Harlan Campbell, PhD.

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EDUCATION

Sept, 2015 - June, 2019 **University of British Columbia**, PhD - Statistics
Supervisor: Prof. Paul Gustafson, link

Sept, 2009 - Dec, 2011 **Simon Fraser University**, Master of Science - Statistics
Supervisor: Prof. Charmaine Dean, link

Sept, 2004 - Dec, 2008 **McGill University**, Bachelor of Science - Mathematics
Minor concentration in Music

EMPLOYMENT

July, 2019 - **University of British Columbia** –Postdoctoral Research Fellow
Funding from ReCoDID (EU Horizon 2020, CIHR), link; and the World Health Organization; link.

August, 2020 - **Precision HEOR** –Statistician
Consultant for network meta-analysis to support the development and commercialization of novel healthcare innovations; link.

July, 2012 - Dec, 2017 **EMMES Canada CRO** –Statistician
Statistical services as a partner to clinicians and scientists for studies including:

- mTBI Mechanisms of Action of HBO2 for Persistent Post-Concussive Symptoms (BIMA), link;
  Sponsor: U.S. Army Medical Research and Materiel Command

- Causal Inference Evaluation of the Healthy Schools BC Program;
  Sponsor: BC Centre for Disease Control

- The Age-Related Eye Disease Study 2 (AREDS2), link;
  Sponsor: National Eye Institute

- Comparison of Home Sampling of A1c with Blotter Paper to A1c from Local In-lab Venous Blood Sample, link;
  Sponsor: LifeLabs Medical Laboratory Services

Sept - Dec, 2011	**Cardiome Pharma** –Statistics Internship Developing tools for longitudinal data analysis and visualization.
2011 - 2017	**Independent Consulting** –Statistics for various clients including: Taking Root (2015 - 2017); SFU Glaciology Research (2015); Culex Environmental (2011 - 2012).

RESEARCH

Statistics Publications

2022 Bayes factors and posterior estimation: Two sides of the very same coin, H Campbell and P Gustafson, The American Statistician, (2022). link

2022 A Comparison of Alternative Network Meta-Analysis Methods in the Presence of Non-Proportional Hazards: A Case Study in First-Line Advanced or Metastatic Renal Cell Carcinoma, S Cope, K Chan, H Campbell, J Chen, J Borrill, JR May, W Malcolm, S Branchoux, K Kupas, JP Jansen, Value in Health, (2022). link

2022 Adjusting for misclassification of a predictor in an individual participant data meta-analysis, VMT de Jong, H Campbell, L Maxwell, T Jaenisch, P Gustafson, T PA Debray, Research Synthesis Methods, (2022). link

2022 Limitations introduced by a low participation rate of SARS-CoV-2 seroprevalence data; O Pluss, H Campbell, L Pezzi, I Morales, Y Roell, TM Quandelacy, MM Lamb, M Chu, T Baernighausen, and T Jaenisch, The International Journal of Epidemiology, (2022). link

2022 The Bayes factor, HDI-ROPE and frequentist equivalence tests can all be reverse engineered -almost exactly- from one another: Reply to Linde et al. (2021), H Campbell and P Gustafson, in press at Psychological Methods, (2022). link

2022 Systematic review reveals lack of causal methodology applied to pooled longitudinal observational infectious disease studies, H Hufstedler, S Rahman, AM Danzer, H Goymann, VMT de Jong, H Campbell, P Gustafson, TPA Debray, T Jaenisch, L Maxwell, EC Matthay, T Bärnighausen, Journal of Clinical Epidemiology, (2022). link

2022 Bayesian adjustment for preferential testing in estimating infection fatality rates: Theory and methods as motivated by the COVID-19 pandemic, H Campbell, P de Valpine, L Maxwell, VMT de Jong, T Debray, T Jaenisch, P Gustafson, The Annals of Applied Statistics, (2022). link

2022 A few things to consider when deciding whether or not to conduct underpowered research (letter to the editor), H Campbell, VMT de Jong, T Debray, P Gustafson, Journal of Clinical Epidemiology, (2022). link

2022 Systematic Review Reveals Lack of Causal Methodology Applied to Pooled Longitudinal Observational Infectious Disease Studies, H Hufstedler, S Rahman, AM Danzer, H Goymann, VMT de Jong, H Campbell, P Gustafson, T Debray, T Jaenisch, L Maxwell, E Matthay, T Bärnighausen, Journal of Clinical Epidemiology, (2022). link

2021 Inferring the COVID-19 IFR with a simple Bayesian evidence synthesis of seroprevalence study data and imprecise mortality data, H Campbell and P Gustafson, Epidemiology and Infection, (2021). link

2021 What to make of equivalence testing with a post-specified margin?, H Campbell and P Gustafson, Meta-Psychology, (2021). link

