CRAIG P. HUTTON

I am a Senior Behavioural Scientist with the Province of British Columbia's Behavioural Insights Group. My diverse training in experimental psychology, applied statistics, and data science leads me to apply a multidisciplinary and creative approach to doing research. I deeply enjoy solving complex problems and exploring new ideas.

💼 EXPERIENCE

2023 | Present

Senior Behavioural Scientist
BC Behavioural Insights Group   📍 Vancouver, BC

- Leading qualitative and quantitative behavioural insights (BI) research projects to address behavioural challenges.
- Developing, testing, and evaluating BI solutions to improve government service accessibility for British Columbians.
- Statistical modelling, hypothesis testing, and machine learning with R.
- Advising senior executives and stakeholders on research methods to address strategic knowledge gaps.
- Building organizational capacity by training staff and developing data management and analysis processes.
- Research collaborations, science communication, and networking.

2020 | 2023

Data Scientist
BC Ministry of Social Development & Poverty Reduction   📍 Victoria, BC

- Led a portfolio of four research and data science projects for the Ministry of Social Development and Poverty Reduction.
- Established collaborations with BC Stats, the Ministry of Housing, and the BC Centre for Disease Control.
- Population-level predictive modelling and analysis of educational attainment, homelessness, housing instability, poverty, and drug overdose risk.
- Research findings informed the development of the Downtown Eastside Response Plan and led to $633 million in funding for homelessness in BC.
- Statistical modelling, hypothesis testing, and machine learning with R.
- Service demand forecasting using time-series analysis and regression modelling in R.
- Advising senior executives and stakeholders on research methods to address strategic knowledge gaps.
- Querying, modifying, and constructing relational databases using SQL and SAS.
- Recruiting, training, and supervising research staff.
- Led a team of three in designing, conducting, and evaluating a randomized controlled trial of a behavioural insights intervention, which doubled uptake of employment services within a month for a random sample of 206 income assistance clients.

📇 CONTACT INFO

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For more information, please contact me via email.

👤 SKILLS

Scientific Research
Applied Statistics
Machine Learning
Project Management
Leadership
Teaching
Public Speaking
Software Development
Microsoft Office

📈 DATA ANALYSIS

Data Visualisation (e.g. ggplot2)
Linear Models (GLM, GLMM)
Additive Models (GAM, GAMM)
Time-Series Forecasting
CART, Random Forests, XGBoost
PCA, MCA, Factor Analysis, FAMD
Cluster Analysis (e.g. k-means)
Deep Learning (MLP, RNN, CNN)
Bayesian Analysis (e.g. brms)
Causal Inference (DAGs)
Missing Data Imputation (mice)

2019-2020

Data Science Fellow
BC Ministry of Citizens' Services   📍 Victoria, BC

- Evaluated the economic impacts of financial assistance policies with time-series regression models.
- Developed an R package to facilitate exploratory data analysis: bcgov.github.io/elucidate/
- Queried and modified relational databases using SQL.
- Constructed high throughput data processing pipelines to facilitate rapid and reproducible analysis.

2018-2019

Postdoctoral Research Fellow
Division of Medical Sciences, University of Victoria   📍 Victoria, BC

- Led multiple research projects investigating the neurological basis of concussion symptoms.
- Collaborated with an international partnership of 10 health scientists and clinicians to study disease patterns using integrated data from Canada, the United States of America, England, and Ireland.
- Employed a decision tree to predict the concussion status of over 450 patients with 95% test accuracy.
- Communicated research findings to project stakeholders in meetings and peer-reviewed publications.

2013-2018

Teaching Assistant
Department of Psychology, Neuroscience, & Behaviour, McMaster University   📍 Hamilton, ON

- Developed course content and graded assignments for a total of 675 students in 10 courses.
- Supervised 9 community outreach group projects (4-5 students each).
- Delivered 6 guest lectures to a variety of class sizes (8-40+ students).

🎓 EDUCATION

2018

Ph.D. in Psychology
McMaster University   📍 Hamilton, ON

- Awarded $137,500 in competitive scholarships

2013

Hons. B.Sc. in Biopsychology
University of Winnipeg   📍 Winnipeg, MB

- Awarded $7,000 in competitive scholarships

📣 RECENT TALKS

2023

Improving Employment Service Registration Rates Among Income Assistance Clients in British Columbia.
BIG Difference BC   📍 Vancouver, BC

- 🎥 https://craig.rbind.io/talks/bigdifference2023

2023

Risk factors for social assistance reliance after high school.
BC Ministry of Social Development and Poverty Reduction - Executive Meeting   📍 Victoria, BC

🏆 CERTIFICATES

• Behavioural Insights
University of British Columbia
Vancouver, BC | 2023

• Future Leaders Program
Government of British Columbia
Victoria, BC | 2022

• Fundamentals of OCAP®
First Nations Information Governance Centre
Ottawa, ON | 2021

</> PROGRAMMING

R / tidyverse / data.table
SQL / MySQL
SAS / SPSS
Python / keras
h2o / Spark
Parallel processing
git / GitHub / GitLab
Bash

📖 REPRODUCIBLE REPORTING

R Markdown
blogdown
Jupiter Notebooks
flexdashboards

2022 • **Socioeconomic, demographic, and health predictors of drug overdose in the BC Provincial Overdose Cohort.**
BC Centre for Disease Control Grand Rounds   📍 Vancouver, BC
• 🎥 https://craig.rbind.io/talks/bccdc2022

2022 • **Socioeconomic, demographic, and health predictors of drug overdose in the BC Provincial Overdose Cohort.**
Employment and Social Development Canada   📍 Victoria, BC

2020 • **Social assistance and health in Vancouver's Downtown Eastside neighbourhood**
BC Government Deputy Ministers Board on Integrated Data
📍 Victoria, BC

🤝 COMMUNITY ROLES

2021-2023 • **Data Expert in Residence**
Exchange Lab; BC Public Service   📍 Victoria, BC

2019-Present • **Blog Editor & Content Creator**
Data Science Studio; University of Victoria   📍 Victoria, BC

📄 TECHNICAL PAPERS

2023 • **Predictors of social assistance reliance after high school: a retrospective cohort study of Vancouver secondary school alumni from 2010-2019.**
Government of British Columbia   📍 Victoria, BC

2022 • **Socioeconomic, health, and demographic predictors of drug overdose in British Columbia from 2015-2018.**
Government of British Columbia   📍 Victoria, BC

2022 • **Socioeconomic, health, and academic predictors of high school graduation in Vancouver from 2000-2009.**
Government of British Columbia   📍 Victoria, BC

2021 • **Social Assistance and Health in Vancouver's Downtown Eastside Neighbourhood from 1995-2017.**
Government of British Columbia   📍 Victoria, BC

• **8 scientific papers, 175 citations, h-index = 6**
craig.rbind.io/scholar
• PDFs available upon request