Quan (Kyle) Zhang

808-312-9336 · quanz@hawaii.edu · ORCID · ResearchGate · LinkedIn

Summary

Third-year Ph.D. candidate in Econometrics and Quantitative Economics at the University of Hawai'i at Mānoa, working as a quantitative economist and health economist on the intersection of population aging, health shocks, and labor supply. Peer-reviewed publications in *JAMA*, *Health Affairs*, *Value in Health*, the *International Journal of Epidemiology*, and *PNAS* (in press). Dissertation uses CHARLS 2011–2018 to identify causal effects of health shocks and frailty on labor supply, consumption, and intergenerational outcomes, applying TWFE, event study, IV, DML, and causal forest methods. Concurrent M.S. in Quantitative Health Sciences (JABSOM) provides training in biostatistics, psychometric measurement, epidemiology, and cohort study design. Expected completion: May 2027; targeting the 2027–2028 academic job market.

Education

Ph.D., Economics (Quantitative Economics & Econometrics), University of Hawai'i at Mānoa — 2023 – Present
Advisor: Sang-Hyop Lee Co-Chair: Tim J. Halliday Committee: Teresa Molina Expected: May 2027

M.S., Quantitative Health Sciences, John A. Burns School of Medicine, UH Mānoa — 2024 – 2026

M.S., Industrial & Systems Engineering, Northern Illinois University — 2012

Completed Ph.D. Coursework

Economics core (UH Mānoa, Department of Economics): Microeconomic Theory I–III (ECON 606/608/620); Macroeconomic Theory I–II (ECON 607/609); Mathematics for Economics (ECON 627); Econometrics I–II (ECON 628/629).
Field and applied economics: Labor Economics and Policy (ECON 670); Strategic Behavior and Experimental Economics (ECON 686); Advanced Topics in Economics (ECON 696, two semesters); Health Economics and Policy (ECON 674, Spring 2026); Economic Development (ECON 610, Spring 2026); Doctoral Research Seminar (ECON 730, Spring 2026).
Quantitative Health Sciences (JABSOM): Fundamentals of Biostatistics (QHS 601); Generalized Linear Models (QHS 602); Secondary Data Analysis (QHS 650); Data Management and Visualization (QHS 605); Bioinformatics I–II (QHS 610/611); Principles of Epidemiology II (PH 664); Clinical Research Introduction (BIOM 640); One Health (PH 611); QHCR Research Seminar (QHS 646).
Computational methods: Machine Learning Methods (ICS 235); Introduction to Geographic Information Systems (GEO 388).

Research Interests

Economics of aging, health shocks, and frailty dynamics; labor supply, consumption smoothing, and intergenerational time allocation in aging populations; causal inference and applied microeconometrics in observational longitudinal health data; disaster health economics and community resilience; health equity and distributional cost-effectiveness.

Peer-Reviewed Publications

1. Zhang, Q. (2026). "Do Negative Social Ties Accelerate Aging in Adults, or Does Aging Erode Social Ties?" *Proceedings of the National Academy of Sciences (PNAS)*. (In press.)
2. Zhang, Q. (2026). Keep REMS focused on safety, not as a barrier to generics. *Health Affairs*. DOI
3. Zhang, Q. (2026). Enhancing life-course analyses of financial disadvantage and depressive mood through longitudinal design and causal inference. *Journal of Epidemiology*. DOI
4. Zhang, Q. (2025). Overcoming bias in a fall prevention program in resource-limited areas. *JAMA*. DOI
5. Zhang, Q. (2025). Operationalizing distributional cost-effectiveness in genomic medicine: A US-focused comment on Smith et al. *Value in Health*. DOI
6. Zhang, Q. (2025). On "The joint impact of greenspace and air pollution on mortality": Methodological proposals. *International Journal of Epidemiology*. DOI
7. Zhang, Q. (2025). A causal roadmap for Child Opportunity Index 2.0. *Public Health Reports*. DOI

Working Papers (Dissertation)

1. Zhang, Q. (2026). "Health Shocks, Frailty Dynamics, and Labor Supply in China's Aging Population: Evidence from CHARLS 2011–2018." *Submitted to NBER Summer Institute 2026, Workshop on Aging, Cambridge, MA.*
2. Zhang, Q. (2026). "Consumption Smoothing and Falls as Health Shocks: Evidence from CHARLS and HRS."
3. Zhang, Q. (2026). "Later, Longer, Fewer and the Quantity–Quality Trade-off: Evidence from CHARLS."

Papers Under Review

1. Zhang, Q. (2026). "Caregiving as Health Capital Depreciation: Time Allocation Evidence from IPUMS ATUS." Under review; to be presented at the Gerontological Society of America 2026 Annual Scientific Meeting, NDIRA Caregiving Symposium, National Harbor, MD (November 2026).
2. Zhang, Q. (2026). "QALY Losses from Acute Health Shocks Across European Welfare Regimes: A Panel Event Study Using SHARE." Under review, *Health Economics*.
3. Zhang, Q. (2026). "Enrollment Dynamics and Health Equity Effects of California's Staggered Medi-Cal Expansion to Undocumented Adults." Under review, *Health Affairs*.

