

University of Richmond

UR Scholarship Repository

Honors Theses

Student Research

2024

Examining Variability in and Contextual Predictors of College Student Belonging

Yangyue Li

Follow this and additional works at: <https://scholarship.richmond.edu/honors-theses>



Part of the [Psychology Commons](#)

Recommended Citation

Li, Yangyue, "Examining Variability in and Contextual Predictors of College Student Belonging" (2024). *Honors Theses*. 1764.

<https://scholarship.richmond.edu/honors-theses/1764>

This Thesis is brought to you for free and open access by the Student Research at UR Scholarship Repository. It has been accepted for inclusion in Honors Theses by an authorized administrator of UR Scholarship Repository. For more information, please contact scholarshipprepository@richmond.edu.

Examining Variability in and Contextual Predictors of College Student Belonging

by

Yangyue Li

Honors Thesis

Submitted to:

Psychology Department

University of Richmond

Richmond, VA

May 3, 2024

Advisor: Dr. Karen Kochel

Abstract

Sense of belonging is a feeling of connectedness and perceptions of being accepted and valued by the community. Belonging has significant implications for academic performance and psychosocial functioning among college students. The purpose of the study is to examine disparities in belonging and whether contextual factors predict a higher sense of belonging among fourth-year undergraduate students at the University of Richmond (UR). The sample came from the UR Senior Exit Survey. Participants included 1,673 senior students who graduated from UR across five years. My findings suggested that 1) underrepresented students (with racial/ethnic minority, low-income, and first-generation identities) reported lower belonging compared to their majority peers, 2) inclusive campus climate and contact with peers from different backgrounds predicted greater belonging, and 3) first-generation status moderated the association between contact with diverse peers and sense of belonging.

Keywords: student belonging, social identity, intergroup contact, campus climate

Examining Variability in and Contextual Predictors of College Student Belonging

Sense of belonging is often described as a fundamental human motivation and evidence shows that people desire to form attachments and connections with others (Baumeister & Leary, 1995). Strayhorn (2019) defined students' sense of belonging as "Students' perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by and important to the campus community, or others on campus such as faculty, staff, and peers." Because sense of belonging has implications for academic and psychosocial outcomes, it is crucial to study students' belonging in school settings. It is especially important to study belonging in emerging adulthood because social identity exploration and formation are important tasks during this developmental period (Arnett, 2000), and social identities have implications for sense of belonging (Hussain & Jones, 2021; Lewis et al., 2021; Strayhorn et al., 2016). The transition from adolescence to emerging adulthood involves significant life changes, such as preparing for college or going to work (Arnett, 2000). Belonging to peer groups, communities, and universities may be important for emerging adults' well-being.

Research shows that sense of belonging is positively associated with students' academic performance, motivation, retention, and persistence (Hausmann et al., 2007). For example, research suggests that higher levels of belongingness are associated with improvements in college students' grade point averages (GPA; Walton & Cohen, 2007). Students' sense of belonging is also correlated with academic motivation and reported academic self-efficacy; when students felt a sense of belonging in a particular class, they were more motivated and confident in accomplishing academic goals in that class (Freeman et al., 2007). In addition, raising students' sense of belonging yields a higher retention and persistence rate. Studies have found

that re-enrollment is higher among students with greater belonging (Murphy et al., 2020; Patterson Silver Wolf et al., 2021).

Besides academic outcomes, sense of belonging is closely related to indicators of college students' psychosocial functioning (Hagerty et al., 1996). For instance, Pittman and Richmond (2007) found that sense of belonging predicted psychological adjustment: students with greater school belonging reported more self-worth and lower levels of internalizing and externalizing behaviors. Loneliness may also arise from the need to belong that is not fulfilled (Baumeister & Leary, 1995). Another study found that belongingness in school had a positive effect on students' psychological adjustment such as hope, which positively correlates with self-efficacy, self-actualization, and general well-being (Van Ryzin et al., 2009). In another study, evidence suggested that lower feelings of belonging significantly predicted depressive symptoms in first-year undergraduate students (Dutcher et al., 2022). Importantly, research shows that certain groups are more likely to experience these negative academic and psychological outcomes because they are less likely to belong.

