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Food Insecurity Among UCSC Doctoral Students: An Analysis of the 2017 Graduate Survey

UCSC Blum Center on Poverty,
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UCSC Institutional Research,
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UCSC Food Access and Basic
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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). 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 achievement.



Food insecurity is increasingly recognized as a significant problem on college campuses across the United States (Brotton & Goldrick-Rab, 2018; Dewey, 2018; Dubick, Matthews, & Cady, 2016; Goldrick-Rab, 2018; National Conference of State Legislatures, 2018; Wood & Harris, 2018). In a study of 3,765 students at 8 community colleges and 26 four-year institutions, 48% of respondents qualified as food insecure in the previous 30 days. A comprehensive analysis of nearly 9,000 University of California (UC) students found that 44% of undergraduate and 26% of graduate students struggled to access good-quality, varied nutritious food and/or went hungry (UC Office of the President, 2017).



Most research examining campus food insecurity focuses on undergraduate students and as a result, less is known about graduate students' experiences of food insecurity. To address this gap, we analyzed doctoral students' responses to food security items from the 2017 UCSC Graduate Student Survey. Our analysis reveals high rates of food insecurity among doctoral students and highlights the need for enhanced campus services to ensure that all students' basic needs are met.

Key Findings

Thirty-one percent of UCSC doctoral students experienced food insecurity.

To save money, 34% of food insecure doctoral students skipped meals somewhat or very often, and 93% worried about debt and/or financial circumstances somewhat or very often.

Twenty-three percent of food insecure doctoral students frequently worried about running out of food before having money to purchase more and 13% ran out of food and could not afford to buy more.

Thirteen percent of food insecure doctoral students reported being hungry as a frequent barrier to their academic success and 11% identified housing insecurity and/or homelessness as a frequent obstacle.

Nineteen percent of food insecure students described their health as poor or very poor.

Domestic students from underrepresented racial and ethnic minority groups, first-generation students, international students, students in the Arts, Humanities, and Social Sciences, and students in their first four years of graduate study were at heightened risk of experiencing food insecurity.

Thirty-nine percent of first-generation-college students were food insecure compared to 28% of non-first-generation students.

Doctoral students in the Arts, Humanities, and Social Sciences experienced higher rates of food insecurity than students in the Physical and Biological Sciences, and in the School of Engineering.

Food Insecurity is a Widespread Concern at U.S. Colleges and Universities

In 2017, 40 million people or 1 in 8 Americans experienced food insecurity (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2018). Food insecurity refers to having limited or uncertain access to nutritious, safe foods necessary for a healthy lifestyle. 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 on U.S. college campuses is increasingly recognized as a public health priority (Broton & Goldrick-Rab, 2018; Dewey, 2018; Dubick et al., 2016; Goldrick-Rab, 2018; National Conference of State Legislatures, 2018; Nazmi et al., 2018; Wood & Harris, 2018). On campuses that have assessed food insecurity, prevalence rates consistently surpass those of the general population (Kolowich, 2015). Nazmi and his colleagues (2018) estimate that food insecurity among U.S. college students is three times higher than the national household average, affecting roughly half of all students. In a study of 3,765 students at 8 community colleges and 26 four-year institutions, 48% of respondents were food insecure during the previous 30 days. Twenty-one percent of students at the University of Hawaii-Manoa and 34% of first-year students at Arizona State University were food insecure (Kolowich, 2015). An alarming 59% of students attending Western Oregon University experienced food insecurity (Patton-López, López-Cevallos, Cancel-Tirado, & Vazquez, 2014). Unfortunately, many eligible students do not receive food assistance. A U.S. Government Accountability Office (GAO, 2018) found that almost 2 million students who were potentially eligible for the Supplemental Nutrition Assistance Program (SNAP) did not receive this assistance.

Food insecurity is a significant concern at California colleges and universities. A study of approximately 9,000 University of California (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 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).

Pursuing a graduate degree is financially challenging, yet food insecurity among doctoral students has received limited attention. Most research in this area focuses on undergraduate rather than graduate students. To address this gap, we analyzed doctoral students' responses to food security items from the 2017 UCSC Graduate Student Survey.

Methodology

In spring and early summer 2017, UCSC’s Office of Institutional Research, Assessment, and Policy Studies conducted the bi-annual Graduate Student Survey to assess issues related to graduate student well-being including campus and department climate, funding, health, academic progress, and basic needs. Demographic information was also collected. All graduate students enrolled in PhD programs were invited to participate.

