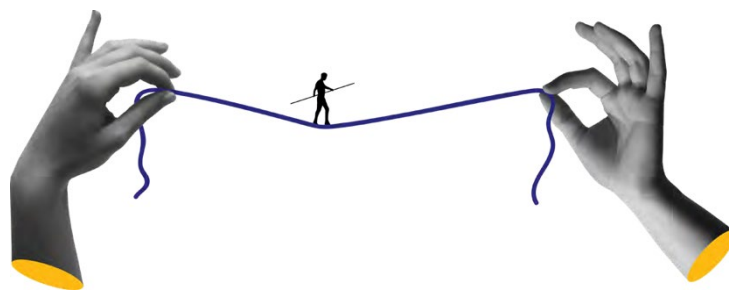


Being a STEM Student is a Delicate Balancing Act:

Basic Needs Insecurity Among Community College
STEM Undergraduates



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Being a STEM Student is a Delicate Balancing Act

"It's tough! We're pulled in a million directions... In STEM fields, it seems we're expected to put aside any potential personal development in favor of developing as a scientist or "rational" thinker. I think this expectation is one of the main sources of barriers to entry for STEM fields because if can afford to put aside any sort of development apart from being a scientist, you need to be pretty damn privileged."

– Student from Oregon



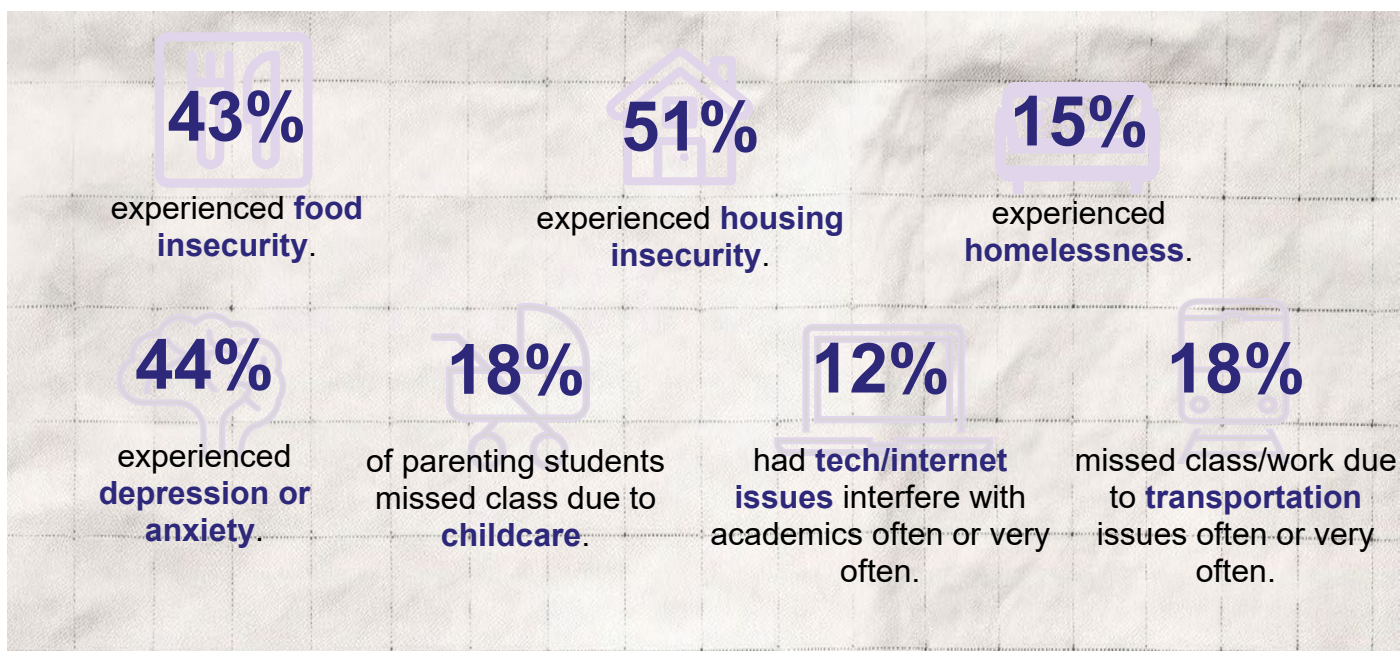
For many community college students pursuing STEM degrees, the path to graduation is often defined by the ongoing challenge of balancing academic demands with the need to meet basic needs. These students often face significant barriers, such as food insecurity, housing instability, and limited access to mental health support, transportation, technology, or child care, which can hinder their ability to succeed both inside and outside the classroom.

