# Larry Han

Office Northeastern University

Department of Health Sciences

Robinson Hall 316D 336 Huntington Avenue Boston, MA 02115

Contact

Email: lar.han@northeastern.edu Website: larrylehan.github.io Twitter: twitter.com/lhan320

Cell: (919) 272-1491

EDUCATION

Ph.D. in Biostatistics, Harvard University, May 2023

Advisors: Tianxi Cai, Lorenzo Trippa

Committee: Rui Duan, Sebastian Schneeweiss

A.M. in Biostatistics, Harvard University, May 2020

M.Phil. in Healthcare Operations, University of Cambridge, Jul 2018

Distinction

Advisor: Stefan Scholtes

M.A. in Global Affairs, Tsinghua University, Jul 2017

Outstanding Master's Thesis Award

Advisor: Michael Powers

B.S. in Public Health, Biostatistics, University of North Carolina at Chapel Hill, May 2016

Highest Honors, Highest Distinction Advisors: Michael Hudgens, Joseph Tucker

ACADEMIC APPOINTMENTS  ${\bf Assistant\ Professor\ of\ Health\ Sciences}, \textit{Northeastern\ University}, \, {\bf Aug\ 2023-Present}$ 

Impact Engine Fellow, Real World Healthcare Navigator, Aug 2023-Present

Postdoctoral Fellow in Health Care Policy, Harvard Medical School, May 2023-Aug 2023

Advisor: Sharon-Lise Normand

Funding

National Heart, Lung, and Blood Institute R01HL162893, May 2023-Present

Co-Investigator, 30% effort

Principal Investigators: Sharon-Lise Normand & Sara Pasquali

Modern Analytics to Improve Quality & Outcome Assessments Following Congenital Heart Surgery

World Health Organization Social Innovation in Health Research Grant, 2019–2022

Co-Principal Investigator, \$190,000 USD annually

National Institutes of Health T32 COMET Training Grant, 2020–2022

Coordinator: Jeffrey Katz, Distinguished Chair in Orthopaedic Surgery, Harvard Medical School

National Institutes of Health T32 Big Data to Knowledge Training Grant, 2018–2020

Coordinator: John Quackenbush, Department Chair, Harvard Biostatistics

Honors & Awards

2023 National Committee on U.S.-China Relations, Track II Dialogue on Healthcare, Rapporteur

2023 American Statistical Association Student Paper Award, Health Policy Statistics Section

2023 International Conference on Health Policy Statistics Student Paper Travel Award

2022 Western North American Region of the International Biometric Society Spring Meeting

Best Oral Student Paper Presentation Award

- 2022 American Statistical Association Biopharmaceutical Section Scholarship Award
- 2022 American Statistical Association Young Investigator Award, Statistics in Epidemiology
- 2022 American Causal Inference Conference New Researcher Award
- 2022 Institute of Mathematical Statistics Hannan Graduate Student Travel Award
- 2022 Rose Fellowship, Assistance Publique-Hopitaux de Paris
- 2021 John Van Ryzin Award
- 2021 American Statistical Association Biopharmaceutical Regulatory-Industry Statistics Workshop Student Poster Award
- 2021 34<sup>th</sup> New England Statistics Symposium Student Poster Award
- 2021 Best Student Poster, Harvard T.H. Chan Poster Day
- 2019 25 Under 25 Leaders in US-China Relations, China Hands
- 2017 Gates Cambridge Scholarship
- 2016 Schwarzman Scholarship
- 2016 Phillips Ambassadors 10-Year Anniversary Award
- 2016 Order of the Golden Fleece
- 2016 Delta Omega Award of Excellence
- 2015 Goldwater Scholarship
- 2014 Phillips Ambassadorship
- 2012 Morehead-Cain Scholarship
- 2012 National Merit Scholarship

# WORKING PAPERS, PRE-PRINTS & PEER-REVIEWED PUBLICATIONS

### RESEARCH INTERESTS

Methodological: Causal inference; Federated learning; High-dimensional statistics; Natural language processing; Semi-supervised learning; Sensitivity analysis; Surrogate markers; Transfer learning

Applications: Clinical trials; Comparative effectiveness; Crowdsourcing; Electronic health records; Global health; Healthcare operations; Health policy and management; Infectious diseases; Pharmacoepidemiology; Rapid testing; Social innovation; Quality measurement

