

Yue Chu PhD, MSPH, MBBS

Population Health Scientist & Demographer

Columbus, Ohio | chu.282@osu.edu | y-chu.github.io | [LinkedIn](#) | [GitHub](#) | [Google Scholar](#)

SUMMARY

Population health scientist and demographer with more than a decade of research on population measurement under incomplete and imperfect information. I develop demographic, statistical, computational, and AI methods for mortality and cause-of-death estimation, study measurement error and data quality in surveys and surveillance, and build research software and data infrastructure with WHO and international partners. Author or coauthor of 23 peer-reviewed publications, including first-author and joint-first-author work in *Lancet Global Health*.

EXPERTISE

Methods: Bayesian and demographic estimation; mortality and cause-of-death modeling; survey methods, measurement error, and validation; machine learning, pretrained language models, LLMs, and multimodal learning; evidence synthesis

Computing: R, Python, Julia, SQL, Stata; Hugging Face, Optuna; Azure, Snowflake, AWS

Domains: mortality surveillance and verbal autopsy; maternal, newborn, and child health; global health estimation; population health

EXPERIENCE

Postdoctoral Fellow

May 2025 – present

Institute for Population Research (from Feb 2026) and Health and Environment Modeling Laboratory, The Ohio State University

- Core team member of CODA, a Gates Foundation-initiated international consortium developing AI-enabled cause-of-death determination: test multimodal fusion performance, contribute to model choice, development, and interpretation, and coauthor consortium papers.
- Research on language models, multimodal learning, and information sufficiency in verbal autopsy; first and corresponding author of a national multimodal cause-of-death benchmark released on *medRxiv*, and coauthor of a separate child-mortality benchmark presented as a NeurIPS 2026 poster by its first author.
- Teaching Assistant, SOCIOL 8607 Causal Modeling (Spring 2026): facilitated discussion and provided coding support.

Platform Manager and Core Developer, Reference Data Archive

2022 – present

WHO-hosted platform; Key Personnel on the Gates Foundation-funded archive award at Ohio State (2022–2026)

- Co-lead software development for the WHO-hosted Reference Data Archive with the Africa Health Research Institute as platform manager and core developer; serve as sole data manager (Julia, Python, R, SQL).
- Built data ingestion, curation, metadata, quality-control, and dissemination workflows, including NADA and user-facing APIs; manage platform users and data.
- Wrote the platform documentation (user guides, tutorials, standard operating procedures, protocols) and coordinate technical implementation across Ohio State, the Africa Health Research Institute, and WHO.
- Supervised two doctoral research assistants on data-quality checks, data cleaning, and coding.

Graduate Research Associate

Jan 2019 – May 2025

The Ohio State University; appointments supporting verbal autopsy methods, the Reference Data Archive, and customer-insights research

- Dissertation: showed that fine-tuned pretrained language models using verbal autopsy narratives outperform leading questionnaire-only algorithms, and that multimodal models improve further; developed MultimodalVA, an open-source Python package for these workflows ([GitHub](#)).
- Led the cross-site analysis of harmonized verbal autopsy data from nine surveillance sites in six countries in eastern and southern Africa (first author, *Lancet Global Health*, 2024).
- Contributed statistical modeling to statewide COVID-19 prevalence estimation for Ohio using Bayesian multilevel poststratification with imperfect diagnostic tests (*PNAS*, 2021; *Annals of Epidemiology*, 2022).
- Contributed to NICHD-funded verbal autopsy methods research (R01HD086227), openVA algorithm validation, and the Bloomberg Data for Health Probbase update.

Data Science Intern / Graduate Research Associate

May 2022 – May 2023

Nationwide Mutual via InnoSource (May–Aug 2022); Nationwide Center for Advanced Customer Insights, Ohio State (Aug 2022–May 2023)

Research Associate

Jan 2015 – Jul 2018

Department of International Health, Johns Hopkins Bloomberg School of Public Health (research assistant roles, 2013–2015)

- Research Associate on the Maternal and Child Epidemiology Estimation and IMPROVE projects and on NICHD-funded studies of survey data quality (R21HD087811) and age patterns of under-five mortality (R01HD090082).
- Conducted systematic reviews, statistical modeling, and data analysis for global, national, and subnational estimates of child mortality and its causes (e.g., *Lancet*, 2016; *Lancet Global Health*, 2017), including a joint-first-author state-level analysis for India (*Lancet Global Health*, 2019).
- Coauthored a validation study of survey-reported neonatal mortality against surveillance records (*Demography*, 2020).
- Provided day-to-day supervision to 10+ graduate research assistants.

Selected Consulting, Technical Advisory, and Country Work

2018 – 2023

- **Ministry of Health, Guinea-Bissau (2022–23)**: set up ODK-based survey data collection and a centralized data system for verbal autopsy interviews.
- **World Health Organization (2021)**: technical input to the revision of the 2022 WHO standardized verbal autopsy instrument.
- **KIT Royal Tropical Institute (2018)**: consultant demographer for the Afghanistan Health Survey 2018; conducted the mortality and cause-of-death analysis and drafted the corresponding report sections.
- **World Health Organization (2018)**: designed an evaluation plan for reviewing the quality of cause-of-death estimates in the Global Health Observatory.

EDUCATION

PhD in Sociology, minor in Statistics and Demography

2025

The Ohio State University (MA in Sociology, 2020)

MSPH, Population, Family and Reproductive Health

2014

Johns Hopkins Bloomberg School of Public Health

Bachelor of Medicine, Preventive Medicine

2012

Fudan University, Shanghai, China

SELECTED PUBLICATIONS

- **Chu Y**, Marston M, Dube A, et al. Temporal changes in cause of death among adolescents and adults in six countries in eastern and southern Africa in 1995–2019: a multi-country surveillance study of verbal autopsy data. *Lancet Global Health*. 2024;12(8):e1278–e1287.
- Schumacher AE, McCormick TH, Wakefield J, **Chu Y**, et al. A flexible Bayesian framework to estimate age- and cause-specific child mortality over time from sample registration data. *Annals of Applied Statistics*. 2022;16(1):124–143.
- Kline D, Li Z, **Chu Y**, et al. Estimating seroprevalence of SARS-CoV-2 in Ohio: a Bayesian multilevel poststratification approach with multiple diagnostic tests. *PNAS*. 2021;118(26):e2023947118.
- HELLERINGER S, Liu L, **Chu Y**, Rodrigues A, Fisker AB. Biases in survey estimates of neonatal mortality: results from a validation study in urban areas of Guinea-Bissau. *Demography*. 2020;57(5):1705–1726.
- **Chu Y**, Wu Z, McCormick TH, Li ZR, Clark SJ. Multimodal artificial intelligence for cause-of-death assignment from verbal autopsy records: a national benchmark study in South Africa. *medRxiv*. 2026. doi:10.64898/2026.10.15.26364476.

Full record: 23 peer-reviewed publications, plus preprints and reports, in the [academic CV](#).

TEACHING AND SERVICE

Teaching: teaching assistant or recitation leader for four graduate and undergraduate courses in causal modeling, statistics, population studies, and demographic methods (Ohio State, Johns Hopkins).

Service: session chair and discussant, Population Association of America (2021, 2025); peer reviewer for *PNAS*, *Nature*, *Demographic Research*, *Population Health Metrics*, *PLOS ONE*, and other journals.