

William Ruth

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Education

- PhD in Statistics: Sep. 2016 – Present
 - Supervised by Prof. Richard Lockhart
 - Simon Fraser University, Burnaby, British Columbia, Canada
- MSc in Statistics: Sep. 2014 – Aug. 2016
 - Thesis: On supervised and unsupervised discrimination
 - Supervised by Prof. Tom Loughin
 - Simon Fraser University, Burnaby, British Columbia, Canada
- BSc in Statistics: Sep. 2010 – Apr. 2014
 - Simon Fraser University, Burnaby, British Columbia, Canada

Research Interests

- Infectious disease modelling
- Analysis of missing data
- Scientific computing

Awards

- SFU Graduate Fellowship: 2020
- SFU Faculty of Science Excellence in Teaching Award: 2018
- NSERC CGS D: 2016
- SFU Graduate Dean's Entrance Scholarship: 2016
- SFU Provost Prize of Distinction: 2016
- NSERC CGS M: 2014

Papers

- **Ruth, W.** and Lockhart, R. "Parameter Estimation for COVID Outbreaks in Long-Term Care Facilities." Draft in progress.
- **Ruth, W.** and Lockhart, R. "SARS-CoV-2 Transmission in University Classes". *Network Modelling Analysis in Health Informatics and Bioinformatics* **11**, 32 (2022).
- Riahi, N. and **Ruth, W.** and D'Arcy, R.C.N. and Menon, C. "Using Neurofeedback to Guide Mental Imagery for Improving Motor Skill, a Case Study". Accepted by IEEE Transactions on Neural Systems & Rehabilitation Engineering.
- **Ruth, W.** and Loughin, T. M. "The effects of heteroscedasticity on regression trees." Draft in progress. (<https://doi.org/10.48550/arXiv.1606.05273>)

Presentations

- Simulated Epidemic Spread in University Classes: SSC 2021
- Box-Cox Transformations in High-Dimensional Linear Models – Carleton Statistics Seminar: Oct 2020
- Box-Cox Transformations in High-Dimensional Linear Models: JSM 2020
- Post-Selection Inference and the LASSO – SFU/UBC Joint Statistics Seminar: Nov 2019
- Model Selection – Guest Lectures for Modern Methods in Applied Statistics: Sep 2019
- MARS – Guest Lectures for Modern Methods in Applied Statistics: Sep 2019
- Theory for Machine Learning – SFU Graduate Student Seminar: Sep 2018
- Bayesian Model Selection – Guest Lecture for Bayesian Statistics: Apr 2017
- Classification – Guest Lectures for Modern Methods in Applied Statistics: Nov 2016
- Heteroscedasticity and Regression Trees – SFU/UBC Joint Statistics Seminar: 2015
- Introductory Statistics for High-School Teachers – Port Moody Secondary: Feb 2015

Service

Departmental

- President – Department of Statistics Graduate Caucus: 2016 – 2020
- Vice-President – Department of Statistics Graduate Caucus: 2014 – 2016
- Vice-President – Operations Research Student Union: 2013 – 2014

Conferences

- Organizer – SFU/UBC Joint Statistics Seminar: Nov 2019
- Chair – Vancouver International Swordplay Symposium: Apr 2019

Miscellaneous

- Developed a series of Jupyter notebooks for students learning to use R, which are being used in several introductory statistics courses at SFU: 2017
- Organized and led several reading groups for independent study by graduate students: Various from 2017 to present

Teaching and Consulting

- TA – Statistics Communication (STAT 300W): Spring 2022
- TA – Statistical Learning and Prediction (STAT 452): Fall 2020
- TA – Introduction to Mathematical Statistics (STAT 330): Fall 2019
- Sessional Instructor – Statistics for the Life Sciences (STAT 201): Spring 2019
- Consultant – Yoren Technology (Shanghai) Co: Summer 2018
- Marker – Modern Methods in Applied Statistics (STAT 852): Fall 2018

- TA – Statistical Learning and Prediction (STAT 452): Fall 2017
- TA – Bayesian Statistics (STAT 460): Spring 2017
- TA – Linear Models in Applied Statistics (STAT 350): Fall 2015
- TA – Applied Time Series Analysis (STAT 485): Fall 2014
- TA – Introductory Statistics Workshop: Various from 2012 to present