4. Zhang, Q. (2026). "Balancing Innovation Incentives and Equitable Access for AI Health Technologies: Policy Levers for IP, Transparency, and Solidarity." Under review, *npj Health Systems*.
5. Zhang, Q. (2026). "Inflammatory, Nutritional, and Metabolic Biomarker Profiles in Early-Onset Colorectal Cancer: A 24-Year Cross-Sectional Analysis of NHANES, 2001–2023." Under review, *JAMA Oncology*.

Invited Contributions

1. Zhang, Q. (Forthcoming). "Multidimensional Poverty Index (MPI): Measurement, Health Deprivations, and Policy Use." In R. Baikady (Ed.), *The Palgrave Encyclopedia of Global Poverty Research*. Palgrave Macmillan / Springer Nature.
2. Zhang, Q. (Forthcoming). "Social Determinants of Health and Multidimensional Poverty." In R. Baikady (Ed.), *The Palgrave Encyclopedia of Global Poverty Research*. Palgrave Macmillan / Springer Nature.

Research Experience

Graduate Research Assistant — UHERO, University of Hawai'i at Mānoa 2024 – Present

Maui Wildfire Exposure Study (MauiWES) — NIH- and state-funded longitudinal cohort *2024 – Present*

PI: Ruben Juarez. Collaboration across UHERO, JABSOM, and UH Maui College.

- Analyze longitudinal mixed-methods data (biomarker, environmental exposure, behavioral, and socioeconomic modules) for 2,000+ participants in an IRB-compliant cohort; contribute individual-level risk forecasts informing state disaster-recovery policy. Work contributes to a study published in *JAMA Network Open* (2025).

Roots Reborn Program Evaluation — Post-wildfire economic empowerment intervention *2025 – 2026*

- Independently designed and executed evaluation of an IRB-approved human-subjects intervention: Qualtrics instrument design, matched-panel construction, pre–post causal analysis, and executive summary for policymakers. Built a session-level framework linking program costs to quality-adjusted participant outcomes, producing a submission-ready manuscript.

Minority-Owned Small Business Financing Study — City & County of Honolulu OER-funded *2024 – 2025*

- Built a four-module R causal-inference pipeline (propensity score matching, inverse probability weighting, Heckman selection, mediation), identifying heterogeneous treatment effects of financing barriers across business subgroups.

Invited Collaborator & Peer Reviewer — GBD Study 2023, IHME, University of Washington 2024 – Present

- Provided substantive peer review for Global Burden of Disease 2023 manuscripts on antimicrobial resistance (Western Pacific), type 1 diabetes, and colon/rectum cancer, covering burden estimation methodology, statistical modeling, and uncertainty quantification.

Teaching Experience

Instructor, Introduction to Statistics, UH Mānoa Department of Economics Summer 2025
Teaching Assistant, Principles of Microeconomics & Macroeconomics, UH Mānoa 2023 – 2024

Technical Skills

Software: R (tidyverse, fixest, modelsummary, ggplot2, data.table, Shiny); Stata 18; Python (pandas, statsmodels, scikit-learn); SQL; Git; LaTeX.

Methods: Two-way fixed effects; difference-in-differences; event study designs; instrumental variables (2SLS); regression discontinuity; propensity score matching; inverse probability weighting; Heckman selection; mediation analysis; survival analysis; double/debiased machine learning (DML); causal forests; LASSO/elastic net; specification curve analysis; multiple imputation (MICE); wild cluster bootstrap; sensitivity analysis (Oster 2019; Cinelli–Hazlett 2020; Lee bounds); power analysis.

Quantitative health sciences: Frailty index construction (Rockwood deficit accumulation); item response theory (IRT); confirmatory factor analysis (CFA); GAD-7/CES-D psychometric scoring; cost-effectiveness and distributional cost-effectiveness analysis (CEA/DCEA); survey and cohort study design (Qualtrics, IRB protocols).

Data: CHARLS, HRS, SHARE, MEPS, BRFSS, NHANES, GBD, IPUMS (USA/CPS/International/ATUS).

Awards & Honors

2026	AWARD Network Summer Institute, University of California, San Francisco (NIA/NIH R24AG077014-funded)
2025	Burnham O. Campbell Fund Award, University of Hawai'i at Mānoa
2024, 2025	Hung Family Scholarship Award
2024	Jordan & Cara Odo Foundation Leadership Scholarship
2023	Achievement Award, Department of Economics, UH Mānoa

Professional Service & Memberships

Peer Reviewer, *Public Health in Practice* (Elsevier), 2025–Present.

Memberships: American Economic Association (AEA) · American Society of Health Economists (ASHEcon) · International Health Economics Association (iHEA) · Gerontological Society of America (GSA) · Hawaii Economic Association (HEA) · Pi Gamma Mu.

Languages: English (fluent) · Mandarin Chinese (native).

