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# **UCSC Undergraduate Food Insecurity: An Analysis of the 2016 University of California Undergraduate Experience Survey**

**UCSC Blum Center on Poverty,  
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# Executive Summary



Food insecurity refers to limited or uncertain access to nutritious, safe food necessary to lead a healthy, active lifestyle (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2018). Recent research is raising awareness of high rates of food insecurity among U.S. college students (e.g., Dubick, Matthews, & Cady, 2016; Goldrick-Rab, Richardson, & Hernandez, 2017; Nazmi et al., 2018). Although food insecurity varies across college campuses, rates are equivalent to or exceed the national household average of 12.7% (Coleman-Jensen et al., 2018). As many as 67% of U.S. community college (Goldrick-Rab et al., 2017) and 59% of university students (Patton-López, López-Cevallos, Cancel-Tirado, & Vazquez, 2014) are food insecure. Millions of students who are eligible to participate in the Supplemental Nutrition Assistance Program (SNAP) do not receive this essential support (U.S. Government Accountability Office, 2018).

High rates of food insecurity are documented across the University of California (UC) system. A study of approximately 9,000 UC undergraduate and graduate students found that 19% of respondents went hungry and that an additional 23% lacked reliable access to a high quality, varied, nutritious diet (Martinez, Maynard, & Ritchie, 2016). Another analysis found that 44% of UC undergraduate and 26% of graduate students struggled to access high quality, varied nutritious food and/or went hungry (UC Office of the President, 2017). Students who are racial/ethnic minorities, students who experienced food insecurity during childhood, low-income students, first-generation students, LGBTQ students, and students who are former foster care youth are among those who were disproportionately affected

In Spring 2016, the University of California Undergraduate Experience Survey (UCUES) was distributed system-wide to assess undergraduate student life (e.g., academic engagement, academic experience, community engagement, food and housing security). To obtain a deeper understanding of the prevalence of food insecurity at UCSC, we analyzed data specific to our campus. Consistent with the UC Office of the President, we defined “food insecurity” as an affirmative response (i.e., “sometimes true” or “often true”) to one or both of the UCUES items assessing food insecurity (i.e., “I was worried whether my food would run out before I got more” and “The food that I bought just didn’t last, and I didn’t have money to get more”).

Our analysis reveals high rates of food insecurity among UCSC undergraduates and highlights the need for enhanced campus services to ensure that *all* students’ basic needs are met.

# Key Findings

- **Forty-eight percent of UCSC undergraduate students experienced food insecurity during the 2015-16 academic year.**
- **Food insecure students were significantly more likely than food secure students to skip meals and/or reduce portions. They were also more likely worry about and/or run out of food before having money to buy more.**
- **Underrepresented racial and ethnic minority students experienced higher rates of food insecurity than White, non-Hispanic students and Asian American students.**
- **Women and non-cisgender students were significantly more likely to experience food insecurity than male students.**
- **First-generation college students were significantly more likely to experience food insecurity than non-first-generation students.**
- **Upper-division students experienced higher rates of food insecurity than lower-division students.**
- **The prevalence of food insecurity varied across divisions/fields of study, with upper-division students in the Arts, Humanities, and Social Sciences reporting higher rates of food insecurity than students in STEM majors.**
- **Food insecure students were significantly more likely than food secure students to report being stressed, depressed, or upset. They were also more likely to be homeless and/or housing insecure, and to report difficulty concentrating on academics.**
- **Food insecure students were significantly more likely than their food secure peers to apply for financial aid, increase their student loans and credit card debt, take a new job or work more hours at an existing job, increase their course load, and/or take a leave of absence.**
- **Compared to their food secure peers, food insecure students were significantly more likely to be concerned about paying for their education and their accumulated debt. They were also more likely to perceive the cost of attending UCSC as unmanageable.**
- **Food insecure students perceived the campus climate as less inclusive than food secure students.**

# Introduction

Food insecurity refers to limited or uncertain access to nutritious, safe food necessary to lead a healthy, active lifestyle (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2018). Food insecurity may be temporary or long term, with common indicators including running out of food and not having money to buy more, cutting portions and/or skipping meals, and going hungry and/or eating less than is needed. Food insecurity negatively affects health, well-being, and academic performance. Food insecurity is associated with lower grade school scores in math and reading (Alaimo, Olson, & Frongillo, 2001; Winicki & Jemison, 2003; Jyoti, Frongillo, & Jones, 2005), increased suicide ideation and suicide attempts among teenagers (Alaimo, Olson, & Frongillo, 2002), and poor nutrition and health among senior citizens (Lee & Frongillo, 2001).

A growing body of research documents high levels of food insecurity among U.S. college students (Chaparro, Zaghoul, Holck, & Dobbs, 2009; Freudenberg et al., 2011; Gaines, Robb, Knol, & Sickler, 2014; Goldrick-Rab et al., 2017; Hagedorn & Olfert, 2018; Martinez, Frongillo, Leung, & Ritchie, 2018; Martinez, Maynard, & Ritchie, 2016; Maroto, Snelling, & Linck, 2015; Patton-López et al., 2014; Silva et al., 2017). Campus rates of food insecurity are higher than the national rate of 12.7% for U.S. households (Coleman-Jensen et al., 2018). For example, 67% of respondents in a survey of more than 33,000 community college students from 70 institutions were food insecure – a rate of 5 times the national average (Goldrick-Rab et al., 2017). Similarly, another study found that 59% of students at an Oregon university were food insecure (Patton-López et al., 2014).

