

Joe Watson

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Department of Statistics
3182 Earth Sciences Building, 2207 Main Mall
Vancouver, BC Canada V6T 1Z4

Suite 901, 1307 Harwood Street,
Vancouver, BC,
Canada, V6E 1S7

EDUCATION

University of British Columbia

Doctor of Philosophy in Statistics (Candidate)

Supervisor: James V Zidek Co. Supervisor: Marie Auger-Méthé

Vancouver, Canada

Expected completion: 2020

University of Bath and Simon Fraser University

Master of Mathematics with Study Year Abroad

Bath, UK and Vancouver, Canada

1st Class with highest avg grade in cohort

Research Experience

January 2019 –
Onwards

Research assistant, University of British Columbia
Supervisor - Marie Auger-Méthé

- Develop novel methodology for species distribution modeling.

May 2017 -
December 2018.

Research assistant, University of British Columbia
Supervisor – James V Zidek

- Developing a general framework for both detecting and correcting for preferential sampling within a spatio-temporal setting.

May 2017 -
Onwards

Research assistant, University of British Columbia
Supervisor – Gabriela V. Cohen Freue

- Writing a review paper for high-dimensional instrumental variables problems with an application to causal statistical genomics.

July 2017 –
Dec 2018

Short-term research consultant, University of British Columbia

- Helping to provide short-term statistical consulting through the STCS service at UBC.

Teaching Experience

Sep 2016 -
December 2018.

Teaching assistant, University of British Columbia

- Running tutorial and lab sessions for introductory statistics courses.

May 2017 –
Onwards

Teaching assistant trainer and mentor, University of British Columbia

- Helping to design and run teaching workshops to help train future TAs in Statistics. Providing continual performance feedback.

May 2018 -
Onwards

Data Science for Social Good coordinator, University of British Columbia

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- Providing statistical training to the cohort for the DSSG program, through the conducting of 9-hour intensive workshops. Mentoring the DSSG teams from concept creation through to delivery.

Industry Experience

SMRU Consulting

Research assistant

Vancouver, Canada

September 2019 – onwards

- Apply novel statistical methodology to real world conservation efforts, with a particular focus on Southern Resident Killer Whales. Work has been used for advising government policy.

Sagentia

Summer Intern

Cambridge, United Kingdom

Summer 2014

- Involvement with the development of several consumer, medical and industrial products. Designing statistical quality control tests for new products and bespoke algorithm creation.

Academic Experience/Service

Statistics Faculty Search Committee

- Served on UBC Department of Statistics' search committee for a new Assistant Professor.

Paper Reviewer

- Reviewed one academic paper.

Mentoring Experience

Master's Student Mentoring

- Helped to mentor a new Master's student. This involved a weekly meeting to discuss their research interests and their future research goals. Assisted them with finding the necessary resources to achieve their goals, as well as provided them with advice and support.

Publications

A general theory for preferential sampling in environmental networks.

In Press: The Annals of Applied Statistics.

Submitted Manuscripts

A general framework for estimating the spatio-temporal distribution of a species using multiple data types. *Submitted JRSS Series C - Preprint @: <https://arxiv.org/abs/1911.00151>*

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Works in Progress

A fast Monte Carlo test for preferential sampling. *For submission shortly*

A review of sparse methods for optimal instruments and their applications in high-dimensional genomics settings. *For submission shortly.*

Optimal network design for spatio-temporal log-Gaussian Cox processes, with an application to Chinook Salmon. *In progress.*

Presentations and Posters

Apr 2018

University of Toronto Statistics Graduate Student Research Day

- Invited to present current work on preferential sampling in spatio-temporal networks.

June 2018

SSC annual meeting 2018 Montréal

- Presented current work on preferential sampling in spatio-temporal networks at the SSC annual meeting 2018 in a contributed session.

CRM Montréal - Causal Inference in the Presence of Dependence

- Presented identical work as an invited speaker at an invited session.

July 2018

JSM 2018 Vancouver Data Expo competition

- Presented a speed talk and poster on the problem of extreme weather predictions in the US at the Joint Statistical Meeting 2018.

Sept 2018

The Future of Statistical Modeling in Medical Data Leiden

- Presented work on high dimensional instrumental variable methods and participated in discussions as an invited guest.

April 2019

The University of Edinburgh Research Seminar

- Invited to present work on species distribution modeling using R-INLA.

May 2019

CREEM@ University of St Andrews Statistics Research Seminar

- Invited to present work on species distribution modeling in a 1 hour lecture at St Andrews University's.

Aug 2019

GEOMED Conference Glasgow 2019 (Winner: Best Student Talk)

- Invited speaker to present work on modeling air pollution in the presence of preferential sampling, and its potential impact on health effect estimates.

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- Sep 2019 **Royal Statistical Society Conference 2019 Belfast**
- Presented work on species distribution modeling in a contributed session.
- June 2020 **International Statistical Ecology Conference 2020 Sydney**
- Invited to present work on species distribution modeling by combining citizen science and survey data.
- Sep 2020 **TIES 2020 Conference @ Imperial College London**
- Invited to present work on species distribution modeling in the presence of preferential sampling.

Research Interests

- Spatial statistics
- Spatio-temporal modeling
- Statistical Ecology
- Point Processes
- Novel applications for r-INLA
- Causal Inference

Awards, Scholarships and Bursaries

- Aug 2019 • GEOMED 2019 prize for best student talk
- Sep 2016 -
onwards. • UBC Four Year Fellowship
• UBC Tuition Award
• UBC International Tuition Award.
- May 2016 James Duthie Award for Excellence in Statistics, awarded to the graduating student with the highest average grade in statistics courses at University of Bath.
- Sep 2013 –
Apr 2015 Sagentia STEM bursary

Professional Memberships

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Mar 2018 -
onwards.

- **American Statistical Association**
- **Statistical Society Canada**
- **Royal Statistical Society**

References

James V Zidek
Relationship: Supervisor
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Marie Auger-Méthé
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