

## ABSTRACT

Title of Thesis: DO PERCEPTIONS OF GENERAL CAMPUS CLIMATE MEDIATE DISABILITY STATUS AND INSTITUTIONAL SATISFACTION?: A REPLICATION STUDY

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The present study examined the potential mediating role of perceptions of general campus climate on the relationship between disability status and institutional satisfaction across two independent university samples—both of which are large predominately white midwestern institutions in the United States. Consistent with the proposed hypotheses, disability status was negatively related to general campus climate perceptions and institutional satisfaction and positively correlated with institutional satisfaction. In both samples, perceptions of general campus climate significantly explained the link between disability status and institutional satisfaction. In the first sample, perceptions of general campus climate partially mediated the aforementioned connection. However, in the second sample, perceptions of general campus climate fully mediated disability status and college student satisfaction. Findings, implications, and limitations are discussed.

DO PERCEPTIONS OF GENERAL CAMPUS CLIMATE MEDIATE DISABILITY  
STATUS AND INSTITUTIONAL SATISFACTION?: A REPLICATION STUDY

by

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## Dedication

To the students and families at Huntington Park High School and to my teacher friends, colleagues, and family, thank you for teaching, supporting, and inspiring me to do this work.

## Acknowledgements

I would like to acknowledge my thesis chair and committee members for their support and patience throughout this process. Also, many thanks to my mentors, friends, and family members—near and far—who have kept me going along the way. I am especially grateful for my graduate school comrades from the west coast, midwest, east coast, and in my program—nothing more important than doing this together. Most of all, thank you God for your strength and comfort during this journey.

## Table of Contents

Dedication.....	ii
Acknowledgements .....	iii
Table of Contents .....	iv
List of Tables.....	v
Chapter 1: Introduction to the Problem.....	1
Chapter 2: Review of the Literature .....	5
College Students with Disabilities.....	5
Perceptions of Campus Climate .....	16
Institutional Satisfaction: Definition, Frameworks, Measurement, and Correlates to Student Outcomes.....	45
The Present Study.....	53
Chapter 3: Method.....	55
Participants .....	55
Measures.....	56
Procedures .....	60
Chapter 4: Results.....	62
Preliminary Analyses.....	62
Main Analysis.....	66
Chapter 5: Discussion.....	67
Limitations and Suggestions for Future Research.....	71
Implications for Practice.....	73
Appendices .....	76
References .....	83

## List of Tables

Table 1

*Campus A: Intercorrelations, Means, Standard Deviations, and Ranges*

Variables	1	2	3	<i>M</i>	<i>SD</i>	<i>R</i>
1. Disability Status	-			0.42	0.49	1.00
2. General Campus Climate	-.132**	-		5.33	1.12	6.54
3. College Satisfaction	-.160**	.574**	-	3.42	0.79	4.22

Note. \*\*  $p < .05$ .

Table 2

*Campus B: Intercorrelations, Means, Standard Deviations, and Ranges*

Variables	1	2	3	<i>M</i>	<i>SD</i>	<i>R</i>
1. Disability Status	-			0.50	0.50	1.00
2. General Campus Climate	-.184**	-		4.60	0.74	4.61
3. College Satisfaction	-.128**	.637**	-	3.36	0.90	3.04

Note. \*\*  $p < .05$ . \*  $p < .05$

Table 3

*Campus A: Regression Results for Mediation*

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
(Constant)	1.35	0.14	9.71	0.00
Disability Status	-0.14	0.06	-2.44	0.02
General Campus Climate	0.40	0.03	16.04	0.00
Boot indirect effect      Boot <i>SE</i> Bias corrected 95% CI				
Indirect effect	-0.112	0.039	[-.199, -.047]	

Note. All  $p$  values, two-tailed.

Table 4

*Campus B: Regression Results for Mediation*

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
(Constant)	0.15	0.23	0.67	0.50
Disability Status	-0.02	0.06	-0.29	0.77
General Campus Climate	0.70	0.05	15.24	0.00
Boot indirect effect      Boot <i>SE</i> Bias corrected 95% CI				
Indirect effect	-0.216	0.052	[-.294, -.095]	

Note. All  $p$  values, two-tailed.

## Chapter 1: Introduction to the Problem

Given the increasing diversity on colleges and universities in recent decades, issues of diversity and inclusion have become a national priority on college campuses across the nation (Association of American Colleges and Universities [AACU], 2017). In response, colleges and universities are engaging in systematic efforts to promote diversity, foster inclusion, and respond to multicultural and diversity concerns (AACU, 2017; American Psychological Association, 2002). As such, there has been growing interdisciplinary research on diversity issues on college campuses in the higher education (e.g., Hurtado, Milem, Clayton-Pederson, & Allen, 1998) and in the counseling psychology literature (e.g., Castillo et al., 2006; Mallinckrodt et al., 2014; Miville, Gelso, Pannu, Liu, & Touradji, 1999; Pieterse, Carter, Evans, & Walter, 2010) because students in marginalized groups may be at special risk for college dropout. Also, from a financial perspective, high dropout rates are very costly and inefficient for colleges and universities, and it more advantageous and efficient for institutions to focus on intervention and prevention efforts to increase the likelihood of students persisting towards earning their degrees.

As such, assessment and evaluation of campus climate has gained considerable attention in recent years. This research includes assessing the quality of services for students; understanding and measuring student, staff, and faculty perceptions of their institutions and their experiences; and evaluating institutional climate and climate changes over time (Hutchinson, Raymond, & Black, 2008). Over the past 25 years, campus climate research has consistently indicated that students from marginalized communities, such as racial/ethnic minority students, sexual



minority students, women, and students with disabilities, are more likely than their non-marginalized peers to drop out or transfer to another institution as a result of experiencing acts of bias, alienation, and differential treatment (Hurtado & Carter, 1997; Sedlacek, 1999). While most compare experiences between marginalized and majority group members, in their content analysis of campus climate studies, Hart and Fellabuum (2008) found that most of the campus climate research examines students of color and women, whereas less attention has focused on LGBTQ students, student veterans, and students with disabilities. Thus, in hope to further understand the experiences of students with disabilities on college campuses and to address the growing concern of higher education's financial and educational responsibilities, the present study examined the perceptions of general campus climate of college students with disabilities—a group that is known as “at-risk” for attrition. Specifically, the potential role and explanation of perceptions of general campus climate on the connection between students' disability status and their college satisfaction was investigated. As a note moving forward, perceptions of general campus climate is defined as a student's internal experience with the overall ethos and atmosphere of the institution (Navarro, Worthington, Hart, & Khairallah, 2009; Rankin, 2003; Worthington, 2013; Worthington, Navarro, Loewy, & Hart, 2008).

While underrepresented in colleges and universities across the United States (U.S.), students with disabilities are enrolling in college and university campuses in increasing numbers (Newman, Wagner, Cameto, Knokey, & Shaver, 2010; Snyder & Dillow, 2010). The U.S. Department of Education ([DOE], 2015) noted that in 2011-2012, only 11% of undergraduates reported having a disability. This enrollment has

nearly doubled in 10 years, where only six percent of undergraduates reported having a disability in 1995-1996 (Berk told & Horn, 1999). Moreover, in response to recent key federal legislation, including the Americans with Disabilities Act (ADA) Amendment of 2008 (ADA, 2014) and the Higher Education Opportunity Act of 2008 (P.L. 110-315) where the interpretation of disability was broadened and financial assistance for individuals with intellectual disabilities and new programs for students with disabilities were created, respectively, there is a considerable amount of interest in examining access, retention, and satisfaction issues in higher education among students with disabilities (Raue & Lewis, 2011).

Students with disabilities have unique challenges compared to their peers without disabilities—resulting in lower rates of persistence, retention, and graduation. For example, studies have found that, in general, students with disabilities who are registered with their campus's Disability Support Services (DSS) and, as a result, receive their academic accommodations earn their college degrees at a higher rate (O'Neill, Markward, & French, 2012). Students who do not receive their accommodations through DSS are more likely to experience lower academic outcomes. Relatedly, students with disabilities experience stigma and exclusion in their interactions with faculty and their peers. These experiences have resulted in high course failure (Sanford et al., 2011), low retention (Adams & Proctor, 2010), and low graduation rates (Hurst & Smerdom, 2000). Because such experiences are specific towards this population, it is crucial to understand factors, such as perceptions of general campus climate, that are impacting this high-risk population with the

intention to create and improve supports and interventions that foster inclusion and increasing persistence towards graduation for students with disabilities.

Thus, the present study examined the potential role of students' perceptions of general campus climate on the relationship between disability status and students' college satisfaction. Findings from this study addresses the dearth of disability-related research in counseling psychology (Foley-Nicpon & Lee, 2012) and extend our understanding of satisfaction among students with disabilities. Furthermore, most of the campus climate literature utilizes single identity-specific frameworks and measures to understand campus racial, gender, sexual orientation climate. However, this study employs a new conceptualization of campus climate theory and measurement, that is, perceptions of general campus climate. In the following chapters, I review the literature on college students with disabilities, campus climate, and college satisfaction building the rationale for this investigation and state my hypotheses. Next, the methodology of this study is outlined, and results are presented. Finally, in the last chapter, I synthesize and make connections from the results of this study to the existing literature and provide recommendations for higher education professionals, counselors, and researchers.

## Chapter 2: Review of the Literature

In the following sections, I review and discuss the literature on (a) college students with disabilities, (b) campus climate theory and research, and (c) the theory and research on student college satisfaction as it relates to students with disabilities and their perceptions of the overall campus climate. The goal of this literature review is to highlight and synthesize the current theoretical and empirical research regarding the challenges and issues that college students with disabilities face with specific focus on general campus climate and institutional satisfaction.

### **College Students with Disabilities**

**Increasing enrollment of students with disabilities in postsecondary education.** College students with disabilities are increasingly attending institutions of higher education (both 2- and 4-year colleges and universities). In 2008-2009, 88% of higher education institutions across the U.S. reported enrolling students with disabilities (Raue & Lewis, 2011). The National Center for Education Statistics of the U.S. Department of Education (2015) found that in the 2007-2008 and 2011-2012 academic years, 11% percent of undergraduate students reported having a disability. The same report also indicated that rates of undergraduate student veterans with disabilities increased from 15% (2007-2008) to 21% (2011-2012). To gain a better understanding of the within-group differences in this population, institutions that enrolled students with disabilities during the 12-month 2008-2009 academic year reported registering students with specific learning disabilities (86%), ADD/ADHD (Attention Deficit Disorder/Attention Deficit and Hyperactivity Disorder; 79%),

mobility limitations or orthopedic impairments (76%), and psychiatric conditions (76%; Raue & Lewis, 2011). It is important to note that these statistics only represent students who are registered at their institution's Disability Support Services (DSS). Therefore, these rates are likely an underestimation of the number of students with disabilities who are attending their postsecondary school.

These estimates are corroborated by other studies that suggest increased enrollment of students with disabilities, both who are registered or not registered with their institution's DSS. In a national representative sample, Newman and Madaus (2015) found that less than 50% of students with disabilities disclose their disability status. Another study suggests that the number of students with psychological disabilities (e.g., mood and anxiety disorders) on campuses are readily increasing and are projected to surpass the rates of students with specific learning disabilities and ADD/ADHD (Sharpe, Bruininks, Blacklock, Benson, & Johnson, 2004).

Despite the increasing enrollment of students with disabilities in postsecondary education, degree completion for college students with disabilities is drastically lower compared to students without disabilities. Among those enrolled in 4-year public institutions, 33% of students with disabilities compared to 48% of students without disabilities had completed their bachelor's degree (Hurst & Smerdom, 2000). Wolanin and Steele (2004) also reported that 73% of high school students with disabilities enroll in higher education compared to 84% of their peers without disabilities, yet only 28% complete their degrees compared to 54% their peers without disabilities at four-year institutions. The same study found that among students who graduate from college, students with disabilities graduate at

significantly lower rates in contrast to their peers without disabilities. The authors concluded that inadequate preparation for college in K-12 schools, low high school graduation rates, and unique challenges with transition from high school to postsecondary school are critical factors that impact the disparity of degree achievement between students with and without disabilities. In the following sections, I discuss a variety of common barriers that college students with disabilities encounter during their postsecondary experience that may lead to poor educational outcomes.

**Common barriers that students with disabilities experience during college.** Adjustment and adaptation from high school to postsecondary education has been shown to predict (a) college student persistence to graduation, (b) college experience, (c) institutional satisfaction, (d) retention, and (e) degree completion. In the following sections, I discuss the current empirical literature on the critical factors that influence adjustment to postsecondary education, including psychological barriers, social support, and institutional barriers that notably impact the experiences of college students with impairments.

***Psychological barriers.*** College students with disabilities experience a range of psychological barriers. Many disability scholars suggest that self-empowerment and self-determination are critical skills for students with disabilities to be successful in college (Hong, Ivy, Gonzalez, & Ehrensberger, 2007; Wehmeyer, 1995, 1996, 1997). Hong and colleagues (2007) described the essential components of self-empowerment, which includes self-advocacy, self-regulation, internal locus of control, and self-knowledge. Ideally, these skills should be developed in middle and

high school as part of students' Individual Education Program (IEP) and individualized transition plan for postsecondary life (e.g., obtaining the necessary skills for living and employment), including transition from secondary to postsecondary schools. However, studies indicate that K-12 schools fail to adequately prepare students in the necessary supports, attitudes, and skills, leading to poorer adjustment to college—impacting their persistence towards graduation (Wolanin & Steele, 2004). Moreover, studies show that college students with disabilities are less likely to develop a sense of empowerment, less likely to communicate their needs, less likely to evaluate their own performance, and less likely to be aware of their strengths, weaknesses, and interests (Cawthorn & Cole, 2010; Dowrick, Anderson, Heyer, & Acosta, 2005; Hong et al., 2007; Wehmeyer, 1996).

