

Cong Jiang

+1 (519) 722 6158 • [personal website](#) • cong.jiang@umontreal.ca
www.linkedin.com/in/clarencejiang • <https://twitter.com/statsCong>
<https://github.com/CONGJIANG>

RESEARCH INTERESTS

Causal Inference, Dynamic Treatment Regimes, Interference, Semiparametric/nonparametric theory, machine learning, health & public policy

TRAINING

Postdoctoral Researcher, Biostatistics, Université de Montréal, CANADA Oct. 2022 -

Supervisors: Dr. Mireille Schnitzer and Dr. Denis Talbot

University of Waterloo (UW), CANADA Sep. 2017 - Aug. 2022

Ph.D. of Statistics

Dissertation: "Dynamic Treatment Regimes with Interference" ([Link](#)), defended on Aug. 2nd, 2022.

Committee: Dr. Michael R. Kosorok (University of North Carolina at Chapel Hill), Dr. Yeying Zhu, Dr. Zahid Butt, Dr. Paul Marriott, Dr. Michael P. Wallace and Dr. Mary E. Thompson.

City University of New York (CUNY), U.S.A. Aug. 2015 - Jul. 2017

Master of Mathematics, Supervisors: Dr. Asohan Amarasingham and Dr. Shirshendu Chatterjee

Anhui University of Finance and Economics, CHINA

Bachelor of Mathematical Finance, Honors with Distinction

Sep. 2011 - Jul. 2015

RESEARCH EXPERIENCE

Postdoctoral Researcher, Université de Montréal

Supervisors: Mireille Schnitzer and Denis Talbot

Oct. 2022 –

Keywords: CAUSAL INFERENCE, MACHINE LEARNING, VACCINE EFFECTIVENESS (VE), TEST-NEGATIVE DESIGN (TND)

- Project 1: Efficient and doubly robust estimation of COVID-19 VE under TND, using nonparametric theory.
- Project 2: Estimate heterogeneous COVID-19 VE under TND, and develop optimal treatment allocation strategy with scarcity constraints, in the presence of interference (i.e., considering herd immunity).

Research Assistantships, UW

Supervisors: Mary E. Thompson and Michael P. Wallace

Sep. 2017 – Aug. 2022

Keywords: DYNAMIC TREATMENT REGIMES (DTR), INTERFERENCE, TOBACCO USAGE, NICOTINE ADDICTION AND CESSATION

- Project 1: Proposing network propensity function for doubly robust DTR estimation with network interference.
- Project 2: Introducing weights for model balance, addressing misspecification in generalized linear models, and enhancing doubly-robust approach for binary outcomes in DTR estimation.
- Project 3: Examining heterogeneous causal effects of smoking alternatives (e.g., e-cigarettes) on nicotine addiction and cessation, considering household members' behaviors.
- Project 4: Applying probabilistic record linkage methods to derive efficient estimators using linked data from the International Tobacco Control Project.

NYU Langone Health (Buzsáki Lab)

Research Assistant, CUNY (Asohan Amarasingham's Group)

Supported by the Research Foundation of CUNY

May 2016 – Jul. 2017

Keywords: NEUROSCIENCE, SPIKE TRAINS, NON-STATIONARY POINT PROCESSES, SPIKE-CENTERED JITTER

- Utilizing a rate- and history-preserving resampling algorithm, we obtained a closed-form expression for synchrony distribution. We showcased dynamic programming's Markov Chain sampling and FFT's 'faster-jitter' computation of synchrony distribution.
- Cooperated with Professor Amarasingham and contributed to a simulation study in Platkiewicz, Stark and Amarasingham (2017), *Spike-Centered Jitter Can Mistake Temporal Structure*, *Neural Computation*.

PRESENTATIONS

INVITED TALKS

Centre de Recherches Mathématique StatLab annual meeting **Montreal, Canada**
2023

- Efficient and doubly robust estimation of COVID-19 vaccine effectiveness under the test-negative design

CANSSI Quebec Postdoc Day **Montreal, Canada**
2023

- Efficient and doubly robust estimation of COVID-19 vaccine effectiveness under the test-negative design

Pacific Causal Inference Conference 2023 **Beijing, China**
2023

- Vaccine effectiveness estimation under the test-negative design: efficiency theory for causal inference under conditional exchangeability

Second CANSSI-NISS Health Data Science Workshop **Waterloo, Canada**
C. Jiang & M. Schnitzer 2023

- Vaccine effectiveness estimation under the test-negative design: identifiability and efficiency theory for causal inference under conditional exchangeability

Statistical Society of Canada (SSC) Annual Meeting **Ottawa, Canada**
2023

- Estimating dynamic treatment regimes for ordinal outcomes with household interference.

Health Data Science Lab (HDSL), University of Waterloo **Waterloo, Canada**
2022

- Dynamic Treatment Regimes with Interference.

CONTRIBUTED ORAL PRESENTATIONS

Joint Statistical Meetings (JSM) **Toronto, Canada**
C. Jiang 2023

- Efficient estimation of COVID-19 vaccine effectiveness under the test-negative design

Statistical Society of Canada (SSC) Annual Meeting (virtual)
C. Jiang 2022

- Doubly Robust Dynamic Treatment Regimen Estimation for Binary Outcomes.

Statistical Society of Canada (SSC) Annual Meeting (virtual)
C. Jiang 2021

- Dynamic Treatment Regimes with Network Interference.

Waterloo Student Conference in Statistics, Actuarial Science and Finance **Waterloo, Canada**
C. Jiang 2020

- Dynamic Treatment Regimes with Interference — Q-learning.

