

Spring 6-9-2023

## Campus Racial Climate and Mentoring: Impact on Academic and School Experience Outcomes

Safa Asad  
DePaul University, [sasad@depaul.edu](mailto:sasad@depaul.edu)

Follow this and additional works at: [https://via.library.depaul.edu/csh\\_etd](https://via.library.depaul.edu/csh_etd)



Part of the [Psychology Commons](#)

---

### Recommended Citation

Asad, Safa, "Campus Racial Climate and Mentoring: Impact on Academic and School Experience Outcomes" (2023). *College of Science and Health Theses and Dissertations*. 479.  
[https://via.library.depaul.edu/csh\\_etd/479](https://via.library.depaul.edu/csh_etd/479)

This Thesis is brought to you for free and open access by the College of Science and Health at Digital Commons@DePaul. It has been accepted for inclusion in College of Science and Health Theses and Dissertations by an authorized administrator of Digital Commons@DePaul. For more information, please contact [digitalservices@depaul.edu](mailto:digitalservices@depaul.edu).

**Campus Racial Climate and Mentoring: Impact on Academic and School Experience**

**Outcomes**

A Thesis

Presented in

Partial Fulfillment of the

Requirement for the Degree of

Masters of Arts

By

Safa S. Asad

May 9, 2023

Department of Psychology

College of Science and Health

DePaul University

Chicago, Illinois

**Thesis Committee**

Susan D. McMahon, Ph.D., Chairperson

Christine Reyna, Ph.D.

Luciano Berardi, Ph.D.

**Acknowledgments**

This thesis would not be possible without the unrelenting support of my mentors. I would like to express gratitude to my thesis chairperson, Dr. Susan McMahon for their feedback and expertise provided throughout this project and my reader Dr. Christine Reyna for their guidance and constant encouragement. I am grateful for Dr. Luciano Berardi's initial assistance to this project and access to their data. I would like to thank my peer mentors for all their support over the last three years. Finally, I owe extensive gratitude to God, my parents, sisters, and best friends, without whom I would not be here today. Their belief in me and motivation has made the successful completion of this project possible.

**Biography**

Safa S. Asad was born in Chicago, Illinois on January 22, 1993. She graduated from Lane Tech High School in Chicago Illinois. She received a Bachelor of Arts degree in Psychology from the University of Illinois at Chicago. She is currently pursuing a Doctor of Philosophy degree in Community Psychology at DePaul University.

Table of Contents

Thesis Committee.....ii

Acknowledgements.....iii

Biography.....iv

Abstract.....vi

Introduction.....1

    Risk and Resilience Theory.....3

    Campus Racial Climate.....5

    Impact on Students’ College Experiences.....6

    The Role of Mentoring.....9

    Rationale .....12

    Statement of Hypotheses .....13

Method.....18

    Recruitment.....18

    Participants .....19

    Procedure.....20

    Measures.....20

Results.....22

Discussion.....34

Limitations .....47

Conclusion .....48

References .....50

Appendices.....63

    Appendix A. Racial Climate Measure .....63

    Appendix B. Sense of Belonging Measure.....64

    Appendix C. National Survey of Student Engagement Measure.....66

    Appendix D. Mentor Identification Measure.....67

### Abstract

The current negative sociopolitical climate has impacted students on college campuses throughout the nation. Literature suggests campus racial climate is a risk factor for negative student outcomes. Using resiliency theory and the protective resilience model, this study examines the effects of campus racial climate and mentoring on school experiences and academic outcomes in 247 college freshmen. This study utilizes linear regression to examine the relationship between racial climate perception and mentoring on student outcomes (e.g., *sense of belonging, school engagement, and grade point average at graduation*) and uses moderated linear regression to determine if the presence of a new mentor moderates the relationship between first year negative racial climate perception and student outcomes. Findings from this study suggest a negative racial climate perception in the first year is associated with lower belonging, higher engagement, and lower GPA during the first year. Longitudinal assessment revealed first year negative racial climate perception predicted GPA at graduation. The presence of a new on-campus mentor during one's first year of college was positively associated with higher belonging and engagement in the first year but did not have any significant association with GPA in year one or at graduation. A new mentor in the first year did not emerge as a moderator for negative racial climate in the first year for student outcomes in the third year or graduation. The importance of racial climate perception during the transition year and its impact on graduation GPA as well as the role of mentoring support are discussed alongside implications for research, practice and policy.

## Introduction

The sociopolitical climate in the United States over the last 5 years can be described as hostile, particularly for people of color. The impact of two contentious general elections, heightened racist rhetoric, and increased national focus on police brutality have reverberated throughout college campuses. A Harris Poll conducted in 2015 and 2017 found that students of color, in comparison to White students, in their first year, were less likely to rate their university campus climate as “excellent” or “good” (students of color: 61%, White students: 79%). The same poll found that students of color reported feeling isolated on campus at a higher rate (46% to 30%) and were less likely to report an inclusive campus (28% to 45%) than White students (Equity in Mental Health Framework, 2017). The feeling of an unwelcoming campus climate may be in part due to campus hate crimes, of which, race served as the motivating bias in 45% of cases (National Center for Education Statistics 2022).

The Southern Poverty Law Center (SPLC), which tracks hate crimes throughout the nation, reported an increase in hate groups in 2016 (Potok, 2017); over 1,000 hate crimes were reported on college campuses that year (National Center for Education Statistics, 2022). During the week of the 2016 election, over 200 incidents of harassment and intimidation were reported on college campuses, with the nature of anti-Black, immigrant, and Muslim, being the most common (SPLC, 2016). Vandalism reported on campuses included swastikas and flyers with anti-Semitic language (Hui & Svlurga, 2016; Perry, 2015). College campuses have also seen student-led protests surrounding guest speakership of controversial right-wing figures which has dominated the news cycle. Despite student walkouts and protests, the 2017 “Unite the Right” rally was hosted by white nationalists on UVA’s campus, quickly turning violent and leaving one dead (Lithwick & Stern, 2017).



Black students attending predominantly white institutions commonly experienced racism and inequality on their college campuses (Chavous & Leath, 2017). Deferred Action for Childhood Arrivals, also known as DACA recipients or “Dreamers” and undocumented students, have experienced anti-immigrant rhetoric and have seen hate speech become “normalized” on their campuses; these experiences have hindered their ability to participate in the classroom (Munoz et al., 2018). The rise in hostile campus climate and hate crimes has prompted student-led protests, civic engagement, and social action on college campuses (Chavous & Leath, 2017). A survey of university presidents found that addressing racial climate on campus was a top priority for these leaders, in large part due to the rise in social movements and calls for actions from their students (American Council of Education, 2016).

Universities need to address the racial climate on their campuses, as research has shown that negative racial experiences have served as a risk to students (Wong et al., 2003). Wong and colleagues’ (2003) study on middle school students found that ethnic discrimination experienced from teachers and classmates predicted lower grades, academic self-concept (e.g., academic ability) and academic values (e.g., motivation), suggesting that negative racial experiences may impact students as they progress through school.

The present study builds upon these and other published findings on racial climate, student outcomes and the effects of having a mentor in the first year of college. This study examined the role of racial climate on college campuses as a risk factor for negative student school experiences and academic outcomes. Using risk and resilience theory and the protective factor model, the study explored how students’ adoption of a resilience practice, such as obtaining a new mentor in the first year of college, may attenuate the risk presented by a negative

racial experience on academic outcomes. The findings inform recommendations for research, policy, and practice.

### **Risk and Resilience Theory**

Resilience is one's ability to overcome a negative outcome in the presence of risk (Woodland, 2016). Resilience is described as a “strengths-based approach” that “enhances” promotive factors (Zimmerman et al., 2013); it serves to either produce a positive outcome or weaken or eliminate a negative outcome (Fergus & Zimmerman, 2005). Three key components that make up the resilience theory model are: risks, outcomes, and promotive factors that enhance resilience. The first component is the presence of a “risk”. Risk factors bring exposure to and increase the chance of negative outcomes (Hurd & Zimmerman, 2010). This study examines negative racial climate perception as a risk factor. Negative outcomes in this study are described as students' school experiences and academic outcomes, specifically, lower sense of belonging and student engagement, and lower grade point average (GPA) at time of graduation.

Promotive factors make up the third component of the resiliency theory. In Zimmerman and colleagues' (2013) model, protective factors are substituted for promotive factors, as protective factors moderate or buffer risk rather than compensate or negate risk factors (Hurd & Zimmerman, 2010; Zimmerman et al., 2013). This protective model utilizes assets or resources to moderate negative outcomes (Zimmerman et al., 2013). Assets are described as factors that individuals possess [e.g., coping, self-efficacy, identity (racial, cultural, and ethnic); Hurd & Zimmerman, 2010; Zimmerman et al, 2013]. Previous research has examined the relationships between racial discrimination (a contributor to one's racial climate experience) student outcomes and one's assets as a protective factor. In Leath and colleagues' (2019) study examining racial identity, discrimination, and academic engagement outcomes in black adolescents, they found

that gender and racial identity served as protective factors that moderated the relationship between the risk of racial discrimination and academic outcomes. Similarly, ethnic identity in Mexican-origin adolescents served as a protective factor that buffered the relationship between discrimination and school behavior (Umana-Taylor et al., 2011). Alongside published research on the protective role of assets on negative racial experiences and student related outcomes, scholars have also examined how an individual's resources may serve as protective factors.

Resources are external environmental factors, such as familial/parental support or mentor support (Fergus & Zimmerman 2005; Woodland, 2016; Zimmerman et al., 2013). Research suggests natural mentors for young mothers have helped these at-risk youths' mental health in the long term, serving in a protective factor role (Hurd & Zimmerman, 2010). Studies have examined the moderating effects of mentor presence for negative influence of friends on school-related outcomes (Zimmerman et al., 2013) and the protective impact mentors can have on long-term educational attainment by strengthening one's "private regard" (positive or negative feelings towards oneself; Hurd et al., 2012).

Hurd and Zimmerman (2010) theorized that mentors can help build resilience through various types of support (social, physical, emotional). Through this support, mentors have promoted resilience in at-risk youth when faced with adversity, such as differential treatment (Brittian & Gray, 2014) and racial discrimination (Cooper et al., 2013). In the college setting, Hurtado and Ponjuan (2005) found that students who had support networks had higher sense of belonging and confidence that helped them negate adverse effects of "marginality".

Using resilience theory and protective resilience model (Fergus and Zimmerman, 2005), this study examined the relationship between campus racial climate during students' first year of college and their school experiences and academic outcomes. A new mentor relationship

acquired during their first year of college was explored as a possible protective factor -a moderator- for this relationship.

### **Campus Racial Climate**

Campus racial climate perception has been described as an individual's observations of their "campus environment with regard to race" (Museus et al., 2008, Reid & Radhakrishnan, 2003). Students' perceptions can be formed from their personal experiences with their minority status which may include racism, perceived discrimination, prejudice, behavior experienced from classmates and/or instructors, and lack of support from their university (Reid & Radhakrishnan, 2003). Research has shown that negative racial experiences in the school setting can act as a stressor, putting one at risk for negative outcomes (Cabrera et al., 1999; Lee, 2005; Wong et al., 2003). In the context of this paper, negative outcomes will focus on college student's school experiences (sense of belonging, engagement) and academic achievement (GPA at time of graduation).

Empirical research suggests negative racial climate impacts students nationwide on college campuses. Students of all races have reported a negative racial climate (Cabrera & Amaury, 1996; Fischer, 2010), though African American students were more likely to report a negative racial climate than any other race (Cabrera, 1999; Fischer, 2010; Reid & Radhakrishnan, 2003). Negative racial climate perception has served as a risk factor and predicted lower sense of belonging (Hurtado & Carter, 1997), lower satisfaction with college and lower academic performance (Cabrera, 1999), lower commitment to a student's institution (Cabrera & Amaury, 1996; Museus, et al., 2008; Zea et al., 1997) and lower likelihood of timely graduation (Fischer, 2010).

Though negative racial climate has impacted a variety of academic outcomes, this study will focused on three key student outcomes. Two of these outcomes focus on students' college experience - sense of belonging and student engagement. Research suggests sense of belonging can be related to self-confidence as well as morale and persistence among students (Butler-Barnes et al., 2018; Hurtado & Ponjuan, 2005; Johnson, 2012). Butler-Barnes and colleagues (2018) theorized that African American girls who had a strong sense of belonging may be more engaged in the classroom. Both sense of belonging and engagement have shown to impact student's behavior, mental health, and academic performance. The additional outcome focusses on students' academic outcomes - GPA at graduation - which is a long-term outcome that research suggest can be negatively impacted by students who experience a negative racial climate. In their critique of the current research on campus racial climate and student outcomes, Lascher and Offenstein (2012) suggest that most of the published research focuses on either one minority group or only minority groups. They recommend future research examine the relationship between racial climate perception across all groups; this study will examine the relationship, with a diverse student population, including White and non-White students.