# Working Papers

- [6] Han, L.; Liu, Y.; Levis, A. "Federated Conformal Inference under Covariate Shift." In preparation.
- [5] **Han, L.**; Tang, W.; Tian, L.; Cai, T. "Multi-Institution Federated Learning of Differential COVID-19 Vaccine Efficacy." *In preparation*.
- [4] **Han, L.**; Zhang, Y.; Duan, R. "Heterogeneous Causal Effect Estimation in Underrepresented Populations: Federated and Transfer Learning Approaches." *In preparation*.
- [3] **Han, L.**; Hou, J.; Cai, T. "Semi-supervised Doubly Robust Estimation for Pragmatic Trial Design." In preparation.
- [2] **Han, L.** and Cai, T. "Cross-Institutional EHR Data Harmonization using NLP: Prediction of Long-COVID Outcomes in French and US Hospitals." *In preparation*.
- [1] Liu, M.; **Han, L.**; Xiong, X.; Cai, T.; Tian, L. "Federated Survival Analysis with High Dimensional and Heterogeneous Data." *In preparation*.

#### Preprints

- [4] **Han, L.;** Zhu, S.; Zubizarreta, J. "Multiply Robust Federated Estimation of Targeted Average Treatment Effects."
- [3] Guo, Z.; Li, X; **Han, L.**; Cai, T. "Robust Inference for Federated Meta-Learning." *Arxiv*, 2023 Jan.. [Paper].
  - ullet Invited revision at Journal of the American Statistical Association: Theory ullet Methods
- [2] **Han, L.;** Li, Y.; Niknam, B.; Zubizarreta, J. "Privacy-Preserving and Communication-Efficient Causal Inference for Hospital Quality Measurement." *Arxiv*, 2022 Mar. [Paper].
  - Invited revision at Annals of Applied Statistics
  - 2023 American Statistical Association Student Paper Award, Health Policy Statistics Section
  - 2022 Western North American Region of the International Biometric Society Spring Meeting Best Oral Student Paper Presentation Award
- [1] **Han, L.;** Duan, R.; Cai, T. "Federated Adaptive Causal Estimation (FACE) of Target Treatment Effects." *Arxiv*, 2021 Dec. [Paper].
  - ullet Invited revision at Journal of the American Statistical Association: Theory & Methods
  - 2022 American Statistical Association Young Investigator Award, Section on Statistics in Epidemiology, Joint Statistical Meetings

# Publications

- [36] **Han, L.** "Breaking Free from the Hazard Ratio: Embracing the Restricted Mean Survival Time in Clinical Trials." *NEJM Evidence*, 2023 Jul. [Paper].
- [35] Han, S.; Wu, P.; Wang, Z.; Cui, Y.; Yang, H.; Zhou, Z., **Han, L.**; Yang, L.; Jiang, J.; Shao, R.; Wang, C. "Reporting Studies Involving Cluster Data: Interpretation and Extension of the TRIPOD-Cluster Checklist." *Digital Medicine and Health (Chinese)*, 2023 Jun.
- [34] Han, L.; Arfe, A.; Trippa, L. "Sensitivity Analyses of Clinical Trial Designs: Selecting Scenarios and Summarizing Operating Characteristics." The American Statistician, 2023 May. [Paper].
  - 2021 New England Statistics Symposium Student Poster Award
- [33] **Han, L.;** Wang, X.; Cai, T. "Identifying Surrogate Markers in Real-World Comparative Effectiveness Research." *Statistics in Medicine*, 2022 Aug. [Paper].
  - 2021 John Van Ryzin Award
- [32] Day, S.; Hlatshwako, T.G., Lloyd, A., **Han, L.**; Tang, W.; Bayus, B.; Tucker, J.D. "Evaluating and Volunteering for Crowdsourced Interventions: Cross-Sectional Data on COVID-19 Safety from a University Survey." *PLOS One*, 2022 Sep. [Paper].
- [31] Weber, G.; Hong, C.; Xia, Z; ... 4CE (Han, L.); Kohane, I.; Cai, T.; Brat, G. "International Comparisons of Laboratory Values from the 4CE Collaborative to Predict COVID-19 Mortality." NPJ Digital Medicine, 2022 Jun 13; 5(74). [Paper].
- [30] Wang, X.; Parast, L.; **Han, L.**; Tian, L; Cai, T. "Robust Approach to Combining Multiple Markers to Improve Surrogacy." *Biometrics*, 2022 Apr 15. [Paper].
- [29] **Han, L.;** Tang, W.; Tiarney, R.; et al. "Joint International Consensus Statement on Crowdsourcing Challenge Contests in Health and Medicine: Results of a Modified Delphi Process." *BMJ Open.* 2021 Nov; 11(11):e048699. [Paper].
- [28] Nauffal, V.; Marstrand, P.; **Han, L.**; et al. "Worldwide Differences in Primary Prevention Implantable Cardioverter Defibrillator Utilization and Outcomes in Hypertrophic Cardiomyopathy." *European Heart Journal*, 2021 Sep. 42(38), 3932-3944. [Paper].
- [27] Day, S.; Li, C.; Hlatshwako, T.; Abu-Hijleh, F.; **Han, L.;** Deitelzweig, C.; Bayus, B.; Ramaswamy, R.; Tang, W.; Tucker J. "Assessment of a Crowdsourcing Open Call for Approaches to University Community Engagement and Strategic Planning During COVID-19." *JAMA Network Open*, 2021 May; 4(5):e2110090. [Paper].

