

James Hogg

PHD STUDENT

School of Mathematical Sciences, Queensland University of Technology

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I am a statistician currently studying for a PhD in the School of Mathematical Sciences at the Queensland University of Technology (QUT). Focused on generating small area level estimates of cancer risk factors for the globally recognized Australian Cancer Atlas, my research is driven by a passion for making research more accessible, as well as a commitment to utilizing Bayesian inference and spatial modeling to enhance the field of cancer research. My teaching experience, together with the awards I've received for presentations and invited talks, attest to my proficiency in conveying complex statistical ideas to a wide audience. With my dedication to advancing the field of cancer research and a deep-seated enthusiasm for exploring the potential of Bayesian inference and spatial modeling, I am poised to make a significant contribution to either academic or industry roles.

Employment

Instructor/presenter of High Performance Computing (HPC) training

Virtual

DEPARTMENT OF HEALTH, WESTERN AUSTRALIA (DoHWA)

November 2023

- Two-hour intensive training on the use of QUTs HPC for Bayesian modelling
- Created detailed manual and R scripts for future reference

Supervisor (casual)

Virtual

ENVIRONMENTAL PROTECTION AUTHORITY (EPA) VICTORIA

May 2023 - August 2023

- Supervisory of QUT research assistant
- QUT and EPA collaboration to create a R Shiny app to visualise spatial data

Statistical consultant (casual)

Virtual

DEPARTMENT OF HEALTH, WESTERN AUSTRALIA (DoHWA)

November 2022 (ongoing)

- Consulting on bayesian modelling

Instructor/presenter of Bayesian training

Perth, Australia

DEPARTMENT OF HEALTH, WESTERN AUSTRALIA (DoHWA)

November 2022

- Three days of intensive training on Bayesian spatial temporal analysis

Internship (full-time)

Virtual

DEPARTMENT OF HEALTH, WESTERN AUSTRALIA (DoHWA)

August - November 2022

- Project: Bayesian modelling
- Supervisors: Dr Susanna Cramb, Dr Alex Xiao
- Recommended spatio-temporal models for a wide range of health data
- Provided lengthy and detailed reports giving the details of spatio-temporal models
- Created detailed and large R code scrips to run a variety of models
- Created training materials for 3-days of intensive Bayesian spatio-temporal course

Research assistant (part-time)

Brisbane, Australia

QUEENSLAND UNIVERSITY OF TECHNOLOGY (QUT)

October 2021 - March 2022

- Project: Modifiable areal unit problem (MAUP) in disease mapping
- Co-investigators: Dr Susanna Cramb, Ass. Prof. Helen Thompson

Tutor (casual)

Brisbane, Australia

QUEENSLAND UNIVERSITY OF TECHNOLOGY (QUT)

September - November 2021

- Course title: Quantitative Skills for Health Scientists (LQB286)

Marker (casual)

Virtual

UNIVERSITY OF QUEENSLAND (UQ)

July 2021 - October 2022

- Course title: Categorical Data and Generalised Linear Models (STAT7608)
- Course title: Regression Modelling 2 (STAT7619)
- Course title: Applied Regression Analyses (PUBH7631)

Education and qualifications

Doctor of Philosophy, Statistics

Brisbane, Australia

QUEENSLAND UNIVERSITY OF TECHNOLOGY (QUT)

2021 (ongoing)

- Full-time equivalent
- PhD funded by the internationally-awarded Australian Cancer Atlas

Graduate Statistician (Gstat) Accreditation

STATISTICAL SOCIETY OF AUSTRALIA

2021 (ongoing)

Master of Biostatistics

UNIVERSITY OF QUEENSLAND (UQ)

Virtual

2018-2020

- Provided by the Biostatistics Collaboration of Australia
- GPA: 7.0
- Dean's Commendation for Academic Excellence (2018 & 2019)
- Thesis complete at Cancer Council Queensland

Bachelor of Music with Distinction

QUEENSLAND UNIVERSITY OF TECHNOLOGY (QUT)

Brisbane, Australia

2015-2017

- Minor in statistics (4 units)
- GPA: 6.5
- Dean's Award for Excellence (all 6 semesters)

Queensland Certificate of Education

INDOORROOPILLY STATE HIGH SCHOOL

Brisbane, Australia

2010-2014

- Overall Position (OP): 1
- Best All Rounder Award 2014
- Parents and Citizens' Music Award 2014

Professional service

UN Datathon

UNITED NATIONS

Brisbane, Australia

November 2023

Co-chair of Bayesian Research and Applications group (BRAG)

QUEENSLAND UNIVERSITY OF TECHNOLOGY (QUT)

Brisbane, Australia

June 2022 - December 2023

- Organiser of fortnightly internal talks on Bayesian research

Volunteer

GOOD DATA INSTITUTE (GDI)

Virtual

March - June 2023

Organiser and host

STANCONNECT 2022: STAN THROUGH SPACE AND TIME

Virtual

July - November 2022

- 10 speakers from 8 countries
- Over 100 virtual attendees

Master's Thesis

CANCER COUNCIL QUEENSLAND

Virtual

March - October 2020

- Title: "Influence of individual- and area-level socioeconomic factors on breast cancer stage at diagnosis: A multilevel approach"