Additionally, the stigma experienced by college students with disabilities are unique and different than other stigma-related experiences from other minority groups. According to Green (2007) stigma consists of negative self-evaluations based on interactions between individuals that have to deal with labeling, stereotyping, separation, and discrimination. Green (2007) found that having a disability increased the perception that individuals with disabilities are devalued and experience decreased well-being. One study indicated that students with disabilities experience stigma from faculty and peers due to the challenge of describing what their disability is and their unique disability-related needs (Triano, 2003). Also, college students with learning disabilities who viewed their learning difficulties as more stigmatizing and immutable were less likely to report willingness to seek help in response to negative situations. These individuals also had lower self-esteem after reading a vignette

scenario of a negative instructor response to someone who is requesting accommodations (Hartman-Hall & Haaga, 2002). In a qualitative analysis of reflective journals from students with disabilities over 10 weeks, Hong (2015) found stress to be a specific barrier, which included physical demands, mental and emotional struggles, and social stigmatization (Hong, 2015). Psychological stress and barriers that students with disabilities encounter may be misunderstood and minimized, impacting the psychological and emotional health of a student.

***Lack of social support and sense of belonging.*** In addition to the psychological barriers that students with disabilities confront, social support and belonging have been identified as critical factors that students with disabilities encounter during their college tenure. Social support has been recognized to be a protective factor for both at-risk and non-at-risk populations (Constantine, Wilton, & Caldwell, 2003; Elliot, Herrick, & Witty, 1992; Sarason & Sarason, 2009; Wilks & Spivey, 2010; Yalcin, 2011). However, with notable exceptions (e.g., Lombardi et al., 2016; Murray, Lombardi, Bender, & Gerdes, 2013), there is far less research on the role of social support as it relates to college students with disabilities. Because students with disabilities have unique and different experiences compared to other subpopulations (e.g., women, students of color, LGBTQ students) and students without disabilities, the role of social support may also be distinct. For example, disability-related stigma may influence one's relationships with peers, faculty, and staff. Moreover, in order to obtain and receive appropriate academic accommodations, students must self-disclose at their DSS and later to their instructors. Thus, social relationships and social support are foundational to deeply



grasp the experiences that students with impairments encounter daily. In the following paragraphs, I highlight and discuss the role of social support from family, faculty, and peers in the lives of postsecondary students with disabilities.

As mentioned previously, obtaining the necessary academic and social support differs significantly from secondary education to postsecondary education for students with disabilities compared to their abled-bodied peers. Studies have found that for students with impairments, parental support is crucial for healthy college adjustment, the acquisition of accommodations, and positive academic outcomes. For example, in their study examining social support from different sources (e.g., parents, peers, partner), Lombardi, Murray, and Kowitt (2016) found that regardless of satisfaction with parent support, students with disabilities who listed parents as their main support earned higher GPAs compared to students with disabilities who listed other types of relationships. They also found that students with disabilities with higher levels of family support had more positive self-determination and self-advocacy, which, as mentioned above, are necessary skills for academic achievement.

Importantly, students with disabilities interact with their peers on campus. Studies have found that relationships with college students without disabilities can also impact the social and academic adjustment for students with disabilities. Lombardi and colleagues (2016) found a buffering effect on the negative consequences of low course efficacy (i.e., self-efficacy in academic settings). In other words, students who reported low course efficacy who have little social peer support are less likely to make significant academic gains. In another investigation, Murray, Lombardi, Bender, and Gerdes (2013) found that, for students with disabilities, both

the amount (quantity) of people and satisfaction with their support (quality) served as a protective factor from the negative effects of financial stress on course efficacy and overall campus climate.

In addition to social support, belongingness is another factor that is especially crucial for postsecondary students with disabilities. Belongingness and loneliness are significant predictors of academic performance, health, and academic persistence for all students (Baumeister & Leary, 1995; Cacioppo & Patrick, 2008; Qualter et al., 2015; Rotenberg, 1994; Walton & Cohen, 2011). Most would make the assumption that, in general, belongingness is a main ingredient for positive adjustment in college; however, the findings in the literature are mixed. Adams and Proctor (2010) found that students with disabilities were more likely to have poorer social adjustment (i.e., feelings of not fitting in with others) and thoughts of dropping out of school as compared to students without disabilities. In contrast, Shepler and Woosley (2012) found no significant differences between students with and without disabilities regarding adjustment to college, academic mastery, institutional attachment, or feelings of being homesick. One possible explanation of these discrepant findings can be related to sampling and participant recruitment and differences between the campuses that the data were collected. For instance, as compared to Adams and Proctor's (2010) study, Shepler and Woosley (2012) discussed that their participants were recruited from their DSS department and that overall the students with disabilities at that institution rate greater satisfaction with their services. Relating back to the present study, I contend that perceptions of general campus climate include social support and belongingness along with additional indicators that

contribute to positive general campus climate perceptions and may serve as a potential mediator between belongingness and social support and academic outcomes. For instance, it is likely that one who perceives the campus as inviting, inclusive, and safe may endorse higher levels of belonging since these perceptions of the climate are associated with relationships that students have on campus.

***Institutional barriers.*** Access to academic accommodations is drastically different for students with disabilities in high school compared to postsecondary schools. In fact, students with differing (dis)abilities in K-12 are entitled to disability services under federal legislation via the Individuals with Disabilities Education Act (IDEA, 2004) as well as two civil rights acts, Americans with Disabilities Act (ADA; 1990, 2008) and Section 504 of the Rehabilitation Act (Section 504; 1973). When students with disabilities enroll in postsecondary institutions, students are no longer entitled to educational services under IDEA; however, colleges and universities still need to be in compliance with ADA and Section 504. In order to gain access to accommodations in college, students must provide the necessary documents (e.g., most recent IEP, psychological testing, neurological testing, etc.) that then are assessed to see if the student qualifies for a documented disability, registered with the DSS. Next, it is up to the student to meet with their instructors and share their accommodations. Throughout this process, it is the responsibility of the student to meet with the DSS, disclose their disability, provide all documents to qualify for services, and again disclose their disability due to their request for academic accommodations with instructors. As such, disability self-disclosure is a critical factor

of students with impairments and is associated to a variety of psychological, social, and academic outcomes, discussed next.

**Self-disclosure as a necessary means to access accommodations.** Self-disclosure of a disability is a voluntary action for postsecondary students with disabilities. Analyzing data from the *National Longitudinal Transition Study-2*, Newman and Madaus (2015) found that only 35% of students with disabilities disclosed their disability status with their college. The authors also found that only 23% received accommodations in college compared to 95% received accommodations in high school. Interestingly, Newman and colleagues (2011) analyzed the same dataset as Newman and Madaus (2014) and found that among students who did not receive accommodations, 50% of 2- and 4-year college students with disabilities reported that accommodations would have been helpful. Furthermore, there is evidence that demonstrates that students do not receive accommodations because instructors may not think they need them (Salzer, Wick, & Rogers, 2008), while 50% of students, who had IEPs in high school, did not disclose because they did not consider themselves as someone with a disability (Newman & Madaus, 2014).

Whereas the studies noted above suggests that many students with disabilities may not need academic accommodations or perhaps believe that they no longer have a disability, there is other evidence that strongly demonstrate that students with disabilities may not understand their challenges in postsecondary education. In other words, they are unaware that in actuality they need academic support services. There is accumulating evidence that suggest students with disabilities entering college lack

awareness and knowledge of their specific disability, its impact on learning and access to academic support services and accommodations as well as their legal rights from high school to college (Denhart, 2008; Lightner, Kipps-Vaughan, Schulte, & Trice, 2012; Walker & Test, 2011). Qualitative studies (Dorwick, Anderson, Heyer, & Acosta, 2005; Marshak, Van Wieren, Raeke Ferrell, Swiss, & Dugan, 2010) highlight the barriers and difficulties that students with disabilities face when accessing accommodations. For example, Marshak and colleagues (2010) interviewed 16 postsecondary students with disabilities to explore barriers to using disability-related services and accommodations. The authors reported the following barriers that students experienced: (a) identity issues (e.g., desire to lessen the stigma from their high school identity), (b) desire to avoid negative social reactions (e.g., not wanting to be singled out or have resentment from students who do not receive accommodations), (c) insufficient knowledge (e.g., lacking the skills to explain their disability to others while personally questioning the fairness of receiving accommodations), (d) perceived quality and usefulness of services (e.g., lack of coordination with implementation of services), and (e) negative experiences with faculty (e.g., professors not fully believing that the student actually has a disability even when documentation is provided). These studies suggest that utilization of academic accommodations significantly decrease when students' transition from high school to college; this is influenced by (lack of) self-identification and self-acceptance of their disability, awareness of how their disability affects their school work, and avoidance strategies to less stigmatizing experiences.

For students who choose to disclose their disability, there are mixed findings with regard to the effectiveness of accommodations utilization on academic experiences and outcomes. There is budding evidence that support the general assumption that using accommodations is positively related to better academic performance (Mamiseishvi & Koch, 2011; Mull, Sitlington, & Alper, 2001; Sireci, Scarpatti, & Li, 2005; Troiano, Liefeld, & Trachtenberg, 2010). However, some scholars have argued there is little to no empirical evidence that suggests utilization of accommodations is helpful for students. For instance, Rath and Royer (2002) found students using only one accommodation had higher grades compared to those who utilized two accommodations. One potential explanation of these discrepant findings may be that utilization of accommodations can elicit stigma-related reactions for students with disabilities, lowering academic performance. In fact, Hartmann-Hall and Haaga (2002) found that participants who read a vignette of a student requesting accommodations where the instructor responds positively reported higher willingness to seek help; conversely, participants who read a vignette of a student requesting accommodations with a negative instructor response reported lower willingness to seek help. In other words, how students with disabilities perceive and experience the interaction(s) of requesting accommodations with instructors is crucial to future opportunities for further assistance. This is upheld by Trammell and Hathaway's (2007) review of the literature; they observed and asserted that the process and decision to seek help is "complex, multilayered and highly correlated to the climate and disability environment [...and that the] stigmatizing effect of disability seems to be a significant factor [in the help seeking behavior of students with disabilities]" (pp.

6-7). In relation to this investigation, Trammell and Hathaway's (2007) assertion that the ableist and stigmatizing climate and environment impacts one's likelihood to seek help—in this case, decreasing the chances of registering with the DSS and interaction with instructors. Thus, perceptions of general campus climate, a central variable in this study, may be able to capture the experiences of students with impairments, which is discussed next.

### **Perceptions of Campus Climate**

Institutions of higher education have increasingly utilized comprehensive campus climate assessments to evaluate the experiences of students, faculty, and staff with the aim to inform university-level policy and interventions. Campus climate studies differ on a number of dimensions, including (a) the purpose of the assessment, (b) what factors of climate are being assessed (e.g., classroom climate, residence hall climate, overall climate), (c) who is being assessed (i.e., students, staff, administrators, and/or faculty), and (d) the type of climate for certain personal and social identity groups (e.g., climate perceptions of women and men; perceptions of campus climate for Greek life members), among others.

In the following sections, I review and discuss (a) the definition of perceived campus climate, (b) theoretical frameworks of campus climate, (c) measurement issues related to campus climate, and (d) associations between campus climate and student outcomes. Next, I briefly review the extant empirical literature on perceptions of campus climate as it pertains to certain identity groups (e.g., racial and sexual minorities), with specific focus on disability campus climate. Last, I discuss the limitations of the present research on campus climate, and, in response, define and

make the case for a new approach for evaluating campus climate—perceptions of general campus climate (PGCC), generally, and specifically for the present investigation on students with disabilities in higher education.

**Defining campus climate.** Campus climate is a common construct and area of study in the field of higher education, yet there is little consensus on the definition and measurement among comprehensive campus climate assessments across the United States. In fact, Hart and Fellabaum (2008) found no unitary definition and standardized measurement practices of campus climate among 118 campus climate studies. This is surprising given that over the last 20 years, colleges and universities have employed campus climate assessments to evaluate the environment in regard to multicultural and diversity issues among all campus stakeholders (i.e., students, faculty, staff, and administrators; Hurtado et al., 1998). Although there are varied definitions of campus climate, there are some common features: campus climate (a) is multifaceted, comprised of people's attitudes and behaviors; (b) is more malleable compared to culture, and (b) interacts with the larger organizational structures, policies, and practices (Petersen & Spencer, 1990).

Peterson and Spencer (1990) define campus climate as members' common perceptions of attitudes, feelings, and behaviors of and towards campus organizational life. They further explain,

[t]he major features of climate are (1) its primary emphasis on common participant views of a wide array of organizational phenomena that allow for comparison among groups or over time, (2) its focus on current patterns of beliefs and behaviors, and (3) its often ephemeral or malleable character.



Climate is pervasive, potentially inclusive of a broad array of organizational phenomena, yet easily focused to fit the researcher's or the administrator's interest (p. 8)

Moreover, the same authors identified three broad categories of campus climate: (a) the objective climate, which are the trends of activities and behaviors at an institution; (b) the perceived climate, which are members' impressions and expectations of an organization's norms; and (c) the psychological or felt climate, how members feel about their organization and their experiences on campus.

When understanding climate, it is also important to discuss culture as the two are sometimes used interchangeably and the definitions are often conflated. Peterson and Spencer (1990) argue that culture (a) aims to serve as a mechanism to emphasize an organization's distinctive characteristics which results in a subordinate meaning to members of the organization, (b) is deeply permeated and engrained, and (c) is immutable, such that it would take consistent, slower, and intensive change efforts to alter. To understand this in another way, culture can be construed as a region's enduring weather conditions. For example, in the Southwestern U.S., the predominant weather is high temperature, dry heat, and little precipitation. This can be considered culture in this example. Whereas climate, can be seen as the occasional one to two times a year that it rains in the Southwestern part of the U.S. and that temperature will drop below normal. Here, the culture is unlikely to change drastically in a short amount of time because this region of the U.S. is known to a desert. It would take many more years for a significant change in the culture (of the weather). Whereas, climate, in this example, is explained by the smaller events and changes relative to the

larger culture changes (the predominate regional weather). In the current investigation, climate is examined as opposed to culture because changes in campus climate are likely to occur compared to overall campus culture as explained above. These factors are foundational to campus climate theories and frameworks, discussed next.