Variability in Sense of Belonging

There is variability in college students' sense of belonging, with students from historically marginalized backgrounds, including racial/ethnic minority students, first-generation students, and low-income students, reporting lower levels of belonging than their peers. For example, previous research shows that individuals from racial/ethnic minority groups are likely to feel less belonging on campus due to higher levels of discrimination (Hussain & Jones, 2021; Lewis, 2019). Lewis (2019) found that Black students at a Historically White University experienced a higher frequency of racial microaggression by peers and faculty in the classroom, which led to feeling less connected to the university and a lower sense of belonging. Consistent

with these findings, Hussain and Jones (2021) found that more instances of discrimination and bias contributed to diminished levels of sense of belonging among Asian, Black, Latino students at a large university in the mid-Atlantic US; moreover, the study found that Black students perceived a less inclusive campus climate. In another study, evidence suggested that a vast majority of Native American students felt unsupported by the institution, which might indicate lower levels of belonging (Strayhorn et al., 2016). Johnson et al. (2007) explored sense of belonging among first-year students from different racial/ethnic groups at 34 universities and found that White/Caucasian students expressed the greatest sense of belonging among all the racial/ethnic groups. These studies showed that individuals from racial/ethnic minority groups tend to report lower sense of belonging. In addition to racial/ethnic minority students, first-generation and low-income students tend to face challenges when attending college.

First-generation students face a series of challenges and tend to report a lower sense of belonging than their non-first-generation peers (Stebbleton et al., 2014). For instance, during COVID-19, Gopalan et al. (2022) sent out a survey to 1,004 undergraduate students from a large, multicampus Northeastern public university. First-generation (FG, $N=373$) students reported significantly lower belonging than their peers. One reason why FG students might experience less belonging is that they experience academic acculturative stress (Jenkins et al., 2013). At home, first-generation students often interact with individuals with less educated backgrounds, whereas in college, they are surrounded by highly educated people. This acculturation process may impose distress on these individuals. In fact, Jenkins et al. (2013) compared first- and non-first-generation undergraduate students and found that first-generation students reported less social support, including instrumental and emotional support, from both family and friends. Similarly, first-generation students perceived lower helpfulness and instrumental support in

communications about specific college topics with parents (Palbusa & Gauvain, 2017). These findings underscore how disadvantages first-generation students have may contribute to lower levels of belonging.

Literature has shown that social class is also closely associated with sense of belonging. Ostrove and Long (2007) assessed college students' social class background both subjectively (i.e., self-identify with categories such as poor, working class, etc) and objectively (i.e. report family income) and examined the correlation between social class and sense of belonging. Results suggested that social class background significantly predicted sense of belonging in college such that low-income students struggled more with belonging (Ostrove & Long, 2007). Low-income students frequently have time restrictions that limit their capacity to engage in social and academic opportunities because they attend college while managing their jobs and family obligations (Kezar et al., 2015). Other researchers have reported that low-income students with another disadvantaged identity are at particular risk for low belonging. For instance, students who are both first-generation and low-income reported lower levels of family support and lower sense of belonging (Kreniske et al., 2023). Consistent with intersectionality theory, individuals with two or more marginalized identities may be especially likely to experience negative psychological adjustment such as a lower level of belonging (Crenshaw, 1991). To mitigate these disparities and adverse outcomes, research on possible strategies to increase sense of belonging among underrepresented students should be addressed.

Contextual Factors that Predict Belonging

An inclusive and diverse campus climate might predict a higher sense of belonging among historically underrepresented students for at least two reasons (Johnson, 2012). First, a more inclusive campus environment where diverse opinions are accepted may help shift norms

and attitudes toward historically underrepresented students. Results from one intervention indicated that both privileged and marginalized participants who were exposed to the social norms interventions that promoted pro-diversity attitudes and inclusive behaviors reported that the campus was more inclusive than participants in the control conditions (Murrar et al., 2020). Second, a more diverse and inclusive campus climate may allow students to feel a sense of connectedness and experience fewer biases. Johnson (2012) argued that perceptions of a positive campus racial climate were significantly positively related to the overall sense of belonging. Building inclusive learning environments may also contribute to the sense of belonging because students are less likely to report experiences of discrimination and bias in a diverse community (Hurtado et al., 2018).

Certain kinds of interactions with peers may also affect students' sense of belonging. According to intergroup contact theory (Pettigrew & Tropp, 2006), experiences with peers from different backgrounds can reduce stereotypes and prejudices that individuals may hold about people from different backgrounds. Consistent with this perspective, findings from Johnson et al. (2007) suggested that interaction with a diverse peer group was a significant predictor (only for Hispanic/Latino students) of a higher sense of belonging. Another study showed that minority students who engaged in more socialization with diverse others experienced greater belonging (Hussain and Jones, 2021). Consistent with these findings, Strayhorn et al. (2016) explored sense of belonging among Native American students and concluded that interaction with diverse peers and faculty significantly predicted sense of belonging. There is reason to believe that contextual factors, such as an inclusive campus environment and interactions with diverse peers, matter for students' sense of belonging.