- [26] Wang, C.\*; Han, L.\*; Stein, G.; et al. "Crowdsourcing in Health and Medical Research: A Systematic Review." Infectious Diseases of Poverty. 2020 Jan; 9(1):8. [Paper]. \*Co-first authors
- [25] Sidhu, K.; Han, L.; Picard, K.; et al. "Ventricular Tachycardia in Cardiolaminopathy: Characteristics and Considerations for Device Programming." Heart Rhythm. 2020 Oct 1; 17(10):1704-1710. [Paper].
- [24] Marston, N.; Han, L.; Olivotto, I.; et al. "Clinical Characteristics and Cardiovascular Outcomes in Childhood-Onset Hypertrophic Cardiomyopathy Compared with Adult-Onset Disease." European Heart Journal. 2020 May, 42(20), 1988-1996. [Paper].
- [23] Marstrand, P.; Han, L.; Day, S.; et al. "Hypertrophic Cardiomyopathy with Left Ventricular Systolic Dysfunction: Insights from the SHaRe Registry." Circulation. 2020 Apr 28; 141(17):1371-1383. [Paper].
- [22] McCoy, T.; Han, L.; Pellegrini, A.; et al. "Stratifying Risk for Dementia Onset Using Large-Scale Electronic Health Record Data: A Retrospective Cohort Study." Alzheimer's & Dementia: The Journal of the Alzheimer's Association. 2020 Jan 16. [Paper].

#### • Featured article

- [21] Lakdawala, N.; Olivotto, I.; Day, S.; **Han, L.**; et al. "Associations Between Female Sex, Sarcomere Variants and Clinical Outcomes in Hypertrophic Cardiomyopathy." *Circulation: Genomic and Precision Medicine.* 2020 Dec. 14(1), e003062. [Paper].
- [20] Halpaap, B.; Tucker, J.; Mathanga, D.; Juban, N.; Awor, P.; Saravia, N.; Han, L; et al. "Social Innovation in Global Health: Sparking Location Action." *Lancet Global Health*. 2020 May; 8(5):e633-634. [Paper].
- [19] Han, L.; Fine, J.; Robinson, S.; Boyle, A.; Freeman, M.; Scholtes, S. "Is Seniority of Emergency Physician Associated with the Weekend Effect?" *Emergency Medicine Journal*. 2019 Dec;36(12):708-715. [Paper].
  - [Invited commentary] from the President of the Royal College of Emergency Medicine
- [18] Eberly, L.; Day, S.; Ashley, E.; Jacoby D.; Jefferies; J.; Colan, S.; Rossano, J.; Semsarian, C.; Pereira, A.; Olivotto, I.; Ingles, J.; Seidman, C.; Channaoui, N.; Cirino, A.; **Han, L.**; Ho, C.; Lakdawala, N. "Association of Race with Disease Expression and Clinical Outcomes Among Patients with Hypertrophic Cardiomyopathy." *JAMA Cardiology*. 2019 Dec; 5(1), 83-91. [Paper].
- [17] Liu, F.; Qin, Y.; Meng, S.; Zhang, W.; Tang, W.; Han, L.; et al. "HIV Self-Testing among MSM in China: A Qualitative Implementation Research Study." *Journal of Virus Eradication*. 2019 Nov 4;5(4):220-224. [Paper].
- [16] Li, K.; Tang, W.; Wu, D.; Huang, W.; Feng, W.; Lee, A.; Feng, H.; Pan, S.; Han, L.; Mak, V.; Yang, L; Tucker, J. "Pay-it-forward Dual Gonorrhea/Chlamydia Test Uptake among MSM in China: A Pragmatic, Quasi-Experimental Study." The Lancet Infectious Diseases. 2019 Jan;19(1):76-82. [Paper].
- [15] **Han, L.;** Chen, A.; Wei, S.; et al. "Crowdsourcing in Health & Health Research: A Practical Guide." World Health Organization. 2018 July. License: CC BY-NC-SA 3.0 IGO. [Paper].
- [14] Qin, Y.\*; **Han, L.\***; Babbit, A.; et al. "Experiences Using and Organizing HIV Self-Testing." Journal of the International AIDS Society. 2018 Jan 28:32(3):371-381. [Paper]. \*Co-first authors
- [13] **Han, L.;** Hudgens, M.; Emch, M.; et al. "RTS,S/AS01 Malaria Vaccine Efficacy is Not Modified by Seasonal Precipitation: Results from a Phase 3 Randomized Controlled Trial in Lilongwe, Malawi." *Scientific Reports.* 2017 Aug 3:7(1):7200. [Paper].
- [12] Zhang, T.\*; Liu, C.\*; **Han, L.\*** et al. "Community Engagement in Sexual Health and Uptake of HIV Testing and Syphilis Testing Among MSM in China: a Cross-sectional Online Survey." *Journal of the International AIDS Society.* 2017 Apr 3:20(1):21372. [Paper]. \*Co-first authors
- [11] SESH Study Group (Han, L.); Tucker, J. "Crowdsourcing to Promote HIV Testing Among MSM in China: Study Protocol for a Stepped Wedge Randomized Controlled Trial." *Trials.* 2017 Oct 2;18(1):447. [Paper].