Selected research presentations

Poster presentation

BAYES ON THE BEACH

Gold Coast, Australia

February 2024

- Title: Generalising the Shared Component Model - The Area Indices of Behaviours Impacting Cancer

Contributed session

AUSTRALIAN STATISTICAL CONFERENCE

Virtual

December 2023

- Title: Solutions to sparsity in survey statistics: Mapping the prevalence of cancer risk factors in Australia

Short talk

EARLY CAREER RESEARCHER CANCER EPIDEMIOLOGY CONFERENCE

Virtual

November 2023

- Title: Mapping the prevalence of cancer risk factors at the small area level in Australia

Invited session

64TH INTERNATIONAL STATISTICAL INSTITUTE WORLD STATISTICS CONGRESS

Ottawa, Canada

July 2023

- Title: A solution for Sparsity and Instability: Introducing a Two-Stage Bayesian Method of Small Area Estimation for Proportions

Invited talk

EPIDEMIOLOGY IN GOVERNMENT (EIG) SPECIAL INTEREST GROUP (SIG) MEETING

Virtual

December 2022

- Title: Mapping Cancer: The Australian Cancer Atlas

Short talk

SPARSE SYMPOSIUM

- Title: Risk factors and the Australian Cancer Atlas: the trepidation of instability and sparsity in small area estimation

Virtual
November 2022

Short talk

SECOND EARLY CAREER RESEARCHER CANCER EPIDEMIOLOGY CONFERENCE

- Title: Risk factors and the Australian Cancer Atlas: the trepidation of instability and sparsity in small area estimation

Virtual
November 2022

Poster presentation

INTERNATIONAL SOCIETY OF BAYESIAN ANALYSIS (ISBA) WORLD MEETING

- Title: Introducing a Bayesian two-stage logistic-normal model for small area estimation of proportions

Montreal, Canada
June 2022

Poster presentation

THE BAYESIAN YOUNG STATISTICIANS MEETING

- Title: Introducing a Bayesian two-stage logistic-normal model for small area estimation of proportions

Montreal, Canada
June 2022

Short talk

QANZIAM CONFERENCE

- Title: Searching for stability in Bayesian small area estimation of proportions

QUT, Brisbane, Australia
June 2022

Contributed talk

SMALL AREA ESTIMATION, SURVEYS AND DATA SCIENCE

- Title: Searching for stability: Introducing a method of small area estimation for proportions using severely sparse data

Virtual
May 2022

Short talk

ACEMS FINAL RETREAT

- Title: Modelling cancer risk factors in Australia

Moreton Island, Australia
November 2021

Selected publications

arXiv preprint (2023) - under review at the *International Statistical Review*

J HOGG, J CAMERON, S CRAMB, P BAADE, K MENGENSEN

- A Two-stage Bayesian Small Area Estimation Method for Proportions

Published 2023 - *International Journal of Health Geographics*

J HOGG, J CAMERON, S CRAMB, P BAADE, K MENGENSEN

- Mapping the prevalence of cancer risk factors at the small area level in Australia

arXiv preprint (2024) - under review at *Health and Place*

J HOGG, S CRAMB, J CAMERON, P BAADE, K MENGENSEN

- Creating area level indices of behaviours impacting cancer in Australia with a Bayesian generalised shared component model

Awards

Overall: Second Place

UN DATATHON 2023

January 2024

Best Team by Region: Oceania, Australia, and New Zealand

UN DATATHON 2023

January 2024

Best Oral Presentation Award

THIRD EARLY CAREER RESEARCHER CANCER EPIDEMIOLOGY CONFERENCE

November 2023

First place in Hackathon

GOOD DATA INSTITUTE (GDI)

- Hackathon with BioGrow (NZ NFP)

June 2023

2023 SuperHERO

HEALTH EQUITY RESEARCH WITH OUTCOMES

April 2023

Best Oral Presentation Award

SECOND EARLY CAREER RESEARCHER CANCER EPIDEMIOLOGY CONFERENCE

November 2022

Honourable Mention for Best Student Presentation

QANZIAM CONFERENCE

June 2022

QUT Centre for Data Science and Cancer Council QLD Scholarship

DOCTOR OF PHILOSOPHY, STATISTICS

April 2021

- \$30,000 p.a. for 3.5 years during PhD studies.

Star Graduate

BIOSTATISTICS COLLABORATION OF AUSTRALIA

December 2020

Professional memberships

Statistical Society of Australia (SSA)

International Society of Bayesian Analysis (ISBA)

Centre for Data Science (CDS)

Health Equity Research with Outcomes (HERO)

Software

Statistical: R, Python, SQL, Stata

Writing: MS Office suite, Latex, Endnote, Mendeley

Terminal: Git Bash, Unix

Bayesian computation: Stan, nimble, WinBUGS, JAGS, pymc

Productivity: Sunsama, Zoom

Visualisation: Ggplot2, Canva, Lucidchart

Core R packages: tidyverse, shiny, Rmarkdown

Core Python packages: numpy, pandas, pymc, pytorch, sklearn