Current Study

The purpose of this study was to explore disparities in sense of belonging between traditional students and historically disadvantaged students and whether contextual factors predict a sense of belonging, particularly for historically disadvantaged students. Specifically, the first aim was to examine differences in sense of belonging between historically underrepresented students, including racial/ethnic minority, first-generation, and low-income students, and majority students. I hypothesized that individuals from the above historically underrepresented groups are more likely to experience a lower sense of belonging than those from the majority groups. The second aim was to investigate whether diverse and inclusive campus communities and interactions with students from diverse backgrounds predict a higher sense of belonging. I hypothesized that students who perceived the campus as inclusive and diverse and who interacted more with diverse peers experienced a higher sense of belonging. The third aim was to examine whether these contextual factors predict belonging better for some groups of students compared to others. I hypothesized that the link between contextual factors and belonging would be stronger for historically underrepresented students.

Method

Participants

The Office of Institutional Effectiveness invited fourth-year undergraduate students at the University of Richmond (UR) to complete the Senior Exit Survey before graduating. The purpose of the survey is to gain insight into students' satisfaction with their college experience.

The sample consisted of 1,673 participants in total. In 2019, 356 students (44.1% of 807 eligible students) participated; in 2020, 360 students (44.8% of 804 that are eligible) participated; in 2021, 348 students (45.3% of 769 that are eligible) participated; in 2022, 262 students (34.5%

of 760 that are eligible) participated, in 2023, 347 students (43.1% of 805 that are eligible) participated. Demographic data for participants appear in Table 1. The following three groups-Nonresident Alien, Race and Ethnicity Unknown, and Two or more races-were excluded from any analyses involving race. The sample included a higher proportion of white students than the institution had, while the proportion of first-generation students and Pell Grant students approximated that of the institution.

Procedure

The University of Richmond Senior Exit Survey was administered online from March through May to seniors who graduated from the Schools of Arts & Sciences, Business, and Jepson in December, May, and August.

Measures

Sense of Belonging

There was one item asking participants to report their level of belonging: “Thinking about your experience at the University of Richmond, rate your level of satisfaction with your sense of belonging” (1 = *very dissatisfied*, 4 = *very satisfied*).

Inclusive Community

There was one item asking participants to report their perceived inclusion on campus: “Thinking about your experience at the University of Richmond, rate your level of satisfaction with being part of an inclusive community” (1 = *very dissatisfied*, 4 = *very satisfied*).

Contact with Diverse Peers

There was one item asking participants to report their satisfaction with interaction with diverse peers: “Thinking about your experience at the University of Richmond, rate your level of

satisfaction with contact with students from different backgrounds” (1 = *very dissatisfied*, 4 = *very satisfied*).

Pell Grant Status

Federal Pell Grant is a form of need-based federal financial aid awarded by the U.S. Department of Education to help eligible low-income students pay for college costs. Students self-reported the data.

First-generation Status

The definition of first generation is a higher education student whose parent or parents did not earn a bachelor's degree. Students self-reported the data.

Results

Descriptive Analyses and Bivariate Correlations

In Table 2, I present means and standard deviations for all variables by ethnicity/race, first-generation status, and Pell Grant status, respectively. As can be seen in Table 2, a series of *t*-tests revealed significant differences between majority students' and underrepresented students' perceptions of belonging and campus inclusiveness such that majority students outscored race/ethnic minority students, first-generation college students, and students who received Pell Grants. For contact with diverse peers, majority students outscored students of color, but not first-generation students or Pell Grant students.

Sense of belonging was moderately correlated with contact with diverse peers ($r = .386, p < .001$) and strongly correlated with inclusive campus climate ($r = .700, p < .001$). The correlation between contact with diverse peers and the inclusive campus climate was moderate to large ($r = .542, p < .001$).

Regression analyses

In order to investigate differences in belonging between historically underrepresented students and majority students and to examine whether an inclusive campus climate and interactions with students from diverse backgrounds predict students' sense of belonging, I conducted multiple regression analyses (Aiken & West, 1991). I included social identity (either first-generation, limited-income, racial/ethnic minority status) as a moderator to examine whether the relationship between an inclusive campus climate (or interactions with diverse students) and sense of belonging differed for first-generation students, students who receive the Pell Grant, and race/ethnic minority students compared to their majority peers.

Inclusive Campus Climate

For the first regression, I examined the main and interactive effects of inclusive campus climate and first-generation status on sense of belonging. The main effects were significant ($B = 0.678$, $t(1470) = 34.59$, $p < .001$ and $B = -.224$, $t(1470) = -4.422$, $p < .001$, respectively). The main effect of an inclusive campus climate suggests that students who feel they are part of the inclusive community experience higher levels of belonging. The main effect of first-generation status suggests that being a first-generation student was associated with a lower level of belonging. Together, inclusive campus climate and first-generation status explained a significant proportion of variance in sense of belonging $R^2 = .504$, $F(3, 1473) = 497.67$, $p < .001$. The interaction between inclusive campus climate and student belonging with first-generation status as a moderator was not significant. Therefore, first-generation status did not moderate the link between inclusive campus climate and sense of belonging.