- [10] Wong, N.; Tang, W.; **Han, L.** et al. "MSM HIV Testing Following an Online Testing Intervention in China." *BMC Infectious Diseases*. 2017 June 19;17(1):437. [Paper].
- [9] Tang, W.; Mao, J.; Tang, S.; Liu, C.; Mollan, K.; Cao, B.; Wong, T.; Zhang, Y.; Hudgens, M.; Qin, Y.; Han, L.; et al. "Disclosure of Sexual Orientation to Health Professionals in China: Results from an Online Cross-Sectional Study." Journal of the International AIDS Society. 2017 Feb 6:20(1):21416. [Paper].
- [8] Hu, J.; Gu, X.; Tao, X.; Qian, Y.; Babu, G.; Wang, G.; Liao, M.; Han, L.; Kang, D.; Tang, W. "Prevalence and Trends of HIV, Syphillis, and HCV in Migrant and Resident MSM in Shandong, China: Results from a Serial Cross-Sectional Study." PLoS One. 2017 Jan 19;12(1):e0170443. [Paper].
- [7] Han, L.; Wei, C.; Muessig, K.; et al. "HIV Test Uptake Among MSM in China: Implications for Enhanced HIV Test Promotion Campaigns Among Key Populations." Global Public Health. 2016 Jan:1-14. [Paper].
- [6] Tang, W\*.; Han, L\*.; Best, J\*.; et al. "Crowdsourcing HIV Test Promotion Videos: A Non-inferiority Randomized Controlled Trial in China." Clinical Infectious Diseases. 2016 Jun 1;62(11):1436-42. [Paper].
  \*Co-first authors
- [5] Bien, C.; Best, J.; Muessig, K.; Wei, C.; **Han, L.**; Tucker, J. "Gay Apps for Seeking Sex Partners in China: Implications for MSM Sexual Health." *AIDS and Behavior*. 2015 June;19(6):941-6. [Paper].
- [4] Best, J.; Tang, W.; Zhang, Y.; **Han, L.**; et al. "Sexual Behaviors and HIV/Syphilis Testing Among Transgender Individuals in China: Implications for Expanding HIV Testing Services." *Sexually Transmitted Diseases*. 2015 May;42(5):281-5. [Paper].
- [3] **Han, L.;** Bien, C.; Wei, C.; et al. "HIV Self-Testing Among Online MSM in China: Implications for Expanding HIV Testing Among Key Populations." *Journal of Acquired Immune Deficiency Syndromes*. 2014 Oct 1;67(2):216-21. [Paper].
- [2] Tucker, J.; Muessig K.; Cui, R.; Bien, C.; Lo, E.; Lee, R.; Wang, K.; **Han, L.**; et al. "Organizational Characteristics of HIV/Syphilis Testing Services for MSM in South China: a Social Entrepreneurship Analysis and Implications for Creating Sustainable Service Models." *BMC Infectious Diseases.* 2014 Nov 25;14:601. [Paper].
- [1] Wei, C.; Muessig, K.; Bien, C.; Yang, L.; Meng, R.; **Han, L.**; Yang, M.; Tucker, J. "Strategies for Promoting HIV Testing Uptake: Willingness to Receive Couple-Based and Collecting HIV Testing Among a Cross-Sectional Online Sample of MSM in China." *Sexually Transmitted Infections*. 2014 Sep;90(6):469-74. [Paper].

