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CAMPUS RACIAL CLIMATE AND ACADEMIC OUTCOMES: EXAMINING THE  
MODERATING ROLE OF RACIAL IDENTITY FOR AFRICAN AMERICAN COLLEGE  
STUDENTS

by

ALLANA ZUCKERMAN

Under the Direction of Ciara Smalls-Glover, Ph.D.

ABSTRACT

Campus racial climate, including individual perceptions of interracial interactions between students and with faculty (Hurtado, Griffin, Arellano & Cuellar, 2008). African American students often report more discriminatory perceptions of campus racial climate than White, Latino and Asian American students (e.g., Reid & Radhakrishnan, 2003). Campus racial climate has implications for a range of academic outcomes during college (e.g., Fischer, 2010; Torregosa, Ynalvez, & Morin, 2015). Specifically, Black students report experiencing hostile racial climates on their college campuses from both peers and professors and this can influence academic outcomes such as student motivation (e.g., Byrd, 2015), GPA (Torregosa et al., 2015) and whether they graduate on time (Fischer, 2010). While much of the work on campus racial climate has examined racial differences, more work examining within group variation is needed to further explore the role of campus climate on academic outcomes for Black students. The current study seeks to examine whether individual perceptions of campus racial climate in

college impacts academic self-concept and if racial identity moderates this relationship for Black college students. The current study seeks to add to a smaller body of work that has provided an exploration of multiple dimensions of individual perceptions of campus racial climate understanding of students' perception of campus racial climate (e.g., Byrd & Chavous, 2011; Byrd & Chavous, 2012). The sample for the current study was collected as part of a larger longitudinal in the Eastern part of the United States. Inclusion criteria for the current study included 1) identifying as African American/Black (Black for at least one racial group), 2) being a college student 1 year after high school. The final sample for the current included 144 participants, 65% of who identified as female. While campus racial climate was not a significant predictor of academic self-concept, students who attended HBCUs reported higher academic self-concept than students who attended PWIs. Private regard also positively predicted academic self-concept in the current sample. These findings have implications for the positive impact racial identity has on academic outcomes for African American youth. Implications and future directions will be discussed.

**INDEX WORDS:** Campus racial climate, academic self-concept, racial identity, African American

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STUDENTS

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ALLANA ZUCKERMAN

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

in the College of Arts and Sciences

Georgia State University

2019

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Allana June Zuckerman  
2019

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May 2019

## **DEDICATION**

I would like to thank my family and friends who have offered unwavering support. I specifically want to thank my parents (Vikki and Allen) and my wife (Melissa) whose continued support made this work and all future works possible.

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## 1 INTRODUCTION

The National Center for Education Statistics (NCES) (2016) reports an overall increase in the number of students graduating with a bachelor's degree. While there has been a 6% increase in Black students obtaining a bachelor's degree from 1995 to 2015, the gap between White and Black students in the same age range has widened by 9 percent. Authors have posited that one reason for this disparity is the historical legacy of racial discrimination within the education system, which creates specific racial stressors for youth of color (e.g., Condrón & Roscigno, 2003; Lewis & Manno, 2011; Smetana, 2011). One example of this can be found with campus racial climate, defined as individual perceptions of campus diversity and interracial contact among students (Hurtado, Griffin, Arellano & Cuellar, 2008).

Previous research examining racial differences in reports of individual perceptions of campus racial climate has consistently found that African American students often report the most discriminatory perceptions of campus racial climate than White, Latino and Asian American students (e.g., Reid & Radhakrishnan, 2003). Specifically, some Black students report experiencing hostile racial climates on their college campuses from both peers and professors and this can influence student motivation (e.g., Byrd, 2015). Previous work has found negative perceptions of campus racial climate impact academic outcomes for Black students in such as lower intrinsic motivation in high school (e.g., Byrd & Chavous, 2011) and lower GPA and engagement in college (e.g., Torregosa, Ynalvez, & Morin, 2015). Given the impact campus racial climate has on academic outcomes for African American students, the current study sought to examine whether racial identity protects African American student's academic self-concept from poor perceptions of campus racial climate.

## **1.1 Campus Racial Climate: Conceptualization and Measurement**

Campus racial climate is examined here as individual psychological perceptions of interactions between students of multiple racial groups and university wide treatment of Black college students (Hurtado et al., 2008). Previous work has to defined campus racial climate many ways. Examining them within an ecological framework (Bronfenbrenner, 1986), some of this work has included examining institutional policies and racial composition of the school (microsystem level where you examine the spaces within which we have day to day interactions), as well as perceptions of faculty interactions with students of color on campus (individual level where you examine from the perspective of the person).

A review of research reveals that there are a multitude of campus racial climate conceptualizations and measurements. Much of this work has been capturing individual student perceptions of campus racial climate. For example, previous researchers have created their own measures for the study (e.g., Ancis, Sedlacek, & Mohr, 2000; Bottiani et al., 2014; Fischer, 2010) and much of this work includes a single construct seeking to measure student perceptions about treatment of students of color on campus. At least one article used a dichotomous item to measure perceptions of campus racial climate which is further problematic because without a standardized definition of that construct (e.g., Museus et al., 2008), participants could have very different interpretations of the question which would influence their responses and how we would interpret those responses. Previous research has also utilized previously constructed measures (e.g., Tynes, Rose, & Markoe, 2013; Watkins & Aber, 2009) however this may depend on the demographic being targeted since much of this work has also been done in primary and secondary school as well as higher education.

While there are various ecological levels on which you could examine campus racial climate, the current study is focused on individual perceptions of campus racial climate. There are a wide range of ways to measure campus racial climate such as with a single global measure of racial climate or with a single dichotomous variable asking whether racial climate on campus is good or not. However, previous research has indicated that a more than one dimension in a campus racial climate measure provides additional insight into this complex construct. The equal treatment dimension of campus racial climate for the current study is capturing aspects of what Hurtado, Griffin, Arellano, and Cuellar (2008) refers to as the psychological component of campus racial climate. The psychological component includes how much individuals perceive racial discrimination or an overall hostile racial environment on campus. Specifically, the equal treatment dimensions is capturing individual perceptions about behavior and experiences of being a particular racial group on campus. The desire for diversity dimension is capturing the students' individual perceptions regarding the desire both faculty and other students have for interactions between members of different racial groups.

While the psychological dimension is addressed most by many of these campus racial climate measures (Hurtado et al., 2008), much of the work on campus racial climate seeks to understand perceptions of campus racial climate for White students versus students of color; therefore, more non-comparative work is needed to gain a deeper understanding of the experiences and perceptions of African American students and they impact academic outcomes. Additionally, while much of the work on multiple experiences of racism within the school context with African American youth has been in the primary and secondary setting, we know that African American college students also face multiple forms of school-based discrimination. The two main areas of school racial climate that will be focused on for the current study are

individual perceptions about interactions between students of different races and whether they perceived unequal treatment from teachers. Both conceptualizations have been identified by previous researchers as important facets of campus racial climate (e.g., Byrd, 2015; Hurtado et al., 2008). Furthermore, we know even less about potentially culturally relevant factors that buffer the impact of campus racial climate on youth outcomes, like racial identity. As such, the current study seeks to address both gaps by including a multiple dimensions of campus racial climate to examine the role of racial identity on the relationship between campus racial climate and academic outcomes for African American college students. The current study seeks to add to a smaller body of work that has provided more complex understanding of students' perception by including multiple dimensions or indicators of campus racial climate (e.g., Byrd & Chavous, 2011; Byrd & Chavous, 2012).

