# Justin Williams

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## EDUCATION

**University of California, Los Angeles (UCLA)**
*Ph.D. – Biostatistics* *Expected 2020*
*M.S. - Biostatistics* *2016*

**Boston College**
*B.A. – Mathematics* *2013*

## WORK EXPERIENCE

**Graduate Student Researcher** *2015 - 2019*
*Connie Kasari Lab*

- Constructed Bayesian multi-level hierarchical model incorporating spatial random effects
- Established 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

**Product Development Biostatistics Intern** *Summer 2019*
*Genentech*

- 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*

- 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

## SOFTWARE SKILLS

**R** (coursework/teaching/research/preferred)
**Stata** (coursework/teaching)
**Julia** (coursework)
**GitHub** (primary version control software)
**SQL** (work experience)
**SAS** (internship/coursework/teaching/work)
**Python** (research)
**HPC** (high performance computing on cluster)

## RESEARCH INTERESTS

-Causal Inference -Longitudinal Analysis -Machine Learning
-Bayesian Analysis -Spatial Modeling -Trial Design

## PUBLICATIONS

Academic Journals

(1) Williams, J., Bravo HC, Tom J & Paulson JN. *microbiomeDASim*: Simulating longitudinal differential abundance for microbiome data [version 2; peer review: 2 approved]. *F1000Research* 2020, 8:1769.
(2) Williams, J., Kim, H., & Crespi, C. (2019). "Maximum Likelihood Estimation of a Truncated Normal Distribution with Censored Data", *arXiv preprint arXiv:1911.11221*.

(3) Dean, M., Williams, J., Kasari, C., & Orlich, O. (Pre-publish). "Adolescents with autism spectrum disorder and social skills groups at school: A randomized trial comparing intervention environment and peer composition", *School Psychology Review*.
(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
(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

## AWARDS & HONORS

- **Most Outstanding Oral Presentation**

Awarded By: *Western North American Region of the International Biometric Society*
Received: June, 2019

- **Juneal Marie Smith Fellowship in International Nutrition**

Awarded By: *UCLA Fielding School of Public Health*
Received: June, 2019

- **Dissertation Year Fellowship**

Awarded By: *UCLA Graduate Division*
Received: December 2019 – December 2020

- **Graduate Summer Research Mentorship**

Awarded By: *UCLA Graduate Division*
Received: June 2017 – September 2017