# Conferences, Seminars & Workshops

# Session Organization

[1] International Conference on Health Policy Statistics, Scottsdale, AZ. (Invited Session Organizer, Jan 2023). "Statistical Advances and Policy Implications in Hospital Quality Measurement."

# Session Chair

- [3] Joint Statistical Meetings, Toronto, Canada. (Session Chair, Aug 2023). "Surrogate Markers: Identification, Use, and Challenges." (Invited Session Organizer: Layla Parast)
- [2] Joint Statistical Meetings, Washington, D.C. (Session Chair, Aug 2022). "Matching Design and Sensitivity Analysis for Causal Inference." (Contributed Session)
- [1] Eastern North American Region of the International Biometric Society Spring Meeting, Virtual (Session Chair, Mar 2021). "Medical Devices." (Contributed Session)

### INVITED SEMINARS

- [23] Applied Statistics Workshop, Harvard University, Institute for Quantitative Social Sciences, Cambridge, MA. (Invited Speaker, Sep 2023). "Multiply Robust Federated Estimation of Targeted Average Treatment Effects."
- [22] Northeastern University, Health Sciences Seminar, Boston, MA. (Invited Speaker, Mar 2023). "The Blessings of Federation for Causal Inference."
- [21] Boston University, Biostatistics Seminar, Boston, MA. (Invited Speaker, Mar 2023). "The Blessings of Federation for Causal Inference."
- [20] University of California-Berkeley / University of California-San Francisco, Computational Precision Health Seminar, Berkeley, CA. (Invited Speaker, Feb 2023). "The Blessings of Federation for Causal Inference."
- [19] Vanderbilt University Medical Center, Biostatistics Seminar, Nashville, TN. (Invited Speaker, Feb 2023). "The Blessings of Federation for Causal Inference."
- [18] Harvard Medical School, Pharmacoepidemiology Seminar, Boston, MA. (Invited Speaker, Feb 2023). "The Blessings of Federation for Causal Inference."
- [17] University of Washington, Biostatistics Seminar, Seattle, WA. (Invited Speaker, Feb 2023). "The Blessings of Federation for Causal Inference."
- [16] University of Pennsylvania, Biostatistics, Epidemiology, and Informatics Seminar, Philadelphia, PA. (Invited Speaker, Jan 2023). "The Blessings of Federation for Causal Inference."
- [15] University of Virginia, Data Science Seminar, Charlottesville, VA. (Invited Speaker, Jan 2023). "The Blessings of Federation for Causal Inference."
- [14] University of Michigan-Ann Arbor, Biostatistics Seminar, Ann Arbor, MI. (Invited Speaker, Jan 2023). "The Blessings of Federation for Causal Inference."
- [13] North Carolina State University, Statistics Seminar, Raleigh, NC. (Invited Speaker, Dec 2022). "The Blessings of Federation for Causal Inference."
- [12] University of Cambridge Judge Business School, Healthcare Operations Seminar, Online. (Invited Speaker, Nov 2022). "Data-adaptive Heterogeneous Causal Effect Estimation via Trees."
- [11] University of Utah, Biostatistics Seminar, Online. (Invited Speaker, Dec 2022). "The Blessings of Federation for Causal Inference."
- [10] University of Paris, Bioinformatics Seminar, Paris, France. (Invited Speaker, Nov 2022). "Cross-Institutional EHR Data Harmonization using NLP."
- [9] Harvard Medical School, Design of Experimental and Observational Studies Seminar, Boston, MA. (Invited Speaker, Jun 2022). "Privacy-Preserving and Communication-Efficient Causal Inference for Hospital Quality Measurement."
- [8] Johns Hopkins Causal Inference Working Group, Virtual. (Invited Speaker, Sep 2021). "Distributed Causal Inference."
- [7] Harvard Chan Poster Day, Virtual (Speaker, Feb 2021). "On the Evaluation of Surrogate Markers in Real World Data Settings."
- [6] Harvard-MIT Center for Regulatory Science Doctoral Student Symposium, Virtual (Speaker, Feb 2021). "Distributed Causal Learning."
- [5] University of Michigan Statistics for Individualized Healthcare Lab, Virtual. (Invited Speaker, Dec 2020). "Distributed Learning for Causal Modelling."
- [4] London School of Hygiene & Tropical Medicine Centre for Evaluation Seminar Series, London, UK. (Invited Speaker, May 2018). "Crowdsourcing in Health and Medicine: Developing a Practical Guide and Systematic Review."
- [3] University of Cambridge Judge Business School, Healthcare Operations Seminar, Cambridge, UK. (Inivited Speaker, March 2018). "Surviving the Weekend Effect: a Competing Risks Analysis of Excess Weekend Mortality at Addenbrooke's Hospital."
- [2] Tsinghua University Schwarzman Scholars Symposium, Beijing, China. (Invited Speaker, June 2017). "Human Survival."