## **1.2 Campus Racial Climate and the Importance for Black College Students**

Much of the work on campus racial climate has been comparative wherein researchers were interested in racial differences in perceptions on campus racial climate. From this work we have learned that students of color disproportionately experience campus racial climate and racial discrimination in higher percentages than White college students (Biasco, Goodwin & Vitale, 2001, Pieteres et al., 2010). In a comprehensive multi-campus study, even though students of color and White students reported similar frequencies of racial harassment on campus, students of color experienced more racial harassment first-hand than White students and perceived the campus climate as more racially discriminatory (Rankin & Reason, 2005). Moreover, out of four racial groups (White, Asian, Black and Latino), Black college students reported the lowest satisfaction with the campus racial climate at their respective colleges (Museus, Nicholas, & Lambert, 2008).

While previous work has found Black students tend to experience more negative campus racial climate than other racial groups, more work is also needed to unpack the complex experiences of Black students on campus as there is no singular Black student experience. Specifically, previous work with college undergraduates has found that African American youth reported more conflict between racial groups on campus as well as unequal treatment from academic authority figures than their Latino and Asian American counterparts (Ancis et al., 2000; Pieterse, Carter, Evans & Walter, 2010). Experiences of racial discrimination Black college students face in the education system can go unnoticed by non-Black students (Biasco et al., 2001). Furthermore, when measuring general school climate, Black high school students reported fewer positive experiences than their White peers (Bottiani, Bradshaw, & Mendelson, 2014). In terms of within group variation for Black students, previous research examining perceptions of campus racial climate for Black immigrant students found first generation students perceived a more diversity and less than racial discrimination than students with longer time spent in the United States (Griffin et al., 2016). Authors postulate that for first generation Black immigrant students in their sample, ethnicity was more salient than race and that, the longer students are in the United States, the more they begin to contextualize their experiences within the unique historical context of United States racism.

Taken together these findings that demonstrate the negative perceptions of campus racial climate experienced by Black students compared to students of different racial groups (e.g., Ancis et al., 2000) and generational differences in perceptions of campus racial climate for Black immigrant students (Griffin et al., 2016) provide evidence for the complex experiences Black students face in the academic setting. More aptly, there is no monolithic Black experience and therefore more attention to within group variation, and culturally relevant factors that can help

unpack this variation. As such, more work doing an in-depth investigation of how Black college students perceive campus climate and potentially culturally relevant buffers to the negative impact these perceptions can have on academic advancement is needed.

### **1.3 Campus Racial Climate and Academic Self-Concept**

Previous research with nursing students has shown that campus racial climate can influence various aspects of the academic experience for college students including engagement and GPA (Torregosa et al., 2015). Past research examining perceptions of faculty caring, campus racial climate and academic performance found that for students who perceived a more discriminatory campus racial climate, feeling that faculty care and trust them had a stronger positive impact on academic performance (Torregosa et al., 2015). This finding provides insight into the complexity of how campus racial climate impacts academic performance.

Previous work found that when students of color felt they were being evaluated for their performance as representatives of their racial group, this led to lower satisfaction with college which, when combined with negative campus racial climate perception, impacted on-time graduation (Fischer, 2010). This work also found an independent effect of negative campus racial climate in early college on graduating on time with students wherein students with more negative campus racial climate perceptions graduating later than students who had positive campus racial climate perceptions (Fischer, 2010). Furthermore, for Black and Latino college students, satisfaction with campus social life was also impacted by campus racial climate (Fischer, 2010). Moreover, campus racial climate was found as a significant predictor of sense of belonging for women of color in STEM majors (Johnson, 2012). While social life satisfaction and sense of belonging are not currently examined, this is one example of how campus racial climate can affect multiple aspects of the college experience and these experiences do not exist

in a vacuum. Previous research has also found that campus racial climate was related to intrinsic motivation for African American 11<sup>th</sup> graders (Byrd & Chavous, 2011). We also know less about how campus climate impacts college students across time, therefore examining whether campus racial climate in the first year of college impacts academic outcomes later in college will provide additional insight into the impact of campus climate on youth outcomes.

#### **1.4 Academic Self-concept**

Academic self-concept includes specific feelings students have about their academic abilities in school (Cokley, 2000). Academic institutions create environments that communicate messages about who does and does not belong at an institution through policies and seeing how students and professors interact with each other (Oak for adolescents, Hilliard 1991; Noguera 2003). As such, academic institutions tend to communicate to Black students that they do not belong (Hughes, McGill, Ford & Tubbs, 2011; Noguera, 2003). Perceived racism at the academic level, such as treatment of Black students on campus by peers or faculty, leads to negative academic outcomes. For example, as early as 7<sup>th</sup> grade, racism negatively impacts grades and academic self-concept (Wong et al., 2003). This continues through high school where teacher and peer discrimination at school predicts more negative academic expectations for African American youth (Trask-Tate et al., 2014). In college, experiences of institutional racism impacted levels of amotivation wherein Black and Latino college students who reported more institutional racism had higher levels of amotivation (Reynolds, Sneva, & Beehler, 2010). These findings demonstrate the pervasive nature of racism within the academic setting and the negative impact these experiences have on academic outcomes for African American youth.

### **1.5 Racial Identity and Academic Outcomes: A Culturally Relevant Protective Factor**

Racial identity is defined as the extent to which one defines oneself with regards to their racial group membership (Marks, Settles, Cooke, Morgan & Sellers, 2004). One model that assesses multiple dimensions of racial identity is the Multidimensional Model of Racial Identity (MMRI) (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). The MMRI defines racial identity as that part of the person's self-concept that is related to her/his membership within a race. It is concerned with both the significance the individual places on race in defining him or herself and the individual's interpretations of what it means to be Black. Additionally, the MMRI captures stable and fluid dimensions of racial identity, does not place a label of healthy or unhealthy for varying levels of racial identity and assumes that one of the most valid indicators of racial identity is the individuals' perception of what it means to be Black.

The MMRI proposes four dimensions of racial identity in African Americans: Saliency, Centrality, Ideology and Regard. For the purposes of the current study, Centrality and Regard dimensions were examined. Centrality refers to how much an individual believes their race is a key aspect of their self-identity (Sellers et al., 1998). Regard is an individual's personal belief about their own race as well as how others perceive their racial group (Sellers et al., 1998). Regard has a private and a public element. Private Regard is defined as how positively someone feels about their racial group and about being African American (Sellers et al., 1998). Public Regard, on the other hand, is defined as whether an individual believes their racial group is viewed positively by others (Sellers et al, 1998). Public regard refers to how you perceive others view your racial group. For example, for those who report higher levels of public regard, this would reflect a belief that others view African Americans in a positive way. For those who report lower levels of public regard, this would reflect a belief that others view African Americans in a

negative way. Lower public regard has been related to more positive psychological and academic outcomes (e.g., Thomas et al., 2009) suggesting that perceiving that others view their racial group in a more negative way can actually be beneficial.

Previous research has found that racial identity relates to academic outcomes in various ways. For example, in primarily lower income areas, higher GPA is predicted by higher racial pride for African American adolescents however, in primarily higher income areas, lower GPA is predicted by higher racial pride (Byrd & Chavous, 2009). For African American youth in secondary school, ethnic identity one of the strongest predictors of future education orientation (Kerpelman, Eryigit, Stephens, 2008). Witherspoon, Speight and Thomas (1997) found that, for African American high schoolers, racial identity was predictive of GPA. Certain dimensions of racial identity have been shown to positively relate to college adjustment for African American students (Anglin & Wade, 2007). Racial identity has been shown to predict academic efficacy in African American adolescents (Oyserman, Harrison, & Bybee, 2001). Previous research using profile analyses have shown that racial identity profiles have also been shown to be a factor in how African American young adults emotionally respond to discrimination (Jones, Lee, Gaskin, & Neblett, 2014).