### **Impact of Racial Climate on Students' College Experiences**

**Sense of Belonging.** Sense of belonging is one's belief that they are accepted and feel included in an environment. In the school setting, when students feel as if they belong, they feel accepted, valued, important and encouraged by teachers and peers (Knekta & McCartney, 2018). Higher sense of belonging has shown to "encourage academic persistence" and promote resilience in African American adolescent girls who face adversity (Butler-Barnes et al., 2018). Research has also shown that sense of belonging may emerge as a protective factor for racial discrimination and academic attitudes amongst Black youth (Morris et al., 2020). Morris and

colleagues (2020) found that higher sense of belonging buffered the effects of experiencing discrimination on academic efficacy in predominately White schools. Studies have suggested negative racial climate is associated with a sense of belonging for all students (Berryhill & Bee, 2007; Johnson, 2007; Locks et al., 2008). Research has found those who perceive racial tension, "negative climate for diversity" (Hurtado & Ponjuan, 2005), and negative racial climate, reported lower sense of belonging (Locks et al., 2008; Wells & Horn, 2015). Cabrera and colleagues (1999) theorized that lower sense of belonging, due to experiences of prejudice and discrimination experienced by African American students, may lead to a decrease in their academic performance. Hurtado and Carter (1997) found that Latina/o student's racial climate perception during their transition year had a negative impact on their sense of belonging during their third year; this study highlights the direct and longitudinal effects of negative racial climate on students. When racial climate perception is positive high overall sense of belonging was reported for diverse women in STEM (Johnson, 2012).

Despite the importance of racial climate, there are few studies that examine its impact on sense of belonging, which research has shown can also serve as a protective factor and impact student outcomes. This study examined the relationship between racial climate and belonging amongst a diverse sample of freshman college students.

**School Engagement.** Student engagement can be defined as a strong relationship between a student and their classmates, teachers, and schools (National Center on Safe Supporting Learning Environments, n.d). Engagement can encompass three different dimensions which include behavioral (e.g., attendance, assignment completion, participation), emotional (interest in school), and cognitive engagement (e.g., effort, academic self-concept) (National Center on Safe Supporting Learning Environments, n.d). Research has looked at

student engagement and its relationship with school racial climate. Studies have found that African American students who experienced negative racial climate at school also reported lower effort and engagement in school (Cooper et al., 2013; Golden et al., 2018). Mattison and Aber (2007) found that students who experienced a climate of racial fairness in their schools were more likely to have increased student engagement and perception of a positive racial climate can serve as a protective factor for disengagement. Brittian and Gray (2014) reported differential treatment experienced by African American students as “a form of perceived discrimination” and risk factor for academic outcomes; these students reported lower academic self-concept. Adjustment was also negatively associated with a negative racial climate (Cabrera, 1996; Cooper et al., 2013; Hurtado et al., 1996). In sum, there is some research that suggests perceived racial climate impacts both sense of belonging and school engagement. It is also important to examine perceived racial climate in relation to academic outcomes.

**Academic Outcomes.** Academic outcomes can range from grade performance, course completion and graduation. Studies have shown that negative racial climate experienced by students can impact these outcomes. In the high school setting, racial fairness and school racial climate was associated with higher grades for students (Mattison & Arber, 2007). In the college setting, a random coefficient model found that negative racial climate predicted lower grades and was key in discrepancies in GPA between races (Martin et al., 2017). Further, African American students who reported negative racial experiences were more likely to drop a class and consider leaving the university (Solorzano et al., 2000). In support of these findings, Mills (2021) found that African American college students who reported positive campus climate may have had less intention to leave their institution, thus demonstrating academic resilience. Further, Museus and colleagues (2008) found that perceptions of racial climate impacts students’ persistence and

eventual degree completion. This may explain lower graduation rates among students who report a negative racial climate (Brown et al., 2005).

Understanding the effects of racial climate on students' college experiences and academic outcomes can help identify potential protective factors that can moderate risk of a negative racial climate. Previous research has suggested that mentoring relationships can serve as protective factors and have the potential to attenuate the risk of racial climate on academic outcomes. The following section will explain the role of mentoring in this study.

### **The Role of Mentoring**

Mentoring has been described as a relationship where an inexperienced person (mentee) seeks advice, guidance, and knowledge from a more experienced person (a mentor) (Dahlberg & Byars-Winston, 2019). Successful mentoring relationships are developed through trust, empathy, and mutuality, that is, the relationship between mentee and mentor is mutually beneficial to both (Rhodes & Dubois, 2008). Mentors should be effective communicators, good listeners, and advocates for their mentees (Inzer & Crawford, 2005). Mentors can range from parental figures, friends, community members, teachers, and assigned mentors through programs or schools (e.g., counselors, peer mentors, faculty advisors). In the academic setting, mentors can facilitate student development through positive feedback (Grossman & Rhodes, 2002), guidance (Campbell & Campbell, 1997) and foster positive academic outcomes (Rhodes et al., 2000).

In general, the two types of mentors that exist are formal and natural mentors. Formal mentoring is structured (MENTOR, 2006), mentors and mentees can be assigned to work with one another, and often, they have set standards of how mentoring should take place, frequency of mentor-mentee meeting, and type of interaction they have (e.g., scheduled check-ins with counselors/advisors, mandatory meetings with mentors through program participation). Natural



mentoring relationships (NMR) are the “natural coming together” of a mentor and a mentee (Inzer & Crawford, 2005). This relationship is formed organically in that they are not structured, and mentees determine their level of engagement (Deutsch et al., 2020). Mentors in NMR’s can be non-parental adults, community members, extended family, friends (Hurd and Zimmerman, 2010), peers, and other experienced, supportive individuals selected by mentees due to a closeness in their relationship, feelings of respect and admiration (Inzer & Crawford, 2005).

Studies on the impact of mentoring relationships in academic settings are abundant (Law et al., 2020; Crisp & Cruz, 2009; Jacobi, 1999). Research suggests, programmed mentoring has positively impacted mentee's confidence, which has led to an increase in skills proving beneficial for college students during their first year (Hurtado & Ponjuan, 2005). Natural mentoring relationships aid in students' identity development as well as contribute to students' belief in the importance of doing well in school (Hurd et al., 2021; Rhodes & Dubois, 2008). NMR’s also provide valuable institutional knowledge to students such as resources, academic guidance and access to mental health counseling (Hurd et al., 2016).

Alongside positive developmental outcomes, mentoring can have a significant impact on students' academic performance. Research on programmed mentoring relationships during one's first year of college has found that these relationships helped produce positive academic outcomes such as increased sense of belonging (Hurtado & Carter, 1997), higher GPA (Campbell & Campbell, 1997; Folger et al, 2004), more passed courses and completed units (Campbell & Campbell, 1997; Leidenfrost et al., 2014), and lower dropout rates (Campbell & Campbell, 1997; Folger et al., 2004). Natural mentoring relationships during one's first year had a similar impact. Those with NMRs reported higher levels of adjustment, which can impact students' comfortability in a new environment (Hurtado et al., 1996) and increase sense of

belonging (Hurtado & Carter, 1997). For African American students, peer support served as a protective factor between differential treatment and academic self-concept (Brittian and Gray, 2014). Formal and natural mentoring have shown direct impact on student outcomes. These supports may be instrumental in helping students when faced with adversity.

First year college students may be overwhelmed by entering a new school setting, where they are presented with more responsibility, have greater academic demands, lower levels of academic structure when compared to their high school career, and are expected to integrate into a new social environment (Crede & Niehorster, 2012). A policy report by the ACT (American College Testing) found that students who struggle with this transition may do so due to both academic and non-academic factors, which may influence student retention in college (Lotkowski et al., 2004). The non-academic factors include the failure to develop “adequate academic self-confidence”, social integration on campus, and social support (Lotkowski et al., 2004). Acquisition of new mentors in the first year may help to avoid these outcomes.

A study by Hagler and colleagues (2021) found that newly acquired mentoring relationships in the first year was positively associated with school membership (perceived belonging and acceptance at school). Most of these mentors were affiliated with the university; positive interactions and support from these persons may have fostered a sense of belonging on campus as these mentors were also a part of the same environment (Hagler et al., 2021). Freshman with peer mentors were more likely to report more integration in the university when compared to non-mentored students (Yomtov, al., 2017). When asked what benefits their peer mentors had, these students identified general assistance, emotional support, encouragement, help with personal issues, transitioning and adjusting to college and found that their mentors were relatable as they were students themselves (Yomtov, 2017). Additionally, students with

mentors in the first year had higher retention rates and grade point averages when compared to non-mentored students (Salinitri, 2005). These mentored students reported that their mentors helped in their skill development, provided resources, and offered strategies for academic improvement; those who “appeared” adjusted reported developing a friendship with their mentor (Salinitri, 2005). This research suggests mentors have dynamic skills that may aid in the adjustment of college students, especially in the first year.

Though new mentoring relationships in the first year have shown to predict positive student outcomes, it has not been explicitly examined in the protective factor role for students reporting negative racial climate. As research has identified mentoring as an “asset” for adolescents in the face of adversity, exploring its role, during the crucial transition year of college, as a buffer for a negative racial climate will help to inform intervention and prevention programming to assist students in meeting positive outcomes.

### **Rationale**

Research has examined the effect of racial climate perception on academic experiences and outcomes, the impact of mentoring on college experiences and academic outcomes, and the possible protective role of mentoring; however, no studies have explicitly examined the complex relationships among these variables. Further, there is a need to examine these relationships with a diverse sample of college freshman. Given the difficulty in transitioning from high school to college and the long-term impacts young adults face due to maladjustment during this stage (Taylor et al., 2013), there is a need for studies to examine risks college freshman face and resilience factors that can help buffer the effects of these risks.

This study examines the relationship between first year campus racial climate perception and students’ school experiences (sense of belonging and engagement) and long-term academic

outcomes (GPA at time of graduation). Given increased attention to racial climate on college campuses, there is a need for more research on its impact on college outcomes as much of the published literature pre-dates the reported rise of campus hostility within the last 5 years.

The study also examines the acquisition of a new mentor on campus, during the first year of college and its impact on academic outcomes. On campus mentors are familiar with and experiencing the same environment these first-year students are. Shared experiences between mentors and mentees are associated with successful mentoring relationships (Yomtov et al., 2017) and may help to cultivate a sense of belonging and importance (Hagler et al., 2021). In addition, institutional knowledge (e.g., sharing available on campus resources, guidance on class selection) may also help the ways in which mentors support students who may be struggling with the transition to a new school (Salinitri, 2005).

New mentor presence during the first year is also explored as a moderator for the relationship between campus racial climate and student outcomes. Though published research has explored mentor presence as a predictor for student outcomes and as a potential protective factor that enhances resilience, to date, no published studies have examined the potential buffering role of new on campus mentoring relationships during the first year in relation to first year racial campus climate and third year and graduate year student outcomes; this study aims to address this gap. Findings from the study can help our understanding of the impact of racial climate and new mentoring relationships on student outcomes. These findings may inform research, practice, and policy that aims to support students and enhance resilience in the face of adversity.

### **Statement of Hypothesis**

This study will first examine the relationship between first year racial climate perception and new mentor presence on student outcomes cross-sectionally and longitudinally. Cross-sectional analyses provide preliminary understanding of the relationship between risk exposure and outcomes and can inform hypotheses on the relationship between risk and outcomes in other study designs (e.g., longitudinal investigations; Wang and Cheng, 2020). Cross-sectionally, it is hypothesized that a more positive racial climate in the first year will be associated with higher belonging, engagement, and GPA in the first year. Additionally, it is hypothesized that presence of a new mentor in the first year will be associated with higher belonging, engagement, and GPA in the first year when taking into account transfer status.

Longitudinally, this study will examine the relationship between first year racial climate perception and new mentor presence on student outcomes as well as test new mentor presence in the first year as a moderator for racial climate perception and student outcomes. Specifically, the following relationships are hypothesized:

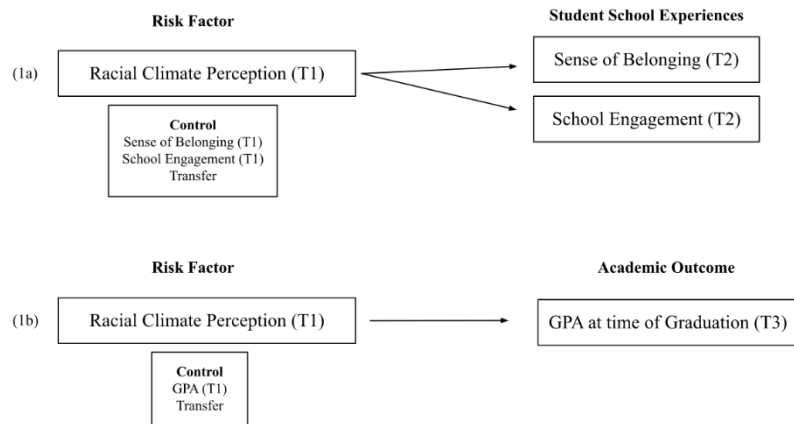
**Hypothesis 1.** There will be significant main effects of racial climate perception at Time 1 on students' school experiences at Time 2 (sense of belonging, school engagement) and academic outcomes at Time 3 (GPA at graduation). (See Figure 1).

1a.) More positive racial climate at Time 1 (T1) will predict higher sense of belonging and higher engagement at Time 2 (T2), controlling for belonging and engagement at T1 and transfer variable.

1b.) More positive racial climate at T1 will predict higher GPA at Time 3 (T3) taking into account GPA at T1 and the transfer variable.

