

Yiran Wang

CONTACT INFORMATION	601-85 Bloor St E Toronto, ON Canada M4W 3Y1	Phone: (548) 989-4168 Email: yiranwang.wang@utoronto.ca Personal Website
RESEARCH INTERESTS	Bayesian Inference, Capture-Recapture, Causal Mediation Analysis, Latent Factor Modeling, Data Integration, Statistical Ecology	
ACADEMIC AFFILIATION	Postdoctoral Fellow	May 2026 - Apr 2028
	Institute of Health Policy, Management and Evaluation, University of Toronto Advisor: Kuan Liu, Ph.D.	
	Postdoctoral Associate	Nov 2024 - Oct 2025
	Dept. of Biostatistics, Yale School of Public Health Topic: <i>Causal Mediation Analysis on Exposure Mixtures with Latent Factor Models</i> Advisor: Bhramar Mukherjee, Ph.D.	
	Ph.D. in Statistics	Sep 2019 - Aug 2024
HONORS & AWARDS	Dept. of Statistics and Actuarial Science, University of Waterloo Thesis: <i>Modeling and Bayesian Computations for Capture-Recapture Studies</i> Advisors: Audrey Béliveau, Ph.D., Martin Lysy, Ph.D.	
	M.S. in Statistics	Sep 2017 - Jun 2019
	Dept. of Statistics, University of California Irvine	
	B.S. in Statistics	Sep 2013 - Jun 2017
	Dept. of Mathematics, Donghua University Thesis: <i>Influence of China's Innovation on Total Factor Productivity Based on Quantile Regression</i> Advisor: Rong Jiang, Ph.D.	
HONORS & AWARDS	University of Toronto Postdoctoral Competitive Research Award (\$10,000)	Sep 2026 - Aug 2027
	Canada Impact+ Research Training Awards (\$70,000/year)	May 2026 - Apr 2028
	2026 ISBA World Meeting Junior Travel Award	Apr 2026
	2025 Joint Statistical Meetings Early Career Travel Award	Jun 2025
	Statistical Society of Canada Annual Meeting Student Grant	May 2024
	University of Waterloo Doctoral Thesis Completion Award	Apr 2024
	Women in Mathematics Directed Reading Program Distinguished Service Award	Apr 2024
	Women in Mathematics Directed Reading Program Mentorship Award	Aug 2023, Apr 2024
	University of Waterloo Graduate Student Research Dissemination Award	May 2023, Mar 2024
	The Eleventh Annual Canadian Statistics Student Conference Travel Award	May 2023
	University of Waterloo Graduate Studies Conference Assistantship	May 2022
	University of Waterloo Senate Graduate Scholarship	Mar 2022

Waterloo Special Graduate Student Entrance Award	Sep 2019
Donghua University Outstanding Graduate	Jun 2017
Donghua University Merit Scholarship	Dec 2016
Donghua University Tianji Scholarship	Dec 2016
Donghua University Social Work Excellence Scholarship	Dec 2015, Dec 2016
Donghua University Outstanding Student Leader	Dec 2015, Dec 2016
1 st Prize in Donghua University Mathematical Modelling Contest	Jun 2015