Sample

A total of 760 doctoral students participated in the 2017 UCSC Graduate Student Survey (60% response rate). Questions about food and housing security were located in the second part of the survey and were completed by about 600-607 students (49% response rate). Overall, student respondents were representative of the enrolled doctoral student population with respect to race/ethnicity and program of study; women were somewhat overrepresented which is typical in surveys. Respondent demographics are provided in Table 1.

Table 1. Respondent demographics

		<i>n</i>	Percentage
<i>Race/Ethnicity or International Status</i>	White, non-Hispanic	308	51%
	International	106	17%
	Asian American	67	11%
	Underrepresented minority students		
	Hispanic/Latinx	62	10%
	African American/Black	22	4%
	American Indian/Alaska Native	9	1%
	Unknown	33	5%
<i>Gender</i>	Women	294	49%
	Men	258	43%
	Non-Cisgender	19	3%
	Decline to state	36	5%
<i>First Generation College Student</i>	Non-First-Generation	426	70%
	First-Generation	174	29%
	Unknown	7	1%
<i>Division</i>	Physical and Biological Sciences	229	38%
	Social Sciences	150	25%
	School of Engineering	133	22%
	Humanities and Arts	95	15%
<i>Year in Program</i>	1 st – 4 th Years	481	79%
	5 th – 9 th Years	126	21%



To identify subpopulations of students who might be at heightened risk of experiencing food insecurity, we conducted comparative analyses of groups based on various demographic characteristics (e.g., gender, race/ethnicity, first-generation) and academic experience (e.g., program of study or academic division). For statistical purposes, groups needed to be comparable in size. When necessary, we clustered students from relatively small groups together. Specifically, African American/Black and American Indian/Alaska Native students were grouped together for inclusion in comparative analyses based on race/ethnicity. We also grouped Humanities and Arts students together to compare their experiences with students from larger divisions.

Our analysis focuses exclusively on respondents who completed food and housing security items and were enrolled in PhD or DMA programs, resulting in a final sample of 507 doctoral students. Throughout our analyses, sample sizes vary depending on the number of respondents who completed the items.

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 2017 UCSC Graduate Student Survey:

- “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.

