

# Harlan Campbell, PhD.

harlancampbell@gmail.com

---

## 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  
Statistical services as a consultant 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

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

2. re:Linde et al. (2021) – The Bayes factor, HDI-ROPE and frequentist equivalence testing are actually all equivalent, H Campbell and P Gustafson, submitted to Psychological Methods, 2021. [link](#)
3. Equivalence testing for standardized effects in linear regression, H Campbell, submitted to Psychological Methods, 2021. [link](#)
4. 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	<b>UBC Faculty of Pharmaceutical Sciences</b> –Guest Lecturer PHRM302 - “Challenges in COVID-19 systematic reviews”.
Jan - May, 2018	<b>UBC Dept. of Statistics</b> –Instructor Teaching STAT 306 for 145 undergraduates. <a href="#">link</a>
Sept, 2015 - May, 2016	<b>UBC Dept. of Statistics</b> –Teaching Assistant Teaching and grading labs for SCIE 300 and STAT 404.
Sept, 2009 - Dec, 2010	<b>SFU Dept. of Statistics and Actuarial Science</b> –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

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

### Peer Review:

- The BMJ	- The American Statistician
- Entropy	- Journal of Applied Statistics
- Canadian Journal of Public Health	- Canadian Journal of Diabetes
- PLoS ONE	- Journal of Statistical Computation and Simulation
- Nature Human Behaviour	- Obesity Reviews
- Statistical Methods & Applications	- PLOS Neglected Tropical Diseases
- Journal of Statistical Education	- BMC Medical Research Methodology (2)
- Royal Society Open Science (2)	

### 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