

Fostering a Sense of Belonging in College

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MIT Teaching + Lab Speaker Series

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PennState

From a senior thesis in the 1980s

*My experiences at Princeton have made me far more aware of my “Blackness” than ever before...no matter how liberal and open-minded some of my White professors and classmates try to be toward me, I sometimes feel like a visitor on campus; **as if I really don’t belong**...It often seems as if, to them, I will always be Black first and a student second*

- Michelle Robinson



Such feelings are widely shared..



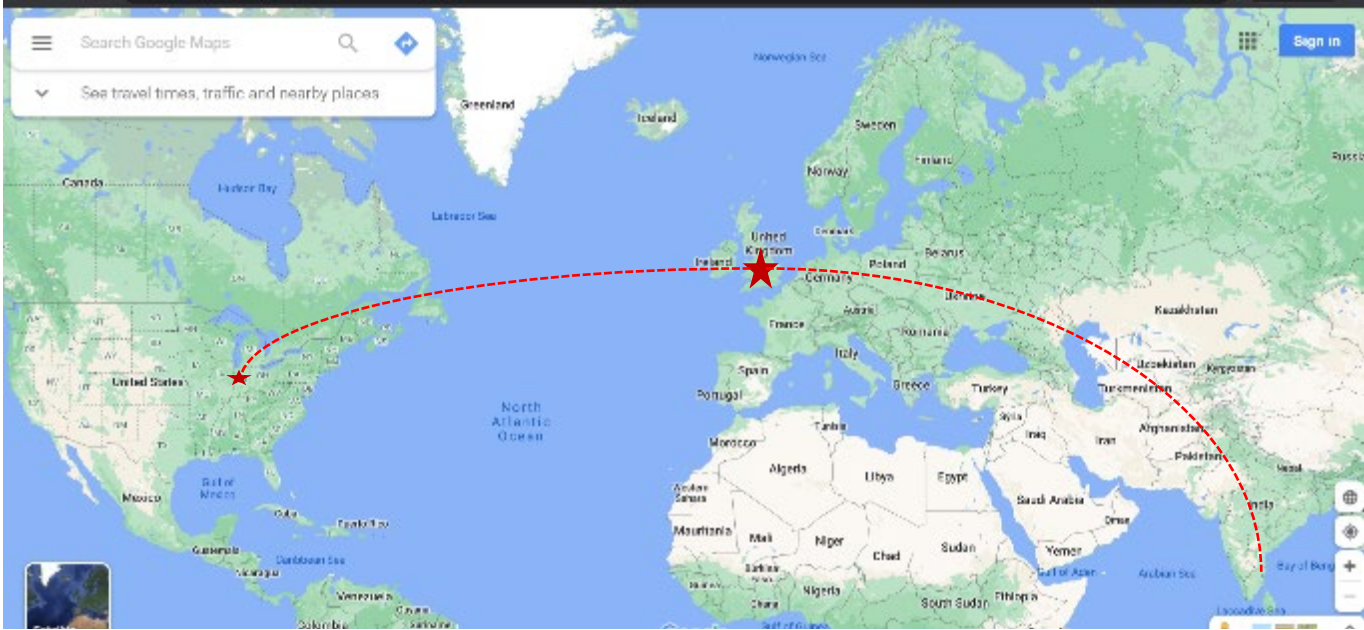
[At Princeton, I felt like] a visitor landing in an alien land . . . I have spent my years since Princeton, while at law school, and in my various professional jobs, not feeling completely a part of the worlds I inhabit.

- Sonia Sotomayor (memoir)

[Judge Ketanji Brown Jackson's hearing](#)



My own story...



Sense of Belonging

- Psychologists describe belonging as a **fundamental human motivation** (Baumeister & Leary, 1995).
- The notion of academic and social “fit” within academic contexts such as school (Eccles & Midgley, 1989; Eccles & Roeser, 2011)
- Rich race-based, critical perspectives examine how the **opportunity structures afforded** by academic contexts **foster or impede belonging** (Gray et al., 2018; Strayhorn, 2012; Hurtado & Carter, 1997)



Sense of Belonging: Social Psychological Tradition

- A “hub” that can facilitate diverse positive outcomes (Strayhorn, 2012; Walton & Brady, 2017; Walton & Cohen, 2007;2011; Yeager et al. 2016).
- Belonging – Global assessments of the extent to which a student feels like they belong in a setting
- Belonging Uncertainty - People often wonder if they belong in new social and academic settings (Walton & Cohen, 2007; Walton & Brady, 2017)
 - This uncertainty might affect the way someone makes sense of negative social events
 - How they interpret daily adversities
 - And might prevent them from fully engaging in college life

Agenda for today

I am going to overview findings from 3 of my studies:

- Study 1: Gopalan & Brady (2019)
- Study 2: Murphy, Gopalan et al. (2020)
- Study 3: Gopalan, Linden-Carmichael, Lanza (2022)

Quick sneak peak on where we are going (if time permits)

Practical insights + Takeaway



College Students' Sense of Belonging: A National Perspective

Maithreyi Gopalan¹ and Shannon T. Brady²

In a nationally representative sample, first-year U.S. college students "somewhat agree," on average, that they feel like they belong at their school. However, belonging varies by key institutional and student characteristics; of note, racial-ethnic minority and first-generation students report lower belonging than peers at 4-year schools, while the opposite is true at 2-year schools. Further, at 4-year schools, belonging predicts persistence even after extensive covariate adjustment. Although descriptive, these findings help us understand belonging and related psychological factors that may promote persistence.

Keywords: belonging; campus engagement; college persistence; first-generation students; mental health; postsecondary education; race; context; student behavior/attitude; underrepresented racial-ethnic groups

ScienceAdvances

RESEARCH ARTICLE | PSYCHOLOGICAL SCIENCE

A customized belonging intervention improves retention of socially disadvantaged students at a broad-access university

MARY C. MURPHY, MAITHREYI GOPALAN, EVELYN R. CARTER, KATHERINE T. U. EMERSON, BETTEL BOTTOMS, AND GREGORY M. WALTON

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4,709

Abstract

Broad-access institutions play a democratizing role in American society, opening doors to many who might not otherwise pursue college. Yet these institutions struggle with persistence and completion. Do feelings of nonbelonging play a role, particularly for students from groups historically disadvantaged in higher education? Is belonging relevant to students' persistence—even when they form the numerical majority, as at many broad-access institutions? We evaluated a randomized intervention aimed at bolstering first-year students' sense of belonging at a broad-access university ($N = 1,063$). The intervention increased the likelihood that racial-ethnic minority students would persist to the second year of college.

... This two-year... d academic fit one... -longing concerns... e academic out-... signed to increase



Original article

College Students' Sense of Belonging and Mental Health Amidst the COVID-19 Pandemic

Maithreyi Gopalan, Ph.D.^{a,*}, Ashley Linden-Carmichael, Ph.D.^b, and Stephanie Lanza, Ph.D.^b

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Article history: Received June 4, 2021; Accepted October 7, 2021

Keywords: Belonging; Underrepresented racial-ethnic minority students; First-generation students; COVID-19; Mental health; College students