Within the UC system, a study of nearly 9,000 students found that 19% often went hungry (“very low food security”) and an additional 23% lacked reliable access to a good-quality, varied, and nutritious diet (“low food security”; Martinez et al., 2016). In another analysis of UC students, 44% of undergraduates and 26% of graduate students were food insecure (UC Office of the President, 2017). Students who are racial/ethnic minorities, students who experienced food insecurity during childhood, low-income students, first-generation students, LGBTQ students, and students who are former foster care youth were especially likely to experience food insecurity.

Food insecure students must routinely choose between buying food, paying rent, and purchasing school supplies, with many students shortchanging their studies by working long hours (Hughes, Serebryanikova, Donaldson, & Leveritt, 2011). Not surprisingly, food insecure undergraduates are more likely to have lower GPAs, to suspend their studies due to limited financial resources, and to have difficulty concentrating (Martinez et al., 2016; Martinez et al., 2018).

This report focuses on experiences of food insecurity among UCSC undergraduate students. Our findings reveal high rates of food insecurity at UCSC, highlighting the need for enhanced campus services to ensure that *all* students’ basic needs are met.

# Methodology

In spring 2016, UCSC’s Office of Institutional Research, Assessment, and Policy Studies distributed the University of California’s Undergraduate Experience Survey (UCUES) to assess a range of issues related to student well-being, including academic progress, health, food and housing security, financial concerns, barriers to academic success, strategies for meeting expenses, and perceptions of campus climate. Demographic information was also collected. All undergraduate students at UCSC were invited to participate.

## Participants

Approximately 5,565-5,575 UCSC undergraduate students responded to questions about food and housing security (35% response rate). Respondents were representative of the enrolled undergraduate student population with respect to major. Women were slightly overrepresented as is typical for student survey data. Respondent demographics are presented in Table 1.

**Table 1.** Select demographic information for UCSC respondents.

		Count	Percent
<i>Race/Ethnicity</i>	White, non-Hispanic	1996	36%
	Asian American	1440	26%
	Underrepresented Minorities		
	Hispanic/Latinx	1633	29%
	African American/Black	208	4%
	American Indian/Alaska Native	60	1%
	International	134	2%
	Unknown	97	2%
<i>Gender</i>	Women	3061	55%
	Men	2257	40%
	Non-cisgender	182	3%
	Unknown	75	1%
<i>First Generation College Student</i>	No	3087	55%
	Yes	2420	43%
	Unknown	68	1%
<i>Transfer Student</i>	Started as Freshman	4574	82%
	Junior Transfer	986	18%
	Unknown	15	< 1%
<i>Level</i>	Freshman	553	10%
	Sophomore	1212	22%
	Junior	1370	24%
	Senior	2431	43%
	Unknown	9	< 1%
<i>Academic Division of students' major</i>	Social Sciences	1219	23%
	Physical and Biological Sciences	894	16%
	School of Engineering	674	12%
	Humanities	424	8%
	Arts	290	5%
	Undeclared	1947	36%



## Defining Food Security

Consistent with the UC Office of the President, “food insecurity” was defined as an affirmative response (i.e., “sometimes true” or “often true”) to one or both of the food insecurity questions included in the 2016 University of California Student Experience Survey (UCUES):

- “I was worried whether my food would run out before I got more.”
- “The food that I bought just didn’t last, and I didn’t have money to get more.”

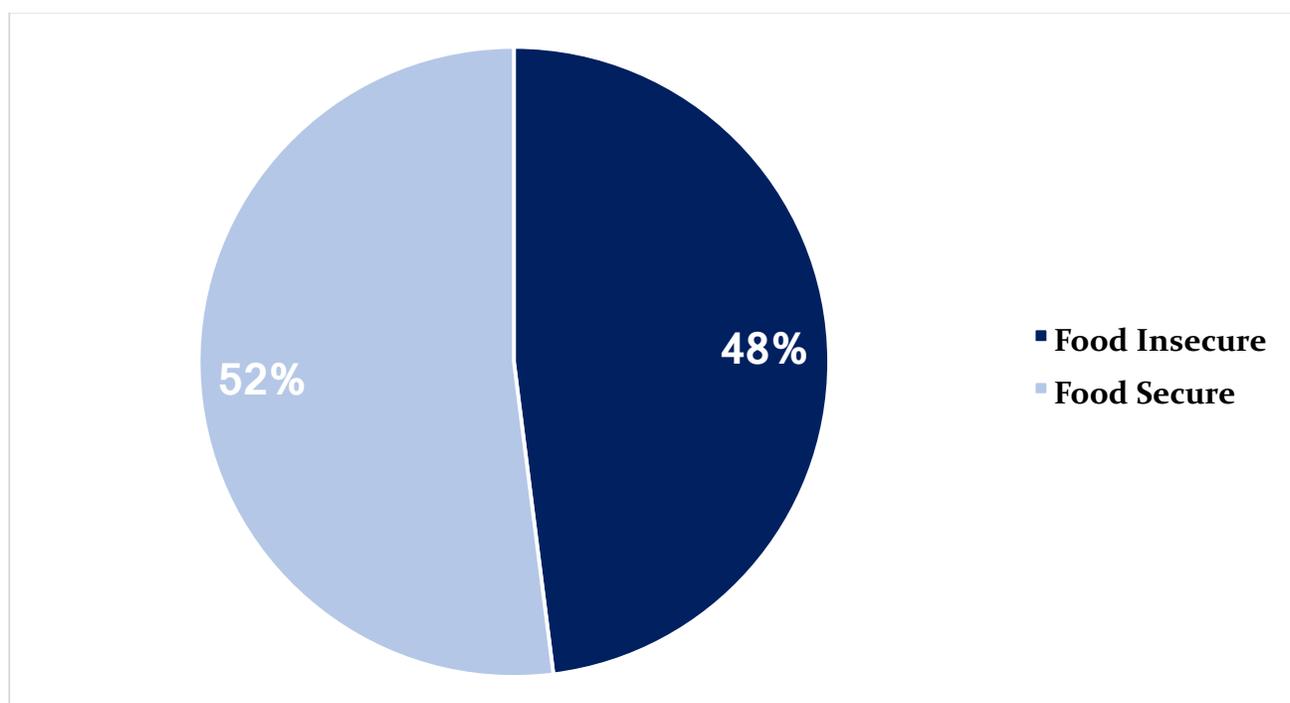
“Food secure” students endorsed the option “never true” in response to both of these questions.