For the second regression, I examined the main and interactive effects of inclusive campus climate and Pell Grant status on the sense of belonging. As reported above, the main

effect of an inclusive campus community was significant. The main effect of Pell Grant status was also significant ($B = -.144$, $t(1470) = -3.160$, $p = .002$) and suggests that students who received the Pell Grant are likely to experience a lower level of belonging. Together, inclusive campus climate and Pell Grant status explained a significant proportion of the variance in sense of belonging $R^2 = .501$, $F(3, 1473) = 491.41$, $p < .001$. The interaction between inclusive campus climate and Pell Grant status was not significant. Therefore, Pell Grant status did not moderate the link between inclusive campus climate and sense of belonging.

For the third regression, I examined The main and interactive effects of inclusive campus climate and race/ethnic minority identity on the sense of belonging. As reported above, the main effect of inclusive campus community was significant. The main effect of race/ethnic minority identity was significant ($B = -.143$, $t(1314) = -3.712$, $p < .001$), which suggests that race/ethnic minority students are likely to experience a lower level of belonging. Together, inclusive campus climate and race/ethnic minority identity explained a significant proportion of the variance in sense of belonging $R^2 = .495$, $F(3, 1316) = 428.52$, $p < .001$. The interaction between inclusive campus climate and race/ethnic minority identity was not significant. Therefore, race/ethnic minority identity did not moderate the link between inclusive campus climate and sense of belonging.

Contact with Diverse Peers

For the first regression, I examined the main and interactive effects of contact with diverse peers and first-generation status on the sense of belonging. The main effects were significant ($B = .381$, $t(1453) = 14.25$, $p < .001$ and $B = -.386$, $t(1453) = -6.096$, $p < .001$, respectively). The main effect of contact with diverse peers suggests that students who are satisfied with interactions with students from diverse backgrounds experience higher levels of

belonging. Together, contact with diverse peers and first-generation status explained a small but significant proportion of variance in sense of belonging $R^2 = .182$, $F(3, 1456) = 107.77$, $p < .001$. The main effect was qualified by an interaction. Specifically, contact with diverse peers was more strongly associated with sense of belonging for first-generation students ($B = .538$, $SE = .507$, $p < .001$) than non-first-generation students ($B = .381$, $SE = .027$, $p < .001$). Therefore, first-generation status moderated the link between contact with diverse peers and sense of belonging.

For the second regression, I examined the main and interactive effects of contact with diverse peers and Pell Grant status on the sense of belonging. As reported above, the main effect of contact with diverse peers was significant. The main effect of Pell Grant status was also significant ($B = -.332$, $t(1453) = -5.793$, $p < .001$). Together, contact with diverse peers and Pell Grant status explained some proportion of the variance in sense of belonging $R^2 = .178$, $F(3, 1456) = 104.927$, $p < .001$. The interaction between contact with diverse peers and Pell Grant status was not significant. Therefore, Pell Grant status did not moderate the link between contact with diverse peers and sense of belonging.

For the third regression, I examined the main and interactive effects of contact with diverse peers and race/ethnic minority identity on sense of belonging. As reported above, the main effect of contact with diverse peers was significant. The main effect of race/ethnic minority identity was significant ($B = -.262$, $t(1301) = -5.37$, $p < .001$). The main effect of race/ethnic minority identity suggests that race/ethnic minority students are likely to experience a lower level of belonging. Together, contact with diverse peers and race/ethnic minority identity explained some proportion of the variance in sense of belonging $R^2 = .183$, $F(3, 1303) = 96.947$, $p < .001$. Main effects were qualified by an interaction. Specifically, contact with diverse peers

was more strongly associated with student belonging for race/ethnic minority students ($B = .496$, $SE = .042$, $p < .001$) than majority students ($B = .350$, $SE = .033$, $p < .001$). Therefore, race/ethnic minority identity moderated the link between contact with diverse peers and sense of belonging.

Summary of Findings

In sum, I found that the Pell Grant status, first-generation status, and underrepresented race/ethnic identity were associated with lower levels of belonging. Additionally, higher levels of two contextual factors, inclusive campus climate and interactions with diverse peers, predicted higher levels of belonging. I also found that Pell Grant status and underrepresented race/ethnic identity moderated the association between interactions with diverse peers and sense of belonging. Specifically, the association between interactions with diverse peers and belonging was stronger for first-generation and race/ethnic minority students compared to majority peers.