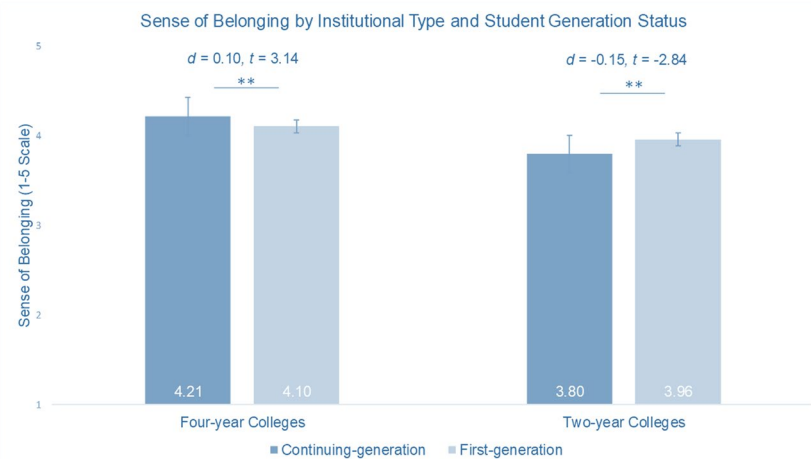
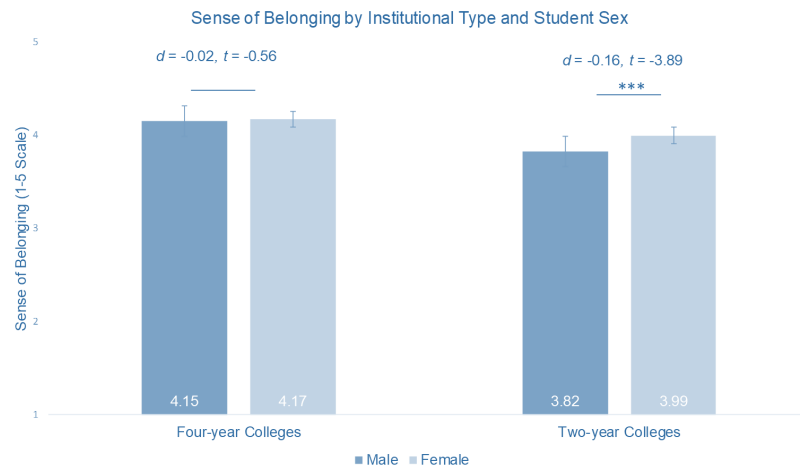
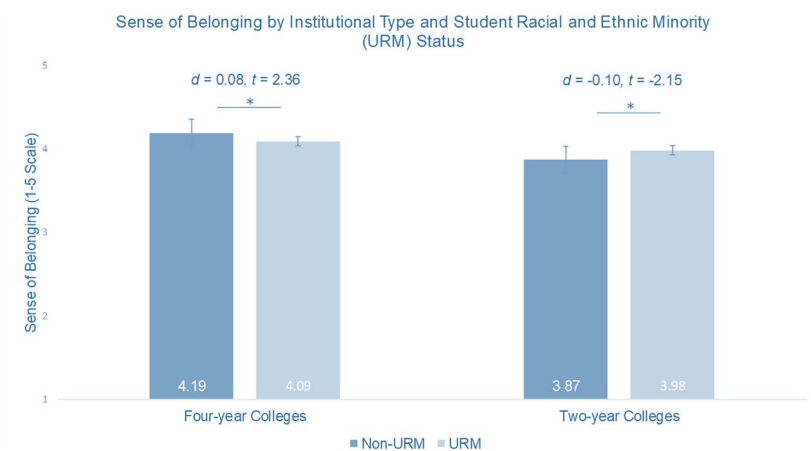
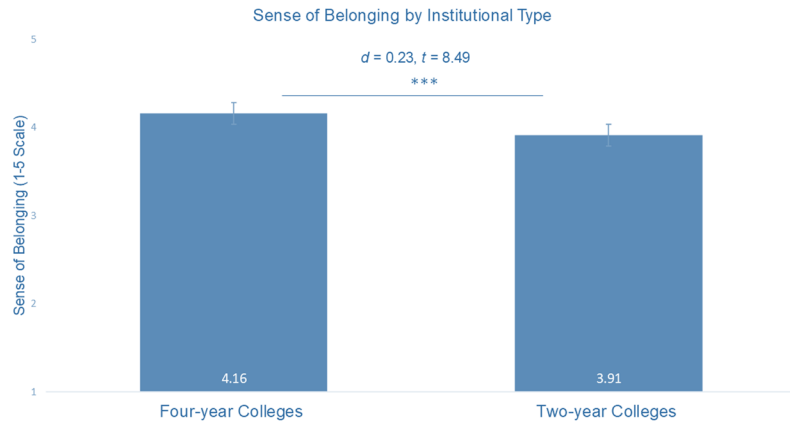


PennState

Study 1: A national perspective on belonging in College

- Data: Beginning Postsecondary Students Longitudinal Study (BPS)2012:2014
- Nationally-representative sample of first-time beginning college students in 2012
 - Surveyed in 2012
 - Then again in 2014
 - Self-reports of Belonging, Use of campus resources, and mental health in college
 - Academic records
 - Persistence
 - Performance

A national perspective on belonging in college



A national perspective on belonging in college

Table 1
Coefficients and Standard Errors From Multivariate Regressions

	4-Year Colleges				2-Year Colleges			
	Academic Outcomes		Other Outcomes		Academic Outcomes		Other Outcomes	
	Persistence Year 2	Persistence Year 3	Use of Campus Services Year 3	Self-Reported Mental Health Year 3	Persistence Year 2	Persistence Year 3	Use of Campus Services Year 3	Self-Reported Mental Health Year 3
Sense of belonging	.019*** (.006)	.021*** (.006)	.014** (.005)	.050*** (.013)	.008 (.011)	-.000 (.011)	.004 (.009)	.027 (.021)
Public/private institution (public = 1)	.055*** (.014)	.046*** (.012)	-.046*** (.011)	.042 (.029)	.033 (.056)	.014 (.055)	.019 (.061)	.061 (.120)
URM (Black, Hispanic, Native)	.018 (.013)	.026 (.017)	.042** (.013)	.070 (.042)	-.002 (.028)	.008 (.027)	.068** (.023)	.036 (.047)
Asian	.033 (.023)	.053* (.024)	.051* (.025)	-.128* (.058)	.069 (.061)	.033 (.061)	-.044 (.043)	.135 (.105)
Two or more races	-.005 (.026)	-.006 (.029)	.026 (.019)	-.093 (.058)	.084 (.050)	.007 (.062)	.050 (.057)	.064 (.115)
First-generation	-.042** (.015)	-.046* (.018)	-.019 (.012)	.009 (.026)	-.011 (.030)	-.049 (.031)	-.027 (.026)	.048 (.049)
Sex (female = 1)	.042*** (.009)	.042*** (.011)	.004 (.010)	-.134*** (.031)	.045 (.027)	.041 (.024)	.024 (.019)	-.180** (.058)
High school GPA	.042** (.013)	.045*** (.012)	.000 (.012)	.045 (.038)	-.004 (.020)	.009 (.021)	.050* (.021)	.072* (.032)
First-year GPA	.081*** (.011)	.076*** (.012)	.012 (.008)	.037 (.026)	.101*** (.012)	.098*** (.012)	-.009 (.015)	.015 (.027)
R ²	.11	.11	.07	.21	.05	.05	.07	.16
N observations ^a	10,500	10,500	6,800	10,500	5,130	5,130	1,900	5,130

Note. Standard errors in parentheses. All estimates are unstandardized but weighted to adjust for the BPS: 12/14 complex survey design: Analysis weight (WTA000) and bootstrap variance estimation using replicate weights (WTA001-WTA200) to adjust for poststratification weight adjustment. To economize on space, we report on coefficients and standard errors on key variables only. All specifications also include students' ACT/SAT scores, socioeconomic status, first-year GPA, and a measure total debt burden, as noted in main text and Appendix (available on the journal website). We also controlled for self-reported first-year use of campus services and self-reported mental health in the models predicting third-year use of campus services and third-year self-reported mental health outcomes. URM = underrepresented racial-ethnic minority students.

^aSample size rounded to the nearest 10 as per data set guidelines.

* $p < .05$. ** $p < .01$. *** $p < .001$.

At 4-year colleges, first-year belonging* is associated with:

- Persistence (years 2 and 3)
- Use of campus resources
- Self-reported mental health

At 2-year colleges, first-year belonging is not associated with persistence, engagement, or mental health.

- Suggests that belonging may function differently in two-year settings (Deil-Amen, 2011).

*Controlling for race, FG status, gender, SES, SAT/ACT scores, high school GPA, first-year GPA, student debt, public/private school, and analogous first-year outcome.





Study 1 summary...

Consistent with past research in smaller convenience samples, URM and FG students at four-year colleges report lower belonging than their peers.

- Social identity and context matters
- Protective for persistence and mental health in 4-year colleges

Only a single nationally representative dataset measures students' belonging in college, using a single item.

More robust measures of student belonging, of students' uncertainty about their belonging may yield important insights.

College Students' Sense of Belonging: A National Perspective

Maithreyi Gopalan¹  and Shannon T. Brady²

In a nationally representative sample, first-year U.S. college students “somewhat agree,” on average, that they feel like they belong at their school. However, belonging varies by key institutional and student characteristics; of note, racial-ethnic minority and first-generation students report lower belonging than peers at 4-year schools, while the opposite is true at 2-year schools. Further, at 4-year schools, belonging predicts better persistence, engagement, and mental health even after extensive covariate adjustment. Although descriptive, these patterns highlight the need to better measure and understand belonging and related psychological factors that may promote college students' success and well-being.

Keywords: belonging; campus engagement; college persistence; descriptive analysis; disparities; ethnicity; first-generation students; mental health; postsecondary education; race; regression analyses; secondary data analysis; social context; student behavior/attitude; underrepresented racial-ethnic minority students



Study 2: Can we improve students' sense of belonging?