Statistical Society of Canada (SSC) Annual Meeting **Calgary, Canada**
C. Jiang 2019

- Dynamic Treatment Regimes with Interference.

Statistical Society of Canada (SSC) Annual Meeting **Montreal, Canada**
C. Jiang 2018

- Case Studies in Data Analysis Competition. Modelling and Predicting the Popularity of TED Talks with Cox (Time-Varying) Proportional Hazard Model.

SENSE TO SYNAPSE 2017, The Rockefeller University **New York City, USA**
J. Platkiewicz, C. Jiang, A. Amarasingham. 2017

- Validation of Injected Synchrony Models for Detecting Monosynaptic Connectivity Using Large-Scale Labeled Datasets.

RESEARCH PRESENTATION AWARDS

First CANSSI-NISS Health Data Science Workshop

Poster Presentation Competition Award

2021

"Dynamic Treatment Regimes with Network Interference."

Statistics and Actuarial Science and WatRISQ Research Presentation, UW

Best Research Presentation Prize

2021

"Dynamic Treatment Regimes with Interference."

GRANTS, FELLOWSHIPS & AWARDS

- 2022 **Canadian Institutes of Health Research Project Grant** (2nd place in the committee)
CO-INVESTIGATOR, PROJECT TITLE: THE TEST-NEGATIVE DESIGN FOR THE ESTIMATION OF COVID-19 VACCINE EFFECTIVENESS: DESIGN EVALUATION AND DEVELOPMENT OF STATISTICAL METHODS IN THE EVOLVING CONTEXT
- 2022 **Centre de Recherches Mathématiques StatLab Postdoctoral Fellowship** [\$10,000 CAD]
- 2018 **OICR (Bio)statistics Training Initiative Fellowship Award**
[Top (Bio)statistics PhDs of Ontario ([Link](#)), \$30,000 CAD]
- 2018, 2022 **Chair Award**, Department of Statistics and Actuarial Science, UW, [\$1,000 CAD]
- 2017 **Doctoral Entrance Award**, Faculty of mathematics, UW, [\$1,000 CAD]
- 2016 **Rich Summer Internships Award**, Department of Mathematics, CUNY, [\$6,000 USD]
- 2015, 2016 **Rich Mathematics Scholarship**, CUNY, [\$12,000 USD]

WORKING PAPERS

- C. Jiang, Denis Talbot, Mireille E Schnitzer, and Sara Carazo (2023). **Efficient and Doubly Robust Estimation of COVID-19 Vaccine Effectiveness under the Test-Negative Design.**
- C. Jiang, M.P. Wallace, and M.E. Thompson (2023). **Doubly Robust Dynamic Treatment Regimen Estimation for Binary Outcomes: two-step weighted generalized linear models.** *Under Review*([arxiv link](#)).
- C. Jiang, M.E. Thompson, M.P. Wallace(2023). **Estimating dynamic treatment regimes for ordinal outcomes with household interference: Application in household smoking cessation.** *Under Review*([arxiv link](#)).
- E.O.Brizuela, M.Carabali, C. Jiang, J.Merckx, D.Talbot, M.E. Schnitzer (2023). **Potential Biases in Test-Negative Design Studies of COVID-19 Vaccine Effectiveness Arising from the Inclusion of Asymptomatic Individuals.** *Revise & resubmit to American Journal of Epidemiology*

PUBLICATIONS ([Google scholar link](#))

- C. Jiang, M.P. Wallace, and M.E. Thompson (2023). **Dynamic Treatment Regimes with Interference.** *The Canadian Journal of Statistics.* **51**(2): 469 - 502. <https://doi.org/10.1002/cjs.11702>.
- C. Hong, L. Qin, C. Jiang, M. Qin, Y. Sun, and J.Luo (2023). **Characteristics, risk management and GMP standards of pharmaceutical companies in China.** *Frontiers in Public Health* **11**:1103555.[doi: 10.3389/fpubh.2023.1103555](https://doi.org/10.3389/fpubh.2023.1103555).

TEACHING EXPERIENCE

Teaching Assistant:

- STAT 341 Computational Statistics and Data Analysis – Winter 2021, UW
- STAT 444/844, CM 764 Statistical Learning - Advance Regression - Spring 2021, UW
- STAT 337 - Introduction to Biostatistics - Fall 2020, UW

- STAT 441/841/CM763: Statistical Learning - Classification - Winters 2019, UW
- STAT 241 Statistics (Advanced Level) - Winters 2018, UW
- STAT 240 Probability (Advanced Level) - Fall 2017, UW

SERVICE TO THE SCIENTIFIC COMMUNITY

PEER-REVIEW SERVICE: *Statistics in Medicine, Journal of the American Statistical Association*

ORGANIZED INVITED SESSIONS AT CONFERENCES: "Advances And Applications In Optimal Dynamic Treatment Regimes" May 2023 SSC, Ottawa.

REFEREES

Mary E. Thompson, Professor of Statistics & Actuarial Science at UW, Canada.
methompson@uwaterloo.ca

Mireille Schnitzer, Associate Professor of Biostatistics at Université de Montréal, Canada.
mireille.schnitzer@umontreal.ca

Denis Talbot, Professor of Biostatistics at Université Laval, Canada.
denis.talbot@fmed.ulaval.ca

Michael P. Wallace, Associate Professor of Statistics & Actuarial Science at UW, Canada.
michael.wallace@uwaterloo.ca