Among youth, inadequate cardiorespiratory fitness and physical inactivity are powerful markers of health associated with numerous health outcomes across the lifespan. Unfortunately, a majority of U.S. youth have inadequate cardiorespiratory fitness levels and do not meet physical activity guidelines. While previous research has identified several individual-level factors associated with youth cardiorespiratory fitness and physical activity, environmental factors have been increasingly recognized. Of particular interest is the neighborhood socioeconomic environment, which has been consistently associated with several health outcomes among adults. However, little is known regarding the relationship between the neighborhood socioeconomic environment, cardiorespiratory fitness, and physical activity among younger populations. Hence, the overall purpose of this dissertation was to determine how characteristics of neighborhood socioeconomic environment are associated with cardiorespiratory fitness and physical activity in diverse samples of youth. Three studies were conducted to address this overarching purpose.

In the first study, the relationship between cardiorespiratory fitness and area-level socioeconomic environment was examined. The extent to which sex, grade level,
race/ethnicity, and family socioeconomic status moderated this relationship was also examined. Results indicated that cardiorespiratory fitness was positively associated with area-level socioeconomic environment among school-age youth in South Carolina. More specifically, the odds of achieving the Healthy Fitness Zone for cardiorespiratory fitness decreased by approximately 25-34% with increasing deprivation of the socioeconomic environment, after controlling for covariates. Additionally, the association between cardiorespiratory fitness and area-level socioeconomic environment varied significantly by sex, grade level, and race/ethnicity.

The second study investigated the association between cardiorespiratory fitness and neighborhood socioeconomic environment; and examined the extent to which physical activity mediated this relationship in a nationally representative sample of U.S. youth. The findings from this study indicated that neighborhood socioeconomic environment was not significantly associated with cardiorespiratory fitness or physical activity. While non-significant, cardiorespiratory fitness was observed to decrease as deprivation of neighborhood socioeconomic environment increased. It is plausible that limitations in the study design and/or lack of statistical power may have contributed to the null findings.

The purpose of the third study was to describe the longitudinal association of neighborhood socioeconomic environment with physical activity in youth during the transition from childhood to adolescence, and to determine if access to physical activity facilities moderated this relationship. Findings demonstrated that changes in physical activity from 5th grade to 7th grade were significantly associated with neighborhood socioeconomic environment. Over time, decreases in physical activity varied by degree
of neighborhood socioeconomic deprivation. However, access to physical activity facilities did not moderate this relationship.

In conclusion, the findings of this dissertation suggest that neighborhood socioeconomic environment is associated with cardiorespiratory fitness and physical activity in youth. In general, increased deprivation of the neighborhood socioeconomic environment was associated with lower cardiorespiratory fitness and physical activity levels in youth. However, some inconsistencies were observed across the findings of the three studies. Additional studies are needed to better understand the complex relationships among neighborhood socioeconomic environment, cardiorespiratory fitness, and physical activity in youth.