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RESEARCH ARTICLE | PSYCHOLOGICAL SCIENCE

f t in g r e

A customized belonging intervention improves retention of socially disadvantaged students at a broad-access university

MARY C. MURPHY · MAITHREYI GOPALAN, EVELYN R. CARTER · KATHERINE T. U. EMERSON · BETTE L. BOTTOMS, AND · GREGORY M. WALTON [Authors Info](#)
[& Affiliations](#)

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Past Belonging Interventions



SHARE REPORT A Brief Social-Belonging Intervention Improves Academic and Health Outcomes of Minority Students

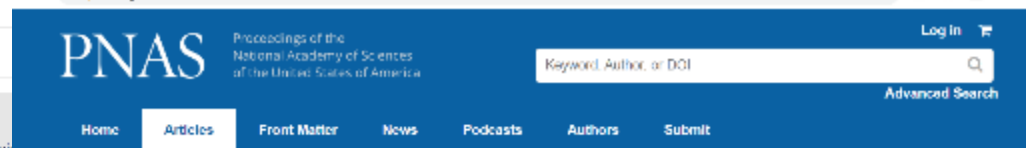
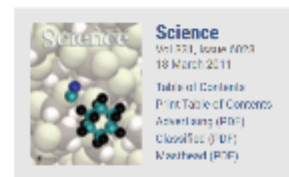
Gregory M. Walton^{1*}, Geoffrey L. Cohen^{1,2}
+ See all authors and affiliations

Science, 18 Mar 2011
Vol. 327, Issue 5922, pp. 1427-1431
DOI: 10.1126/science.1198261

Article Figures & Data Info & Metrics eLetters

Abstract

A brief intervention aimed at buttressing college freshmen's sense of social belonging in school was tested in a randomized controlled trial (N = 92), and its academic and health



RESEARCH ARTICLE

Teaching a lay theory before college narrows achievement gaps at scale

David S. Yeager, Gregory M. Walton, Shannon T. Dwyer, Ezra N. Akronis, David Paineiro, Lea...
+ See all authors and affiliations

PNAS June 14, 2016 (vol. 113, no. 24) E5341-E5346, first published May 19, 2016 (https://doi.org/10.1073/pnas.1624507113)
Edited by Michael E. Long, New York University, New York, NY, and approved April 28, 2016 (received for review December 10, 2015)

Article Figures & S Info & Metrics PDF

Significance

In the United States, large, persistent gaps exist in the rates at which racial, ethnic, and socioeconomic groups complete postsecondary education, even when groups are educated

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Social Sciences > Psychological and Cognitive Sciences



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Belonging in College

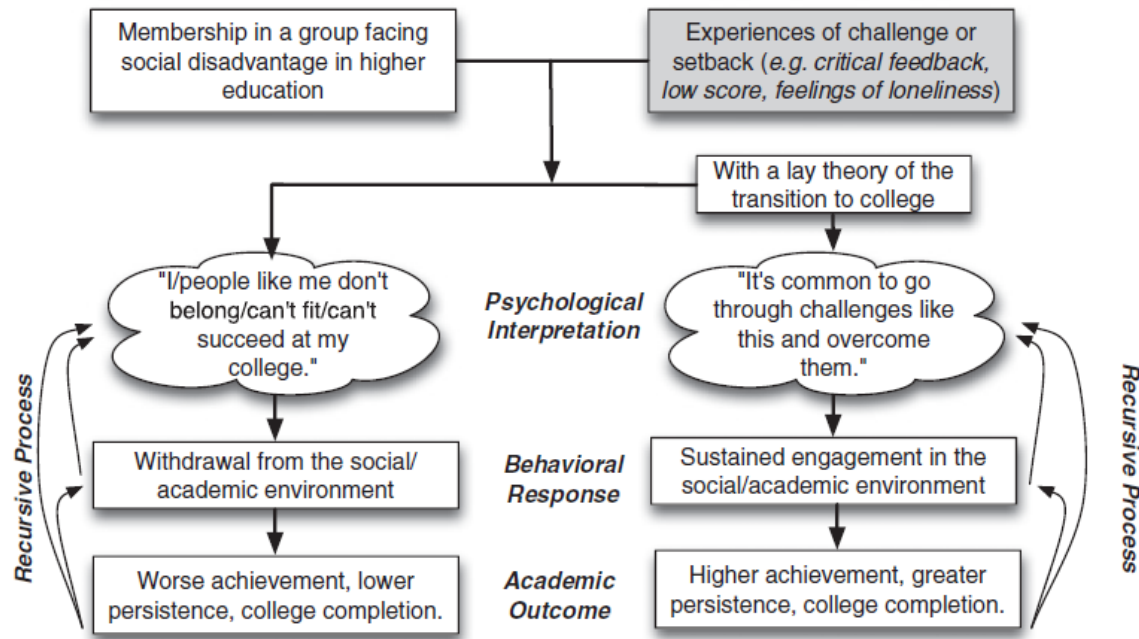
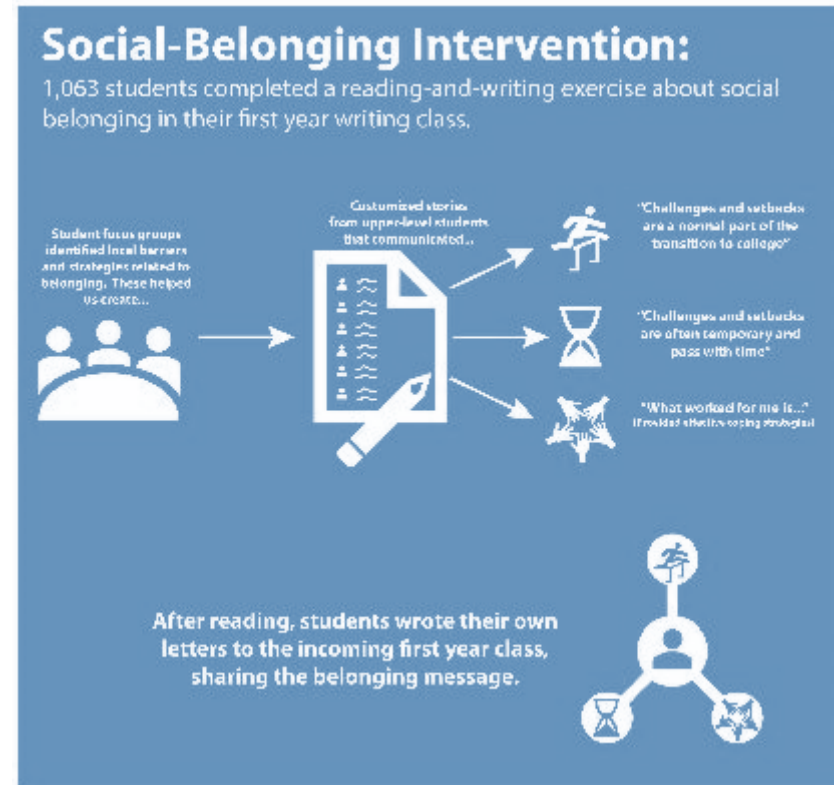


Fig. 1. Theoretical model: the process through which lay theories affect disadvantaged students' behavior and academic outcomes across the transition to college.

University Context

- Broad Access, Hispanic-serving, 4-year Public University in the Midwest
- Majority-Minority Campus
 - Underrepresented racial/ethnic minority students and first-generation college students comprise more than 50 and 40 percent of the first-year cohort, respectively.
- Commuter School
 - Over 85 percent of the nearly 30,000 students commuting to campus
- Social Belonging Intervention from past trials should be customized to this setting



Design work

Insight

Many students stated during the pilot survey that they had worries about belonging given their commuter status.

Example

A student stated “Most of us are commuters, so we have similar struggles and challenges in that regard. Over time I have realized that most people have a lot more in common than they think, and it sometimes takes more than where are you from”; or a “what’s your major” type of question to figure out, but it’s worth it. Get to know people, for real.”