**Figure 1**

*Racial Climate Predicting Student School Experiences and Academic Outcomes*



*Note. T1 denotes Time 1, T2 denotes Time 2, and T3 denotes Time 3*

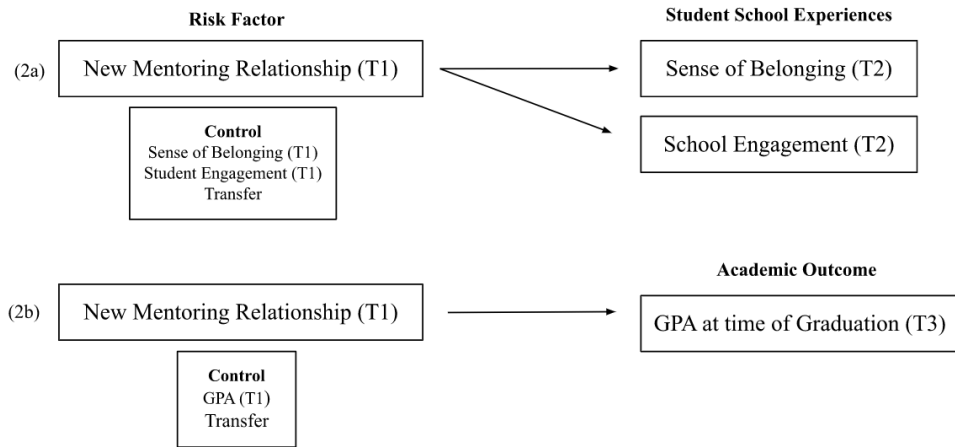
**Hypothesis 2.** Presence of a new mentoring relationship at the university during Time 1 will show significant main effects on students’ school experiences at Time 2 and academic outcomes at Time 3, taking into account control variables (Figure 2).

2a.) A new mentoring relationship at T1 will predict higher sense of belonging and higher school engagement at T2, taking into account belonging, engagement at T1, and transfer variable.

2b.) A new mentoring relationship at T1 will predict higher GPA at T3, controlling for, GPA at T1 and transfer variable

**Figure 2**

*New Mentoring Relationship Predicting Student School Experiences and Academic Outcomes*



*Note. T1 denotes Time 1, T2 denotes Time 2, T3 denotes Time 3*

**Hypothesis 3.** Moderation effects will emerge such that a new mentoring relationship during T1 will buffer the effects of racial climate perception at T1 on student school experiences at T2 and academic outcomes at T3, taking into account control variables.

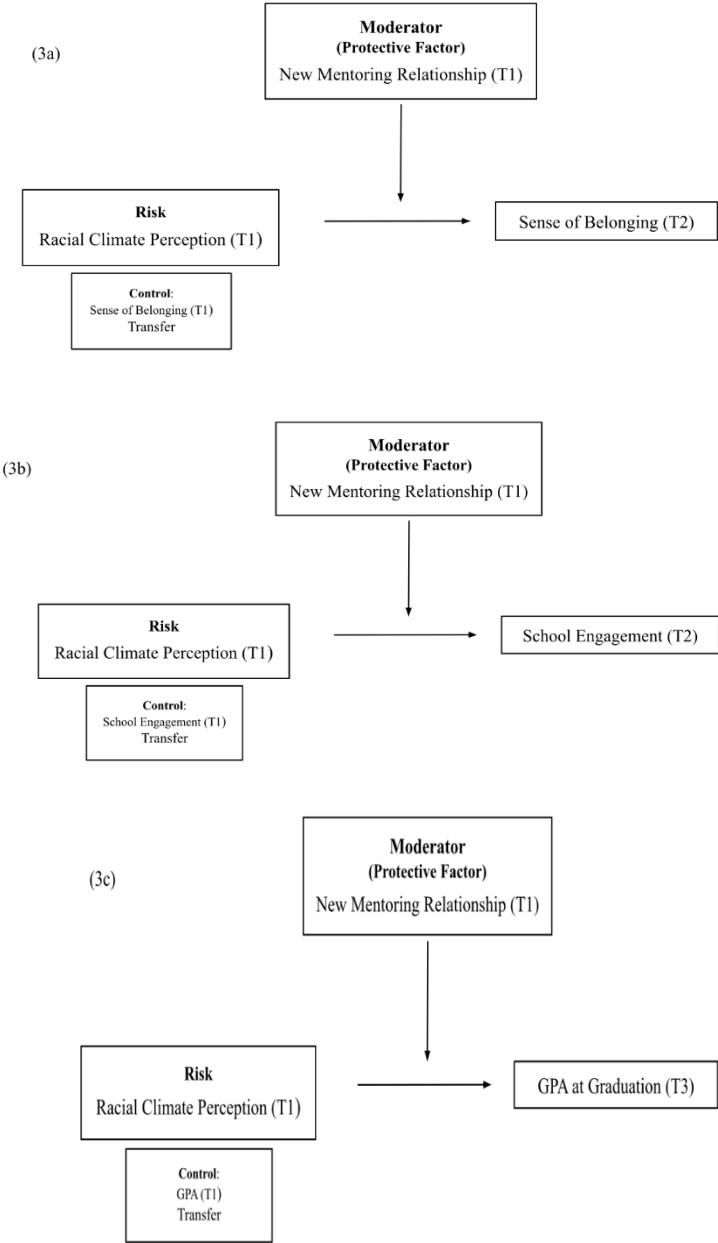
3a.) Presence of a new mentoring relationship at T1 will reduce the effect of negative racial climate at T1 on sense of belonging at T2, controlling for belonging at T1 and transfer variable.

3b.) Presence of a new mentoring relationship at T1 will reduce the effect of negative racial climate at T1 on school engagement at T2, controlling for engagement at T1 and transfer variable

3c.) Presence of a new mentoring relationship at Time 1 will reduce the effect of negative racial climate at T1 on GPA at T3, controlling for GPA at T1 and transfer variable

Figure 3

*New Mentoring Relationship Predicting Racial Climate Perception and School Experiences and Academic Outcomes*



*Note. T1 denotes Time 1, T2 denotes Time 2, T3 denotes Time 3*



## Method

### Recruitment

First year college freshmen enrolled at a large urban Catholic university in the Midwest were recruited for a web-based survey during the spring of 2016. Through email invitation, students were invited to participate in an institutional study aimed to understand the first-year college experience. Participants were informed that the goals of the study were to learn about students' experiences during high school and their first year at college and how this may impact their overall college adjustment.

The study was explained to be longitudinal, with surveys on students' college experience administered at three different time points (spring of freshmen year, spring of junior year, spring of senior year). The invitation included a brief description of what topics the survey questions consisted of (e.g., college, academic, social experiences, relationships with teachers and other supportive relationships at the university, and overall adjustment to college). Additional information included notification that participants would be asked for information on gender, ethnicity/race, and family background. Participants were informed that surveys would take an estimated time of 25-30 minutes to complete.

Information on confidentiality of responses was included as well as potential risks involved with participation. Risks explained were: information when requesting educational records could be accessed by people not part of the research team, potential survey data breach due to initial link to the student record number, potential psychological effects due to violation of these FERPA rights. Additionally, participants were told that some of the questions on the web-based survey could make them uncomfortable. No direct benefits were listed for taking the survey and students were informed that their participation would yield a \$25 gift card (first 100

participants), or \$10 gift card (next 150 participants) emailed 10-25 days after survey completion.

Participants were also informed that there would be no negative consequences for not participating. Detailed information about confidentiality, institutional review board approval for the study, as well as primary investigator contact information and students' rights was also provided. Electronic consent was required by the participants; once consent was given, students were able to begin the survey.

### **Participants**

The web-based survey was distributed via email invitation to all freshman students enrolled during the 2015-2016 academic year ( $N= 1000$ ). A total of 250 students completed the initial consent, but only 247 completed the full survey at Time 1. Two groups of participants, group A and group B were assessed for this study. Group A includes one hundred and six students out of the initial two hundred and forty-seven sample, who completed the Racial Climate survey measure at Time 1 and the Sense of Belonging and School Engagement survey measures at Time 2. These 106 students make up the sample of participants who completed the survey at Time 1 and Time 2. Group B includes 192 students who took the initial survey at Time 1 and had a recorded cumulative GPA at graduation. Fifty-five students from the initial sample of 247 students had either left the institution or had not yet graduated and therefore were not included in Group B.

Group A participants are 67.9% female ( $N=72$ ) and 30.2% male ( $N=32$ ); 1.9% were unknown. Most of the sample identified as White (58.5%), followed by Hispanic (19.3%), Asian (12.8%), African American (6.4%), and Multiracial (1.8%). Group B includes 192 participants who completed the Racial Climate survey measure at Time 1. These students were assessed for

GPA at time of graduation. The participants for Group B are 64.1% female ( $N=123$ ) and 35.4% male ( $N=68$ ), 0.5% were unknown. Majority of the sample identified as White (61.5%), followed by Asian (13.0%), Latin/o (12.5%), African American (9.4%), and Multiracial (3.1 %). From Group A, fifty students (47.2%) indicated having a new mentor during their first year, while fifty-six students (52.8%) did not report a new mentor. For Group B, there was an even split between participants who had a mentor in the first year ( $N=96$ ) and those that did not ( $N=96$ ). Twenty-eight of the students who participated in the survey transferred to the university during the winter session of their first year (10 weeks after the start of the official academic calendar), thus, when running analyses, a “transfer” control variable was created to account for transferred students.

### **Procedure**

Following electronic consent, participants completed the web-based survey. The first survey was completed at Time 1, in Spring 2016 (end of first year of college). Each section of the survey provided brief instructions and prompts that allowed students to respond to questions. At Time 2, spring 2018 (end of third year of college), participants completed the survey measures once again. The study examined responses to self-report questions on mentor identification, sense of belonging, and school engagement. Data on cumulative GPA at time of graduation was given to authorized research personnel by the University. All identifying information was de-identified, and data were entered into a statistics software program, IBM SPSS, version 27.

### **Measures**

Racial climate perception and mentoring identification were measured at Time 1 (end of freshman year). Sense of belonging and student school engagement were measured at Times 1

and 2 (end of junior year). Data for academic outcome variables, cumulative GPA at graduation was drawn from students' academic records at the end of their senior year (Spring 2019).

**Racial Climate** (see Appendix A). Five items from the racial climate subscale (Reid & Radhakrishnan, 2003) were used to assess students' campus racial climate perception. Item examples include "I have experienced racial insensitivity from other students" and "In my opinion, this campus is more racist than most". Responses were coded on a Likert-type scale where 1= Strongly Disagree and 5=Strongly Agree. Higher scores indicate a more negative racial climate perception. Cronbach's alpha for this scale is  $\alpha = .70$  (Reid & Radhakrishnan, 2003) and for this study it was  $\alpha = .786$

**Mentoring Identification** (see Appendix B). One item was used to identify if students reported having a new mentoring relationship during their first year of college. Students were asked to indicate yes or no to the question: "Is there \*anyone at the "university" who is at least two years older\* and more experienced than you whom you go to for support and guidance? This person is not a parent or the person who raised you or a relative or a boy/girlfriend and must be a part of the DePaul campus community. This person is someone who: a) you can count on to be there for you b) who believes in you and cares deeply about you c) who inspires you to do your best, and d) who has really influenced what you do and the choices you make" (adapted from Sanchez, 2008).

**School Sense of Belonging** (see Appendix C). Hagborg's (1994) School Sense of Belonging scale was used to assess students' reported belonging. The 11-item measure included items such as: "I feel a real part of this university", "I am treated with as much respect as other students", "People at this university are friendly to me". Items were rated on a Likert-type scale

where 1= Completely False, 5= Completely True. Higher scores indicate a higher sense of belonging. Cronbach's Alpha for the scale was .90 (Hagborg, 1998) and for this study was .88.

**Student School Engagement** (see Appendix D). Five items from the National Survey of Student Engagement, Core US survey (Center for Postsecondary Research, 2014) were examined for this study. Two items assessed faculty-student interactions and three items assessed collaborative learning. Students were asked to rate (1=Never, 4=Very Often) how often they did the following items such as the following during their time at the university: "Asked another student to help you understand course material", "Asked questions or contributed to course discussion in other ways", "Discussed course topics, ideas, or concepts with a faculty member outside of class", "Worked with a faculty member on activities other than coursework (committees, student groups, etc.)", "Discussed course topics, ideas, or concepts with a faculty member outside of class". Higher scores indicate higher engagement. The Cronbach's Alpha for this study was .71.

**GPA.** Participants' cumulative GPA at the time of graduation was collected from academic records by authorized research personnel. Cumulative GPA is based on a four-point scale: 0 (F) to 4.0 (A).

**Transfer.** To account for the twenty-eight students who transferred to the university during the winter session of their first year, the total sample was dummy coded to differentiate students who enrolled at the beginning of the 2015- 2016 academic year ("0"= entered in Fall, 2015, not a transfer) and students who transferred in one quarter later ("1"= transferred in Winter, 2016).

