

# Raiden B. Hasegawa, Ph.D.

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## EDUCATION

- 2014-2019     Ph.D., Statistics, The Wharton School, University of Pennsylvania  
Dissertation title: *Essays in Causal Inference: Addressing Bias in Observational and Randomized Studies Through Analysis and Design*  
Advisor: Professor Dylan S. Small
- 2012-2013     Additional graduate coursework, Scientific Computing, Courant Institute of Mathematical Sciences, New York University
- 2006-2010     B.A., *cum laude*, *Distinction in Major*, Economics, Yale University

## PROFESSIONAL EXPERIENCE

- 2019-Present     Google, Data Scientist  
*Hierarchical time series forecasting for Google-wide compute infrastructure planning.*  
*Programming Languages: R, Python, GoogleSQL*
- 2012-2014     Federal Reserve Bank of New York, Research Associate  
*Research Areas: Bayesian macroeconomic forecasting, Bayesian VAR models, particle filtering, parallel scientific computing*  
*Programming Languages: Matlab, Stata and Python, Bash and Awk scripting*
- 2011-2012     GreenOrder, Sustainability Analyst  
*Provided management and strategy consulting services to Fortune 500 companies with a focus on sustainability*
- 2010-2011     DC Energy, Investment Analyst  
*Designed, tested and implemented quantitative trading strategies in wholesale power markets.*  
*Programming Languages: PHP, MySQL, R*

## PUBLICATIONS (★ denotes co-first authors, equal contributions)

- Deshpande, Sameer K., **Hasegawa, Raiden B.**, Weiss, Jordan, Small, Dylan S. (2020). The association between adolescent football participation and early adulthood depression. *PLoS ONE* 15(3): e0229978, doi:10.1371/journal.pone.0229978.
- **Hasegawa, Raiden B.**, Deshpande, Sameer K., Small, Dylan S., and Rosenbaum, Paul R. (2020). Causal Inference with Two Versions of Treatment. *Journal of Educational and Behavioral Statistics*, doi:10.3102/1076998620914003.
- **Hasegawa, Raiden B.**, Small, Dylan S., and Webster, Daniel W. (2019). Bracketing in the Comparative Interrupted Time-Series Design to Address Concerns about History Interacting with Group: Evaluating Missouri Handgun Purchaser Law. *Epidemiology*, 30, 3, 371-379. **Runner up for the the Rothman Epidemiology Prize, 2020.**

- Fogarty, Colin B.\* and **Hasegawa, Raiden B.\*** (2019). Extended sensitivity analysis for heterogeneous unmeasured confounding with an application to sibling studies of returns to education. *Annals of Applied Statistics*, 13, 2, 767-796.
- Deshpande, Sameer K.\* , **Hasegawa, Raiden B.\*** et al. (2017). Association of Playing High School Football with Cognition and Mental Health Later in Life. *JAMA Neurology*, 74, 8, 909-918.
- **Hasegawa, Raiden B.** and Small, Dylan S. (2017). Sensitivity Analysis for Matched Pair Studies of Binary Data: From Worst Case to Average Case Analysis. *Biometrics*, 73, 4, 1424-1432.
- Del Negro, Marco, **Hasegawa, Raiden B.**, and Schorfheide, Frank (2016). Dynamic Prediction Pools: An Investigation of Financial Frictions and Forecasting Performance. *Journal of Econometrics*, 192, 22, 391-405.

## SUBMITTED PAPERS

- **Hasegawa, Raiden B.** and Small, Dylan S. (2019+). Estimating Malaria Vaccine Efficacy in the Absence of a Gold Standard Case Definition: Mendelian Factorial Design. *Under Minor Revision for Journal of the American Statistical Association*.
- Ye, Ting, Keele, Luke, **Hasegawa, Raiden B.**, and Small, Dylan (2020). A Negative Correlation Strategy for Bracketing Difference-in-Differences with Application to the Effect of Voter Identification Laws on Voter Turnout. *Under Review for Annals of Applied Statistics*.

## MANUSCRIPTS IN PROGRESS

- Keele, Luke J., **Hasegawa, Raiden B.**, and Small, Dylan S.. Bracketing Bounds for Differences-in-Differences with an Application to Voter ID Laws.
- **Hasegawa, Raiden B.** Covariance Adjustment in Matched Pair Observational Studies: Choosing Adjustment Algorithms for Power and Design Sensitivity.

## RESEARCH INTERESTS

causal inference • design and analysis of observational studies • sensitivity analysis • evidence factors and multiple comparisons • statistical applications in social and biomedical sciences

## CONFERENCE PRESENTATIONS AND POSTERS

- *Effects of Playing High School Football on Mental Health in Early Adulthood: An Observational Study* ■ Add Health Users Conference, Jul 2018 @ NIH
- *Extended Sensitivity Analysis for Heterogeneous Unmeasured Confounding with an Application to Sibling Studies of Returns to Education* ■ Atlantic Causal Inference Conference, May 2018 @ CMU

## AWARDS

- **Runner up for the Rothman Epidemiology Prize, 2020**  
Awarded to the "best paper published in the journal *Epidemiology* in the preceding year;" for the paper *Evaluating Missouri's Handgun Purchaser Law: A Bracketing Method for Addressing Concerns about History Interacting with Group*.

– **National Science Foundation Travel Award, 2018**

Awarded to the five best junior researcher posters at the 2018 Atlantic Causal Inference Conference; for the poster *Extended Sensitivity Analysis for Heterogeneous Unmeasured Confounding with an Application to Sibling Studies of Returns to Education*

**TEACHING**

- 2014-2018      Department of Statistics, The Wharton School, University of Pennsylvania (TA)  
STAT 101 & 102: *Introductory Business Statistics*  
STAT431: *Mathematical Statistics*  
STAT471: *Intermediate Statistics*  
STAT474: *Modern Regression for Social, Behavioral and Biological Sciences*  
STAT613: *Regression Analysis for Business*
- 2016-2018      Wharton Moneyball Academy (*Graduate Instructor*)  
Sports data science summer course for advanced high school students.

**CONSULTING EXPERIENCE**

- 2016-2017      Race-based bias in personal property insurance payouts case, *Statistical Expert*  
– *Expert report led to a "fair and balanced settlement."*  
– *Methods: clustered logistic regression used to assess the correlation between racial composition and proportion of insurance claims outstanding by zipcode-year.*
- 2016              Electricians' union discrimination case, *Statistical Expert*  
– *Methods: robust permutational tests used to assess the possible presence of racial bias in the "quality" of jobs assigned by an electricians' union to its members.*

**PROGRAMMING EXPERIENCE**

In order of proficiency/experience: R, Matlab, Python, C++, Haskell, SQL, Bash, Stata