### **Campus climate frameworks.**

*Hurtado and colleagues' racial campus climate frameworks.* Originating from Hurtado's (1992) work, Hurtado et al. (1998) introduced a multidimensional racial campus climate framework that is influenced by the structural practices, policies, and behaviors that occur internally and externally within colleges and universities. This model has become one of the most cited and utilized frameworks when investigating campus racial climate and other forms of social identity-based climate perceptions assessments. Hurtado and her colleagues (1998, 1999) define campus racial climate as "a part of the institutional context that includes community members' attitudes, perceptions, behaviors, and expectations around issues of race, ethnicity, and diversity" (Hurtado, Griffin, Arellano, & Cuellar, 2008, p. 205). Specifically, this framework includes four interconnected dimensions: (a) *structural diversity* in regard to the number and/or representation of racial and ethnic groups; (b) the institution's *historical legacy* of exclusion or inclusion of specific racial and ethnic groups; (c) a *behavioral dimension* that captures intergroup contact and relations on campus, and (d) the *psychological climate* which are the perceptions of discrimination and of institutional support and commitment toward diversity (Hurtado, 1992; Hurtado et al., 1998, 1999; Hurtado et al., 2008; Nora & Cabrera,

1996). As an extension of Peterson and Spencer's (1990) view of climate that includes perceptions and attitudes, Hurtado et al. (1998, 1999) posit that members' experiences of the environment are not only psychological but have to do with racial/ethnic minorities lived experiences and their function in a historical system and interactions among other racial/ethnic groups.

Milem, Chang, and Antonio (2005) modified Hurtado et al.'s (1998, 1999) four-dimensional framework by adding fifth dimension, *organizational/structural* dimension. This allowed for a more comprehensive model that includes interactions among people with a variety of identities and the influence of how the internal and external forces (i.e., an institution's structure and history) contribute to the campus (racial) climate. They define this dimension as the representation of

the organizational and structural aspects of colleges and the ways in which benefits for some groups become embedded into these organizational and structural processes. The organizational/structural dimension of climate is reflected in the curriculum; in campus decision-making practices related to budget allocations, reward structures, hiring practices, admissions practices, and tenure decisions; and in other important structures and processes that guide the day-to-day "business" of our campuses. (Milem, et al., 2005, p. 18)

While Hurtado and colleagues (1998, 1999) and Milem and colleagues' (2005) campus climate frameworks are regularly used by higher education researchers and professionals, a major limitation of this model is its strong focus on racial climate (Hurtado et al., 2008) which is consistent with Hart and Fellabaum's (2008) findings that the racial campus climate literature is for more robust and

plentiful. In their review and synthesis of 90 instruments of campus climate assessments, Hurtado et al. (2008) concluded that broadening the scope of campus climate studies from racial/ethnic campus climate to include other categories of identities including differences in gender, age, socioeconomic status, ability status, sexual orientation, religions, and nationality found on campuses across the U.S. is imperative due to the national discourse of diversity. The authors recommended that a flexible multi-institutional validated measure be created so that multi-campus studies can be conducted (Hurtado et al., 2008). This, as the authors posit, will move the scholarship from single-campus studies to multi-campus comparisons. They also noted the importance of incorporating the important campus-specific needs and issues since each campus has its own contextual history. Importantly, Hutchinson et al. (2008) noted that no single study has empirically supported Hurtado et al.'s (1998, 1999) model of racial campus climate. However, it is still unclear how the model can be empirically tested given its theoretical complexity and thus methodological sophistication. In summary, Hurtado et al.'s (1998, 1998) racial campus climate framework and Milem et al.'s (2005) update are widely utilized in the higher educational literature and have been applied to other identity-related experiences other than race. In the next section, I review another campus climate framework that addresses the limitations of a race-focused framework that broadens the scope to examine other identities and climates.

***Transformational Tapestry Model.*** In their extensive literature review on the impact of diversity on college students, Smith and her colleagues' (1997) found that comprehensive institutional changes in teaching methods, curriculum, campus

climate, and institutional definition (of what diversity is) benefits both minority and majority students academically. Their review suggests that, in addition to improving access and retention of minority groups, diversity initiatives are also related to satisfaction, academic success, and cognitive development for all students regardless of their backgrounds.

Applying the findings of Smith et al.'s (1997) literature review and her own scholarship (Rankin, 1994, 1998, 2003), Rankin developed the *Transformational Tapestry Model* (TTM) and further developed and published this model with Reason in 2008 (Rankin & Reason, 2008). Importantly, the TTM conceptualizes campus climate in the context of power, privilege, and oppression using “a power-and-privilege-cognizant approach” that allows campuses to examine their respective climates from a systemic-level that informs macro-level transformation (Rankin & Reason, 2008, p. 265). The model consists of four dimensions: (a) the current campus climate, (b) climate assessment, (c) transformation via intervention, and (d) transformed campus climate. A full review of the entire TTM is beyond the scope of this paper; interested readers should consult Rankin and Reason (2008). I instead focus on the (current) “campus climate,” since this is most relevant to the present study.

Rankin and Reason (2008) posited six higher education components that influence campus climate, including (a) access and retention, (b) research and scholarship, (c) inter- and intra-group relations, (d) curriculum and pedagogy, (e) university policies and service, and (f) external relations. *Access and retention* refers to the accessibility of higher education, along with the necessary supports for students

to graduate. *Research and scholarship* is the encouragement of scholarly and academic activity, specifically towards advocacy, civic engagement, and issues around social justice. *Inter- and intra-group relations* refers to providing educational and programs that foster intergroup contact that center around social justice including building community among underrepresented group. *Curriculum and pedagogy* signifies the infusion of diversity and power, privilege, and oppressive concepts in courses and academic programming. *University policies and services* relate to the institution's visible and behavioral commitment to diversity and social justice, including addressing issues of bias and harassment. Last, *external relations* refer to external components such as federal and state policies, programs, and initiatives that also affect an institution's campus climate. The six dimensions of the TTM are seen as the necessary and primary ingredients of a transformed campus climate.

In her construction of the campus climate survey, Rankin (1994, 1998, 2003) tested a final scale with 55 items with open-ended responses among 10 campuses diverse in terms of geographical location and public or private institutions with a total sample of 15,356 participants (including students, faculty and staff; Rankin & Reason, 2008). Factor analyses of the items and thematic analyses of the qualitative responses formed the basis of the TTM and three components of psychological climate: (a) personal campus experience, (b) perceptions of campus, and (c) perceptions of institutional actions (Rankin & Reason, 2008). While the TTM has been utilized for about 20 years and among at least 100 campuses, there is still a dearth of empirical evidence to validate the TTM in the peer-reviewed literature regarding the factor structure of their campus climate scales. Next, I introduce a new

conceptualization of campus climate that differs from Hutardo et al., Milem et al., and Rankin et al.'s models—targets of climate inquiry.

***Targets of Climate Inquiry.*** Recently, Worthington (2013) conceptualized a new framework of campus climate—*Targets of Climate Inquiry* (TCI). Worthington (2013) posits 14 “targets” or dimensions that should be considered when examining climate, including (a) *institutional compositional diversity* (i.e., analyzing institutional data comparing group identity numerically), (b) *institutional equity analysis* (i.e., utilizing campus data to examine equity), (c) *perceptions of critical mass* (i.e., investigating group comparisons of perceptions of critical mass and satisfaction with numerical diversity), (d) *perceptions of institutional equity* (i.e., beliefs of institutional equity within the university), (e) *general campus climate* (GCC; i.e., “personal, internal experiences and satisfaction with the general climate at the university, and within different units of the institution”; n.p.), (f) *diversity campus climate* (i.e., perception and satisfaction of campus-wide diversity-related climate), (g) *perceived campus climate* (i.e., underrepresented group members’ campus climate perceptions), (h) *perceptions campus inclusivity*, (i) *institutional commitment and change efforts* (i.e., campus members’ perceptions of the institutional commitment and efforts to foster an inclusive climate for all students), (j) *diversity-related competencies* among all constituents, (k) *meaningful interpersonal contact* among people from a variety of identities, (l) *perceptions of the official university responses* to complaints around bias-related incidents on campus, (m) *judgments of the recommended action steps* to the needs and recommendations for specific actions to advance diversity campus climate for various group members, and (n) experiences of

*psychological well-being* and distress. The present study focuses on one facet of Worthington's (2013) targets of climate inquiry—perceptions of general campus climate (PGCC).

**Perceptions of general campus climate.** PGCC is defined as one's internal experience and satisfaction with the overall ethos and ambience of the institution and the extent to which the campus is perceived as friendly, comfortable, concerned, respectful, cooperative, fair, welcoming, supportive, intimidating, oppressive, open, threatening, inclusive, and cold (Rankin, 2003; Worthington, 2013; Narvarro et al., 2009; Worthington et al., 2008). While the frameworks of Hurtado and colleagues (1998, 1999) and Milem and colleagues (2005) focus on racial campus climate, PGCC takes a broader approach that does not explicitly link social identity variable(s) (e.g., gender, race, socioeconomic status, sexual orientation) as a dependent factor of campus climate. Instead, PGCC takes an alternative approach, such that intergroup differences are determined by how people (possibly demographical groups) respond to the aforementioned characteristics (i.e., friendly, comfortable, concerned, etc.). For example, it is possible to compare how PGCC differs by racial groups, such as examining the conceptual and empirical differences among how Black, Asian, Latinx, American Indian, and White students perceive the general campus climate similarly or differently.

As with any conceptual frameworks, there are benefits and limitations that must be addressed. Importantly, utilization of the PGCC framework allows for comparisons of PGCC between- and within-groups because it does not depend on identity-specific content. In other words, one is able to compare, for example,



differences of PGCC between heterosexual and LGBTQ students. Also, the PGCC allows for a more sophisticated approach to understanding multiple intersectional identity distinctions that single identity frameworks fail to examine. As an example, racial campus climate frameworks focus mainly on perceived campus climate for racial groups—a single-axis approach. However, PGCC allows the opportunity to examine two or more identities for a single case. As such, from an PGCC perspective it is possible to explore differences in PGCC between LGBTQ people of color compared to LGBTQ who are white for example. Of note, the drawback of the PGCC model is that the PGCC approach is not able to provide identity-specific nuances, such as the unique experiences of students with disabilities compared to students without disabilities—climate for students with disabilities incorporates access to academic accommodations, whereas students without disabilities may not understand and see the relevance of examining the provision of accommodations as part of one’s evaluation of the campus climate.

There are also similarities between PGCC and perceived campus climate for specific social identity groups. For example, studies that specifically apply racial campus climate approach may include a student’s experience and/or observation of racial tension on campus, which then can inform their evaluation of their campus racial climate. The same incidents and experience can be captured from a PGCC perspective given its broad quality in tapping into multiple dimensions. Furthermore, college students’ sense of belonging is important to racial, sexual, and gender minority groups. These experiences can be captured in both racial, sexual, and gender-specific campus climate frameworks and from a PGCC model. That said, the

multidimensional factors are addressed in both identity-specific and PGCC. Because this study examined PGCC of students with and without disabilities between two independent samples, next I briefly discuss campus climate measurement considerations from a broad perspective.

**Campus climate measurement issues.** The utilization of valid and reliable measures is a necessary ingredient for quality research. Without empirically validated and reliable scales, the study variables and the results will contain errors that would, in turn, effect the interpretations and implications of the findings. Thus, understanding the current practices of measuring campus climate is vital to provide recommendations for interventions and effective program evaluation. As alluded before, there is little consistency, consensus, and psychometrically tested measures that fully and accurately capture campus climate. As discussed earlier, one reason for this deficit is due to the fact that there is no consensus on a definition of campus climate. Another measurement challenge stems from the difficulty of accurately testing theoretical frameworks and related constructs of campus climate due to limitations of research methods, poor measures, and feasibility of the study. This is further complicated by the tension between assessing the specific, independent needs of a single campus and adding scales and inventory that are commonly used on other campuses. Also, a wide variety of institutional qualities and factors are vastly different across postsecondary schools in terms of geographical area of the institution, whether the school is private or public, and students' demographical background differences (e.g., students who work to pay for their education or those who are first generation college students) to name a few, making it difficult to create a universal

framework and measure of campus climate that can be utilized across campuses. Thus, on one hand the nature of campus climate should be institutional-specific, yet on the other hand there are calls for a unified definition and measurement of campus climate across institutions. These two facets of campus climate may be at odds with one another posing additional complication for defining and measuring campus climate.

One novel approach to define and measure campus climate is PGCC. PGCC can address the limitations of identity-specific and institutional-specific campus climate studies due to its independent and overarching nature that encompasses the commonalities among all or most colleges and universities. To put it in a different way, PGCC (as one target of inquiry; Worthington, 2013), offers a promising and parsimonious approach to examine GCC at both single and across institutions. Therefore, PGCC may offer institutions data that is specific to their campus and the ability to compare their campus to other colleges and universities to inform inventions. Additionally, the general nature of PGCC makes it possible and feasible to understand PGCC from a variety of demographical groups. Relevant to the present study, PGCC allows for the comparison of students with and without disabilities—a central focus of this investigation.

To date, there are few empirical studies that apply the PGCC framework and measures PGCC. In a large study examining campus climate for LGBT students, faculty, and staff, Rankin (2003) created and utilized an 11-item bipolar dimensional 5-point scale that asked participants to rate the campus climate in general on the follow dimensions: friendly-hostile, communicative-reserved, concerned-indifferent,

respectful-disrespectful, cooperative-uncooperative, competitive-noncompetitive, improving-worsening, accessible to persons with disabilities-inaccessible to persons with disabilities, non-racist-racist, non-sexist-sexist, and non-homophobic-homophobic. Unfortunately, there is no information that describes her scale development process nor instructions of how the scale is scored. Adapting items from Rankin's (2003) measure of GCC, Worthington et al. (2008) developed a 6-item semantic differential bipolar 5-point scale that asked participants to rate the general campus climate on the following dimensions: (a) friendly-hostile, (b) communicative-reserved, (c) concerned-indifferent, (d) respectful-disrespectful, (e) improving-worsening, and (f) cooperative-uncooperative. Scores were average across the six items and ranged from 1 to 5 where higher scores indicated more positive PGCC. The internal consistency estimate was .90 in this study. In a later study that utilized the same PGCC scale at Worthington et al. (2008), internal consistency estimate was also .90 (Navarro et al., 2009). Slight variations of this scale were used in the present study which is described in detail in the Method section in Chapter 3. While the PGCC construct is in its infancy, as with other campus climate studies, there are no longitudinal studies and no unified measurement of PGCC, making it difficult to assume directionality and PGCC overtime as well as difficulty in establishing reliable and valid measures.