Moreover, racial identity has also been shown to be protective against the deleterious impact of racial discrimination on academic outcomes for African American young adults. For example, racial discrimination may have a lower impact on African American youth who have lower public regard (Sellers et al., 2006). Researchers have postulated that racial identity may keep youth from internalizing experiences of discrimination and instead ascribing discrimination experiences to external forces (Seaton, Caldwell, Sellers & Jackson, 2010). A longitudinal analysis of racial discrimination on depressive symptoms for African American college students

found that racial identity moderated this relationship (Hoggard, Byrd & Sellers, 2015). Higher ethnic identity has been shown to buffer the negative impact racism has on career aspirations in African American college students (Tovar-Murray, Jenifer, Andrusyk, D'Angelo & King, 2011). In a longitudinal analysis with students of color, ethnic identity has been shown to moderate the relationship between racial discrimination and well-being (Green, Way & Pahl, 2006). Previous research has found that having a high positive ethnic identity can minimize the impact of racial discrimination on academic outcomes as early as middle school for African American youth (Wong, Eccles, & Sameroff, 2003).

Byrd and Chavous (2011) examined whether school racial climate predicted intrinsic motivation and whether this was moderated by private regard, public regard and centrality for African American 11<sup>th</sup> graders. They found that, for youth in settings where they perceived more positive contact between racial groups, having higher private regard was related to higher intrinsic motivation, whereas for youth in settings where they perceived racial inequality and exclusion, having higher private regard was related to lower intrinsic motivation. The authors postulated that for youth who have higher racial identity, when they are in environments where they perceive negative treatment of their racial group, they may want to disengage with that environment (Byrd & Chavous, 2011). Taken together, these findings illustrate how the school context can be both promotive and inhibitive for African American youth depending on the perceptions of racial attitudes and race relations on campus.

A report including analyses of workshop session notes provides insight into how Black students deal with the challenges they face while in the academic setting (Floyd, 2010). Floyd (2010) concludes that it is paramount we further understand and promote the culturally specific developmental processes which promote overall (including academic) success for Black youth.

Moreover, Awad (2007) found that, in a sample of African American college students, racial identity did not predict grades. However, researchers have postulated that racial identity can influence grades indirectly through academic self-concept, therefore making it all the more important to understand how racial identity influences academic self-concept. Awad (2007) also postulated that the relationship between racial identity and academic outcomes could be influenced by whether the student experiences stereotype threat in their environment – a phenomenon similar to racial discrimination. This provides further evidence for the expected relationship between perceived campus racial climate, racial identity and academic self-concept.

## **1.6 Conceptual Framework**

Based on Allport's (1954) intergroup contact theory, more positive interactions between groups that perceive themselves as different from one another should be related to more positive outcomes. In the current study, the desire for diversity dimension of campus racial climate measures the extent to which individuals perceive that there is a desire for positive intergroup interaction. Taking this theory into consideration, higher desire for diversity could be related to more positive academic outcomes. Specifically, students who perceive that people on campus desire for members of different racial groups to interact and understand each other will have more positive academic outcomes (higher desire for diversity will be related to higher academic self-concept). Allport's (1954) theory also presumes that contact between groups, particularly when they are working towards a common goal and considered equal status, can lead to positive outcomes. The second dimension, equal treatment, assesses individual perceptions that students of different races are treated equally. Based on this theory, students who perceive more equal treatment may also have more positive academic self-concept.

Based on the racial identity-context congruence approach, when there is a connection between the context and the racial identity of those who occupy that context, those who occupy that space should have better outcomes than those who have an identity that is not congruent with the context (Byrd & Chavous, 2012). Specifically, when racial identity and the context are in alignment then this leads to more positive outcomes. This is based on the notion that when how you identify is appreciated and accepted in the context you are occupying, that this leads to better psychological and academic outcomes. In terms of the college setting and campus racial climate, it is proposed in the current study that when racial climate of the campus is reflective of the racial identity of the students that it leads to more positive academic outcomes such as higher academic self-concept and highest level of expected education. This would mean that there is congruence between the racial climate of the college context and the racial identity of the students who attend. Conversely, students who experience a campus racial climate that differs from their racial identity beliefs will have worse academic outcomes such as lower academic self-concept and lower highest level of expected education. This is based on the notion that if the academic context does not align with the racial identity of students who attend, then their academics suffer specifically they have lower academic self-concept and lower expected level of education.

In the current study, lower public regard is expected to be related to higher academic self-concept. Additionally, when a more negative campus climate is reported, low levels of public regard are expected to relate to more positive academic self-concept. This is because if someone perceives that others view their racial group in a negative way, experiencing negative racial climate on campus may confirm their views about how others view their racial group. In

contrast, having a lower public regard would protect against internalizing ~~of a more~~ negative campus racial climate experiences (so they would have a higher academic self-concept).

As an example, previous research has found that for Black Caribbean youth, high racial centrality buffered the relationship between teacher discrimination and GPA while low public regard also buffered this relationship (Thomas et al., 2009). This provides an empirical example for considering the differential direction of public regard than that of private regard or centrality for the current study. Specifically, this provides an example of how high centrality (feeling your race is central to your overall identity) and low public regard (the belief that others view people of your racial group in a negative light) may act similarly with respect to how they buffer the impact of campus racial climate on academic self-concept. Specifically, in the presence of high private regard, campus racial climate will be associated with higher academic self-concept. This would be indicative of a potential congruence between the racial identity of the students (high private regard or positive views about being African American) and the positive experiences with racial climate on campus. This congruence would lead to higher academic self-concept. In the presence of high centrality, campus racial climate will be associated with higher academic self-concept. This is because there would be congruence between the positive experiences of racial climate on campus and having high centrality (or having a strong sense that race is central to your identity as a person).

### ***1.6.1 Research Questions and Hypotheses***

- (1) Does individual campus racial climate in freshman year of college predict academic self-concept in African American college students two years later?
  - a. Specifically, it is expected that higher reports of equal treatment and desire for diversity in the first year of college will predict higher academic self-concept two years later.
- (2) Does racial identity predict academic self-concept in African American college students?
  - a. It is expected that higher private regard, lower public regard and higher centrality will predict higher academic self-concept.
- (3) Does racial identity moderate the relationship between individual perceptions of campus racial climate in college and academic self-concept?
  - a. Private Regard: At high levels of private regard, equal treatment will be associated with higher academic self-concept. At high levels of private regard, desire for diversity will be associated with higher academic self-concept.
  - b. Public Regard: At low levels of public regard, equal treatment will be associated with higher academic self-concept. At low levels of public regard, desire for diversity will be associated with higher academic self-concept.
  - c. Centrality: At high levels of centrality, equal treatment will be associated with higher academic self-concept. At high levels of centrality, desire for diversity will be associated with higher academic self-concept.

## 2 METHODS

### 2.1 Sample and Procedure

#### 2.1.1 *Sample*

The sample for the current study was collected as part of a larger longitudinal study known as the Maryland Adolescent Development in Context Study (MADICS). An overarching purpose of the MADICS data is to explore contextual influences on behavior with a focus on identifying developmental pathways to success. This sample was recruited in an Eastern part of the United States. Over half of the original 1,482 families identified as African American (Eccles, 1997). Data was collected across four waves beginning when youth started middle school in 1991. Inclusion criteria for the current study included 1) identifying as African American/Black (if multiracial, then must identify as African American /Black for at least one racial group), 2) being a college student in Wave 5 (1 year after high school), and 3) being a college student in Wave 6 (3 years after high school).

Based on this inclusion criteria, the final sample is 144 participants. The majority of the sample identified solely as African American/Black (88.2%) while 11.8% of participants identified as multi-racial with African/Black as at least one self-identified racial group. The sample is predominantly female (69.4%). Of the students who reported their college (n=110), 64 students attended an HBCU in their 1<sup>st</sup> year after high school and 46 attended a PWI. Over half of participants came from a household with a total household income (parental income only) of less than \$55,000 a year (51.8%) when they were in 6<sup>th</sup> grade.

