

Quan (Kyle) Zhang

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EDUCATION

Ph.D., Economics (Quantitative Economics & Econometrics), University of Hawai'i at Mānoa 2023 – Present
Advisor: Sang-Hyop Lee Expected: Dec 2026

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

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

RESEARCH INTERESTS

Health economics and policy; causal inference and applied econometrics for health and social outcomes; population aging, frailty dynamics, and the joint determination of health and labor supply over the life course; disaster health economics and community resilience; quantitative health sciences and clinical research methodology, including cost-effectiveness analysis, psychometric measurement, and biomarker-integrated longitudinal study design; health equity and disparities etc.

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

PAPERS UNDER REVIEW

1. 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*.
2. Zhang, Q. (2026). “Caregiving as Health Capital Depreciation: Time Allocation Evidence from IPUMS ATUS.” Under review; to be presented at GSA 2026 Annual Scientific Meeting, National Harbor, MD (November 2026).
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). “QALY Losses from Acute Health Shocks Across European Welfare Regimes: A Panel Event Study Using SHARE.” Under review, *Health Economics*.
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*

WORKING PAPERS

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, 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.”

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.

CONFERENCE PRESENTATIONS

1. Zhang, Q. (2026). “Caregiving as Health Capital Depreciation: Time Allocation Evidence from IPUMS ATUS.” Gerontological Society of America (GSA) 2026 Annual Scientific Meeting, National Harbor, MD. NDIRA Caregiving Symposium. (Forthcoming, November 2026.)
2. 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, Economics of Health Workshop / Workshop on Aging, Cambridge, MA.

RESEARCH EXPERIENCE

- Graduate Research Assistant** — UHERO, University of Hawai'i at Mānoa 2024 – Present
Project 1: Maui Wildfire Exposure Study (MauiWES) 2024 – Present
NIH- and state-funded longitudinal cohort. PI: Ruben Juarez. In collaboration with UHERO, JABSOM, and UH Maui College.
- Analyzed mixed-methods data (biomarker, behavioral, socioeconomic) for 2,000+ participants in an IRB-compliant longitudinal study; generated individual-level risk forecasts informing disaster-recovery policy.
 - Designed quantitative instruments and contributed to participant recruitment protocols for ongoing cohort waves. Contributing to a study published in *JAMA Network Open* (2025).
- Project 2: Roots Reborn Program Evaluation* 2025 – 2026
Post-wildfire economic empowerment intervention.
- Designed and executed full evaluation of an IRB-approved human-subjects intervention: Qualtrics survey design → matched-panel construction → pre-post causal analysis → executive summary for policymakers.
 - Built session-level evaluation framework linking program costs to quality-adjusted participant outcomes, producing a submission-ready manuscript with actionable policy recommendations.
- Project 3: Minority-Owned Small Business Financing Study* 2024 – 2025
City & County of Honolulu OER-funded.
- Built 4-module R causal-inference pipeline (PSM, IPW, Heckman selection, mediation), identifying heterogeneous treatment effects of financing barriers across business subgroups.
- GBD Collaborator** — Global Burden of Disease Study 2023, IHME 2024 – Present
- Invited collaborator at the Institute for Health Metrics and Evaluation, University of Washington. Provided substantive peer review for GBD 2023 manuscripts on antimicrobial resistance (Western Pacific), type 1 diabetes, and colon/rectum cancer.
- Research Assistant (Co-Op)** — Argonne National Laboratory, TRACC 2011
- Developed regression models for urban evacuation timing in collaboration with NASA. Applied simulation, Design of Experiment, and statistical modeling for Chicago evacuation planning.

PRIOR INDUSTRY EXPERIENCE

- Program Manager**, Microsoft Corporation, SQL Server Data Warehousing (APS), Redmond, WA 2014 – 2015
Managed \$4M delivery pipeline of cloud data-warehouse appliances; developed logistics and cost model for Parallel Data Warehousing infrastructure.
- Project Management Specialist**, Quanta Computer (Amazon AWS NPI), Bellevue, WA 2013 – 2014
Coordinated New Product Introduction releases for AWS cloud servers; managed BOM provisioning and cross-cultural supply chain operations between North American and Asian markets.
- Project Engineer (Co-Op)**, Caterpillar Inc., Manufacturing Strategy, Aurora, IL 2012
Delivered NPV-based analysis projecting ~\$1M/year savings across warehouse-relocation scenarios; achieved 60% reduction in urgent-order tardiness via Six Sigma DMAIC.

TEACHING EXPERIENCE

- Instructor**, Introduction to Statistics, UH Mānoa Department of Economics Summer 2025
- Teaching Assistant**, Principles of Microeconomics & Macroeconomics, UH Mānoa 2023 – 2024
- Teaching Assistant**, Arena Simulation, Operations Research, Decision Analysis, NIU ISE 2010 – 2012

AWARDS & HONORS

- 2026 AWARD Network Summer Institute, University of California, San Francisco (NIA/NIH-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

- Peer Reviewer**, *Public Health in Practice* (Elsevier), 2025–Present
- Collaborator & Peer Reviewer**, Global Burden of Disease Study 2023, Institute for Health Metrics and Evaluation (IHME), University of Washington, 2024–Present
- Antimicrobial Resistance in the Western Pacific Region (IHME ID: WHO AMR), 2026
 - Global Type 1 Diabetes (IHME ID: 5338), 2026
 - Global Colon Rectum Cancer (IHME ID: 4219), 2026

PROFESSIONAL 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

TECHNICAL SKILLS

Statistical Software: R (tidyverse, fixest, modelsummary, ggplot2, Shiny), Stata, Python (pandas, statsmodels, scikit-learn), SQL, Git etc.

Causal Inference & Econometrics: Two-way fixed effects, difference-in-differences, instrumental variables (2SLS), event study designs, regression discontinuity, propensity score matching, inverse probability weighting, Heckman selection models, mediation analysis, sensitivity analysis (Oster 2019; Cinelli–Hazlett 2020), Lee bounds, specification curve analysis, wild cluster bootstrap, A/B testing frameworks, power analysis etc.

Machine Learning & Computational Methods: Double/debiased machine learning (DML), causal forests, LASSO/elastic net, multiple imputation (MICE) etc.

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 analysis (CEA/DCEA), survey design (Qualtrics) etc.

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

CERTIFICATIONS

Google Business Intelligence Professional Certificate · Google Data Analytics Professional Certificate · Certified Six Sigma DMAIC Green Belt (Caterpillar Inc.)

LANGUAGES

English (fluent) · Mandarin Chinese (native)