## Results

### Descriptive Statistics

The sample population was reflective of the campuses' overall student body. Bivariate Pearson correlations were conducted on key study variables (see Table 1). Bivariate correlations revealed a significant negative correlation between racial climate perception at Time 1 and sense of belonging at Time 1 and 2 and Year 1 GPA and Graduation GPA; that is, a more negative racial climate perception was correlated with lower feelings of belonging at Time 1 and 2 and lower GPA scores across time. Racial campus climate perception at Time 1 was positively correlated with engagement at Time 1, such that higher negative racial climate perception was correlated with higher levels of student engagement in the first year. Key outcome variables--sense of belonging, engagement, GPA--were positively correlated across both Time 1 and Time 2. Due to low sample size for some groups, race/ethnicity was dummy coded as White and Non-White participants. Gender was also dummy coded for Male and Female participants. Gender was not significantly correlated with key study variables; however, race/ethnicity was significantly correlated with two of the outcome variables: student engagement at Time 2 and GPA at graduation ( $p < 0.05$ ). To be consistent across models, neither gender nor race/ethnicity served as controls for this study. The transfer variable and outcomes at Time 1 (engagement, belonging and Year 1 GPA) served as covariates in the models.

Means and standard deviations are presented for White and Non-White participants on key variables (see Table 2). T-test analyses revealed significant mean differences between these two groups' Year 1: racial climate perceptions, GPA, sense of belonging, Time 2 engagement, and graduation GPA. For racial campus climate perception in the first year, where higher mean scores indicate a more negative experience, Non-White students reported a more negative racial climate when compared to White students. For Year 1 sense of belonging, GPA,

**Table 1***Means, standard deviations, and correlations for study variables*

	Means	Standard Deviations	Racial Climate (T1)	Sense of Belonging (T1)	Sense of Belonging (T2)	Student Engagement (T1)	Student Engagement (T2)	Year 1 GPA	Graduation GPA
Racial Climate (T1)	2.52	.900	1						
Sense of Belonging (T1)	3.75	.833	-.248**	1					
Sense of Belonging (T2)	3.94	.711	-.201*	.618**	1				
Student Engagement (T1)	2.35	.564	.282**	.232**	.076	1			
Student Engagement (T2)	2.43	.614	.119*	.241*	.317**	.497**	1		
Year 1 GPA	3.41	.573	-.137**	.289*	.250*	.063	.068	1	
Graduation GPA	3.55	.33	-.176*	.156*	.152*	.152*	-.025	.721**	1

*Note.;* \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Time 2 engagement, and graduation GPA, where higher scores indicated more belonging, engagement, and higher GPA scores, Non-White students, when compared to White students, had lower mean scores.

**Table 2**

*T-Test Results of Racial Differences across Variables*

Variables	F	<i>t</i>	White			Non-White		
			<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Racial Climate (T1)	1.13	-3.20**	139	2.36	.820	108	2.72	.961
Sense of Belonging (T1)	4.21	3.49**	139	3.91	.766	108	3.54	.874
Sense of Belonging (T2)	5.40	1.45	62	4.02	.610	44	3.82	.826
Sense of Engagement (T1)	3.94	-.354	138	2.34	.522	108	2.36	.617
Sense of Engagement (T2)	.136	2.01*	63	2.53	.576	44	2.29	.646
Year 1 GPA	34.3	6.77***	139	3.61	.372	103	3.15	.682
Graduation GPA	9.40	5.00***	118	3.64	.262	74	3.41	.378

Note: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

### Cross-Sectional Analysis

Using a cross-sectional approach, a linear regression was conducted to examine the relationship between first year racial climate and first year student outcomes (belonging at Time 1, engagement at Time 1 and first year GPA), where the transfer variable served as a covariate. Findings revealed a more negative racial climate perception in the first year was associated with lower sense of belonging in the first year [ $B = -.24$ ,  $t(244) = -4.243$ ,  $p = .000$ ], higher student engagement in the first year [ $B = .17$ ,  $t(243) = 4.459$ ,  $p = .000$ ] and lower GPA at Time 1 [ $B = -.09$ ,  $t(239) = -2.229$ ,  $p = .027$ ] (see Table 3).

A new mentoring relationship in the first year was regressed with Time 1 outcomes to test whether mentor presence was significantly associated, where the transfer variable served as the covariate. New mentor presence in the first year was significantly associated with higher



**Table 3**

*The Effects of Time one Racial Climate on Time 1 Student Belonging, Engagement, and GPA*

Independent Variables	Beta	S.E	95% CI		R <sup>2</sup>
			LL	CI	
Sense of Belonging (T1)					.085
Racial Climate (T1)	-0.241***	0.057	[-.353, -.129]		
Transfer	-0.402*	0.161	[-.720, -.085]		
Student Engagement (T1)					0.089
Racial Climate (T1)	0.171***	0.038	[-.096, .247]		
Transfer	-.168	0.109	[-.383, .047]		
Year One GPA					.026
Racial Climate (T1)	-.092*	.041	[-.173, -.011]		
Transfer	-.164	.118	[-.396, .069]		

*Note:* \*p < .05; \*\*p < .01; \*\*\*p < .001

belonging in the first year [ $B = .55, t(244) = 5.559, p = .000$ ] and higher engagement in the first year [ $B = .35, t(243) = 5.167, p = .000$ ]. New mentor presence was not associated with GPA in the first year [ $B = .04, t(239) = .599, p = .550$ ] (see Table 4).

**Longitudinal Analyses**

Longitudinally, racial climate in the first year was regressed with student outcomes in the third year and at graduation. To test the main hypotheses, a more positive racial climate will predict higher sense of belonging, higher student engagement, higher GPA at graduation and a new mentor in the first year will predict higher sense of belonging, higher student engagement, higher GPA at graduation, a two-step process was used for multiple linear regression analysis.

**Table 4**

*The Effects of New Mentor Relationship in the first year on Student Belonging, Engagement, and GPA*

Independent Variable	Beta	S.E	95% CI		R <sup>2</sup>
			LL	CI	
Sense of Belonging (T1)					0.128
New Mentor (T1)	0.554***	0.100	[.358, .751]		
Transfer	-.285	.157	[-.595, .025]		
Student Engagement (T1)					0.112
New Mentor (T1)	.353***	0.068	[.218, .487]		
Transfer	-.172	.108	[-.384, -.040]		
Year 1 GPA					.008
New Mentor (T1)	.044	.074	[-.101, .190]		
Transfer	-.140	.119	[-.375, .095]		

*Note:* \*p < .05; \*\*p < .01; \*\*\*p < .001

In the first step, in different models, the independent variables, racial climate during the first year, and new mentor in the first year, were regressed with each of the key outcome variables: belonging T2, engagement T2, GPA at Graduation. The second step added “transfer” as a covariate, as well as belonging at Time 1, engagement at Time 1 and Year 1 GPA as covariates to their respective models (See Table 5).

**Racial climate predicting student belonging.** Multiple linear regression analysis was conducted to predict student’s racial climate perception from their first year on student’s sense of belonging during their second year. The model was significant,  $F(3, 102) = 21.48$   $p < .000$ ,  $R^2 = .387$ . Initially, racial climate at Time 1 was regressed with sense of belonging at Time 2, this

relationship was significant, [ $B = -0.15$ ,  $t(104) = -2.092$ ,  $p = .039$ ], that is, more negative racial climate perception in the first year, predicted lower sense of belonging during the third year. However, when taking into account control variables, transfer and sense of belonging at Time 1, racial climate at Time 1 was not associated with belonging at Time 2, [ $B = -.05$ ,  $t(102) = -.815$ ,  $p = .417$ ]. Thus, Hypothesis 1a, a more positive racial climate perception at Time 1 will predict higher sense of belonging at Time 2, was not supported.

**Racial Climate Predicting Student Engagement .** Results for a multiple linear regression analysis on negative racial climate in the first year on student's engagement during their second year showed a significant model,  $F(3, 103) = 13.56$   $p = .000$ ,  $R^2 = .283$ . The relationship between first year climate and Time 2 student engagement, taking into account control variables transfer, student engagement at Time 1, was not significant [ $B = -0.03$ ,  $t(105) = -.574$ ,  $p = .567$ ]. Thus, Hypothesis 1b, a more positive racial climate perception at Time 1 will predict higher student engagement at Time 2, was not supported.

**Racial Climate Predicting GPA at Graduation.** Linear regression results examining racial climate in the first year predicting GPA at time of graduation, where Year 1 GPA and transfer served as a control variables, were significant  $F(3, 188) = 74.19$   $p = .000$   $R^2 = .542$ . A more negative racial climate perception at Time 1 predicted lower GPA at Time 2, [ $B = -.04$ ,  $t(188) = -2.15$ ,  $p = .033$ ]. Therefore, Hypothesis 1c, more negative racial climate perception will predict lower GPA at time of graduation was supported.

**New Mentoring Relationship Predicting Sense of Belonging .** A linear regression model predicting new mentor presence in the first year on student's sense of belonging during their second year was overall significant,  $F(3, 102) = 21.164$ ,  $p < .001$ ,  $R^2 = .384$ . New mentor presence at Time 1 on sense of belonging at Time 2 showed that new

**Table 5**

*Racial Climate Predicting Student Belonging, Engagement, and GPA at Graduation*

Independent Variables	B	S.E	95% CI		R <sup>2</sup>
			LL	CI	
Sense of Belonging (T2)					
Step 1					.040
Racial Climate (T1)	-0.154*	0.074	[-.300, -.008]		
Step 2					.387
Racial Climate (T1)	-0.050	0.062	[-.172, .072]		
Transfer	-0.100	0.183	[-.464, .263]		
Sense of Belonging (T1)	.513***	0.070	[.375, .651]		
Student Engagement (T2)					
Step 1					0.014
Racial Climate (T1)	0.079	0.064	[-.048, .206]		
Step 2					0.337
Racial Climate (T1)	-.033	0.058	[-.115, .112]		
Transfer	-.378*	0.170	[-.649, .009]		
Sense of Engagement (T1)	.472***	0.087	[.324, .657]		
GPA at Graduation					
Step 1					.031
Racial Climate (T1)	-.067**	.027	[-.120, -.013]		
Step 2					.538
Racial Climate (T1)	-.041*	.019	[-.078, -.003]		
Transfer	-.130*	.056	[-.235, -.014]		
YR 1 GPA	.620***	.044	[.505, .687]		

Note: \*p < .05; \*\*p < .01; \*\*\*p < .001

mentor presence positively predicted sense of belonging at Time 2, [ $B=.32, t(104)=2.39, p=.019$ ]. However, when taking into account control variables, transfer and sense of belonging (T1), having a new mentor was not associated with sense of belonging (T2) [ $B=0.32, t$

(102)=.273,  $p = .785$ ] (See Table 6). Thus, Hypothesis 2a, new mentor presence at Time 1 will predict higher sense of belonging at Time 2, was not supported (See Table 6).

**New Mentoring Relationship Predicting Student Engagement .** A linear regression model analysis to predict new mentor presence in the first year on student engagement during their second year was significant,  $F(3, 103) = 14.86$   $p \leq .000$ ,  $R^2 = .302$ . New mentor presence in the first year predicted student engagement at Time 2,  $B = .353$ ,  $t(3.085)$ ,  $p = .003$ . However, when control variables, transfer, student engagement at Time 1 were added to the model the relationship was no longer significant, [ $B = .19$ ,  $t(1.77)$ ,  $p = .080$ ] (Table 4). Thus, Hypothesis 2b, new mentor presence at Time 1 will predict higher student engagement at Time 2, was not supported.

**New Mentoring Relationship Predicting Graduation GPA.** The linear regression analysis model with new mentor presence in the first year predicting GPA at graduation showed overall significance,  $F(3, 188) = 72.14$ ,  $p \leq .001$ ,  $R^2 = .535$ . The relationship between new mentor presence in the first year, taking into account control variables, transfer and year 1 GPA, did not predict graduation GPA, [ $B = -.04$ ,  $t(188) = -1.325$ ,  $p = .187$ ]. Therefore, hypothesis 3b, new mentor presence at Time 1 will predict graduation GPA, was not supported.

**New Mentor as a Moderator for Racial Climate and Sense of Belonging .** To investigate whether a new mentoring relationship in the first year of college serves as a protective factor for negative racial climate perception, a linear moderation analysis was performed using PROCESS. The outcome variable for the analysis was sense of belonging during the third year and the predictor variable was racial climate perception during the first year. The moderator variable was the presence of a new mentor during the first year.

**Table 6**

*New Mentoring Relationship Predicting Student Belonging, Engagement, and GPA at Graduation*

Independent Variable	B	S.E	95% CI		R <sup>2</sup>
			LL	CI	
Sense of Belonging (T2)					
Step 1					0.052
New Mentor (T1)	0.323*	0.135	[.055, .592]		
Step 2					.384
New Mentor (T1)	.032	.118	[-.202, .266]		
Transfer	-.087	.183	[-.451, .277]		
Sense of Belonging (T1)	.520***	.072	[.377, .663]		
Student Engagement (T2)					
Step 1					0.083
New Mentor (T1)	.353**	0.115	[.126, .580]		
Step 2					.302
New Mentor (T1)	0.192	.108	[-.023, .406]		
Transfer	-.410*	.169	[-.745, -.075]		
Student Engagement (T1)	.401***	0.087	[.228, .574]		
GPA at Graduation					
Step 1					.002
New Mentor (T1)	-.033	.048	[-.127, .061]		
Step 2					.543
New Mentor (T1)	-.043	.033	[-.108, .021]		
Transfer	-.122*	.056	[-.233, -.011]		
YR 1 GPA	.632***	.044	[.545, .718]		

*Note:* \*p < .05; \*\*p < .01; \*\*\*p < .001

Two control variables were included in the model: transfer and sense of belonging at Time 1.