[1] UNC Project-Malawi, Lilongwe, Malawi. (Invited Speaker, Mar 2016). "Survival Analysis from a Phase 3 RCT: RTS,S/AS01 Malaria Vaccine Efficacy in Lilongwe, Malawi and its Interaction with Seasonal Precipitation."

# Conference Presentations

- [26] Forum on the Integration of Observational and Randomized Data, Washington, D.C. (Invited Speaker, Nov 2023). "Federated Transfer Learning and Applications in Data Integration for Real World Evidence."
- [25] INFORMS, Phoenix, AZ. (Community-Committee's Choice Session, Oct 2023). "Federated Transfer Learning to Estimate the Quality of Congenital Heart Centers."
- [24] RAND Center for Causal Inference Symposium, Online. (Speaker, Aug 2023). "Multiply Robust Federated Estimation of Targeted Average Treatment Effects."
- [23] Joint Statistical Meetings, Toronto, Canada. (Invited Speaker, Aug 2023). "Federated Transfer Learning for Heterogeneous Causal Effects in Underrepresented Populations."
- [22] Joint Statistical Meetings, Toronto, Canada. (Invited Speaker, Aug 2023). "Privacy-Preserving and Communication-Efficient Hospital Quality Measurement."

#### • American Statistical Association Student Paper Award, Health Policy Statistics Section

- [21] Institute of Mathematical Statistics New Researchers Conference, Toronto, Canada. (Speed Talk, Aug 2023). "Federated Transfer Learning for Heterogeneous Causal Effects in Underrepresented Populations."
- [20] MedInfo, Sydney, Australia. (Co-author, Jul 2023). "TAXN: Translate Align Extract Normalize, a multilingual extraction tool for clinical texts."
- [19] Eastern North American Region of the International Biometric Society Spring Meeting, Nashville, TN. (Oral, Mar 2023). "Federated and Transfer Learning Approaches to Causal Inference."
- [18] 15<sup>th</sup> International Conference of the European Consortium for Informatics and Mathematics Working Group on Computational and Methodological Statistics, London, U.K. (Invited Speaker, Dec 2022). "Heterogeneous Causal Effect Estimation: Federated and Transfer Learning Approaches."
- [17] Banff Workshop, Oaxaca, Mexico. (Invited Speaker, Aug 2022). "Extensions to Real-World Data and Multiple Surrogate Markers."
- [16] Joint Statistical Meetings, Washington, D.C. (Oral, Aug 2022). "Federated Adaptive Causal Estimation (FACE) of Target Treatment Effects."

# • American Statistical Association Young Investigator Award, Section on Statistics in Epidemiology

- [15] 31<sup>st</sup> International Biometric Conference, Riga, Latvia. (Invited Speaker, Jul 2022). "Identification and Evaluation of Surrogate Markers."
- [14] Western North American Region of the International Biometric Society Spring Meeting, Virtual. (Oral, Jun 2022). "Privacy-Preserving and Communication-Efficient Causal Inference for Hospital Quality Measurement."

#### • Best Oral Student Paper Presentation Award

[13] American Causal Inference Conference, Berkeley, CA. (Oral, May 2022). "Privacy-Preserving and Communication-Efficient Causal Inference for Hospital Quality Measurement."

#### • NSF New Researcher Award

[12] Eastern North American Region of the International Biometric Society Spring Meeting, Houston, TX. (Oral, Mar 2022). "Distributed Causal Inference."

