

Indicators of Need:

Pell Receipt and Basic Needs Insecurity Among
Community College STEM Students

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Stacy J. Priniski

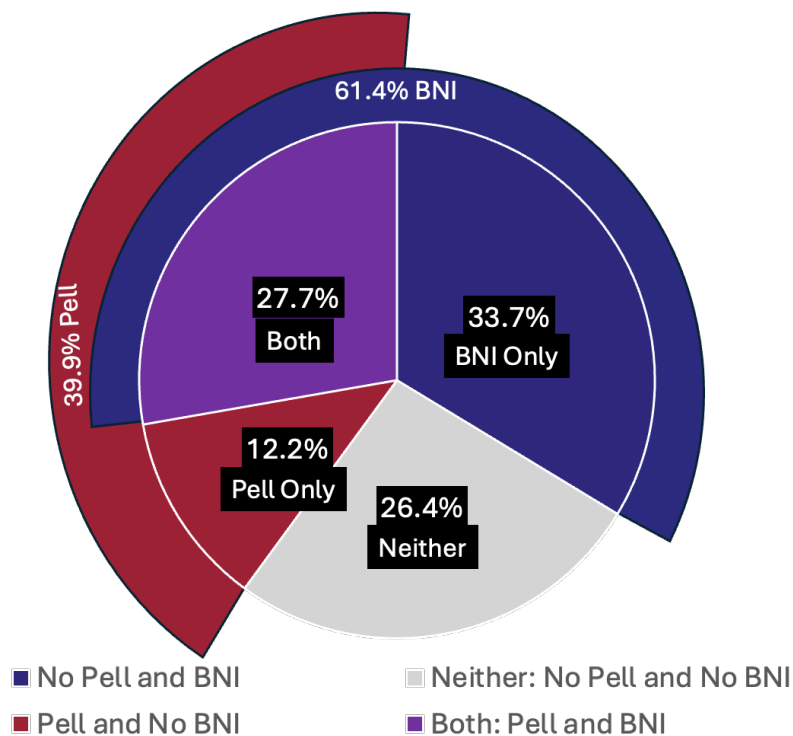
Indicators of Need: Pell Receipt and Basic Needs Insecurity Among Community College STEM Students

Pell grant receipt is among the most commonly-used indicators of financial need in higher education. It is often used as a proxy for a low-income background and used to identify students who might benefit from supports, including S-STEM (Scholarships in STEM) scholarships. But is Pell receipt a good proxy for students experiencing severe financial challenges?

We examined relations among different indicators of financial distress in a sample of 16,961 STEM students from 89 community colleges across 16 states that fielded [The Hope Center Student Basic Needs Survey](#) between Spring 2023 and Spring 2025.

Do Pell Receipt and Basic Needs Insecurity Overlap?

We found that **40%** of STEM community college students reported receiving a **Pell grant** and **61%** experienced **basic needs insecurity (BNI)¹ related to food and/or housing**. Although there is overlap between the two populations, the correlation between the two is relatively low ($r = .14$). Not all Pell recipients are experiencing basic needs insecurity, and a large proportion of students experiencing basic needs insecurity reported that they did not receive a Pell grant. This suggests that using Pell as an indicator of need for financial and basic needs support likely misses a large number of students with high levels of need.



¹ Information about items used to measure Pell grant receipt and basic needs insecurity related to food and/or housing can be found in The Hope Center's survey report online [appendices](#).

Based on the pie graph above, you might consider students as falling into four categories.