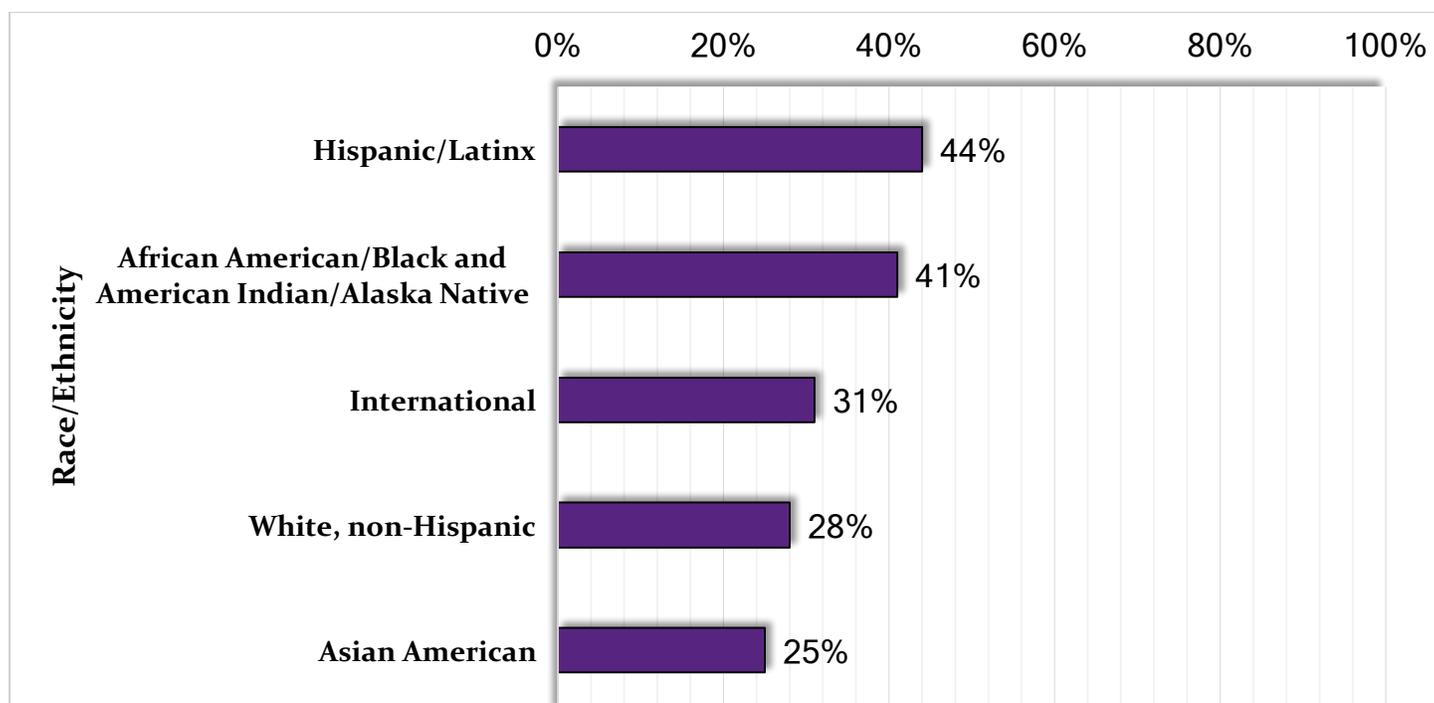
Findings

Prevalence of Food Insecurity among UCSC Doctoral Students

Food insecurity is a pervasive problem. Overall, we found that 31% of doctoral students experienced food insecurity. This estimate is similar to the system-wide finding that 26% of UC graduate students struggle to access high quality, varied nutritious food and/or go hungry (UC Office of the President, 2017).

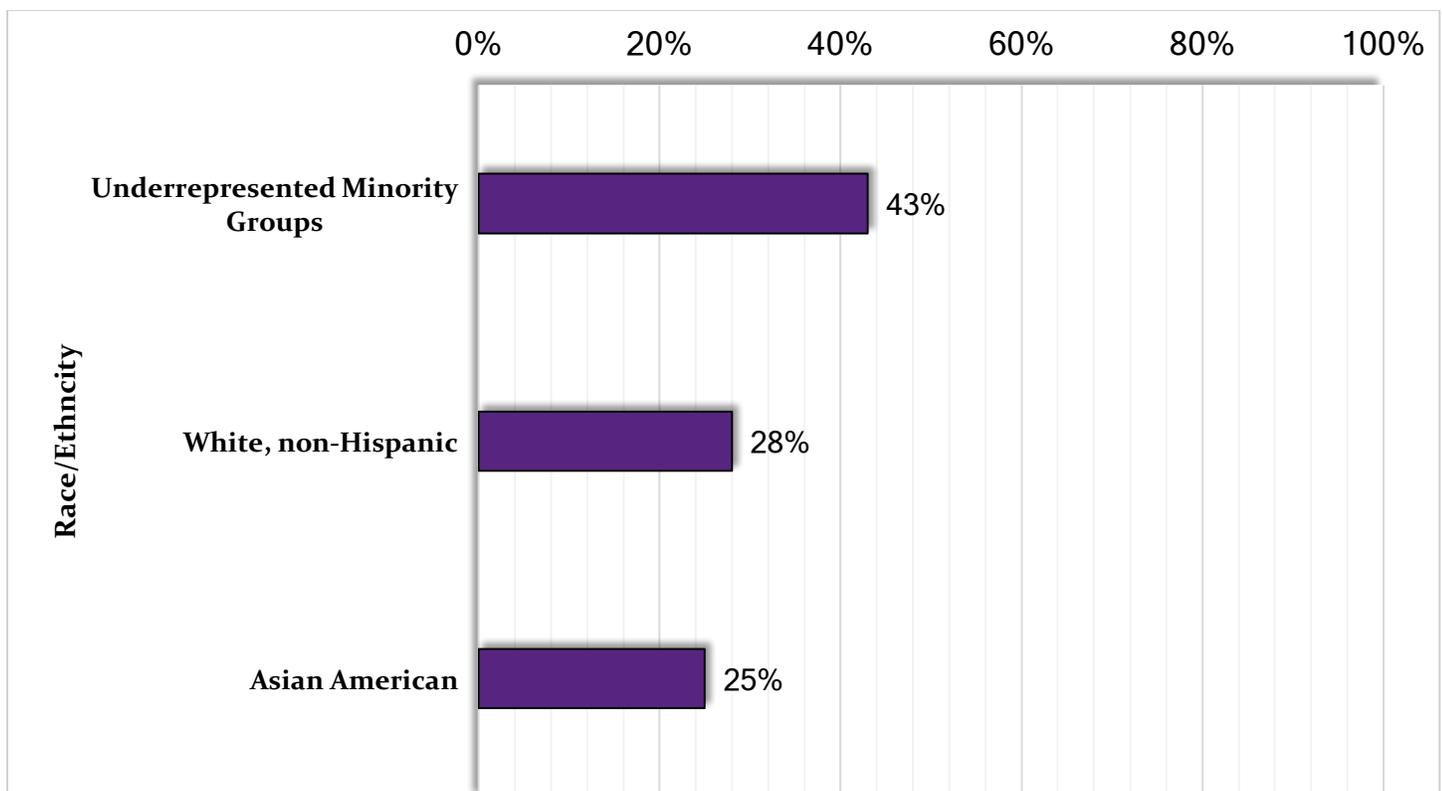
Domestic students from underrepresented racial and ethnic minority groups (URM) and international students experience high rates of food insecurity. Although food insecurity was experienced by graduate students from diverse racial and ethnic groups, domestic underrepresented racial and ethnic minority students and international students were most at risk of experiencing food insecurity. Forty-four percent of Hispanic/Latinx students, 41% of African American/Black and American Indian/Alaska Native students (combined), 31% of international students, 28% percent of White, non-Hispanic, and 25% Asian American students were food insecure. See Figure 1. Collectively, these findings are consistent with studies documenting high rates of food insecurity among undergraduate students from underrepresented racial and ethnic minority groups (Broton & Goldrick-Rab, 2018; Dubick, Matthews, & Cady, 2016; Goldrick-Rab, 2018).