#### • Institute of Mathematical Statistics Hannan Graduate Student Travel Award

- [11] New England Statistics Symposium, Virtual. (Invited Speaker, Oct 2021). "Identifying Real-World Surrogate Markers for Replicating Clinical Trials."
- [10] New England Statistics Symposium, Virtual. (Poster, Oct 2021). "Optimal Sensitivity Analysis for Clinical Trial Design."

# • Munich Re / HSB Best Poster Award

[9] American Statistical Association Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Virtual (Poster, Sep 2021). "On the Evaluation of Surrogate Markers in Real World Data Settings."

#### • Best Poster Award

[8] Eastern North American Region of the International Biometric Society Spring Meeting, Virtual (Oral, Mar 2021). "On the Evaluation of Surrogate Markers in Real World Data Settings."

#### • John Van Ryzin Award

- [7] American Society of Tropical Medicine & Hygiene 68th Annual Meeting, National Harbor, Maryland. (Invited Symposium Panelist, Nov 2019). "Social Innovation for Infectious Diseases of Poverty: Sparking Local Innovation."
- [6] INFORMS Healthcare: Transforming Health with Data, Mind, and Body, Cambridge, MA. (Invited Panelist, July 2019). "Is Seniority of Emergency Physician Associated with the Weekend Mortality Effect?"
- [5] 12<sup>th</sup> Program in Quantitative Genomics Conference on Biobanks: Study Design and Data Analysis, Harvard Medical School, Boston, MA. (Poster, Nov 2018). "Excess Mortality Associated with Junior Doctor Treatment at the Weekend: An Analysis of Electronic Medical Records in the UK."
- [4] 20<sup>th</sup> International Union Against Sexually Transmitted Infections Asia-Pacific Conference, Okayama, Japan. (Oral, Dec 2016). "A Global Qualitative Systematic Review of HIV Self-testing."
- [3] 65<sup>th</sup> Annual American Society of Tropical Medicine & Hygiene Conference, Atlanta, GA. (Poster, Nov 2016). "RTS,S Malaria Vaccine Efficacy Does Not Vary with Seasonal Precipitation: Results from a Phase 3 RCT in Lilongwe, Malawi."
- [2] 21<sup>st</sup> International AIDS Conference, Durban, South Africa. (Poster, July 2016). "The Social Context of HIV Self-testing: A Global Qualitative Evidence Synthesis."
- [1] World Health Organization, Social Innovation in Health Initiative, Blantyre, Malawi. (Oral, June 2018). "Co-Creating a Research Culture and Guide for Social Innovation."

# TEACHING

# TEACHING AWARDS

2022 Certificate of Distinction in Teaching, Harvard Faculty of Arts and Sciences

2021 Certificate of Distinction in Teaching, Harvard T.H. Chan School of Public Health

2020 Certificate of Distinction in Teaching, Harvard T.H. Chan School of Public Health

#### Instructor

#### Ph.D. Qualifying Exam Summer Course, Instructor, Summer 2021

- Teaching content review and problem-solving in probability and inference to Harvard Biostatistics Ph.D. students in preparation for the theory and methods portion of the qualifying exam
- Class size: 15

#### HNRS 396: Infectious Diseases, Instructor, Spring 2016

- One of eight undergraduates selected to build the curriculum and teach a course, titled "The Re-emergence of Infectious Diseases: From Cholera to Ebola and Beyond"
- Class size: 10

### TEACHING FELLOW

# STAT 286: Causal Inference with Applications, TF, Fall 2022

- Harvard Statistics Department's graduate-level course on causal inference, taught by Prof. Kosuke Imai
- TF rating: 4.7/5.0; class size: 50

#### STAT 293: Design of Experimental/Non-experimental Studies, TF, Spring 2022

- Harvard Statistics Department's graduate-level reading course on causal inference, focusing primarily on discussing new papers, taught by Prof. Jose Zubizarreta
- TF rating: 4.9/5.0; class size: 15

# BST 223: Applied Survival Analysis, TF, Spring 2022

- Harvard Biostatistics Department's masters-level survival analysis course, taught by Prof. Sebastien Haneuse
- TF rating: 4.9/5.0; class size: 100

# BST 222: Statistical Inference, Head TF, Fall 2019, 2020, 2021, 2022

- Head TF responsible for developing content and teaching labs for the masters' level statistical inference course, taught by Prof. Rui Duan (2021, 2022) and David Wypij (2019, 2020)
- TF ratings: 4.7/5.0 (2019); 4.8/5.0 (2020); 4.7/5.0 (2021); class size: 70