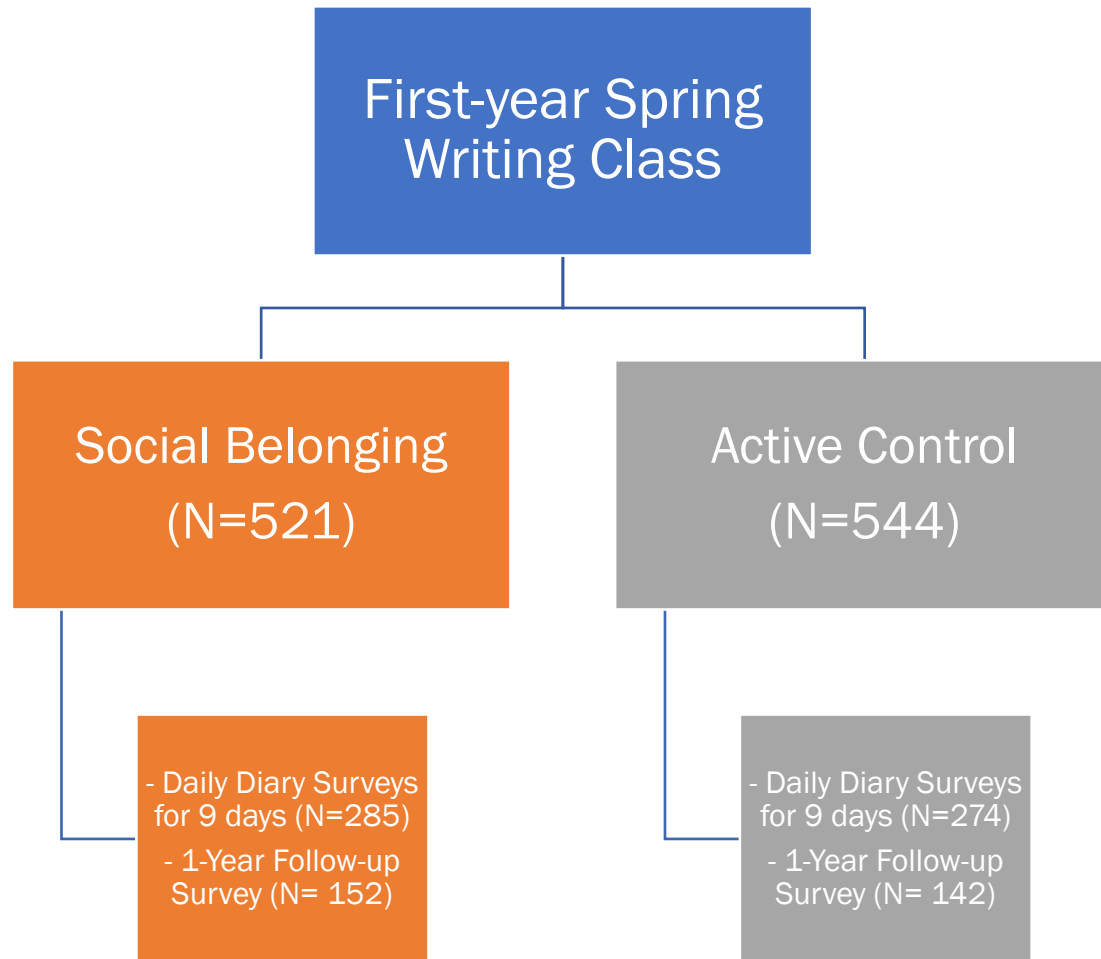
Corresponding Revision

Emphasize that friendships can happen anywhere in college but how one has to take that effort and seize the opportunity. A student mentioned how they formed a “commuter family” that was used in the revised materials.

- Customized Intervention Upperclassmen Story: “I’ve always had to commute 2 hours each way to [school]. It’s been hard to make friends and be involved on campus, and sometimes I envy students who live closer. Studying is difficult – especially when I get home late after a long day of classes. What made a difference to me was that I found the [school] commuter resource center. There, I met a lot of [school] students who are commuters, so we share some similar struggles and challenges. Over time, I learned to use the long commute productively – keeping busy and doing work for class. It took time to figure out the best routes, but now I’ve got it down. Eventually I also found other people who take the same route as I do, and the three of us have sort of developed our own little commuter family. We’ve even started taking some classes together. It’s great to know I have friends I can hang out with on campus and on that long CTA ride home.”



Social Belonging Intervention in College



Social Belonging Condition Vignettes

*Being religious, I thought I would stick out like a sore thumb when I started at [college]. Also, I live at home and commute to school, so I worried I wouldn't make friends or feel connected to campus. To be honest, I felt really lonely sometimes. I didn't know anybody. I would walk between classes and not have anyone to talk to and I wondered whether things would ever change. But instead of just worrying so much, I decided to join some groups and clubs I was interested in. **It took time, but in the end I made some good friends in these groups, people I share interests with. [college] is so diverse.** You just need to find your niche. As with any major adjustment in life, I learned you just need time to find the right people. Now I feel as close to my friends in college as I did to my friends from high school.*

-Participant #182, White male, age 24

*When I first came to [college], I was worried that I was different from other students. **Everyone seemed so sure that it was the right place for them and they all seemed so happy here.** I wasn't sure I fit in. Sometime after my freshman year, I realized that many people who come to [college] are unsure about whether they fit in. **Looking back, it seems funny to me -- now I know that everybody feels different from everybody else when they start here.** At least in some ways, we all face pretty similar challenges. Since I realized this, I am more comfortable at [college] and I've been able to fully enjoy what life has to offer here.*

-Participant #19, Black male, age 20



Social Belonging Condition Content

1. Acknowledge many hardships during transition
 - Picking class schedule, work-life balance, finding authentic friends
2. Communicate “you are not alone” in facing these hardships
 - Use counter-stereotypical cues
3. Communicate that belonging increases over time
4. Provide specific examples of hardships and resolutions

Control Condition Vignettes

When I first got to [college], I had trouble absorbing all of the material in some of my textbooks. I realized that one thing I could do was to do all the practice problems a week or two before the exam. That way if I still had questions about the material I could go to the TA or professor. When I did that for a set of exams, it worked. It was hard to get my act together a week ahead of time, but it did pay off.

- Participant #33, Asian male, age 23

There can be a lot of work in college. When I got to campus, I realized I didn't know how to study properly. I signed up for a Study Skills seminar at the Academic Center for Excellence. The best suggestion they had was to review your lecture notes at the end of each day. That helps you learn them and then you can tell if there is something you missed, or something you don't understand, and you can ask about it. I'm glad I took the time to do that.

-Participant #101, Latino female, age 21



Writing exercise embedded in Social Belonging Condition

- Saying-is-believing
 - In your letter, please describe how people's experience changes over time at [college] - how they may feel unsure at first of their fit or belonging but ultimately come to feel they belong. Feel free to illustrate your letter with examples from your own experiences so far. You may take as much time as you like.
- Demographic questions

Data

- Administrative records from college – semester-by-semester
 - Persistence
 - Non-Cumulative GPA
- Sub-sample invited to participate in daily diary surveys (9-days)
 - Daily adversity
 - Social Belonging
- Sub-sample invited to participate in a follow-up survey about 1 year after the intervention
 - Social Belonging

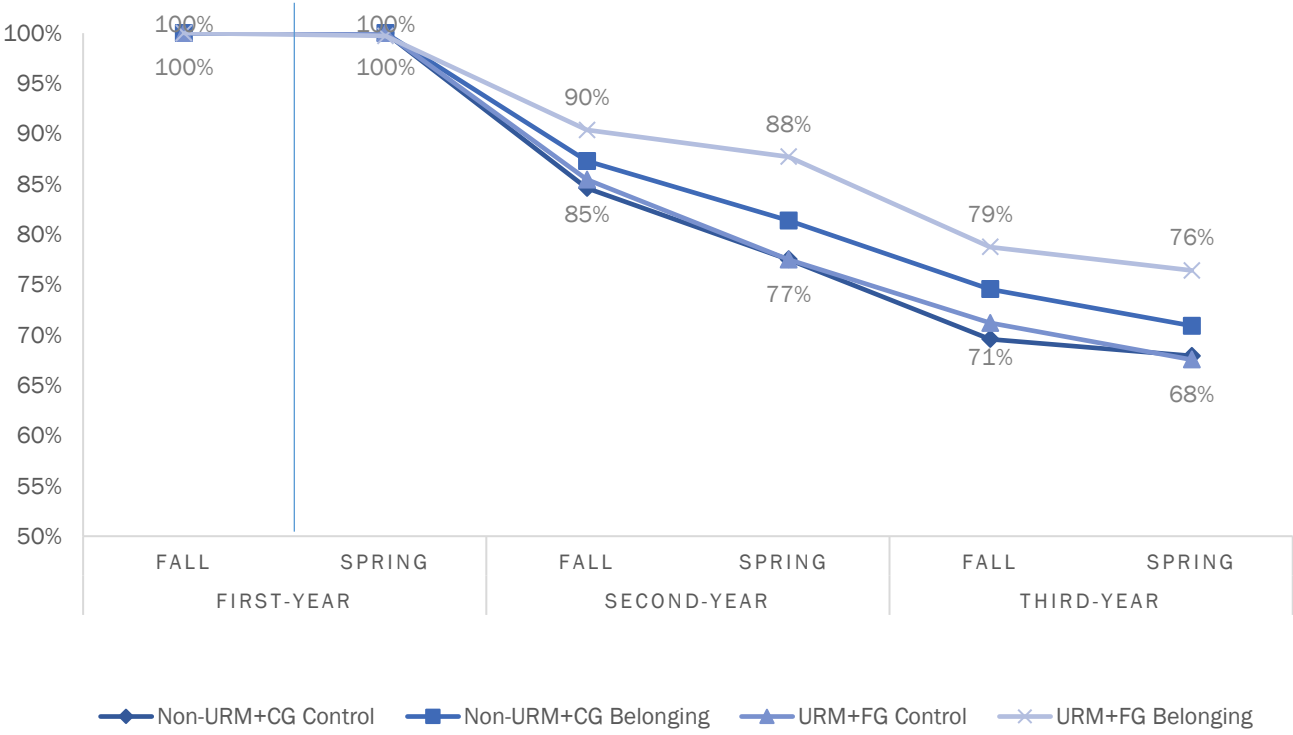
Effectiveness of Random Assignment

	Active Control Mean (SD)	Social Belonging Mean (SD)	Social Belonging- Active Control t/ χ^2 (P-Value)
Gender (Female=1)	0.51 (0.50)	0.59 (0.50)	6.4** (0.01)
Baseline GPA	2.76 (0.76)	2.84 (0.79)	-1.7 (0.10)
URM+FG Group Status	0.55 (0.50)	0.56 (0.50)	0.235 (0.23)
Composite ACT/SAT (Standardized)	0.03 (1.00)	0.02 (1.00)	0.12 (0.9)
Number of Observations	542	521	

Notes: Asterisks denote significance at the 0.1% (***), 1% (**), and 5% (*) levels.