Discussion

The purpose of the study was to understand variability in levels of college students' belonging on campus and to explore contextual factors that predict higher belonging. The first aim was to examine differences in sense of belonging between historically underrepresented students and majority students. Results indicated that racial/ethnic minority identity, first-generation status, and Pell Grant status were associated with lower levels of belonging. These findings are in line with previous research showing that underrepresented students experience lower levels of belonging and perceive the campus climate as less inclusive (Hussain & Jones, 2021; Lewis, 2019). It could be that underrepresented students' feelings of non-belonging are due to their marginalized group membership and experiencing a higher frequency of discrimination and microaggressions (Sue et al., 2007). In addition, first-generation

students tend to report less social support from family and friends (Jenkins et al., 2013), which may lower their sense of belonging. Further, students from low-income families often perceive more financial challenges, which might distract them from academic and social life in college, therefore threatening their belonging to the institution.

The second aim was to investigate whether an inclusive campus climate and contact with students from diverse backgrounds are associated with higher levels of belonging. Findings indicated that both contextual factors predicted greater belonging, which means that students who were more satisfied with being a part of an inclusive community and had more interactions with peers from different backgrounds experienced higher levels of belonging. Therefore, it is possible that lack of belonging can be improved through interventions that address these two contextual predictors. Previous belonging interventions that aimed to promote inclusion within campus communities were successful in promoting student belonging. For example, Murrar et al. (2020) found that students in the intervention condition, for whom the valuing of diversity and inclusion in daily interactions was normalized, reported higher levels of belonging to the university community and felt that others valued their thoughts and opinions in the classroom. Intergroup contact can also promote belonging, by buffering the negative effects of racial discrimination toward minority students. For example, in one study, Latino students who built cross-group friendships with majority group peers were less negatively influenced by race-based rejection sensitivity (RS-race) on university satisfaction and sense of belonging (Mendoza-Denton & Page-Gould, 2008). What's more, among Non-White students who participated in an activity that normalized adversity in college, those who are in groups with greater diversity showed improvement in GPA, which is an important indicator of student

belonging (Binning et al., 2020). My findings support past work and highlight the necessity of belonging interventions on campus.

The third aim was to examine whether these contextual factors predict belonging more strongly for underrepresented students compared to majority students. My hypotheses were partially supported such that racial/ethnic minority identity and first-generation status moderated the relationship between contact with diverse peers and sense of belonging. Inconsistent with my hypothesis, inclusive campus climate did not predict greater belonging more strongly for underrepresented students. I speculate that the perception of an inclusive campus climate might not always align with the actual experiences of underrepresented students. Although the community may appear inclusive and welcoming on the surface, underrepresented students may still encounter covert forms of discrimination or exclusion. Interactions with peers from diverse backgrounds, though, might involve deeper and more meaningful engagement compared to the broader notion of an inclusive campus climate. These interactions can involve shared experiences, cultural or ethnic exchange, and support networks that contribute more directly to a sense of belonging for underrepresented students. What's more, interactions with peers from similar backgrounds can provide a sense of validation and affirmation of one's identity (Tajfel, 2010). This affirmation may be particularly protective for underrepresented students who may face challenges related to their identity.

Contrary to my hypothesis, Pell Grant status did not moderate the association between contact with diverse peers and sense of belonging. One possible reason why the effect of contact with peers from different backgrounds was not stronger for students coming from low-income families might be that it matters less for students with invisible forms of diversity such as socioeconomic status (SES) or income level. It may not be obvious to students if they are

interacting with someone who has different SES from them compared to more visible characteristics such as race and ethnicity. Nevertheless, this does not explain why the association was stronger for first-generation students. It is possible that interactions with peers are supportive and provide a buffering effect for first-generation students who perceive less social support from their family members and friends. Research shows that first-generation students sometimes feel less supported by family because their parents have less understanding of higher education (Engle, 2007).

Limitations and Future Directions

Although this study has several strengths, there are a few noteworthy limitations. First, all measures used in this study were single-item, which means that questions were about college in general and not based on specific contexts (e.g., academic, social). Although single-item measures can be straightforward, measures including several questions can be more comprehensive to assess all facets of the variable. For example, past research examining sense of belonging has included questions such as “I feel like a real part of (name of school)”, “Other students here like me the way I am”, and “Most professors at this school are interested in me” (Goodenow, 1993; Pittman & Richmond, 2008). Additionally, the measure for contact with diverse peers did not include the quality of intergroup contact, in which higher-quality contact may be more influential in changing intergroup attitudes than contact quantity (Voci & Hewstone, 2003). Although satisfaction with contact might correlate with the interaction quality, future measurements should explicitly assess quality. It could be beneficial if future measurements for student belonging differentiate among institutional belonging, social belonging, and belonging to a particular class, club, or sorority/fraternity. Students may not feel

they belong to the institution in general, while belonging to a friend group or a sports team may buffer the negative effects of non-belonging to the overall college campus.