The interaction between racial climate (T1) and new mentor (T1) was not found to be significant

[*B*= -.06, 95% C.I. (-.304, .183), *p*= 0.623] (Table 7). The relationship between racial climate

(T1) and sense of belonging (T2) was not significant. The hypothesis that a new mentor during the first year will reduce the effect of negative racial climate at Time 1 on sense of belonging at Time 2 was not supported.

**Table 7**

*New Mentor as a Moderator for Racial Climate on Sense of Belonging*

Predictor	B	SE	95% CI		t	p
			LL	UL		
Racial Climate (T1)	-.029	.086	[-.199, .141]		-.334	.739
New Mentor (T1)	0.210	.333	[-.452, .872]		.629	.531
Racial Climate (T1) * New Mentor (T1)	-0.060	-.493	[-.304, .188]		-.493	.623
Sense of Belonging (T1)	0.502	0.077	[.350, .655]		6.54	.000
Transfer	-0.100	.188	[-.473, .273]		-.533	.560

*Note.* Sense of Belonging (T1), Transfer are covariates, CI=confidence interval; LL=lower limit; UL=upper limit

**New Mentor as a Moderator for Racial Climate on Student Engagement . To**

investigate whether a new mentoring relationship in the first year of college serves as a protective factor for racial climate perception, a linear moderation analysis was performed using PROCESS. The outcome variable for the analysis was student engagement during the third year and the predictor variable was racial climate perception during the first year. The moderator variable was the presence of a new mentor during the first year. Two control variables were included in the model: transfer and student engagement at Time 1. The interaction between racial climate (T1) and new mentor (T1) was not found to be significant [ $B= 0.01$ , 95% C.I (-.216, .229),  $p=0.956$ ]. The relationship between racial climate (T1) and student engagement (T2) was not significant (Table 8). The hypothesis that new mentor during the first year will reduce the effect of negative racial climate at Time 1 on student engagement at Time 2 was not supported.

**Table 8**

*New Mentor as a moderator for Racial Climate on Student Engagement*

Predictor	B	SE	95% CI		t	p
			LL	UL		
Racial Climate (T1)	-.038	.076	[-.189, -.114]		-.492	.623
New Mentor (T1)	.177	.301	[-.431, .784]		.577	.566
Racial Climate (T1) * New Mentor (T1)	.006	0.112	[-.216, .229]		.055	.956
Sense of Engagement (T1)	-.416	0.092	[.234,.600]		6.54	.000
Transfer	-.414	.0172	[.234, .599]		-2.42	.018

*Note.* Sense of Belonging (T1) is the covariate, CI=confidence interval; LL=lower limit; UL=upper limit

**New Mentor as a Moderator for Racial Climate and Graduation GPA.** A linear moderation analysis was performed using PROCESS to test the relationship between variables racial climate in the first year of college and graduation GPA. The outcome variable for the analysis was GPA at graduation and the predictor variable was racial climate perception during the first year. Presence of a new mentor during the first year was examined as the moderator. Two control variables were included in the model: transfer and Year 1 GPA. The interaction between racial climate (T1) and new mentor (T1) was significant [ $B = -.13$ , 95% C.I (-.201, -.0522),  $p = 0.001$ ] (See Table 9). Contrary to expectation, a new mentoring relationship in the first year did not buffer the effects of negative racial climate on GPA. After probing the interaction at plus and minus one standard deviation, we found that for those without a mentor, their GPA remained high regardless of negative racial climate; however, for those with a mentor in their first year, as negative racial climate increased, GPA decreased (See Figure, 4).



**Table 9**

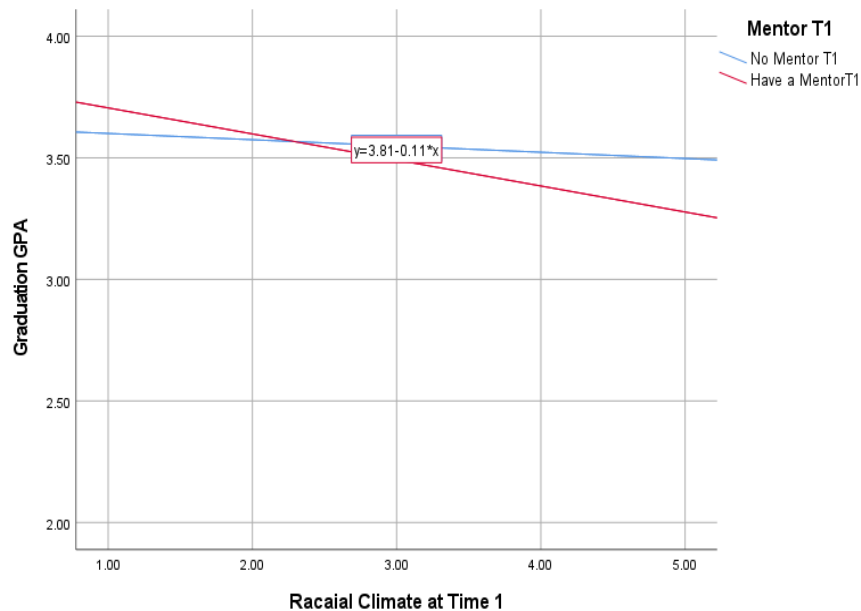
*New Mentor as a moderator for Racial Climate on Graduation GPA*

Predictor	B	SE	95% CI		t	p
			LL	UL		
Racial Climate (T1)	.026	.024	[-.024, .080]		1.05	.331
New Mentor (T1)	.280	.099	[.076, .464]		2.74	.005
Racial Climate (T1) * New Mentor (T1)	-.127	.036	[-.198, -.049]		-3.26	.001
Transfer	-.094	.055	[-.200, .012]		1.39	.092
Year 1 GPA	.639	.045	[.527, .707]		13.5	.000

*Note.* Sense of Belonging (T1) is the covariate, CI=confidence interval; LL=lower limit; UL=upper limit

**Figure 4**

*New Mentor as a moderator for Racial Climate on Graduation GPA*



**Discussion**

The aim of this study was to investigate the relationship between first year college students’ racial campus climate perception and their school experiences and academic outcomes. Using linear and moderation regression analyses, students’ first year (Time 1) racial climate

perception and presence of new mentoring relationships was analyzed with students' belonging engagement and GPA across different time points: cross-sectionally during their first year, and longitudinally, during their third year and at graduation.

### **The effects of Racial Climate on Students School Experience and Academic Outcomes**

When examining this study's data cross-sectionally, racial climate had a significant association with belonging, engagement and GPA, which is consistent with existing literature (e.g., Butler-Barns et al., 2018; Chavous & Leath, 2017; Mattinson & Arber, 2007). Students who reported high negative racial climate experiences had lower belonging and GPA which supports literature that has also identified this relationship (e.g., Levin et al., 2006; Locks et al., 2008; Mattison & Arber, 2007; Wells & Horn, 2015). These findings are significant in that they suggest campus racial climate experiences during the first year may influence student outcomes during this crucial transition year.

Though cross-sectional analyses are limited in that they do not allow causal inferences between risks and outcomes, they do provide a snapshot of what is happening at a particular point in time. The findings from this study revealed an association between high negative racial climate and higher student engagement in the first year. This finding is consistent with previous studies that have found when students face racialized adversity, it encourages active engagement on campus, greater effort in school, and enhanced academic motivation (Chavous and Leath, 2017; Golden et al., 2018; Levin et al., 2006). Racialized experiences may raise their critical consciousness and prompt students to build resilience by resisting and challenging structures that oppress them (O'Connor, 1997). Increasing engagement may be a form of resilience that protects students. A qualitative study on Black undergraduate students' experiences at a predominantly white institution, found that many students responded to a negative racial climate by becoming

more actively engaged on campus--from participating in movements, to feeling as if they had to positively represent their community, and serving as mentors for other Black students (Mwangi et al., 2018). When students face risk, such as a negative climate, they find ways in which they can overcome these barriers and challenges, such as becoming more engaged and by seeking and acquiring support. The findings cross-sectionally are important as they establish an understanding on how these variables are initially associated. Racial climate perception in the first year is associated with various student outcomes during that crucial transition year. To test whether racial climate perception in the first year has lasting effects, student outcome variables were tested in the third year and at graduation.

When examining the data longitudinally, findings from this study were inconsistent with hypotheses that predicted racial climate at Time 1 would show significant main effects on students' sense of belonging and engagement at Time 3, when taking into account control variables, a more positive racial climate did not predict higher sense of belonging, which is inconsistent with published studies that have found this association (Hurtado and Carter, 1997, Hurtado and Ponjuan, 2005; Nunez, 2009). Similarly, a more negative racial climate did not show a relationship with lower engagement at Time 3, which has been identified in published research (see Cooper et al., 2013). A relationship between racial climate and these outcomes may not have emerged due to low sample size and attrition at Time 2, particularly for students of color. At Time 2, only seven Black students and twenty-one Hispanic students participated in the study compared to sixty-four White students. The disparity between White and Non-White respondents is noteworthy as research has found that African American and Latino students reported more negative racial perception of their campus than White students (Reid & Radhakrishnan, 2003). Though the current study's findings do not support the hypothesis that

racial climate perception will have a longitudinal effect on student outcomes, these findings cannot be generalized. Very few studies have examined the longitudinal relationship between racial campus climate perception and student engagement in the college setting. More empirical research is needed to draw conclusions on how these variables interact..

When examining the mean differences across variables for White and Non-White participants there were noticeable differences between key study variables (See Table 2). Non-White students reported higher perception of a negative racial climate during their first year when compared to White students. Additionally, Non-White students had lower belonging in the first year and engagement in the second year. There were significant differences in mean scores of GPA across time. Of most concern, half a letter grade separated White (GPA: 3.61) and Non-White students (GPA: 3.15) in the first year. These findings are supportive of research that has found that Black students had lower GPA's than White students in the first semester of college (Spenner et al., 2004) and Black students perceived more campus racial conflict (Ancis et al., 2000). Non-White students reporting more negative racial climate scores are particularly concerning as research has found that students who perceive hostile climate and report discrimination have lower institutional attachment, personal-emotional adjustment and first-second year transitions (Hurtado et al.,1996).

Consistent with this study's hypothesis, negative racial climate in the first year predicted lower cumulative GPA at graduation, thus, demonstrating the detrimental longitudinal impact of negative racial climate perception. This finding is consistent with Martin and colleagues (2017) study that found racial and ethnic differences in academic performance between White students and Non-White students were explained by campus climate perceptions. These findings are important as both GPA and racial climate are associated with on-time graduation (Fisher, 2010).

Furthermore, these findings provide support for Oates (2009) study identifying biased treatment as the primary reason for test score differentials between White and Black students and their discussion on the importance of taking into account environmental factors and their role in the disparity of achievement between these students. For Black students, who are more likely to experience discrimination by faculty in the college setting (Martin et al., 2017), perceive a negative, hostile racial campus climate (Cabrera, 1999; Martin et al., 2017; Reid & Radhakrishnan, 2003), and not graduate on-time (NCES, 2019), findings from this study underscores the importance of addressing the racial climate on college campuses

### **The Role of Mentoring**

Cross-sectionally, students who reported a new mentor at the university during their first year indicated higher belonging and engagement. This finding supports literature that suggests acquisition of a mentoring relationship is important and may influence students' sense of belonging (Hurtado & Carter, 1997) and their engagement throughout their time at university. Mentor support from peers and faculty in the first year is crucial for persistence, retention, and intention to graduate (Morrow & Ackerman, 2012; Sailintri, 2005; Yomtov et al., 2017). These findings underscore the importance of students having mentoring support in college, especially in the first year, as a means of support for their school connectedness and students experience outcomes. Though this study found a significant association with student experience outcomes and mentoring support, a new mentoring relationship in the first year in this study was not associated with a higher GPA in the first year. This finding is inconsistent with studies that have found this relationship to be significant in the transition year (e.g., Salinitri, 2005). Perhaps this finding did not emerge in the present study due to the limitations of the mentoring identification variable. This study operationalizes a "mentor" by asking students to indicate if they had a

mentor at the university more experienced than them who they go to for support, guidance, who cares about them and influences their choices. A yes or no is how this question is rated and tested in the analyses. Future studies may want to move beyond identification of mentor and examine mentor characteristics and differences between formal and informal mentors to assess whether certain types of mentors are associated with and predict student success. For example, Salinitri and colleagues (2005) went further than identification of mentor presence and in addition examined students who were not mentored and those who were mentored by mentors who participated in formal mentoring training, were matched with students by discipline, and mentors who only served 1-2 mentees. Mentored students in this study had higher overall GPA and were more likely to be in good academic standing when compared to non-mentored students. The present study did not assess mentor characteristics such as mentor training, mentor capacity (e.g., how many students they served), or the differences between types of mentors (e.g., peer, faculty). We also did not examine the amount of support students received from their mentors. Additional research is needed to further examine these relationships longitudinally.