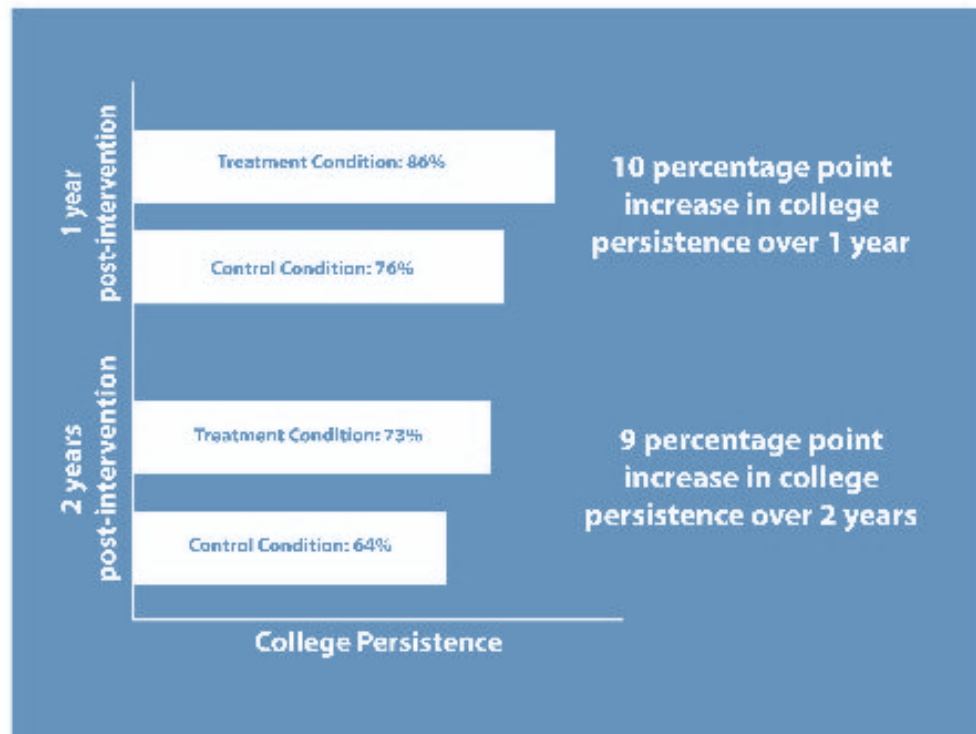


Continuous Enrollment Rates by Student Group Membership, Experimental Condition, and Academic Term

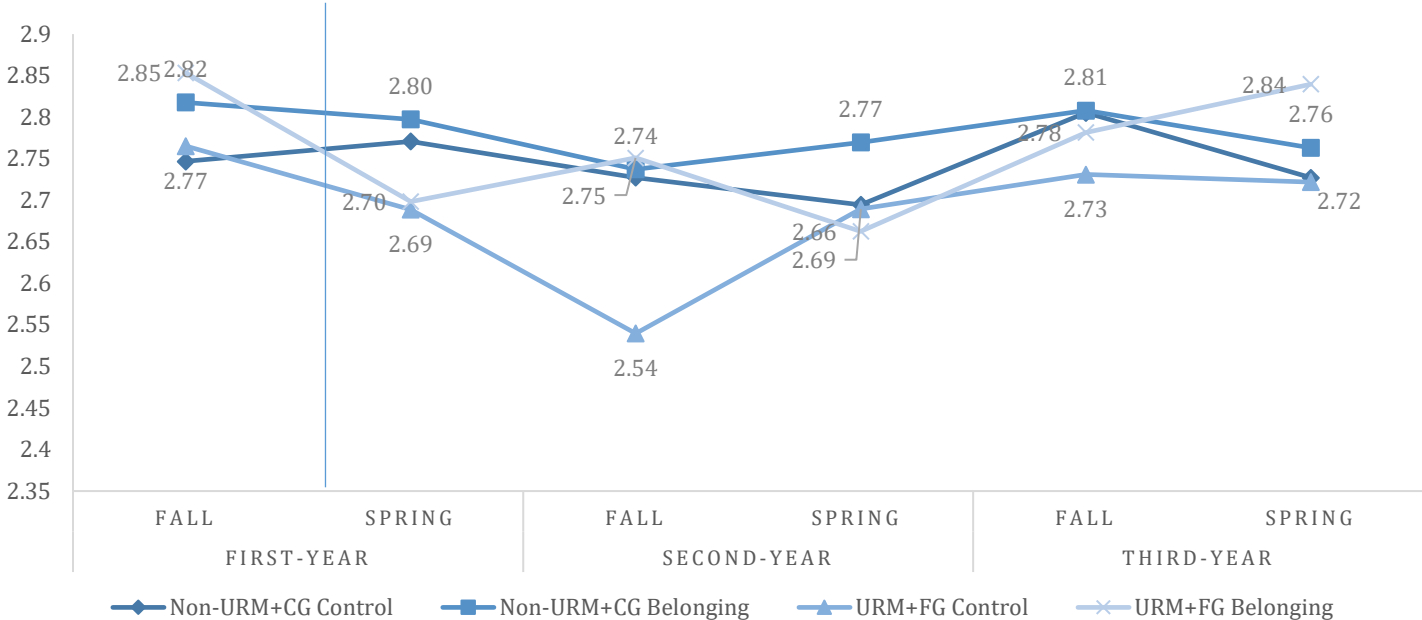


Persistence Effects Highlights

Black, Latinx, Native American, and first-generation students showed greater continuous enrollment over the next 2 years after completing the social belonging reading-and-writing exercise.



Non-Cumulative GPA by Student Group Membership, Experimental Condition, and Academic Term



Regression-Adjusted Effects on GPA

Non-Cumulative GPA	One-Semester Post-Intervention		One Year Post-Intervention		Two Years Post-Intervention	
	Non-URM + CG	URM+FG	Non-URM+CG	URM+FG	Non-URM+CG	URM+FG
	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)
Treatment Indicator (Treatment = 1, Active Control = 0)	-0.04 (0.08)	0.19** (0.07)	-0.004 (0.07)	0.10 (0.06)	-0.04 (0.08)	0.11 (0.06)
Baseline GPA	0.46*** (0.05)	0.48*** (0.05)	0.47*** (0.05)	0.52*** (0.04)	0.46*** (0.05)	0.47*** (0.05)
Gender (Female =1, Male = 0)	-0.04 (0.08)	0.03 (0.07)	-0.04 (0.08)	0.08 (0.06)	-0.03 (0.08)	0.11 (0.06)
Number of Observations	375	521	375	528	377	535

Note. Standard errors in parentheses.

* $p < .05$. ** $p < .01$. *** $p < .001$.

