

## High-Level Overview: Research Evidence Informing the Student Experience Project

---

### Social Belonging

Feeling valued and connected to others in one's learning community (i.e., having a sense of **social belonging**) is positively associated with student well-being, academic engagement, and performance. Conversely, **belonging uncertainty** is the concern people have about the extent to which they belong, or fit in, in different contexts or across time. While most students question their social or academic belonging to some extent in college, students from groups that have been historically underrepresented or are negatively stereotyped are particularly likely to experience belonging uncertainty because they are aware of cultural stigmas and stereotypes toward their groups.

By helping students to understand that belonging concerns are a normal part of college transitions and do not signal a lack of belonging or academic potential, and that belonging can improve with time and by taking self-directed steps to build community, colleges have the ability to help students increase their sense of belonging, maintain academic engagement, and bolster achievement, particularly for students from structurally disadvantaged or underrepresented groups.

#### Key Publications:

- Cheryan, S., Plaut, V. C., Davies, P., & Steele, C. M. (2009). [Ambient belonging: How stereotypical cues impact gender participation in computer science](#). *Journal of Personality and Social Psychology*, 97, 1045-1060.
- LaCosse, J., Canning, E.A., Bowman, N.A., Murphy, M.C., Logel, C. (2020). [A social-belonging intervention improves STEM outcomes for students who speak English as a second language](#). *Science Advances*.
- Logel, C., Le Forestier, J.M., Witherspoon, E.B., Fotuhi, O. (2020). [A Social-Belonging Intervention Benefits Higher Weight Students' Stability and Academic Achievement](#). *Social Psychological and Personality Science*.
- Murdock-Perriera, L. A., Boucher, K. L., Carter, E. R., & Murphy, M. C. (2019). [Places of belonging: Person- and place-focused interventions to support belonging in college](#). *Higher Education: Handbook of Theory and Research*.
- 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).
- Walton, G. M. & Cohen, G. L. (2011). [A brief social-belonging intervention improves academic and health outcomes of minority students](#). *Science*, 331, 1447-1451.
- Walton, G. M., Logel, C., Peach, J., Spencer, S, & Zanna, M. P. (2015). [Two brief interventions to mitigate a "chilly" climate transform women's experience, relationships, and achievement in engineering](#). *Journal of Educational Psychology*, 107, 468-485.

## High-Level Overview: Research Evidence Informing the Student Experience Project

---

### Growth Mindset

*Mindsets* are beliefs people hold, that they may or may not be aware of, that act as a lens through which they interpret events in their lives. One mindset that is particularly important for students is about the extent to which they believe characteristics, like intelligence, are fixed or can be developed with effort, help-seeking, and good strategies. People who have a **growth mindset** about ability believe that it is malleable and can be improved with effort, feedback, and using effective strategies for learning. In contrast, people who have a **fixed mindset** about ability believe that it is fixed, and cannot be changed over time or developed significantly.

At an institutional level, growth mindset refers to the beliefs of powerful members of an institution (e.g., faculty, staff, and administrators) regarding the nature of students' ability. Institutional mindsets are conveyed through practices, policies, and messages from authority figures that reflect beliefs about ability. These institutional mindsets impact students' engagement and learning and can have a disproportionate effect on students from socially disadvantaged backgrounds (e.g., racial/ethnic minorities, first-generation students, low income students, and women in STEM).

By encouraging students to adopt a growth mindset of ability, colleges, faculty, and staff can increase student engagement, and improve student learning and academic outcomes. Cultivating an institutional growth mindset about ability, and communicating those beliefs to students, can also decrease students' experiences of identity threat, and increase levels of trust among students who belong to groups that are targeted by negative stereotypes about their abilities.