Longitudinally, this study examined the presence of a mentor in a student's first year of college and student and academic experience outcomes in the third year (belonging, engagement) and at graduation (cumulative GPA). When considering control variables, new mentor presence in the first year did not predict higher belonging or engagement in the third year and GPA at graduation, inconsistent with the hypotheses,. As discussed, rather than only examining new mentor presence or absence as a predictor for student outcomes, evaluating various qualities of a mentor and its relationship with student outcomes may yield significant results. A longitudinal study by Phinney and colleagues (2011) found that students who were mentored did not have a decline in academic motivation throughout the year, had a decrease in negative psychosocial

variables (e.g., stress, depression) and had a lower chance of being at risk for poor academic outcomes. Mentors in this study underwent training and were required to meet with mentees regularly to help develop a relationship with students. Students rated these mentors satisfactorily which predicted sense of belonging. Missing from the current study are analyses on relationship quality and reported satisfaction with mentors. Future research should investigate the relationship between various mentor characteristics and their potential role as predictors of positive student outcomes and moderating factors for risks.

Alongside issues discussed, attrition rates of the participants who took the survey between Time 1 and Time 2, limitations with the mentoring identification variable, 55 students had not yet graduated or left the university and did not have a cumulative GPA at the time of this study's data collection which may have impacted the data. Additionally, while investigating the linear regression models for belonging and engagement at Time 2, it was noted that when the Time 1 outcomes were added as control variables to the model, the significance of the relationship between new mentor presence in the first year and Time 2 outcomes were eliminated. We can speculate that new mentoring relationships in the first year may have had the strongest influence at that time and there is not a significantly noticeable effect to detect in the third year and at graduation. Mentorship may also change significantly across time, and these relationships were not assessed across time.

### **Mentoring as a Protective Factor**

The current findings did not support the hypotheses that a new mentoring relationship in the first year would emerge as a protective factor for students' sense of belonging and engagement at Time 2 when faced with the risk of racial climate at Time 1. Though previous literature has identified the protective role of mentor support in the face of risk e.g., as a

moderator for racial discrimination and school suspensions, and greater school engagement (Cooper, et al., 2013) between stress and depressive anxiety symptoms (Hurd and Zimmerman, 2011) and past peer victimization and interpersonal problems (Drevon et al., 2018), this study did not identify mentoring as a moderator for engagement and belonging for a negative racial climate perception. This finding is not surprising as mentoring has not consistently had buffering effects for racial discrimination (Sanchez et al., 2017). Sanchez and colleagues (2017) model, where mentoring relationship quality served as a moderator for racial discrimination and coping efficacy, was not significant. These researchers suggest that perhaps mentors were also affected by experiences with racial discrimination and were not able to “offset” the stress of racial discrimination on coping. Perhaps mentors in this study were also affected by the racial climate on campus and were not able to offer buffering affects to this risk on belonging and engagement. Where mentoring quality was examined as a moderator for the Sanchez and colleagues (2017) study, only presence of a mentor was measured in this study. Perhaps the presence of a mentor is not powerful enough to buffer the negative effects of racial climate, particularly across time. Future studies may want to examine various mentor characteristics as moderators to assess if these factors play a buffering role in the relationship between campus racial climate and student outcomes.

When examining new mentor presence as a moderator for racial climate during the first year and GPA at graduation, though the relationship revealed a significant effect, it did not indicate that having a mentor served as a protective factor. The current findings suggest that for those with a mentor in their first year, as negative racial climate increased, GPA decreased. Students without a mentor in the first year, consistently had lower perceived negative racial climate in the first year and high graduation GPAs. A possible explanation for this finding may



be that those who perceive a negative racial climate and are struggling academically may be seeking out a mentoring relationship. This offers some support to Brittian and colleagues' (2009) findings that mentored students had lower GPAs than non-mentored students. These researchers discuss how African American students in their study, who believed that mentoring was for students struggling, did not seek mentorships if they were doing well academically (Brittian et al., 2009). Additionally, Phinney and colleagues (2011) did not find that mentoring protected against lower GPAs, in fact, their study found that these students had lower GPAs from the fall semester to the spring semester. The authors discuss a possible reason to this findings may be because mentors were not told explicitly to help monitor academic progress. Future research may include mentor training that is designed to address various academic and psychosocial needs of students. Overall, though the findings from this study demonstrate an association between mentoring, negative racial climate perception and graduation GPA, we cannot assume causality. Future research may investigate why students seek mentors and how we can support students in identifying their need for mentor support before they begin struggling academically.

### **Implications for Research**

Racial climate perception was associated with students' sense of belonging, engagement, and GPA during their first year of college. A more negative racial climate perception in the first year predicted lower GPA at graduation. At the time of data collection, 55 students from the initial sample had not yet graduated or had left the university. To investigate possible reasons for this attrition and delay in graduation, future studies may want to explore the effects of racial climate perception on attrition; there is currently only one study that has assessed the effects of racial climate on timely graduation (Fischer, 2010). Furthermore, as research has found that experiences in the college setting predict hostile campus climate perception (Hurtado & Ponjuan,

2005), future research into the types of racialized incidents and their impact on student well being and performance is needed.

The current study also found a relationship between racial climate, mentor presence in the first year and graduation GPA. Further probing must be done to explore possible reasons as to why mentored students may be seeking these relationships in the first year, its possible connection to a lower GPA at graduation, and if racial climate perception had any influence. As this study takes a quantitative approach to assessing racial climate on student outcomes, future studies may want to incorporate a mixed methods approach and include qualitative measures that allow for the probing of complex topics such as campus racial climate. Through qualitative measures, researchers have had the ability to gain a more nuanced understanding of the racialized experiences faced by college students and the resilience they have built and adapted to overcome these challenges (Mwangi et al., 2018). Additionally, future research examining the impact of racial climate experiences early in the college career can use a nationally representative sample (Museus & Chang, 2021). Much of the published research on racial climate experiences focuses on Latiné or African American students; researchers may want to examine larger sample sizes and explore the differences among races/ethnicities to gain a better understanding of how individuals from different groups perceive campus climate and how promotive factors may address this risk.

Findings from this study suggest a new mentor in the first year was also associated with higher belonging and engagement in the first year. As noted, cultivating relationships with individuals who are a part of and experiencing the same climate as you can foster a bond and provide support an off-campus mentor may not be able to offer. Findings from this study offer additional research questions on mentoring. Aside from presence of a new mentor, what specific

mentor characteristics (e.g., type of mentor, frequency of meeting with mentor, type of relationship with mentor) have a moderating role for student outcomes when at risk for negative racial climate? Using Rhodes' mentor model (2005), researchers can evaluate different mentor characteristics and how they can serve as protective factors. Again, studies of this nature can use a mixed-method approach to gain a deeper understanding of student's experiences with racial climate, associated risks, and ways in which they have built resiliency. Nuances are lost when students are expected to choose from answer lists on a survey. A mixed method study may help to inform comprehensive policy and structural changes universities can adapt to aid in the success and wellbeing of their students.

### **Implications for Practice**

Universities cannot directly change national racial tensions; they can, however, address racial climate in their settings by increasing support for students. A survey of college presidents found that nearly half reported hiring a full-time administrator to address student diversity on campus (American Council of Education, 2016). Though this is a start, universities need to investigate factors that influence this risk and invest into assets that can promote resilience. As the findings from this study suggest, first year racial climate is associated with first year student outcomes, investment in prevention programming, informed by the resiliency theory, can help students when they face adversity (Zimmerman, 2013). Universities can invest resources into minority support and retention programs as well as informational events around cultural awareness, diversity (Museus et al., 2008), equity, and inclusion. Museus and Chang (2021) suggest that campuses can improve sense of belonging for first generation students through "structured spaces" and programs. These would allow students to form connections with peers,

faculty, and staff who share similar backgrounds, which is important as the current study found a significant association with mentor presence and student belonging and engagement.

To ensure adjustment and success of first year college students, more investment into transitional programming, such as Comprehensive College Transition Programs (CCTP) is needed. CCTPs offer a variety of services that include formal support and mentorship from staff, faculty, peers, encourage peer interaction, as well as engagement in courses and program activities (Cole et al., 2019). A study on CCTP effectiveness across three universities found that peer interactions (e.g., sharing concerns on academic issues, discussion of personal issues, studying together), staff support and caring and their method of providing grade check-ins (checking on grades in courses to provide academic advice) with students were significantly associated with student belonging and mattering (Cole et al., 2019). As the findings from this study demonstrate the connection between mentor support and higher belonging and engagement in the crucial first year, universities need to find creative ways to provide additional supports to students in the transition year.

Universities looking for low-cost intervention programs may look to establish programming like the Connected Scholars Program (CSP). CSP is an intervention that provides incoming college freshman with skills to recruit informal mentors who can aid them with academic and career goals (Schwartz et al., 2016). Students attend workshops that are designed to discuss the importance of mentoring and supportive relationships, help students identify compatible mentors and resources on campus, and provide strategies to develop mentoring relationships. Post-interviews with scholars suggest that through CSP, participants were able to understand the value of mentoring relationships, develop skills and enhance self-efficacy in developing mentoring relationships, and change the way they interacted with non-parental

figures (Schwartz et al., 2016). Though this intervention is offered to high school seniors in their last semester, universities may offer an adapted version to new students during orientation or early in their first year of college. Programs such as CSP offer students the skills to identify and acquire natural mentors.

Universities that have a strong interest in student adjustment may want to invest in programming that promotes the acquisition of both types of mentoring as both have been proven to be effective in student success (Hurtado et al., 1996; Campbell & Campbell, 1997; Folger et al., 2004, Lidenfrost et al., 2014). Though this study did not explore specific mentor characteristics e.g., racial/ethnic identity, gender, age of mentor, future research may want to investigate if any of these characteristics serve as a moderator for racial climate and student outcomes (e.g., higher GPA, higher belonging). Research has examined mentor-matching, matching mentors and mentees based on gender and ethnicity, which may be more effective as students matched with mentors of the same ethnicity felt they received more psychosocial support (Black-Beard et al., 2011), had higher GPA, and better graduation rates (Campbell and Campbell, 2007).

### **Implications for Policy**

Universities need to provide more support through institutional structural changes to address the ecological context that contributes to the risk of a negative racial climate. Requiring mandatory cultural sensitivity training for all university personnel and students may be a step in the right direction. Rankin and Reason (2005) found that generally, students wanted more attention to race-related issues. Students of color were more likely to advocate for workshops, required courses, and training for staff. Most of these students believed that the workshops and programs designed to address race issues would improve the campus climate slightly. Alongside

prevention programming, required courses on race related issues, and training university personnel, universities must diversify their faculty. When students report having many same race professors, they were likely to have higher grades (Fisher, 2010). Having a diverse faculty can contribute to a more “welcoming” environment for racialized students (Museus et al., 2008).

### **Limitations**

Though the demographic makeup of the sample was reflective of the overall student body, the present study was limited due to its small sample size and significant attrition rates. More than half of the survey respondents from Time 1 did not participate in the Time 2 survey, reducing the initial sample from two hundred and forty-six students to one hundred and six students. As noted, fifty-five students from the initial sample size did not have a recorded cumulative graduation GPA as they either had not graduated or had left the university which then affected the sample size of Group B participants. Though G\*Power did indicate the power of the sample was sufficient, a larger sample size may have provided a better understanding of the data and helped to identify outliers and find small effects. Small sample sizes may also undermine the validity both internally and externally of the study (Faber & Fonseca, 2014). Furthermore, this study relied on self-report data from students taken at the end of academic years. There may be recall bias in responses.

The current study examines the data longitudinally (racial climate and mentor presence at Time 1 with Time 2 and 3 school experience and academic outcomes) as well as cross-sectionally; however, it did not assess these variables prior to entering the university. Data from this study that examines the variables prior to entering college may be useful in establishing a baseline to compare pre-college and during college experiences. Assessing pre-college data may allow researchers to identify changes in belonging and engagement patterns once students enter

college. This would allow researchers to establish more sequencing of events and follow change over time for these students (Caruana et al., 2015).

Lastly, the GPA at graduation variable in this study only assesses students who had graduated. At the university of the students from this study, a minimum cumulative GPA of 2.00 is required to graduate. This may have been attributed to the representation of students in sample size for Group B. Students who did not meet the minimum requirements for GPA would not be able to graduate and therefore would be filtered out from this sample. Future studies may examine cumulative GPA at the end of four years for all students rather than focusing on graduated students. This may offer more insight regarding how racial climate and mentor presence may affect all students.

### **Conclusion**

As the racial climate nationally remains contentious, it is important to address how this may impact students at the college level. In this study, negative racial climate perception in the first year was associated with lower belonging and higher engagement in year one, as well as lower GPA in year one and at graduation. This is concerning, as students who struggle academically may be at risk for losing federal student aid (U.S. Department of Education, n.d). Low cumulative GPAs at graduation may also impact students' ability to meet the minimum requirements for competitive graduate programs as well as career options.

Though this study did not find a relationship between mentor presence in the first year as a buffer for the risk of negative racial climate on student outcomes in the third year, it did identify that mentor support in the first year was associated with higher levels of belonging and engagement in the first year. Further research is needed to investigate how negative racialized experiences on campus may impact students throughout their college career and what resources

universities can offer to better support students. As research has shown lower belonging and engagement impact student retention and graduation (Morrow & Ackerman, 2012), investment into research, policy, and practices that address negative racial climate on campus and facilitate mentoring and other supportive measures is needed.



