

# Chloe Krakauer

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## EDUCATION

- University of Washington, Seattle** 2016-2021  
Ph.D., Biostatistics  
Dissertation advisors: Ken Rice, Ph.D. and Mauricio Sadinle, Ph.D.
- University of Washington, Seattle** 2012-2014  
Masters of Science, Biostatistics  
Academic advisor: Jim Hughes, Ph.D.
- Western Washington University** 2008-2012  
Bachelors of Science, Mathematics and Minor in Business Administration, *magna cum laude*

## PROFESSIONAL EXPERIENCE

- Kaiser Permanente Washington Health Research Institute** 2017-2019, 2020-present  
Collaborative Biostatistician II (2021-present)/Research Assistant  
Seattle WA
- My work involves a variety of epidemiologic studies and clinical trials.
  - Plan and conduct data analyses, disseminate results, and prepare manuscripts.
  - Write analysis plans, prepare grants, and consult investigators.
  - Plan journal club meetings.
  - Research project topics: lung cancer screening, pharmaceutical pricing, smoking cessation and dental hygiene, home-based HPV testing, improvements in cardiovascular health care in small clinics, recruitment to volunteer samples for biobank, dementia, and modeling efficacy of different meningitis vaccination schedules.
- University of Washington** Summer 2020  
Teaching Assistant for Introduction to R  
University of Washington Summer Institutes (held virtually)  
Seattle WA
- Answered questions via Slack/Zoom.
  - Class taught by Drs. Ken Rice and Timothy Thornton, UW
- Teaching Assistant for Biostatistics for the Health Sciences Winter 2020  
Seattle WA
- Held regular office hours
  - Led discussion section
  - Class taught by Dr. Lyndia Brumback, UW
- Teaching Assistant for Design of Medical Studies Spring 2019  
Seattle WA
- Delivered a lecture on blinding, factorial designs, and cross-in designs.
  - Held regular office hours, helping students design medical studies.
  - Critiqued study designs during mock site reviews and other grading responsibilities.
  - Responsible for maintaining website.
  - Class taught by Dr. Thomas Fleming, UW

## **Seattle Epidemiologic Information Center (ERIC)**

2014-2017

Biostatistician

Puget Sound Veterans Affairs Hospital, Seattle WA

- Planned and conducted data analyses, disseminated results, and prepared manuscripts.
- Wrote analysis plans, prepared grants, and consulted investigators.
- Managed and requested data and prepared data collection instruments.
- Conducted simulation studies to determine necessary sample size.
- Served as lead statistician on a national epidemiologic study.
- Research project topics: plan to evaluate coverage of a national data set; effects of deployment to the middle east on pulmonary health; participation among Veterans in health surveys; and associations between testosterone treatment with risk of prostate cancer, bladder cancer, and cardiovascular events.

## **HIV Prevention Trials Network**

2012-2014

Research Assistant/Biostatistician

Fred Hutchinson Cancer Research Institute, Seattle

- Planning and conducting analyses with CDC fellow on risk of HIV transmission.
- Simulations to determine bias during interim analyses of clinical trial.
- Assess sensitivity to missing data using simulations.

## **RESEARCH PROJECTS**

### **Regression Estimation with Logit Additive Nonignorable Missingness Using Auxiliary Marginal Information (Dissertation Project 1)**

2019-present

Advised by Mauricio Sadinle, PhD (UW)

- Baseline covariates are simple to collect, but follow-up measures are often prone to missingness not-at-random; failing to account for the missingness mechanism may lead to biased estimates of association.
- Under a flexible class of selection models, auxiliary marginal information on the outcome may be used to make informed assumptions about the behavior of missing data necessary to define the regression function.
- We have developed a fully parametric approach yielding consistent and asymptotically normal estimates of regression values.
- Manuscript in progress.

### **Post-Hoc Test Assessment (Dissertation Project 2)**

2019-present

Advised by Ken Rice, PhD (UW)

- Decision theory may be used to motivate common frequentist statistical tests.
- We aim to use the new nomenclature offered by decision theory to evaluate evidential worth of a test, avoiding pitfalls of existing methodology.
- Manuscript in progress.

### **Decision-Theoretic Shrinkage Approach to Correct for "Winner's Curse" (Dissertation Project 3)**

2020-present

Advised by Ken Rice, PhD (UW)

- Zhong and Prentice (2008) provide effective methods for adjusting for the "winner's curse"—bias incurred from reporting results from significant tests only.
- We have motivated this shrinkage estimator using a unifying (across some shrinkage estimators) decision-theoretic framework, allowing for better comparison to other shrinkage estimators and incorporation of prior skepticism.
- Manuscript in progress.

### **Study Design With Systems of Ordinary Differential Equations**

2017-present

Advised by Ali Shojaie, PhD (UW) and Sarah Holte, PhD (Fred Hutchinson Cancer Research Institute)

- Expected values of many systems of observations are defined using systems of ordinary differential equations.
- We aim to design studies that minimize cost while maximizing precision of estimates of parameters in the assumed system of ordinary differential equations.
- Manuscript in progress.