**Perceptions of campus climate and student outcomes.** Most of the research on campus climate has focused on perceptions of campus climate for individuals from various marginalized communities (e.g., racial and ethnic minorities; lesbian, gay, bisexual, and transgender persons; persons with disabilities; etc.) and have emerged

in recent years (e.g., Ancis, Sedlacek, & Mohr, 2000; Hurtado & Ponjuan, 2005; Museus, Nichols, & Lambert, 2008; Worthington, 2008). However, the majority of campus climate studies have focused on students' perception of racial campus climate and women (Hart & Fellabaum, 2008; Worthington, 2008). Thus, there is a gap in the literature of perceptions of campus climate among students with disabilities.

The extant body of empirical research on campus climate suggests significant implications for postsecondary institutions. For instance, studies have found that historically advantaged group members (e.g., White, male, heterosexual individuals) perceive the campus as more positive than members of marginalized communities (e.g., persons of color, female, LGBTQ individuals; Worthington, 2008). Furthermore, individuals from historically marginalized communities tend to view the campus climate in negative ways. Findings also suggest that there are many benefits with campuses that promote cross-racial interactions (Harper & Hurtado, 2007). Additionally, findings suggest that campus climate is related to academic persistence decisions and attitudes toward help seeking for students of color and that social support is a strong indicator for academic persistence for most minority groups (Gloria, Castellanos, Lopez, & Rosales, 2005).

Taken together, the literature suggests that campus climate is a viable variable in understanding individuals' experiences on campuses and may have the potential impact on student outcomes. This study aims to address this gap in the climate research among students with disabilities by examining whether a similar relationship between students with and without disabilities will emerge as with previous studies

comparing marginalized groups with advantaged group members from a general concept and measure of campus climate.

**Review of identity-specific campus climate studies.** In the following sections, a brief review of the empirical literature on race and sexual orientation is provided. This is followed by a deeper exploration and synthesis of the budding literature on disability campus climate as it relates to the PGCC among students with disabilities.

***Racial campus climate.*** As highlighted earlier, the majority of campus climate studies have focused on students' perceptions of their institution's racial climate. Consistently, studies have indicated that students of color and white students perceive general campus climate differently, such that students of color reported more negative views of the racial climate, whereas white students perceived more positive racial climate (e.g., Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Cress & Ikeda, 2003; Johnson-Durgans, 1994; Navarro et al., 2009; Reid & Radhakrishnan, 2003; Worthington et al., 2008).

These findings are corroborated by studies focusing on racial campus climate; again, students of color reported more negative views of racial campus climate compared to their white peers (Ancis et al., 2000; Johnson, 2003; Pfeifer & Schneider, 1974; Navarro et al., 2009; Reid & Radhakrishnan, 2003; Worthington et al., 2008). According to Reid and Radhakrishnan (2003), campus racial climate comprises of students' experiences and observations of being a racialized member on campus, including students' experiences of racism, and perceptions of their institution's commitment to foster diversity. Students of color also reported

perceiving and directly experiencing more racial discrimination and prejudice than white students on campus (Biasco, Goodwin, & Vitale, 2001; Hurtado, 1992; Nettles, 1990; Nora & Carbrera, 1996; Navarro et al., 2009). For example, in her analyses of a four-year longitudinal national representative dataset in the late 1980s, Hurtado (1992) found that about one of four students perceived significant racial tension on their campuses. She also found Black and Latinx students were more likely to perceive racial tension compared to white students, who largely believed that racism is no longer an issue in society.

In their investigation of 15 years of campus racial climate research, Harper and Hurtado (2007) identified three broad categories to classify racial climate studies, including (a) differential perceptions of campus climate by race, (b) students of color reports of prejudicial treatment and racist campus environments, and (c) benefits connected with campus climates that facilitate cross-racial engagement. Furthermore, focus group data at five large predominately white institutions from geographically diverse regions were qualitatively analyzed (Harper & Hurtado, 2007). Nine recurring themes were identified: (a) consensus among students of color and white students regarding institutional negligence of attending to racial issues; (b) race as an avoidable, unpopular, and taboo topic that is not discussed on campus; (c) white students report that racial segregation occurs because students of color self-segregate; (d) racial disparities in reports of social satisfaction on campus; (e) strongholds of reputable legacies of racism that students of color are not able to undo these significant past incidents; (f) white students' overestimation of students' of color satisfaction with the climate; (g) the pervasiveness of whiteness in physical spaces,

curricula, and activities while perceptions of excluding identity-based spaces, other than multicultural centers; (h) the consciousness-powerlessness paradox among faculty and staff of color who acknowledged the racial inequity, but choose not to broach such topic due to fear of political consequences; and (i) unexplored qualitative realities of race and racism in institutional assessment compared to quantitative climate surveys (Harper & Hurtado, 2007). The authors concluded that, “Despite fifteen years of racial climate research on multiple campuses, the themes of exclusion, institutional rhetoric rather than action, and marginality continue to emerge from student voices” (Harper & Hurtado, 2007, p. 21). Importantly, the campus climate literature delineates substantial differences in perceptions by identity-statuses in addition to race. Thus, researchers propose that interventions should be aimed at both (a) intersecting identities regardless of the positionality of the identities’ as it relates to power, privilege, and oppression and (b) urge researchers and administrators to extend climate studies beyond the race to account for the perceptual differences in age, gender, sexual orientation, socioeconomic status, religion, etc. (Hart & Fellabaum, 2008; Hurtado et al., 2008; Marine, 2011; Milem et al., 2005; Rankin & Reason, 2005). In response to their call, the current investigation focuses on PGCC among college students’ with and without disabilities as it predicts students’ satisfaction with their school.

***LGBTQ campus climate.*** Historically, in comparison to campus racial climate studies, there was a dearth research on campus climate perceptions of LGBTQ students’ and their experiences on colleges and universities across the nation. Scholars have argued that the limited literature on climate for LGBTQ students



reflects the uninviting, exclusion, and discriminatory environments in postsecondary education (Rankin, 2003; Rankin, Weber, & Blumenfeld, & Frazer, 2010). Rankin and colleagues (2010) assert that most, if not all, of the research is clear that the experiences and perceptions of the LGBT campus body (i.e., students, faculty, administrators, and staff) accentuate negative experiences that LGBTQ members face ranging from subtle (indirect; e.g., microaggressions) discrimination to overt (explicit) discrimination and harassment. Rankin (2003) and her colleagues (2010) strongly noted that a major limitation of the LGBTQ climate research is that most investigations examined single campuses, a small number of schools, and a small group of people on a number of campuses. Only two large comprehensive national research studies have examined the experiences of LGBTQ students, faculty, staff, and administrators: Rankin (2003) and Rankin et al. (2010), which will be discussed next.

A National Gay and Lesbian Taskforce study conducted by Rankin in 2003 examined 14 postsecondary institutions from October 2000 to December 2001. The institutions included ten public and four private schools that resulted in a total sample of 1,669 completed surveys from students, staff, and faculty. Using purposeful and snowball sampling, the survey consisted of 35 questions that were based on previous studies (i.e., Rankin, 1994) with available space for participants to shared additional comments. The aim of the study was to understand campus stakeholders' personal experiences with LGBTQ people, and their climate perceptions for LGBTQ members at their respective institutions, and perceptions of their institutions' action related to LGBTQ policies and initiatives (Rankin, 2003). Factor analysis of the survey items

yielded three factors: (a) lived oppressive experiences, (b) perceptions of anti-LGBTQ oppression on campus, and (c) institutional actions (Rankin, 2003). They found that one third of LGBTQ undergraduate students reported experiences of harassment within the past year. Additionally, 20% of participants responded fear for their physical safety due to their sexual orientation and gender identity; 51% reported concealing these identities to avoid intimidating interactions. In terms of perceptions of anti-LGBTQ oppression on campus, analyses suggested that 43% of the participants rated the overall campus climate as homophobic and ten percent of members reported avoiding areas of the campus where LGBTQ people would gather. In relation to institutional actions, 41% of participants stated their institution was not responding and addressing issues related to sexual orientation and gender identity. While this multi-institutional study was pinnacle of the LGBTQ climate literature at that time, Rankin cautions the generalizability of its findings stating that the institutions who chose to participate in the study were those that had visible LGBTQ presence at their institutions (e.g., LGBTQ resource centers). Thus, the findings may paint a more positive view of campus climate and experiences for students, faculty, staff, and administrators (Rankin, 2003).

In a larger study that used the same survey as Rankin (2003), Rankin and colleagues (2010) examined the campus climate of 5,149 LGBQ students, faculty, and staff members in all 50 states in the spring of 2009. The authors found that LGBTQ participants experienced significantly greater harassment and discrimination compared to their heterosexual allies (Rankin et al., 2010). For example, findings indicated that LGBTQ campus members were twice as likely to be targets of

derogatory remarks (61%), stared at (37%), and singled out (36%) compared to their heterosexual peers (29%, 17%, and 18%, respectively; Rankin et al., 2010). Further results demonstrated that 39% of transmasculine, 38% of transfeminine, and 31% of gender non-conforming campus participants reported experiences of harassment and discrimination compared to 20% of cisgender men and 19% of cisgender women (Rankin et al., 2010). The authors also found that LGBTQ campus members who identified also as a person of color were 10 times more likely to report racial profiling as a form of harassment compared to their white LGBTQ counterparts (2%; Rankin et al., 2010). Not surprisingly, the study found that LGBTQ participants viewed the campus as more negative in contrast to their heterosexual peers (Rankin et al., 2010). Transgender and gender non-conforming campus members perceived the campus climate as more negative compared to their cisgender men and women counterparts (Rankin et al., 2010).

Taken together, the current literature regarding LGBTQ members' perceptions of campus climate has grown significantly. Rankin and her colleagues have conducted single-campus and multi-campus studies for over 20 years applying the TTM model (Rankin & Reason, 2008). While these studies should be applauded for a major contribution to the literature on LGBTQ campus climate, a major limitation of Rankin's empirical investigations (e.g., Rankin, 2003; Rankin et al., 2010) is the lack statistical and methodological rigor. For example, these studies are not published in peer-reviewed scholarly outlets. Also, in her multi-institution studies, Rankin's investigations fail to acknowledge and account for the nested nature of multi-campus data in their data analyses; thus, the findings should be interpreted with caution

because it does not meet the statistical assumption that data are independent from another. Also, the majority of the analyses of Rankin's studies are frequency counts, limiting the ability to draw statistical inferences to understand the mechanisms of the relations among perceptions of campus climate, identity, and student outcomes for example. While in the past LGBTQ campus climate studies were a scarcity compared to racial campus climate studies, scholarship on perceptions of campus climate for postsecondary members with disabilities is significantly absent. In the next section, I provide a more thorough review of disability campus climate as it relates to the present study.

*Disability campus climate.* Although this study examined perceptions of general campus climate among students with disabilities, there is also a literature about unique climate considerations for students with disabilities. Focusing on the experiences of individuals and identity-based groups and quality of interactions among these various groups on campus, Evans, Broido, Brown, and Wilke (2017) assert that:

Students with disabilities are often discriminated against and oppressed by individuals who have more power and legitimacy in the environment, including college administrators, faculty, and nondisabled students [...]  
Institutional structures, policies, and norms create environments having barriers to the success of students with disabilities. Finally, the attitudes and behaviors of these campus stakeholders, as well as the policies and structures they construct, contribute to the climate that impaired students must deal with as part of their college experience. (Evans et al., 2017, pp. 254-255)

The authors contend that the ableist norms of society, in this case postsecondary campuses, inhibits, restricts, and limits students with differing abilities. Highlighting the connection between an ableist campus climate and environments to student outcomes, Strange (2000) posits that perceptions of campus climate for students with disabilities is a major factor of their success in postsecondary education because campus climate perceptions has been shown to be strongly related to student behavior, satisfaction with college, and persistence.

Scholars (e.g., Evans et al., 2017; Lombardi, Gerdes, & Murray, 2011) have identified factors that contribute to the experiences and perceptions of campus climate for college students with impairments. In their theoretical model of climate campus for students with disabilities, Lombardi and colleagues (2011) proposed that disability campus climate comprises the following components: (a) *individual actions* (i.e., self-efficacy and self-advocacy), (b) *postsecondary supports* (i.e., disability support services and faculty teaching practices), and (c) *social supports* (i.e., family and peer support). Since the sections above (see College Students with Disabilities) reviewed these features (i.e., peer and family support, use of accommodations and disability support services, self-advocacy, faculty teaching practices, and disability stigma experiences) of campus climate perceptions and experiences of students with disabilities, this section focuses mainly on the *impact* of PGCC among postsecondary students with disabilities.

Although scholars have examined elements that contribute to the perceptions of campus climate of college students with disabilities, the research investigating the effect of these perceptions on the experiences of students with disabilities (e.g.,

satisfaction, persistence, retention, etc.) are far less robust (Evans et al., 2017). Consistent with other empirical studies in the limited campus climate literature on underrepresented groups (e.g., racial and ethnic minority, LGBTQ students), there is evidence that suggests that students with disabilities significantly view the climate as less supportive (e.g., Hedrick, Dizén, Collins, Evans, & Grayson, 2010) and more negative compared to their peers without disabilities. These negative perceptions are “created by the attitudes and behaviors of faculty, staff, and other students that can cause students with disabilities to internalize stereotypes and negative qualities that others attribute to them” (Evans et al., 2017, p. 260).