GPA Effects Highlights

- GPA in the semester following treatment (the first semester of the second year) rose by 0.19 GPA points and, over the next two years, by 0.11 points
- Intervention did not affect non-URM and continuing-generation students' GPA in the semester following treatment, nor over the next two years
- Identical results were found when examining change in GPA (mean post-intervention GPA minus mean pre-intervention GPA)
 - Significant condition effect on change in GPA emerged for URM+FG students
- Intervention reduced the number of URM+FG students falling in the bottom GPA quantile by 8 percentage points

Campus-wide Comparison Groups

	Non-URM+ CG	Non-URM+ CG	Non-URM+ CG	URM+FG	URM+FG	URM+FG
Continuous Enrollment and Non-Cumulative GPA	Continuous Enrollment two semesters post-intervention Odds Ratio (SE)	Non-Cumulative GPA one semester post-intervention β (SE)	Non-Cumulative GPA two semesters post-intervention β (SE)	Continuous Enrollment two semesters post-intervention Odds Ratio (SE)	Non-Cumulative GPA one semester post-intervention β (SE)	Non-Cumulative GPA two semesters post-intervention β (SE)
Treatment Indicator (Treatment = 1, Control = 0)	1.23 (0.25)	-0.04 (0.06)	-0.04 (0.06)	1.82** (0.34)	0.14** (0.05)	0.08 (0.05)
Baseline GPA	2.0*** (0.19)	0.48*** (0.03)	0.48*** (0.03)	2.61*** (0.13)	0.460*** (0.02)	0.473*** (0.02)
Gender (Female =1, Male = 0)	1.13 (0.18)	0.10* (0.05)	0.10* (0.05)	0.90 (0.08)	0.04 (0.03)	0.06* (0.03)
Number of Observations	1,003	861	863	4,037	3,440	3,488

Psychological Mechanisms

- Evidence from Daily Diaries

Feelings of Daily Social and Academic Fit	URM+FG Students Social Belonging Treatment Condition	URM+FG Students- Control Condition
	β (SE)	β (SE)
Daily Adversity Composite Index	-0.005 (0.006)	-0.022*** (0.006)
Number of Observations ^a	818	760

Note. Robust standard errors, clustered at the student-level, in parentheses. All specifications include student and time fixed effects.

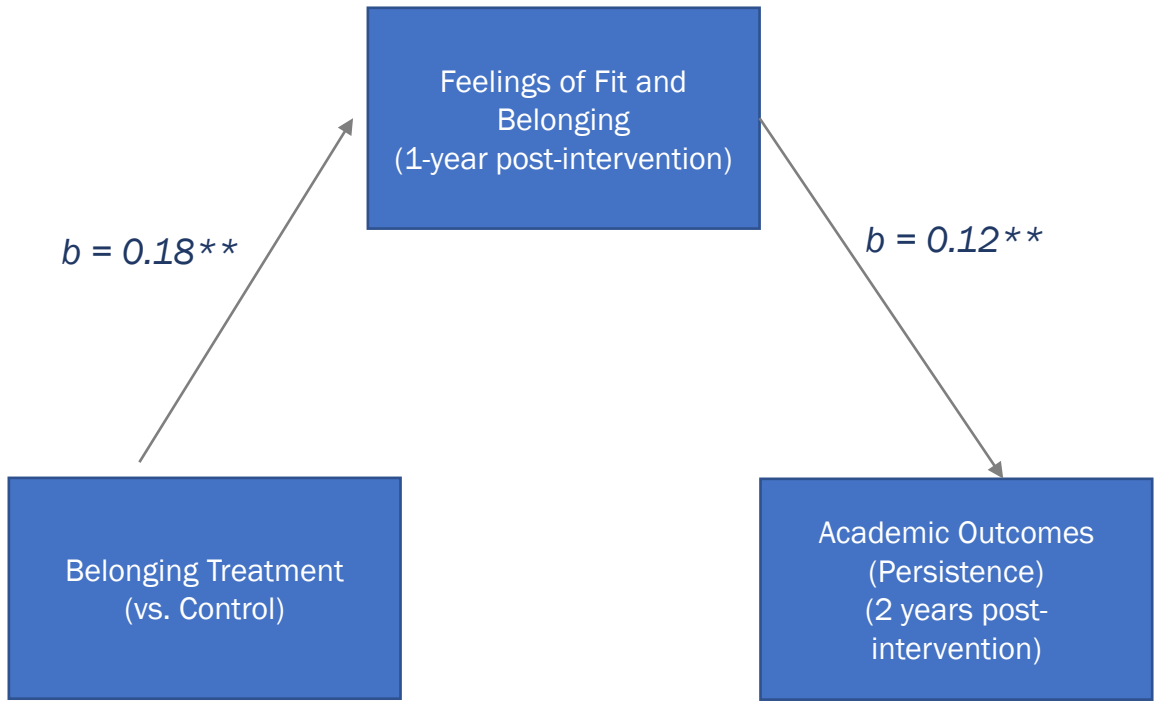
^a Sample size for this longitudinal within-student analysis shown in terms of students' daily responses
^{*} $p < .05$. ^{**} $p < .01$. ^{***} $p < .001$.

Daily Adversity
Positive Event Scale (1=Neutral - 5=Very Positive)
Negative Event Scale (1=Neutral - 5=Very Negative)

Daily Social and Academic Fit (Daily Diary Surveys)	Daily α 's = 0.87-0.90
Scale*: 1=Strongly disagree 2=Disagree 3=Somewhat disagree 4=Neither agree nor disagree 5=Somewhat agree 6=Disagree 7=Strongly agree	
1.	Right now, I feel comfortable at <school name>.
2.	Right now, I feel like I belong at <school name>.
3.	Right now, I feel like other students at <school name> accept me.
4.	Right now, I feel like other students understand more than I do about what's going on at <school name>.
5.	Right now, I feel like I think in the same way as do students who do well at <school name>.
6.	Right now, I feel it is a mystery to me how <school name> works (r)
7.	Right now, I feel alienated from <school name> (r)
8.	Right now, I feel like students at <school name> are a lot like me.
9.	Right now, I feel like I fit in well at <school name>.
10.	Right now, I feel like, compared with most other students, I know how to do well at <school name>.
11.	Right now, I feel confident that I have the ability to do well at <school name>.
12.	Right now, I feel that I have LESS ability than others (r)

Psychological Mechanisms

- Evidence from 1-year follow-up survey

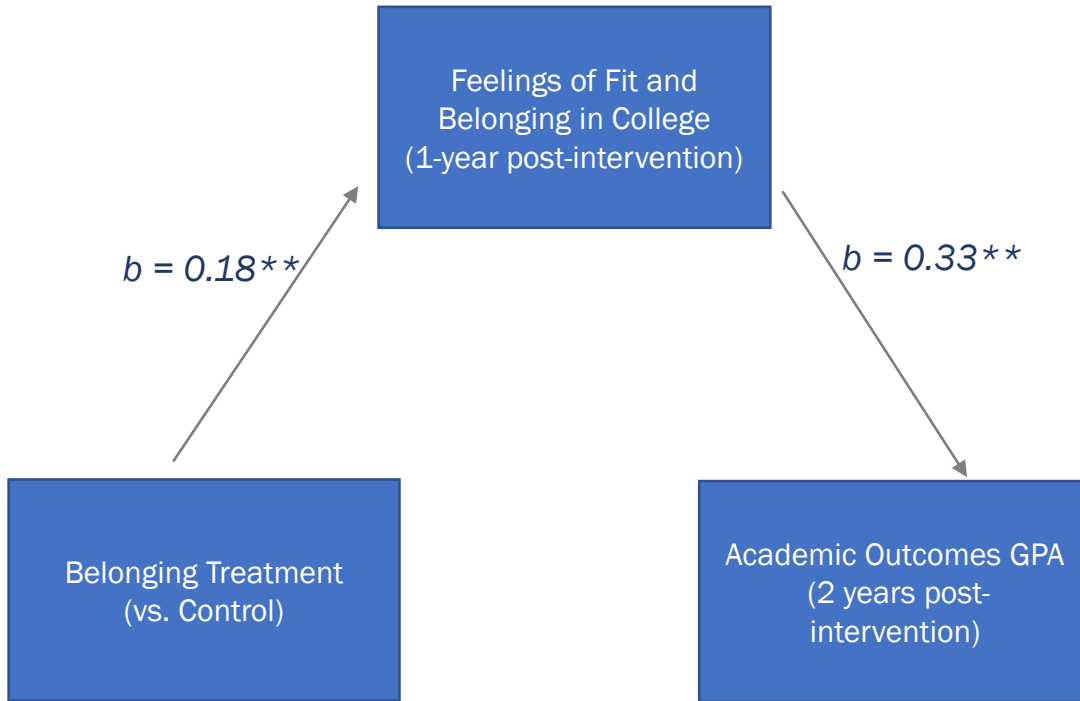


Average Causal Mediated Effect = 0.02*
95% CI = 0.001 to 0.05

Social and Academic Fit (Follow-up Survey)		α = 0.862
Scale*: 1=Strongly disagree 2=Disagree 3=Somewhat disagree 4=Neither agree nor disagree 5=Somewhat agree 6=Disagree 7=Strongly agree		
1.	I feel comfortable at <school name>.	
2.	I belong at <school name>.	
3.	Other students at <school name> accept me.	
4.	Other students understand more than I do about what's going on at <school name>.	
5.	I think in the same way as do students who do well at <school name>.	
6.	It is a mystery to me how <school name> works (r)	
7.	I feel alienated from <school name> (r)	
8.	Students at <school name> are a lot like me.	
9.	I fit in well at <school name>.	
10.	Compared with most other students, I know how to do well at <school name>.	
11.	I feel confident that I have the ability to do well at <school name>.	
12.	I feel that I have LESS ability than others (r)	
13.	Being successful at <school name> is important to me.	
14.	How interesting are classes at <school name> for you?	
15.	How much do you enjoy academic work at <school name>?	
16.	In the future, I could see myself doing well academically at <school name>.	
17.	In the future, I could see myself impressing a professor.	
18.	In the future, I could see myself working closely with a professor or graduate student on an independent project (e.g., research, honors or capstone thesis, etc.).	
19.	Now, using a percentile rank, please assess your potential to succeed at <school name>, compared with other <school name> students, by drawing an X on the line below. Marking an X at 50% means you believe you have more potential than half of <school name> students, and less potential than half. Marking 90% means you believe you have more potential than almost all <school name> students. Marking 10% means you believe you have less potential than almost all <school name> students. * This item was measured on a continuous scale ranging from 0-100 percentile)	