- PUBLICATIONS
1. Lauren Raymond-King, Sean McGrath, Bhramar Mukherjee, **Yiran Wang**, Harsh Parikh, John Rothen, Pamela R. Soulos, Cary P. Gross, and John W. Kunstman. Frailty and Low Utilization of Curative-Intent Surgical Resection in Non-Metastatic Pancreatic Cancer. *JNCI Cancer Spectrum*. pkg078. [DOI]
 2. Maxwell Salvatore, **Yiran Wang**, Preeti Syal, Brian Wahl, Harsh Parikh, Vishal Deo, Naveen Kumar Bhatraju, Kaushalya Jayaweera, Nisha Rana, Redoy Ranjan, Fyezah Jehan, Abdullah Yusuf, Karthik Adapa, Mona Duggal, Anurag Agrawal, and Bhramar Mukherjee (2026). The Case for an Integrated Biobanking Initiative in South Asia. *The Lancet Regional Health - Southeast Asia*. 49: 100777 [DOI]
 3. Sean McGrath[†], **Yiran Wang**[†], Yi-Ting Lin, John D. Meeker, Sung Kyun Park, Joshua L. Warren, and Bhramar Mukherjee (2026). A Comparison and Evaluation of Statistical Methods for Mediation Analysis with Mixtures of Environmental Exposures. *BMC Medical Research Methodology*. 26: 93 [DOI]
 4. **Yiran Wang**, Alicia E. Boyd, Lillian Rountree, Yi Ren, Kate Nyhan, Ruchit Nagar, Jackson Higginbottom, Megan L. Ranney, Harsh Parikh, and Bhramar Mukherjee (2026). Ten Core Concepts for Ensuring Data Equity in Public Health. *JAMA Health Forum*. 7(1): e256031. [DOI]
 5. Daniel Y. Dapaah, Shoutaro Arakawa, Gwennyth A. Carroll, **Yiran Wang**, Stewart McLachlin, Mitsuru Saito, and Thomas L. Willett (2026). Advanced Glycation End-product Adducts Alter the Bone Collagen Network and Human Cortical Bone Fracture Resistance. *JBMR Plus*. 10(1): ziaf172. [DOI]
 6. **Yiran Wang**, Martin Lysy, and Audrey Béliveau (2025). Plant-Capture Methods for Estimating Homeless Population Size From Uncertain Plant Captures. *Epidemiology*. 36(3): 319–326. [DOI]
 7. Daniel Y. Dapaah, Shoutaro Arakawa, Gwennyth A. Carroll, **Yiran Wang**, Stewart McLachlin, Mitsuru Saito, and Thomas L. Willett. Is direct oxidative damage of bone collagen associated with poor human cortical bone tissue fracture resistance? *JBMR Plus*. Under review.
 8. **Yiran Wang**, Martin Lysy, and Audrey Béliveau (2025). Rapid Scaling of Compositional Uncertainty from Sample to Population Levels. *arXiv preprint arXiv:2510.00980* [arXiv]
 9. **Yiran Wang**, Alicia E. Boyd, Lillian Rountree, Yi Ren, Kate Nyhan, Ruchit Nagar, Jackson Higginbottom, Megan L. Ranney, Harsh Parikh, and Bhramar Mukherjee (2025). Towards Enhancing Data Equity in Public Health Data Science. *arXiv preprint arXiv:2508.20301* [arXiv]
 10. **Yiran Wang**, Yi-Ting Lin, Sean McGrath, John D. Meeker, Sung Kyun Park, Joshua L. Warren, and Bhramar Mukherjee (2025). A Tutorial on Conducting Mediation Analysis with Exposure Mixtures. *arXiv preprint arXiv:2509.10916* [arXiv]
 11. **Yiran Wang**, Martin Lysy, and Audrey Béliveau (2024). Method of Moments Estimation of the Bayesian Credible Interval for Markov Chain Monte Carlo. *Working Paper*.

[†] Co-first authorship

Curriculum Vitae

ADDITIONAL PROFESSIONAL EXPERIENCE

Research Assistant

Jan 2020 - Apr 2024

University of Waterloo, Waterloo, ON

- Built a new framework for the plant-capture method to estimate population size by incorporating uncertainty in the plants' assessments and also other factors with Bayesian and frequentist inference approaches.
- Analyzed the stock population, proposed new Bayesian genetic mark-recapture methods, and applied to simulation studies and real-data analysis.
- Advisors: Audrey Béliveau, Ph.D., Martin Lysy, Ph.D.

Consultant

Sep 2023 - Apr 2024

UW Statistical Consulting & Survey Research Unit, Waterloo, ON

- Advising students and faculty members on how to leverage sound statistical approaches in their analyses, with more active involvement in enhanced service projects.
- Advisor: Joslin Goh, Ph.D.