Despite community colleges offering a more affordable path to higher education, factors such as rising living costs and insufficient financial aid continue to place a heavy burden on these students. As they navigate the complexities of work, school, and basic well-being, the pursuit of a STEM degree becomes not only an academic challenge, but also a struggle for stability and essential support.

This report shares findings from 80 community colleges across 14 states that participated in the [INTUITN S-STEM Hub](#) or [Hope Impact Partnerships](#) (HIP) and fielded [The Hope Center Student Basic Needs Survey](#) between Spring 2023 and Fall 2024.

Among 17,045 survey participants pursuing STEM majors, we found that **62%** of STEM majors experience **basic needs insecurity related to food and/or housing**. When we consider other basic needs (**mental health, child care, transportation, and internet/technology access**) in addition to food and housing, **73%** of community college STEM students face at least one form of basic needs insecurity.

Although some might expect STEM students to be more affluent or have access to more resources than their peers, basic needs insecurity rates were in fact very similar between STEM and non-STEM students.



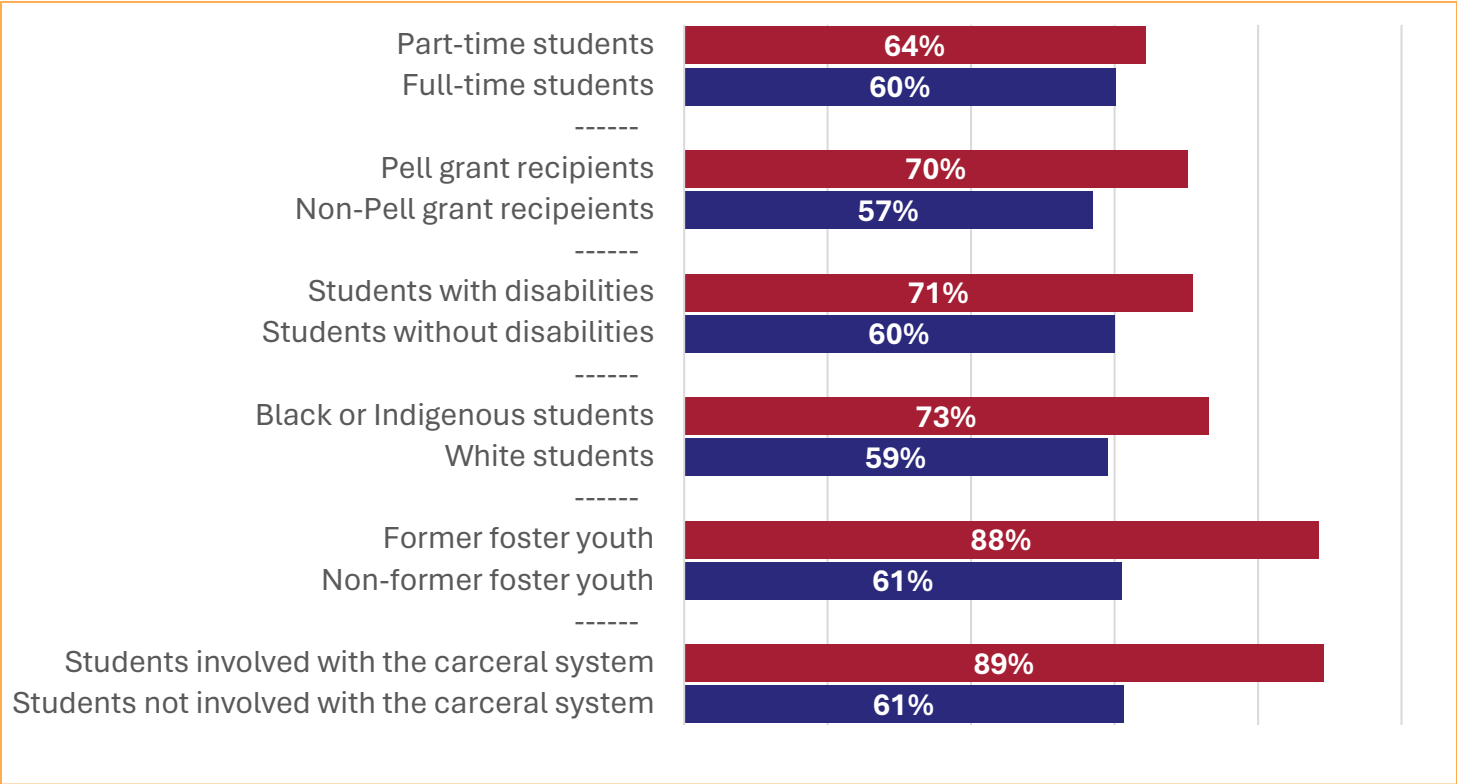
Consistent with [research](#) on basic needs generally, we find that basic needs insecurity among STEM majors is particularly prevalent among students with structurally marginalized identities and those who have the greatest trouble accessing and affording higher education. Figure 1 displays disparities in rates of basic needs insecurity related to food and/or housing (i.e., whether students experienced any of the following: food insecurity, housing insecurity, or homelessness) for students as a function of enrollment status (full-time/part-time), Pell recipient status, disability, race, foster care involvement, and carceral system involvement.