2021 Measurement error in individual participant data meta-analysis - a Bayesian framework for continuous outcome data, H Campbell, VMT de Jong, T Jaenisch, T PA Debray, P Gustafson, Research Synthesis Methods, (2021). link

2021 Current trends in the application of causal inference methods to pooled longitudinal observational infectious disease studies – A protocol for a methodological systematic review, H Hufstedler, E C. Matthay, S Rahman, VMT de Jong, H Campbell, P Gustafson, T Debray, T Jaenisch, L Maxwell, T Bärnighausen, PLoS ONE, (2021). link

2021 The consequences of checking for overdispersion and zero-inflation, H Campbell, Methods in Ecology and Evolution, 12:4 (2021): 665-680. link

2021 Current trends in the application of causal inference methods to pooled longitudinal non-randomised data: a protocol for a methodological systematic review, E Yeboah, NS Mauer, H Hufstedler, S Carr, EC Matthay, L Maxwell, S Rahman, T Debray, VMT de Jong, H Campbell, P Gustafson, T Jaenisch, T Bärnighausen, BMJ Open, (2021). link

2020 Can we disregard the whole model? Omnibus non-inferiority testing for R^2 in multivariable linear regression and $\hat{\eta}^2$ in ANOVA, H Campbell and D Lakens, The British Journal of Mathematical and Statistical Psychology, (2020). link

2019 The world of research has gone berserk: modeling the consequences of requiring "greater statistical stringency" for scientific publication, H Campbell and P Gustafson, The American Statistician, special issue on Statistical Inference in the 21st Century, 73.sup1 (2019): 358 - 373. link

2019 Is it even rainier in North Vancouver? A non-parametric rank-based test for semicontinuous longitudinal data, H Campbell, Journal of Applied Statistics, 46:7 (2019): 1155 - 1176. link

2018 The validity and efficiency of hypothesis testing in observational studies with time-varying exposures, H Campbell and P Gustafson, Observational Studies, (2018). link

2018 Conditional equivalence testing: an alternative remedy to publication bias, H Campbell and P Gustafson, PLoS ONE 13(4): e0195145 (2018). link

2017 Twin data that made a big difference, and that deserve to be better-known and used in teaching, H Campbell, JA Hanley, Journal of Statistical Education, 25.3 (2017): 131-136. link

2014 The consequences of proportional-hazards based model selection, H Campbell and CB Dean, Statistics in Medicine, 33.6, (2014): 1042-1056. link

2012 Model-based clustering of longitudinal data: application to modeling disease course and gene expression trajectories, A Ciampi, H Campbell, A Dyachenko, B Rich, J McCusker, and MG Cole, Communications in Statistics-Simulation and Computation, 41.7 (2012): 992-1005. link

Applied Publications

2020 The Zika Virus Individual Participant Data Consortium: a global initiative to estimate the effects of fetal exposure to Zika virus on adverse fetal, infant, and child health outcomes, Zika Virus Individual Participant Data Consortium, Tropical Medicine and Infectious Disease, 5(4), 152 (2020). link

2018 Comparison of hemoglobin A1c results based on at-home and in-lab dried blood spot sampling to routine venous blood sampling in-lab in adult patients with type 1 or type 2 diabetes, TG Elliott, KC Dooley, M Zhang, H Campbell, DJS Thompson, Canadian Journal of Diabetes, 42.4 (2018): 426-432.e1. link

2016 Sleep assessments for a mild traumatic brain injury trial in a military population, JM Walker, NT James, H Campbell, SH Wilson, S Churchill, LK Weaver, Undersea and Hyperbaric Medicine Journal, 43.5, (2016). link

2015 Comparison of reducing epicardial fat by exercise, diet or bariatric surgery weight loss strategies: A systematic review and meta-analysis, S Rabkin and H Campbell, Obesity Reviews, 16.5 (2015): 406-415. link

2014 Impact on diabetes care of access to an online patient portal, M Lau, H Campbell, T Tang, DJS Thompson, and T Elliott, Canadian Journal of Diabetes, 38.1 (2014): 17-21. link

2013 Modelling factors that affect the presence of larval mosquitoes (diptera: culicidae) in stormwater drainage systems to improve the efficacy of control programmes, MJ Jackson, JL Gow, MJ Evelyn, TJS McMahon, H Campbell, J Sheppard, TJ Howay, D Fladmark, A Thielman, The Canadian Entomologist, 145.06 (2013): 674-685. link

2012 An evaluation of the effectiveness of a commercial mechanical trap to reduce abundance of adult nuisance mosquito populations, MJ Jackson, JL Gow, MJ Evelyn, TJS McMahon, TJ Howay, H Campbell, J Blancard, and A Thielman, Journal of the American Mosquito Control Association, 28.4 (2012): 292-300. link

Preprints

1. Standardization allows for efficient unbiased estimation in observational studies and in indirect treatment comparisons: A comprehensive simulation study; H Campbell, JE Park, JP Jansen, S Cope, submitted to Statistics in Medicine, 2023. link