TEACHING EXPERIENCE

Teaching Assistant

University of Waterloo, Waterloo, ON

Sep 2019 - Apr 2024

- Held regular office hours, proctored tests, designed and marked assignments and tests for:
 - STAT 202 Introductory Statistics for Scientists Fall 2019
 - STAT 230 Probability Winter 2020, Spring 2020
 - STAT 330 Mathematical Statistics Winter 2021, Fall 2021
 - STAT 331 Applied Linear Models Spring 2020, Fall 2020, Winter 2021
 - STAT 371 Applied Linear Models and Process Improvement for Business Fall 2019, Fall 2020, Winter 2022, Fall 2022
 - STAT 431 Generalized Linear Models and their Applications Spring 2022, Spring 2023
 - STAT 436/836 Introduction to the Analysis of Spatial Data in Health Research Winter 2023, Winter 2024

University of California, Irvine, Irvine, CA

Apr 2018 - Mar 2019

- Held regular office hours, conducted weekly discussion sections, graded homework and examinations for:
 - STATS 7 Basic Statistics Winter 2019
 - STATS 67 Introduction to Probability and Statistics for Computer Science Spring 2018, Fall 2018

CONFERENCE TALKS

Bayesian Mediation Analysis with Latent Exposure Mixtures

2025 Joint Statistical Meetings

Aug 2025

Plant-Capture Methods Using Uncertain Plant Captures

The 2026 New Researchers Conference

Jul 2026

The 2026 ISBA World Meeting

Jun 2026

The 38th New England Statistics Symposium

Jun 2025

The Bayesian Young Statisticians Meeting 2025

Apr 2025

The 2025 ENAR Spring Meeting

Mar 2025

The Statistical Society of Canada 2024 Annual Meeting

Jun 2024

Curriculum Vitae

2023 Waterloo Student Conference in Statistics, Actuarial Science and Finance
Oct 2023

Genetic Mark-Recapture Methods for Stock Populations

2023 Joint Statistical Meetings Aug 2023
The Statistical Society of Canada 2023 Annual Meeting May 2023
EURING Analytical Meeting & Workshop 2023 Apr 2023
The 2022 ISBA World Meeting Jun 2022
International Statistical Ecology Conference 2022 Jun 2022
The Statistical Society of Canada 2022 Annual Meeting Jun 2022
The Statistical Society of Canada 2021 Annual Meeting Jun 2021
EURING Analytical Meeting & Workshop 2021 Jun 2021

SERVICE

Journal Reviewer

American Journal of Epidemiology, Statistical Methods & Applications

Event and Organization

Council Member Jul 2026 - Jul 2028
ENAR Council for Emerging and New Statisticians (CENS)

Instructor & Program Coordinator Mar 2025 - Jul 2025
2025 Big Data Summer Immersion at Yale (BDSY)

Committee Member May 2023 - Apr 2024
University of Waterloo Graduate International Student Advisory Committee (ISAC-G)

Conference Organizing Committee Sept 2022 - May 2023
The Eleventh Annual Canadian Statistics Student Conference (CSSC)

Conference Organizing Volunteer Nov 2021
The 2nd Waterloo Student Conference in Statistics, Actuarial Science and Finance

Student Representative Oct 2018 - Apr 2019
Department of Statistics, University of California Irvine

Mentorship

Mentor Jan 2024 - Apr 2024, May 2023 - Aug 2023
University of Waterloo Women in Mathematics Directed Reading Program

Mentor Volunteer Apr 2021, Apr 2022, Apr 2023, Apr 2024
ASA DataFest

PROFESSIONAL DEVELOPMENT

Intermediate Teaching Workshops: *Participation and Equity* 2025
Yale University

Intermediate Teaching Workshops: *Classroom Observation* 2025
Yale University

Intermediate Teaching Workshops: *Teaching International Students* 2025
Yale University

Advanced Teaching Workshops: *Lecturing for Active Engagement* 2025
Yale University

Curriculum Vitae

Intermediate Teaching Workshops: *Leading Effective Discussions* 2025
Yale University

Canadian Statistical Sciences Institute CRT Workshop: *Modern Methods in Survey Sampling* 2024
University of Ottawa

Canadian Ecological Forecasting Initiative Summer School: *Forecasting for Decision-Making: An Epidemiological & Ecological Perspective* 2023
The Fields Institute for Research in Mathematical Sciences

Workshop: *NIMBLE virtual short course* 2023
NIMBLE Development Team

Canadian Statistical Sciences Institute CRT Summer School: *Modern Methods in Survey Sampling* 2022
University of Ottawa