Additionally, data were collected from the University of Richmond senior exit survey and that limited the participation to only seniors. However, belonging may change over time, and belonging at one point may not reflect student belonging throughout the four years. Past research shows that students tend to struggle with lower belonging in their first year of college because they might encounter more challenges when going through the transition from high school (Katreovich & Aruguete, 2017). Future research can look at longitudinal data and explore possible factors that promote or threaten student belonging on campus.

Another limitation is that this study combined data across five years, from 2019 to 2023, encompassing both pre-COVID-19 and post-COVID-19 periods. During the years affected by COVID-19, levels of belonging were generally lower (Mooney & Becker, 2021). Moving forward, it is crucial to analyze the data across time to examine whether the associations remain the same each year or whether other environmental factors are correlated with sense of belonging.

Another limitation is that I categorized all racial/ethnic minority students in one underrepresented group and, thus, did not account for the variability of belonging within students of color. Past work has shown that Black students reported experiencing a greater frequency of racial microaggressions than Asian, Latinx, or Multiracial students on campus, which may in turn lead to lower belonging for Black students than students from these groups (Lewis et al., 2021). It would provide a more nuanced understanding if future research investigated the differences between racial/ethnic groups.

My findings added to the literature on student belonging at a mid-sized, predominantly-White liberal arts institution. Most current literature focuses on college students in larger universities where diversity in race, ethnicity, and SES is higher, and frequencies for interactions with peers from different backgrounds were naturally higher. This study contributes to literature showing that college students may benefit from interventions designed to promote increases in student belonging.

References

- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469–480.
<https://doi.org/10.1037/0003-066X.55.5.469>
- Baumeister, R. F., & Leary, M. R. (1995). The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation. *Psychological Bulletin*, 117(3), 497–529. <https://doi.org/10.1037/0033-2909.117.3.497>
- Binning, K. R., Kaufmann, N., McGreevy, E. M., Fotuhi, O., Chen, S., Marshman, E., Kalender, Z. Y., Limeri, L., Betancur, L., & Singh, C. (2020). Changing Social Contexts to Foster Equity in College Science Courses: An Ecological-Belonging Intervention. *Psychological Science*, 31(9), 1059–1070. <https://doi.org/10.1177/0956797620929984>
- Crenshaw, K. (1991). Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. *Stanford Law Review*, 43(6), 1241–1299.
<https://doi.org/10.2307/1229039>
- Dutcher, J. M., Lederman, J., Jain, M., Price, S., Kumar, A., Villalba, D. K., Tumminia, M. J., Doryab, A., Creswell, K. G., Riskin, E., Sefdigar, Y., Seo, W., Mankoff, J., Cohen, S., Dey, A., & Creswell, J. D. (2022). Lack of Belonging Predicts Depressive Symptomatology in College Students. *Psychological Science*, 33(7), 1048–1067.
<https://doi.org/10.1177/09567976211073135>
- Engle, J. (2007). Postsecondary access and success for first-generation college students. *American academic*, 3(1), 25-48.
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of Belonging in College Freshmen at the Classroom and Campus Levels. *The Journal of Experimental Education*,

- 75(3), 203–220. <https://doi.org/10.3200/JEXE.75.3.203-220>
- Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, 30(1), 79–90. [https://doi.org/10.1002/1520-6807\(199301\)30:1<79::AID-PITS2310300113>3.0.CO;2-X](https://doi.org/10.1002/1520-6807(199301)30:1<79::AID-PITS2310300113>3.0.CO;2-X)
- Gopalan, M., Linden-Carmichael, A., & Lanza, S. (2022). College Students' Sense of Belonging and Mental Health Amidst the COVID-19 Pandemic. *Journal of Adolescent Health*, 70(2), 228–233. <https://doi.org/10.1016/j.jadohealth.2021.10.010>
- Hagerty, B. M., Williams, R. A., Coyne, J. C., & Early, M. R. (1996). Sense of belonging and indicators of social and psychological functioning. *Archives of Psychiatric Nursing*, 10(4), 235–244. [https://doi.org/10.1016/S0883-9417\(96\)80029-X](https://doi.org/10.1016/S0883-9417(96)80029-X)
- Hausmann, L. R. M., Schofield, J. W., & Woods, R. L. (2007). Sense of Belonging as a Predictor of Intentions to Persist Among African American and White First-Year College Students. *Research in Higher Education*, 48(7), 803–839. <https://doi.org/10.1007/s11162-007-9052-9>
- Hurtado, S., Ruiz Alvarado, A., & Guillermo-Wann, C. (2018). Creating Inclusive Environments: The Mediating Effect of Faculty and Staff Validation on the Relationship of Discrimination/Bias to Students' Sense of Belonging. *JCSCORE*, 1(1), 59–81. <https://doi.org/10.15763/issn.2642-2387.2015.1.1.59-81>
- Hussain, M., & Jones, J. M. (2021). Discrimination, diversity, and sense of belonging: Experiences of students of color. *Journal of Diversity in Higher Education*, 14(1), 63–71. <https://doi.org/10.1037/dhe0000117>
- Jenkins, S. R., Belanger, A., Connally, M. L., Boals, A., & Durón, K. M. (2013). First-Generation Undergraduate Students' Social Support, Depression, and Life