2. Defining a credible interval is not always possible with “point-null” priors: A lesser-known consequence of the Jeffreys-Lindley paradox; H Campbell, P Gustafson, submitted to Bayesian Analysis, 2022. link

3. A fully Bayesian approach to estimating SARS-CoV-2 cumulative incidence and infection fatality rates from serosurveys; Justin J. Slater, Ayuish Bansal, Harlan Campbell, Paul Gustafson, Patrick E. Brown, Jeffrey S. Rosenthal; submitted to Biometrics submitted to Biostatistics, 2022. link

4. Equivalence testing for linear regression, H Campbell, submitted to Psychological Methods, 2021. link

5. A non-inferiority test for R-squared with random regressors, H Campbell, 2020. link

Presentations

Determining the lethality of COVID19 - how can Bayesian methods help?

-The Therapeutics Initiative, Univ. of British Columbia (Invited Seminar), January 27, 2021

-The 2021 Annual Meeting of the Statistical Society of Canada, June 7, 2021

Bayesian adjustment for preferential testing in estimating infection fatality rates: Theory and methods as motivated by the COVID-19 pandemic., H Campbell; UBC Dept. of Statistics Seminar (Invited Seminar), Sept. 29 2020.

The consequences of checking for zero-inflation and overdispersion in the analysis of count data., H Campbell; The International Statistical Ecology Conference, Sydney (virtual), 2020.

If Journals Embraced Conditional Equivalence Testing, Would Research be Better?; Invited Seminar:

- METRICS, Stanford University, Oct. 18, 2019
- Therapeutics Initiative, University of British Columbia, June 26, 2019
- Department of Statistics and Actuarial Science, University of Waterloo, Jan. 30, 2019
- Mathematics Department, Reed College, Feb. 26, 2019
- Department of Mathematics and Statistics, University of Ottawa, Apr. 17, 2019

Can we disregard the whole model? Omnibus non-inferiority testing for R^2 in multivariable linear regression and $\hat{\eta}^2$ in ANOVA., H Campbell and D Lakens; The 47th Annual Meeting of the Statistical Society of Canada, Calgary, 2019.

Conditional equivalence testing, H Campbell, P Gustafson; The 46th Annual Meeting of the Statistical Society of Canada, Montreal, 2018. Invited talk.

What to make of non-inferiority and equivalence testing with a post-specified margin?, H Campbell; Joint Statistical Meetings (JSM), Vancouver, 2018.

A non-parametric rank based test for semicontinuous longitudinal data, H Campbell; The 44th Annual Meeting of the Statistical Society of Canada, St. Catharines, 2016.

The consequences of proportional-hazards based model selection, H Campbell, CB Dean; The Society for Clinical Trials 34th Annual Meeting, Boston, 2013.

SKILLS

Communication -	Fully bilingual in french and english.
Technology -	Programming: proficient in R (JAGS, stan, shiny), SAS, and Matlab. Cloud Computing: experience with Compute Canada clusters. Data Management: experience with AdvantageEDC.

TEACHING

July, 2021	**UBC Faculty of Pharmaceutical Sciences** –Guest Lecturer PHRM302 - "Challenges in COVID-19 systematic reviews".
Jan - May, 2018	**UBC Dept. of Statistics** –Instructor Teaching STAT 306 for 145 undergraduates. link
Sept, 2015 - May, 2016	**UBC Dept. of Statistics** –Teaching Assistant Teaching and grading labs for SCIE 300 and STAT 404.
Sept, 2009 - Dec, 2010	**SFU Dept. of Statistics and Actuarial Science** –Teaching Assistant Teaching and grading for various courses and statistics workshop.

SERVICE & AWARDS

Leadership:

Evaluation committee member for the 2021 Statistical Society of Canada's Biostatistics study competition. link

Review member for Mitacs Accelerate research proposal.

Organizer of the Constance van Eeden seminar (2017 and 2018). link

Peer Review:

- The BMJ
- Methods in Ecology and Evolution
- Nature Human Behaviour
- Royal Society Open Science (4)
- Canadian Journal of Public Health
- PLoS ONE
- Statistical Methods & Applications
- Journal of Statistical Education
- Computational Statistics
- The American Statistician
- The Journal of Applied Statistics
- BMC Medical Research Methodology (4)
- Canadian Journal of Diabetes
- Journal of Statistical Computation and Simulation
- Obesity Reviews
- PLOS Neglected Tropical Diseases
- The Lancet Regional Health - Southeast Asia
- Journal of Data Science, Statistics, and Visualisation

Awards:

2019 - Marshall Prize from UBC Statistics for “great distinction according to the professional and academic criteria.” link

2016 - Statistical Society of Canada Student Travel Award

2015-2019 - UBC Faculty of Science PhD Tuition Award