Figure 1. Prevalence rates of food insecurity among diverse student groups.



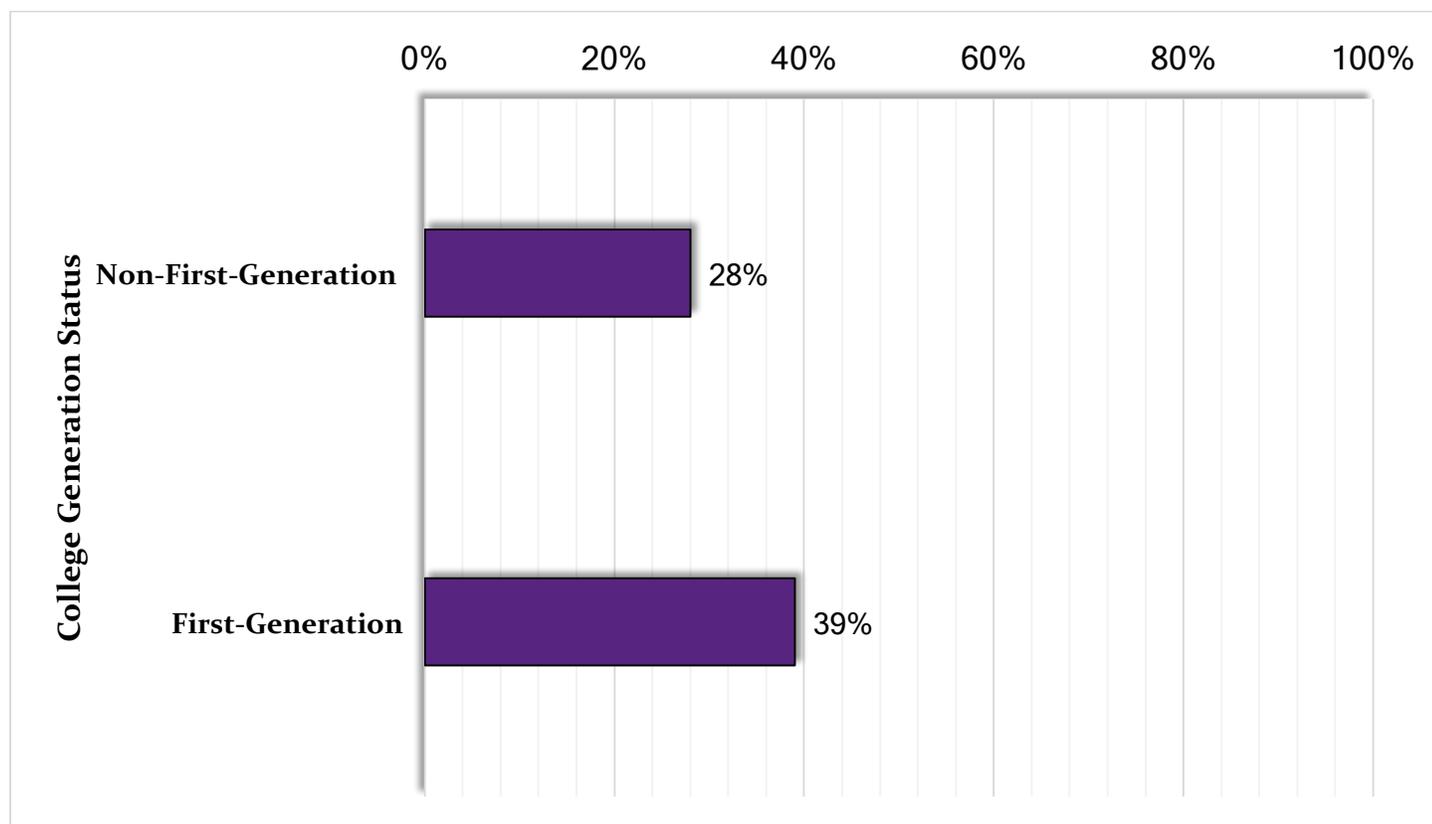
Underrepresented racial and ethnic minority students experience higher rates of food insecurity than White, non-Hispanic and Asian American students. We further compared the prevalence of food insecurity across three racial/ethnic groups: White, non-Hispanic vs. Asian American vs. underrepresented racial and ethnic minority students (URM, i.e., Hispanic/Latinx, African American/Black, and American Indian/Alaska Native). URM students were more likely to be food insecure than White, non-Hispanic and Asian American students ($p = .011$). Forty-three percent of underrepresented minority students experienced food insecurity compared to 28% of White, non-Hispanic and 25% of Asian American students (see Figure 2).