For instance, in a life history interview study with 21 participants (with the majority identifying as having a learning disability that was made aware during postsecondary education), Madriaga (2007) observed that the level of openness in the learning environment determines disability closure. When the classroom climate was viewed as more negative (e.g., unsafe for disability disclosure), participants internalized their disability as their own problem and that it is not the problem of others (Madriaga, 2007). This idea was corroborated with another qualitative study (i.e., Hutcheon & Wolbring, 2012) that sought to understand how college students with disabilities ( $N = 8$ ) made meaning of their experiences in college. The researchers identified five themes: hegemonic voice, voice of the body, voice of silence, voice of assertion, and voice of change (Hutcheon & Wolbring, 2012). All of the participants in this study experienced internalized ableism as evidenced by participants’ reports of the hierarchies within the disability community (i.e., viewing

that some disabilities are more acceptable compared to others; Hutcheon & Wolbring, 2012).

In addition to internalized ableism, students with disabilities remark on their negative experiences in the higher education. In a focus group study with 10 college students with disabilities from various regions of the U.S., students with disabilities ranked *postsecondary supports* (i.e., disability support services, coordination of support services) and *attitudes and awareness* (i.e., faculty acceptance [or ignorance] of students' disabilities; accommodation-related stigma; and concerns of self-disclosing their disability) as two of the four most important aspects of college (Dowrick et al., 2005). These findings were consistent with other single-institution studies (Denhart, 2008; Hong, 2015, Houck, Asselin, Troutman, & Arrington, 1992). In a mixed-method study, Houck et al. (1992) found that 76% of students with learning disabilities stated that their greatest concern included others lacking understanding (a) about learning disabilities; (b) of the experiences of having a learning disability; (c) of the judgment from students without disability when accommodations are used, questioning it if it is fair; (d) instructor's willingness to provide accommodations; and (e) of their worries about graduation.

For students with impairments, campus climate also plays a crucial role in their transition from secondary school to postsecondary education, impacting their adjustment. For instance, Murray, Lombardi, and Kosty (2014) used a person-centered approach to examine adjustment for college students with disabilities by identifying three levels (poor, average, and high) of adjustment. About a third of their sample of 200 students self-identified as having a disability (compared to 598

students in the overall study population) and were in the poorly adjusted profile while about one tenth in the high adjustment profile. In particular, students in the poorly adjusted profile reported having significantly less family support, self-efficacy, self-advocacy, and positive perceptions of the campus climate in contrast to students in the average- and highly-adjusted profiles. Of note, they found a significant positive association between campus climate and students' initial adjustment. Additionally, the authors found that initial adjustment to college was unrelated to high school GPA, financial stress, receiving support from disability support services, use of accommodations, or time spent studying, which is congruent with previous studies (Lombardi, Murray, & Gerdes, 2012; Murray et al., 2013).

The studies reviewed above examined campus climate peripherally, not as a central focus on the studies. Next, I discuss two campus climate studies concentrating specifically with postsecondary students with differing abilities and their climate perceptions and experiences. Mentioned previously, Lombardi and her colleagues' (2011) developed a tripartite theoretical framework conceptualizing the experiences and perceptions of campus climate for college and university students with impairments; they developed, administered, and examined the validity and reliability of the *College Students with Disabilities Campus Climate (CSDCC)* survey to measure and assesses the individual actions and perceptions of institutional and social supports among college students with disabilities. One hundred ninety-seven students with disabilities (70% who identified as having a learning disability) from a large research public university in the northwest region of the U.S. completed the survey. Exploratory factor analysis yielded nine reliable factors: (a) peer support, (b) utilizing



accommodation, (c) disability services, (d) self-advocacy, (e) family support, (f) campus climate, (g) faculty teaching practices, (h) faculty attempts to minimize barriers, and (i) stigma associated with disability (Lombardi et al., 2011).

Additionally, the authors examined if the CSDCC factors predicted a variety of student success outcomes. They found that the CSDCC factors did not significantly predict GPA, which is consistent with the extant literature (Morningstar et al., 2010; Murray & Wren, 2003). Congruent with previous studies indicating that self-advocacy is one of the most, if not the most, vital skills for college students with disabilities (Janiga & Costenbader, 2002; Sitlington, 2003), self-advocacy explained a significant portion of the unique variance in GPA, course efficacy, roommate efficacy, and social efficacy (Lombardi et al., 2011). Among the nine subscales of the CSDCC, campus climate was significantly and positively associated with peer support, disability services, self-advocacy, family support, faculty teaching practices, and significantly and negatively correlated to stigmatization of disability. The campus climate subscale of the College Self-Efficacy Inventory (i.e., measuring college students' confidence in performing various tasks; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993) was positively correlated with course efficacy, roommate efficacy, and social efficacy. Also, the campus climate subscale within the Social Support Questionnaire (Sarason, Sarason, Shearin, & Pierce, 1987) was positively and significantly related to social support appraisal, social support total people, and was not significantly correlated with GPA.

In a different study of 9,682 students with disabilities (total number of students  $N = 51,452$ ; total  $N = 104,208$  [includes faculty, staff, and students]) from a

larger campus climate assessment from 13 different institutions conducted in 2011 by Rankin and her colleagues (most questions based on Rankin's 2003 study described previously), students with disabilities reported their level of comfort (a) on campus (in general), (b) in their respective departments, and (c) in their respective classes, the authors found that across the three aforementioned settings, students with disabilities significantly reported that they were uncomfortable or very uncomfortable with these settings compared to their counterparts without disabilities. Additionally, the results indicated that among students with disabilities, 20.3% reported discriminatory experiences (i.e., experiences of exclusion, harassment, intimidation, or hostile interactions); and 13.4% reported that these discriminatory interfered with their ability to work or learn. Moreover, over one-third of students with disabilities reported experiences of harassment and bullying (Rankin, 2011 as cited in Evans et al., 2017). Intriguingly, results indicated that students with disabilities viewed the campus climate as less respectful and welcoming for students with psychological disabilities in comparison to students with health issues, learning disabilities, or physical disabilities (Rankin, 2011 as cited in Evans et al., 2017). Last, students with disabilities significantly perceived less academic success and intent to persist towards graduation compared to their peers without impairments. It is important to note the limitations of this large-scale study, which includes the underrepresentation of students with learning disabilities (which is atypical compared to most of the present statistics), the self-selection bias of participants, and the cross-sectional nature of the investigation, making the findings not generalizable.

Taken together, the research on disability campus climate is in its initial

development compared to the robust literature on campus climate by gender, race, and sexual orientation. It is clear that students with disabilities encounter negative experience and report more negative perceptions of campus climate. Additionally, there is evidence that students with disabilities experience poorer academic outcomes compared to their counterparts without disabilities. However, there less research on the relationship between disability status and levels of satisfaction with college.

**Critical observations of campus climate literature.** After a deep examination and analyses of the campus climate literature as discussed to this point, there are clear observations and limitations to this body of research are noteworthy. First, while many campus climate investigations have been conducted, there is still a lack of a unified and agreed upon operationalized definition. Without a clear definition of a construct and its nomological network with other constructs, there are inherent flaws in its measurement—developing psychometric instruments to assess constructs rests solely on a clear definition that differentiates the construct from other similar constructs. Faulty measurement leads to unreliable and invalid claims and interpretations of findings from a study. Cross-sectional research designs have been used for the majority of campus climate studies. Without additional longitudinal studies, it is difficult for researchers and campus professionals to understand the directionality and changes in campus climate over time, which theoretical frameworks posit (e.g., TTP model; Rankin & Reason, 2008). Moreover, with notable exceptions (e.g., Lombardi et al., 2016; Navarro et al., 2009; Worthington et al., 2008), there have been few empirical studies that examine campus climate as a potential mediator and/or moderator between predictor and outcome variables such as

identity-status and satisfaction with one's institution. Most of the studies have campus climate as a predictor of educational outcomes. Therefore, this study extends the campus climate research in continuing to examine potential mediators and moderators. In particular, this study tests a mediational model by examining PGCC as a possible mechanism that explains the relationship between disability and institutional satisfaction among a college student population that has receive less attention, college students with disabilities. Next, I discuss institutional satisfaction—the outcome variable of this study.

### **Institutional Satisfaction: Definition, Frameworks, Measurement, and Correlates to Student Outcomes**

Institutional satisfaction has been widely studied in the higher education. Conceptualized as both an important predictor and outcome variable of college students' academic outcomes and persistence towards graduation, satisfaction with college is central to many theories and frameworks for college student academic performance, retention, and persistence. In the following sections, I (a) define institutional satisfaction, (b) review relevant theoretical models of student retention and persistence that relate to satisfaction and climate, (c) consider current issues in measuring college satisfaction, and (d) provide a brief review of empirical studies on satisfaction.

**Defining institutional satisfaction.** Over the years, various theorists have defined institutional satisfaction in myriad ways and to this day there is still little consensus on a definition (Sears, Boyce, Boon, Goghari, Irwin, & Boyes, 2017). Bean and Bradley (1986) defined student satisfaction as “a pleasurable emotional state

resulting from a person's enactment of the role of being a student" (p. 398). In a more detailed description, Athiyaman (1997) defined satisfaction as a temporary affective response to the (dis)confirmation of expectations regarding a certain experience that leads to one's evaluation of the quality of the experience. Similarly, Elliott and Healy (2001) defined satisfaction as a "short-term attitude resulting from an evaluation of a student's educational experience [...which] results when [the institution's] actual performance meets or exceeds the student's expectations" (p. 2). Evidently, college satisfaction is a complex construct that incorporates a variety of subjective appraisals via one's perceptions, emotions, cognitions, and evaluations of the campus experience (Sears et al., 2017). In addition, institutional satisfaction can be viewed as a global appraisal of one's experience in college that is developed continually, (re)evaluated, and changing throughout a student's repeated experience throughout their tenure in postsecondary education (Elliott & Shin, 2002). Importantly, scholars have found and argued that the campus environment, encompassing both social- and academic-related factors, intersect and explain students' overall satisfaction (Browne, Kaldenberg, Browne, & Brown, 1998; Elliott & Shin, 2002).

**Theoretical frameworks of persistence and retention: the role of satisfaction.** Many theories espouse the central position that institutional and student satisfaction plays in college and university students' academic performance, persistence, and retention. These theories assumed that satisfaction is both a direct factor or an indirect factor of students' intentions to persist or leave college (Strahan & Crede, 2015).

While there are a number of theoretical models on retention and persistence for students in higher education (e.g., Bean & Metzner, 1985; Braxton & Hirschy, 2005; Braxton et al., 2004), historically Tinto's (1975, 1993) seminal longitudinal student departure interactionalist theory has received the most attention in the literature and serves as a foundation of many theories. Tinto's (1975, 1993) theory is based on the four areas: (a) background and individual characteristics (i.e., race/ethnicity, socioeconomic status, gender, high school experiences), (b) institutional commitment and goal of graduating college, (c) accepting and internalizing the values and expectations of college, and importantly (d) healthy integration of academic and social aspects of university life. Tinto's theory does not come without criticism and limitations. Scholars (Braxton, Milem, & Sullivan, 2000; Guiffrida, 2006; Tierney, 1992) have criticized the inapplicability of this framework with underrepresented student populations suggesting that the model fails to recognize the unique experiences of underrepresented students and their families of origin and experiences of discrimination. Other scholars have also critiqued Tinto's theory due to its lack of highlighting the powerful experiences that students face on campus and for its lack of empirical consistency and validity (Braxton, 2000). In turn, revisions on this model added a broader range of psychological elements (e.g., self-efficacy; Bean & Eaton, 2000) that underscore the influence of the college environment and climate on college satisfaction and commitment to graduate (Braxton et al., 2004). Such criticisms delineate that students' experiences with the campus environment and climate elicits simultaneous affective satisfaction responses

that are likely important elements of their chances of persisting toward graduation (Astin, 1984, 1993; Bean & Bradley, 1986; Fischer, 2007).

Relevant to the current investigation, Baird's (2000) and Braxton and colleagues (2004) note the central role of campus climate on student retention, success, and persistence, stating that their experiences, perceptions, and interpretations of the climate and environment shape their future decisions and behaviors. Satisfaction evaluations are connected to the negative and positive emotional responses when one assesses the campus environment (Baird, 2000). This is corroborated with Kuh's (2001) observations that a campus climate, culture, and environment "can influence student satisfaction, achievement, and ultimately whether a student persists and graduates" (p. 37). From a conceptual psychological perspective, Braxton et al. (2004) and Braxton and Hirschy (2005) articulate that psychological factors and processes impact student decisions to persist or to leave the institution making it a powerful determinant of students' social integration, institutional commitment, and subsequent persistence. Thus, the present study was aimed to examine the potential role of PGCC on the link between disability status and satisfaction with college.

From a higher education marketing perspective, Schertzer and Schertzer (2004) proposed a student satisfaction and retention conceptual model that centers on the importance of person-environment fit. Specifically, they argue that colleges and universities are becoming more consumer-oriented, such that students are the customer and the university is the product. They posit that congruency between the institutions' values and the students' value must be a strong "match" so that it leads to

greater satisfaction; in turn, this results in greater institutional commitment and less student attrition. Furthermore, they assert that certain factors contribute to the “fit” or “match” between students and schools and retention, including: “academic fit, student-institution values congruence, student-faculty values congruence, academic advising, [and] institution social opportunities” (Schertzer & Schertzer, 2004, p. 81). Relevant to this study, their model states that academic fit is positively related to satisfaction with and commitment to one’s educational institution; satisfaction is positively associated with institutional commitment; and institutional commitment is positively correlated with student retention. Thus, in this study, college satisfaction serves as a proxy variable to retention via institutional commitment. Next, I discuss the measurement of college satisfaction followed by a review of retention and its relationship with institutional satisfaction.

**Measuring institutional satisfaction.** Currently, there are multiple measures of students’ satisfaction with college, most of which capture different factors of the university experience that students reported as (dis)satisfying. Because the measurement of psychological constructs depends on theory, construct operationalization, and nomological networks, it is vital to understand the assumptions of theory as it relates to measurement. In turn, there are multiple ways that scholars conceptualize and measure institutional satisfaction, such as whether college satisfaction is unidimensional or multidimensional.