# Results

## Prevalence Rates of Food Insecurity among UCSC Undergraduate Students

**Food insecurity is a pervasive problem at UCSC.** Overall, 48% of UCSC undergraduates were food insecure (see Figure 1). This prevalence rate is within the range of food insecurity reported at other universities (e.g., 21% at the University of Hawaii at Manoa, 39% at the City University of New York, and 59% at an Oregon university; Chaparro et al., 2009; Freudenberg, et al., 2011; Patton-López et al., 2014), and is over 3 times the national household rate of 12.7% (Coleman-Jensen et al., 2018).

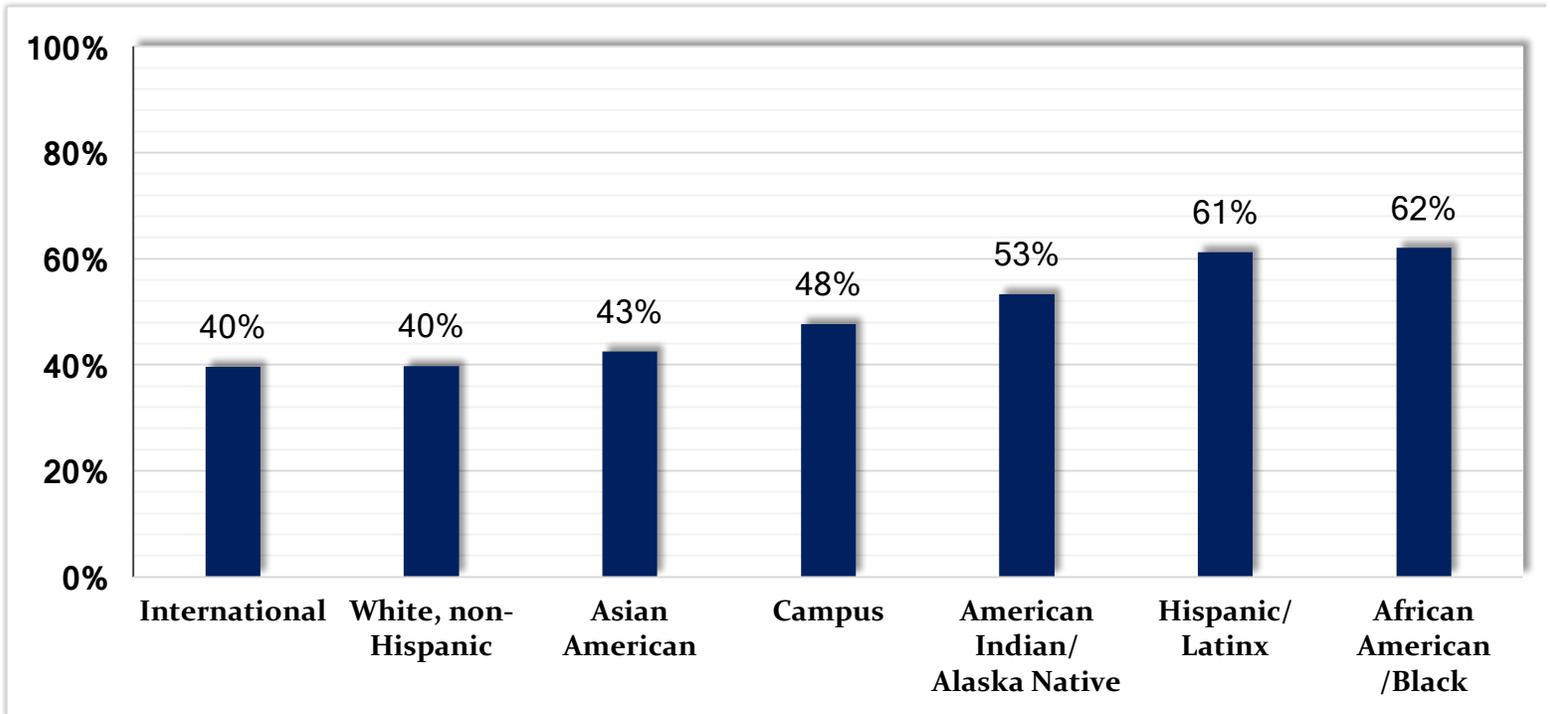
**Figure 1.** Percentage of food secure and food insecure among UCSC undergraduate students.