- **Neither (26.4%):** Those who are not experiencing basic needs insecurity and did not receive a Pell grant (about $\frac{1}{4}$ of STEM community college students in our sample) can be assumed to be relatively financially stable.
- **Pell only (12.2%):** Those who did receive a Pell grant and are not experiencing basic needs insecurity likely represent students who had relatively low levels of need that such that receipt of the Pell grant stabilized their financial status and allowed them to afford their basic necessities (as the Pell grant is intended to do).
- **BNI only (33.7%):** Finally, those students experiencing basic needs insecurity who did not receive a Pell grant² are likely experiencing financial challenges and either did not complete the FAFSA (which is required to receive a Pell grant) or were not eligible for Pell grants. According to an [AACCC analysis of NCES data](#), only about 65% of community college students complete the FAFSA. AACCC estimates that 18% of community college students are eligible for Pell but did not complete the FAFSA and another 9% of students complete the FAFSA and are eligible for Pell but did not receive it. These circumstances likely account for many of the students in our sample who are experiencing basic needs insecurity and did not receive a Pell grant. In addition, there are likely students who are not eligible for Pell but would benefit from financial support (e.g., parents are not contributing to their tuition or bills, enrolled more than 12 terms, previously earned a bachelor's degree).
- **Both (27.7%):** Those who received the Pell grant and are still experiencing basic needs insecurity (27.7% of the sample) likely had relatively higher levels of need, such that the Pell grant was not sufficient to meet their basic needs.

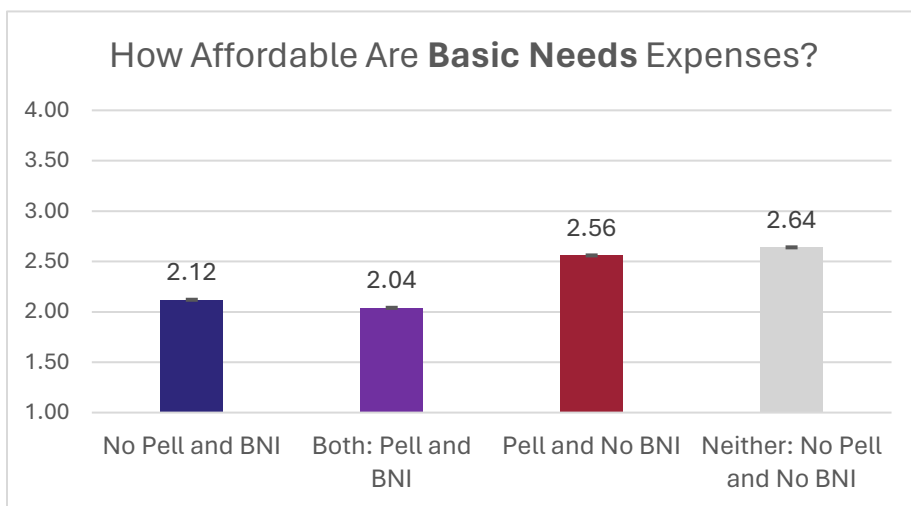
Are Pell Status and Basic Needs Related to Retention Challenges?

Given links between financial wellbeing and persistence, it is important for colleges to identify students who might be struggling—to offer supports for their retention. Are Pell receipt and/or basic needs insecurity good indicators of challenges to retention?

We examined relations among Pell receipt, basic needs insecurity related to food and/or housing (BNI), and several student-experience variables that may be related to colleges' retention efforts: self-report ratings of how affordable their academic and basic needs expenses are, students' sense of belonging in college, students' confidence that they can succeed in college, and students' re-enrollment intentions. Our statistical models included Pell receipt, BNI, and their interaction (to account for all four groups described above—neither, Pell only, BNI only, both), with students clustered by school. With 5 outcomes, we used a conservative critical p value of .01 for significance tests.

² Pell receipt is self-reported in the survey, so it is possible that some students could be misreporting their Pell status. However, as the rates of Pell receipt are actually slightly *higher* in our sample (40%) than the national average (34% of students at public two-year institutions, according to [NCES](#)). Therefore, we believe that under-reporting of Pell receipt is unlikely to be a factor for this group.

Unsurprisingly, basic needs insecurity predicted lower **perceived affordability** for both basic needs and academic expenses. Pell grant recipients also rated basic needs expenses as less affordable, but that was attenuated for academic expenses: Pell recipients did not rate academic expenses as less affordable than non-Pell recipients, possibly because **Pell is perceived to apply primarily to academic expenses**.