#### Key Publications:

- Canning, E.A., Muenks, K., Green, D.J., & Murphy, M.C. (2019). [STEM faculty who believe ability is fixed have larger racial achievement gaps and inspire less student motivation in their classes](#). *Science Advances*, 5(2).
- Cohen, G. L., Steele, C. M., & Ross, L. D. (1999). [The mentor's dilemma: Providing critical feedback across the racial divide](#). *Personality and Social Psychology Bulletin*, 25(10), 1302–1318.
- Murphy, M. C., & Taylor, V. J. (2012). [The role of situational cues in signaling and maintaining stereotype threat](#). In M. Inzlicht & T. Schmader (Eds.), *Stereotype threat: Theory, process, and application* (p. 17–33). Oxford University Press.
- Rattan, A., Savani, K., Komarraju, M., Morrison, M. M., Boggs, C., & Ambady, N. (2018). [Meta-lay theories of scientific potential drive underrepresented students' sense of belonging to science, technology, engineering, and mathematics \(STEM\)](#). *Journal of Personality and Social Psychology*, 115(1), 54–75.

## High-Level Overview: Research Evidence Informing the Student Experience Project

---

Yeager, D. S., Purdie-Vaughns, V., Garcia, J., Apfel, N., Brzustoski, P., Master, A., Hessert, W.T., Williams, M.E., Cohen, G.L. (2014). [Breaking the Cycle of Mistrust: Wise Interventions to Provide Critical Feedback Across the Racial Divide](#). *Journal of Experimental Psychology: General*, 143, 804–824.

Yeager, D. S., Walton, G. M., Brady, S. T., Akcinar, E. N., Paunesku, D., Keane, L., Kamentz, D., Ritter, G., Duckworth, A. L., Urstein, R., Gomez E., Markus, H. R. Cohen, G. L., & Dweck, C. S. (2016). [Teaching a lay theory before college narrows achievement gaps at scale](#). *Proceedings of the National Academy of Sciences of the United States of America*, 113, E3341-E3348.

### Inclusive Climate & Identity Safety

Inclusive educational environments communicate that students from diverse identities and backgrounds are welcome, valued, and respected as a part of the community -- and that all can be successful, and belong there. This is especially important for students from backgrounds that are negatively stereotyped or underrepresented in college settings, who are more likely to experience **social identity threat** -- the worry that they will be viewed in terms of their social group stereotypes, and not as an individual. Social identity threat can be prompted by messages in the classroom about who is likely to be successful or by the lack of peers, instructors, or discipline experts that share one’s group memberships.

Working to create inclusive and identity safe environments is particularly important for students that come from backgrounds that are negatively stereotyped in society or who are numerically underrepresented in college settings. Experiencing identity threat as a result of being negatively stereotyped (i.e., women aren’t good at math), or underestimated based on group identity (i.e., you speak so eloquently) has been found to undermine academic retention and achievement and lower social belonging for students who, absent an oppressive culture, will thrive. Identity safe classroom environments that communicate that all students are valued, respected, and capable of success enhance student learning and bolster engagement.

#### Key Publications:

Boucher, K.L., & Murphy, M.C. (2017). [Why so few?: The role of social identity and situational cues in understanding the underrepresentation of women in STEM fields](#). In Mavor, K.I., Platow, M., & Bizumic, B. (Eds.). *Self, Social Identity, and Education*. Psychology Press: New York, NY.

Murphy, M.C. & Destin, M. (2016). [Promoting Inclusion and Identity Safety to Support College Success](#). Report prepared for The Century Foundation College Completion Series.

Murphy, M. C., Steele, C. M., & Gross, J. J. (2007). [Signaling threat: How situational cues affect women in math, science, and engineering settings](#). *Psychological Science*, 18, 879-885.

## High-Level Overview: Research Evidence Informing the Student Experience Project

---

Purdie-Vaughns, V., Steele, C. M., Davies, P. G., Dittmann, R., & Crosby, J. R. (2008). [Social identity contingencies: How diversity cues signal threat or safety for African Americans in mainstream institutions.](#) *Journal of Personality and Social Psychology*, 94(4), 615-630.

Steele, C. M., Spencer, S. J., & Aronson, J. (2002). [Contending with group image: The psychology of stereotype and social identity threat.](#) In M. P. Zanna (Ed.), *Advances in experimental social psychology*, Vol. 34 (p. 379–440). Academic Press.