One widely used instrument measuring satisfaction from a multifaceted assumption is the *Student Satisfaction Inventory* (SSI; Schreiner & Juillerat, 1994), which consists 116 items assessing a large range of college experiences on a 7-pt



scale (1) “not important at all” to (7) “very important” and “not satisfied at all” to “very satisfied.” It also includes three summary questions related to overall satisfaction, level of expectations met by their college, and whether the student would enroll again at their college. The SSI measures the degrees of perceived importance and satisfaction among 11 dimensions, including: (a) academic advising effectiveness, (b) campus climate, (c) campus life, (d) campus support services, (e) concern for the individual, (f) instructional effectiveness, (g) recruitment and financial aid effectiveness, (h) registration effectiveness, (i) campus safety and security, (j) service excellence, and (k) student centeredness.

Furthermore, the SSI has three subscales scores: (a) an importance score, (b) a satisfaction score, and (c) a performance gap score. The performance gap score is determined by subtracting the satisfaction score from the importance score; greater discrepancy indicates that the institution is not meeting the expectations and smaller discrepancy represents that the institution is meeting students’ expectations.

Cronbach’s alpha was found to be .97 and .98 for importance and satisfaction scores, respectively. It has also demonstrated high levels of convergent validity as evidenced by its strong, positive, and significant associations with the *College Student Satisfaction Questionnaire* ( $r = .71; p < .00001$ ; as cited by Elliott, 2002).

Examining the determinates of student satisfaction, Elliott (2002) found that student centeredness, campus climate (i.e., campus pride and belonging, effectiveness of communications to students), and instructional effectiveness were the top three significant predictors of satisfaction. Campus climate was rated the fifth in importance out of the 11 subscales although it was one of three that had the largest

impact (Elliott, 2002). The authors concluded that their findings suggest that high levels of satisfaction are both associated with relatively important and unimportant dimensions of their college experiences. In other words, what students think are important factors to their satisfaction is not necessarily the same as the dimension(s) that actually predict their overall college satisfaction.

There are many advantages to using multidimensional measures of satisfaction because it provides specific areas that allow higher education researchers and administrators to strategically target their interventions, planning, and policies. However, historically the field has also utilized one- to three-item scales that captured more of a global sense of a student's satisfaction with their postsecondary experiences; the advantage of this approach is the utility that it can be added to a long survey (decreasing respondent fatigue) and simplicity during data analysis. Additionally, the parsimonious nature of a few items allows for specific factors that professionals aim to evaluate. For instance, the overall satisfaction of class instruction, living in the residence halls, counseling services, financial aid services, technology services, etc. While there are limitations to using few items, the present study aimed to examine students' overall satisfaction of their college experience; thus, only four-items were used.

**The relationships among satisfaction, retention, and campus climate.** As mentioned previously, the construct of student satisfaction with college has been utilized both as a psychological outcome variable and as a predictor variable. Studies have also shown that satisfaction can serve as a mediating factor predicting student achievement and persistence (Einarson & Matier, 2005; Fischer, 2007; Thomas &

Galambos, 2004; Umbach & Porter, 2002). Not surprisingly, positive experiences with college environments (as measured by perceptions of campus climate) aid students to feel invited and welcomed in turn increasing their satisfaction. As a vital predictor of persistence and retention, higher satisfaction scores are related to increased institutional commitment (Strauss & Volkwein, 2004) and higher academic achievement (Pike, 1993). Notably, higher overall satisfaction significantly predicts college students' persistence towards earning their degrees (Fischer, 2007).

In sum, the current research on disability campus climate is in its infancy. Lombardi and colleagues have laid the groundwork for understanding the multidimensional factors that contribute to campus climate for students with disabilities. Not surprisingly, empirical evidence indicates that students with disabilities compared to students without disabilities have different experiences in college. Also, the common method of investigating campus climate for underrepresented groups is by social identity-related campus climate measures (e.g., campus racial climate, sexual orientation climate). Using a general campus climate approach, the present investigation hopes to extend the PGCC (e.g., Navarro et al., 2009; Worthington et al., 2008) scholarship by applying the PGCC framework and measurement to understand PGCC among college students with disabilities. Doing so, will further validate the PGCC measure and offer a scale that has the potential to be used widely across institutions and identities. Last, it is crucial to understand what mechanisms predict disability status and college satisfaction. Identifying this mediating factor may inform intervention, prevention, and resource allocation efforts,

which will result in greater retention and degree completion among college students with disabilities.

### **The Present Study**

The current investigation examined the relationships among PGCC, disability status, and institutional satisfaction in two independent samples of university students. Specifically, the main research question was: do perceptions of general campus climate mediate the relationship between disability status and college satisfaction (see Appendix A)? The following were my hypotheses:

- 1) There will be a significant negative relationship between disability status and college satisfaction (i.e., students with disabilities will report lower levels of college satisfaction).
- 2) There will be a significant negative relationship between disability status and perceptions of general campus climate (i.e., students with disabilities will report lower levels of positive general campus climate).
- 3) Perceptions of general campus climate will significantly mediate the relationship between disability status and college satisfaction.

Hypothesis 1 is based on the literature that suggests that students with disabilities have lower rates of retention, which is strongly related to satisfaction (Adler, 1999; Greenbaum, Graham, & Scales, 1995; Hill, 1996; Janiga & Consetnbader, 2002).

Hypothesis 2 is consistent with the idea and empirical findings that students from marginalized communities (Ancis et al., 2000; Hurtado & Ponjuan, 2005; Museus et al., 2008; Worthington, 2008; i.e., students with disabilities, women, sexual minorities, and students of color) perceive the campus more negatively and less

positively compared to students from majority groups (i.e., students without disabilities, men, white students). Hypothesis 3 is based on the understanding that PGCC explains the pathway between disability status and college satisfaction, which is consistent with the satisfaction literature suggesting that experiences of social and academic integration are positively correlated with satisfaction (Bean & Metzner, 1985; Braxton & Hirschy, 2005; Braxton et al., 2004). Thus, students who are more integrated may perceive the general climate as more welcoming, inclusive, positive, safe, friendly, etc.

## Chapter 3: Method

### Participants

Participants were recruited from two large public Midwestern universities. Data were collected as part of two independent campus climate studies. Given the large differences in samples sizes for people with and without disabilities, it was decided to randomly select a subsample of students without disabilities compare to the sample of students with disabilities for both campus datasets.

Campus A consisted of 617 participants who ranged in age from 18 to 65 ( $M = 24.29$ ,  $SD = 7.69$ ). Three hundred eighty-eight identified as female, 210 male, and 19 transgender or gender non-conforming. Most of the participants identified as heterosexual (81.4%), 4.1% bisexual, 2.4% lesbian, 15% gay, 1.1% uncertain, .8% questioning, 2.6% Queer, and 1.3% other. The majority of Campus A was White/European (77.0%) followed by 2.8% African American/Black, 7.0% Asian/Asian American, .6% Native American Indian/Alaskan Native or Pacific Islander, 1.3% Hispanic/Latinx, and 7.6% other. Three hundred fifty-six students did not report having a disability and 261 reported having at least one disability. Specially, participants had the following disabilities: 11.7% visual, 4.1% hearing, 12.5% learning, 2.6% mobility, 1.8% speech, 6.3% medical, 14.3% psychological, and 2.8% other.

Campus B consisted of 429 participants who ranged in age from 18 to 64 ( $M = 25.51$ ,  $SD = 8.88$ ). Two hundred ninety-one identified as female, 127 male, and 11 transgender or gender non-conforming. Most of the participants identified as

heterosexual (85.6%), 4.0% bisexual, .9% lesbian, 2.6% gay, 1.4% uncertain, .9% questioning, 1.2% Queer, and 3.5% other. The majority of Campus B was White/European (80.4%) followed by 3.3% African American/Black, 3.0% Asian/Asian American, 1.2% Native American Indian/Alaskan Native or Pacific Islander, 1.2% Hispanic/Latinx, and 10.5% other. Two hundred fourteen students did not report having a disability and 215 reported having at least one disability. Specially, participants identified with having the following disabilities: 9.8% visual, 4.7% hearing, 9.3% learning, 4.7% mobility, 2.1% speech, 10.5% medical, 13.1% psychological, and 5.4% other.

## **Measures**

For both campuses, a larger campus climate study was administered to participants. The purpose of these larger campus climate studies was to provide an institutional evaluation of the campus climate for diversity to inform campus policies, practices, and interventions and make evidence-based decisions (Hurtado, Carter, & Kardia, 1988). For example, these studies examined diversity attitudes and experiences of staff, faculty, and students from a variety of social identity locations (e.g., gender, sexual orientation, SES, etc.). Data from these larger studies were used to investigate the research questions for the current study. Thus, only data for the following variables were analyzed: disability status, perceptions of general campus climate, college satisfaction, and other demographic information. Moreover, instruments for the variables were slightly different for each campus although they were intended to measure the same basic constructs. Consequently, specific

descriptions for each scale are provided for both campuses in the following subsections.

**Demographics.** In addition to disability status, other demographic indicators were also gathered, including age, gender, race/ethnicity, sexual orientation, and spiritual/religious belief system. Appendix E describes how these demographic variables were collected and how they were recoded to interpret findings from both university samples.

**Perceived general campus climate (PGCC).** For Campus A, perceived general campus climate was measured using seven items on a 7-point scale from 1 (*not at all*) to 7 (*entirely*) in response to the question stem, “Please rate the campus climate in general using the following scale.” Each item had different bipolar dimensions that included: (a) friendly-hostile, (b) comfortable-uncomfortable, (c) concerned-indifferent, (d) respectful-disrespectful, (e) cooperative-uncooperative, (f) fair-unfair, and (g) welcoming-not-welcoming (see Appendix D). All seven items were reversed scored then averaged for a scale score. Higher scores reflect more positive perceptions of campus climate whereas lower scores indicated more negative climate. The internal consistency for this sample was .92.

Similar general campus climate measures have been used in past studies and have shown adequate reliability and validity. For instance, Worthington et al. (2008) used a similar measure rated on the following dimensions: (a) friendly-hostile, (b) communicative-reserved, (c) concerned-indifferent, (d) respectful-disrespectful, (e) improving-worsening, and (f) cooperative-uncooperative. In their sample of students at a predominately white public university campus, the authors reported an internal



consistency estimate of .90. This estimate was consistent with a later study conducted also on a predominately white public college campus, which utilized the same scale that reported .90 for reliability (Navarro et al., 2009)

For Campus B, PGCC was measured very similarly to Campus A, however participants were asked to rate their level of agreement on a 12-item 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*) by answering the following question, “In general, how would you describe your overall experiences of the [name of institution] campus?” (See Appendix D.) Participants rated their level of agreement to the following items: supportive, \*indifferent, fair, \*hostile, welcoming, \*intimidating, respectful, \*oppressive, open, \*threatening, inclusive, and \*cold. Items marked with an asterisk in the previous sentence were reversed scored then averaged for analysis. Higher scores denoted more positive PGCC, conversely lower scores represented more negative PGCC. In this study, the internal consistency was .88. Validity evidence was not reported in Worthington et al. (2008) or Navarro et al.’s (2009) studies.

**Institutional satisfaction.** Due to limitations of secondary analyses, a formal measure of college satisfaction was not used. In this case, the author used four items aimed to measure students’ institutional satisfaction for both Campus A and B (see Appendix C). Items one, two, and three asked participants to rate their responses to three questions using a 4-point scale from 1 (*not at all*), 2 (*a little*), 3 (*somewhat*), and 4 (*a great deal*). These questions were: “Have you thought very seriously about leaving [name of institution]?”, “Do you ever wish you had chosen another university or college instead of [name of institution]?”, and “Have you researched or applied to

other universities since coming to [name of institution]? All three items were reversed coded. Item four asked participants to respond to the following prompt, “Are you satisfied with your OVERALL [capitalization in original survey] experience at [name of institution]?” using a 5-point scale from 1 (*not at all satisfied*) to 5 (*completely satisfied*). All four items were averaged such that higher scores indicated greater levels of satisfaction with college and lower scores represented lower levels of institutional satisfaction. For the present investigation, internal consistencies were .83 and .85 for Campus A and Campus B, respectively.

As mentioned in the literature review, this study utilized satisfaction with college as a proxy variable to institutional commitment and to retention. While there are many similarities between institutional satisfaction and institutional commitment, there are notable differences that are important to consider since the two are very similar constructs. Scherzter and Schertzer (2004) argue that together academic fit (i.e., congruence or incongruence between student and institution values) and satisfaction are unique predictors of institutional commitment and that institutional commitment then predicts retention. Thus, they theorize that satisfaction is different than commitment. Additionally, an examination of the Institutional Commitment scale (Nora & Cabrera, 1993) suggests that institutional commitment consists of the following aspects: certainty of choice, institutional quality and prestige, a sense of belonging, practical value of the students’ education, loyalty to the institution, and affinity of values. While some items (items 1, 2, and 3) on the created measure of Institutional Satisfaction in this study are similar to Nora and Cabrera’s “certainty of choice” (i.e., “I am confident I made the right decision in choosing to attend this

institution.” and “I am certain this institution is the right choice for me.”; Nora & Cabrera, 1993, p. 248) and to “loyalty” (i.e., “It is very important for me to graduate from this institution as opposed to some other school.”; Nora & Cabrera, 1993, pp. 248-249) subscales, the Institutional Satisfaction scale created in this investigation includes an additional item that explicitly measures overall satisfaction, making a clearer difference between assessing institutional satisfaction compared to institutional commitment. As such, together the four-items used in this study aimed to measure Institutional Satisfaction.

**Disability status.** Participants were asked, “Please indicate if you have a disability. (mark none or all that apply).” The eight categories included were: (a) visual, (b) hearing, (c) learning, (d) mobility, (e) speech, (f) medical, (g) psychological, and (h) other (specify). Participants were allowed to fill in the blank for the “other” categories for both campuses. For Campus B, participants also were able to mark “none.” Students who indicated that they have one or more disabilities were coded as 1 and students who did not select any option or marked “none” were coded as 0, denoting no disability.

## **Procedures**

For Campus A, data were collected using an Internet survey as part of a larger campus climate evaluation at a large public land-grant predominately white campus in the Midwest. Various methods were used to recruit and publicize the survey, including email announcements, radio and press releases prior and during the data collection period. Emails were distributed twice in one academic semester and contained a link to the climate survey. Random sampling and oversampling data

collection methods were used in order to increase participation from minority students. Participants were offered an opportunity to enter a raffle drawing for free parking, free textbooks, and concert tickets. A similar goals and procedures was used for Campus B.