Figure 2. Percentage of doctoral students within racial/ethnic minority and majority groups that experienced food insecurity.



First-generation college students experience higher rates of food insecurity than non-first-generation students. First-generation students (i.e., first person in their family to complete a four-year degree) were significantly more likely to experience food insecurity than their non-first-generation peers ($p = .009$). Thirty-nine percent of first-generation college students in graduate school were food insecure compared to 28% of non-first-generation students (see Figure 3). Similarly, studies of undergraduates find that first-generation students experience higher rates of food insecurity (Broton & Goldrick-Rab, 2018; Dubick, Matthews, & Cady, 2016; Goldrick-Rab, 2018).

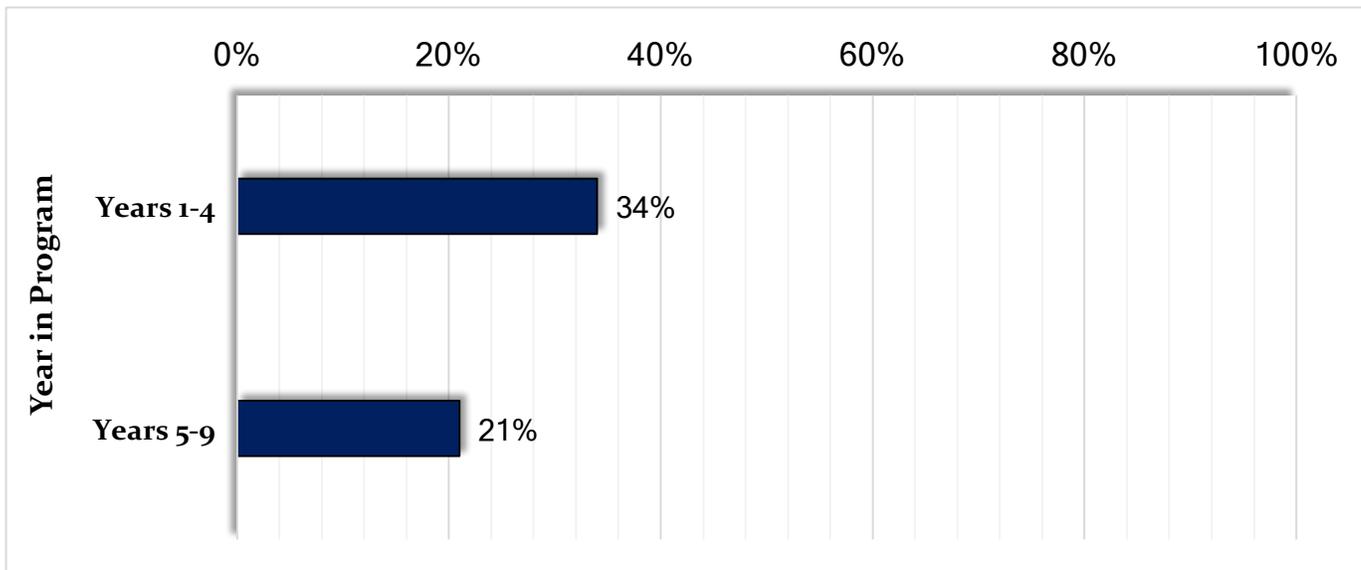
Figure 3. Food insecurity by college generation status.



Women, men, and non-cisgender students experience similar rates of food insecurity. Thirty percent of women, 29% of men, and 33% of non-cisgender doctoral students experienced food insecurity. No statistically significant gender differences were found.