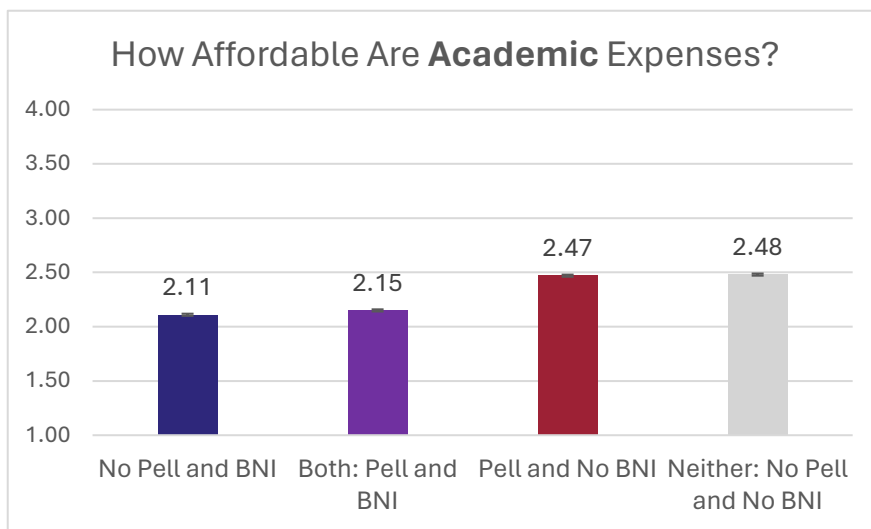


Affordability of basic needs expenses: We asked students how affordable various basic needs-related items are for them personally on a 1 = Not at all affordable to 4 = Extremely affordable scale (or students could mark the expense as not applicable). Results reflect the average of food, housing, clothing/hygiene products, healthcare, transportation (own vehicle), public transportation, internet/broadband, and child care.

- Pell recipients ($b = -.08, p < .001$) and students experiencing BNI ($b = -.51, p < .001$) both rated basic expenses as less affordable; the difference between students experiencing BNI and those who were not experiencing BNI was much bigger than the difference between Pell recipients and non-recipients.

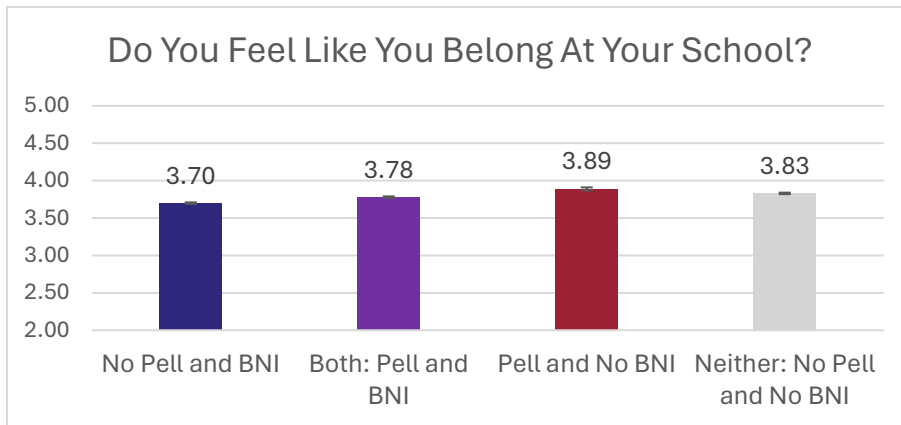
Affordability of academic expenses:

We asked students how affordable various basic needs-related items are for them personally on a 1 = Not at all affordable to 4 = Extremely affordable scale (or students could mark the expense as not applicable). Results reflect the average of tuition and fees, books and course materials, and computer or other technology needed for your courses/major.



- Students experiencing BNI rated academic expenses as less affordable ($b = -.38, p < .001$); the difference between Pell recipients and non-recipients was not significant ($p = .41$). A significant interaction ($b = .06, p = .007$) indicates that for students experiencing BNI, those receiving Pell grants rated academic expenses as slightly more affordable.