For example, **73% of Black and Indigenous STEM majors** who completed our survey report facing at least one form of basic needs insecurity related to food and/or housing, compared to 59% of White STEM majors—a **14 percentage point gap**. Notably, the racial gap is even larger than the gap between STEM majors who are traditionally identified as having need (i.e., **Pell grant recipients**) and their peers (**13 percentage point gap**).

"Students with disabilities are under-represented and under-supported... More needs to be done to accommodate students with disabilities to give them an equal opportunity to be educated including the need for disability specific grants and scholarships, greater awareness and understanding of needed course accommodations, and in general (I'm not sure what) just more needs to be done to help students with disabilities seeking to enter STEM." – Student from Oregon



Figure 1: Basic needs insecurity related to food and/or housing, by student group.



Use of Basic Needs Supports

We asked students about campus basic needs supports (emergency grants, campus food pantry, food scholarships, meal vouchers, or another source of free food, help obtaining public benefits, emergency housing, help finding affordable housing, transportation resources, a campus health clinic and/or counseling, and loaned or free Wi-Fi hotspot or laptop) as well as public benefits (related to food, direct financial assistance, healthcare, transportation, community or nonprofit support, veterans benefits, and housing or utilities). Unfortunately, **almost one in five** (19%) of STEM majors who experienced at least one form of basic needs insecurity had not utilized any of the **campus resources** or **public benefits** we asked about (see Figure 2).

