

UNDERSTANDING THE BURDENS OF RACE AT A PREDOMINANTLY  
WHITE UNIVERSITY: THE EXPERIENCES OF UNDERREPRESENTED  
STUDENTS IN AN INTRODUCTORY STATISTICS COURSE

DISSERTATION

Presented in Partial Fulfillment of the Requirements for  
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By

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## ABSTRACT

The researcher sought to understand the experiences of underrepresented students in introductory statistics courses. This research considered the burdens of race and culture from the effects of history, societal perceptions, and inadequate preparation on underrepresented (African American and Latino) students inside the classroom. Finally, the research considered the important influences and predictors of underrepresented students achieving statistics performance.

Using a conceptual framework consisting of Critical Theory, Critical Race Theory, Ogbu's Cultural-ecological theory, and social constructivism, this research used a mixed methodology consisting of a grounded theory approach and exploratory multiple linear regression models. The researcher conducted a comparative qualitative study of five underrepresented and seven represented students in two introductory statistics courses at a predominantly White university. The researcher also conducted a survey of 52 underrepresented and 389 represented students in the courses. Furthermore using an autoethnographic representation, the researcher used his lived experiences considering himself as a participant to provide further insight and richness of the data.

Findings from this research for underrepresented students were (a) The burdens of race from negative societal stereotypes and poor mathematical foundations accentuated by poor graph comprehension and lack of interest in mathematics/statistics that challenge statistics conceptualization, (b) the importance of positive support networks, (c) lack of participation in their statistics course, (d) many come from discouraging backgrounds with a lack of opportunities and resources non-conducive to a learning environment, and (e) the important qualities of effective teachers of underrepresented students. Finally, the data suggested that underrepresented students believed the race and cultural competence of the teacher was important.

Recommendations from this research for underrepresented students suggest (a) teachers stressing studying details to understand statistical concepts, (b) teachers providing interesting examples of which some should include social issues (c) influential people encouraging positive support networks (d) teachers continually practicing their communication skills, (e) universities hiring more underrepresented statistics teachers, and (f) teachers becoming more culturally competent.