Psychological Mechanisms



Average Causal Mediated Effect = 0.06^{**}
 95% CI = 0.005 to 0.14

Social and Academic Fit (Follow-up Survey)		$\alpha = 0.862$
Scale*: 1=Strongly disagree		
2=Disagree		
3= Somewhat disagree		
4=Neither agree nor disagree		
5=Somewhat agree		
6=Disagree		
7=Strongly agree		
1.	I feel comfortable at <school name>.	
2.	I belong at <school name>.	
3.	Other students at <school name> accept me.	
4.	Other students understand more than I do about what's going on at <school name>.	
5.	I think in the same way as do students who do well at <school name>.	
6.	It is a mystery to me how <school name> works (r)	
7.	I feel alienated from <school name> (r)	
8.	Students at <school name> are a lot like me.	
9.	I fit in well at <school name>.	
10.	Compared with most other students, I know how to do well at <school name>.	
11.	I feel confident that I have the ability to do well at <school name>.	
12.	I feel that I have LESS ability than others (r)	
13.	Being successful at <school name> is important to me.	
14.	How interesting are classes at <school name> for you?	
15.	How much do you enjoy academic work at <school name>?	
16.	In the future, I could see myself doing well academically at <school name>.	
17.	In the future, I could see myself impressing a professor.	
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19.	Now, using a percentile rank, please assess your potential to succeed at <school name>, compared with other <school name> students, by drawing an X on the line below. Marking an X at 50% means you believe you have more potential than half of <school name> students, and less potential than half. Marking 90% means you believe you have more potential than almost all <school name> students. Marking 10% means you believe you have less potential than almost all <school name> students. * This item was measured on a continuous scale ranging from 0-100 percentile)	





In summary...

Students' psychosocial processes intrinsically tied to educational outcomes (and disparities)

College students' **sense of belonging** matters

- Improves persistence among minoritized and first-gen students (Murphy, Gopalan et al. 2020)
- Doesn't change the overall perceptions of negative events; but changes students' construal or attribution of those events to their global belonging (Murphy, Gopalan et al. 2020)

First , customized, randomized experiment in a broad-access university

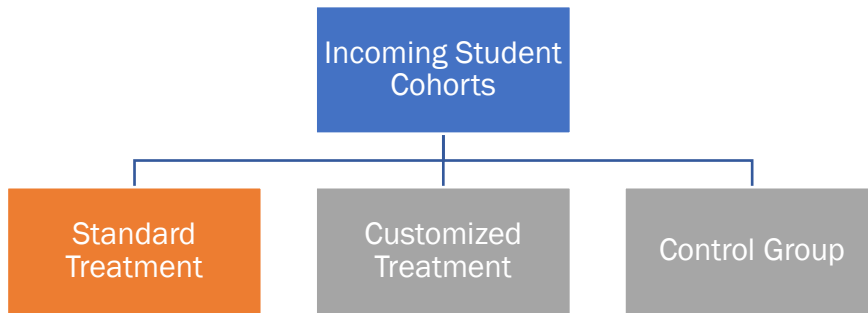
The screenshot shows the top portion of a Science Advances article. The title is "A customized belonging intervention improves retention of socially disadvantaged students at a broad-access university". The authors listed are Mary C. Murphy, Maithreyi Gopalan, Evelyn R. Carter, Katherine T. U. Emerson, Settle L. Bottoms, and Gregory M. Walton. The article is categorized as a Research Article in Psychological Science. The abstract text is visible, starting with "Broad-access institutions play a democratizing role in American society, opening doors to many who might not otherwise pursue college. Yet these institutions struggle with persistence and completion. Do feelings of nonbelonging play a role, particularly for students from groups historically disadvantaged in higher education? Is belonging relevant to students' persistence—even when they form the numerical majority, as at many broad-access institutions? We evaluated a randomized intervention aimed at bolstering first-year students' sense of belonging at a broad-access university (N = 1,063). The intervention increased the likelihood that racial-ethnic minority and first-generation students maintained continuous enrollment over the next two academic years relative to multiple control groups. This two-year gain in persistence was mediated by greater feelings of social and academic fit one year post-intervention. Results suggest that efforts to address belonging concerns at broad-access, majority-minority institutions can improve core academic outcomes for historically disadvantaged students at institutions designed to increase college accessibility." The page also shows a citation count of 4,709 and a citation icon.



Context Matters...

- Similar interventions did not work everywhere...
 - Changed student reports of belonging but no effect on academic outcomes (Oreopoulos et al., 2020)
 - Short-term effects on GPA, but no changes in persistence/enrollment (Broda et al., 2018)
- Value affirmative interventions to reduce stereotype threat bias:
 - Did not work in some school settings (Dee, 2015; Hanselman et al., 2017)
 - Did not improve short-term academic outcomes in community college settings (Baker et al., 2019)

Scale-up: In the field....



CTC Partners



The Jayco Foundation



30+

schools

40K+

students

40+

lessons

~300+

Additional schools have expressed interest.

COLLEGE TRANSITION COLLABORATIVE collegetransitioncollaborative.org

Principal Investigators

- Christine Legel, University of Nebraska
- Mary Murphy, Indiana University
- Gregory Kralik, Georgia University
- David Hooten, University of Kentucky
- Elizabeth Sear & Lisa Davidson, College of William & Mary
- A. L. Brown, Johns Hopkins University
- Eric Strick, Johns Hopkins University
- Michelle Smith, UNC-Chapel Hill

Leadership

Study 3: Belonging amidst COVID

- Joint work with Stephanie Lanza and Ashley-Linden Carmichael
- Data from a large mid-Atlantic university [CORE](#)
 - College Relationship and Experience (CORE) – Fall 2019
 - COVID-CORE – Spring 2020
 - Only include longitudinal data here ($N = 1,004$)
 - Black (6%)
 - Hispanic (7%)
 - FG (29%)
 - URM+FG (37%)
- Thank you to Stephanie and Courtney for sneaking in some belonging measures for me into CORE 😊
 - 2-item measure on students' sense of belonging in college
- Standardized scales to measure depression and anxiety risk

Belonging at a large Mid-Atlantic university (T1: Pre-COVID; T2: Amidst COVID)