### References

- American Council on Education. (2016, March 8). Racial Climate on Campus: A Survey of College Presidents. *Higher Education Today*.  
<https://www.higheredtoday.org/2016/03/08/racial-climate-on-campus-a-survey-of-college-presidents/>
- Ancis, Sedlacek, W. E., & Mohr, J. J. (2000). Student perceptions of campus cultural climate by race. *Journal of Counseling and Development, 78*(2), 180–185.  
<https://doi.org/10.1002/j.1556-6676.2000.tb02576.x>
- Berryhill, J. C., & Bee, E. K. (2007). Ethnically diverse college students' psychological sense of community: Do their perceptions of campus racial climate influence it? *The College Student Affairs Journal, 27*(1), 76–
- Brittian, A. S., & Gray, D. L. (2014). African American students' perceptions of differential treatment in learning environments: Examining the moderating role of peer support, connection to heritage, and discrimination efficacy. *Journal of Education, 194*(1), 1–9. <https://doi.org/10.1177/002205741419400103>
- Brittian, A. S., Sy, S. R., & Stokes, J. E. (2009). Mentoring: Implications for African American college students. *Western Journal of Black Studies, 33*(2).
- Blake-Beard, S., Bayne, M. L., Crosby, F. J., & Muller, C. B. (2011). Matching by race and gender in mentoring relationships: Keeping our eyes on the prize. *Journal of Social Issues, 67*(3), 622–643.
- Brown, A. R., Morning, C., & Watkins, C. (2005). Influence of African American engineering student perceptions of campus climate on graduation rates. *Journal of Engineering Education, 94*(2), 263–271. <https://doi.org/10.1002/j.2168-9830.2005.tb00847.x>

Butler-Barnes, S. T., Leath, S., Williams, A., Byrd, C., Carter, R., & Chavous, T. M. (2018).

Promoting resilience Among African American girls: Racial identity as a protective factor. *Child Development, 89*(6), e552–e571. <https://doi.org/10.1111/cdev.12995>

Cabrera A., Amaury N. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college, *The Journal of Higher Education, 67*(2), 119-148. DOI: 10.1080/00221546.1996.11780253

Cabrera, A. F., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between White students and African-American students. *The Journal of Higher Education, 70*(2), 134–. <https://doi.org/10.2307/2649125>

Campbell, T. A., & Campbell, D. E. (1997). Faculty/Student mentor program: Effects on academic performance and retention. *Research in Higher Education, 38*(6), 727–742. <https://doi.org/10.1023/A:1024911904627>

Campbell, T. A., & Campbell, D. E. (2007). Outcomes of mentoring at-risk college students: Gender and ethnic matching effects. *Mentoring & Tutoring, 15*(2), 135-148.

Caruana, E. J., Roman, M., Hernández-Sánchez, J., & Solli, P. (2015). Longitudinal studies. *Journal of Thoracic Disease, 7*(11), E537–E540. <https://doi.org/10.3978/j.issn.2072-1439.2015.10.63>

Center for Postsecondary Research (2014). *National Survey of Student Engagement*. Retrieved from: <https://nsse.indiana.edu/nsse/working-with-nsse-data/data-codebooks/>

Chavous, T., & Leath, S. (2017). “We really protested”: The Influence of sociopolitical beliefs, political self-efficacy, and campus racial climate on civic engagement among

- black college students attending predominantly White institutions. *The Journal of Negro Education*, 86(3), 220–237. <https://doi.org/10.7709/jnegroeducation.86.3.0220>
- Cole, D., Newman, C. B., & Hypolite, L. I. (2020). Sense of belonging and mattering among two cohorts of first-year students participating in a comprehensive college transition program. *American Behavioral Scientist*, 64(3), 276-297.
- Cooper, S. M., Brown, C., Metzger, I., Clinton, Y., & Guthrie, B. (2013). Racial discrimination and African American adolescents' adjustment: Gender variation in family and community social support, promotive and protective factors. *Journal of Child and Family Studies*, 22(1), 15–29. <https://doi.org/10.1007/s10826-012-9608-y>
- Credé, M., Niehorster, S. Adjustment to college as measured by the student adaptation to college questionnaire: A quantitative review of its structure and relationships with correlates and consequences. *Educational Psychogoy Review*, 24, 133–165 (2012).  
<https://doi.org/10.1007/s10648-011-9184-5>
- Crisp, G., & Cruz, I. (2009). Mentoring college students: A critical review of the literature between 1990 and 2007. *Research in Higher Education*, 50(6), 525-545.
- Dahlberg, M., & Byars-Winston, A. (2019). The science of mentoring relationships: What is mentorship. In the cience of Effective Mentorship in STEMM. National Academic Press. <https://www.ncbi.nlm.nih.gov/books/NBK552772/>
- Deutsch, N. L., Mauer, V. A., Johnson, H. E., Grabowska, A. A., & Arbeit, M. R. (2020). “[My counselor] knows stuff about me, but [my natural mentor] actually knows me”:  
Distinguishing characteristics of youth’s natural mentoring relationships. *Children and Youth Services Review*, 111, 104879-  
. <https://doi.org/10.1016/j.childyouth.2020.104879>

- Drevon, D. D., Kim, S. Y., & Fredrick, S. S. (2018). Natural mentoring relationships as a protective factor for victims of bullying. *Journal of School Violence, 17*(4), 405-416.
- Engagement. (n.d.). National Center on Safe Supportive Learning Environments. Retrieved October, 2021, from <https://safesupportivelearning.ed.gov/topic-research/engagement>
- Equity in Mental Health. (n.d.). *A Framework of Recommendations for Colleges and Universities to Support the Mental Health of Students of Color*. <https://equityinmentalhealth.org>
- Faber, J., & Fonseca, L. M. (2014). How sample size influences research outcomes. *Dental Press Journal of Orthodontics, 19*(4), 27–29. <https://doi.org/10.1590/2176-9451.19.4.027-029.ebo>
- Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health, 26*(1), 399–419. <https://doi.org/10.1146/annurev.publhealth.26.021304.144357>
- Fischer, M. J. (2010). A longitudinal examination of the role of stereotype threat and racial climate on college outcomes for minorities at elite institutions. *Social Psychology of Education: An International Journal, 13*(1), 19–40. <https://doi.org/10.1007/s11218-009-9105-3>
- Folger, W. A., Carter, J. A., & Chase, P. B. (2004). Supporting first generation college freshmen with small group intervention. *College Student Journal, 38*(3), 472–475
- Ganim, S., Welch, C., & Meyersohn, N. (2017, February 16). A resurgence of white nationalism’: Hate groups spiked in 2016. *CNN*. <https://www.cnn.com/2017/02/15/politics/hate-groups-spiked-in-2016/index.html>
- Golden, A. R., Griffin, C. B., Metzger, I. W., & Cooper, S. M. (2018). School racial climate and academic outcomes in African American adolescents: The protective role of peers.

*Journal of Black Psychology*, 44(1), 47-

73. <https://doi.org/10.1177/0095798417736685>

Grossman, J. B., & Rhodes, J. E. (2002). The test of time: Predictors and effects of duration in youth mentoring relationships. *American Journal of Community Psychology*, 30(2), 199-219. doi:<http://dx.doi.org.ezproxy.depaul.edu/10.1023/A:1014680827552>

Hagborg, W. J. (1998). An investigation of a brief measure of school membership. *Adolescence*, 33(130), 461–468.

Hagler, M. A., Christensen, K. M., & Rhodes, J. E. (2021). A longitudinal investigation of first-generation college students' mentoring relationships during their transition to higher education. *Journal of College Student Retention : Research, Theory & Practice*.  
<https://doi.org/10.1177/15210251211022741>

Hui, M., & Svlurga, S. (2016, March 29). Hacker sends anti-Semitic fliers to network printers at Princeton, many other colleges. *Washington Post*.  
<https://www.washingtonpost.com/news/grade-point/wp/2016/03/29/hacker-sends-anti-semitic-fliers-to-network-printers-at-princeton-many-other-colleges/>

Hurd, N. M., & Zimmerman, M. A. (2010). Natural mentoring relationships among adolescent mothers: A study of resilience: Natural mentoring relationships among mothers. *Journal of Research on Adolescence*, 20(3), 789–809. <https://doi.org/10.1111/j.1532-7795.2010.00660.x>

Hurd, N. M., Sánchez, B., Zimmerman, M. A., & Caldwell, C. H. (2012). Natural mentors, racial identity, and educational attainment among African American adolescents: exploring pathways to success: Natural mentors, racial identity, and educational

- attainment. *Child Development*, 83(4), 1196–1212. <https://doi.org/10.1111/j.1467-8624.2012.01769.x>
- Hurd, N. M., Tan, J. S., & Loeb, E. L. (2016). Natural mentoring relationships and the adjustment to college among underrepresented students. *American Journal of Community Psychology*, 57(3-4), 330–341. <https://doi.org/10.1002/ajcp.12059>
- Hurtado, S., Carter, D., & Spuler, A. (1996). Latino student transition to college: Assessing difficulties and factors in successful college adjustment. *Research in Higher Education* 37(2), 135-157.
- Hurtado, S., & Carter, D. (1997). Effects of college transition and perceptions of the campus racial climate on latino college students' sense of belonging. *Sociology of Education*, 70 (4), 324-345.
- Hurtado, S., & Ponjuan, L. (2005). Latino educational outcomes and the campus climate. *Journal of Hispanic Higher Education*, 4(3), 235–251. <https://doi.org/10.1177/1538192705276548>
- Inzer, L. D., & Crawford, C.B. (2005). A review of formal and informal mentoring: Processes, problems, and design. *Journal of Leadership Education*, 4(1), 37-46.
- Jacobi, M. (1991). Mentoring and undergraduate academic success: A literature review. *Review of Educational Research*, 61(4), 505-532.
- Johnson, D. R. (2012). Campus racial climate perceptions and overall sense of belonging among racially diverse women in STEM Majors. *Journal of College Student Development*, 53(2), 336–346. <https://doi.org/10.1353/csd.2012.0028>
- Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H. T., & Longerbeam, S. D. (2007). Examining sense of belonging among first-year

- undergraduates from different racial/ethnic groups. *Journal of College Student Development*, 48(5), 525–542. <https://doi.org/10.1353/csd.2007.0054>
- Knekta, E., & McCartney, M. (2021). What can departments do to increase students' retention? A case study of students' sense of belonging and involvement in a biology department. *Journal of College Student Retention: Research, Theory & Practice*, 22(4), 721-742.
- Lascher, E. L., & Offenstein, J. L. (2012). Campus racial climate and student academic outcomes: A critique of prior research and recommendations for future study. *Journal of College Student Retention: Research, Theory & Practice*, 14(2), 265–277. <https://doi.org/10.2190/CS.14.2.g>
- Law, D. D., Hales, K., & Busenbark, D. (2020). Student success: A literature review of faculty to student mentoring. *Journal on Empowering Teaching Excellence*, 4(1), 6.
- Lee, R. M. (2005). Resilience Against Discrimination: Ethnic identity and other-group orientation as protective factors for Korean Americans. *Journal of Counseling Psychology*, 52(1), 36–44. <https://doi.org/10.1037/0022-0167.52.1.36>
- Leath, S., Mathews, C., Harrison, A., & Chavous, T. (2019). Racial identity, racial discrimination, and classroom engagement outcomes among Black girls and boys in predominantly Black and predominantly white school districts. *American Educational Research Journal*, 56(4), 1318–1352. <https://doi.org/10.3102/0002831218816955>
- Leidenfrost, B., Strassnig, B., Schütz, M., Carbon, C.-C., & Schabmann, A. (2014). The impact of peer mentoring on mentee academic performance: Is any mentoring style better than no mentoring at all? *International Journal on Teaching and Learning in Higher Education*, 26(1), 102–.