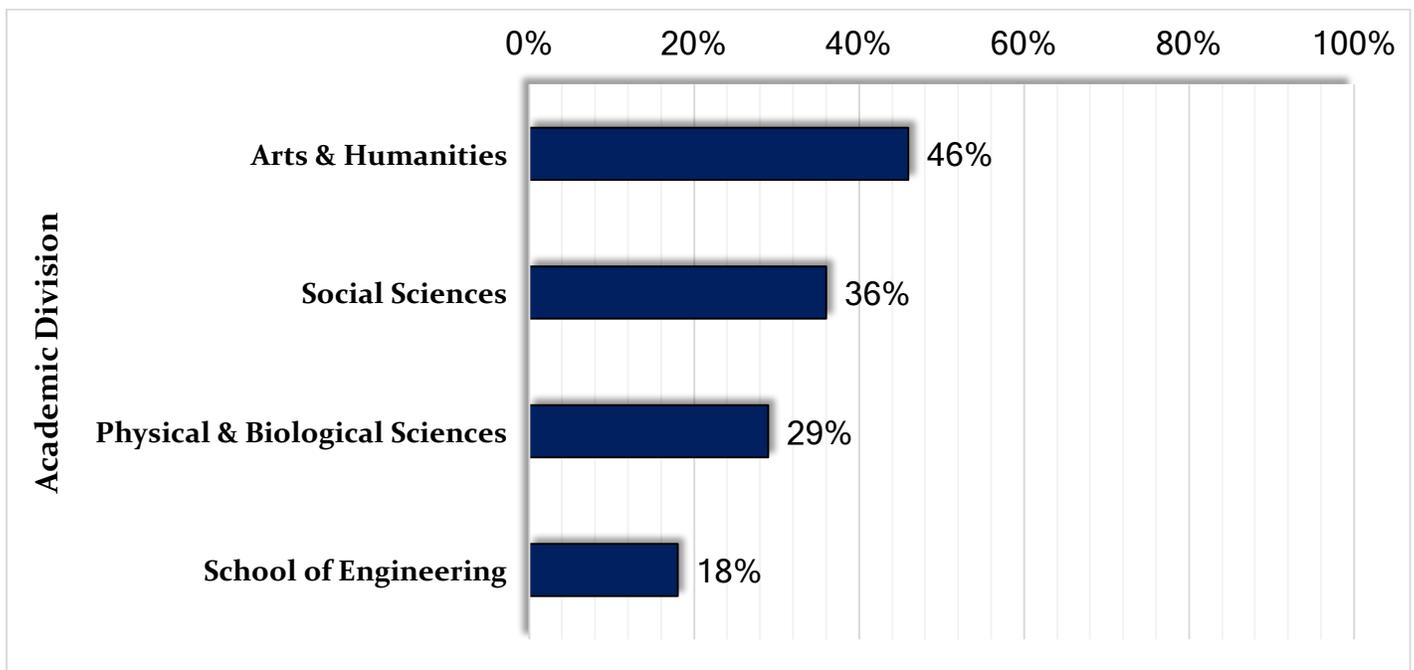
The early years of graduate study are associated with heightened vulnerability. Respondents' completed years of doctoral study ranged from 1 to 9 years (see Table 1) and this proved impactful ($p = .005$). Higher rates of food insecurity were found among graduate students in their first four years of their study (34%) than students in their fifth year or beyond (21%). See Figure 4. This difference could be attributed to many reasons, including students leaving graduate school before their 4th year due to experiences of food insecurity (discussed below).

Figure 4. Percentage of students experiencing food insecurity by years of graduate study.



Experiences of food insecurity varies across academic divisions. We also examined food insecurity by academic division and found that students in the Arts & Humanities (combined), and Social Sciences experienced food insecurity at significantly higher rates than those in Physical and Biological Sciences and School of Engineering ($p = .000$). Refer to Figure 5.

Figure 5. Percentage of students by academic division experiencing food insecurity.



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 meals to save money in the past year?
- How frequently have you worried about debt and/or financial circumstances?

Not surprisingly, food insecure students were significantly more likely than their food secure counterparts to skip meals to save money ($p < .001$). Thirty-nine percent of food insecure students occasionally skipped meals and another 34% did so somewhat to very often (see Table 2).

Additionally, food insecure and food secure students differed in how frequently they worried about debt and/or their financial circumstances ($p < .001$), with 93 % of food insecure students worrying about these issues somewhat often to very often (see Table 2).