## **Determining Adherence With Sparse Biomarkers Using a Bayesian Framework**

2013-2014

Masters thesis, UW, advised by Jim Hughes, PhD

- Biological samples were collected sparsely during treatment of HIV-negative individuals with pre-exposure prophylaxis (PrEP) during a clinical trial.
- Using biological samples and self-report of adherence, we aimed to estimate adherence of subjects to the prescribed treatment regimen using pharmacokinetic modeling via MCMC.
- Manuscript submitted.

## **PUBLICATIONS**

### **Published**

1. Molly Shores, Thomas Walsh, Anna Korpak, **Chloe Krakauer**, Christopher Forsberg, Alexandra Fox, Kathryn Moore, Susan Heckbert, MaryLou Thompson, Nicholas Smith, and Alvin Matsumoto. Association of Testosterone Treatment with Risk of Incident Cardiovascular Events Among Older Men with Low Testosterone Levels. *Journal of the American Heart Association*, in press.
2. Katie F. Coleman, **Chloe Krakauer**, Melissa Anderson, LeAnn Michaels, David A. Dorr, Lyle J. Fagnan, Clarissa Hsu, and Michael L. Parchman. How Do Small Primary Care Practices Improve Clinical Performance? Results from a 15-month intervention. *Annals of Family Medicine*, in press.
3. **Chloe Krakauer** and Kenneth Rice. Contribution to the discussion of testing by betting: A strategy for statistical and scientific communication by Chloe Krakauer and Kenneth Rice. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, in press.
4. Kenneth Rice, Tyler Bonnett, and **Chloe Krakauer**. Knowing the signs: a direct and generalizable motivation of two-sided tests. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 2020.
5. McClure, J.B.; Anderson, M.L.; **Krakauer, C.**; Blasi, P.; Bush, T.; Nelson, J.; Catz, S.L. Impact of a Novel Oral Health Promotion Program on Routine Oral Hygiene among Socioeconomically Disadvantaged Smokers: Results from a Randomized Semi-Pragmatic Trial. *Translational Behavioral Medicine*. February 2019.
6. Blasi, P.R.; **Krakauer, C.**; Anderson, M.L.; Nelson, J.; Bush, T.; Catz, S.L.; McClure, J.B. Factors Associated with future dental care utilization among low-income smokers overdue for dental visits. *BMC Oral Health*. November 2018, 18 (1), 183.
7. Walsh TJ, Shores MM, **Krakauer CA**, Forsberg CW, Fox AE, Moore KP, et al. (2018) Testosterone treatment and the risk of aggressive prostate cancer in men with low testosterone levels. *PLoS ONE* 13(6): e0199194. <https://doi.org/10.1371/journal.pone.0199194>
8. Hall, G.; Young, A.; **Krakauer, C.**; Watson, C.C.; Cummings, V.; Mayer, K.; Koblin, B. Sexual Risk Behaviors Among Black Men Who Have Sex With Men Who Also Report Having Sex With Transgender Partners: Analysis of HIV Prevention Trials Network (HPTN) 061 Study. *AIDS Education and Prevention*. October 2017, Vol. 29, No. 5: 418–431.

## **PRESENTATIONS**

### **Joint Statistical Meetings, Vancouver BC**

August 2020

Invited Poster Session

Poster title: Regression Estimation with Logit Additive Nonignorable Missingness  
Using Auxiliary Marginal Information

Contributed Poster Session: Section on Bayesian Statistical Science

Poster title: Decision-Theoretic Approach to *Post-Hoc* Significance Test Assessment,  
Addressing the question “I had near-significant results... what now?”

### **Joint Statistical Meetings, Vancouver BC**

July 2018

Biometrics Section: Modern Methods and Applications for HIV/AIDS Research

Talk title: Statistical considerations when modeling with ordinary differential equations

## PROFESSIONAL SOCIETIES

- Member, American Statistical Association 2018-present
- Member, International Biometric Society Western North American Region 2015-present

## OTHER

**Missing Data Reading Group** Spring 2019  
Organizer

- Primary aim was to read through the National Academy of Sciences 2010 report on missing data in clinical trials and become familiar with other current methodological issues related to missing data.
- Scheduled meetings and organized talks with guest speakers.
- Delivered lecture and led discussion on methods for data missing not at random.

## HONORS, AWARDS, AND SCHOLARSHIPS

- Mathematics Memorial Scholarship, Western Washington University 2011
- Accepted into Honors Program and Scholarship, Western Washington University 2008  
Scholarship awarded to top ten percent of incoming class

## PROGRAMMING AND SOFTWARE

- **R** (proficient): simulations, graphics, data manipulation, statistical analysis, summary statistics, and R Markdown.
- **Stata** (proficient): data manipulation, graphics, statistical analysis, and summary statistics.
- **OpenBUGS** (proficient): simulations
- **Latex** (proficient)
- **Microsoft Office** (proficient)
- **Mathematica** (working knowledge)
- **GitHub** (working knowledge)
- **PASS** (working knowledge)