#### 2.1.2 *Procedure*

Families from several schools in one county of an Eastern state were recruited in the seventh grade by being sent letters asking for permission for adolescents living in the home if

they would like to participate in the study. The primary and secondary caregiver were also asked if they would like to participate. For the purposes of this study, only the adolescents will be included in the analyses. Participants were asked to complete an in face and a self-report survey. Adolescents who began the study were then asked to continue participating and given appropriate compensation throughout for their participation.

## **2.2 Measures**

### **2.2.1 *Campus racial climate***

Campus racial climate was obtained from wave 5 using two subscales of a larger school climate measure. The dimensions utilized for the current study include individual students' perceptions of equal treatment and desire for diversity. Definitions, scaling, sample items and reliabilities are provided below. The campus racial climate measure was created by the MADICS staff for the purpose of the study (Eccles, 1997).

#### **2.2.1.1 *Equal treatment***

The equal treatment subscale includes 7 items measuring individual students' perception about people of all races being treated equitable at their respective college (1=*Strongly Agree* to 5=*Strongly Disagree*) ( $\alpha = .76$ ). Sample items include "Instructors treat me badly because of my race (R)" and "You have to be a particular race to get any privileges at my college (R)" Higher scores indicated perceptions of equitable treatment of students based on racial group membership on campus.

#### **2.2.1.2 *Desire for diversity***

The desire for diversity subscale includes 8 items measuring the individual students' perception of understanding and knowledge between multiple racial groups on the overall

college campus population (1=*Strongly Agree* to 5=*Strongly Disagree*) ( $\alpha = .82$ ). Sample items include “Instructors at my college like for students of different races to get along (R)” and “Students at my college think it’s good to get to know other students of different races (R).” Higher scores indicated lower beliefs that instructors and students wanted students of different races to interact and get along on campus.

## **2.2.2 *Multidimensional Inventory of Black Identity (MIBI)***

The Multidimensional Inventory of Black Identity (MIBI) (Sellers et al., 1997) was obtained from wave 6 to measure students’ perceptions of their own identity regarding their racial group membership. Two dimensions of the MIBI were utilized for the current study: regard and centrality. Regard includes perceptions about beliefs about your racial group membership and they include two sub-dimensions: private regard and public regard. Definitions, scaling, sample items and reliabilities are provided below.

### **2.2.2.1 *Private regard***

The private regard subscale includes 7 items measuring the extent to which participants feel positively about being African American. (1=*Strongly Agree* to 5=*Strongly Disagree*) ( $\alpha = .67$ ). Sample items include “I feel that Blacks have made major accomplishments and advancements (R)” and “I believe that because I am Black I have many strengths (R).” Higher scores indicate participants feel positively about being Black.

### **2.2.2.2 *Public regard***

The public regard subscale includes 4 items measuring how participants believe others view African Americans (1=*Strongly Agree* to 5=*Strongly Disagree*) ( $\alpha = .74$ ). Sample items include “Overall, Blacks are considered good by others (R)” and “Society views Black people as

an asset. (R)” Higher public regard indicates participants believe others view African American positively. Lower public regard indicates participants believe others view African Americans negatively.

### **2.2.2.3 Centrality**

The centrality subscale includes 3 items measuring how much participants feel being Black is part of their overall sense of identity (1=*Strongly Agree* to 5=*Strongly Disagree*) ( $\alpha = .78$ ). Sample items include “Being Black is an important part of my self-image (R)” and “I have a strong attached to other Black people. (R)” Higher scores indicate participants feel being Black is central to their overall identity.

### **2.2.3 Academic self-concept**

Academic self-concept was obtained from wave 6 using a 6-item measure to assess the extent to which youth believe in their scholastic abilities (1=*Strongly Agree* to 5=*Strongly Disagree*) ( $\alpha = .91$ ). The academic self-concept was created by the MADICS staff for the purpose of the study (Eccles, 1997). Sample items include “I am certain I can master the skills being taught in my college classes.” Every item is reverse scored so higher scores reflect higher academic self-concept.

### **2.2.4 Covariates**

#### **2.2.4.1 Gender**

Gender was obtained from wave 6 where participants were asked to self-report their sex (1=*Male*; 2=*Female*). Previous research has also found gender differences in several of the current study variables. For example, racial centrality is related to academic self-concept for Black women (Cokley & Moore, 2007). Previous research has also found a decrease in the

relationship between academic self-concept and GPA for Black male upperclassmen (Cokley 2002). While no gender differences were found in terms of racial centrality, Cokley (2001) found that racial centrality was positively related to academic self-concept for Black women whereas the inverse was found for Black men. This finding indicates that there could be gender differences in how racial identity impacts academic motivation for Black college students. Moreover, while previous research has found academic self-concept to be related to GPA (e.g., Awad, 2007; Cokley, McClain, Jones & Johnson, 2011), gender differences were also found wherein academic self-concept decreased for Black males while increasing for Black women (Cokley et al., 2011). As such, gender is included as a control variable in the current study control for differences based on gender to further unpack these relationships.

#### ***2.2.4.2 Parental household income***

For the current study, the following measures were used to assess socioeconomic status: parental household income in 6<sup>th</sup> grade (wave 1). *Parental household income* was obtained from parents when participants were in 6<sup>th</sup> grade. Parents were asked to indicate their total income before taxes for that year (1=Between \$10,000 and \$14,999 to 14= <\$75,000).

#### ***2.2.4.3 HBCU and PWI college status***

Colleges students listed they were attending was categorized as either as either a Historically Black College or University (HBCU) or Predominately White Institution (PWI). A list of HBCU colleges was obtained from the US Department of Education (2019) and this list was used to categorize colleges. For any college that was not identified as an HBCU, the school was assessed for whether it was a PWI. Demographics of the campus were examined from the website. An undergraduate student was brought on to help categorize colleges.

## **2.3 Analytic Strategy**

### ***2.3.1 Power analysis for sample size***

GPower 3.1 was used to determine how many participants are needed to obtain a relationship at a power of 0.80 for the hypothesized relationships. At  $p < .05$  with an estimated medium effect size of .15, with a total number of 7 predictors, a total number of 103 participants would be needed. As such, the current sample size was sufficient to obtain necessary statistical power.

#### ***2.3.1.1 Assumption checks***

Regression analyses presume sample normality therefore normality assumptions were checked for the current sample. A normal probability plot and scatterplots were used to assess the regression normality assumptions of linearity, normality, homoscedasticity prior to analyses. Correlations between study variables were conducted to assess multicollinearity.

#### ***2.3.1.2 Missing data***

A missing data analysis was conducted in order to determine whether there was enough missing data to warrant the need for a missing data plan. Little's MCAR test was run to determine if data was missing at random. Results from Little's MCAR test were insignificant so the data were missing completely at random.

#### ***2.3.1.3 Study variable means compared by those lost to attrition***

T-tests were conducted to determine if there were mean differences in main study variables from wave 5 between the sample for the current study and the sample lost to attrition. The mean equal treatment scores did not differ,  $t(232) = .56, p = .58$ . The mean desire for diversity scores did not differ,  $t(228) = -.91, p = .36$ . The mean academic self-concept scores did not differ,  $t(236)$

= -1.77,  $p=.08$ . The mean private regard scores did not differ,  $t(220) = .18, p=.86$ . The mean public regard scores did not differ,  $t(227) = -.09, p=.92$ . The mean centrality scores did not differ,  $t(224) = 1.96, p=.05$ .

Of those lost to attrition ( $N=98$ ), 41 were men and 56 were women. The current sample included 42 men and 99 women demonstrating a more equitable gender distribution when compared to the gender breakdown of Black college students than the gender breakdown of the sample lost to attrition. For example, Black men were not disproportionately represented in the sample lost to attrition when compared to the current sample.

#### ***2.3.1.4 Covariates***

Based on previous research delineated in the introduction, there will be several control variables included in the analyses for the current study. These include gender (wave 6), parental household income (wave 1), and whether the student attends an HBCU or PWI (wave 5). Additional information on covariates can be found above in the measures section.