For Campus B, email invitations were sent to 20,816 campus stakeholders (i.e., faculty, students, staff, and administrators) with 3,510 individuals who responded in some way (response rate 16.9%). Only 3,160 surveys were useable. Campus A response rate data were not available.

Using internet survey data collection should be done with caution due to two primary concerns: (a) there is a chance that respondents complete and submit their survey more than one time and (b) there is a risk when collecting data via internet surveys due malicious responding. To address these two concerns, I followed suggestions from Schmidt (1997); Smith and Leigh (1997); and Mohr and Rochlen (1999). First, duplicate surveys were identified by examining the time, date, and origin of their submission (via internet protocol address). These cases were then examined to determine whether the entries were accidental or malicious. As an example, in the situation when two identical cases were submitted within one to two minutes this would be considered accidental; whereas, random response patterns indicate malicious responding. Both cases were deleted if they were categorized as malicious, whereas cases deemed accidental were retained. As a note, the samples described earlier for both Campuses A and B is the final sample after completing the aforementioned steps.

## Chapter 4: Results

In the following sections, I described preliminary analyses including procedures for handling missing data. I then examine the descriptive statistics among disability status, institutional satisfaction, and PGCC and discuss the intercorrelations among these variables. Last, I discuss the main analyses to answer the central questions of the current study.

### **Preliminary Analyses**

Missing data are commonplace in educational and psychological research and proper identification of missing data and methods of addressing missing data should be applied to minimize bias when analyzing and interpreting research findings (Acock, 2005; Allison, 2001; Schlomer, Bauma, & Card, 2010; Streiner, 2002). Missing data can be a result of participants' omission of answering all items in a survey. Another reason for missing data is attrition, which may occur due to participant fatigue or boredom and, in the case of longitudinal studies, participant drop out. Regardless, accurately identifying the type of missing data and conducting the appropriate statistical procedures to address the missingness is necessary to prevent misinterpretation and bias (Schlomer et al., 2010).

According to Little and Rubin (2002), there are three patterns of missing data, which include (a) missing completely at random (MCAR), (b) missing at random (MAR); and (c) not missing at random (NMAR). When data are MCAR, it is assumed that missing information are no different than non-missing data. Therefore, it is concluded that the pattern of missing data is random. In the case of MAR, the missing

data and values are not contingent on the missing values; instead, they rely on observed values of the data (Allison, 2001). Last, NMAR occurs when the missingness is connected to the value that would likely be observed.

After determining the nature of the missing data, researchers must select a method to address the missingness, such as deletion methods, non-random imputation methods, and random imputation (see Schlomer et al., 2010). In the current study, I used the multiple imputation (MI; Rubin, 2004; Schafer, 1999) method to handle missing data because simulation studies suggest superior results in comparison to other aforementioned techniques (Schafer & Graham, 2002; Schlomer et al., 2010). There are two main benefits when executing MI: (a) MI produces unbiased parameter estimates based on the uncertainty related to the missing data, and (b) MI provides acceptable outcomes when working with small samples or when there are high rates of missing data (Schafer & Graham, 2002; Schlomer et al., 2010). MI consists of (a) approximating multiple complete versions of the datasets, (b) conducting the analyses on each of the aforementioned datasets, and (c) pooling the results from each of these analyses into a single set of results. The literature suggests that MI performs well with multiple regression models even with 25%-30% missing data (Newman, 2003; Pastor, 2003).

In the present investigation, missing data were handled in a variety of ways for both Campus A and B. For Campus A, rates of missing data for self-identification of having a disability, PGCC, and Institutional Satisfaction variables were 0%, 7.9% and 7.5%, respectively. Taken together, 66.7% of participants had missing data on the PGCC and/or Institutional Satisfaction measures. The total percentage of data points

missing for this study was 5.1% for Campus A. For Campus B, rates of missing data for self-identification of having a disability, PGCC, and Institutional Satisfaction variables were 0%, 11.0% and 6.5%, respectively. Collectively, 66.7% of participants had missing data on the PGCC and/or Institutional Satisfaction measures. Last, 5.8% of the data points were missing for this study for Campus B.

Next, Little's MCAR test of missingness (Little, 1988) were conducted for both Campus A and B to determine whether the data are MCAR at the scale-level. For Campus A, Little's chi-square statistic was significant indicating that the missing data were not MCAR,  $\chi^2 = 11.72, df = 5, p = .04$ ). However, Campus B data points were MCAR  $\chi^2 = 1.57, df = 2, p = .46$ . Campus A's missing data can be categorized as NMAR, which means that it cannot be indisputably concluded that the data is MAR or MCAR, even still researchers assume MAR or MCAR especially when there is no evidence suggesting otherwise (Schlomer et al., 2010). Simulation studies have demonstrated that MI performs adequately well when data are MCAR or MAR across 10% and 20% of missing data (Schlomer et al., 2010). Another study indicates MI performs well when even 25% of the data are missing (Buhi, Goodson, & Neilands, 2008). Thus, even though Campus A data is suggested to be NMAR, MI is still likely to provide unbiased estimates since only 5.1% of the data were missing, which is considerably lower than the 10%, 20%, and 25% of missing data as previously mentioned. Thus, MI was selected to address the missing data for both campuses.

Ten imputations were conducted for each dataset (Campus A and B), which is beyond the recommended of three to five imputations (Schafer, 1997; Schlomer et al.,

2010). Next, the analyses were carried out for each of the ten datasets with the parameter estimates and their respective standard errors. Finally, parameter estimates across the ten imputed datasets were averaged, resulting in an unbiased parameter estimate. Mediation analyses were conducted with all imputed datasets and the results were pooled into a single set of results for the respective campuses.

Means, standard deviations, and observed ranges are presented in Table 1. In regard to PGCC, the mean score for Campus A was above the midpoint of the scale. Similarly, the mean score for PGCC was also above the midpoint of the scale. (The midpoints for perceptions of general campus climate are different between the two campuses.) This indicates that students from Campus A and B report more positive perceptions of their respective institutions' general campus climate. For both campuses, mean scores were also above the midpoint, suggesting that, on average, students from both campuses reported being satisfied with their respective campus.

Intercorrelations for the study variables for Campus A and B are also displayed in Tables 1 and 2, respectively. Correlations among the variables of focus are all statistically significant and in the expected directions for both campuses. Specifically, for Campuses A and B, disability status was significantly and negatively related to PGCC and institutional satisfaction, both with small effect sizes according to conventional benchmarks; correlations values ( $r$ ) of .10, .30, and .50 suggest small, medium, and large effects, respectively (Cohen, 1992). Likewise, disability status was significantly and negatively associated with institutional satisfaction with a small effect sizes for both campuses. Finally, in both Campus A and B, disability status was significantly and positively related to college satisfaction with large effect sizes.



## **Main Analysis**

Next, regression analyses were conducted where disability status and PGCC were predictors of college satisfaction (see Tables 3 and 4). Both disability status and PGCC were found to be significant predictors, explaining 33.7% of the variance in college satisfaction for Campus A and 39.4% for Campus B.

Examining the semi-partial correlations on Campus A, disability status and PGCC explained 1% and 31.4% of the variance in college satisfaction, respectively. In Campus B, disability status and PGCC explained .01% and 39.4% of the variance in college satisfaction, respectively.

The Hayes (2013) PROCESS macro in SPSS was used to conduct the mediation analyses. The macro provides 10,000 estimated indirect effects by creating 10,000 bootstrap samples with replacement. Significant mediation effects are indicated by a 95% confidence interval that does not include zero. The bias corrected 95% confidence interval (CI) for Campus A was [-.199, -.047]; see Table 3), which does not contain zero; therefore, there is a mediated effect. Because the relationship between disability status and college satisfaction was still significant after including PGCC as a mediator, PGCC served as a significant partial mediator. For Campus B, PGCC fully mediated disability status and institutional satisfaction because the direct effect between disability status and college satisfaction was non-significant when PGCC was the mediator (bias corrected 95% CI: [-.294, -.095]; see Table 4).

## Chapter 5: Discussion

In this chapter, the findings of the main and supplemental analyses are discussed within the context of the extant literature. Next, theoretical and methodological implications of the study are considered. Last, limitations are reviewed, followed by suggestions for future directions for research and practice.

The main finding of this study was that PGCC significantly explained the relationship between college students' disability status (having at least one disability or none) and levels of college satisfaction. Additionally, the mediation model was replicated with a different independent sample. Results indicated that PGCC both partially (in Campus A) and fully (Campus B) mediated disability status and institutional satisfaction. This demonstrates that (in Campus A) PGCC incompletely explained the association between whether a student has a disability (or not) and their level of satisfaction with college. However, in a second independent sample (Campus B), PGCC completely explained the aforementioned relationship. Because PGCC only explained some of the variance in the association between disability status and satisfaction, this suggests the existence of other mediators that may, in addition to PGCC or not, better explain the aforementioned relationship. A potential explanation for the incomplete and complete mediating role of PGCC may be explained by differences institutional factors (e.g., the socioeconomic status of students, whether the school is private or public, the geographic location of the school, the acceptance and retention rates of the institution, the racial numeral makeup of students, faculty, staff, community members, etc.; Strahan & Crede, 2015). As discussed in the Chapter 2, there are common factors that make up campus climate across higher education

institutions. However, Hurtado and colleagues explained that each campus has its unique context, history, and practices that also contribute to the campus climate. This is similar to Worthington's (2013) targets of inquiry, which suggests that a number of specific targets together create an institution's climate, meanwhile another permutation of the targets can also create a (dis)similar climate. In other words, commonalities and differences among postsecondary schools influence the mediating effect of PGCC on disability status and satisfaction.

Another explanation of the partial and full mediation finding is related to research methodology and measurement. As discussed in the literature review, there is no consensus on what campus climate is and this may be partially true for PGCC. Furthermore, because PGCC is still in its conceptual, measurement, and empirical infancy, it is likely that the construct will undergo revision and refinement. Importantly, measurement of PGCC has been different including the length of the measure (number of items), the scaling of the items (Likert-type or bipolar semantic differential; number of anchors), number of and when items are reversed scored, and differences in the content of the items (e.g., number of positive vs. negative perceptions of campus climate and use of words that are synonyms). Likewise, PGCC measurement validity and reliability across samples have not been widely established which may introduce measurement error because the measure might be assessing different constructs due to the nature of the sample. In the present study, PGCC measures for Campuses A and B were in fact different, in terms of the number of items and the scaling method. It is also unknown how the measurements would

perform on the other institutions. In short, the differences in the partial and full mediating role of PGCC may be due to issues related to measurement.

Additionally, the study offers a new perspective of campus climate in addition to supporting the utility of PGCC among varying identity groups. A unique contribution of this study is that it examines the perceived campus climate for students with disabilities from a general campus climate perspective, which does not incorporate specific disability-related items and factors. While college and universities can utilize measures specific to students with disabilities, such as the CSDCC (Lombardi et al., 2011), PGCC captures similar and broader aspects of campus climate compared to the CSDCC. For instance, students with disabilities may have difficulty with instructors when requesting use of their accommodations and experience discrimination due to their disability. These negative experiences are likely to result in perceiving the climate as hostile, unwelcoming, unsafe, and exclusive—dimensions that are captured in both the CSDCC and PGCC. Thus, PGCC can serve as an indicator of PGCC for students with disabilities and likely for other underrepresented group members. In other words, PGCC is likely able to measure similar information that an identity-specific campus climate assesses. In turn, the major advantage of using the PGCC model and measure allows for multiple social identity groups to report their PGCC.

Moreover, correlational results from both Campus A and Campus B are consistent with the stated hypothesis and aligns with the current literature. There was a significant negative association between disability status and college satisfaction. Next, there was also a significant negative relationship between disability status and

PGCC. These findings demonstrate that students with disabilities experience and sense the overall campus climate differently than students without disabilities, and this relationship influences the level of institutional satisfaction among students.

Findings from this study contribute to the campus climate, college satisfaction, and college students with disabilities literature. Consistent with Worthington's (2008) observation, these findings are similar to the differing perceptions of campus climate among majority and minority group members in terms of gender, race, and sexual orientation. Students from marginalized groups report less positive campus climate, while those in dominant groups view the campus climate as more positive. This supports Rankin's (2011; as cited in Evans et al. 2017) findings that students with disabilities view their campuses as less respectful and welcoming; both of which are measured in the general campus climate perception scales employed in this study.

Furthermore, the findings from this study are consistent with Smith et al.'s (1997) literature review indicating that diversity is related to satisfaction, academic success and learning for students of all backgrounds; in this case, students with disabilities. This further substantiates Strange's (2000) observation that perceptions of campus climate have strong effects on student behavior, satisfaction, and persistence toward degree attainment. The findings also support the critical role of satisfaction as explained by PGCC. Although, specific academic outcomes (e.g., academic achievement, attrition rates, persistence, and retention indicators) were not utilized in this project, it is possible to assert that campus climate also plays a critical for both students with and without disabilities and their institutional commitment, persistence,

and retention as measured and explained by college satisfaction. Another strength of this study was replicating the findings to another independent sample which addresses the replication crisis in psychological research (Maxwell, Lau, & Howard, 2015).

### **Limitations and Suggestions for Future Research**

While there are unique strengths to this study, there are noteworthy limitations. First, the study utilized a cross-sectional design. Maxwell and Cole (2007) point out that most empirical tests of mediation use cross-sectional data even when mediation assumes that the casual process is longitudinal. Thus, it is important to use longitudinal data to determine longitudinal meditation effects. Future studies should also consider if campus climate and related variables change throughout the college experience for students with disabilities. Second, this study was replicated with an additional campus. It is important to note that campuses have their unique institutional climates, contexts, and histories. Therefore, generalizability of the findings should be interpreted with caution.

