tang EYH, et al. Cardiovascular disease, associated risk factors, and risk of dementia: An umbrella review of meta-analyses. *Front Epidemiol*. 2023;3. doi:10.3389/fepid.2023.1095236

5. Saeed A, Lopez O, Cohen A, Reis SE. Cardiovascular Disease and Alzheimer's Disease: The Heart–Brain Axis. *J Am Heart Assoc*. 2023;12(21):e030780. doi:10.1161/JAHA.123.030780

6. Zhou M, Zhao G, Zeng Y, Zhu J, Cheng F, Liang W. Aging and Cardiovascular Disease: Current Status and Challenges. *Rev Cardiovasc Med*. 2022;23(4):135. doi:10.31083/j.rcm2304135

7. AHEAD (Achieving Healthcare Efficiency through Accountable Design) Model | CMS. Accessed May 20, 2026. https://www.cms.gov/priorities/innovation/innovation-models/ahead