#### ***2.3.2 Analytic strategy for research question 1***

Research question 1 – does campus racial climate in freshman year of college predict academic outcomes in the third year of college? – was examined using a hierarchical regression. A regression was run to determine if equal treatment and desire for diversity during the first year of college predicts academic self-concept in the third year of college. Covariates listed above were included to control for certain variables based on previous research and current study correlations.

### ***2.3.3 Analytic strategy for research question 2***

Research question 2 – does racial identity (centrality, public regard and private regard) in predict academic outcomes? – was examined using a hierarchical regression. A hierarchical regression was run to determine if racial identity during the first year of college predicts academic self-concept in the third year of college. Covariates listed above were included to control for certain variables based on previous research and current study correlations.

### ***2.3.4 Analytic strategy for research question 3***

Research question 3 – does racial identity moderate the relationship between campus racial climate predict academic outcomes? – was examined using hierarchical regression analyses. The study variables were centered to create an interpretable zero by subtracting the mean of each variable from their scores. Using the centered variables, interaction terms between the two dimensions of campus racial climate and the three dimensions of racial identity were created. The interaction terms then used as predictor variables in a moderation model to determine whether racial identity moderated the relationship between campus racial climate and academic outcomes. For example, in order to test for whether private regard moderates equal treatment, the covariates and equal treatment were added to step 1. Next, private regard was added to step 2. Lastly, an interaction term using their centered variables (equal treatment x private regard) was added to step 3.

## 3 RESULTS

### 3.1 Descriptives

For campus racial climate, participants in the sample, on average, slightly agreed that students of all races are treated equitably on campus ( $M=3.67$ ,  $SD=.59$ ) and that students and instructors on campus wanted people of different races to get along ( $M=3.56$ ,  $SD=.56$ ). In terms of racial identity, participants in the sample felt positively about being Black ( $M=4.54$ ,  $SD=.52$ ) and felt that being Black was central to their overall sense of identity ( $M=4.14$ ,  $SD=.77$ ). On average, students also reported feeling others view African Americans in a negative light ( $M=2.84$ ,  $SD=.64$ ). Overall, participants also reported feeling they had the skills necessary to be successful in academia ( $M=4.18$ ,  $SD=.61$ ). Table 1 include means, standard deviations, and ranges for all study variables.

### 3.2 Correlations

Correlations among study variables and covariates revealed several significant findings. Equal treatment was positively related to desire for diversity ( $r=.48^{**}$ ,  $p<.01$ ). Equal treatment was also positively related to public regard, meaning students who perceived more equal treatment on campus also believed others viewed African Americans in a more positive way ( $r=.17^*$ ,  $p<.05$ ). Private regard was positively related to centrality indicating that the feeling positive about being African American were related to feeling being Black was central to their overall identity ( $r=.58^{**}$ ,  $p<.01$ ). Private regard was positively related to academic self-concept ( $r=.47^{**}$ ,  $p<.01$ ) indicating that feeling positive about being African American was related to more positive academic self-concept. Women reported lower public regard than men in the sample ( $r=.18^*$ ,  $p<.05$ ) demonstrating that Black women believed others viewed African Americans more negatively than Black men in the sample. Students who attended a PWI

reported lower public regard than students who attended an HBCU in the sample ( $r=-.26^{**}$ ,  $p<.01$ ) meaning students who attended PWIs believed others view African Americans more negatively than students who attended HBCUs. Centrality was positively correlated with academic self-concept ( $r=.29^{**}$ ,  $p<.01$ ). Lastly, students who attended PWIs reported lower academic self-concept than students who attended HBCUs ( $r=-.27^*$ ,  $p<.05$ ). Table 2 includes correlations among all study variables.

**Table 1. Means, Standard Deviations and Ranges for Study Variables (N=143)**

Variable	<i>M</i>	<i>SD</i>	Range	
			Potential	Actual
Equal Treatment	3.67	.59	1.00-5.00	1.86 - 5.00
Desire for Diversity	3.56	.56	1.00-5.00	2.25 - 5.00
Private Regard	4.54	.52	1.00-5.00	2.50 - 5.00
Public Regard	2.84	.64	1.00-5.00	1.25 - 4.75
Centrality	4.14	.77	1.00-5.00	1.33 - 5.00
Academic Self-Concept	4.18	.61	1.00-5.00	2.50 - 5.00

**Table 2. Correlations among Study Variables**

Variables	1	2	3	4	5	6	7	8	9
1. Equal Treatment	—	.48**	.12	.17*	-.09	.15	.03	-.18	-.08
2. Desire for Diversity		—	.12	.04	.05	.13	-.12	.17	.06
3. Private Regard			—	.12	.58**	.47**	-.01	-.08	-.08
4. Public Regard				—	.07	.09	-.18*	-.26**	.05
5. Centrality					—	.29**	.09	-.07	.05
6. Academic Self-Concept						—	.09	-.27*	-.17
7. Gender							—	.12	-.13
8. HBCU or PWI								—	-.09
9. Parental Household Income									—

Note: \* $p < .05$ , \*\* $p < .01$

### 3.3 Research Question 1

A hierarchical regression was conducted to determine if campus racial climate during freshman year of college predicted academic self-concept in the third year of college. Covariates (including gender, whether the student attended an HBCU or PWI, and parental household income) were included on step 1. Two dimensions of campus racial climate (equal treatment and desire for diversity) were included on the second step. Findings revealed that the overall model (which explained 10% of the variance in academic self-concept for the current sample) was not significant (Table 3).

**Table 3. Campus Racial Climate Predicting Academic Self-Concept**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.13	.14	.11	
HBCU or PWI	-.38**	.13	-.33	
Parental Household Income	-.02	.02	-.13	
Step 2				
Gender	.12	.14	.10	
HBCU or PWI	-.39	.14	-.33	
Parental Household Income	-.02	.02	-.12	
Equal Treatment	.06	.15	.05	
Desire for Diversity	.16	.14	.14	.03

*Note.* \*\* $p < .01$

### 3.4 Research Question 2

A hierarchical regression was conducted to determine if racial identity predicted academic self-concept in the third year of college. Covariates (including gender, whether the student attended an HBCU or PWI and parental household income) were included on the first step. HBCU or PWI college status predicted academic self-concept wherein those attending an HBCU reported higher academic self-concept in step 1 (Table 4). Three dimensions of racial identity

(private regard, public regard and centrality) were included on the second step. Findings revealed that the overall model was significant,  $F = 6.86, p < .001$ , and the model accounted for 31% of the variance in the overall sample. Once all identity dimensions were included in the model, private regard was the only significant predictor of academic self-concept with higher private regard predicting higher academic self-concept,  $b = .57, p < .001$  (Table 4).

**Table 4. Racial Identity Predicting Academic Self-Concept**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.12	.14	.10	
HBCU or PWI	-.37**	.13	-.32	
Parental Household Income	-.02	.02	-.15	
Step 2				
Gender	.17	.12	.14	
HBCU or PWI	-.29	.11	-.25	
Parental Household Income	-.02	.01	-.12	
Private Regard	.57***	.13	.51	
Public Regard	.01	.09	.01	
Centrality	-.02	.09	-.03	.24***

Note. \*\* $p < .01$ , \*\*\* $p < .001$

### 3.5 Research Question 3

Hierarchical regressions were conducted to determine if racial identity predicted academic self-concept in the third year of college. Covariates (including gender and whether the student attended an HBCU or PWI) and campus racial climate were included on the first step. To examine whether three dimensions of racial identity (private regard, public regard and centrality) moderated the relationship between two dimensions of campus racial climate (desire for diversity and equal treatment) and academic self-concept, 6 hierarchical regressions were run (1 for each interaction term). Due to the number of regressions, and the need to decrease potential type 1 error, a Bonferonni correction was applied (where the number from the alpha used for

experimental comparison (.05) was divided by the number of statistical tests (in this case, 6 hierarchical regressions)) (Cohen, 2008) and the alpha level for research question 3 was then set to  $p < .001$ . For all regressions, first the covariates (gender and HBCU or PWI) and the campus racial climate dimension (equal treatment or desire for diversity) were included in step 1. The racial identity dimension (private regard, public regard or centrality) was included in step 2 and the interaction term (campus racial climate dimension X racial identity dimension) was included in step 3. Findings from all analyses for research question 3 are in table 5 through table 10.