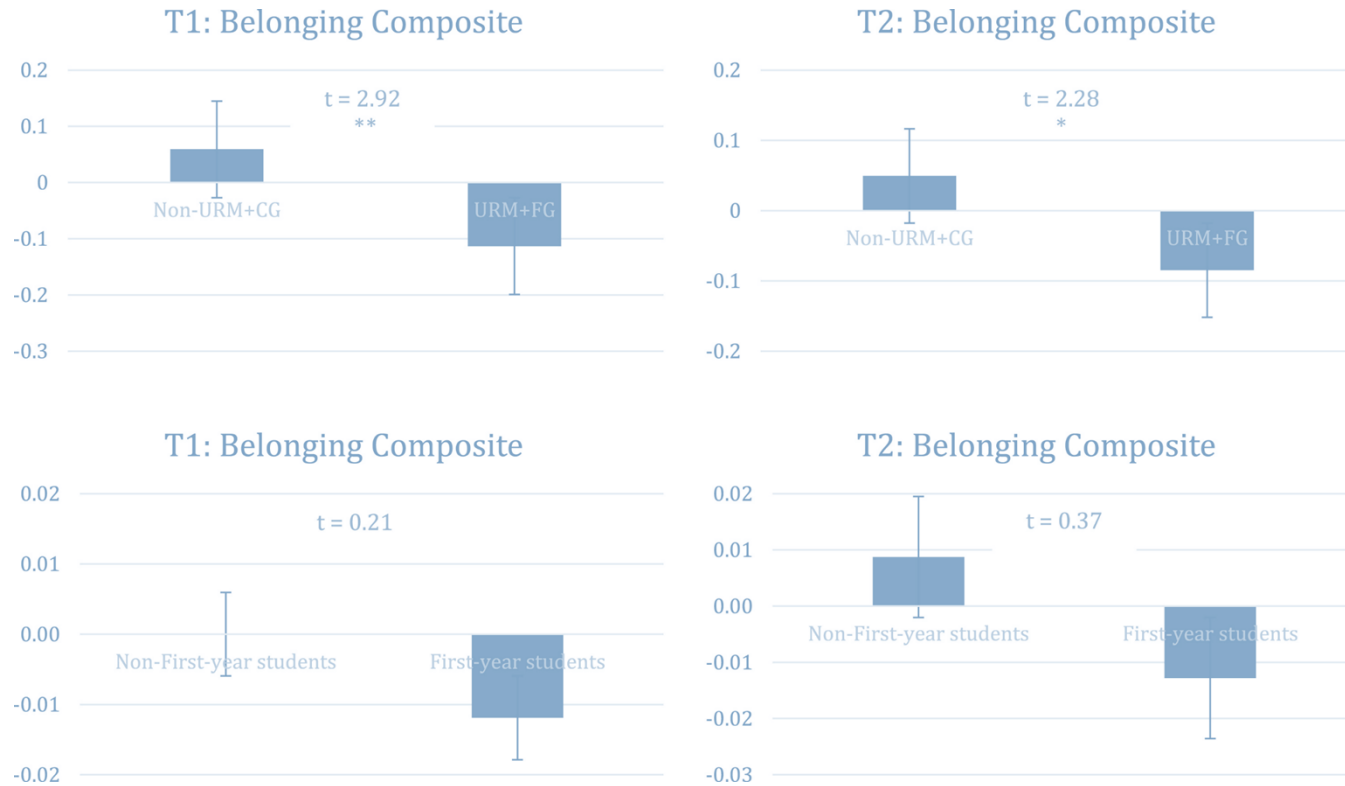


Figure 1. Students' sense of belonging (standardized composite) by key student characteristics before and amidst COVID-19. Student characteristics include FY students versus all others and URM/FG versus all others. Error bars represent standard errors. T1: N = 1,002 (FY = 422; URM/FG = 373) and N = 999 (FY = 422; URM/FG = 371). * $p < .05$, ** $p < .01$, *** $p < .001$.

Within-Student Associations

	Mental health outcome								
	Depression score	Elevated depression risk	Anxiety score	Elevated anxiety risk					
Panel A: multivariate regressions					Panel B: longitudinal models				
Number of students	893	893	949	949	Number of students	993	993	1,000	1,000
Model 1: belonging composite (T1)	-.205 (.230)	-.049*** (.018)	-.066** (.030)	-.056** (.025)	Model 1: belonging composite	-1.268*** (.312)	-.074*** (.024)	-.072 (.046)	-.053 (.038)
Model 2: first-year student × belonging composite interaction (T1)	.361 (.410)	-.021 (.0335)	-.010 (.0578)	-.010 (.0473)	Model 2: first-year student × belonging composite interaction	-2.879*** (.300)	-.172*** (.0274)	.001 (.040)	-.041 (.033)
Model 3: underrepresented racial/ethnic minority or first-generation student × belonging composite interaction (T1)	.008 (.417)	.032 (.034)	.015 (.059)	.041 (.048)	Model 3: underrepresented racial/ethnic minority or first-generation student × belonging composite interaction	-2.320*** (.322)	-.121*** (.0296)	-.039 (.043)	-.020 (.038)

Standard errors in parentheses. Each regression coefficient in the above table is from a separate regression model. To economize on space, we report on coefficients and standard errors on key variables only. All specifications in Panel A above also include students' race/ethnicity, sex, first-generation college status, residential status, and year in college, as noted in main text. We also control for self-reported baseline (T1) level of the DV of interest across models in Panel A. In Panel B, we include student fixed effects and wave fixed effects such that associations between within-student changes in belonging and DV respectively are captured. To test moderations in Panel B, we used a hybrid model that interacts wave fixed effect with first year (underrepresented racial/ethnic minority or first-generation student). Because we use student fixed effects, all other time-invariant student characteristics are excluded from the models in Panel B; all models used robust standard errors, clustered at the student level.

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





Sense of Belonging matters even amidst COVID

- Replicated past demographic differences in belonging
- Protective of Depression and anxiety to some extent
- Matters more for 1st year students

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Original article

College Students' Sense of Belonging and Mental Health Amidst the COVID-19 Pandemic

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Keywords: Belonging; Underrepresented racial-ethnic minority students; First-generation students; COVID-19; Mental health; College students



PennState

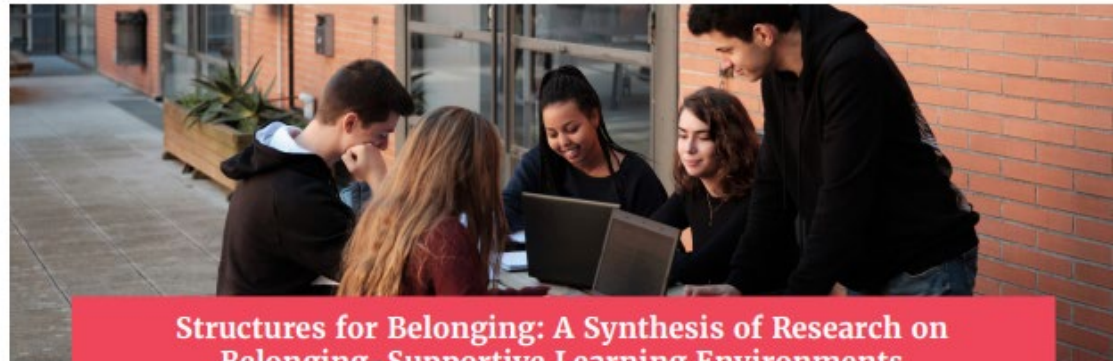
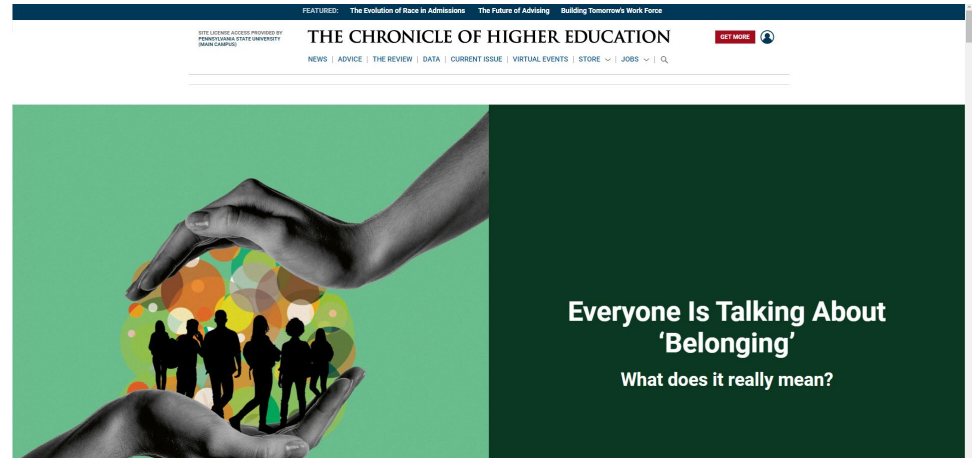
Gopalan et al. (2022)

2 Practical Insights...

- “Stop telling students, ‘You Belong!’”
- Show Instead...
- Build environments/structures that fosters students’ belonging...
 - **“Know that you are not alone”**
 - Recognize that transitions are hard and that worries about belonging and fitting in are legit, normal, and that we all face...
 - **“Know that it will improve with time...”**
 - Belonging as a PROCESS...

1 Big Take-Away

YOU BELONG



Structures for Belonging: A Synthesis of Research on Belonging-Supportive Learning Environments

BY KALEEN HEALEY AND CHLOE STROMAN



PennState

<http://studentexperiencenetwork.org/wp-content/uploads/2021/03/Structures-for-Belonging-Key-Takeaways.pdf>

Belonging Resources

- Papers cited in the presentation
 - Gopalan & Brady ([2020](#))
 - Gopalan, Linden-Carmichael, & Lanza ([2022](#))
 - Murphy, Gopalan et al. ([2020](#))
 - Walton & Cohen ([2011](#))
 - Yeager et al. ([2016](#))
- Equity Accelerator (Formerly, College Transition Collaborative)
 - <https://collegetransitioncollaborative.org/>
- PERTS
 - <https://www.perts.net/orientation/cb>
- Student Experience Research Network
 - <https://studentexperiencenetwork.org/research-library/?string=belong&authors=&stages=&types=>
- “Stop telling students ‘You Belong!’” [by Greg Walton](#)
- Belonging instruments:
 - <https://edinstruments.com/instruments/domains/2/subdomains/39>
 - <https://edinstruments.com/instruments/domains/2/subdomains/39/grades/16>



Questions?

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