# BST 238: Advanced Topics in Clinical Trials, Head TF, Spring 2021

- Designing content and teaching select lectures for advanced topics in clinical trials, e.g., surrogate endpoints; group sequential methods; meta-analyses, taught by Prof. David Wypij
- TF rating: 4.7/5.0; class size: 20

#### BST 214: Principles of Clinical Trials, Head TF, Spring 2020, 2021

- Revising content for a clinical trials course for clinicians and policymakers interested in the scientific, policy, and management aspects of clinical trials, taught by Prof. David Wypij
- TF rating: 4.8/5.0 (2020); 4.9/5.0 (2021); class size: 70

#### GLBL 394: International Relations, TA, Spring 2015, 2016

 One of 15 students who led a weekly seminar-style recitation section of 300 undergraduates on international relations (recitation size: 20)

#### Advising & Mentoring

### INDEPENDENT STUDY SUPERVISION

#### Zhu (Lucy) Shen

- Harvard University, Department of Biostatistics, Ph.D. Candidate, Mar 2022-Present

#### Yi Liu

- North Carolina State University, Department of Statistics, Ph.D. Candidate, Apr 2023–Present

#### SERVICE

# EXTERNAL PROFESSIONAL ACTIVITIES

# American Statistical Association Statistics in Epidemiology Young Investigator Award, Paper Award Committee, 2023

 Reviewing and scoring papers for the American Statistical Association Young Investigator Award for the Joint Statistical Meetings

#### Data Science in Action: Machine Learning for Self-Driving Cars, 2023

 Mentored high school students from underrepresented backgrounds in statistics and machine learning

#### Rhodes-Schwarzman, Orientation Facilitator, 2019-Present

- Facilitating the Leading Lives workshop for incoming and outgoing Schwarzman Scholars

#### Morehead Cain Foundation, Selections Interviewer, 2018–Present

- Interviewing and evaluating high school applicants for the nation's first merit scholarship

# Carolina Collective Initiative, Steering Committee, May-Aug 2020

- Organized an open call and judged ideas for the reopening of UNC campus during COVID-19

#### University Service

### Harvard Biostatistics Student Committee, Co-President, Aug 2021–May 2023

 Organizing town hall meetings and small group discussions to represent Ph.D. student interests, including recruitment, qualifying exams, academics, student-life, and mental health

# Harvard DEIB Committee, Representative, Aug 2020-May 2023

- Developed qualitative focus groups and quantitative surveys for Harvard Biostatistics Department efforts in Diversity, Equity, Inclusion, and Belonging (DEIB)
- Spearheading a new mentorship program connecting underrepresented minorities with mentors

#### Harvard Graduate Asian Baptist Student Koinonia, President, Aug 2019-May 2023

Organizing Bible study outreach and fellowship for Harvard and Boston-area graduate students

# Harvard Graduate Student Council, Representative, Sep 2018-May 2021

- Evaluating funding proposals for GSAS conferences and activities

# Cambridge Judge Teaching Committee, Representative, Jan-June 2018

 Assessed student and professor feedback for courses at Cambridge Judge Business School and developed a guidance for improving research programs

# Journal of Schwarzman College, Co-Founder and Editor, Sep 2016–July 2017

 Established Schwarzman College's first journal aggregating global perspectives on China and developed a framework for a quarterly print publication

#### Tsinghua Graduate Student Union, Representative, Aug 2016–July 2017

- Translated over 300 museum exhibit labels for the Tsinghua University Art Museum
- English voice-over for Xinhua Net's explanatory video of China's Two Sessions conference

# EDITORIAL SERVICE

#### Associate Editor

Journal of Causal Inference, 2023-Present

#### AD-HOC REVIEWER

#### Biostatistics

- Biometrics  $(2\times)$
- Biostatistics
- Statistics in Medicine
- Clinical Trials
- Trials

## Healthcare Operations

- Management Science

#### Public Health

- AIDS Care

- BMC Medical Research Methodology
- BMC Public Health
- BMJ Open
- Global Public Health
- Scientific Reports
- Sexually Transmitted Infections

# ${\rm Skills}$

# Languages & Software

- Native fluency in English and Mandarin Chinese
- R, SAS, Python (NetworkX), MatLab

# Athletic Activities

- American Junior Golf Association All-Star
- Completed a US Army Special Forces Selections and Assessment training course