### ***3.5.1 Racial identity moderating desire for diversity and academic self-concept***

The first regression includes covariates (gender and HBCU or PWI), desire for diversity, private regard and the interaction term (desire for diversity X private regard). When desire for diversity and private regard are included in the model in step 2, the overall model was significant,  $F = 11.42$ ,  $p = .000$ , and explained 35% of the variance in academic self-concept (Table 5). Specifically, higher private regard predicted higher academic self-concept  $b = .56$ ,  $p < .001$ . The overall model including the interaction term was not significant. The second regression included covariates (gender and HBCU or PWI), desire for diversity, public regard and the interaction term (desire for diversity X public regard). This model was not significant (Table 6). The third regression included covariates (gender and HBCU or PWI), desire for diversity, centrality and the interaction term (desire for diversity X centrality). This model was not significant (Table 7).

**Table 5. Private Regard as a Moderator of the Relationship between Desire for Diversity and Academic Self-Concept**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.17	.13	.14	
HBCU or PWI	-.36	.13	-.32	
Desire for Diversity	.19	.12	.17	
Step 2				
Gender	.23	.11	.19	
HBCU or PWI	-.28	.11	-.25	
Desire for Diversity	.13	.10	.12	
Private Regard	.56***	.10	.51	.25***
Step 3				
Gender	.23	.11	.19	
HBCU or PWI	-.28	.11	-.25	
Desire for Diversity	.13	.10	.12	
Private Regard	.56***	.10	.51	
Desire for Diversity X Private Regard	.01	.22	.00	.00

*Note.* \*\*\* $p < .001$

**Table 6. Public Regard as a Moderator of the Relationship between Desire for Diversity and Academic Self-Concept**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.18	.13	.15	
HBCU or PWI	-.37	.12	-.33	
Desire for Diversity	.21	.12	.19	
Step 2				
Gender	.19	.13	.16	
HBCU or PWI	-.36	.13	-.31	
Desire for Diversity	.21	.12	.19	
Public Regard	-.06	.10	-.07	.00
Step 3				
Gender	.20	.13	.16	
HBCU or PWI	-.36	.13	-.31	
Desire for Diversity	.21	.12	.19	
Public Regard	-.06	.11	-.06	
Desire for Diversity X Public Regard	.05	.17	.03	.00

*Note.* \*\*\* $p < .001$

**Table 7. Centrality as a Moderator of the Relationship between Desire for Diversity and Academic Self-Concept**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.18	.13	.15	
HBCU or PWI	-.37	.12	-.33	
Desire for Diversity	.21	.12	.19	
Step 2				
Gender	.15	.13	.13	
HBCU or PWI	-.36	.12	-.31	
Desire for Diversity	.20	.11	.19	
Centrality	.18	.08	.24	.06
Step 3				
Gender	.16	.13	.13	
HBCU or PWI	-.37	.12	-.32	
Desire for Diversity	.22	.12	.20	
Centrality	.19	.08	.27	
Desire for Diversity X Centrality	-.19	.16	-.13	.02

Note. \*\*\* $p < .001$

### 3.5.2 Racial identity moderating equal treatment and academic self-concept

The first regression includes covariates (gender and HBCU or PWI), equal treatment, private regard and the interaction term (equal treatment X private regard). When equal treatment and private regard are included in the model in step 2, the overall model was significant and explained 30% of the variance in academic self-concept (Table 8). Specifically, higher private regard predicted higher academic self-concept,  $b = .56$ ,  $p < .001$ . The overall model including the interaction term was not significant.

The second regression included covariates (gender and HBCU or PWI), equal treatment, public regard and the interaction term (equal treatment X public regard). This model was not significant (Table 9). The third regression included covariates (gender and HBCU or PWI), equal

treatment, centrality and the interaction term (equal treatment X centrality). This model was not significant (Table 10).

**Table 8. Private Regard as a Moderator of the Relationship between Equal Treatment and Academic Self-Concept**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.14	.13	.11	
HBCU or PWI	-.27	.13	-.23	
Equal Treatment	.19	.12	.17	
Step 2				
Gender	.19	.12	.16	
HBCU or PWI	-.20	.11	-.18	
Equal Treatment	.17	.11	.15	
Private Regard	.54***	.11	.48	.22***
Step 3				
Gender	.19	.12	.16	
HBCU or PWI	-.20	.11	-.17	
Equal Treatment	.16	.11	.15	
Private Regard	.56***	.11	.50	
Equal Treatment X Private Regard	.26	.25	.09	.01

Note. \*\*\* $p < .001$

**Table 9. Public Regard as a Moderator of the Relationship between Equal Treatment and Academic Self-Concept**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.15	.13	.12	
HBCU or PWI	-.28	.13	-.24	
Equal Treatment	.19	.12	.18	
Step 2				
Gender	.17	.14	.13	
HBCU or PWI	-.27	.13	-.23	
Equal Treatment	.19	.12	.17	
Public Regard	-.04	.11	-.05	.00
Step 3				
Gender	.17	.14	.14	
HBCU or PWI	-.27	.13	-.23	
Equal Treatment	.19	.12	.18	
Public Regard	-.04	.11	-.04	
Equal Treatment X Public Regard	.11	.24	.05	.00

*Note.* \*\*\* $p < .001$

**Table 10. Centrality as a Moderator of the Relationship between Equal Treatment and Academic Self-Concept**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.15	.13	.12	
HBCU or PWI	-.27	.13	-.24	
Equal Treatment	.19	.12	.18	
Step 2				
Gender	.12	.13	.09	
HBCU or PWI	-.25	.12	-.22	
Equal Treatment	.22	.12	.19	
Centrality	.19	.08	.25	.06
Step 3				
Gender	.14	.13	.11	
HBCU or PWI	-.27	.12	-.24	
Equal Treatment	.21	.12	.19	
Centrality	.21	.08	.28	
Equal Treatment X Centrality	-.28	.15	-.19	.03

Note. \*\*\* $p < .001$

### 3.6 Exploratory Analyses

Exploratory analyses were conducted within wave 5 only (the 1<sup>st</sup> year of college) after preliminary associated revealed campus racial climate within wave 5 was related to academic self-concept in the first year of college. Means, standard deviations and ranges for variables in wave 5 included in the exploratory analyses can be found in Table 14.

Correlations revealed several significant findings. Similarities that emerged from correlations among variables in wave 5 include the following: higher reports of campus racial climate with equal treatment were related to higher reports of desire for diversity ( $r = .46^{**}$ ,  $p < .01$ ), higher private regard was related to higher centrality (more central being Black is to overall identity) ( $r = .48^{**}$ ,  $p < .01$ ) and higher private regard was related to higher reports of academic self-concept ( $r = .38^{**}$ ,  $p < .01$ ). Differences that emerged from correlations among

variables in wave 5 include the following: higher reports of equal treatment were related to higher private regard (how positive one feels about being African American) ( $r = -.21^{**}$ ,  $p < .01$ ), equal treatment and desire for diversity were both positively correlated with academic self-concept ( $r = .28^{**}$ ,  $p < .01$  and  $r = .33^{**}$ ,  $p < .01$ , respectively) and centrality was positively correlated with academic self-concept ( $r = .14^*$ ,  $p < .05$ ). Table 15 includes correlations among variables included in the exploratory analyses for within wave 5.