- Satisfaction. *Journal of College Counseling*, 16(2), 129–142.
<https://doi.org/10.1002/j.2161-1882.2013.00032.x>
- Johnson, D. R. (2012). Campus Racial Climate Perceptions and Overall Sense of Belonging Among Racially Diverse Women in STEM Majors. *Journal of College Student Development*, 53(2), 336–346. <https://doi.org/10.1353/csd.2012.0028>
- Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H. T., & Longerbeam, S. D. (2007). Examining Sense of Belonging Among First-Year Undergraduates From Different Racial/Ethnic Groups. *Journal of College Student Development*, 48(5), 525–542. <https://doi.org/10.1353/csd.2007.0054>
- Katreich, A. V., & Aruguete, M. S. (2017). Recognizing challenges and predicting success in first-generation university students. *Journal of STEM Education: Innovations and Research*, 18(2), 40–44.
- Kezar, A. J., Walpole, M., & Perna, L. W. (2015). Engaging low-income students. Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations, 237-255.
- Kreniske, P., Mellins, C. A., Shea, E., Walsh, K., Wall, M., Santelli, J. S., Reardon, L., Khan, S., Hwei, T., & Hirsch, J. S. (2023). Associations Between Low-Household Income and First-Generation Status With College Student Belonging, Mental Health, and Well-Being. *Emerging Adulthood*, 11(3), 710–720. <https://doi.org/10.1177/21676968221124649>
- Lewis, J. A., Mendenhall, R., Ojiemwen, A., Thomas, M., Riopelle, C., Harwood, S. A., & Browne Hunt, M. (2021). Racial Microaggressions and Sense of Belonging at a Historically White University. *American Behavioral Scientist*, 65(8), 1049–1071.
<https://doi.org/10.1177/0002764219859613>

Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color.

(2023). *STANFORD LAW REVIEW*, 43.

Mendoza-Denton, R., & Page-Gould, E. (2008). Can Cross-Group Friendships Influence

Minority Students' Well-Being at Historically White Universities? *Psychological*

Science, 19(9), 933–939. <https://doi.org/10.1111/j.1467-9280.2008.02179.x>

Mooney, C., & Becker, B. A. (2021). Investigating the impact of the COVID-19 pandemic on

computing students' sense of belonging. In *ACM Inroads* (Vol. 12, Issue 2, pp. 38–45).

<https://doi.org/10.1145/3463408>

Murphy, M. C., Gopalan, M., Carter, E. R., Emerson, K. T. U., Bottoms, B. L., & Walton, G. M.

(2020). A customized belonging intervention improves retention of socially

disadvantaged students at a broad-access university. *Science Advances*, 6(29), eaba4677.

<https://doi.org/10.1126/sciadv.aba4677>

Murrar, S., Campbell, M. R., & Brauer, M. (2020). Exposure to peers' pro-diversity attitudes

increases inclusion and reduces the achievement gap. *Nature Human Behaviour*, 4(9),

889–897. <https://doi.org/10.1038/s41562-020-0899-5>

Ostrove, J. M., & Long, S. M. (2007). Social Class and Belonging: Implications for College

Adjustment. *The Review of Higher Education*, 30(4), 363–389.

<https://doi.org/10.1353/rhe.2007.0028>

Palbusa, J. A., & Gauvain, M. (2017). Parent–Student Communication About College and

Freshman Grades in First-Generation and Non–First-Generation Students. *Journal of*

College Student Development, 58(1), 107–112. <https://doi.org/10.1353/csd.2017.0007>

Patterson Silver Wolf, D. A., Taylor, F., Maguin, E., & Asher BlackDeer, A. (2021). You Are