Statement of Research Interests and Motivation

NBER Mentoring Program on Aging and Health Economics Research, Fall 2026

Quan (Kyle) Zhang · University of Hawai'i at Mānoa · quanz@hawaii.edu

Current research. My dissertation uses the China Health and Retirement Longitudinal Study (CHARLS, 2011–2018) to identify how health shocks and frailty dynamics reshape labor supply, consumption, and intergenerational time allocation in an aging population. Chapter 1 (submitted to the NBER Summer Institute 2026 Workshop on Aging) estimates the causal effect of acute health shocks on labor-force exit and hours, using an event study design with staggered-adoption robustness checks, Rockwood-style frailty index as a continuous treatment intensity, and IV identification from plausibly exogenous health events. Chapter 2 extends the framework to falls as a specific health shock, linking CHARLS and HRS to test whether consumption smoothing differs across welfare regimes. Chapter 3 examines fertility responses to rural-urban migration and the quantity–quality trade-off under China's demographic transition.

Beyond the dissertation, three parallel projects are on the job-market runway. First, a caregiving paper using IPUMS ATUS treats informal care time as health capital depreciation for the caregiver, with heterogeneous-effect estimates across gender and race (GSA 2026, NDIRA Caregiving Symposium). Second, a panel event study using SHARE estimates QALY losses from acute health shocks across five European welfare regimes, quantifying how public long-term care systems buffer health-capital depreciation. Third, a health-equity evaluation of California's staggered Medi-Cal expansion to undocumented adults uses a staggered difference-in-differences design with Callaway-Sant'Anna estimation. My earlier peer-reviewed work in *JAMA*, *Health Affairs*, *Value in Health*, and the *International Journal of Epidemiology* has sharpened a parallel methodological interest: the translation between causal inference, cost-effectiveness, and distributional health-equity frameworks.

Motivation for attending. My committee at UH Mānoa is strong in health economics. My advisor Sang-Hyop Lee is a population economist and demographer whose work through the East-West Center and the National Transfer Accounts network has shaped how I think about intergenerational transfers and the macro-demography of aging. Tim J. Halliday, my co-chair, is the UHERO–HMSA Distinguished Professor of Health Economics and an IZA Research Fellow; his empirical work on intergenerational health transmission, air pollution and health, and Medicaid-eligible vulnerable populations has directly shaped my framing on health shocks and health capital. Teresa Molina is an applied microeconomist across development, health, and labor, and Editor of the *Journal of Health Economics*; her work on early-life shocks, human capital, and gendered responses to environmental stressors is the closest methodological template I have for the identification strategies I am using in CHARLS. I am fortunate in the committee I have.

What this program offers is a different dimension of exposure than any committee can provide: sustained engagement with the community of economists working on *U.S. aging panels*—HRS, Medicare claims, the NHATS/NSOC caregiving infrastructure, and the retirement-decision literature the NBER Aging program has built over three decades. My dissertation uses CHARLS for identification, but its target audience is the same audience that publishes on HRS and SHARE, and the framing norms, identification standards, and policy conversations in that community are not ones I can absorb fully from outside. At my current stage—launched on dissertation work, one year from the academic market, and geographically distant from the field's core nodes—this workshop is the most concentrated access point I can plausibly reach in 2026. What I am seeking is the methodological conversation still in working-paper form, the identification choices being debated in real time, and the chance to be in the room with senior scholars whose empirical design choices I am actively drawing on.

Support and guidance that would be most helpful. Three specific things.

First, *identification and framing feedback on Chapter 1.* The NBER SI submission frames health shocks through a TWFE event study; I have robustness checks using Callaway-Sant'Anna, de Chaisemartin-D'Haultfœuille, and Sun-Abraham estimators, plus a DML specification with causal forests for treatment-effect heterogeneity. What I lack is an outside voice on whether the frailty-index-as-continuous-treatment framing will read as novel or as a measurement sideshow to a health-economics audience, and whether I should reposition the paper toward a labor or a health journal. A 15-minute office-hours conversation with either organizer, or with any of the speakers working on health shocks and labor supply, would materially change the revision path.

Second, *strategic guidance on the 2027–2028 academic job market.* I intend to target research universities with aging and health infrastructure (HRS, CHARLS, SHARE), with the University of Michigan as one institutional match given its NIA training programs. I would benefit from honest calibration of what my current pipeline—a few peer-reviewed letters and commentaries plus three dissertation chapters—looks like to hiring committees in health economics versus applied micro versus health services research. Strategic questions include whether to prioritize converting the SHARE and Medi-Cal papers over adding a fourth dissertation chapter, and how to frame a research statement that reads coherently to both economics and health-policy audiences.

Third, *entry into the health-economics community.* The mentees at this workshop and the organizer-speaker network are the people I will see at ASHEcon, iHEA, and NBER Summer Institute meetings for the next twenty years. Building those relationships one year before going on the market, from an institution that sits outside the usual health-economics recruitment pipelines, is the highest-leverage thing I can do in 2026. The October 2 long-term care and caregiving meeting is particularly well-aligned with my GSA caregiving paper, and I would plan to stay for it.

What I can contribute in return: substantive engagement with work on Chinese aging cohorts, European welfare-regime comparisons, and frailty measurement; a clinical-research perspective from concurrent QHS training at JABSOM; and the motivation of someone at a distance from the field's core institutions, with a clear sense of what that exposure would change for my work.