Based on associations between variables from correlations within wave 5, a hierarchical regression was conducted to determine if campus racial climate during freshman year of college predicted academic self-concept in the first year of college. Covariates (including gender and whether the student attended an HBCU or PWI) were included on step 1. Two dimensions of campus racial climate (equal treatment and desire for diversity) were included on the second step, desire for diversity emerged as the sole significant predictor of academic self-concept with higher perceptions of desire for diversity predicting higher academic self-concept in the first year of college (Table 16). Findings revealed that the model was significant,  $F = 7.37$ ,  $p < .001$ , and accounted for 15% of variance in the overall sample.

## 4 DISCUSSION

The current study sought to examine the following: 1) whether campus racial climate in the first year of college predicted academic self-concept in the third year of college, 2) whether racial identity in the first year of college predicted academic self-concept in the third year of college, and 3) whether racial identity moderates the relationship between campus racial climate and academic self-concept.

### 4.1 Campus Racial Climate and Academic Self-Concept

The first hypothesis was not supported by findings from the current study. Neither dimension of campus racial climate in the first year of college— desire for diversity or equal treatment – predicted academic self-concept in the third year of college for the current sample. Previous work found campus racial climate to be a positive predictor of sense of belonging for women of color in STEM majors (Johnson, 2012) and engagement and GPA in nursing students (Torregosa et al., 2015). Given the associations between campus racial climate and academic outcomes for African American students in previous samples, it was expected that there would be a similar relationship for campus racial climate and academic self-concept in the current sample.

One interesting finding that emerged was students who attended HBCUs reported higher academic self-concept than students who attended PWIs. Previous work found that Black men who attended HBCUs reported higher academic self-concept than Black men attending PWIs (Fleming, 1984). While previous work did not find significant differences in African American students attending HBCUs versus PWIs (Cokley, 2000). However, students who attended HBCUs reported an overall more positive experience (such as more positive student-faculty interactions) and postulated that these positive experiences should lead to higher academic self-concept (Cokley, 2000). Cokley (2000) also found that, for students who attended HBCUs,

student-faculty interaction was a stronger predictor of academic self-concept while GPA was a stronger predictor of students attending PWIs. It could be that for students in the current sample there are other factors or experiences at college that are impacting their academic self-concept.

Findings from exploratory analyses conducted solely within the first year of college (wave 5) yielded different results. Specifically, higher perceptions around desire for diversity were related to higher academic self-concept within the same year. This means students who perceive instructors and students want students of different races to get along on campus have higher academic self-concept in the first year of college. It could be that experiences that inform perceptions about campus racial climate are more salient for students within the same year than across time in the current sample. It could also be the case that if students changed schools by the third year then their perceptions may differ from the first year to the third year. Future work should examine if the salience of these perceptions and experiences is a mechanism through which campus climate impacts academic self-concept.

Desire for diversity positively predicted academic self-concept in wave 5, which supports part of Allport's (1954) intergroup contact theory. Specifically, more positive individual perceptions of the desire for people of different racial groups to interact with one another leads to positive outcomes, in this case it leads to higher academic self-concept. Since equal treatment was not significantly related to academic self-concept, the other part of Allport's (1954) theory was not confirmed in the current sample. Specifically, presumed equal status among outgroup members did not impact academic self-concept for the current sample. Future work should examine other potential mechanisms through which individual perceptions of campus racial climate impact academic self-concept. For example, based on previous research (e.g., Cokley, 2000; Fischer, 2010), future work should continue to consider how campus racial climate may

impact academic outcomes through additional variables like overall positive experience and college satisfaction for African American students.

#### **4.2 Racial Identity and Academic Self-Concept**

Based on previous research it was hypothesized that higher private regard, higher centrality and lower public regard would be related to academic self-concept. Private regard positively predicted academic self-concept for which partially supported these hypotheses. However, public regard and centrality did not significantly predict academic self-concept. Findings from exploratory analyses conducted solely within the first year of college (wave 5) yielded similar results. These findings support previous work which has found positive associations between ethnic identity and academic outcomes. For example, ethnic identity has been shown to positively predict future education orientation for African American youth (e.g., Kerpelman et al., 2008). Racial identity has also positively predicted GPA for Black high school students (e.g., Witherspoon et al., 1997) and academic self-efficacy for African American adolescents (e.g., Oyserman et al., 2001). High private regard, high centrality and low public regard were positive correlated with education beliefs for African American youth (Chavous, Bernat, Schmeelk-Cone, Caldwell, Kohn-Wood, & Zimmerman, 2003). Examining various dimensions of racial identity, previous research has shown a consistent positive relationship between racial identity and academic outcomes for African American youth. The current study adds to this literature by demonstrating the positive impact that private regard has on academic self-concept for Black college students.

Given previous research, centrality and public regard were expected to be related to academic self-concept as well. For example, for Black women, racial centrality was shown to positively relate to academic self-concept (Cokley, 2001). For Black Caribbean youth, the impact

of teacher discrimination on GPA was buffered by high centrality and low public regard (Thomas et al., 2009). At the bivariate level, both private regard and centrality were positively correlated with academic self-concept. However, once all dimensions of racial identity were included in the regression model, only private regard was a significant predictor of academic self-concept. It could be that for this sample, feelings about how positively individuals felt about being African American impacted academic self-concept above and beyond centrality and public regard. Previous work has also found relationships between clusters of racial identity and outcomes for African American youth. Specifically, from three out of four racial identity clusters including patterns of three racial identity dimensions (private regard, public regard and centrality), had high private regard. The cluster with the lowest private regard, public regard and centrality scores completed the lowest level of education after high school and had more negative education beliefs (Chavous et al., 2003). Future work should also consider continuing to explore this relationship using patterns of racial identity dimensions to examine how they relate to academic self-concept.

At the bivariate level, correlations among study variables yielded two significant findings with public regard. Black women in the sample reported they believed others viewed African Americans more negatively than Black men in the sample. This relationship between public regard and gender has been found previously (e.g., Oney, Cole & Sellers, 2011). Intersectionality attends to the unique experience of being a Black woman and the intersecting identities of race and gender that are inextricably linked. It is possible that when answering questions about how they believe others view members of their racial group, women in the sample were considering how others view Black women specifically (and for men, Black men specifically).

Correlations between study variables also yielded that students who attended HBCUs reported higher public regard or higher belief that others viewed their racial group positively than students who attended PWIs. This means students who attended HBCUs believed others view African Americans more positively. Previous research found that Black students attending HBCUs report an overall more positive experience than Black students attending PWIs (Cokley, 2000). Being in a space that continually promotes your racial heritage, and where you have positive experiences with members of your own racial group, could contribute to how you positively you believe others view members of your racial group.

#### **4.3 Racial Identity as a Moderator of the Relationship Between Campus Racial Climate and Academic Self-concept**

Additional analyses were conducted to examine if racial identity moderated the relationship between campus racial climate in college and academic self-concept. While campus racial climate was expected to predict academic self-concept, racial identity was expected to strengthen this relationship. For example, higher equal treatment was expected to predict academic self-concept, at higher private regard, this relationship was expected to be stronger. Higher equal treatment was expected to predict academic self-concept, and at higher centrality this relationship was expected to be stronger. Higher equal treatment was expected to predict academic self-concept and at lower public regard this relationship was expected to be stronger. The same relationships were expected for desire for diversity. However, findings from moderation analyses in the current study yielded no significant moderations. Findings from exploratory analyses conducted solely within the first year of college (wave 5) yielded similar results.