Table 2. Frequency with which food insecure students ($n = 186$) skipped meals and worried about money.

	Never	Rarely	Occasionally	Somewhat Often to Very Often
Skipped Meals to Save Money	7%	20%	39%	34%
Worried about Debt and/or Financial Circumstances	0%	1%	6%	93%

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

- How frequently have you worried whether your food would run out before you got money to buy more in the past year?
- How frequently has the food you bought not lasted and you didn't have the money to buy more?

Food insecure students were significantly more likely than their secure peers to worry about running out of food before they had money to buy more ($p < .001$). Seventy-four percent of food insecure students reported that this was sometimes true, and another 23% reported this was often true (see Table 3).

Food insecure students were also more likely to run out of food than their food secure peers ($p < .001$), with 49% reporting that they ran out food and could not afford to buy more while another 13% reported that this was often true (see Table 3).

Table 3. Percentage of food insecure students ($n = 186$) concerned about running out of food.

	Never True	Sometimes True	Often True
I was worried whether my food would run out before I got money to buy more	3%	74%	23%
The food I bought just didn't last, and I didn't have money to get more	38%	49%	13%

Food Insecurity is a Barrier to Academic Achievement and Well-Being

Difficulty meeting basic needs undermines health, academic achievement, and well-being (Seligman & Schillinger, 2010). To learn more about the consequences of food and housing insecurity on our campus, we analyzed responses to the following questions:

- During this academic year, how often has going hungry, not having enough food been an obstacle to your school work or academic success?
- During this academic year, how often has inconsistent access to housing, or homelessness been an obstacle to your academic success?

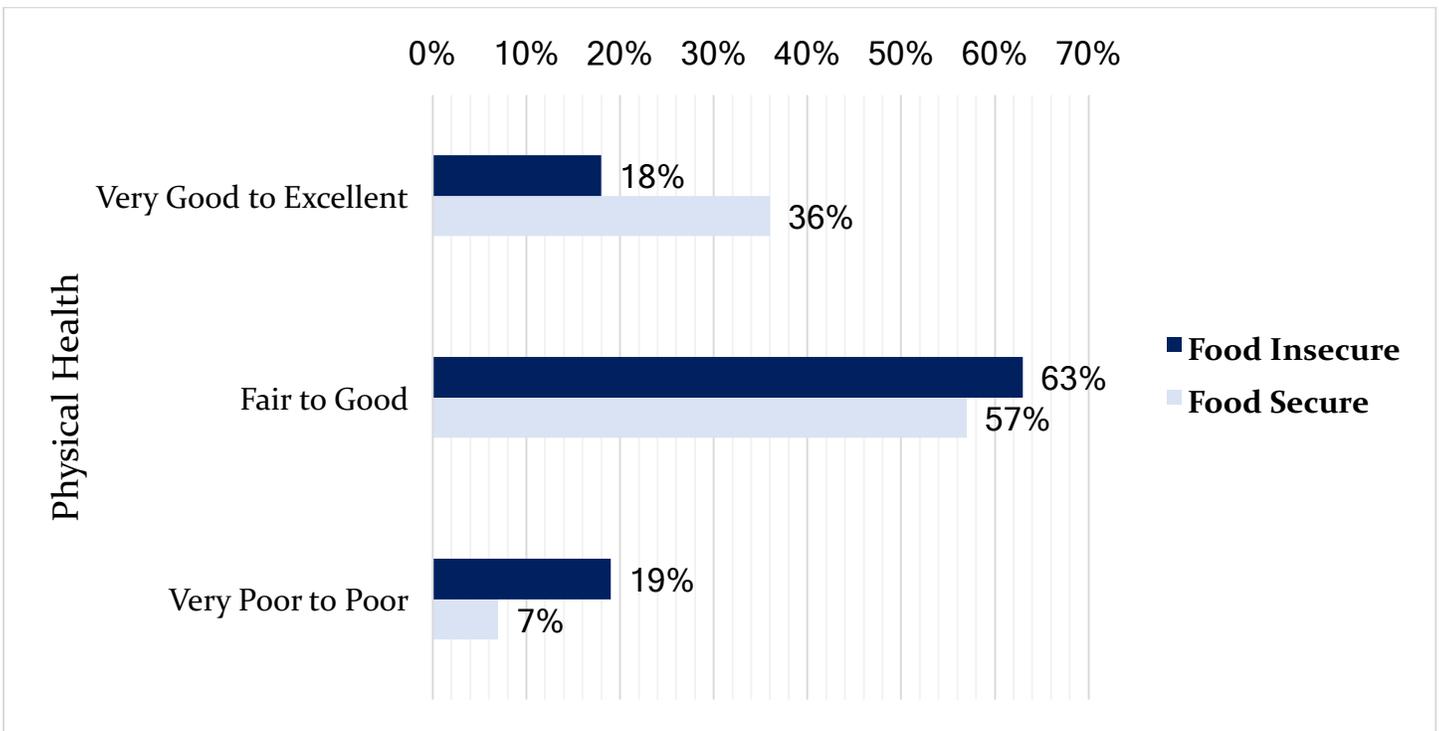
Food insecure doctoral students were significantly more likely than their food secure peers to perceive lack of food ($p < .001$) and housing insecurity and/or homelessness ($p < .001$) as barriers to their academic success. Twenty-nine percent of food insecure students identified not having enough food as an occasional barrier and another 13% regarded it as a frequent obstacle. Fifteen percent and 11% identified housing insecurity as an occasional or frequent obstacle, respectively (see Table 4).