College Material—You Belong: An Underrepresented Minority Student Retention

- Intervention Without Deception. *Journal of College Student Retention: Research, Theory & Practice*, 23(3), 507–522. <https://doi.org/10.1177/1521025119848749>
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90(5), 751–783.
<https://doi.org/10.1037/0022-3514.90.5.751>
- Pittman, L. D., & Richmond, A. (2008). University Belonging, Friendship Quality, and Psychological Adjustment During the Transition to College. *The Journal of Experimental Education*, 76(4), 343–362. <https://doi.org/10.3200/JEXE.76.4.343-362>
- Tajfel, H. (Ed.). (2010). Social identity and intergroup relations (Vol. 7). Cambridge University Press.
- Stebbleton, M. J., Soria, K. M., & Huesman, R. L. (2014). First-Generation Students' Sense of Belonging, Mental Health, and Use of Counseling Services at Public Research Universities. *Journal of College Counseling*, 17(1), 6–20.
<https://doi.org/10.1002/j.2161-1882.2014.00044.x>
- Strayhorn, T. L. (2019). College students' sense of belonging : a key to educational success for all students / Terrell L. Strayhorn. (Second edition.). Routledge.
<https://doi.org/10.5749/jamerindieduc.55.1.0049>
- Strayhorn, T. L., Bie, F., & Williams, M. S. (2016). Measuring the Influence of Native American College Students' Interactions with Diverse Others on Sense of Belonging. *Journal of American Indian Education*, 55(1), 49–73. <https://doi.org/10.1353/jaie.2016.a798950>
- Strayhorn, T. L., & Bie, F. (2023). Measuring the Influence of Native American College Students' Interactions with Diverse Others on Sense of Belonging. *JOURNAL OF AMERICAN INDIAN EDUCATION*, 1.

Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A. M. B., Nadal, K. L., & Esquilin, M. (2007). Racial microaggressions in everyday life: Implications for clinical practice. *American Psychologist*, 62(4), 271–286.

<https://doi.org/10.1037/0003-066X.62.4.271>

Van Ryzin, M. J., Gravely, A. A., & Roseth, C. J. (2009). Autonomy, Belongingness, and Engagement in School as Contributors to Adolescent Psychological Well-Being. *Journal of Youth and Adolescence*, 38(1), 1–12. <https://doi.org/10.1007/s10964-007-9257-4>

Voci, A., & Hewstone, M. (2003). Intergroup Contact and Prejudice Toward Immigrants in Italy: The Mediation Role of Anxiety and the Moderational Role of Group Salience. *Group Processes & Intergroup Relations*, 6(1), 37–54.

<https://doi.org/10.1177/1368430203006001011>

Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92(1), 82–96.

<https://doi.org/10.1037/0022-3514.92.1.82>

Table 1. Participants demographics.

	2019		2020		2021		2022		2023	
	N	%	N	%	N	%	N	%	N	%
Ethnicity/Race										
American Indian or Alaska	1	0.3		0.0		0.0		0.0	1	0.3
Asian	12	3.4	40	11.1	25	7.2	20	7.6	24	6.9
Black or African American	20	5.6	12	3.3	19	5.5	12	4.6	18	5.2
Hispanics of any race	29	8.1	32	8.9	27	7.8	31	11.8	45	13.0
Nonresident Alien	27	7.6	16	4.4	28	8.0	14	5.3	16	4.6
Race and Ethnicity Unknown	23	6.5	13	3.6	16	4.6	10	3.8	17	4.9
Two or more races	15	4.2	17	4.7	18	5.2	15	5.7	17	4.9
White	229	64.3	230	63.9	215	61.8	161	61.2	209	60.2
First Generation Status										
First-generation	47	13.2	53	10.0	40	11.5	40	15.2	49	14.1
Non-first-generation	309	86.8	307	90.0	308	88.5	223	84.8	298	85.9
Pell Grant Status										
Yes	65	18.3	36	14.7	59	17.0	37	14.1	63	18.2
No	292	81.7	324	85.3	289	83.0	226	85.9	284	81.8

Table 2. Descriptive Statistics

Mean Differences on Study Variables by Race/Ethnicity, First Generation Status and Pell Grant Status

Variable		<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Sense of belonging	Students of color	260	2.73	0.878	7.34	<.001	0.514
	White	944	3.17	0.859			
	First generation	190	2.7	0.896	6.081	<.001	0.472
	Non-first generation	1317	3.12	0.878			
	Pell grant	248	2.78	0.928	5.338	<.001	0.387
	Non-pell grant	1259	3.12	0.873			
Intergroup contact	Students of color	263	2.78	0.957	3.334	<.001	0.254
	White	938	2.99	0.816			
	First generation	192	2.89	0.969	1.119	0.132	0.096
	Non-first generation	1310	2.97	0.846			
	Pell grant	249	2.89	0.944	1.3	0.097	0.097
	Non-pell grant	1253	2.97	0.845			
Inclusive campus	Students of color	265	2.49	0.938	6.455	<.001	0.471
	White	944	2.9	0.862			
	First generation	189	2.59	0.916	3.655	<.001	0.284
	Non-first generation	1312	2.85	0.89			
	Pell grant	251	2.57	0.898	4.743	<.001	0.33
	Non-pell grant	1267	2.86	0.889			