The overall sample reported high academic self-concept therefore it may also be that experience or perceptions on campus in the first year of college are not impacting academic ability. Campus racial climate was not a significant predictor of academic self-concept in third year in college but students who attended HBCUs reported higher academic self-concept. Previous research has shown Black students reported more positive experiences at HBCUs than PWIs (Cokley, 2000) which could impact academic self-concept. ~~Future work should examine~~ It is possible that the celebration and integration of cultural heritage into overall campus life and learning may positively benefit academic achievement for students of color on college campuses. For example, for students at HBCUs versus PWIs, student-faculty interaction was a stronger predictor of GPA (e.g., Cokley, 2000). Future work may consider looking at additional variables that can contribute to academic self-concept for Black students such as student-faculty interaction (e.g., Cokley, 2000).

#### **4.4 Limitations and Future Directions**

The current study had several limitations. The sample was obtained from a larger longitudinal study recruiting primarily from the southeast. Future work should consider expanding this to gain a better sense of whether campus racial climate and its impact may differ geographically. Another is the measure of campus racial climate was about all racial groups and not specifically about African Americans. Future work should consider using a campus racial climate measure that is specific to the experience of African American students on campus. Specifically, future work should consider examining campus racial climate qualitatively starting with Black students' discrimination experiences, perceptions of the campus organizational structure and sense of campus belonging.

While no differences were found in campus racial climate between students attending HBCUs versus PWIs in the current sample, future work should also consider how campus racial climate may differ by campus. Specifically, future work should also consider confirmatory factor analyses to examine the construction of campus racial climate measures normed with students in PWIs versus HBCUs. Campus racial climate measure questions about relationships between students, especially how faculty and students are treating each other on campus, would differ from given the racial composition of the student body and the faculty. It could be there are questions that are applicable to students experiences at PWIs that would not be applicable to students experiences at HBCUs. Ultimately, HBCUs aim at providing a safe and constructive academic space for Blacks students therefore assessing the campus climate regarding interactions between students of different races and students and faculty would differ. This may also be a limitation since over half of the sample attended an HBCU. Lastly, future work should look at additional factors that contribute to campus racial climate on additional ecological levels such campus racial composition, institutional policies that may shape campus racial climate perceptions or examining these factors over time (chronosystem examining changes over time).

#### **4.5 Implications and Conclusions**

Findings from this study have implications for research and practice as well. While campus racial climate in the first year of college was not related to academic self-concept in the third year of college, there was a relationship between desire for diversity and academic self-concept in the first year of college. By examining multiple dimensions of campus racial climate, this work contributes to the school racial climate literature by providing examining multiple dimensions of campus racial climate to allow for a nuanced understanding of how perceptions about racial climate can impact Black students. In the current study, racial identity in the first

year of college was related to academic self-concept later in college. Specifically, private regard in the first year was related to higher academic self-concept later in college. Given the positive impact high private regard has on academic self-concept for students in the current sample, it would benefit African American students for institutions to invest in spaces and experiences that foster positive feelings about one's racial group. Lastly, this work also contributes to the literature on academic outcomes by examining potentially culturally relevant protective factors, such as racial identity, that can contribute to positive self-perceptions about academics.

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## APPENDICES

## Appendix A: Tables with Measures including Items and Reliabilities

Table 11. Campus Racial Climate Measure Items and Reliabilities

Measure	$\alpha$	Items	$\alpha$ if item deleted
Equal Treatment Wave 5	.76	All students at my college are treatment equally.	.76
		I don't know of any race that gets special treatment at my college. (R)	.75
		The administration treats students of all races at my college fairly. (R)	.71
		Instructors treat me badly because of my race.	.72
		Instructors at my college pay attention to both Black and White students. (R)	.74
		Each student at my college has an equal chance to get into the most important school organizations. (R)	.74
		You have to be a particular race to get any privileges at my college.	.70
Desire for Diversity Wave 5	.82	The university administration at my college encourages students to make friends with students of different races. (R)	.81
		Instructors at my college like for students of different races to get along. (R)	.78
		Instructors at my college like for students of different races to understand each other. (R)	.78
		Black and White students at my college need each other. (R)	.84
		Instructors at my college think students ought to get along with both Blacks and Whites. (R)	.77
		After Blacks and Whites at my college get to know each other, they find they have a lot in common. (R)	.80
		Students at my college think it's good to get to know other students of different races. (R)	.80
Blacks and Whites at my college have important things to offer each other. (R)	.78		

Note: All scales were as follows: (1=Strongly Agree to 5=Strongly Disagree).

**Table 12. Racial Identity Measure Items and Reliabilities**

Measure	$\alpha$	Items	$\alpha$ if item deleted
Private Regard	.67	I feel that Blacks have made major accomplishments and advancements. (R)	.72
Wave 6		I feel good about Black people. (R)	.59
		I often regret that I am Black.	.54
		I am happy that I am Black. (R)	.54
Public Regard	.74	In general, others respect Black people. (R)	.72
Wave 6		In general, other groups view Blacks in a positive manner. (R)	.66
		Overall, Blacks are considered good by others. (R)	.64
		Society views Black people as an asset. (R)	.71
Centrality	.78	Being Black is an important part of my self-image. (R)	.53
Wave 6		Being Black is an important reflection of who I am. (R)	.58
		I have a strong attachment to other Black people. (R)	.94

*Note:* All scales were as follows: (1=*Strongly Agree* to 5=*Strongly Disagree*).

**Table 13. Academic Self-Concept Measure Items and Reliabilities**

Measure	$\alpha$	Items	$\alpha$ if item deleted
Academic Self- Concept Wave 6	.91	My professors think I am a good student. (R)	.92
		I expect to do well in my college classes. (R)	.90
		I believe I will receive excellent grades in my classes. (R)	.88
		I am confident that I can do an excellent job on the assignments and tests in my courses. (R)	.87
		I am certain I can master the skills being taught in my college classes. (R)	.88
		Considering the difficulty of my courses, the teacher, and my skills, I think I will do well in my college courses. (R)	.88

*Note:* All scales were as follows: (1=*Strongly Agree* to 5=*Strongly Disagree*).

**Appendix B: Exploratory Analysis Tables**

**Table 14. Means, Standard Deviations and Ranges for Exploratory Analysis (Wave 5 Only) (N=243)**

Variable	<i>M</i>	<i>SD</i>	Range	
			Potential	Actual
Equal Treatment	3.68	.61	1.00-5.00	1.57 - 5.00
Desire for Diversity	3.54	.56	1.00-5.00	2.00 - 5.00
Private Regard	3.04	.34	1.00-5.00	1.67 - 5.00
Public Regard	3.27	.99	1.00-5.00	1.00 - 5.00
Centrality	4.12	.79	1.00-5.00	1.00 - 5.00
Academic Self-Concept	4.08	.65	1.00-5.00	2.00 - 5.00

**Table 15. Correlations among Wave 5 Variables for Exploratory Analyses**

Variables	1	2	3	4	5	6	7	8
1. Equal Treatment	—	.46**	.21**	-.08	-.02	.28**	.02	-.15
2. Desire for Diversity		—	.12	-.11	.06	.33**	-.08	.16
3. Private Regard			—	-.01	.48**	.38**	.07	-.03
4. Public Regard				—	.01	.02	.04	.12
5. Centrality					—	.14*	-.05	-.16
6. Academic Self-Concept						—	.05	-.11
7. Gender							—	.03
8. HBCU or PWI								—

Note: \* $p < .05$ , \*\* $p < .01$

**Table 16. Campus racial climate predicting academic self-concept (Wave 5 Only)**

Predictor	B	SE	$\beta$	$\Delta R^2$
Step 1				
Gender	.01	.05	.03	
HBCU or PWI	-.16	.11	-.12	
Step 2				
Gender	.03	.05	.04	
HBCU or PWI	-.22	.11	-.16	
Equal Treatment	.12	.11	.11	
Desire for Diversity	.42**	.11	.34	.16***

*Note.* \*\* $p < .01$ , \*\*\* $p < .01$