

Curriculum Vitae

Immanuel J. Williams Ph.D.

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Education

- Ph.D. Rutgers University, May 2017
Major: Education
Major focus: Psychometrics & Statistics
- M.S. Rutgers University, January 2013
Major: Statistics
Major focus: Psychometrics
- B.S. The University of Maryland, Baltimore County, May 2011
Major: Mathematics
Major focus: Statistics

Teaching experience

- 2018-Present *Lecturer:* California Polytechnic State University
Courses: Statistical Inference for Management I/II
- 2017-2018 *Lecturer:* University California Santa Cruz
Courses: Statistical Methods For The Biological, Environmental, And Health Sciences, Gambling, And Gaming, & The Art of Data Visualization
- 2015-2017 *Lecturer:* California State University Monterey Bay
Courses: Pre-calculus, Calculus II, & Applied Statistics

Publications

- Sisso D., Bass N., **Williams, I. J.**, (Submitted to Journal of Teaching Statistics).
Teaching One-Way ANOVA with Engaging NBA Data and R Shiny within a Flexdashboard
- Weiland T., **Williams, I. J.**, (Submitted to Journal of Statistical and Data Science Education).
Culturally Relevant Data in Teaching of Statistics and Data Science Courses.
- DeLiema D., Flood V. J., Dahn M., **Williams I. J.**, Abrahamson D., Enyedy N., & Steen F.
2022). Debugging Failure: A Multi-dimensional Framework for Documenting Newcomers' Experiences with Obstacles. *Cognition and Instruction*
- Langer-Osuna J. M., Munson J., Gargroetzi E. C., **Williams I. J.**, Chavez R. (2020) So What Are We Working On? Examining Student Authority Relations During Collaborative Mathematics Activity in a Fourth Grade Classroom. *Educational Studies in Mathematics*
- Bathey, D., Leyva L. A., **Williams, I. J.**, Belizario, V., Greco, R., Shah, R. (2019). Racial (Mis)Match in Middle School Mathematics Classrooms: Relational Interactions as a Racialized Mechanism. *Harvard Educational Review*, 89(1)
- Williams, I. J.**, & Williams, K. K. (2018). Using R Shiny to Enhance the Learning Experience of

Confidence Intervals using National Basketball Association (NBA) Data. *Teaching Statistics*.

Williams, I. J., & Culpepper, S., A. (2017). Gain scores, analysis of. In Frey, B.B. (ed). *Encyclopedia of Educational Research, Measurement and Evaluation*. Thousand Oaks, CA: Sage.

Williams, I. J., & Williams, K. K. (2016). Understanding Summary Statistics and Graphical Techniques to compare Michael Jordan versus LeBron James. *Teaching Statistics*.

Presentations

Refereed Conference Presentations:

Millard C., **Williams, I. J.**, (2022, November) Extraction, Transformation, and Visualization: A different take on introducing Exploratory Data Analysis. Poster presented virtually at the annual meeting of the Joint Mathematical Meeting CSU.

Millard C., **Williams, I. J.**, (2022, October) Extraction, Manipulation, and Visualization: A different take on introducing Exploratory Data Analysis Poster presented virtually at the annual meeting of the Electronic Undergraduate Statistics Research Conference. **(Tied 1st Place)**

Sisso D., **Williams, I. J.**, (2021, October) Who is the NBA GOAT (Greatest of All Time)? Using Culturally Relevant Data to Teach ANOVA. Poster presented virtually at the annual meeting of the Electronic Undergraduate Statistics Research Conference.

Williams I. J., Weiland T. (2021, April) Explore Culturally Relevant Data through a Map of Segregation And Redlining. Poster presented virtually at the annual meeting of the United States Conference on Teaching Statistics.

Williams I. J. (2020, May) Personalized Assessment Reports to Inform and Motivate Students within Introductory Statistics Courses using R and Akindi. Poster presented virtually at the annual meeting of the Electronic Conference on Teaching Statistics.

Williams I. J. (2019, November) Plots For Shots: Implementing R Shiny and Culturally Relevant Data in the Classroom to Enhance Student Learning and Engagement. Poster presented at the annual meeting of the Math Alliance, St. Louis, CA.

Langer-Osuna J. M., Munson J., Gargroetzi E. C., Chavez R., **Williams I. J.** (2019, April) Interactional Pathways to Shared Intellectual Authority During Group Work. Poster presented at the annual meeting of the National Council of Teachers of Mathematics, San Diego, CA.

Batthey D., Leyva L., Belizario V., **Williams I. J.**, Greco R., Shah R. (2017, April) Racial Mis-Match: Racialized Effects on Relational Interactions in Mathematics Classrooms. Poster presented at the annual meeting of the National Council of Teachers of Mathematics, San Antonio, TX.

Williams, I. J., Williams K. (2015, May). Michael Jordan's Shoes: Bridging the Gap between Teachers and Urban Students. Poster presented at the biannual meeting of the United States Conference on Teaching Statistics, State College, PA.

Oluwalana, O., **Williams, I. J.**, Chiu, C. (2015, April). Evaluating the use of Factor Analysis in Q-Matrix Estimation. Poster presented at the annual meeting of the National Council of Measurement in Education, Chicago, IL.