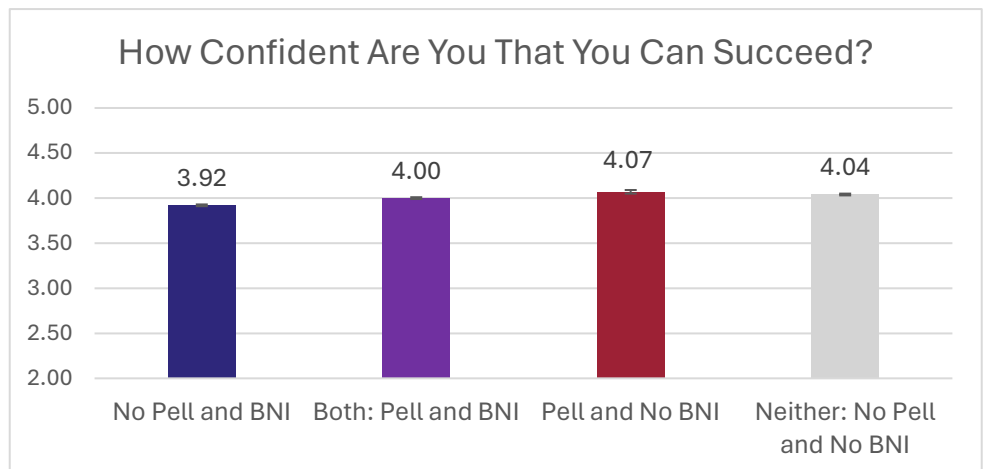
Overall, the effects of Pell status and basic needs insecurity on students' **sense of belonging and academic confidence** were very small. Regardless of financial difficulties, students were fairly certain that they belong in college and can succeed. This is evidence of students' resilience and dedication to their education. That said, the small differences are interesting. Whereas experiencing basic needs insecurity had negative association with belonging and confidence, receiving a Pell grant had a positive association with belonging. **Students may experience the grant as a positive sign that they belong in school.**



Belonging: We asked students the extent to which they agreed with the following statements about their college (1 = Strongly disagree to 5 = Strongly agree): “I feel like I belong,” “I fit in well,” “I feel like an outsider” (reverse coded), and “I feel comfortable.” Results reflect the average of these items.

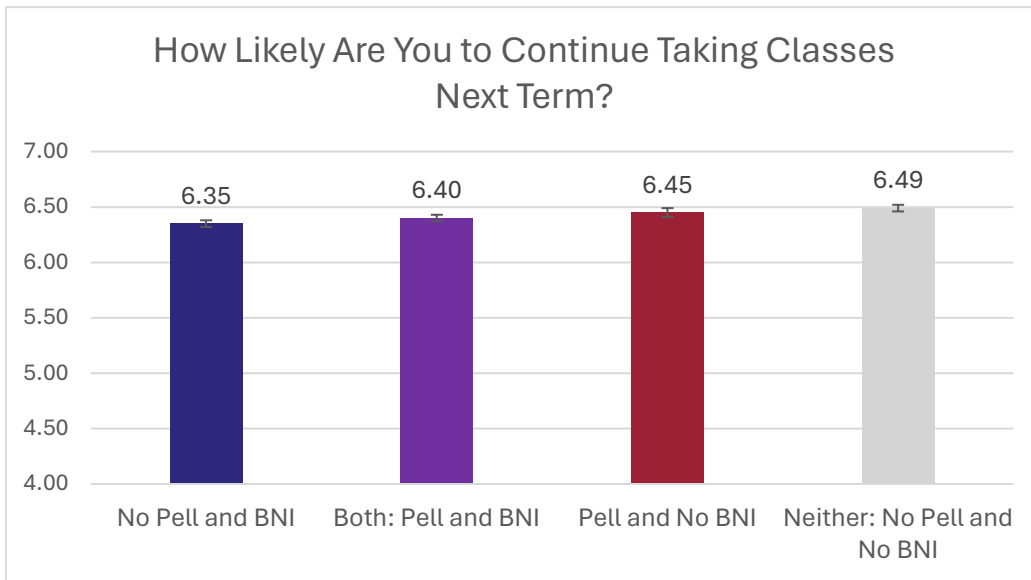
- Pell recipients had a stronger sense of belonging than students who did not receive a Pell grant ($b = .06, p = .003$). Students experiencing BNI had a lower sense of belonging than students who did not experience BNI ($b = -.13, p < .001$). These effects were small.