**Underrepresented racial and ethnic minority students experience higher rates of food insecurity than White, non-Hispanic students and Asian American students.** Our analysis of UCSC data revealed higher rates of food insecurity among underrepresented students of color than among White, non-Hispanic and Asian American students,  $p < .001$  (see Figure 2). Sixty-two percent of African American/Black, 61% of Latinx/Hispanic, 53% of American Indian/Alaska Native,<sup>1</sup> 43% of Asian American, and 40% of White, non-Hispanic students were food insecure. Forty percent of international students experienced food insecurity. These findings are consistent with previous research documenting high rates of food insecurity among college students of color (Martinez et al., 2016).

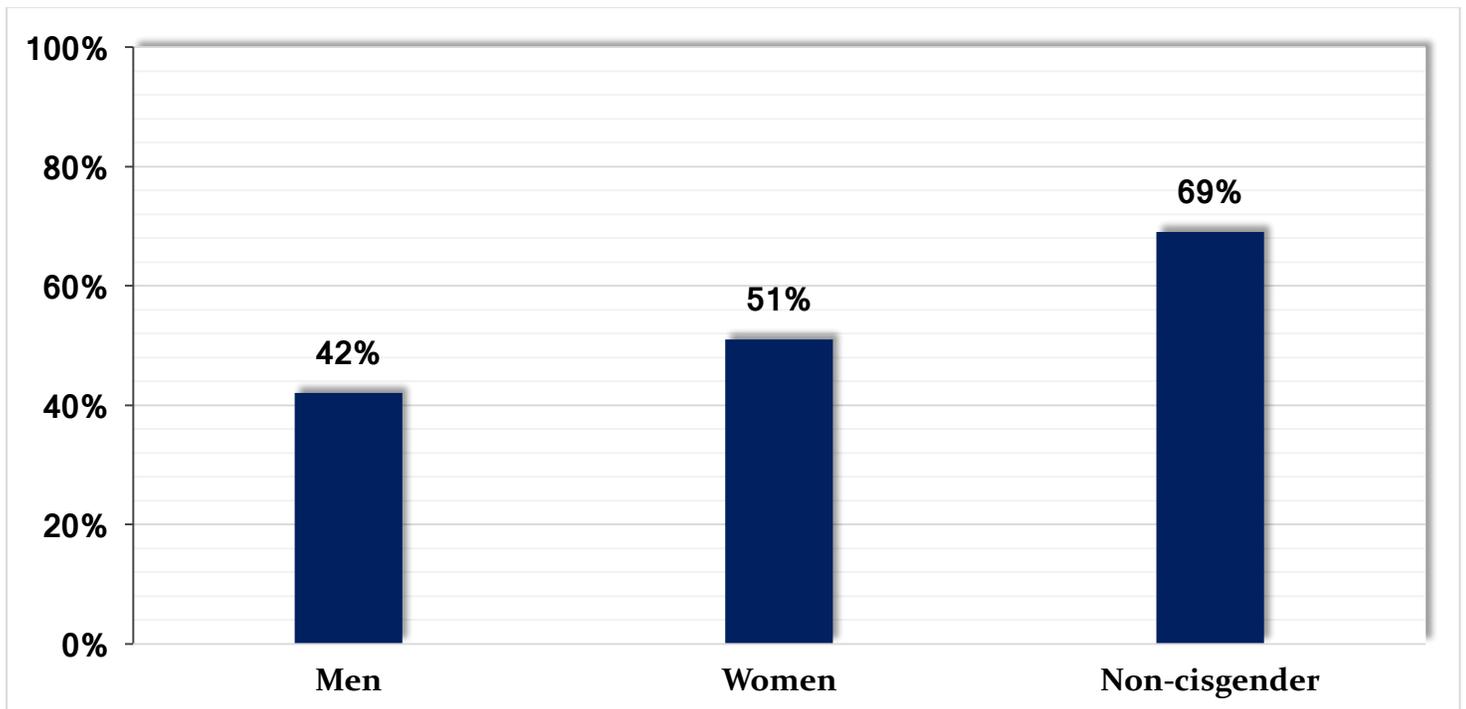
<sup>1</sup> The rates of food insecurity among American Indian/Alaska Native students were not significantly different from other URM or Asian American students but they were significantly more at risk than White, non-Hispanic students.