Third, disability status was collapsed into a binary variable—students without disabilities and students with disabilities. While this method is easier to analyze, it fails to account for the within-group variation among those with different types of disabilities. Of note, the type(s) of disability may impact how students with disabilities view and experience their campus impacting their satisfaction with the school they attend. For example, students with ADHD, learning disabilities, and psychiatric disabilities are likely to have different interactions with peers, faculty, and campus staff because these disabilities may be concealable and disability disclosure is more likely a choice (Dong & Lucas, 2014). While students with more apparent

disabilities (e.g., mobility, visual, and hearing disabilities) may have different interactions because others are more likely to see their disability. This results in less doubt of whether one has a disability. It is suggested that future studies collect enough participants from those with different types of disabilities, so that analyses and findings will capture the differing experiences of students with varying disabilities by disability type.

Of note, another limitation is the use of a global measure for overall satisfaction compared to a multidimensional instrument (as discussed in the literature review). This is important because schools should consider what students find the most important. While an institution can identify a large performance gap, it is critical for them to also determine which dimensions are the most important for students. Differentiating recruitment and retention strategies by importance should be considered when recruiting prospective students. However, once students matriculate and work through their college program, maintaining satisfaction is critical for retaining the student. For example, Schertzer and Schertzer (2004) found that campus pride, belongingness, and instructional effectiveness were found to be significant predictors of satisfaction. Campus climate was one of three factors that had the largest impact; it was concluded high levels of satisfaction are both associated with relatively important and unimportant dimensions of one's college experience.

Future research should examine the relations among disability disclosure, satisfaction, and general campus climate. Because there is evidence that suggest that people with more apparent disabilities compared to those with not-as-apparent disabilities are least likely to be questioned about their disability from peers and

faculty. It would be interesting to examine how the disability disclosure process changes one's interactions with others over time.

### **Implications for Practice**

This study has important implications for campus professionals, campus administration, and counselors in making decisions on policies and intervention for this group of students. First, at an individual level, counselors may support student's experiences on campus that will improve their satisfaction. This may include a person-centered approach to therapy that focuses on the belief that one can accept and self-actualize which has been shown to be important in determining satisfaction (Elliott, 2002). Additionally, therapists may encourage their clients with disabilities to attend social gatherings and encourage social support.

Second, because campus climate studies are readily conducted on campuses across the U.S., findings from campus climate studies should be used to inform administrators and other stakeholders in making institutional level decisions, campus level interventions, and allocating of funds and resources to specific campus entities to improve students' experiences, regardless of disability, in college. Furthermore, comparing and collaborating with other institutions can inform the development of best practices for campus climate assessments and interventions.

Third, further use of the PGCC scale among other identity groups will further address the issue of group differences among climate factors. Because of the broad nature of the PGCC scale, it is also possible to examine multiple identities from an intersectionality perspective, which can provide more nuanced findings for a variety of demographic groups. Responding to Hurtado et al.'s (2008) urge to extend climate



studies to include people from other social identity locations and to develop a standardized measure that can be used for large multi-campus climate evaluations, PGCC has the potential to address this call.

Taken together, colleges and universities must be aware of the increasing enrollment of students with disabilities. While this is a major accomplishment compared to the past, higher education institutions must be prepared to create an inclusive, welcoming, and safe environment, which are all indicators of positive perceptions of campus climate. In turn, more positive experiences, interactions, and PGCC can impact a student's satisfaction with college. Importantly, postsecondary education must do its best to keep students satisfied on a number of dimensions because student satisfaction is indicative of one's commitment to the school, academic performance, intent to persist to graduate, and degree completion.

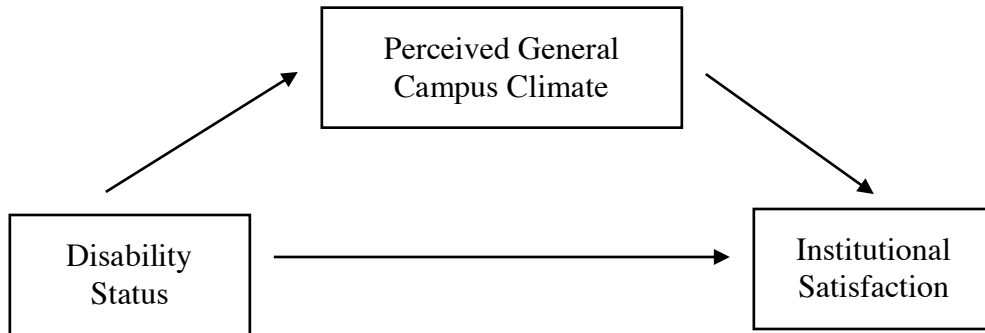
One way to keep students from all backgrounds satisfied is to improve and transform the campus climate for all students, staff, and faculty. Due to the increasing diversity on college campuses, it must be a priority for colleges and universities to examine their climate for educating students that differ from one another in terms of age, gender, race, ethnicity, sexual orientation, spiritual/religious affiliation, socioeconomic status, etc. One method is to evaluate the perceptions of general campus climate for individuals across various identity-groups and backgrounds. Applying a PGCC framework and utilizing the PGCC measure provides important information that can be used to strategically plan initiatives, programs, and policies that support students from marginalized backgrounds. This study provides additional evidence for the concept and measurement of general campus climate perceptions by

examining the mediating role of PGCC on disability status and college satisfaction as well as contributing to the research on the experiences of students with disabilities. In conclusion, creating a welcoming, inclusive, supportive, and respectful campus climate for all individuals benefits all stakeholders, increasing institutional satisfaction, and in turn yielding positive outcomes.

# Appendices

## APPENDIX A

### Mediation Model



## APPENDIX B

### Item for Disability Status

1) Please indicate if you have a disability. (mark none or all that apply)

- ☐ Visual (1)
- ☐ Hearing (2)
- ☐ Learning (3)
- ☐ Mobility (4)
- ☐ Speech (5)
- ☐ Medical (6)
- ☐ Psychological (7)
- ☐ Other (specify) (8) \_\_\_\_\_

*Note.* Campus B contained ninth response category, “none.” For Campus A, blank responses indicated no disability or “none.”

## APPENDIX C

### Items for Institutional Satisfaction

1) Have you thought very seriously about leaving [Campus A or B]?

- ☐ Not at all (1)
- ☐ A little (2)
- ☐ Somewhat (3)
- ☐ A great deal (4)

2) Do you ever wish you had chosen another university or college instead of [Campus A or B]?

- ☐ Not at all (1)
- ☐ A little (2)
- ☐ Somewhat (3)
- ☐ A great deal (4)

3) Have you researched or applied to other universities since coming to [Campus A or B]?

- ☐ Not at all (1)
- ☐ A little (2)
- ☐ Somewhat (3)
- ☐ A great deal (4)

4) Are you satisfied with your OVERALL experience at [Campus B]?

- ☐ Not at all satisfied (1)
- ☐ Somewhat dissatisfied (2)
- ☐ Neither satisfied nor dissatisfied (3)
- ☐ Mostly satisfied (4)
- ☐ Completely satisfied (5)

*Note.* Instead of “Neither satisfied nor dissatisfied”, Campus A used “Moderately satisfied.”

## APPENDIX D

### Campus A: Items for Perceived General Campus Climate

Please rate the campus climate in general using the following scales:

- |  |  |
|--|--|
| 1) <ul style="list-style-type: none"><li><input type="radio"/> Friendly (1)</li><li><input type="radio"/> 2 (2)</li><li><input type="radio"/> 3 (3)</li><li><input type="radio"/> 4 (4)</li><li><input type="radio"/> 5 (5)</li><li><input type="radio"/> 6 (6)</li><li><input type="radio"/> Hostile (7)</li></ul>          | 5) <ul style="list-style-type: none"><li><input type="radio"/> Cooperative (1)</li><li><input type="radio"/> 2 (2)</li><li><input type="radio"/> 3 (3)</li><li><input type="radio"/> 4 (4)</li><li><input type="radio"/> 5 (5)</li><li><input type="radio"/> 6 (6)</li><li><input type="radio"/> Uncooperative (7)</li></ul> |
| 2) <ul style="list-style-type: none"><li><input type="radio"/> Comfortable (1)</li><li><input type="radio"/> 2 (2)</li><li><input type="radio"/> 3 (3)</li><li><input type="radio"/> 4 (4)</li><li><input type="radio"/> 5 (5)</li><li><input type="radio"/> 6 (6)</li><li><input type="radio"/> Uncomfortable (7)</li></ul> | 6) <ul style="list-style-type: none"><li><input type="radio"/> Fair (1)</li><li><input type="radio"/> 2 (2)</li><li><input type="radio"/> 3 (3)</li><li><input type="radio"/> 4 (4)</li><li><input type="radio"/> 5 (5)</li><li><input type="radio"/> 6 (6)</li><li><input type="radio"/> Unfair (7)</li></ul>               |
| 3) <ul style="list-style-type: none"><li><input type="radio"/> Concerned (1)</li><li><input type="radio"/> 2 (2)</li><li><input type="radio"/> 3 (3)</li><li><input type="radio"/> 4 (4)</li><li><input type="radio"/> 5 (5)</li><li><input type="radio"/> 6 (6)</li><li><input type="radio"/> Indifferent (7)</li></ul>     | 7) <ul style="list-style-type: none"><li><input type="radio"/> Welcoming (1)</li><li><input type="radio"/> 2 (2)</li><li><input type="radio"/> 3 (3)</li><li><input type="radio"/> 4 (4)</li><li><input type="radio"/> 5 (5)</li><li><input type="radio"/> 6 (6)</li><li><input type="radio"/> Not welcoming (7)</li></ul>   |
| 4) <ul style="list-style-type: none"><li><input type="radio"/> Respectful (1)</li><li><input type="radio"/> 2 (2)</li><li><input type="radio"/> 3 (3)</li><li><input type="radio"/> 4 (4)</li><li><input type="radio"/> 5 (5)</li><li><input type="radio"/> 6 (6)</li><li><input type="radio"/> Disrespectful (7)</li></ul>  |  |

# APPENDIX D (continued)

## Campus B: Items for Perceived General Campus Climate

In general, how would you describe your overall experiences of the [Campus B] campus? (Please choose one for each row)

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Somewhat Agree (4)	Agree (5)	Strongly Agree (6)
Supportive (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indifferent (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fair (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hostile (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Welcoming (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intimidating (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respectful (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oppressive (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threatening (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inclusive (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## APPENDIX E

### Demographic Items

- 1) Age: [fill in the blank]
- 2) Gender:

#### Campus A

- ☐ Man (1)
  - ☐ Woman (2)
  - ☐ FtM (3)
  - ☐ MtF (4)
  - ☐ Transgender (5)
  - ☐ Gender-queer (6)
  - ☐ Other (specify) (7)
- 

#### Campus B

What sex were you assigned at birth (on your original birth certificate)?

- Male (1)
- Female (2)

Do you consider yourself to be transgender or gender non-conforming in any way? (Note: Transgender/gender non-conforming describes people whose gender identity or expression is different, at least part of the time, from the sex assigned to them at birth).

*Note.* The gender item from both campuses will be recoded using the following coding scheme: 1 (*male*), 2 (*female*), and 3 (*transgender or gender non-conforming*).

- 3) Race/Ethnicity

#### Campus A

Race/Ethnicity (check all that apply)

- ☐ African American/Black (1)
  - ☐ Arab (2)
  - ☐ Asian/Asian American (3)
  - ☐ Native American Indian/Alaskan Native/Pacific Islander (4)
  - ☐ White/European (5)
  - ☐ Chicano/Hispanic/Latino(a) (6)
  - ☐ Other (specify) (7)
- 

#### Campus B

Race/Ethnicity (check any that apply)

- ☐ African American/Black (1)
- ☐ Asian/Asian American (2)
- ☐ Hispanic/Latino(a) (3)
- ☐ American Indian or Alaska Native (4)
- ☐ Native Hawaiian or other Pacific Islander (5)
- ☐ White or European American (6)
- ☐ Other (7)

*Note.* The race/ethnicity item from both campuses will be recoded using the following coding scheme: 1 (*African American/Black*), 2 (*Asian/Asian American*), 3 (*Native American Indian/Alaskan Native/Pacific Islander*), 4 (*Hispanic/Latino*), 5 (*White/European*), and 6 (*other; e.g., Arab, Multiracial*).



## APPENDIX E (continued)

### 4) Sexual Orientation

<b>Campus A</b>	<b>Campus B</b>
Sexual orientation identity:	Sexual orientation:
<ul style="list-style-type: none"><li>• Bisexual (1)</li><li>• Lesbian (2)</li><li>• Gay (3)</li><li>• Uncertain (4)</li><li>• Heterosexual (5)</li><li>• Questioning (6)</li><li>• Queer (7)</li><li>• Other (specify) (8)</li></ul>	<ul style="list-style-type: none"><li>• Heterosexual (1)</li><li>• Bisexual (2)</li><li>• Lesbian (3)</li><li>• Gay (4)</li><li>• Uncertain (5)</li><li>• Questioning (6)</li><li>• Queer (7)</li><li>• Other (8) (please specify)</li></ul>

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*Note.* The sexual orientation item from both campuses will be recoded using the following coding scheme: Heterosexual (1), Bisexual (2), Lesbian (3), Gay (4), Uncertain (5), Questioning (6), Queer (7), and Other (8).

### 5) Spiritual/religious belief system.

<b>Campus A</b>	<b>Campus B</b>
Spiritual/Religious belief system:	Religious/Spiritual belief system:
<ul style="list-style-type: none"><li>• Agnostic (1)</li><li>• Atheist (2)</li><li>• Buddhist (3)</li><li>• Christian (4)</li><li>• Earth Religion (5)</li><li>• Hindu (6)</li><li>• Jewish (7)</li><li>• Muslim (8)</li><li>• Other (specify) (9)</li></ul>	<ul style="list-style-type: none"><li>• Agnostic (1)</li><li>• Atheist (2)</li><li>• Buddhist (3)</li><li>• Christian (4)</li><li>• Earth Religion (5)</li><li>• Hindu (6)</li><li>• Jewish (7)</li><li>• Muslim (8)</li><li>• Other (9) (please specify)</li></ul>

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*Note.* The sexual orientation item from both campuses will be recoded using the following coding scheme: Agnostic (1), Atheist (2), Buddhist (3), Christian (4), Earth Religion (5), Hindu (6), Jewish (7), Muslim (8), and Other (9).

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