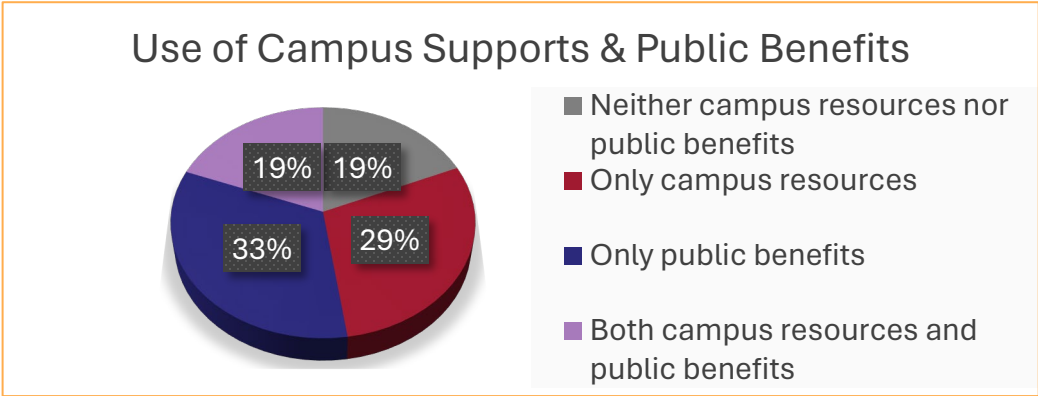
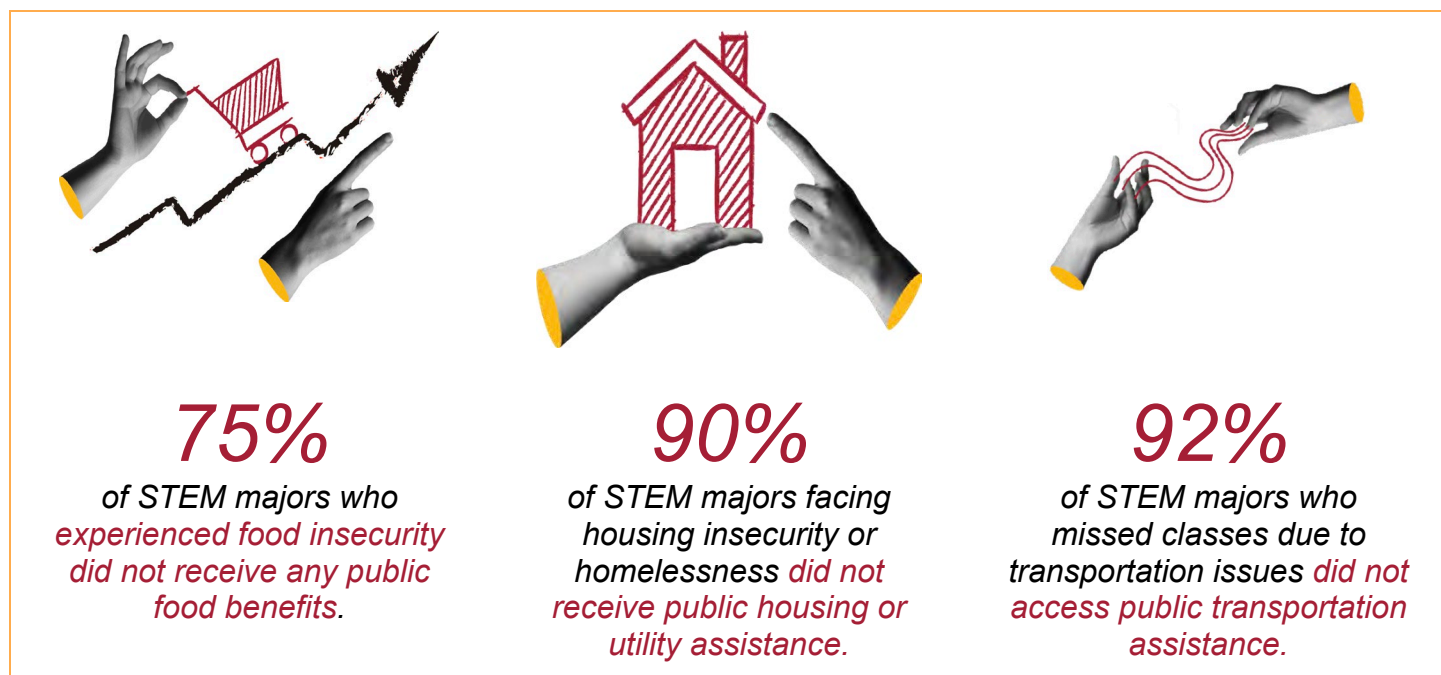


Figure 2: Use of basic needs supports among STEM students experiencing at least one form of basic needs insecurity.