**Figure 2.** Experiences of food insecurity within each racial/ethnic group.



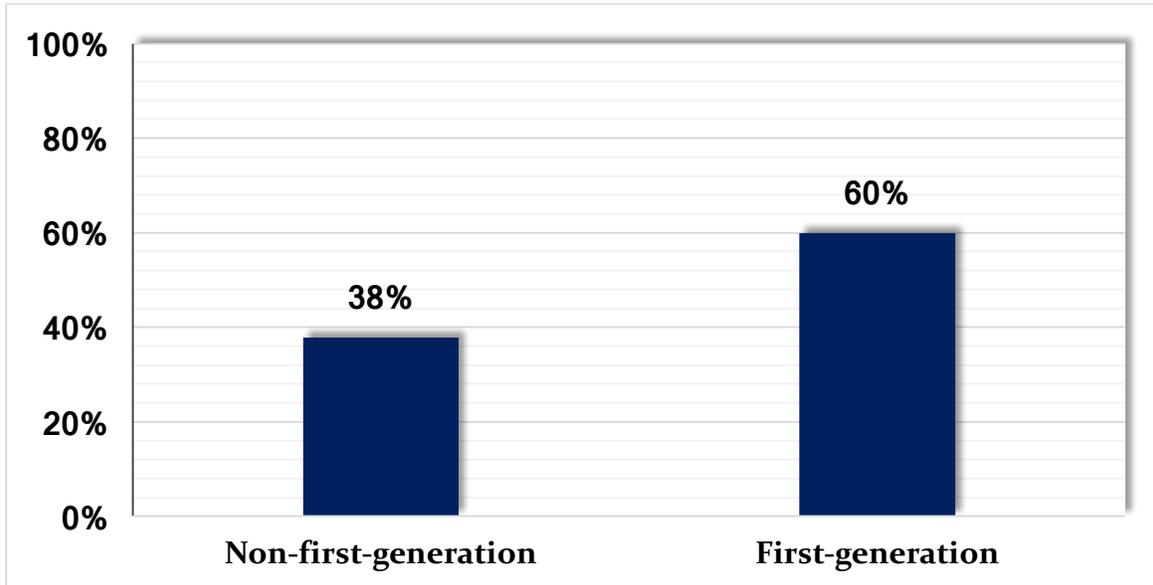
**Women and non-cisgender students are at heightened risk of food insecurity.** Women and non-cisgender students experienced food insecurity at higher rates than men,  $p < .001$ . Fifty-one percent of women and 69% of non-cisgender students were food insecure compared to 42% of men (see Figure 3).

**Figure 3.** UCSC students' experiences of food insecurity by gender identity.



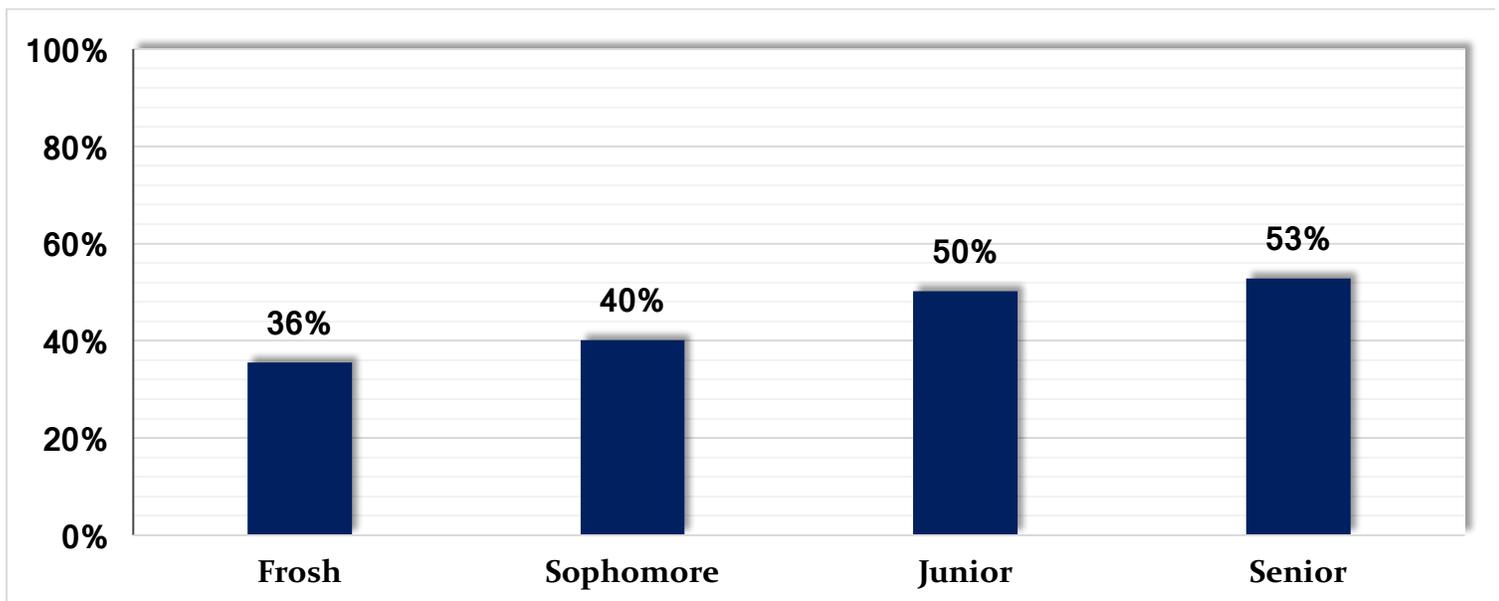
**First generation college students were more likely to experience food insecurity than students with family histories of college attendance.** First generation college students were significantly more likely to experience food insecurity than continuing generation students,  $p < .001$ . Sixty percent of first-generation college students were food insecure compared to 38% of non-first-generation students (see Figure 4).

*Figure 4.* Food insecurity and generational status.



**Upper-division students experienced higher rates of food insecurity than lower-division students.** Seniors (53%) and juniors (50%) were significantly more likely to be food insecure than sophomores (40%) and frosh (36%),  $p < .001$ . See Figure 5. Greater likelihood of living off-campus and lower enrollment in a UCSC meal plan may help to explain this finding.