Academic confidence: We asked students the extent to which they agreed with the following statements about their college (1 = Strongly disagree to 5 = Strongly agree): “I feel that I can do well academically,” “I feel that I can make good progress toward my goal,” and “I feel that I can achieve my goals.” Results reflect the average of these items.



- Students experiencing BNI were less confident that they could succeed academically than students who did not experience BNI ($b = -.14, p < .001$). Receiving a Pell grant was not associated with academic confidence ($p = .147$).

Overall, students were very committed to continuing their education. There was a small association between basic needs insecurity and **intention to persist** such that students experiencing basic needs insecurity rated their chances of continuing to take classes the following term as somewhat lower than students that were not experiencing basic needs insecurity. This is further evidence of students' **resilience and dedication to their education, even in the face of extreme adversity.**



Persistence intentions: We asked students “How likely are you to continue taking classes next academic term?” (Students who said they were completing their credential in the current term were excluded from this question.) Students responded on a scale of 1 = Extremely unlikely to 7 = Extremely likely.

- Students experiencing BNI reported being less likely to continue taking classes in the next term ($b = -.14, p < .001$). Pell receipt was not associated with persistence intentions.

Discussion and Recommendations

Pell eligibility remains an important indicator of financial strain, yet the findings show that it captures only a slice of the need present among community college STEM students. A substantial portion of students who do not receive Pell grants nonetheless experience severe need, as indicated by basic needs insecurity (BNI) related to food and/or housing. BNI is also more strongly tied than Pell status to factors that matter for persistence: difficulty affording basic needs and academic expenses, lower belonging, reduced academic confidence, and weaker intentions to re-enroll in the next academic term. Taken together, these patterns illustrate that Pell status, while convenient, is an incomplete lens for identifying students who face significant barriers to continuing their education and would benefit from proactive supports.

These findings underscore the necessity of broader strategies for detecting student need. Colleges cannot rely solely on Pell data, especially given low FAFSA completion rates that leave many

students' financial circumstances invisible. The findings also highlight some of the benefits of receiving a Pell grant. Receiving a Pell grant was associated with a greater sense of belonging in college, and Pell grants did appear to have the intended effect of making academic expenses more affordable (specifically among students with the greatest need—those experiencing basic needs insecurity). However, although Pell grants can be used for any costs of attendance, including food and housing, students did not experience Pell as alleviating their basic needs expenses. This is perhaps unsurprising since the maximum Pell grant for students in public two-year colleges is less than average tuition (e.g., in [2022-23](#), max Pell was \$6,895, and average tuition and fees was \$9,610).

Recommendations: Colleges should assess basic needs insecurities among their students to assist with connecting students at risk of leaving school with the supports they need to persist. Direct assessment of basic needs insecurity would provide a more accurate picture of who is struggling and allow institutions to connect students with supports earlier and more effectively. Expanding criteria for scholarships and emergency aid beyond FAFSA-derived indicators would help ensure that aid reaches those who need it most. These efforts should be paired with strategies to remind, encourage, and support students to complete the FAFSA so they can fully access available state and federal aid.

Suggested Citation

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<https://hope.temple.edu/projects/national-science-foundation-s-stem-hub-project/indicators-need-pell-receipt-basic-needs-insecurity-among-community-college-stem-students>

About the INTuitN-STEM Hub



With support from the [National Science Foundation](#) (NSF), the INTuitN-STEM Hub (Investigating Non-Tuition Needs among community college STEM students) (a) conducts collaborative research with S-STEM programs to understand and address basic needs insecurity and student access to non-tuition supports and resources and (b) creates a broader community of institutions interested in building knowledge around supporting students' basic needs.

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