Low rates of service uptake are even more stark when you consider specific examples:



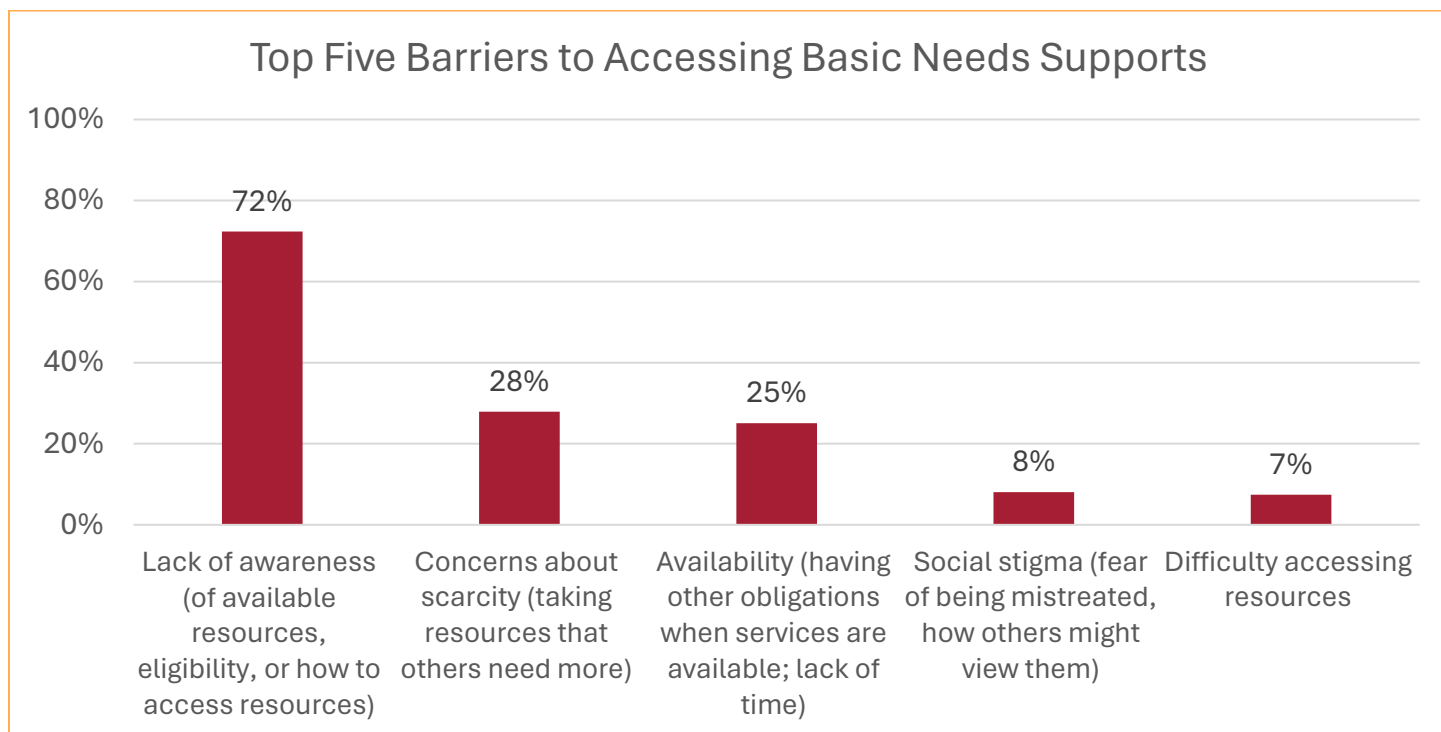
Barriers to Utilizing Campus Basic Needs Supports

We asked students, “Which factors caused you to receive fewer campus resources (like the ones above) than you would have otherwise? (Please check all that apply.)” Among those experiencing at least one form of basic needs insecurity, by far the most common barrier—cited by nearly 3 in 4 STEM students—was **awareness** (i.e., not knowing what resources were available, whether they were eligible, and how to access the resources; see Figure 3). Other common concerns were **scarcity** (not wanting to take resources that others needed more), and **availability** (lacking time to find resources or having obligations at the times when services are available). Although **social stigma** is not one of the top three barriers, it is still experienced by about 1 in 12 students.