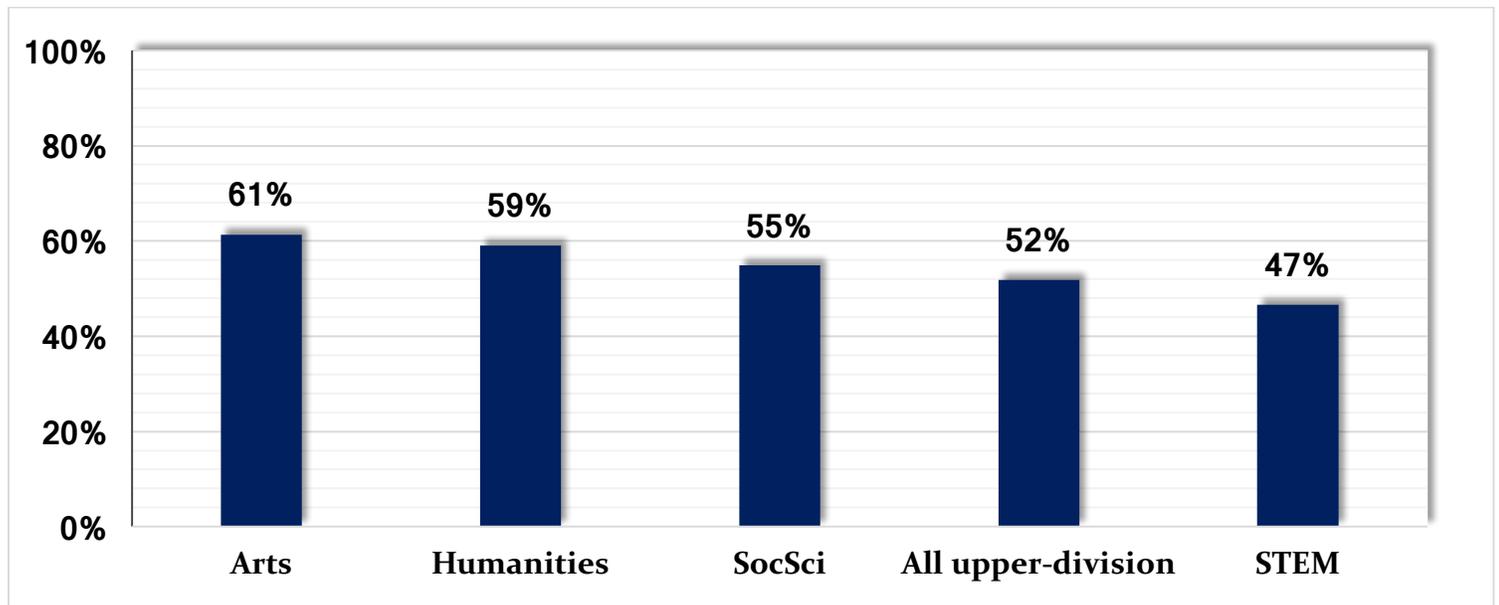
*Figure 5.* Prevalence of food insecurity by year of study.



We also examined rates of food insecurity among transfer and upper-division students who started as frosh, finding similarly high rates for both groups. Fifty-four percent of transfer students compared to 51% of upper-division students who started as frosh were food insecure.

**Upper-division Arts, Humanities, and Social Science students experience higher rates of food insecurity than STEM students.** In addition to significant differences in rates of food insecurity among upper- and lower-division students, there are also divisional differences. Upper-division Arts (61%), Humanities (59%), and Social Science (55%) students reported higher rates of food insecurity than STEM (47%) students,  $p < .001$ . Refer to Figure 6.

**Figure 6.** Prevalence of food insecurity by academic division/area of study.



### Food Insecure Students Eat Less and Worry More

To learn more about experiences of food insecurity, we analyzed responses to the following questions:

- How frequently have you skipped or cut the size of meals?
- How frequently have you worried about your debt and financial circumstances?

Not surprisingly, food insecure students were significantly more likely than food secure students to skip meals and/or reduce portions,  $p < .001$ . While skipping/cutting meals was rare among food secure students (4%), 33% of food insecure students occasionally skipped/cut meals and 45% often did so. These groups also differed in how frequently they worried about debt and/or their financial circumstances ( $p < .001$ ), with 12% of food insecure students worrying about these issues occasionally and 84% worrying about them often (see Table 2).

**Table 2.** Percentage of UCSC students who skip meals and worry about finances.

		Skipped or cut the size of meals	Worried about debt and/or financial circumstances
<b>Never</b>	<i>Food Insecure</i>	6%	1%
	<i>Food Secure</i>	57%	14%
<b>Rarely</b>	<i>Food Insecure</i>	16%	3%
	<i>Food Secure</i>	27%	16%
<b>Occasionally</b>	<i>Food Insecure</i>	33%	12%
	<i>Food Secure</i>	12%	22%
<b>Somewhat to Very Often</b>	<i>Food Insecure</i>	45%	84%
	<i>Food Secure</i>	4%	48%

We also further examined responses to the two items that were used to assess food insecurity:

- I was worried whether my food would run out before I got money to buy more.
- The food that I bought just didn't last, and I didn't have money to get more.

Food insecure students were significantly more likely than their food secure peers to worry about and/or run out of food before having money to buy more,  $p < .001$ . Ninety-five percent of food insecure students worried about running out of food and being unable to buy more and 77% reported having had this experience. Food secure students did not have these concerns. Please refer to Table 3.

