

# Justin Williams

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## EDUCATION

### University of California, Los Angeles (UCLA)

*Expected 2020*

*Ph.D. – Biostatistics*

Advisor: Catherine Crespi

Committee: Tom Belin, Hua Zhou, May Wang

*M.S. - Biostatistics*

*2016*

Thesis: “Bayesian Hierarchical Spatial Analysis of Autism Spectrum Disorder Services in the Los Angeles Unified School District”

Advisor: Rob Weiss

### Boston College

*B.A. – Mathematics*

*2013*

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## RESEARCH EXPERIENCE

### Graduate Student Researcher

*2015 - 2019*

*Connie Kasari Lab*

- Constructed Bayesian multi-level hierarchical model incorporating spatial random effects
- Developed longitudinal data visualization tools available in GitHub R package ([ggplot.spaghetti](#))
- Clinical trial longitudinal analysis using mixed effects and generalized estimating equations
- Adjusted for empirical trends using zero-inflated and hurdle models with count outcomes
- Automated analysis for inter rater reliability
- Data management and data cleaning for multisite clinical trial database
- Co-authored multiple papers as primary statistician

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## PROFESSIONAL EXPERIENCE

### Product Development Biostatistics Intern

*Summer 2019*

*Genentech-South San Francisco, CA*

- Designed software to simulate longitudinal differential abundance for microbiome: [microbiomeDASim](#)
  - Flexibly specify form of the trend over time including polynomial, oscillating, or hockey stick trends
  - Define desired sample size, number of repeated measures, and signal:noise ratio
  - Multiple choices for longitudinal dependence including: AR(1), compound, or independent
- Compared multiple methods for estimating differential abundance over time

### Biostatistics R&D Intern

*Summer 2018*

*Alcon-Fort Worth, TX*

- Developed methodology for parameter estimation of censored data from truncated normal distribution
- Investigated available methods for estimation with left censoring using R and SAS
- Produced functions and macros to simulate data and calculate bias metrics
- Applied methods to estimate parameters for historical clinical trial data

### Predictive Analytics Intern-Business Intelligence Team

*Summer 2016*

*Ingram Micro-Irvine, CA*

- Illustrated regional product demand for products to inform warehouse stocking decisions
- Pulled purchasing and warehouse transaction information from servers via SQL
- Engineered product similarity scores based on feature list with mixed scale variables

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## TEACHING EXPERIENCE

### Special Reader: Computer Management of Health Data

*Sep '16 – Dec '16*

*UCLA, Biostatistics Department*

Student Evaluation: 9/9

- Taught data management tools with SAS to 23 first-year Biostatistics graduate students

- Introduced tools for creating randomization schemes and generating reproducible data

## Special Reader: Basic Biostatistics

Jan '16 – Mar '16

UCLA, Biostatistics Department

Student Evaluation: 8.89/9

- Led weekly lab sections using Stata on topics such as linear regressions, ANOVA, logistic regression, and non-parametric tests
- Designed and administered discussion sections weekly
- Graded homework and lab assignments

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## SOFTWARE SKILLS

**R** (coursework/teaching/research/preferred)

**SQL** (work)

**SAS** (internship/coursework/teaching/work)

**Stata** (coursework/teaching)

**Julia** (coursework)

**Python** (research)

**GitHub** (primary version control software)

**HPC** (high performance computing on cluster)

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## RESEARCH INTERESTS

-Causal Inference

-Longitudinal Analysis

-Machine Learning

-Bayesian Analysis

-Spatial Modeling

-Trial Design

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## PUBLICATIONS

### Academic Journals

- (1) Williams, J.R., Kim, H., & Crespi, C.M. (2020). "Modeling observations with a detection limit using a truncated normal distribution with censoring", *BMC Med Res Methodol*, **20**:170. doi:[10.1186/s12874-020-01032-9](https://doi.org/10.1186/s12874-020-01032-9).
- (2) Dean, M., Williams, J., Kasari, C., & Orlich, O. (2020). "Adolescents with autism spectrum disorder and social skills groups at school: A randomized trial comparing intervention environment and peer composition", *School Psychology Review*, **49**(1):60-73. doi:[10.1080/2372966X.2020.1716636](https://doi.org/10.1080/2372966X.2020.1716636)
- (3) Williams, J., Bravo HC, Tom J & Paulson JN. (2020). "microbiomeDASim: Simulating longitudinal differential abundance for microbiome data [version 2; peer review: 2 approved]", *F1000Research* **8**:1769. doi:[10.12688/f1000research.20660.2](https://doi.org/10.12688/f1000research.20660.2).
- (4) Gulsrud, A., Carr, T., Williams, J., Panganiban, J., Jones, F., Kimbrough, J., Shih, W., & Kasari, C. (2019). "Developmental screening and early intervention in a childcare setting for young children at-risk for autism and other developmental delays: A feasibility trial", *Autism Research* **12**(9):1423-1433. doi:[10.1002/aur.2160](https://doi.org/10.1002/aur.2160)
- (5) Locke, J., Williams, J., Shih, W., & Kasari, C. (2017). "Characteristics of socially successful elementary school-aged children with autism", *Journal of Child Psychology and Psychiatry* **58**(1):94-102. doi:[10.1111/jcpp.12636](https://doi.org/10.1111/jcpp.12636)

### Internal Documents

- (1) Williams, J. & Kim, H. (2018) "Analysis methods for left censored log contrast sensitivity data", Alcon Technical Document (TDOC-0055661).
- (2) Williams, J. & Kim, H. (2018) "Methods for calculating log contrast sensitivity difference with left censoring", Alcon Technical Document (TDOC-0055664).

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## PRESENTATIONS & CONFERENCES

### 2019 Joint Statistical Meetings

Denver, CO

"Maximum Likelihood Estimation of a Truncated Normal Distribution with Censored Data"

Williams, J.\*, Crespi, C. & Kim, H.

### 2019 Western North American Region (WNAR) of the International Biometric Society

Portland, OR

"Maximum Likelihood Estimation of a Truncated Normal Distribution with Censored Data"

Williams, J.\*, Crespi, C. & Kim, H.

2018 Joint Statistical Meetings  
“Propensity Score Methods for Studies with Clustered Data and Continuous Exposure”  
Williams, J.\*, Crespi, C. & Wang, M

*Vancouver, BC, Canada*

2018 Gatlinburg Conference  
“Using Clustering to Define ASD Subgroups with Differential Play Outcomes”  
Williams, J.\*, Gulsrud, A., & Kasari, K.

*San Diego, CA*

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#### AWARDS & HONORS

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- **Dissertation Year Fellowship** (\$20,000)

Awarded By: *UCLA Graduate Division*

Received: December 2019 – December 2020

- **Most Outstanding Oral Presentation** (\$500)

Awarded By: *Western North American Region of the International Biometric Society*

Received: June, 2019

- **Juneal Marie Smith Fellowship in International Nutrition** (\$2,500)

Awarded By: *UCLA Fielding School of Public Health*

Received: June, 2019

- **Graduate Summer Research Mentorship** (\$6,000)

Awarded By: *UCLA Graduate Division*

Received: June 2017 – September 2017

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#### PROFESSIONAL ASSOCIATIONS

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- American Statistical Association, Southern California Chapter
- Western North American Region of the International Biometric Society

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#### JOURNAL REVIEW PARTICIPATION

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- Health Services and Outcomes Research Methodology (June 2020)