Broader advertising and outreach would help students understand what services are available for them. Furthermore, widespread awareness of basic needs supports communicates that all students deserve support and are welcome to seek services, which might also increase resource uptake.



Figure 3: Barriers to utilizing campus basic needs supports among STEM students experiencing at least one form of basic needs insecurity.



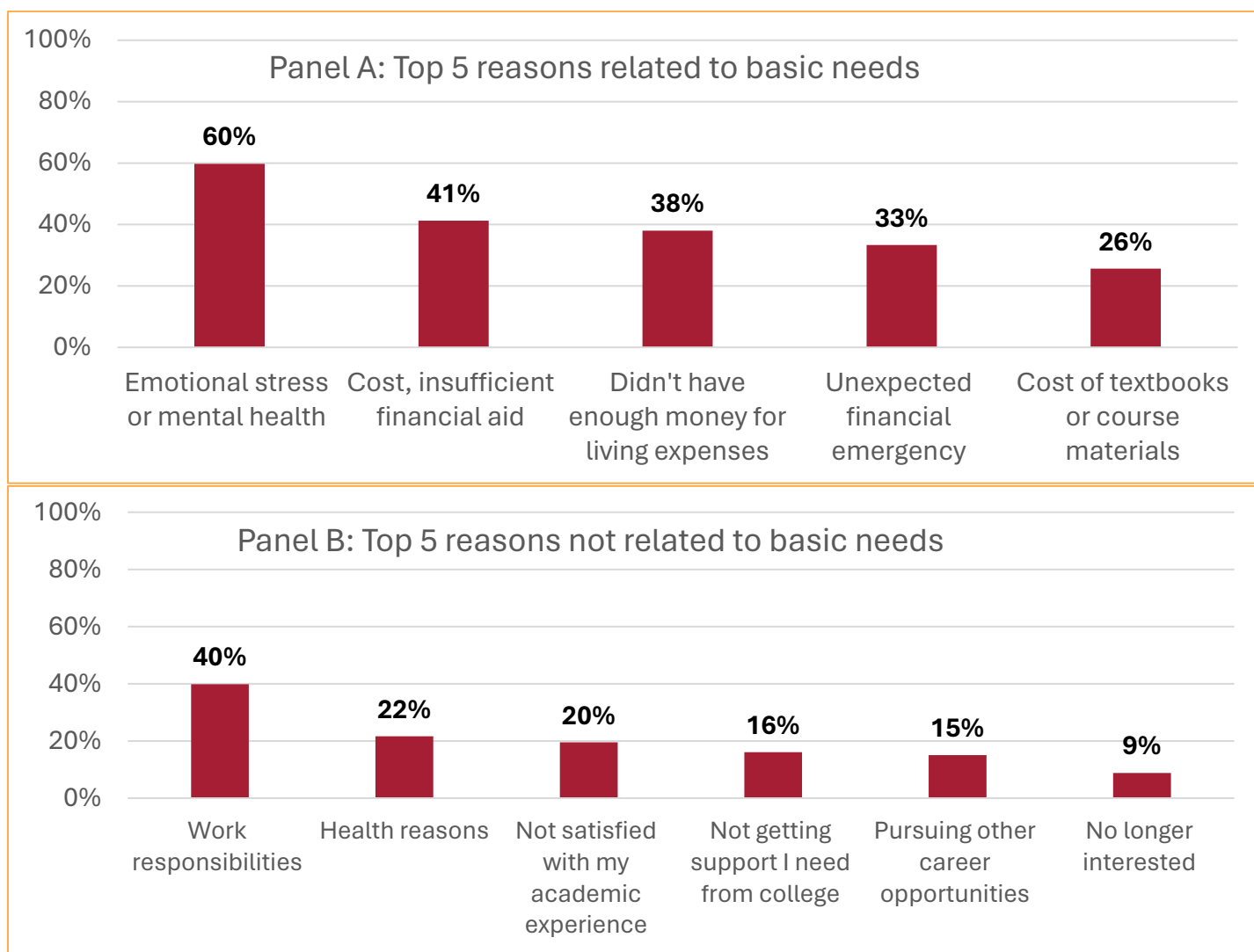
Implications for Retention



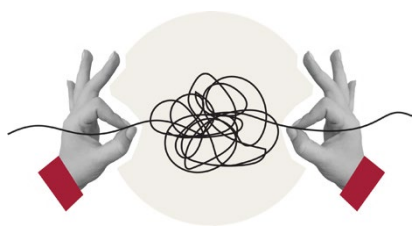
In addition to the human toll of basic needs insecurity, we know that unmet basic needs are also an obstacle to academic success and persistence. Among our sample of community college STEM students, 4,463 students (28%) had previously stopped out of college (temporarily quit school without obtaining a credential and subsequently re-enrolled). We asked these students what factors had contributed to their decision to stop out. **Three in five (60%)** reported that **emotional stress and mental health** were factors in their decision to stop out, and **over one-third (38%)** reported that **not having enough money for living expenses (food, rent, utilities, etc.)** was a factor in their decision to stop out (see Figure 4). When we consider all of the reasons related to basic needs, **80% of students reported that basic needs were factors in their decision to stop out.**



Figure 4: Reasons for stopping out of college.



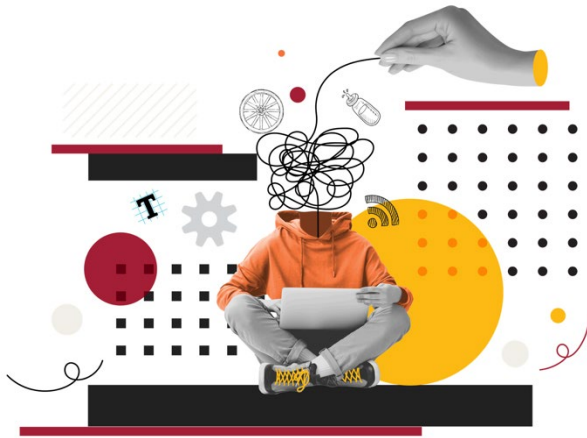
Institutional Recommendations



There is a clear need for increased awareness about basic needs resources to help STEM students to thrive and achieve their academic goals. The Hope Center's work with partners around the country suggests that these awareness campaigns are most likely to be successful if: (a) **students are invited to help design the outreach** and (b) they use a **multipronged approach** including tailored messaging for different student groups, including students who identify as Black, Indigenous, parenting, LGBTQIA+, or first-generation college students.

We also recommend **offering expanded hours** for basic needs supports and services, which would help more students to access them, given the balancing act of school, work, and other obligations.

Most importantly, the **intentionally cultivating a comprehensive support system for students** has been an invaluable resource for students at our partner schools



"College is extremely expensive, almost all students are in a lot of debt (even before we graduate), working and completing course is extremely difficult in STEM programs, we need more help (with mental health services, costs, and basic needs) then we get... we just need more help than is available." – Student from Arizona



What role can STEM faculty play?

Get to know folks in your basic needs office, student services, dean of students, etc. (Note that basic needs supports are housed in different units across campuses.) When a student needs support, a **"warm handoff"** is very effective. It works wonders when you can introduce them to someone who you know and trust to support your students.

One on one advising and **getting to know** the students on an individual level can show students that you care and encourage them to seek you out if they need support.

Openly and widely **share information about basic needs resources**, for example in your [syllabus](#) or in your [slides](#) on the first day of class.

Eliminate unnecessary financial barriers from your own classes. For example, consider open-educational resources as an alternative to pricey textbooks.

Suggested Citation

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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. Join our community by emailing us at hopestem@temple.edu.

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