**Table 3.** Concerns about and experiences of running out of food.

		I was worried whether my food would run out before I got money to buy more	The food that I bought just didn't last, and I didn't have money to get more
<b>Never True</b>	<i>Food Insecure</i>	5%	23%
	<i>Food Secure</i>	100%	100%
<b>Sometimes True</b>	<i>Food Insecure</i>	63%	54%
	<i>Food Secure</i>	0%	0%
<b>Often True</b>	<i>Food Insecure</i>	32%	23%
	<i>Food Secure</i>	0%	0%

### Food Insecure Undermines Well-Being and Academic Performance

The negative consequences of food insecurity on well-being and academic performance are well documented (Freudenberg et al., 2011; Martinez et al., 2016, 2018; Maroto et al., 2015). Food insecure college students are significantly more likely than their food secure peers to report feelings of loneliness, hopelessness, sadness, anger, anxiety, and depression. These emotions can undermine mental health and academic success (Martinez et al., 2018).

To learn more about UCSC students' obstacles, we analyzed self-reported barriers to academic success. Food insecure students were significantly more likely than their food secure peers to experience each of the obstacles reported in Table 4,  $p < .001$ .

**Table 4.** Food insecure UCSC students self-reported obstacles to academic success.

	Not at All	Occasionally	Frequently
<b>Family Responsibilities</b>	34%	36%	30%
<b>Feeling stressed, depressed, or upset</b>	17%	31%	52%
<b>Going hungry, not having enough food</b>	64%	25%	11%
<b>Inability to concentrate on my work</b>	29%	38%	33%
<b>Inconsistent access to housing, or homelessness</b>	82%	12%	6%

Although we could not examine how these experiences were related to GPA, food insecurity's negative effects are well documented. Eighty-eight percent of food insecure participants in a study by Silva and her colleagues (2017) reported negative effects on performance. Martinez and her colleagues (2018) found that a higher proportion of food secure students (51%) had an A average compared to those who were food insecure (30%) but that the opposite was true for having a C average (19% of food insecure students vs. 9% of food secure students).

### Food Insecure Students Struggle to Make Ends Meet

In addition to facing academic obstacles, food insecure students also struggle to meet basic expenses. To gauge this burden, we analyzed data assessing students' financial strategies for making ends meet. Food insecure students were significantly more likely than their food secure peers to apply for financial aid and grants, increase their student loans and credit card debt, take a new job or work more hours at an existing job, increase their course load, and/or take a leave of absence,  $p < .001$  (see Table 5).

**Table 5.** Strategies used by food insecure UCSC students to meet expenses.

	Yes	No
<b>Applied for financial aid, scholarships, or grants</b>	91%	9%
<b>Increased my annual student loan amount</b>	51%	49%
<b>Increased the debt I carry on my credit card</b>	39%	61%
<b>Took a job for the first time at college</b>	45%	55%
<b>Took a leave of absence or quarter off</b>	10%	90%
<b>Took more courses per term</b>	48%	52%
<b>Worked before but increased the number of hours</b>	46%	54%

These strategies are prevalent among food insecure students. For example, employment, notably working more than 20 hours per week, is common among food insecure college students (Freudenberg et al., 2011; Hughes et al., 2011). Unfortunately, these strategies may come at a cost. Employment during college can be beneficial but working more than 20 hours a week is associated with reduced time on assignments and studying (Dundes & Marx, 2006).

## Food Insecure Students are Concerned about Accruing Debt and Paying for their Education

Food insecurity and financial hardship are highly correlated (Freudenberg et al., 2011; Martinez et al., 2016; Patton-López et al., 2014), and students who struggle to meet basic needs are likely to worry about paying for their education. We examined the following questions related to paying for college:

- How concerned have you been about paying for your undergraduate education up to now?
- How concerned are you about paying for your undergraduate education next year?
- How concerned are you about your accumulated educational debt?

Compared to their food secure peers, food insecure students were significantly more likely to report being concerned about paying for their education and their accumulated debt,  $p < .001$ . Table 6 shows a percentage of students who were somewhat concerned, concerned, or very concerned about each of the three aspects of paying for college

**Table 6.** Percentage of food secure and insecure students concerned about educational expenses.

	Concerned about paying for their education up to now	Concerned about paying for their education next year	Concerned about their accumulated educational debt
<i>Food Insecure</i>	72%	77%	77%
<i>Food Secure</i>	47%	52%	53%

To further examine financial burden, we also analyzed responses to the following question:

- Do you agree or disagree with the following statement: Given the grants and scholarships, if any, that you receive, the total cost of attending this university is manageable.

Food insecure students were significantly more likely than their food secure counterparts to perceive the cost of attending UCSC as unmanageable,  $p < .001$ . Sixty-four percent of food insecure students perceived the cost of attending UCSC as unmanageable (see Table 7). Overwhelmed by college costs, food insecure students may be forced to suspend their studies (Martinez et al., 2016).

**Table 7.** Food insecure students' perceptions of affordability of attending UCSC.

	Strongly Disagree	Disagree to Somewhat Disagree	Somewhat Agree to Agree	Strongly Agree
<b>Given the grants and scholarships, if any, that you receive, the total cost of attending this university is manageable</b>	21%	43%	33%	3%

## Campus Climate and Inclusion

Economic hardship and food insecurity can be a marginalizing experience and as a consequence, food insecure students may feel less welcome and supported than their economically secure peers. To learn about students’ perceptions of the campus climate, we analyzed items related to diversity and inclusion. Overall, food insecure students were significantly less likely than their food secure peers to regard the campus climate as inclusive,  $p < .001$ . Twenty-six percent of food insecure students reported feeling uncomfortable with the climate for diversity/inclusion in their major, classes, and on campus (see Table 8).