Williams, I., Brown, T., Li, S., & Suh, Y. (2014, October). Investigating the impact of speededness on item calibration of a mixed format assessment. Paper presented at the Northeastern Educational Research Association annual meeting, Trumbull, CT.

Williams I. J., Iaconangelo, C., de la Torre, J. (2014, April). Inclusion of Covariates in Higher-Order Attribute Structure. Poster presented at the annual meeting of the National Council of Measurement in Education, Philadelphia, PA.

Williams, I., & Suh, Y. (2014, June). Evaluating the impact of item biasedness in confidence intervals of equated ability estimation. Poster presented at the Conference for African-American Researchers in the Mathematical Sciences (CAARMS 20), Princeton, NJ.

Invited Talks:

Williams I. J. (August 2019) Data Science and The Real World. The talk was given at California State University Monterey Bay Seaside, California.

Williams I. J. (August 2018) Data Science and The Real World. The talk was given at California State University Monterey Bay Seaside, California.

Williams I. J. (August 2017) Data Science and The Real World. The talk was given at California State University Monterey Bay Seaside, California.

Williams I. J. (May 2016) Data Science and The Real World. The talk was given at California State University Monterey Bay Seaside, California.

Williams I. J. (May 2015) Data Science and The Real World. The talk was given at Montclair University Newark, New Jersey.

Williams I. J. (May 2015) Data Science and The Real World. The talk was given at NJ SEEDS Newark, New Jersey.

Williams I. J. (April 2015) Data Science and The Real World. The talk was given at the University of Maryland Baltimore County, Baltimore, Maryland.

Williams I. J. (April 2015) Data Science and The Real World. The talk was given at First Baptist Church of Lincoln Garden (Academic Excellence) Somerset, New Jersey.

Williams I. J. (April 2015) Data Science and The Real World. The talk was given at Rutgers Future Scholars Program in Camden, New Jersey.

Williams I. J. (February 2015) Data Science and The Real World. The talk was given at the Program for Acceleration in Careers of Engineering Brookdale Community College, Lincroft, New Jersey.

Williams I. J. (August 2013). Bring Statistics to the Black and Latino Community. The talk was given at the Joint Statistical Meetings, Montreal, Canada.

Professional Experience

April 2018 – August 2018 *Data Analyst*: Used various database tools to manipulate and recover data, Paul Johnson Ed.D. at the University of Tennessee of Knoxville

June 2015 – August 2015 *Researcher*: Utilized data analysis tools to collect longitudinal data collected on individuals with respect to organizational resilience, Edward Poley Ph.D. at Naval Postgraduate School

June 2014 – August 2014 *Researcher*: Examined the impact of test anxiety on assessments. Terran Brown Ph.D. & Shuhong Li, Ph.D. at Educational Testing Services (ETS)

June 2011 – May 2012 *Researcher*: Implemented statistical and various graphical techniques to verify results. Joanna Burger, Ph.D. at Rutgers University

February 2015 – May 2011 *Researcher*: Implemented Detection method to recognize outliers in longitudinal data, Christopher Motsiopoulos at Social Security Administration

February 2015 – May 2011 *Researcher*: Determined if the amount of energy used in poverty-stricken households in Baltimore, Maryland, would decrease after a new source of energy was supplied, Elizabeth Stanwyck, Ph.D. at University of Maryland Baltimore County

June 2010 – August 2010 *Researcher*: Simulations were run within a complicated transporter model (cellular diffusion) for the purpose of making generalizations and simplifications to the model, James Polli Ph.D.

June 2009 – August 2009 *Researcher*: Utilized difference equations to represent human immunodeficiency virus (HIV) spreads within a poverty-stricken development, Nina Fefferman Ph.D. & Tamra Carpenter, Ph.D. at Rutgers University

January 2009 – May 2010 *Researcher*: A mathematical model was derived and analyzed to represent gangs within a closed area. Jinglai Shen, Ph.D. at the University of Maryland Baltimore County

January 2008 – August 2008 *Researcher*: Implemented differential equations to represent biological mechanisms concerning drug therapy within the human body, Jonathan Bell Ph.D.

Awards & Honors

Post-Doctoral Poster Award	2019
Graduate Assistance in Areas of National Need	2012
National Minority Stem Fellow	2011
MARC*U STAR	2007
Meyerhoff Scholar	2008
McNair Scholar	2008
Donation Anonymous Giver: \$1000K	2022

Service Positions

ETS Rater for AP Exam	2021-
Teaching Statistics Journal Reviewer	2020-
Frost Scholar Mentor	2020-
Black Faculty Staff Association	
2019-	
Co-chair	
Institute for Advanced Technology and Public Policy, Cal Poly	
Faculty Scholar	2019-
College of Science and Mathematics Committee for Inclusion and Equity, Cal Poly	
Member	2018-
GATO365	
Founder and Lead Data Scientist	2017-
Bright Futures Program, CSU Monterey Bay	

Selection Committee, Member for Senior Data Analyst 2016

Program for Acceleration in Careers of Engineering (PACE), Lincroft, New Jersey

Calculus Instructor, Brookdale Community College 2013 - 2015

Computer Science Instructor, Brookdale Community College 2014 - 2015

South Africa Initiative (SAI), Johannesburg, South Africa

Algebra and Geometry Instructor, Teboho Trust 2014