- Levin, S., Van Laar, C., & Foote, W. (2006). Ethnic segregation and perceived discrimination in college: Mutual influences and effects on social and academic life. *Journal of Applied Social Psychology, 36*(6), 1471-1501.
- Lithwick, D., & Stern, M. J. (2017, August 14). The Guns Won. *Slate*. <https://slate.com/news-and-politics/2017/08/the-first-and-second-amendments-clashed-in-charlottesville-the-guns-won.html>
- Locks, A.M., Hurtado, S., Bowman, N.A., & Oseguera, L. (2008). Extending notions of campus climate and diversity to students' transition to college. *The Review of Higher Education 31*(3), 257-285. doi:10.1353/rhe.2008.0011.
- Lotkowski, V. A., Robbins, S. B., & Noeth, R. J. (2004). The role of academic and Non-Academic factors in improving college retention. ACT Policy Report. *American College Testing ACT Inc.*
- Martin, N.D., Spenner, K.I. & Mustillo, S.A. (2017). A Test of leading explanations for the college racial-ethnic achievement gap: Evidence from a longitudinal case study. *Research in Higher Education, 58*, 617–645. <https://doi.org/10.1007/s11162-016-9439-6>
- Mattison, E., & Aber, M. S. (2007). Closing the achievement gap: The association of racial climate with achievement and behavioral outcomes. *American Journal of Community Psychology, 40*(1), 1–12. <https://doi.org/10.1007/s10464-007-9128-x>
- Mentoring in America Corp. (n.d.). A snapshot of the current state of mentoring. Mentoring in America. Retrieved 2006, from <https://www.mentoringamerica.org/>
- Morris, K., Seaton, E., Masumi, L., Lindstrom Johnson, S. (2020). Racial discrimination stress, school belonging, and school racial composition on academic attitudes and



- beliefs among black youth. *Social Sciences (Basel)*, 9(191), 191–.
- <https://doi.org/10.3390/socsci9110191>
- Morrow, J., & Ackermann, M. (2012). Intention to persist and retention of first-year students: The importance of motivation and sense of belonging. *College Student Journal*, 46(3), 483-491.
- Mills, K. J. (2021). Black students' perceptions of campus climates and the effect on academic resilience. *Journal of Black Psychology*, 47(4–5), 354–383. <https://doi.org/10.1177/00957984211001195>
- Museus, S. D., Nichols, A. H., & Lambert, A. D. (2008). Racial differences in the effects of campus racial climate on degree completion: A structural equation model. *Review of Higher Education*, 32(1), 107-134.
- Museus, S. D., & Chang, T. H. (2021). The impact of campus environments on sense of belonging for first-generation college students. *Journal of College Student Development*, 62(3), 367-372.
- Munoz, S., Vigil, D., Jach, E., & Rodriguez-Gutierrez, M. (2018, December 20). Unpacking resilience and trauma: Examining the “Trump Effect” in higher education for Undocumented Latinx College Students. *Latinx Education Policy and Resistance in the Trump Era*, 12(3). <https://amaejournal.utsa.edu/index.php/amae/article/view/306>
- Mwangi, C. A. G., Thelamour, B., Ezeofor, I., & Carpenter, A. (2018). "Black elephant in the room": Black students contextualizing campus racial climate within US racial climate. *Journal of College Student Development*, 59(4), 456-474.
- National Center on Safe Supporting Learning Environments. (n.d.). *Engagement*. Retrieved October, 2021, from <https://safesupportivelearning.ed.gov/topic-research/engagement>

- Nation Center for Education Statistics (2022). *Hate Crime Incidents at Postsecondary Institutions*. Retrieved January, 2023, from:  
<https://nces.ed.gov/programs/coe/indicator/a22/postsecondary-hate-crimes>
- Nation Center for Education Statistics (2019). *Indicator 23: Postsecondary Graduation Rates*. Retrieved January, 2023, from:  
[https://nces.ed.gov/programs/raceindicators/indicator\\_red.asp](https://nces.ed.gov/programs/raceindicators/indicator_red.asp)
- Núñez. (2009). A Critical Paradox? Predictors of Latino students' sense of belonging in college. *Journal of Diversity in Higher Education*, 2(1), 46–61.  
<https://doi.org/10.1037/a0014099>
- Oates, G. L. (2009). An empirical test of five prominent explanations for the black-white academic performance gap. *Social Psychology of Education*, 12, 415–441.
- O'Connor, C. (1997). Dispositions toward (collective) struggle and educational resilience in the inner city: A case analysis of six African-American high school students. *American Educational Research Journal*, 34(4), 593-629.
- Perry, A. (2015, November 11). Campus racism makes minority students likelier to drop out of college. Mizzou students had to act. *The Washington Post*.  
<https://www.washingtonpost.com/posteverything/wp/2015/11/11/campus-racism-makes-minority-students-likelier-to-drop-out-of-college>
- Phinney, Torres Campos, C. M., Padilla Kallemeyn, D. M., & Kim, C. (2011). Processes and outcomes of a mentoring program for Latino college freshmen. *Journal of Social Issues*, 67(3), 599–621. <https://doi.org/10.1111/j.1540-4560.2011.01716.x>
- Potok, M. (2017, February). The year in hate and extremism. Intelligence Report.

- Rankin, S. R., & Reason, R. D. (2005). Differing perceptions: How students of color and white students perceive campus climate for underrepresented groups. *Journal of college student development, 46*(1), 43-61.
- Reid, L. D., & Radhakrishnan, P. (2003). Race Matters: The relation between race and general campus climate. *Cultural Diversity & Ethnic Minority Psychology, 9*(3), 263–275. <https://doi.org/10.1037/1099-9809.9.3.263>
- Rhodes, J. E., & DuBois, D. L. (2008). Mentoring relationships and programs for youth. Current Directions in Psychological Science. *Journal of the American Psychological Society, 17*(4), 254–258. <https://doi.org/10.1111/j.1467-8721.2008.00585.x>
- Rhodes, J. E., Grossman, J. B., & Resch, N. L. (2000). Agents of change: pathways through which mentoring relationships influence adolescents' academic adjustment. *Child Development, 71*(6), 1662–1671. <https://doi.org/10.1111/1467-8624.00256>
- Sánchez, B., Mroczkowski, A. L., Liao, L. C., Cooper, A. C., Rivera, C., & DuBois, D. L. (2017). Mentoring as a mediator or moderator of the association between racial discrimination and coping efficacy in urban, low-income Latina/o youth. *American Journal of Community Psychology, 59*(1-2), 15-24.
- Salinitri, G. (2005). The effects of formal mentoring on the retention rates for First-Year, low achieving students. *Canadian Journal of Education, 28*(4), 853–873. <https://doi.org/10.2307/4126458>
- Schwartz, S. E., Kanchewa, S. S., Rhodes, J. E., Cutler, E., & Cunningham, J. L. (2016). “I didn't know you could just ask:” Empowering underrepresented college-bound students to recruit academic and career mentors. *Children and Youth Services Review, 64*, 51-59.

- Solorzano, D., Ceja, M., & Yosso, T. (2000). Critical race theory, racial microaggressions, and campus racial climate: The experiences of African American college students. *The Journal of Negro Education*, 69(1/2), 60-73.
- Southern Poverty Law Center. (2016, November 28). *The Trump Effect: The Impact of The 2016 Presidential Election on Our Nation's Schools*. Southern Poverty Law Center.  
<https://www.splcenter.org/20161128/trump-effect-impact-2016-presidential-election-our-nations-schools#pdf>
- Spenner, Buchmann, C., & Landerman, L. R. (2004). The Black-White achievement gap in the first year: Evidence from a longitudinal case study. *Research in Social Stratification and Mobility*, 22, 187–216. [https://doi.org/10.1016/S0276-5624\(04\)22007-8](https://doi.org/10.1016/S0276-5624(04)22007-8)
- Taylor, Z. E., Doane, L. D., & Eisenberg, N. (2014). Transitioning from high school to college: Relations of social support, ego-resiliency, and maladjustment during emerging adulthood. *Emerging Adulthood*, 2(2), 105-115.
- Umaña-Taylor, A. J., Wong, J. J., Gonzales, N. A., & Dumka, L. E. (2011). Ethnic identity and gender as moderators of the association between discrimination and academic adjustment among Mexican-origin adolescents. *Journal of Adolescence*, 35(4), 773–786. <https://doi.org/10.1016/j.adolescence.2011.11.003>
- Federal Student Aid (n.d.) *Staying Eligible*. U.S. Department of Education.  
<https://studentaid.gov/understand-aid/eligibility/staying-eligible>
- Wang, X., & Cheng, Z. (2020). Cross-sectional studies: strengths, weaknesses, and recommendations. *Chest*, 158(1), S65-S71.

- Wells, A., Horn, C. (2015). "The Asian American college experience at a diverse institution: Campus climate as a predictor of sense of belonging." *Journal of Student Affairs Research and Practice*, 52(2), 149–163.
- Wong, C. A., Eccles, J. S., & Sameroff, A. (2003). The influence of ethnic discrimination and ethnic identification on African American adolescents' school and socioemotional adjustment. *Journal of Personality*, 71(6), 1197–1232. <https://doi.org/10.1111/1467-6494.7106012>
- Woodland, M. H. (2016). After-School Programs: A resource for young Black males and other Urban youth. *Urban Education*., 51(7), 770–796. <https://doi.org/10.1177/0042085914549361>
- Yomtov, D., Plunkett, S. W., Efrat, R., & Marin, A. G. (2017). Can peer mentors improve first-year experiences of university students? *Journal of College Student Retention: Research, Theory & Practice*, 19(1), 25-44.
- Zea, M. C., Reisen, C. A., Beil, C., & Caplan, R. D. (1997). Predicting intention to remain in college among ethnic minority and nonminority students. *The Journal of Social Psychology*, 137(2), 149-160.  
doi:<http://dx.doi.org.ezproxy.depaul.edu/10.1080/00224549709595426>
- Zimmerman, M. A., Stoddard, S. A., Eisman, A. B., Caldwell, C. H., Aiyer, S. M., & Miller, A. (2013). Adolescent resilience: Promotive factors that inform prevention. *Child Development Perspectives*, 7(4), 215–220. <https://doi.org/10.1111/cdep.12042>

### Appendix A

Racial Climate measure (Reid & Radhakrishnan, 2003)

Question: These questions are about different beliefs, opinions, and experiences. There are no right or wrong answers. Read each statement carefully and decide how it applies to you at the present time (since the time you started at \*the university). Choose the response for each statement that best describes your opinion.

Scale

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

- 1) I have experienced racial insensitivity from other students.
  1. Strongly Disagree
  2. Disagree
  3. Neither Agree or Disagree
  4. Agree
  5. Strongly Agree
  
- 2) I have experienced racial insensitivity from faculty
  1. Strongly Disagree
  2. Disagree
  3. Neither Agree or Disagree
  4. Agree
  5. Strongly Agree
  
- 3) The interracial climate on this campus is tense.
  1. Strongly Disagree
  2. Disagree
  3. Neither Agree or Disagree
  4. Agree
  5. Strongly Agree
  
- 4) In my opinion, this campus is more racist than most.
  1. Strongly Disagree
  2. Disagree
  3. Neither Agree or Disagree
  4. Agree
  5. Strongly Agree
  
- 5) Students of other races or ethnic groups seem uncomfortable around me
  1. Strongly Disagree
  2. Disagree
  3. Neither Agree or Disagree
  4. Agree
  5. Strongly Agree

## Appendix B

### Sense of Belonging measure (Hagborg, 1994)

Choose the response for each statement that best describes your opinion. Select the column that identifies the extent to which you agree or disagree with the statement.

#### Scale

Completely false	Somewhat false	Neither true or false	Somewhat true	Completely true
1	2	3	4	5

1.) I feel a real part of this university.

1. Completely false
2. Somewhat false
3. Neither true not false
4. Somewhat true
5. Completely true

2.) People notice when I'm good at something.

1. Completely false
2. Somewhat false
3. Neither true not false
4. Somewhat true
5. Completely true

3.) Other students in this university take my opinions seriously.

1. Completely false
2. Somewhat false
3. Neither true not false
4. Somewhat true
5. Completely true

4.) Most teachers at this university are interested in me.

1. Completely false
2. Somewhat false
3. Neither true not false
4. Somewhat true
5. Completely true

5.) There's at least one teacher or adult in this university I can talk to if I have a problem.

1. Completely false
2. Somewhat false
3. Neither true not false
4. Somewhat true
5. Completely true

- 6.) People at this university are friendly to me.
  1. Completely false
  2. Somewhat false
  3. Neither true not false
  4. Somewhat true
  5. Completely true
  
- 7.) I am included in lots of activities at this university.
  1. Completely false
  2. Somewhat false
  3. Neither true not false
  4. Somewhat true
  5. Completely true
  
- 8.) I am treated with as much respect as other students.
  1. Completely false
  2. Somewhat false
  3. Neither true not false
  4. Somewhat true
  5. Completely true
  
- 9.) The teachers here respect me.
  1. Completely false
  2. Somewhat false
  3. Neither true not false
  4. Somewhat true
  5. Completely true
  
- 10.) People know I can do good work.
  1. Completely false
  2. Somewhat false
  3. Neither true not false
  4. Somewhat true
  5. Completely true
  
- 11.) Other students like the way I am.
  1. Completely false
  2. Somewhat false
  3. Neither true not false
  4. Somewhat true
  5. Completely true



**Appendix C**

National Survey of Student Engagement (Center for Postsecondary Research, 2014)

During your time \*at the university about how often have you done the following...

Scale:

Never	Sometimes	Often	Very Often
1	2	3	4

1.) Asked another student to help you understand course material

1. Never
2. Sometimes
3. Often
4. Very Often

2.) Asked questions or contributed to course discussions in other ways

1. Never
2. Sometimes
3. Often
4. Very Often

3.) Worked with a faculty member on activities other than coursework (committees, student groups, etc.

1. Never
2. Sometimes
3. Often
4. Very Often

4.) Discussed course topics, ideas, or concepts with a faculty member outside of class

1. Never
2. Sometimes
3. Often
4. Very Often

5.) Discussed your academic performance with a faculty member

1. Never
2. Sometimes
3. Often
4. Very Often

**Appendix D**

## Mentoring Identification (adapted, Sanchez, 2008)

Is there anyone at \*the university who is at least two years older\* and more experienced than you whom you go to for support and guidance? This person is not a parent or the person who raised you or a relative or a boy/girlfriend and must be a part of the DePaul campus community. This person is someone who: a) you can count on to be there for you b) who believes in you and cares deeply about you c) who inspires you to do your best, and d) who has really influenced what you do and the choices you make

Do you have a person like this at \*the university?

1. Yes
2. No