**Table 8.** Food insecure students’ perceptions of campus climate regarding diversity and inclusion.

	<b>Strongly Disagree</b>	<b>Disagree to Somewhat Disagree</b>	<b>Somewhat Agree to Agree</b>	<b>Strongly Agree</b>
<b>Overall, I feel comfortable with the campus climate for diversity and inclusion in my major</b>	5%	20%	60%	15%
<b>Overall, I feel comfortable with the climate for diversity and inclusion in my classes.</b>	4%	20%	63%	13%
<b>Overall, I feel comfortable with the climate for inclusiveness at this university</b>	5%	21%	62%	12%

# Recommendations

Our findings document the pervasiveness of food insecurity among UCSC undergraduate students, underscoring the importance of adopting a basic needs master plan that ensures that *all* students are food secure. Students of color, first-generation students, women, and non-cisgender students are among the groups that experience heightened risk. Upper-division students, particularly students in the Arts, Humanities, and Social Sciences, also experience higher rates of food insecurity. Food insecure students at UCSC struggle to make ends meet and worry about running out of food. Limited access to food compromises health and well-being, with food insecure students reporting distress, difficulty concentrating, and hunger as a barrier to their academic performance.

Although our analysis is relatively limited in scope, it is an important step toward understanding undergraduate food insecurity at UCSC. In this analysis, we focused exclusively on food insecurity but food insecure students may experience multiple hardships (e.g., housing insecurity), underscoring the need for more holistic investigations of basic needs. Focus groups and interview studies are needed to understand the lived experiences of food insecure undergraduate students, inform services and programs, and promote student success. Several basic needs studies are currently being conducted by UCSC's Blum Center on Poverty, Social Enterprise, and Participatory Governance.

The UC system is a leader in the movement to reduce student food insecurity, with UC President Janet Napolitano and UC's ten chancellors launching the Global Food Initiative in July 2014 (UC Office of the President, n.d., 2017). On our campus, UCSC's Food Access and Basic Needs Working Group is charged with reducing food and housing insecurity (to learn more about UCSC programs and initiatives, please visit <https://basicneeds.ucsc.edu/about/uc-gfi.html>). Actions are also underway at the state level. For example, the California state legislature passed AB-1747 to support campus food pantries and encourage acceptance of CalFresh at campus restaurants and AB-214 to clarify educational policies and enhance student access to the CalFresh program.

Significant efforts are underway but greater investments are needed to make the UC system and UCSC "hunger free." Enhanced resources and services are needed to reduce undergraduate student food insecurity and ensure that *all* students basic needs are met. We recommend the following actions:

- ***Increase Undergraduate Student Access to CalFresh benefits.*** CalFresh benefits provides needed assistance to students struggling to afford a nutritious, varied diet. CalFresh Ambassadors assist students with their applications and are an important source of peer support. We recommend continuing this program. Strong campus partnerships with Second Harvest Food Bank and the County of Santa Cruz Human Services Department also help ensure CalFresh access.
- ***Enhance Services for Students at Heightened Risk.*** In this analysis, we identified a number of groups at heightened risk of experiencing food insecurity, including students of color, first-generation students, women, non-cisgender students, and upper-division students, particularly students in the Arts, Humanities, and Social Sciences. Enhanced, targeted services are needed to ensure that these groups (and *all* groups) are food secure. Moreover, as a Hispanic Serving

Institution, with over 25% of students identifying as Latinx, UCSC is responsible for ensuring that the basic needs of Latinx students are met.

- ***Increase Access to High Quality, Affordable Food on Campus.*** Students must be able to afford and access high quality, nutritious food when they are on campus.
- ***Recognize the Needs of International Students.*** International students experience high rates of food insecurity and may require specialized services and supports that differ from domestic students.
- ***Raise Campus Awareness of Food Insecurity.*** Food insecurity is common but remains a largely “invisible” problem, and the stigma associated with economic hardship may prevent students from reaching out for assistance. Raising awareness of the prevalence of food insecurity and the structural causes of hardship can help reduce stigma and encourage open communication and greater institutional commitment about basic needs.
- ***Set Campus Benchmarks and Goals for Reducing Food Insecurity among Undergraduates.*** Annual goals for becoming a “hunger free” campus should be set, including the reduction of undergraduate student food insecurity. Through our Food Access and Basic Needs Working Group we can conduct an annual assessment of progress toward these goals.
- ***Ensure Existing Interventions and Food Security Support Strategies are Fully Funded and Supported.*** To ensure student success, ongoing campus support and stable funding processes are needed to support existing food production, distribution (e.g., Slug Support Pantry @ the Cowell Coffee Shop, Pop-Up Student Markets, and the Family Student Housing Bi-Monthly Support Program), and meal support programs (e.g., Swipes For Slugs, Cowell Coffee Shop: For the Peoples, and West Campus Food Trailer Meal Program).
- ***Establish the Food Access and Basic Needs Working Group as a Standing Campus Committee.*** Ensure that basic needs initiatives and interventions continue to be stewarded by the multi-stakeholder model embodied by the Food Access and Basic Needs Working Group. Representation of undergraduate, graduate, staff, and faculty, as well as community and county agency partners, reflects an integrated approach to serving our students with accountability, transparency, and collaboration as core operating principles.
- ***Adopt a Master Plan for Ensuring that the Basic Needs of All UCSC Students are Met.*** We believe that consistent access to a high quality, nutritious, varied diet is a fundamental right and that food and housing security are essential to student success. Adoption of a system-wide and UCSC specific basic needs master plan can help us achieve this goal.

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