Table 4. Percentage of food insecure students ($n=185$) reporting obstacles to their academic success.

	Not at All to Rarely	Occasionally	Frequently
How often has going hungry, not having enough food been an obstacle to your school work or academic success?	58%	29%	13%
How often has inconsistent access to housing, or homelessness been an obstacle to your academic success?	74%	15%	11%

A significant relationship was also found between food insecurity and self-reported health, with food insecure students reporting poorer health ($p < .001$). Food secure students were two times more likely than their food insecure peers to characterize their health as very good or excellent (see Figure 3).

Figure 3. Self-reported health of food secure and food insecure students.



Recommendations

Our findings document the pervasiveness of food insecurity among UCSC doctoral students, underscoring the importance of adopting a basic needs master plan that ensures that all students are food secure. The likelihood of experiencing food insecurity is greatest among domestic students from underrepresented racial and ethnic minority groups, first-generation students, international students, students in their first four years of doctoral study, and students enrolled in the Arts, Humanities, and Social Sciences. Limited access to food compromises health and well-being, with food insecure doctoral students reporting poor health and compromised academic performance.

Although our sample was relatively small and restricted to doctoral students, this analysis is an important step toward understanding food insecurity at the graduate level. Research focused on masters' students is needed as are holistic investigations of basic needs that consider both housing and food insecurity. We encourage inclusion of a comprehensive battery of questions assessing basic needs on the UCSC Graduate Student Survey. Focus groups and interview studies are needed to understand the lived experiences of food insecure graduate 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 insecurity and housing insecurity (to learn more about UCSC programs and initiatives, 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 progress is being made but greater investments are needed to make the UC system and UCSC "hunger free." Enhanced resources and services are needed to reduce graduate student food insecurity and ensure that all students basic needs are met. We recommend the following actions:

- **Increase Graduate Student Access to CalFresh Benefits.** Enhanced collaboration between UCSC and the County of Santa Cruz Human Services Department is needed. Although graduate student researchers and teaching assistants may be eligible for CalFresh benefits, their applications are frequently declined due to misunderstandings regarding their wages and funding. Financial packages need to be clarified to improve graduate student eligibility for CalFresh.
- **Offer Distinct Campus Services for Doctoral Students.** Graduate students may be hesitant to access campus food pantries and other resources because they are perceived as primarily serving undergraduate students and/or because they do not want undergraduates, who may be present at these sites, to be aware of the hardships they are experiencing. Welcoming, targeted outreach regarding available resources is needed. Distinct programs and/or dedicated times exclusively reserved for graduate students can reduce concerns about interacting with undergraduate students who they teach or supervise.
- **Enhance Services for Doctoral Students at Heightened Risk.** Greater supports and services are needed to ensure that the basic needs of doctoral students of color and first-generation students are met. Doctoral students who are in the first four years of graduate study and students enrolled in the Arts, Humanities, and Social Sciences also require enhanced support.
- **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.
- **Increase Graduate Student Wages and Provide Competitive Multiyear Funding Packages.** The high cost of living in California's central coast and relatively low wages undoubtedly deepens hardship and contributes to high rates of food insecurity. Graduate student wages need to meet self-sufficiency standards for Santa Cruz County. Pay equity across academic divisions and different forms of labor (e.g., teaching assistants, graduate student researchers) is needed. Competitive multiyear funding packages can help reduce economic need and uncertainty and reduce time to degree.
- **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 to basic needs.

- **Establish Campus Benchmarks and Goals for Reducing Food Insecurity among Doctoral Students.** Annual goals for becoming a “hunger free” campus should be set, including the reduction of graduate student food insecurity. Annual assessment of progress toward these goals will be needed.
- **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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